118th CONGRESS 1st Session }	SENATE	{ REPORT 118-XXX

THE 2023 JOINT ECONOMIC REPORT

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R E P O R T

OF THE

JOINT ECONOMIC COMMITTEE CONGRESS OF THE UNITED STATES

ON THE

2023 ECONOMIC REPORT OF THE PRESIDENT

JULY 27, 2023 – Ordered to be printed

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U.S. GOVERNMENT PRINTING OFFICE
WASHINGTON: 2023

LETTER OF TRANSMITTAL

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July 27, 2023

HON. CHARLES E. SCHUMER
Majority Leader, U.S. Senate
Washington, DC

DEAR MR. LEADER:

Pursuant to the requirements of the *Employment Act of 1946*, as amended, I hereby transmit the 2023 Joint Economic Report. The analyses and conclusions of this Report are to assist the several Committees of the Congress and its Members as they deal with economic issues and legislation pertaining thereto.

Sincerely,

Martin Heinrich
Chairman

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CONTENTS

118th CONGRESS *1st Session* }	SENATE	{ REPORT 118-xxx

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MR. HEINRICH, from the Joint Economic Committee,
submitted the following

REPORT

Report of the Joint Economic Committee on the
2023 Economic Report of the President

CHAIRMAN'S VIEWS

I am pleased to share the Joint Economic Committee (JEC)
Democratic response to the 2023 Economic Report of the
President. The JEC is required by law to submit findings and
recommendations in response to the Economic Report of the
President (the Report), which is prepared and released each year
by the Council of Economic Advisers (CEA). This year's
Economic Report was published by the Biden administration in
March 2023.

This report focuses primarily on forward-looking policies that will continue our economic growth and bolster our economic resilience while helping to build a sustainable and equitable economy that works for all Americans. Despite the economic headwinds we have faced in recent years, there are clear signs that we are headed in the right direction. The right set of policies will help us build upon these successes.

We are making progress in our ongoing efforts to bring down inflation. Compared to this time last year, when prices were spiking in the wake of Russia's invasion of Ukraine, the United States is seeing lower prices at the pump and at the grocery store. This is helping to relieve some financial pressure for American families, workers, and small businesses. While we still have work to do to bring down prices across the economy, these are promising signals of our continued economic recovery.

As our economy recovers, more Americans are returning to work and our labor market continues to grow. Under President Biden, our economy has added more than 13.2 million jobs and seen 29 consecutive months of job growth. Unemployment for Black and Hispanic workers has fallen significantly. Lower-income workers have seen significant wage gains and better career possibilities. We strive for an economy that creates opportunity and good-paying jobs for every American, and we are continuing our work towards that goal.

Investments from the Inflation Reduction Act, the Bipartisan Infrastructure Law, and the bipartisan CHIPS and Science Act are creating new jobs in infrastructure, clean energy, and manufacturing—and will continue to do so into the future. We should build on this by strengthening job training and apprenticeship programs and investing in children's education and

health care. Investing in children and young adults helps raise incomes, improve workforce skills and job retention, and reduce poverty—opening new doors to economic opportunity.

We are building an equitable economy for future generations. That requires adjusting to rapid changes in our economy, technology, and climate. We must conserve our threatened water resources and transition to cleaner energy sources, being careful to do so in a way that benefits rather than harms the communities that currently rely on fossil-fuel energy for jobs and revenues. And as we work to mitigate the effects of climate change, we must also preserve our public lands, which help fuel local economies and create much needed jobs in many rural communities.

Continued public investment is necessary in order to maintain our strong economic recovery, and those investments will create returns that will help maintain the United States' leadership in innovation, productivity, and national security. It will also position us to build a more sustainable, equitable future.

We can and should make investments in a fiscally responsible way. In the midst of debates on government spending, we should acknowledge that where and how we spend money speaks to the values we hold. Under the previous administration, a Republican-led Congress passed a nearly $2 trillion tax law that primarily benefitted the wealthiest Americans and big corporations. Under President Biden and the Democratic majorities in the 117th Congress, the federal budget deficit came down $1.4 trillion in FY 2022. The Inflation Reduction Act passed in August 2022 is expected to reduce the deficit even further—by nearly $240 billion over the next decade—while codifying policies that will help bring down costs and invest in the future of American families and businesses.

A successful economy is one in which parents can afford to provide opportunities for their children to thrive, entrepreneurs can start new businesses, and workers can pursue jobs that will support their families and allow them to retire with peace of mind. We have the opportunity—and the responsibility—to pass smart economic policy that invests in American families, workers, and businesses. We must seize that opportunity.

