
Ending America's Public Investment Drought

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INTRODUCTION

Economists from Adam Smith onward have understood that free markets don't exist or thrive in a state of nature.¹ They are nestled within a framework of governance that defends societies against outside threats, writes and enforces common laws, and provides public goods – those that all people need but that private actors would have little incentive or ability to develop on their own.²

Unlike private investments, investments in public goods generate benefits that accrue not to individual investors but rather society as a whole. Thus, the responsibility for investing in public goods falls on government: the one institution that represents all citizens and therefore has an obligation to act in the common interest. Public investments such as education, infrastructure, and scientific research lay the foundation for long-term economic growth and shared prosperity. Only by making these investments can governments facilitate the success of private enterprise and free markets.

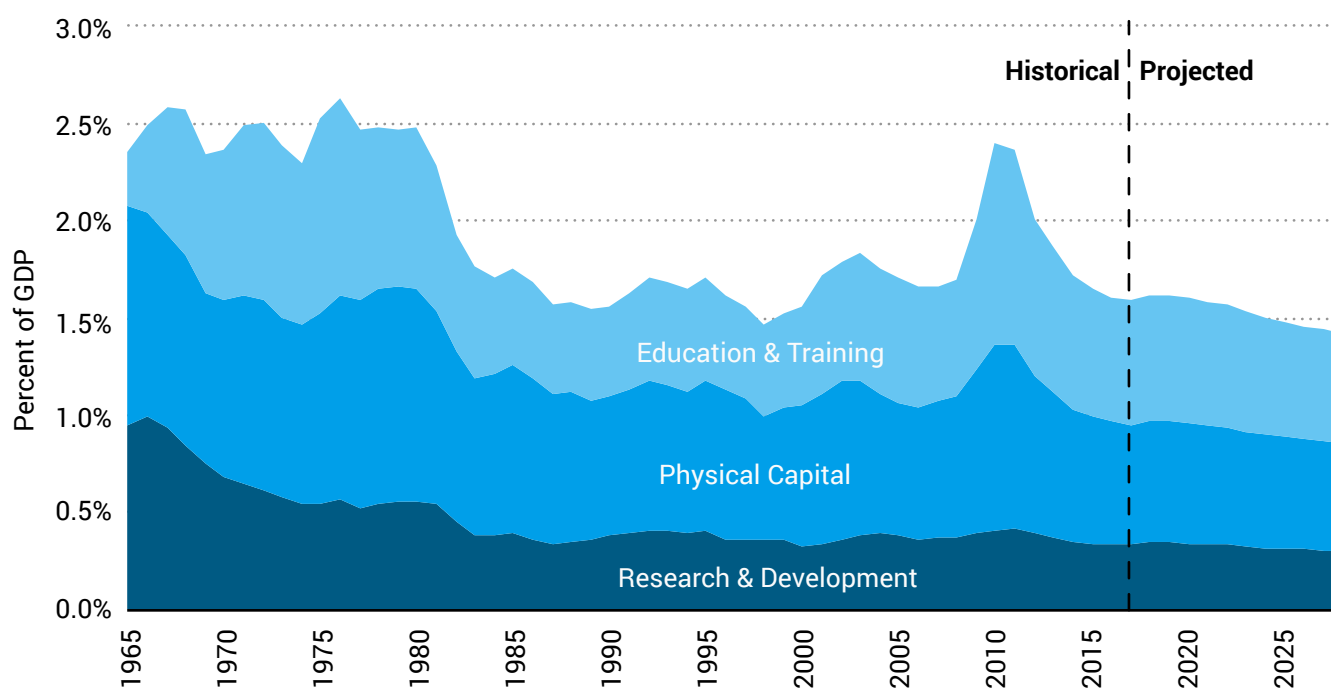
For over three decades following the end of World War II, policymakers in the United States dutifully fulfilled this obligation and invested in America's future. The post-WWII G.I. Bill provided unprecedented access to higher education for returning veterans and their families regardless of their financial situation, giving them an opportunity to pursue a lucrative and fulfilling career while providing businesses access to a skilled workforce.³ The Interstate Highway

System connected people from across the country to exchange goods and services – and still supports one quarter of all vehicle traffic over 60 years later.^{4,5} And the “Space Race” of the 1960s resulted in the development of new technologies from LEDs to water purifiers that continue to benefit our society today.⁶

But in recent years, policymakers have defaulted on their fundamental responsibility to maintain sufficient public investment. Between 1965 and 1980, federal spending on education,

infrastructure, and scientific research averaged about 2.5 percent of gross domestic product (the total value of all goods and services produced by the United States in a given year). Investment spending at that level would have been equal to roughly \$470 billion in 2017. Yet in reality, the federal government spent just \$300 billion on public investment in 2017 – less than 1.5 percent of GDP.⁷ If current trends continue, such investment is projected to reach its lowest level in modern history by 2026 (**Fig. 1**).⁸

Figure 1. Federal Public Investment Spending Over Time



Note: Education & training excludes federal student loan programs, which can be unpredictable and fluctuate from year to year based on repayment rates. Projections assume public investment changes at the same rate as total non-defense discretionary spending and that discretionary spending increases from the February 2018 budget deal are continued.⁹

Sources: Office of Management and Budget^{10,11}, Congressional Budget Office^{12,13}, St. Louis Fed¹⁴, Committee for a Responsible Federal Budget¹⁵, and PPI calculations

If the current generation of policymakers fails to “pay it forward” by maintaining and building upon the investments made by their predecessors, young Americans and future generations will not have the kind of opportunities for economic and social advancement that their parents and grandparents enjoyed. Instead, they would face a future of diminished economic dynamism and growth, lower productivity and wages, and greater social inequality and class conflict. Simply put, the de-facto policy of disinvestment is a formula for national decline.

Rather than address this looming threat, current policymakers have been making America's public investment drought worse. Donald Trump and the Republican-controlled Congress abandoned any pretense of fiscal responsibility and enacted a package of partisan tax cuts in 2017 that the official scorekeepers at the non-partisan Congressional Budget Office estimate will cost more than \$2 trillion over the next decade.¹⁶ These policies provided tax relief to those who needed it least while draining much-needed revenue from public investments that could benefit everyone.

But the federal government's fiscal challenges extend beyond insufficient revenue. America's aging population and rising health care costs are causing spending on expensive federal health and retirement programs such as Medicare, Medicaid, and Social Security to grow significantly faster than the rest of our economy – a trend that members of both parties, but particularly Democrats, have largely refused to tackle. The result is that many people who consider themselves progressives have become complicit in a profoundly unprogressive policy of throttling public investment. These forces together are producing ballooning public debts while leaving less and less room in the federal

budget for investments in a better future.

Meanwhile, state and local governments are also cutting back their public investment spending due to similar demographic and political challenges. The bills for unfunded pension liabilities are coming due as a massive number of public employees move into retirement. The cost of state commitments to health programs such as Medicaid are also swelling due to the same rising health care costs that pressure Medicare at the federal level. And while policymakers in some states are working to tackle these problems, others have made matters worse by enacting their own reckless tax cuts based on the same flawed ideology as Republicans in Washington. The result is cuts to public investment at all levels of government.

Fortunately, there are signs that the American people appreciate the stakes: large majorities of voters in both parties have expressed strong support for government spending on public investments in several independent polls.^{17,18,19} Additionally, a poll conducted by PPI on the eve of the 2018 midterm elections found that more respondents were worried about the growing federal budget deficit than any other issue polled – including almost 9 out of 10 independent voters.²⁰

These findings suggest that Democrats serving in the 116th Congress (or running for higher office in 2020) have a unique opportunity to draw a stark contrast between themselves and fiscally irresponsible Republicans by offering the electorate an agenda that pairs robust public investment in progressive priorities with the fiscal discipline necessary to secure those investments for generations to come.

KEY TAKEAWAYS

The goal of this report is to highlight for American policymakers and their constituents the role that public investment plays in providing the foundation for a prosperous economy, as well as the steps that must be taken to end America's current public investment drought.

The first three sections provide an overview and analysis of the three main categories of public investment in the United States: research and development (intellectual capital), infrastructure (physical capital), and education (human capital). Next, the report demonstrates how these public investments both create long-term economic growth and ensure its benefits are shared by all. Finally, the report explores the external forces that have resulted in recent cuts to public investment, with one section on the pressures facing the federal budget and another on the parallel challenges facing state and local governments.

In 2019, PPI's Center for Funding America's Future will offer concrete proposals for a fiscally responsible public investment agenda that fosters robust and inclusive economic growth.

We're Falling Behind in Research and Development (PP. 8-13):

- Federal R&D spending has contributed to countless technological innovations that enrich our society. To take just one example, a study of NIH's Human Genome Project estimated that the project generated nearly \$1 trillion of economic growth – yielding a massive return of \$178 for every dollar spent.
- Back in the 1960s, the federal government spent as much as 1 percent of GDP on non-defense R&D as it sought to win the space race and put a man on the moon. But today, this spending has fallen by more than half.

That disinvestment threatens basic scientific research that lays the foundation for new industries and technological innovations.

- This year, for the first time in modern history, China – not the United States – will be the global leader in R&D spending. If policymakers don't boost public investment in R&D, they risk forfeiting America's position as the global leader in innovation.

Our Infrastructure is Obsolete and Falling Apart (PP. 13-16):

- Common public goods such as roads, school buildings, electric grids, and water systems provide the physical foundation for private investment and enterprise. But in recent years, that foundation has been allowed to crumble as total government spending on infrastructure has fallen to record-low levels as a percent of GDP.
- Several independent estimates suggest the United States will need to spend roughly \$1.4 trillion more on infrastructure than it is currently projected to spend over the next decade. Failure to reverse America's disinvestment in infrastructure could reduce GDP by nearly \$4 trillion over that time period, costing the average family about \$3,400 per year.
- Investments in infrastructure also boost economic growth in the short term by creating well-paying jobs today. Roughly 1 in 10 workers are employed in either developing or maintaining infrastructure, and wages at the bottom of the earnings distribution are approximately 30 percent higher than what other jobs requiring a comparable level of education would offer.

Workers Need Skills for Next-Generation Jobs (PP. 16-21):

- Education is a valuable investment for both individuals and governments. Investing in a child's pre-kindergarten education generates 7 to 10 percent annual returns for the child and society at-large, while the average annual return on investment for post-secondary education is double or triple what it would be if a similar amount of money was invested in the stock market. Disinvesting from education not only hurts students but also hurts the public by foregoing increased worker productivity and higher tax revenue for the government.
- Per-pupil funding for K-12 education has stagnated or fallen in most states since the 2008 financial crisis. This disinvestment will likely be costly: every dollar spent educating a child results in an average of \$3 in economic activity down the road. It can also reduce the number of students who graduate, potentially imposing long-term costs on them and taxpayers. High-school dropouts are about twice as likely to be unemployed as graduates, and those who are employed earn an average of \$8,000 less per year than graduates do.
- "New-collar" jobs that require some post-secondary education but not a four-year degree now account for 53 percent of jobs in the United States. A worker who obtains the necessary credentials can see their incomes rise by as much as \$11,000 within the first two years alone. But only 43 percent of U.S. workers have the appropriate credentials for these positions, resulting in a "skills gap" that is in part due to underinvestment by the government.

Public Investment Fosters Robust and Inclusive Economic Growth (PP. 21-26):

- Sustained public investment can unleash robust economic growth. The OECD estimates that increasing public investment by 1 percent would increase potential GDP by an average of 5 percent in the long run.
- Public investment also ensures the benefits of economic growth are widely shared. Technological innovations such as the internet improve the lives of people of all income levels. Better transportation infrastructure is correlated with higher social mobility. And investments in public education level the playing field for lower-income students who have access to fewer resources than their wealthier peers.
- But the ability of a state or local community to make public investments is heavily dependent on its existing wealth and fiscal capacities. Poorer communities require federal investments to attract private capital and talented workers. Such investments are vital for promoting economic mobility and keeping the American Dream alive for all.

Poor Federal Budget Choices Are Draining Public Investment (PP. 26-28):

- Washington Republicans abandoned any pretense of fiscal responsibility by adding \$2 trillion of reckless tax cut to the national debt over the past year. These cuts both starved public investments of much-needed revenue and likely contributed to the GOP losing control of the U.S. House of Representatives in the 2018 midterm elections.
- Public investment is also being squeezed by the inexorable growth of Medicare, Medicaid, and Social Security. Due to the aging of the population and rising health care costs,

spending on these programs are projected to grow from about 10 percent of GDP today to nearly 16 percent of GDP in 2048. The refusal of both parties to modernize these programs has left fewer resources available for federal public investment.

- As a result of these decisions, public investment spending by the federal government in GDP-adjusted dollars has plummeted by nearly 40 percent since 1968 – and is projected to hit record-low levels by 2026 if current policies remain in place. Meanwhile, the share of federal spending committed to public investment will fall from 7.9 percent today to 4.4 percent in 2048.