MARTIN HEINRICH
CHAIRMAN

CHAPTER 1: ECONOMIC OUTLOOK

Principal economic indicators show continued economic strength

Today, our economy has recovered more than 13.2 million jobs since President Biden took office, and states like New Mexico are seeing their unemployment rates at the lowest levels in decades. But we continue to face challenges from the global disruptions caused by Russia's invasion of Ukraine, instability in financial markets, higher interest rates, and the rising threat of climate change.

Even as the United States faced global economic headwinds in 2022, businesses added jobs, the economy grew, and inflationary pressures decreased in the second half of the year. In 2022, real Gross Domestic Product (GDP) grew 2.1% and the country gained 4.8 million jobs.[1,2] In June 2023 alone, the United States added 209,000 jobs and the unemployment rate stood at 3.6%, near its 50-year low. Inflation, which is still affecting family budgets, has dropped significantly since last summer. May's Consumer Price Index (CPI) figures showed annual inflation dropping to 4.0%, well below the recent peak of 9.1% in June 2022.[3]

The budget deficit has come down significantly under President Biden, and the Inflation Reduction Act will continue progress on decreasing the deficit. Under President Biden and Democratic majorities in the 117th Congress, the federal budget deficit came down $1.4 trillion in FY 2022. This stands in stark contrast to Republican majorities under the previous administration, which passed an almost $2 trillion tax law that handed out massive tax cuts to the wealthy and big corporations.[4,5] The Inflation

Reduction Act passed in August last year is expected to reduce the deficit by $240 billion over the next 10 years.[6]

Continued public investment is needed to maintain the strong economic recovery and ensure that workers in every community have access to high-paying, high-quality jobs. Investments from the Inflation Reduction Act, the Bipartisan Infrastructure Law, and the bipartisan CHIPS and Science Act will add jobs in infrastructure, clean energy, and manufacturing. These crucial bills will help continue and build on the existing manufacturing jobs boom, with nearly 800,000 manufacturing jobs added since President Biden was sworn into office.[7]

GDP growth has remained positive throughout the Biden administration.

Despite repeated warnings to the contrary, the United States is not in recession. Although real GDP growth dipped below zero in the first two quarters of 2022, the business cycle dating committee of the National Bureau of Economic Research did not declare that the United States was in a recession given the lack of a widespread economic downturn across multiple indicators.[8,9] Major contributors to the measured negative growth rates included declines in highly volatile GDP components such as inventories and net exports, which are influenced by factors other than the current health of the domestic economy.[10,11,12]

Despite Fears, a Recession was Averted and the Economy Continues to Grow

Quarterly growth in real GDP, Q1 2021 to Q1 2023

6.3% 7.0% 2.7% 7.0% -1.6% -0.6% 3.2% 2.6% 2.0%

Q1 2021   Q1 2022   Q1 2023
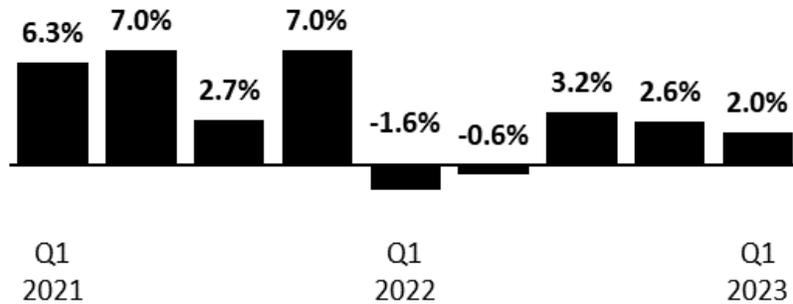
Source: Bureau of Economic Analysis
Note: Data are seasonally adjusted

Multiple measures of inflation continue to trend downward.

Since the headline inflation rate peaked around 9% last summer, it has come down steadily to around 4% today. Rapid declines in food and energy prices have contributed a great deal to the easing of cost pressures facing American families. Prices of goods and services apart from food and energy have also come down dramatically from their peak, in a slowing of what is known as "core inflation". However, the core inflation rate has proved to be more stubborn in recent months, hovering around 5.5%.