State and Local Governments Face Challenges Similar to Those Facing Washington (PP. 28-33):

- State and local governments are also major contributors to public investment, but they are suffering from problems similar to those that afflict Washington.
- Republican governors and legislators in states such as Kansas and Oklahoma enacted unaffordable tax cuts that resulted in dramatic cuts to public investment. These tax cuts proved to be both bad policy and bad politics: Democrats won huge victories in both states in the 2018 midterm elections (despite their strong Republican lean) by campaigning for fairer and more responsible tax policies.
- State and local budgets are also strained by demographic changes. As a share of GDP, state spending on Medicaid has increased nearly 40 percent since 2000 due to rising health costs, while the costs of unfunded pension liabilities have doubled during the same period as the bill for retiring baby boomers comes due. The result: a perfect storm of fiscal mismanagement has drained public investment spending at all levels of government.

WE'RE FALLING BEHIND IN RESEARCH AND DEVELOPMENT

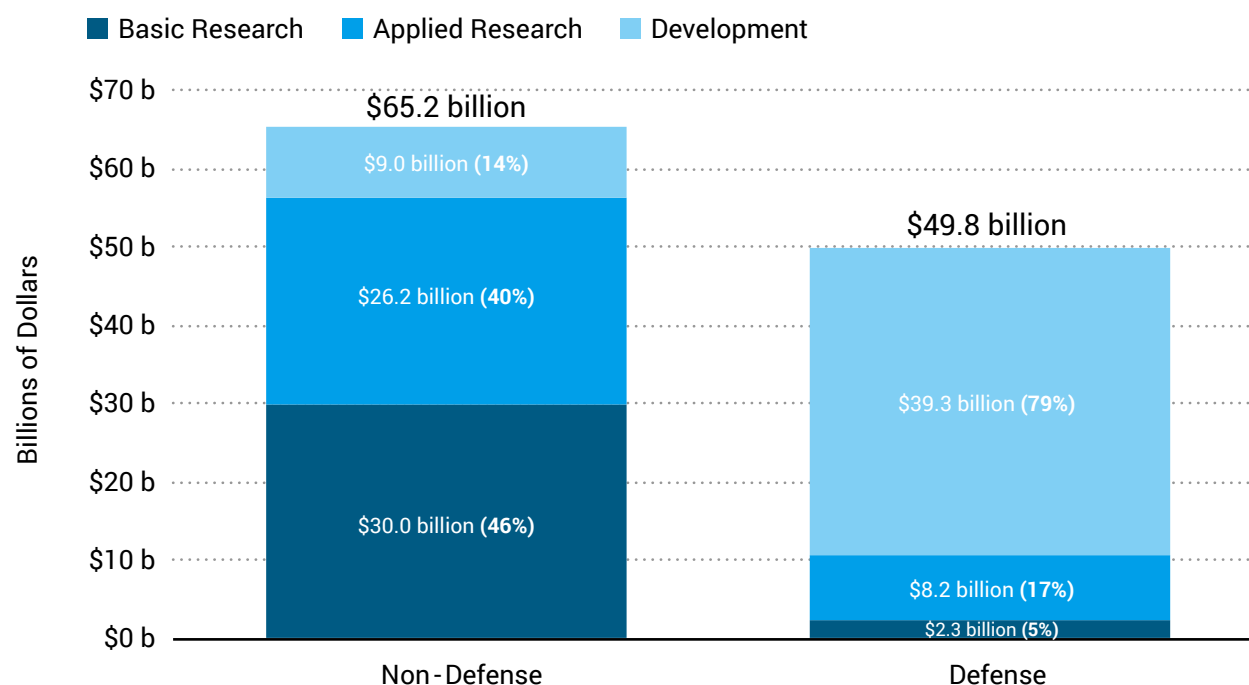
Public investments can be divided into three main categories: intellectual capital, physical capital, and human capital. The first of these consists of scientific research and development (also known as R&D). Our modern economy is powered by technology, from the cars that we drive to the phones in our pockets. But none of it was developed overnight. Every technological advancement is the culmination of years, or even decades, of R&D. Unfortunately, the United States' longstanding commitment to public investment in R&D is waning – and that could hurt our economy for generations.

Research and development occurs in three stages. The first stage, basic research, works to understand foundational scientific principles and generally has no predictable application in

the near future. Applied research attempts to translate basic research into more tangible ideas that can be used to solve specific problems. Finally, the findings from both stages of research are used in the development of new products and technologies.²¹

The type of R&D funded by the government differs greatly depending on whether it is for defense or non-defense purposes, the former of which represents about 40 percent of total federal R&D spending. Whereas non-defense R&D spending is split mostly between basic and applied research, almost four in five defense R&D dollars are put into development (**Fig. 2**). This spending is primarily directed towards developing military systems that typically have few domestic applications, but the remainder of federal R&D spending has undeniable effects on long-term economic growth.²²

Figure 2. Federal R&D Spending by Type, FY 2016



Note: NSF data reflects federal obligations instead of outlays and thus includes some commitments for future spending not included in other figures. Defense R&D includes spending by the Department of Defense, the Department of Homeland Security, and the National Nuclear Security Administration.²³

Sources: National Science Foundation²⁴

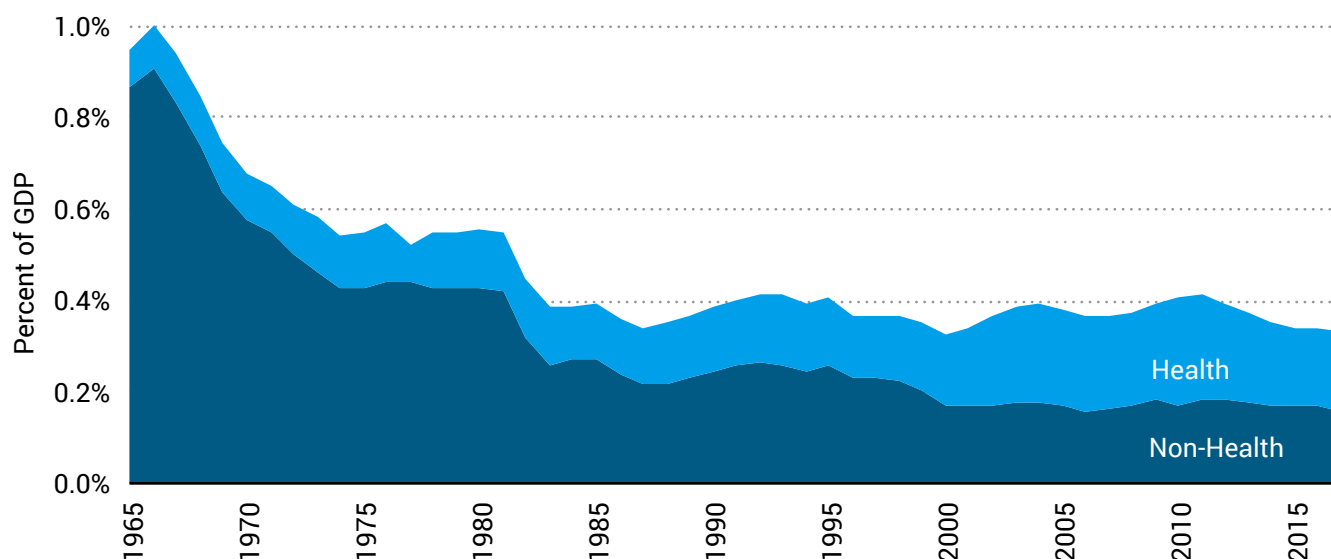
Americans benefit from technologies made possible by federal R&D funding throughout their daily lives. The Department of Energy has helped save billions of dollars in energy costs each year through groundbreaking advancements in energy efficiency and renewable energy research.²⁵ Research funded or conducted by the National Institutes of Health has led to numerous breakthroughs in medicine such as the MRI machine, modern treatments for cancer, and much more.²⁶ Students participating in a National Science Foundation fellowship program developed the algorithm now powering the Google search engine.²⁷ The internet, GPS, and artificial intelligence only exist because of projects pursued using defense R&D funds.²⁸

These investments generate enormous long-term economic benefits. For example, an aggregation of six independent estimates concluded that the Office of Energy Efficiency and Renewable Energy produced \$33 in economic benefits for every dollar spent on R&D.²⁹ A study of NIH's Human Genome Project estimated that the project generated nearly \$1 trillion of economic growth – yielding a massive return of \$178 for every dollar spent.³⁰ Although few public R&D projects will generate such immense gains, other analyses have estimated an average return of at least 30 percent on R&D investment.^{31,32}

But these gains take time to materialize: CBO estimates that it can take up to 20 years for the economy to begin experiencing any benefits from public spending on basic research, and up to 40 years for the full macroeconomic benefits of that research to be realized.³³ This long time horizon means that the decisions policymakers make about R&D spending today are likely to shape our society and our economy for the next generation.

Unfortunately, today's policymakers seem to lack the foresight of their predecessors. Back in the 1960s, the federal government spent as much as 1 percent of GDP on non-defense R&D as it fought to win the space race and put a man on the moon. Investment in the space program resulted in the creation of LEDs, wireless headsets, key components of artificial limbs, and flame-resistant materials that now save lives every day here on earth, among many other technologies.³⁴ It also laid the foundation for entirely new industries that didn't even exist before, such as private space companies now working towards commercializing space travel.³⁵ But today, only one category of non-defense R&D spending is at or above these historical levels: health research (**Fig. 3**).

Figure 3. Historical Non-Defense R&D



Sources: Office of Management and Budget³⁶, St. Louis Fed³⁷, and PPI calculations

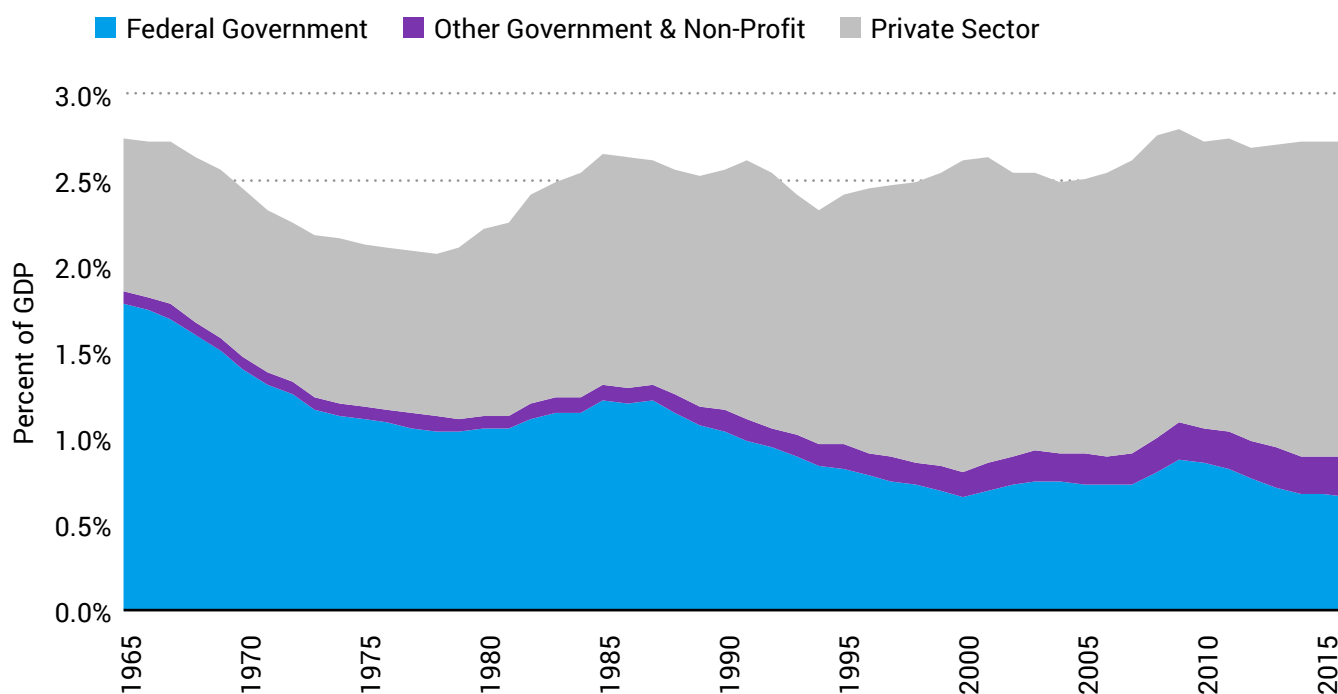
Federal health R&D spending has nearly doubled as a percent of GDP since the 1960s and now makes up the majority of federal non-defense R&D. Investing in health research helps doctors find new cures and cheaper ways to treat diseases, which both reduces human suffering and has the potential to dramatically lower future health costs. Its recent growth should be considered a positive development. As our society ages and health care becomes increasingly expensive, the return on these investments could grow even larger in the years ahead.

But the boost to health R&D spending is outweighed by the decline of funding for all other categories of non-defense R&D. Non-health, non-defense R&D funding as a percent of GDP is less than a quarter of what it was in the mid-60s and

is now at record-low levels.³⁸ This trend will deprive the American people of future innovation and technological advancement throughout our economy.

There is some good news. Even as public investment in R&D has fallen, private investment in R&D has risen (due in part to over \$10 billion worth of tax incentives provided by the government each year).³⁹ When accounting for both public and private spending on non-defense R&D, spending levels have grown steadily as a percent of GDP since the 1970s and are now roughly back to what they were 50 years ago (**Fig. 4**). But this shift is more problematic than the top-line numbers suggest due to the dramatic differences between the types of R&D financed by public and private investment.

Figure 4. U.S. Spending on R&D by Sector



Note: NSF data reflects federal obligations instead of outlays and thus includes some commitments for future spending not included in other figures. Federal R&D in this figure includes both defense and non-defense.

Sources: National Science Foundation⁴⁰, St. Louis Fed⁴¹, and PPI calculations.

Private investors need quick returns. They have little incentive to focus on basic research because the knowledge gained from such activities is unlikely to have commercial applications until several years after the initial investment is made. Furthermore, if and when a marketable purpose is eventually found for the research's findings, there is no guarantee that the researching firm will be the one to profit from it. Less than 7 percent of private business R&D was spent on basic research in 2016 – substantially lower than the 46 percent of federal non-defense R&D spending that went to basic research.⁴²

Basic research is a quintessential public good: its benefits can be unpredictable but tend to permeate throughout society, benefitting the country and the economy in ways we can't

predict. This is exactly the sort of need that cannot be met by the private sector and requires significant and sustained government investment.

The differences between public and private R&D spending are so substantial that public investment in R&D actually entices (rather than crowds out) private investment. As the government invests more in basic research, it creates more opportunities for applied research and development from the private sector.⁴³ Considering that non-defense R&D spending accounts for just 0.8 percent of federal spending, it has a remarkably high bang for the buck.⁴⁴

Fortunately, the American people don't need much convincing that R&D is a good public investment. In a recent Pew poll, three quarters

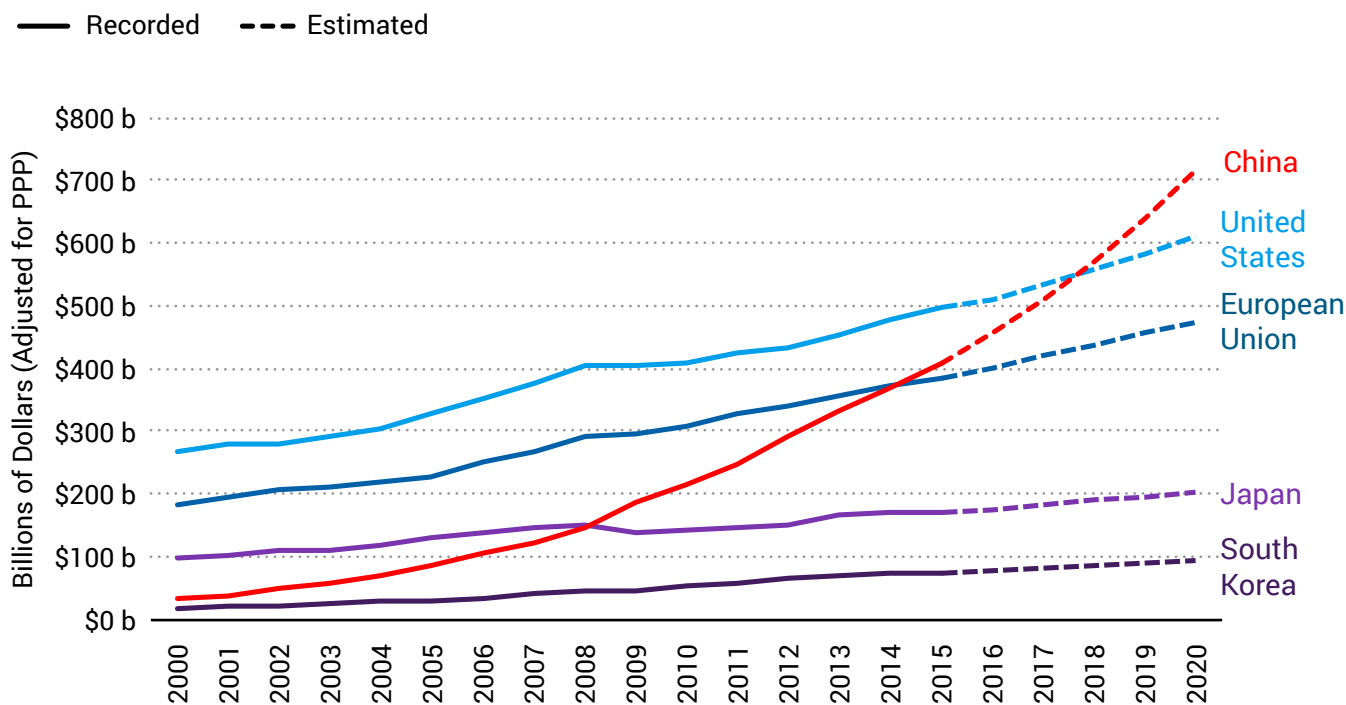
of respondents across the political spectrum expressed support for government-funded scientific research, including over 60 percent of Republicans and 90 percent of Democrats.⁴⁵ Policymakers who promote increasing government R&D spending can be confident knowing they are on the right side of both politics and policy.

But despite R&D's inherent popularity, some members of Congress (particularly Republicans) work to undermine it by trying to make individual research projects seem unnecessarily absurd. Sen. Jeff Flake published one such list of research projects he deemed wasteful in 2015, which included government-funded research into the hunting patterns of mantis shrimp that he

dubbed a "shrimp fight club". But this denigration misses the point of basic research: to expand the base of knowledge other researchers draw from. Today, the results from the project Sen. Flake belittled are being used to develop stronger armor and safer sports helmets.⁴⁶

If policymakers don't reject this mindset and act to boost public investment in R&D, they risk forfeiting America's position as the global leader in innovation. The share of global R&D spending conducted by the United States has fallen by almost a third in the past 15 years as other countries, particularly China, have increased their spending in an attempt to emulate the United States' economic success from scientific investment in the 20th century (**Fig. 5**).⁴⁷

Figure 5. International Spending on R&D



Note: Figure includes all forms of R&D, including both government and private expenditures. Estimates are based on each country's spending growth rate over the three most recent years recorded and adjusted for purchasing power parity (PPP) to reflect differing costs of investment in each country.

Sources: National Science Board⁴⁸ and PPI calculations

On the one hand, a global “race to the top” on scientific research is a good thing for all people. Scientific knowledge has no borders and can benefit everyone no matter where it was discovered. But when it comes time to commercialize new technologies based on those discoveries, the countries that maintained and cultivated their scientific community have a head start on the competition.

This year, for the first time in modern history, China – not the United States – will be the global leader in R&D spending.⁴⁹ Meanwhile, other Asian countries, such as Japan and South Korea, are spending substantially more on R&D as a percent of their GDP than the United States is. America must renew its commitment to public investment in R&D so it can attract top talent, compete in the global economy, and remain the leader of innovation in the 21st century.

OUR INFRASTRUCTURE IS OBSOLETE AND FALLING APART

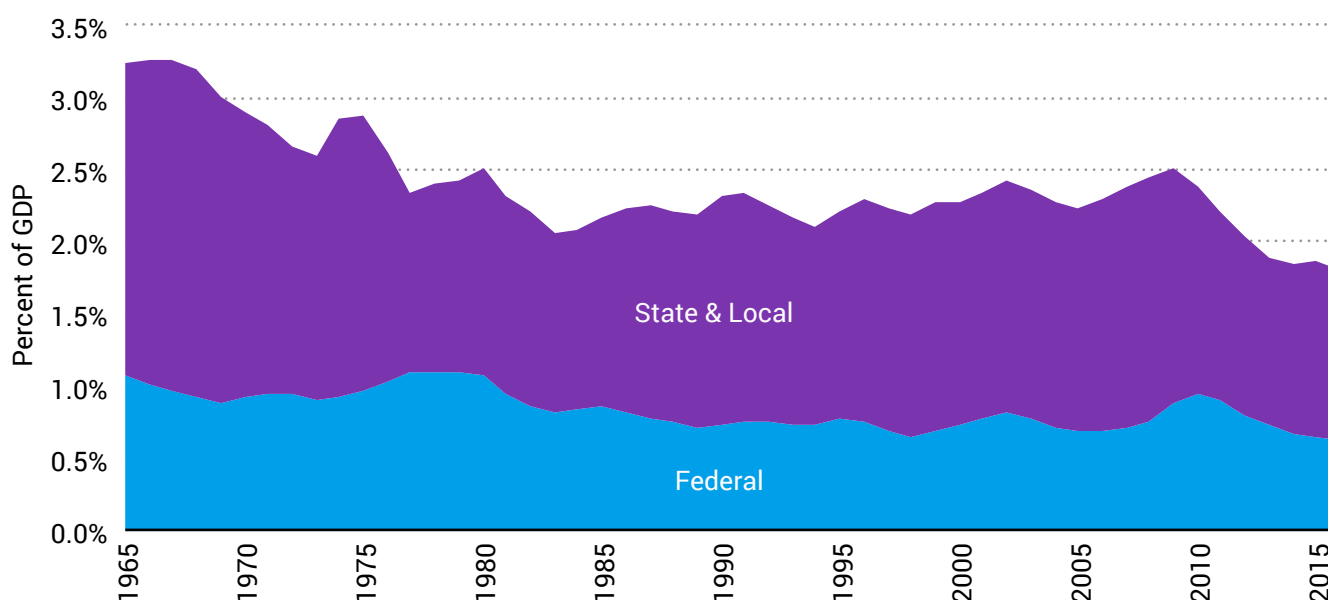
The government invests in a wide variety of physical assets, from machines to buildings to utilities, that facilitate the delivery of public services for years after the initial investment is made. Like R&D spending, physical capital investments are divided between defense and non-defense capacities, the former of which is

mostly for procuring military technology and constructing bases. These investments have negligible benefits for the domestic economy.⁵⁰ Non-defense physical capital investments, however, create and maintain the domestic infrastructure systems that provide the foundation upon which our economy functions. And in recent years, policymakers have been allowing that foundation to crumble.

There are many different infrastructure networks that support our society: electric grids that provide the energy to power our homes and businesses, telecommunications networks that connect us to the world, transportation networks that facilitate the free flow of goods and services, and water systems that ensure universal access to clean and safe drinking water. The modern economy couldn't function properly without these infrastructure networks, each of which requires some level of investment from the government.

The responsibility for developing and maintaining infrastructure largely falls to state and local governments. The federal government provides roughly a third of the funding for public physical capital investments in the United States, mostly in the form of grants to state and local governments.

Figure 6. Government Spending on Non-Defense Physical Capital



Note: Total area reflects all government spending on non-defense physical capital by BEA. Federal share represents outlays on non-defense physical capital as measured by OMB.