Within core inflation, growth in the price of goods has come down steadily. This reflects a slow but steady normalization of cost pressures in the goods market, as supply chains return to normal and the last echoes of pandemic-era disruptions in industries such as microprocessors and new and used cars fade into the past. Growth in the price of services, however, has remained elevated, due largely to a spike in residential rents last year. Because of the length of rental contracts, the subsequent normalization in rent prices will take some time to be fully reflected in the CPI, and

would be expected to drive measured core services inflation lower for the next few months.

The non-housing portion of core services inflation, sometimes referred to as "super-core" services inflation, remained around 0.23% in May, and 4.53% year-on-year, buoyed by the continuing strength of the American consumer and the post-pandemic rotation from goods to services consumption.[13] The Federal Reserve's decision to hold interest rates steady in June reflected a recognition that the lagged effects of the last year's rate hikes are working their way through the economy, and will continue to push core inflation back towards the Fed's 2% goal.

Bipartisan infrastructure and CHIPS deals, as well as IRA, are dramatically boosting factory construction.

Public investments have been essential to ensuring a strong and equitable economy over the past three years. From historic relief packages like the American Rescue Plan to the landmark climate provisions of the Inflation Reduction Act, we have seen how bold federal investments can respond to some of our biggest challenges. During this same period, Americans have also seen the benefits and harms of technology, grappled with the stark realities of finding adequate care for their families, and seen the job market shift with unease. Throughout it, we have shown resilience in a time of immense change.

The historic commitments that are being made to reshoring and building a prosperous, sustainable, and resilient future are beginning to bear fruit in a renaissance of American manufacturing. In the latest statistics, investment in domestic construction by American manufacturers has shown an unprecedented increase. Across the country, businesses are

breaking ground to construct factories that will provide jobs and grow our manufacturing base.

Total Manufacturing Construction Has Boomed Since Last Summer

Total construction spending in manufacturing, billions of 2023 dollars, January 2002 to May 2023

Source: US Census Bureau and Bureau of Labor Statistics

Recent evidence shows that investments in the IRS will more than pay for themselves through higher tax compliance by the very wealthy.

Despite calls from Republicans to defund the Internal Revenue Service that would have made it easier for the wealthy to cheat on their taxes, Congressional Democrats maintained the bulk of the funding directed towards modernizing the Internal Revenue Services' (IRS) systems and enforcement. Aside from the dramatic contribution that better IRS enforcement can bring to deficit reduction, the capacity-building and reforms enabled by this investment will allow more equitable enforcement of the provisions of the tax code. Recent estimates suggest that every dollar invested in auditing the highest-income taxpayers yields $12 in recovered revenue—a "win-win" proposition for the vast majority of Americans who pay their taxes on time and in full.[14]

The costs of GOP debt limit brinksmanship have yet to be fully counted.

Although the compromise bill averted a catastrophic default, the long-term damage caused by the GOP's threats to the full faith and credit of the United States will not be apparent for some time. The Government Accountability Office estimated that the previous round of debt-ceiling threats in 2011 had raised borrowing costs by 70 basis points, which translates to an additional nearly $160 on homeowner's monthly mortgage payments, adding up to an extra $58,000 over the life of their loan. It also translates to approximately an additional $2,500 and $800 for small business and car loans, respectively.[15,16]

In addition to any effect on interest rates, the extended battle over the debt ceiling has interfered with the smooth execution of debt issuance by the Treasury. Forcing the Treasury to concentrate debt issuance in the next few months fits poorly with the needs of capital markets and will provide unwelcome pressure on the world's most important financial market, at a time when irresponsible balance sheet management at several regional banks has highlighted the importance of financial system stability and the complexity of maintaining it.[17]

Continued strength of the labor market promotes equity and resiliency, but we need more

Job gains keep beating expectations, and overall unemployment remains near historic lows.

This far along in a recovery, the labor market would ordinarily be expected to show some signs of sluggishness, but multiple indicators are pointing to its continued strength. The economy continues to add jobs at an elevated rate, and overall unemployment remains near historic lows.[18] Despite widely

publicized layoffs at high-profile technology firms and Wall Street banks, new unemployment claims have moved up slightly but remained relatively stable. Continuing claims have recently fallen.[19]

The United States Has Added Over 13 Million Jobs Since President Biden Took Office

U.S. total nonfarm payrolls, in millions, January 2020 to June 2023
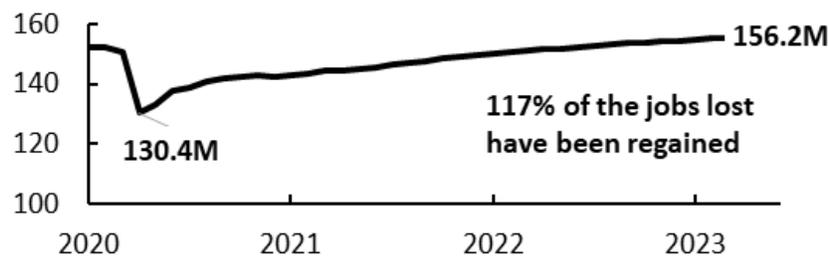
Source: Bureau of Labor Statistics
Note: Data are seasonally adjusted.

However, low overall unemployment rates mask less-encouraging trends for certain groups of Americans. For example, while the June 2023 unemployment rate for all women ages 16 and older was 3.4%, the equivalent rate for Black women was 6.1%. Furthermore, Black women's unemployment rate was still above its pre-pandemic February 2020 level (5.3%). Other groups, such as Black men and young Americans, similarly face higher rates of unemployment. We need to continue prioritizing equity in the recovery of our economy.

While the pandemic may have had a lasting effect on the labor force participation of Americans over 55, participation rates among younger Americans have recovered rapidly to pre-pandemic levels. Although they have begun to subside, vacancies

remain elevated, particularly relative to unemployed workers. Continued strength of labor demand indicates the potential gains from ensuring continued labor force growth, such as by addressing pandemic-era shortfalls in immigration and barriers to child care.

U.S. Employment Rate Exceeds Pre-Pandemic Level

Monthly prime-age U.S. employment-population ratio, January 2019 to June 2023
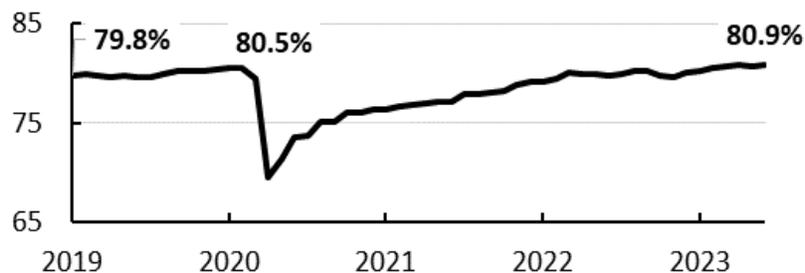
Source: Bureau of Labor Statistics
Note: Data are seasonally adjusted and for people ages 25-54.

Labor force participation rates have reached new milestones for many groups that are often left behind by the economy

Although discrimination and persistent unequal norms continue to create headwinds for the employment of many American workers, tight labor markets during a strong recovery have begun to pull many Americans into the labor market. Women and Black Americans have overcome some of the barriers which were made brutally clear during the pandemic to achieve new milestones in the American labor force.

The labor force participation rate of American women has recently reached, and remains near, an all-time high. Coming so soon after the pandemic-era disruptions resulted in additional caregiving responsibilities and overwhelming job losses for women, this

milestone suggests that changing norms and increased equality remain a powerful force in sustaining women's historic contributions to the growth of the American labor force and economy.

Women's Labor Force Participation Rate Has Fully Recovered From the Pandemic

U.S. prime-age women's labor force participation rate, January 2019 to June 2023
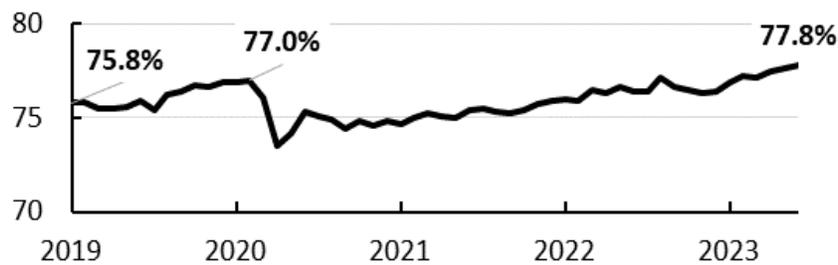
Source: Bureau of Labor Statistics
Note: Data are seasonally adjusted and for women ages 25-54.