Sources: Office of Management and Budget⁵¹, Bureau of Economic Analysis⁵², St. Louis Fed⁵³, and PPI calculations

Both sources of funding declined substantially in the '60s and '70s following the completion of the Interstate Highway System and other post-war investments in domestic infrastructure (**Fig. 6**). Spending then stabilized as a share of GDP for a time, although the value of this investment was eroded by construction costs that grew twice as much as GDP did between 2000 and 2016.⁵⁴

Investments in physical capital fell even further following the 2008 financial crisis, when falling revenues forced state and local governments to cut back on their spending. Federal stimulus money temporarily filled the gap, but when that spending subsided and Congress cut funding even more in a misguided attempt to tackle growing budget deficits, state and local contributions didn't return investment to their previous levels.⁵⁵ As a result, investments in physical capital are at their lowest level since

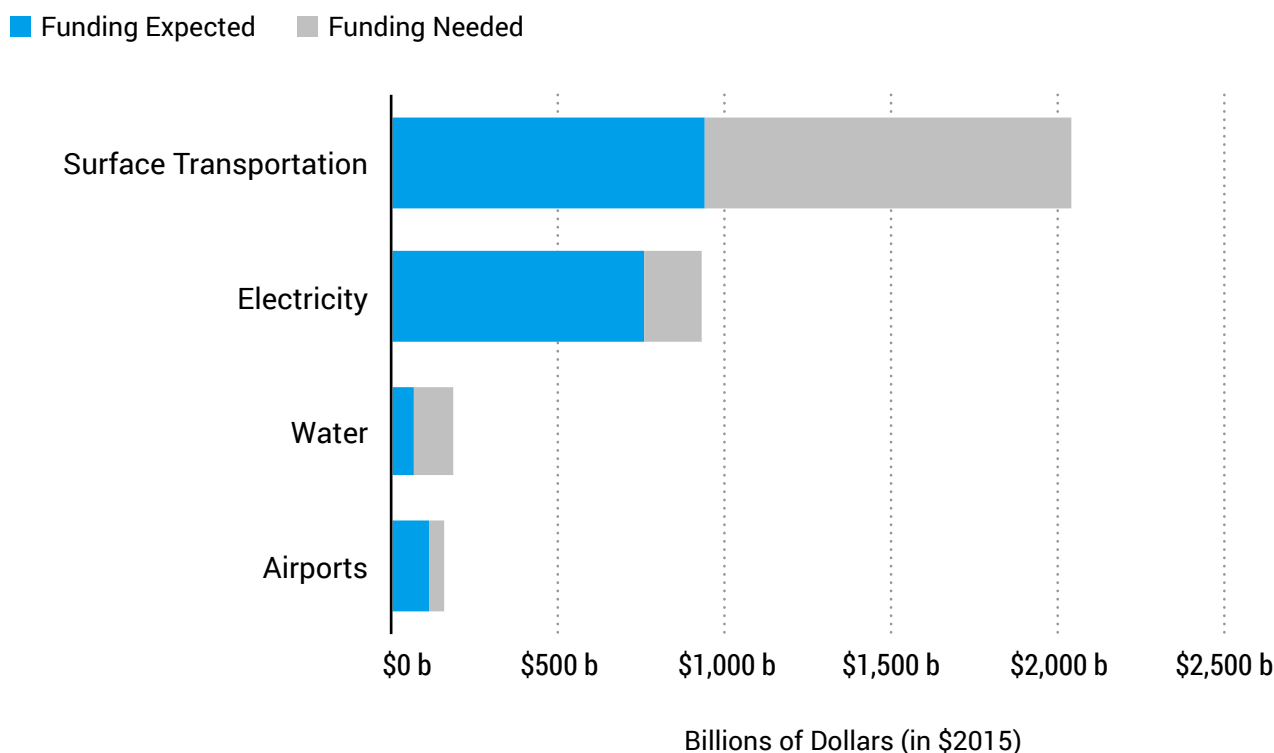
WWII – and they're projected to fall even further if current trends continue.⁵⁶

Years of neglect have taken a costly toll on our infrastructure. A 2017 analysis of the National Bridge Inventory identified 142,912 bridges that were considered structurally deficient or functionally obsolete – approximately one quarter of all bridges.⁵⁷ Partially because of this neglect, surface transportation congestion costs our economy \$160 billion annually. The American economy is also suffering from the shortcomings of our aging electrical grid, which relies on antiquated fossil fuels and needs improved security from emerging cyber threats.⁵⁸ The Department of Energy estimates that blackouts cost the United States over \$150 billion in lost economic output each year.⁵⁹

Part of the problem is a broken incentive structure created by the federal government. Two thirds of federal infrastructure spending takes the form of matching grants given to state and local governments to support the construction of new infrastructure, which incentivizes them to prioritize new construction projects over maintaining and repairing existing structures.⁶⁰ The result is a negative feedback

loop in which new infrastructure is built only to be neglected and fall into disrepair, leaving the country with a growing stock of deficient infrastructure and deferred maintenance costs. This misallocation of resources is particularly costly given that the average rate of return for maintenance projects is estimated to be nearly double the rate of return for comparable spending on new construction.⁶¹

Figure 7. Infrastructure Funding Gaps (2016-2025)



Note: Figures are adjusted for inflation in year 2015 dollars. Water infrastructure includes both water/wastewater systems and water transportation.

Source: American Society of Civil Engineers⁶²

Repairing our country's deficient infrastructure after decades of mismanagement will be expensive. Independent estimates by the American Society of Civil Engineers (ASCE) and McKinsey both found that the United States should spend roughly \$1.4 trillion more on infrastructure than it is currently projected to over the next decade (**Fig. 7**).^{63,64}

But the cost of repairs and maintenance pales in comparison to the cost of further neglect. ASCE estimated in 2016 that the United States could lose nearly \$4 trillion in GDP through 2025 if the infrastructure deficit persists, costing the average family about \$3,400 per year.⁶⁵ A 2014 analysis by the University of Maryland and the National Association of Manufacturers also

demonstrated the value of maintaining robust infrastructure, concluding that each dollar spent on sustained investments in infrastructure generates almost \$3 of additional economic output.⁶⁶

Investing in infrastructure also boosts economic growth in the short term by creating well-paying jobs today. Roughly 1 in 10 workers are employed in either developing or maintaining infrastructure, and wages at the bottom of the earnings distribution are approximately 30 percent higher than what other jobs requiring a comparable level of education would offer. Part of the reason for this difference is that on-the-job training and apprenticeships replace the need for a bachelor's degree.⁶⁷ Infrastructure investment thus has the added benefit of enabling millions of workers, many of whom may have limited opportunities for higher education, to afford a solid middle-class lifestyle.

Revitalizing America's infrastructure is also critical for sustaining our international competitiveness in the global economy. Businesses want to locate their operations in places where they can depend on transportation and communications networks to facilitate the delivery of their goods and services. While the United States is reducing its investments in infrastructure, other developed countries are spending nearly twice as much as a percent of GDP — and getting more robust systems as a result.⁶⁸

Although the United States used to be the standard bearer for strong infrastructure, today the fastest American trains run more than 100 miles per hour slower than the fastest trains abroad.⁶⁹ Allowing other nations to build and maintain superior infrastructure over the coming decades incentivizes businesses to move

offshore. America must prioritize action today to provide the economy with infrastructure that supports growth and innovation.

Policymakers have public opinion on their side: over 60 percent of Democrats and Republicans think the government isn't spending enough money on infrastructure, making higher funding an easy pitch for politicians to make to voters.⁷⁰ Leaders in both parties, including the current president, have also professed a commitment to renewing investments in American infrastructure.⁷¹ Yet this administration has proposed no new federal funds for it, instead relying on \$1.3 trillion in spending by state and local governments and the private sector that it expects to materialize out of nowhere.⁷²

Given the massive size of America's infrastructure deficit, policymakers should be exploring all possible funding sources, including those in the private sector. They should also be using all available evidence to make informed decisions about which projects are likely to have the highest return on investment. But we can't expect to get something for nothing; leveraging private capital for public goods will require increasing public investment at all levels of government. Our leaders must act on their campaign promises and provide the U.S. economy with the concrete foundation it needs to be competitive in the 21st century.

WORKERS NEED SKILLS FOR NEXT-GENERATION JOBS

Investments in advanced technology and infrastructure provide our economy with the tools it needs to flourish, but such tools are only useful in the hands of a skilled workforce that knows what to do with them. The good news is that, unlike the other two categories of public investment, spending on investments in our

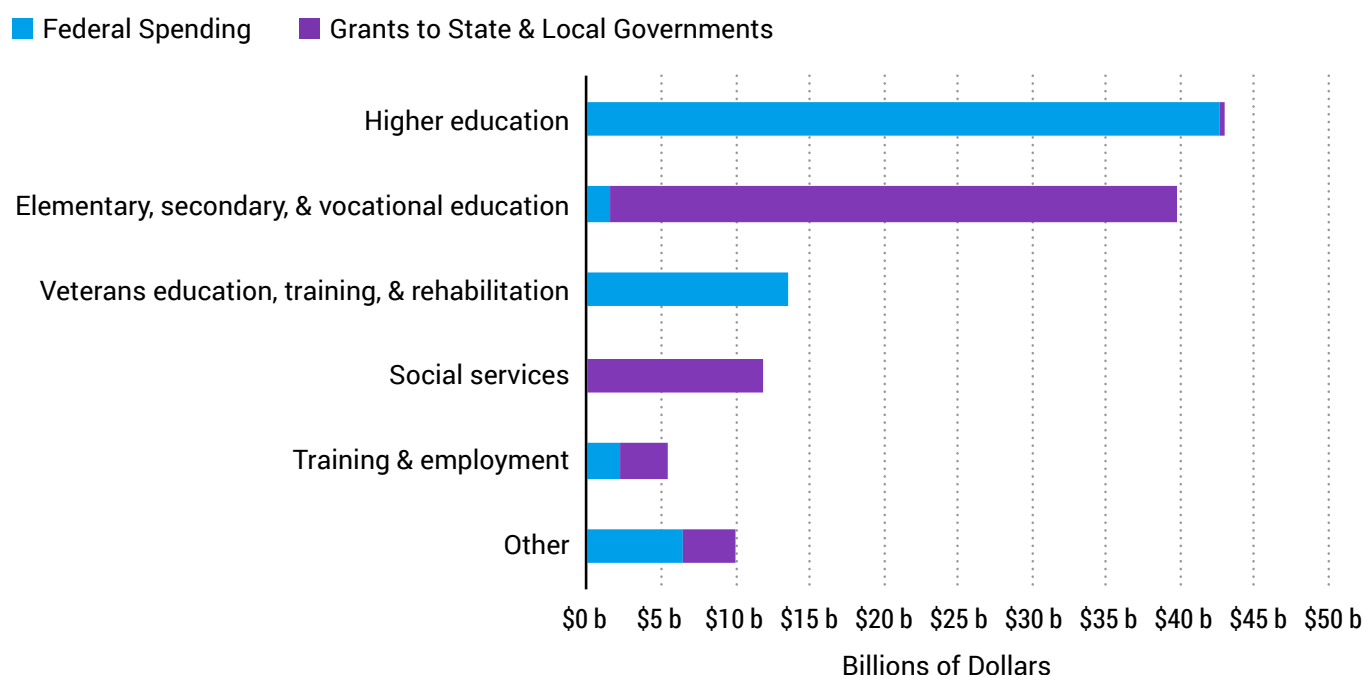
nation's human capital has actually risen rather than fallen as a percent of GDP since the 1960s. But the bad news is that these top-line numbers mask growing problems with education and training that could undermine American workers' abilities to compete for 21st-century jobs.

The federal government has a responsibility to ensure that children and adults of all socioeconomic backgrounds have access to quality education and job training. Doing so not only provides students with the opportunity to pursue a lucrative and fulfilling career – it also offers benefits to society at-large, including

increased worker productivity and higher tax revenue for the government.⁷³

Federal spending on education is split roughly evenly between K-12 and post-secondary education. Some education funding is also spent on targeted worker training and other miscellaneous programs. Like infrastructure, the responsibility for public investments in education is divided between the federal government and state and local governments, with the breakdown varying depending on the type of education (**Fig. 8**).

Figure 8. Federal Spending on Education & Training in FY 2017



Note: Net outlays for higher education exclude federal student loan programs, which can be unpredictable and fluctuate from year to year based on repayment rates.

Source: Office of Management and Budget^{74,75}

Federal investment in children can start before they even begin elementary school, which helps support the development of strong cognitive and social skills that shape the child's personality and ability to learn throughout their

lives. Nobel-prize winning economist James Heckman has estimated that investing in a child's pre-kindergarten education generates 7 to 10 percent annual returns for the child and society at-large – an effect that is even greater

for disadvantaged children who have fewer resources to support them at home.⁷⁶ But despite the tremendous return on investment in young children's education, only 54 percent of American three- or four-year-olds were enrolled in pre-K in 2015.⁷⁷ Expanding pre-K programs, especially for lower-income families, would empower more students to achieve and enable parents to better balance their work life and child rearing.

After a student begins their formal K-12 education, they are very likely to require further public investment – about 9 in 10 American students enrolled in primary or secondary school this year are attending a public school.⁷⁸ The funding structure for K-12 education is similar to infrastructure, with the vast majority of federal spending taking the form of grants to state and local governments. Most of these grants (which account for about 10 percent of public K-12 education funding in the United States) are meant to help reduce the disparity in education funding between affluent schools and poorer ones, or to assist with special education programs for students with disabilities.⁷⁹

Unfortunately, state per-pupil funding for K-12 education has stagnated or fallen in most states since the 2008 financial crisis.⁸⁰ Policymakers may believe that reducing education spending is fiscally responsible, but these deep cuts do more harm than good by undermining students' productivity and earning potential. A 2015 study by Northwestern University estimated that every additional dollar invested in K-12 education generates \$3 in economic benefits on average, with the effects being much more pronounced for children from low-income families.⁸¹

Taxpayers also benefit enormously when the government invests sufficiently to help more students complete high school. On average,

those who drop out of high school about twice as likely to be unemployed as high school graduates, and even when employed, earn an average of \$8,000 less per year than graduates do.^{82,83} There is also some evidence that the same factors which cause individuals to drop out of high school may increase their propensity to commit crimes: the Alliance for Excellent Education estimated that over half of federal inmates and two thirds of state inmates dropped out of high school.⁸⁴

Accordingly, the Alliance estimates that the U.S. criminal justice system could save as much as \$18.5 billion annually if the male graduation rate increased by just 5 percent.⁸⁵ They also estimate that each additional person who does not graduate high school costs Medicaid an average of over \$16,000 more throughout their lifetime.⁸⁶ Increasing public investment in middle and high school – when spending is at its lowest per pupil – could help reduce drop-out rates, thereby enabling students to better support themselves throughout their lives and reducing costs for taxpayers over the long term.⁸⁷

But the area where the federal government can have the greatest impact is on post-secondary education and job training, where most federal money is spent directly on students instead of being funneled through state and local governments. Higher education is generally well worth the cost: research by the Brookings Institution's Hamilton Project found that the average annual return on investment in a bachelor's degree is more than double what it would be if a similar amount of money was invested in the stock market – and for an associate's degree, the average rate of return is almost triple that of stocks.⁸⁸ It should therefore be no surprise that voters support public investments in higher education by a 2-to-1 margin.⁸⁹

HOW DOES THE FEDERAL GOVERNMENT SUPPORT STUDENTS PURSUING HIGHER EDUCATION?

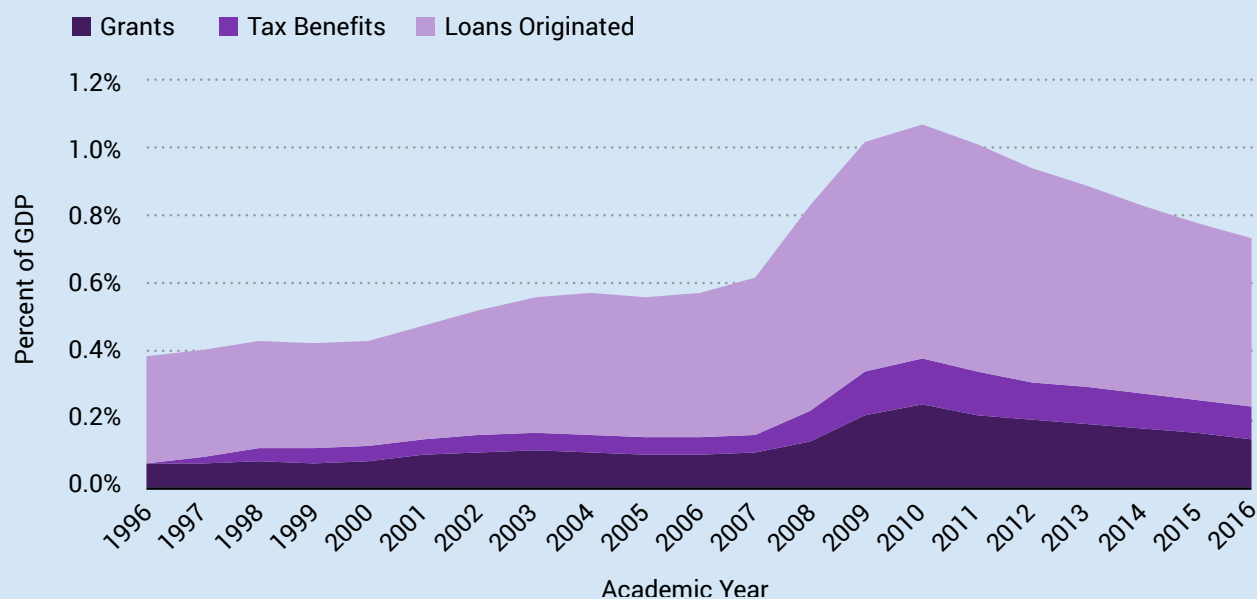
The federal government provides three kinds of support for college students (**Fig. 9**):

Grants – Federal grants provide financial aid to students pursuing higher education that never needs to be repaid.⁹⁰ The largest of these is the federal Pell Grant program for students from low-income families, which helps provide access to higher education for people who could not afford it otherwise.

Loans – There are two kinds of loans that the federal government offers students: subsidized, which have lower interest rates and do not accrue interest while the student is receiving their education; and unsubsidized, which have higher interest rates that do accrue while the student is attending college. Loans make up over two thirds of federal spending on higher education assistance, but because previous loan balances are being repaid at the same time as new loans are being originated, the student loan program has historically on net reduced the federal government's budget deficit.⁹¹

Tax Benefits – The federal government provides a series of tax deductions and incentives to subsidize saving for, and paying off, debt from higher education. The benefits of these tax subsidies primarily accrue to students from higher-income families who can afford to take advantage of them.⁹²

Figure 9. Federal Support for Higher Education



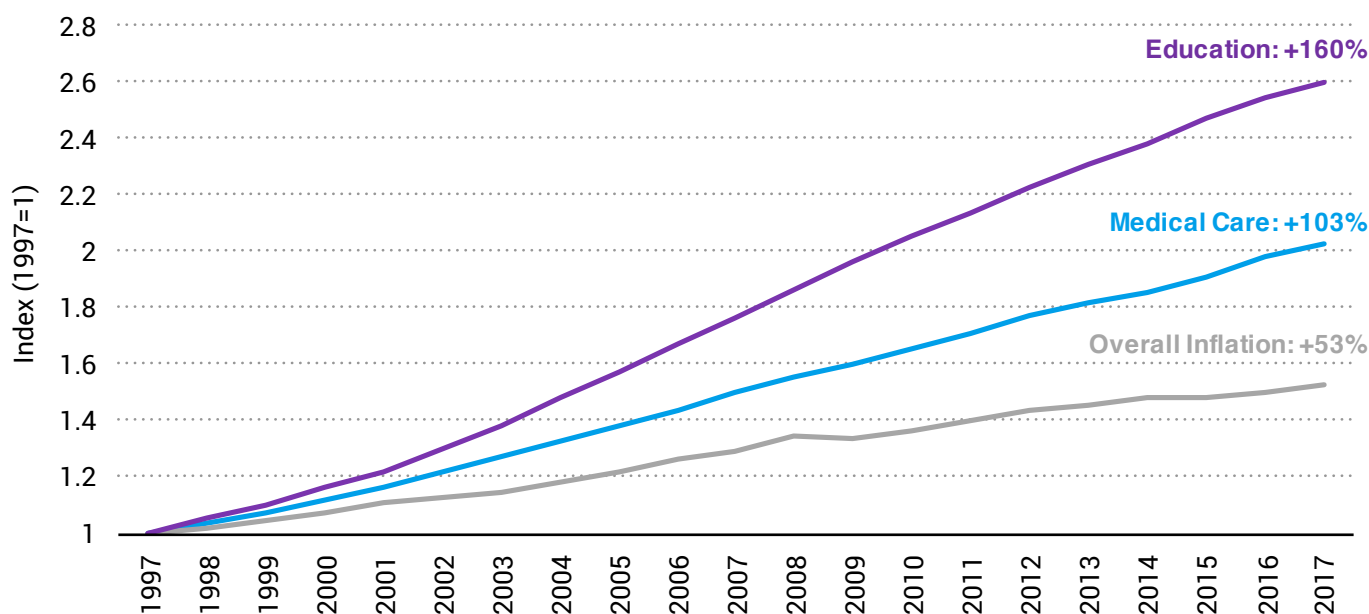
Note: Grants include Pell grants, Federal Supplemental Educational Opportunity Grants, Leveraging Educational Assistance Partnership grants, Academic Competitiveness Grants, and National Science and Math Access to Retain Talent grants. They do not include GI Bill or Post 9/11 GI Bill grants. Tax benefits include tax credits and an estimate of the value of tax deductions for postsecondary education expenses. Loans include Stafford loans, both subsidized and unsubsidized, and PLUS loans to both parents and graduate students.

Sources: Congressional Budget Office⁹³ and St. Louis Fed⁹⁴

As federal policymakers seek to improve public investments in higher education, they should be cognizant of both the societal benefits and the costs of different approaches. The current system has become increasingly expensive: over the last two decades, the combined costs of federal grants and tax benefits more than tripled as a percent of GDP. Yet over the same period, the price of education to consumers still grew even faster than health care (**Fig. 10**). The result:

students have had to borrow more and more money to finance their education even as federal aid continues to rise. Outstanding student loan debt roughly doubled as a percent of GDP in just the past decade and is now the single-largest form of consumer debt.⁹⁵ Excessive student debt can hurt young graduates (and the economy at-large) by limiting their ability to pursue major life goals, such as buying a home.⁹⁶

Figure 10. Price Changes Over the Past Two Decades



Note: Figure depicts changes in CPI-U.

Source: Bureau of Labor Statistics⁹⁷

One often-discussed proposal for increasing public investment in higher education (and reducing the burden of student debt) is to offer a tuition-free public college education to any American student who wants it. But free college would be expensive, costing federal and state governments more than \$1 trillion over the next ten years.⁹⁸ It would also be a large subsidy for

higher-earning college graduates that would be regressively financed by the taxes of those who didn't benefit from a college education.⁹⁹ At the very least, the government must find ways to control the accelerating costs of education before even considering making an open-ended commitment to finance it entirely.

Policymakers could get better bang for their buck by investing in more cost-effective programs that fulfill unmet needs. As our economy has become more skills-dependent, federal support for education and job training has not kept up. Jobs that don't require a traditional four-year bachelor's degree but do require education beyond a high school diploma (also known as "middle-skill" or "new-collar" jobs) now make up over half of all jobs in the United States.¹⁰⁰ These are often solid, well-paying jobs: for example, new-collar tech jobs such as IT support can offer salaries ranging from \$50,000 to \$100,000.¹⁰¹ A study by the Aspen Institute found that obtaining industry-approved credentials for new-collar jobs can increase a previously low-income individual's earnings by as much as \$11,000 within the following two years alone.¹⁰²

But while these positions account for 53 percent of jobs in the United States, only 43 percent of U.S. workers are trained at the middle-skill level – resulting in a "skills gap."¹⁰³ Yet of the nearly \$140 billion spent by the federal government on post-secondary education in 2016, less than one seventh was used for career education and training programs that enable students to obtain middle-skill credentials.¹⁰⁴ Part of the problem is that major federal investments such as the Pell Grant program are largely unavailable for shorter-term occupational training programs, leaving many workers unable to afford enrollment in programs that could help them take advantage of new-collar job opportunities.¹⁰⁵ As industries ranging from health care to manufacturing face shortages of middle-skill workers to meet growing demand, expanding the ability of students to apply Pell Grants towards credential programs could support both workers and economic growth.¹⁰⁶

Investing in evidence-based initiatives would also help policymakers maximize the societal returns on education spending. For example, communities that have coordinated their educational investments with hiring businesses have had proven success in recent years. In Spartanburg, South Carolina, several community colleges worked with automobile manufacturer BMW to design a workforce development program that would help BMW maintain its plant in the community. Colleges knew they were providing students with employable skills because the company that would hire those students helped design the program, while BMW knew that the program would provide its plant with enough trained workers to remain in Spartanburg. This approach was so successful that BMW expanded their investment in 2016.¹⁰⁷

Public investment in education at all ages improves the ability of Americans to innovate and thrive in 21st-century jobs. But making these investments will only be possible if policymakers give themselves the necessary fiscal space by containing runaway costs that make programs themselves more expensive and directing investment towards programs with the highest societal returns. Such an approach can provide businesses with the workforce they need to power our economy and give every American the skills they need to get a well-paying job that supports a middle-class lifestyle.

PUBLIC INVESTMENT FOSTERS ROBUST AND INCLUSIVE ECONOMIC GROWTH

Public investment has a clear role in promoting robust economic growth. The Organisation for Economic Co-operation and Development (OECD) finds that public investment is strongly associated with higher potential GDP (the maximum sustainable output that a country could generate in optimal

economic circumstances). According to the OECD, permanently increasing investment spending by 1 percent increases potential GDP by an average of 5 percent over the long term.¹⁰⁸ When governments fulfill their responsibility to fund investments that benefit everyone over time, their economies have more room to grow and they can better compete with the rest of the world.

Not only does public investment promote long-term growth, it helps ensure the benefits of that growth are widely shared. While social safety net programs can provide a helping hand to those in need, sustained public investments at the federal level are integral to promoting economic mobility and enabling people to support themselves.

Today, even low-income people have access to a wealth of resources that they would not have just a few decades ago. For example, smartphones give anyone who has one access to more information, including economic opportunities, than the most powerful people in the world would have had just a few decades ago. Half of people who earned less than \$30,000 in 2014 owned a smartphone, and 32 percent of them used that phone to apply for a job – almost twice as many as the general population.¹⁰⁹ This innovation was only possible because the government invested in research that led to new technologies such as the microchip and the internet.¹¹⁰ When publicly funded R&D empowers businesses to create new technology, the benefits of innovation are widely shared by people of all socioeconomic backgrounds.