Black Americans have made important contributions to the recovery as well, with Black labor force participation reaching parity with the equivalent rate for white Americans in August 2021 and January 2022, and the gap in employment rates reaching its narrowest point ever. [20] This milestone coincides with the lowest-ever Black unemployment rates.[21] The wage gap between Black and Hispanic workers and their white non-Hispanic counterparts has begun to fall steadily for the first time in decades.[22]

Labor Force Participation Rates for Black and White Americans See Strong Recoveries

U.S. labor force participation rate for Black and white people, January 2019 to June 2023
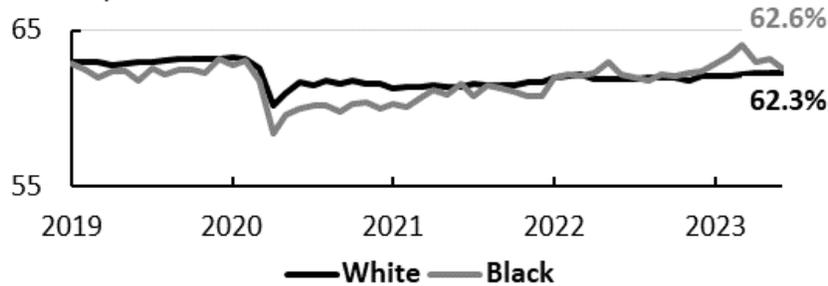
Source: Bureau of Labor Statistics
Note: Data are seasonally adjusted and for people ages 16 and older.

Wage gains during the recovery have been concentrated among lower-wage workers, starting to chip away at the accumulated inequality and wage stagnation since 1980

In fact, the progress towards shrinking racial wage gaps is part of a more general trend towards undoing the wage inequality which has surged over the last four decades. In the current recovery, wages have grown much faster for lower wage workers than for higher wage workers, and for high school graduates than for college graduates. Wages have grown faster in Manufacturing and in Leisure and Hospitality than in other industries, and for lower and middle-skilled occupations more than for high-skilled occupations.[23]

Recent Wage Growth Has Been Concentrated Among Lower-Wage Workers

Monthly wage growth by wage quartile, January 2019 to May 2023
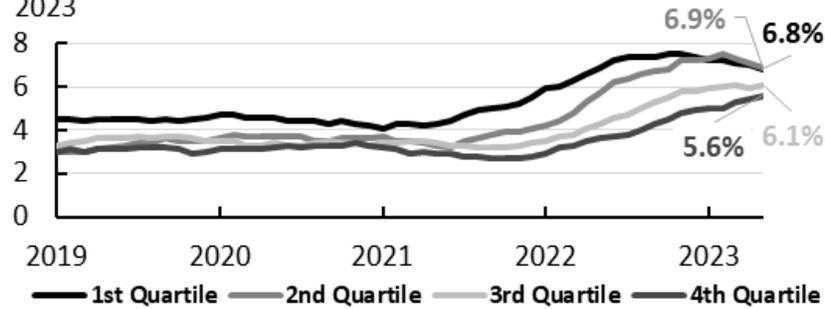
Source: Federal Reserve Bank of Atlanta
Note: Series plots 12 month moving average of median hourly wages.

Wages have grown fastest for job-switchers, and dramatically faster for younger workers than for others. Wages of non-white workers grew faster than those of white workers until recently, and are now growing at roughly the same rate.[24] All of these patterns have been helping to narrow pre-existing gaps and reverse long-run trends of rising inequality.

Relief programs and a strong labor market enable resilient middle-class households to drive the recovery

Bold and timely interventions during the pandemic recession shielded household balance sheets, enabling a rapid and sustained consumer-led recovery.[25] Mortgage delinquencies on single-family homes have rapidly regained their pre-pandemic levels, in distinct contrast to the slow recovery from the Great Recession.[26] The share of American families who could meet an unplanned $400 expense using cash or equivalent went up during the pandemic, before returning to its 2019 level of 63% in 2022.[27]

Unlike the Global Financial Crisis, Foreclosure Starts Stayed Low Despite the Pandemic

Forclosure starts, in thousands, January 2008 to March 2023
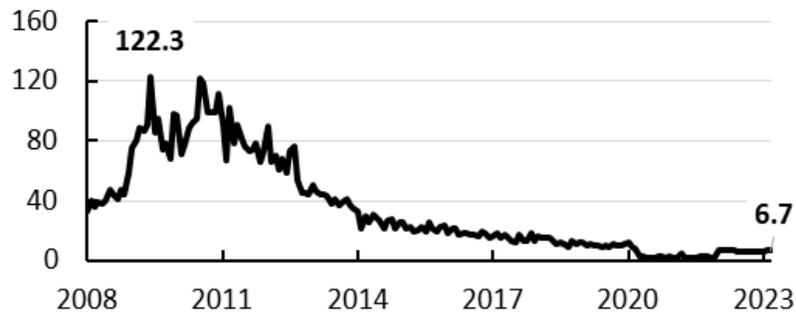
Source: Federal Housing Finance Agency

The health of American consumers' balance sheets stands in stark contrast to the generational damage done by the wave of foreclosures during the Global Financial Crisis in 2008, in which 3.8 million Americans faced foreclosure.[28] Consumer sentiment and employment failed to fully recover for years.