Adequate investment in infrastructure also supports equal economic opportunity. Federal investments have been particularly important for lower-income areas that lack the resources to

invest in their own communities. Disadvantaged communities have smaller tax bases to draw upon than affluent ones, making it difficult to build and maintain robust infrastructure systems. These communities then have trouble attracting private capital and jobs, which perpetuates a cycle of economic hardship. For example, 39 percent of Americans in rural areas lack access to modern broadband services, compared to just 4 percent of those in urban areas.¹¹¹ This disparity creates an economic opportunity gap in growing e-commerce activities that rely on the internet.¹¹²

Urban areas have infrastructure deficiencies as well. Lower-income Americans in cities are struggling with a decreasing stock of affordable housing that fell by 60 percent between 2010 and 2016.¹¹³ Rising rent prices put added pressure on public assistance programs that cannot afford to meet demand.¹¹⁴ In 2016, the number of Americans eligible for public housing was nearly three times the number of units available.¹¹⁵

Vulnerable communities also suffer from harmful environmental conditions brought about by poor infrastructure. For example, the tragedy of lead contamination in Flint, Michigan began when the poverty-stricken, bankrupted city was assigned an emergency financial manager who moved the water supply from the City of Detroit to the Flint River to save money.¹¹⁶ The number of children in Flint who have elevated levels of lead in their blood has nearly doubled since the crisis began, which can cause brain development problems for the rest of their lives.¹¹⁷ One estimate has suggested that the ill-advised attempt to save \$5 million on Flint's water bill will ultimately cost almost \$400 million.¹¹⁸

Similar problems could be just on the horizon for other communities across the country. A 2017 Michigan State University Study projects that nationally, water bills may jump 41 percent in the coming five years to replace dangerous aging pipes, which could make water unaffordable for up to a third of American households.¹¹⁹ Public health crises brought about by cutting corners on investment cement communities in poverty, which means investing in the infrastructure in these areas can have a tremendous impact on residents' economic opportunities.

Good transit infrastructure also helps millions of Americans capitalize on economic opportunity. While transit is used by people of all income levels,

it is often the only or best choice for low-income people who cannot afford a personal vehicle. The length of a region's average commute time is a strong predictor of social mobility among residents (**Fig. 11**).¹²⁰

Access to transportation makes it much easier for people to get and keep work – in Atlanta, a one-minute reduction in a person's commute was associated with an average of one additional quarter of a week worked per year.¹²¹ Job growth is only relevant if workers can access the jobs, and all levels of government should focus on efficiently moving people from where they are to where they can access opportunities.

Figure 11. Commutes and Social Mobility



Note: Figure shows the percentage of people in each commuting zone who have an average commute to work of less than 15 minutes, compared to the absolute upward mobility of their county. Commuting zones are geographic areas that represent discrete local economies better than political boundaries such as county lines. Absolute upward mobility is defined as the expected income percentile in adulthood of children born between 1980-1982 whose parents are at the 25th percentile of the national income distribution. Dataset depicts most commuting zones throughout the United States.

Source: Opportunity Insights¹²²

As income and wealth inequality grow, the gap between what different regions can invest in their children grows with it, perpetuating the cycle of poverty and inequality. On average, 45 percent of education funding comes from one's local community, while an additional 47 percent comes from their state, meaning that the amount invested in a child is directly related to their community's wealth.¹²³

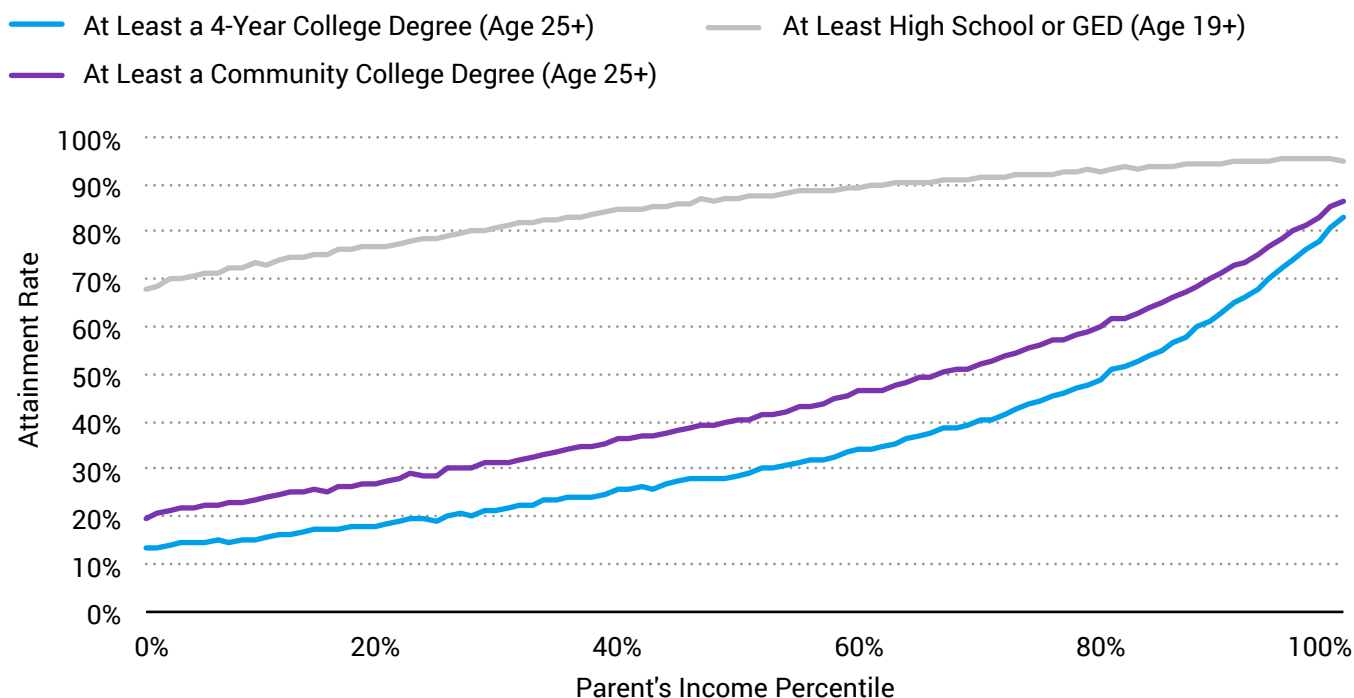
While higher-poverty schools are the most in need of large investments in students, the Department of Education found that nearly half of high-poverty schools actually receive below-average funding.¹²⁴ The results are predictable: the gap between the highest- and lowest-income public school districts amounts to almost four grades' worth of learning.¹²⁵

Meanwhile, wealthy families are investing significantly more into their child's future through private tutors, test-preparation courses, and

other tools to set children up for success than they did forty years ago. Lower-income families cannot keep up. In the early 1970s, wealthy parents spent roughly four times as much as low-income families did investing in their child's education; today, they spend roughly seven times as much as lower-income families do.¹²⁶

While money is not the only factor that impacts student performance, it's no surprise that students who can't access as much support have worse outcomes than wealthier students do.¹²⁷ Students with wealthy parents, who can make greater investments of both money and time, are far more likely to graduate high school, and the likelihood that a given student will obtain a college degree accelerates as their parental income rises (**Fig. 12**). Shutting lower-income families and communities out of a quality education because of a lack of investment prevents their children from enjoying an equal opportunity to achieve the American Dream.

Figure 12. Educational Attainment by Parental Income



Source: Opportunity Insights¹²⁸

But public investments can spur growth and help lower-income families and communities level the playing field. The 2015 Northwestern study found that a consistent 10 percent increase in funding for educating low-income children was associated with a nearly 10 percent increase in both high-school graduation rates and average lifetime earnings. By comparison, the same funding increase had a statistically insignificant effect on children from affluent backgrounds. The outsized impact that increased funding has on disadvantaged children demonstrates that K-12 education is a critical factor in promoting economic opportunity for all.¹²⁹

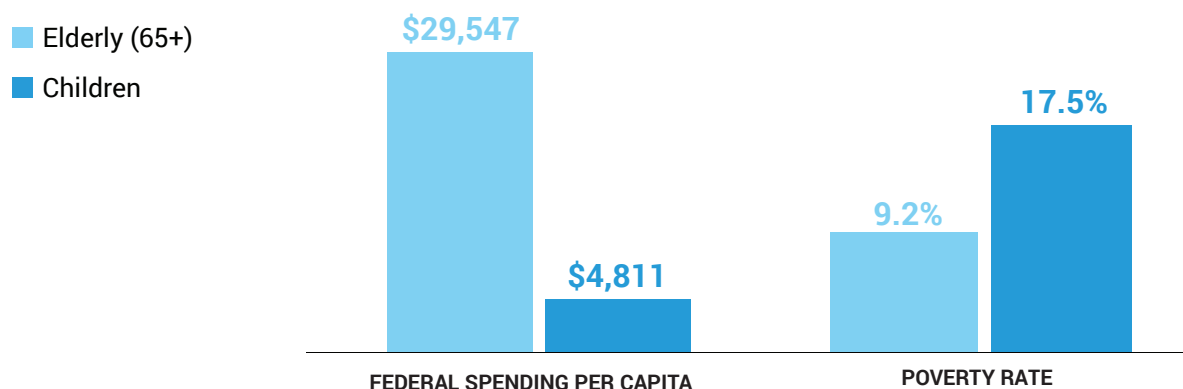
Ensuring students of all backgrounds are given the opportunity to pursue higher education is also critical for economic mobility. Although a traditional college education is not necessarily right for every student, it remains one of the most reliable pathways into the middle class. A Brookings study found that nearly half of children born to parents in the bottom fifth of the income distribution will remain there as adults if they don't earn a college degree. But among similar children who do receive a college education, more than five out of six will move up the income ladder after graduating.¹³⁰ Providing

equal access to all forms of higher education is thus essential for promoting economic mobility and empowering our workforce to realize their full potential.

For these reasons, federal investments in today's children – particularly those from lower-income families – pay dividends throughout their lives as they grow up, enter the workforce, pay taxes, and eventually raise children of their own to do the same. Underinvesting in children undermines the long-term health of our society and our economy

Unfortunately, children today are not the top priority for our government. For every dollar the federal government spends per senior citizen (people aged 65 and older) in the United States, it spends only 16 cents per child (**Fig. 13**). Even taking into account state and local government spending, which includes public schools and other programs that benefit primarily children, government support for children is still less than half what it is for older Americans. This approach is particularly problematic because seniors are much less likely to be in need of financial assistance than children, who have nearly double the poverty rate as that of the elderly.¹³¹

Figure 13. Federal Spending and Poverty Rates by Age



Note: Spending figures are for 2015 but have been adjusted for inflation to 2017 dollars. Poverty rate is for 2017.

Sources: Urban Institute¹³² and Census Bureau¹³³

Today's policymakers have an obligation to support future generations through public investment just as earlier generations did. Public investment both contributes to economic growth and ensures that everyone can benefit from it regardless of their socioeconomic background. To ensure young Americans and future generations continue to have equal access to the American dream, current policymakers must make the same investments that their predecessors did decades ago.

POOR FEDERAL BUDGET CHOICES ARE DRAINING PUBLIC INVESTMENT

The public investment drought is the result of shortsighted policies that promote consumption by the current generation at the expense of investment in the next. A perfect storm of fiscally irresponsible tax cuts and an unwillingness to tackle escalating health and retirement spending has fed rising budget deficits and a growing national debt. Preserving funding for America's future requires tackling these problems and putting the federal budget on a sustainable fiscal path that ensures adequate resources are available for public investment.