Unfortunately, auto loan delinquency rates among younger and lower income borrowers have risen in recent months, indicating a high level of financial strain on some households.[29] This is particularly concerning because of the crossover between this population and the holders of student loan debt, who have been subject to financial uncertainty over the legal challenges to the President Biden's debt forgiveness program. The end of pandemic-era loan forbearance will present a challenge for these house-holds finances, particularly those who carry student loan debt without also having completed a degree. Only 3 out of 10 such households report considering the financial benefits of their education to outweigh the costs.[30]

CHAPTER 2: IMPROVING CHILDHOOD WELL-BEING

Investments in kids are good for families and for the economy as a whole. Recent expansions of nutrition assistance programs and the Child Tax Credit, among other programs, improved child well-being, but more investments are needed to build upon this progress. Expanding access to these programs and removing barriers will enable more eligible kids to benefit, improving their health and financial well-being and producing returns for the economy.

Child poverty fell to a record low recently, but more investments are needed to keep it low

Pandemic-era policies successfully reduced child poverty to a record low in 2021, bringing the United States temporarily in line with peer countries for the first time. In 2022, however, child poverty increased with the expiration of these policies—meaning that the United States will once again lag peer countries in measures of child poverty. Expansions of and additional funding for programs like Medicaid; the Child Tax Credit (CTC); the Supplemental Nutrition Assistance Program (SNAP); the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC); Head Start; the Housing Choice Voucher program; paid parental leave; and affordable child care would help support families and children.

Child poverty fell to a record low in 2021, largely due to the expansion of the Child Tax Credit

Child poverty in 2021 fell to 5.2%, the lowest rate on record according to U.S. Census Bureau measures.[31,32,33] The child poverty rate was cut almost in half from the previous year's rate

of 9.7%. This drop was the largest single-year decline in child poverty on record and was driven primarily by the expanded Child Tax Credit (CTC) included in the American Rescue Plan.

Public Investments Have Successfully Lowered Child Poverty

Supplemental poverty measure for children, 1971 to 2021
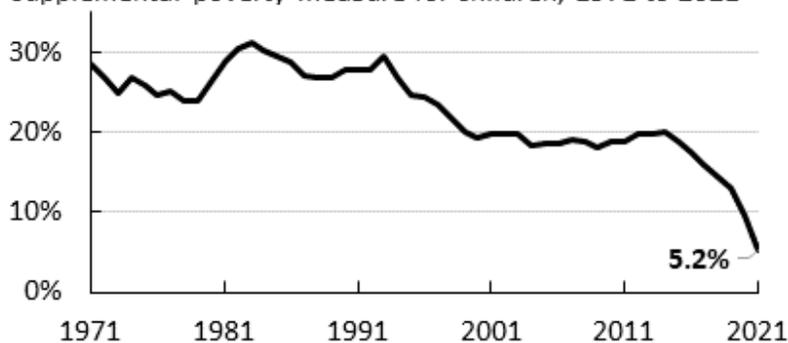
Source: Center on Budget and Policy Priorities
Note: Data are anchored to 2021 poverty thresholds.

Overall, the CTC lifted 5.3 million people—including 2.9 million children—out of poverty in 2021.[34] Just the expansion of the CTC alone lifted 2.1 million children out of poverty, and were the tax credit not expanded, the child poverty rate would have only fallen to 8.1% and these 2.1 million children would have remained in poverty.[35] The CTC also helped reduce the percentage of children living in near-poverty by one-third.[36]

Congress expanded the Child Tax Credit as part of the American Rescue Plan

The expansion of the CTC as part of the American Rescue Plan made the credit fully refundable, which enabled previously ineligible low-income families to receive the full credit.[37] Full refundability was the main driver of the expanded CTC's child poverty reduction and helped 19 million more children become

eligible for the full credit.[38] These children previously could not receive the full credit or received no credit at all because their families' incomes were too low.