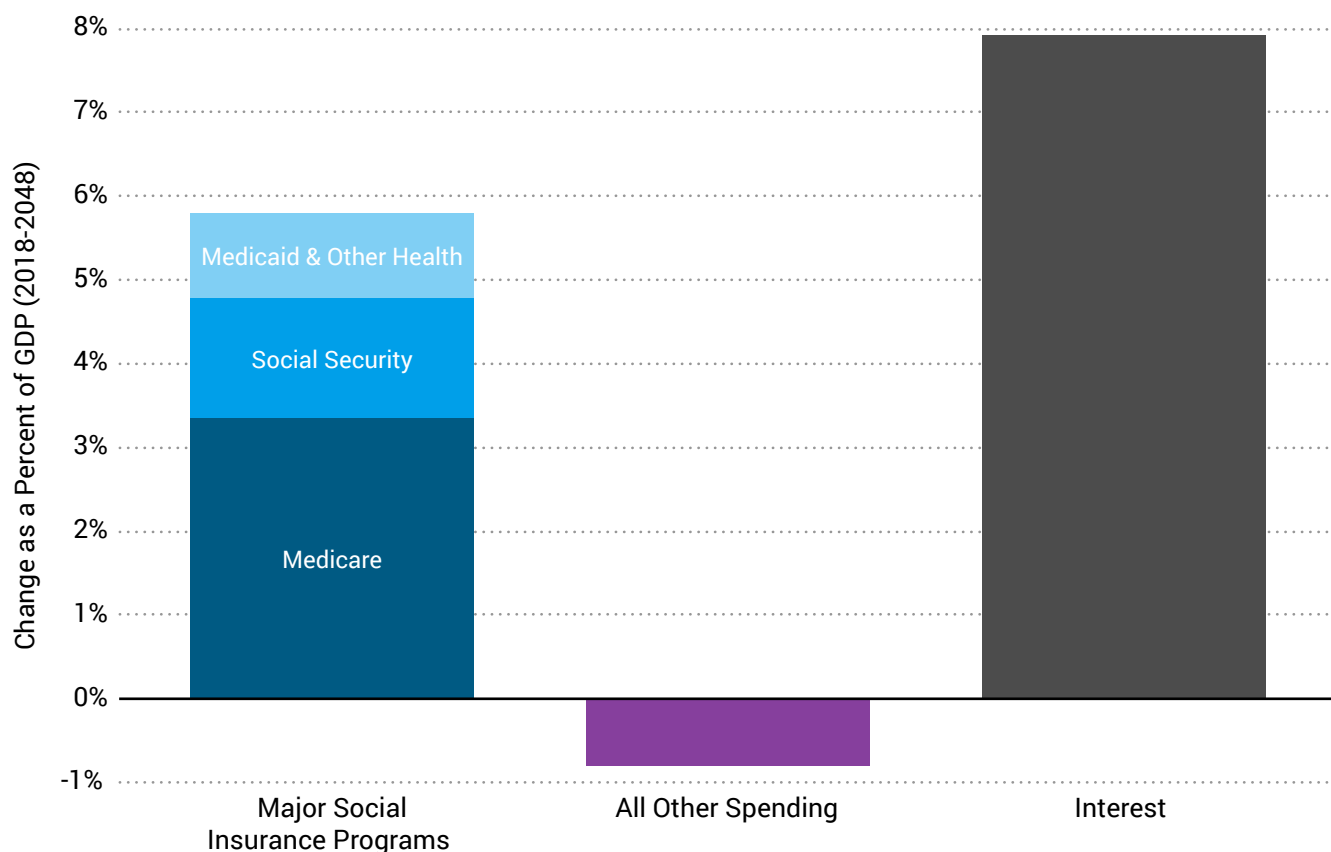
Last year, the federal government spent \$4.1 trillion despite raising only \$3.3 trillion in revenue. The government must borrow money from outside investors to finance the gap, and that borrowing comes with the additional cost of annual interest payments. In Fiscal Year 2018, the federal government spent over \$370 billion paying interest on the national debt (the total amount the federal government has borrowed to finance deficits over the years).¹³⁴ But if current tax and spending policies remain in place, annual interest payments will rise to

nearly \$1 trillion at the end of the next decade.¹³⁵ At that point, interest costs would be twice the projected spending on public investments in education, infrastructure, and scientific research *combined*.¹³⁶

Rather than tackling growing budget deficits, President Trump and the Republican-controlled Congress made them significantly worse. Last year, they abandoned any pretense of fiscal responsibility and enacted a package of unaffordable tax cuts that the official scorekeepers at the non-partisan Congressional Budget Office estimate will cost more than \$2 trillion over the next decade. Even worse, if provisions in the law that are arbitrarily scheduled to expire in 2025 are extended or made permanent, they would cost the federal government several trillion dollars more over the coming decades.¹³⁷ Such massive tax cuts starve public investments and other government programs of much-needed revenue.

But even absent the adoption of these reckless tax cuts, the federal government would still face substantial budgetary pressures that jeopardize public investment. This is largely due to the rapid growth of the three largest social insurance programs: Social Security, which provides income support for seniors, their surviving dependents, and people with disabilities; Medicare, which provides health insurance to seniors and some people with disabilities; and Medicaid, which provides health insurance to people with low incomes and little savings.¹³⁸ These programs are set to grow from about 10 percent of GDP today to nearly 16 percent of GDP in 2048 if current policies are continued **(Fig. 14)**.¹³⁹

Figure 14. Change in Federal Spending Over the Next 30 Years



Note: Projection assumes current tax and spending policies remain in place even if they are scheduled to change or expire under the law as currently written.

Sources: Congressional Budget Office^{140,141}, Medicare Trustees Report¹⁴², Committee for a Responsible Federal Budget¹⁴³, and PPI calculations

The rising cost of Social Security is driven by changing demographics: In 1965, there were 5.4 working-age Americans (those between the ages of 18 and 64) who could pay taxes to finance the benefits of each American over the age of 65.¹⁴⁴ But by 2050, the U.S. Census Bureau projects the ratio of working-age to retirement-age individuals could be as low as 2.6 to 1 – less than half what it was in 1965.¹⁴⁵ Although these demographic changes also contribute to the growth of spending on Medicare and Medicaid, they – unlike Social Security – are

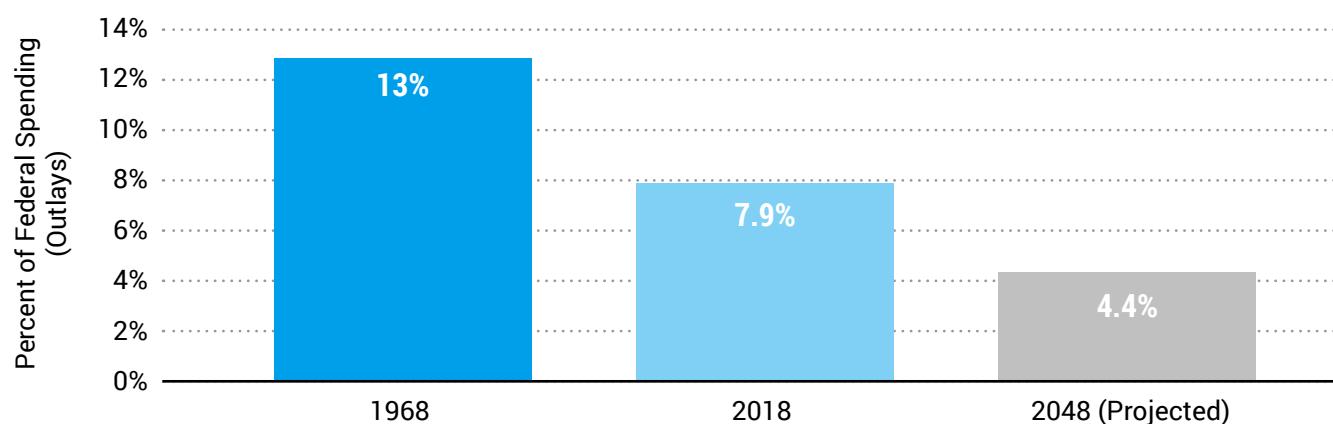
also pressured by the rising cost of health care. Over the next 30 years, CBO projects that rising per-person health costs will be responsible for two thirds of the increase in federal health care spending as a percent of GDP.¹⁴⁶

As these programs and the cost of interest grow, they are leaving fewer resources available for public investment and other federal spending priorities. For too long, members of both parties – but particularly Democrats – have reflexively opposed making any changes to slow the rate of spending growth on social insurance programs,

causing many progressives to become complicit in a profoundly unprogressive policy of throttling public investment. If no action is taken to change course, the share of federal spending committed to public investment thirty years from now will barely be one third of what it was in 1968 (**Fig. 15**).¹⁴⁷

The good news is that the American people are alert to the federal government's fiscal challenges. In a recent PPI poll, 85 percent of respondents said they were very concerned or somewhat concerned about federal budget deficits – more than any other issue polled.¹⁵³

Figure 15. Public Investment as a Share of Federal Spending



Note: The 2048 projection assumes public investment changes at the same rate as total non-defense discretionary spending, and that today's tax and spending policies remain in place even if they are scheduled to change under current law.

Sources: Office of Management and Budget^{148,149}; Congressional Budget Office¹⁵⁰; Medicare Trustees Report¹⁵¹; Committee for a Responsible Federal Budget¹⁵²; and PPI calculations

Moreover, this poll also found that voters favored repealing and replacing the budget-busting Trump-Republican tax cuts with tax reform that is more oriented towards supporting the middle class by a margin of 2 to 1. The decision of Washington Republicans to totally abandon any pretense of fiscal responsibility likely contributed to their loss of several dozen seats and majority control in the U.S. House of Representatives in the 2018 midterm elections.¹⁵⁴

With annual budget deficits now on track to surpass \$1 trillion this year and every year from now on, time is running short to correct course.¹⁵⁵ Today's policymakers must communicate with their constituents why the

long-term benefits of fiscal responsibility and robust public investment outweigh the short-term pain of tax increases or cuts to non-investment spending. Only by doing so can they continue to provide the same opportunities for future generations that their predecessors provided to them.

STATE AND LOCAL GOVERNMENTS FACE CHALLENGES SIMILAR TO THOSE FACING WASHINGTON

Many essential public investments are made in partnership between the federal government and state and local governments. Unfortunately, these governments are grappling with many of the same demographic and political challenges

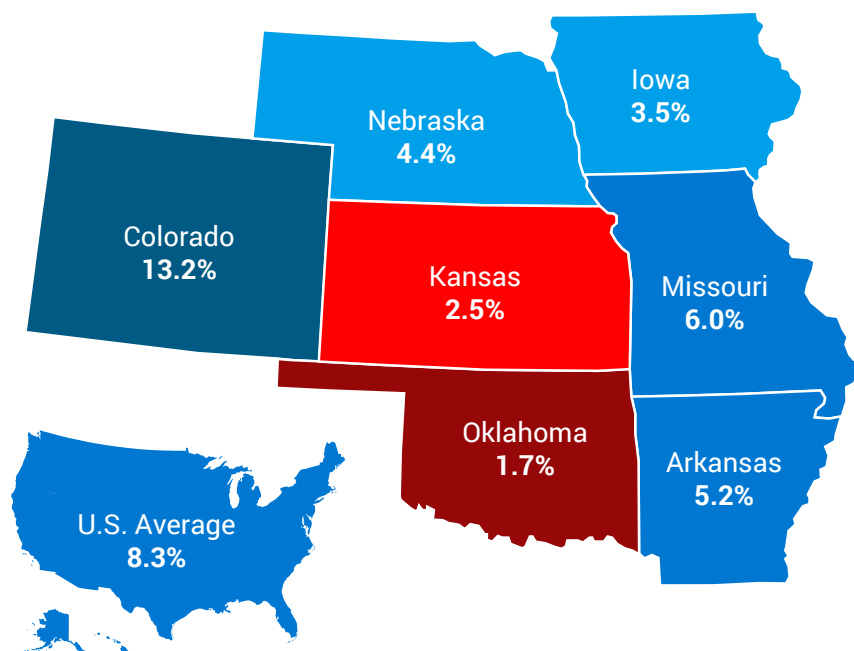
that the federal government is, jeopardizing public investment at all levels. State and local governments must handle their own fiscal challenges in order to continue making critical investments in their future.

Many Republicans in state capitols across the country have enacted tax cuts without paying for them based on the long-discredited theory emanating from their counterparts in Washington that tax cuts “pay for themselves” by stimulating stronger economic growth.¹⁵⁶ For example, Kansas Governor Sam Brownback enacted a massive package of tax cuts in 2012 that dramatically cut taxes for individuals and businesses. At the time, Gov. Brownback referred to his signature tax cuts as a “real live experiment” on the effects of tax cuts on economic growth.¹⁵⁷ But Kansas’ experiment proved to be a colossal failure. The tax cuts failed to attract new businesses, the state’s revenues plummeted by almost \$700 million in

the first year, and its credit rating was cut from AA+ to AA-.^{158,159,160}

To compensate for this dramatic fall in revenues, the state slashed its commitment to public investment. The state borrowed from its highway trust fund, which only shifted the shortfall onto future infrastructure spending. It also consolidated school districts, and important construction projects were postponed.¹⁶¹ Ironically, perhaps because businesses knew that these important investments were being neglected, the economic growth that these tax cuts were supposed to create never materialized. Kansas experienced 2.5 percent job growth during the time the tax cuts were in place, less than one third of the national average (**Fig. 16**). Kansas also had much lower job growth than its neighbors Colorado (13.2 percent) to the west and Missouri (6.0 percent) to the east. The only neighboring state with worse job growth in this time was Oklahoma, to the south.¹⁶²

Figure 16. Job Growth During the Kansas Tax Cut Experiment



Note: Figure shows total growth of seasonally adjusted nonfarm payrolls in each state between the month before the enactment of the Brownback Tax Cuts (December 2012) and the month before their repeal (May 2017).