The American Rescue Plan also dramatically increased the value of the CTC from $2,000 per child to up to $3,600 per child under age 6 and to $3,000 per child between age 6 and 17 in 2021. This increase put significantly more money in the pockets of low- and middle-income families to pay for household expenses.[39]

Pre-pandemic, the United States lagged far behind peer countries in measures of child poverty

Despite being the richest country in the world, the United States has consistently had a higher share of children living in poverty than that of peer countries. In 2019, the Organisation for Economic Co-operation and Development (OECD) reported that 21% of U.S. children lived in poverty.[40,41]

Using the OECD measure, the share of U.S. children living in poverty in 2019 was 21%, which was well above the pre-pandemic average of 13% in other OECD countries and higher than the child poverty rate in all but four OECD countries. This is in part because countries like Finland, Norway, Sweden, Germany, and France have implemented a range of family-friendly policies that the United States lacks, such as universal child care, child savings accounts, and child allowances.[42,43,44,45,46,47] Meanwhile, policy choices left more than one in five children in the United States living in poverty.

Children who grow up in poverty are more likely than their more affluent peers to continue to face barriers in education, employment, health, and productivity throughout their adulthood.[48] As income inequality continues to rise in the United

States, marginalized communities are disproportionately left behind.[49] In particular, children of color, those in Tribal communities, and children in rural areas are even more likely to live in poverty.

Cash transfers like the expanded Child Tax Credit brought the United States more in line with peer countries for the first time

Despite the economic chaos caused by the COVID-19 pandemic, the United States was able to cut the share of children living in poverty from 21% in 2019 to 14% in 2021, according to the OECD.[50] This feat was made possible by pandemic-era cash transfers that provided immediate relief to families when they needed it most.[51] This expanded social safety net brought the United States' child poverty rate in line with the peer country average of 13% for the first time in history.[52]

The success of the expanded CTC and stimulus payments can also be seen in the Supplemental Poverty Measure (SPM) published by the U.S. Census Bureau.[53] While the OECD compares families' income to the country's median income, the SPM calculates whether their income is above or below a set threshold based on the local cost of living for a family in their area. Under this measure, only 5.2% of children in the United States lived in poverty in 2021, a record low and a drastic decrease from the 13.1% living in poverty in 2019.

More investments are needed to sustain the gains of 2021

Although progress has been made, the United States needs to protect and expand effective policies that address child poverty. Many of the policies that reduced poverty in 2021 have expired, once again bringing the United States out of line with peer countries.[54] Data released in September 2023 by the U.S. Census Bureau will show a steep rise in child poverty for 2022, mainly

due to the expiration of the expanded Child Tax Credit.[55,56] Analysis from the Center on Poverty and Social Policy at Columbia University showed that 3.7 million children fell back into poverty after the monthly CTC payments ended.[57]

Instead of adding more barriers for benefit recipients, as House Republicans have insisted on doing, the United States should continue to invest in programs like the Supplemental Nutrition Assistance Program (SNAP), which has a proven track record of increasing food security for low-income families.[58] In total, 14.4 million children received SNAP benefits in 2019.[59] Republican lawmakers' radical budget plans would also drastically cut funding for other essential programs that support families, including Head Start, the Housing Choice Voucher program, the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), child care support, and the Low-Income Home Energy Assistance Program.

Democrats in Congress, by contrast, have reintroduced legislation in the 118th Congress to make the 2021 expansion of the Child Tax Credit permanent, which would benefit more than 60 million children with three-quarters of the benefit going to families in the bottom three quintiles.[60,61] A total of 209 House Democrats have signed onto a bill that would expand the CTC with an emphasis on refundability while also providing a $2,000 payment for newborn babies.[62,63] In addition, family-friendly policies such as paid parental leave, universal child care, and broader investments through the Two-Generation Economic Empowerment Act would increase economic opportunities for families living in poverty.[64] These investments would help every American reach their full potential by reducing the number of children growing up in poverty.

Public investments in children yield economy-wide benefits

Policies like the expanded CTC are an investment in children's well-being over the long term. Research has found that an extra $3,000 in a family's annual income when a child is younger than age 5 leads to 19% higher earnings when they grow up.[65] Other research on investments in early childhood finds that increasing family incomes has tangible outcomes for children, including higher test scores, higher high school and college graduation rates, improved health outcomes, lower rates of incarceration, and reduced need for future income support.[66,67,68,69]

One study found that recipiency of the Earned Income Tax Credit when children are in their teens increases the likelihood of completing high school and college, being employed as a young adult, and having higher earnings.[70] Another study by Hilary Hoynes and others found that SNAP recipiency before age 5 leads to greater economic self-sufficiency, reduced need for future income support, and reduced likelihood of incarceration.[71] And yet another study showed that the recent monthly CTC payments improved the ability of households—particularly low-income households and Black and Hispanic families—to invest in their children's education and long-term development.[72,73] By increasing families' ability to pay for items like tutoring and extracurricular activities, the expanded CTC helped improve future mobility and lifetime success, which creates economy-wide benefits that last for generations.