Source: Bureau of Labor Statistics¹⁶³

Not only were these tax cuts terrible fiscal policy, but they proved to be a political albatross around the necks of policymakers who enacted them. Governor Brownback barely won re-election in 2014 in spite of his state's strong Republican lean and an incredibly favorable national political environment for the GOP that year.¹⁶⁴ In 2016, many of his conservative allies in the state legislature lost re-election to Democrats and moderate Republicans who were opposed to this tax-cut agenda.¹⁶⁵ In 2017, the legislature repealed most of the tax cuts over the governor's objections.¹⁶⁶ And in 2018, Democrat Laura Kelly was elected governor in a state Donald Trump won by over 20 percent just two years earlier, largely because she campaigned against the fiscally irresponsible tax cuts her Republican opponent wanted to restore.¹⁶⁷

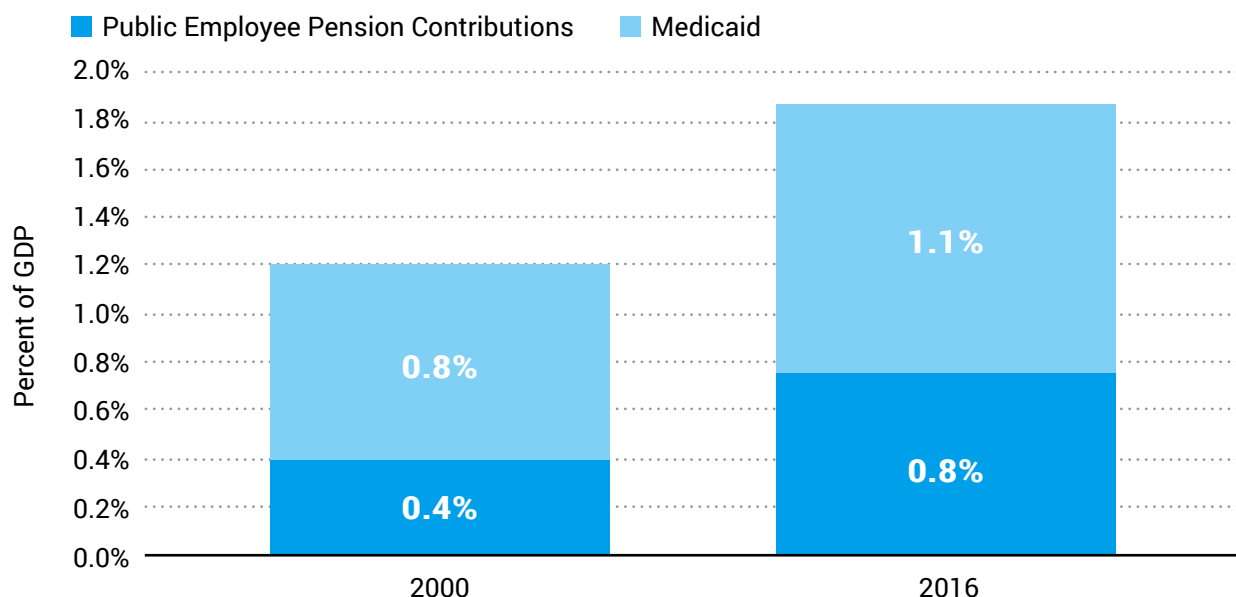
Unfortunately, the Kansas debacle was not enough to deter Republicans elsewhere from pursuing reckless cuts to taxes and public investments. After Oklahoma had already enacted several income tax cuts between 2004 and 2009, Republicans in the state cut personal income taxes even deeper in 2014 and imposed a "trigger" that would automatically lower top income-tax rates in the future if revenue was projected in 2014 to grow above 2014 levels. But this projection didn't account for an unexpected collapse in oil prices, and in 2016, the trigger automatically reduced tax rates and total revenue plunged below 2014 levels. Yet as bad as these tax cuts were, they proved difficult to reverse because a 1992 referendum requires a supermajority of the state legislature to raise taxes in Oklahoma.¹⁶⁸

As a result, Oklahoma's tax cuts had dire implications for public investment and other essential services. Education was the hardest hit: between 2009 and 2016, Oklahoma cut per-capita education spending more than any other state.¹⁶⁹ By 2018, teacher pay had not been increased once in ten years and 20 percent of Oklahoma's schools met for only four days a week.¹⁷⁰ In April, teachers walked out of their classrooms for nine days in protest.¹⁷¹

Law enforcement was also handcuffed by deep budget cuts. Highway Patrol officers whose jobs required them to drive 150-200 miles per day on average were limited to driving just 100 miles each day in order to save money on gasoline.¹⁷² Drunk drivers were allowed to keep their licenses simply because the Department of Public Safety lacked sufficient staff to process revocations.¹⁷³ The state came to a point where it failed to meet the most basic of governmental responsibilities.

Just like in Kansas, tax cuts and the public investment drought they created became a political liability for Republicans in Oklahoma. In special elections between the 2017 and 2018, Democrats overperformed the partisan lean of their districts by a staggering 32.1 percentage points on average.¹⁷⁴ The 2018 midterms were the first election cycle since 1990 in which Democrats grew their presence in the Oklahoma Senate.¹⁷⁵

Figure 17. State & Local Spending on Medicaid and Pensions



Note: Figure reflects the use of state and local government revenues only. Federal spending on Medicaid is excluded, as are employee contributions to government pension plans.

Sources: Census Bureau¹⁷⁶, Center for Medicare and Medicaid Services¹⁷⁷, and St. Louis Fed¹⁷⁸

But like the federal government, state and local budgets face structural problems beyond recent tax cuts that threaten their ability to make critical public investments (**Fig. 17**). For decades, state and local governments have promised their workers lucrative pensions, and workers have planned their retirement saving around that promise. But these governments did not save enough to make good on their commitments: the total shortfall for state and local pensions reached \$1.4 trillion in 2016 after growing by 25 percent in just one year.¹⁷⁹

Many were not prepared for an increase in the ratio of retirees drawing from pension funds relative to workers paying into them, just as the federal government has not prepared for the large increase in retirees drawing from Social Security relative to workers paying into it. In the early 2000s, state and local governments

had more than 2.4 active workers for every pensioner; now, there are only 1.4.¹⁸⁰ As baby boomers retire and collect their pensions, states and municipalities have turned to debt and cuts to public investment spending in order to finance their massive unfunded pension obligations.¹⁸¹

An analysis of state and local education spending offers an illustrative example of this problem. For years, many states promised teachers generous retirement benefits in the future in lieu of higher base pay without making the pension contributions necessary to adequately finance those benefits. As a result, there is a gap of roughly a half a trillion dollars between what states have promised teachers and what their pension plans have saved.¹⁸²

Today's teachers have had to shoulder these climbing costs. One estimate found that just 30 percent of state and local government

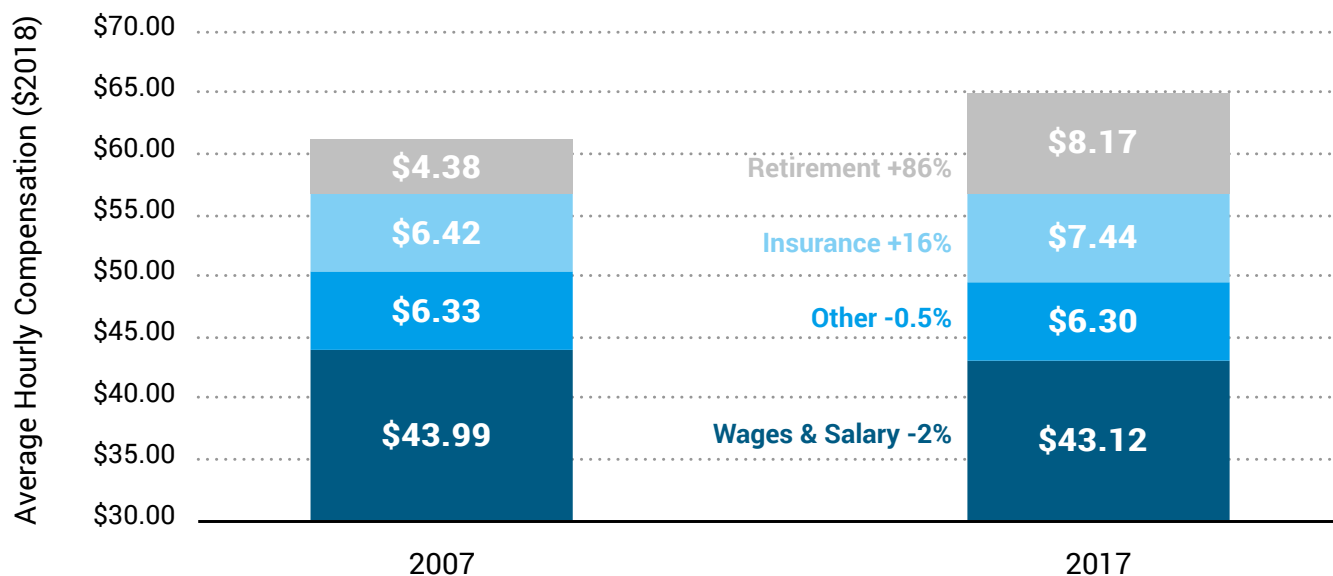
contributions to teacher retirement plans are going to benefit today's workers, even though these contributions are coming out of current teachers' compensation packages. The remaining 70 percent is going to service past debts.¹⁸³ As a result, average inflation-adjusted wages for public elementary, secondary, and special education teachers are now 2 percent lower than they were a decade ago (**Fig. 18**). Substandard pay makes it harder to attract high-quality teachers to empower the next generation and has also increasingly resulted in teacher strikes that disrupt educational activities.¹⁸⁴

Further, just as rising health care costs strain Medicare at the federal level, state budgets are struggling to accommodate growing Medicaid spending. Medicaid is funded through matching grants provided by the federal government, with the level of the match largely determined by the state's per-capita income.¹⁸⁷ Nationally,

states provide roughly 37 percent of the funding for Medicaid.¹⁸⁸ States must use this funding to provide health insurance for low-income Americans in compliance with federal guidelines. Because both state and federal governments pay for medical expenses through Medicaid, both are being squeezed by the rising cost of health care. Additionally, Medicaid covers older Americans who have exhausted their savings to pay for expensive treatment for chronic conditions, so as the country grows older and the costs of this care grow, Medicaid consumes even more state government revenue.¹⁸⁹

As state and local governments grapple with fiscal dilemmas of their own, the last thing federal policymakers should do is foist even more responsibility for maintaining current investments onto them. Yet this is exactly what policymakers do when they cut federal investments in infrastructure and education.

Figure 18. Change in K-12 Public School Teacher Compensation



Note: Figures are adjusted for inflation using CPI-U.

Source: Bureau of Labor Statistics^{185,186} and PPI calculations

Even cuts to R&D strain the finances of state and local governments, as over half of the research funding received by public universities comes from federal grants.¹⁹⁰ State and local governments have their own obligations to handle, including their own public investments, without taking over federal public investment as well.

The backlash in budget-crunched states such as Kansas and Oklahoma demonstrate that voters want sound fiscal policy that supports public investment. There are no easy solutions for the demographic and political challenges facing state and local governments. But one thing is clear: as all levels of government face these challenges, national leaders must take responsibility for ending America's public investment drought – because if they don't, nobody else will.

CONCLUSION

Previous generations of policymakers believed they had a civic duty to manage the nation's resources in a fiscally responsible way and to set aside some portion of present wealth to invest in a brighter future for subsequent generations. But America's post-war tradition of robust public investment is now in jeopardy. Current policymakers are sacrificing future growth in favor of fiscally irresponsible tax cuts and unchecked spending on health care and retirement programs. If our nation allows America's public investment drought to continue, young Americans and future generations will have fewer economic and social benefits to harvest.

There is a better path forward. Our leaders could instead choose to lay the foundation for a future in which innovation can flourish and prosperity is shared. They can invest in life-changing research, state-of-the-art infrastructure, and the skills our workforce needs to succeed in the 21st century. But doing so requires making difficult trade-offs and a willingness to commit to investments whose benefits may not materialize for years or even decades.

Fortunately, voters across the political spectrum support both public investments and the fiscal discipline necessary to maintain those investments over the long term. Their support presents clear opportunities for both the new Congress and candidates for president in 2020 to offer the electorate an agenda that invests in our people without leaving the bill to future generations. Now is the right time for leaders at all levels of government to fund America's future by committing themselves to responsible fiscal policy and ending America's public investment drought.

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Launched in 2018, the PPI Center for Funding America's Future works to promote a fiscally responsible public investment agenda that fosters robust and inclusive economic growth. We tackle issues of public finance in the United States and offer innovative proposals to strengthen the foundation of our economy and build shared prosperity.

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