Overall, a growing body of academic research finds that public investments in children yield significant long-term returns with economy-wide benefits, as healthier, more educated kids grow up to be more productive workers with higher earnings.[74] This, in turn, also generates greater productivity and higher future revenues.

Investments in child care and early childhood education are important for childhood development and the economy

High-quality, accessible child care fosters a number of economic and socioeconomic benefits for both individuals and the country. Underinvestment in child care and the resulting high prices have prevented the United States from fully realizing those benefits, constraining future economic growth. Proposals to address these issues include universal pre-kindergarten and capping out-of-pocket child care costs for parents. These investments will drive economic growth in both the near- and long-term by making it easier for parents to participate in the labor market and increasing the human capital of future workers.

Child care in America is not affordable for most working families

The current child care system suffers from inadequate public investment, leaving parents and caregivers to foot the bill for the rising cost of child care. Recent national estimates find that child care costs for a single child average just over $10,000 per year.[75] These costs can be significantly elevated depending on the state and are usually higher for younger children. For a family with two young children—an infant and a four-year-old—average child care costs exceed the median cost of rent in every reporting state and the District of Columbia.[76]

The high cost of child care takes up a significant portion of family income. The Department of Health and Human Services (HHS) has determined that child care is unaffordable if it exceeds 7% of family income.[77] However, in 36 states and the District of Columbia, a typical married couple with an infant and a four-year-old spends on average more than 20% of their income on child care. These affordability issues are found nationwide, with all reporting states and the District of Columbia exceeding the 7% cap.

This high cost of child care disproportionately burdens lower-income households and those with mothers who are Black, American Indian or Alaska Native, Hispanic, Native Hawaiian or other Pacific Islander, or Asian.[78] Ability to access suitable care also differs based on the mother's race and ethnicity. While 6% of families with a white mother reported ultimately being unable to access a care program that meets their needs, this number was double for families with an American Indian or Alaska Native (12%) or Hispanic (13%) mother. Families with Black, Asian, and Native Hawaiian or other Pacific Islander mothers also report elevated rates at 8%, 7%, and 7%, respectively. For these families, prohibitive costs remain the largest factor preventing them from accessing child care programs that fit their needs.

The High Cost of Child Care Disproportionately Burdens Mothers of Color

Percent of mothers that say cost is a barrier to finding child care, by race/ethnicity, 2016

Black	Hispanic	Asian	White
38%	36%	32%	27%
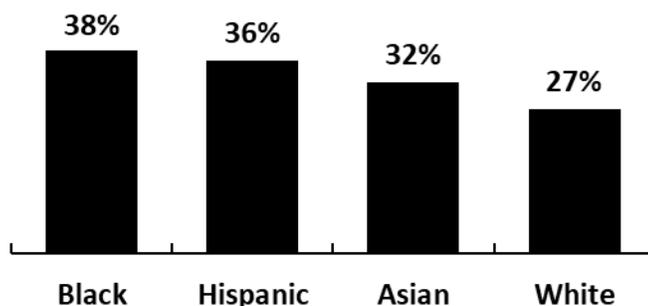
Source: Center for American Progress

Public investments in children by America lag that of other OECD countries

Data from the OECD show that the United States invests less in early childhood education and care as a percentage of Gross Domestic Product (GDP) than all but three other OECD countries.[79] This chronic underfunding of the child care system has shifted the burden of rising costs onto families, leaving many unable to afford the care that they need and depriving them of the benefits of high-quality child care.

Limiting out-of-pocket child care costs will increase families' incomes and support the early development of children

The high and rising cost of child care comes with significant economic consequences. For many families, child care is either entirely unaffordable or so expensive that parents—especially mothers—drop out of the labor force to provide child care themselves, which negatively affects parents' and caregivers' ability to fully participate in the economy.[80] Over two million parents, particularly women, are estimated to have made career sacrifices such as quitting a job or not taking a job due to child care issues in 2016 alone.[81]

Mothers' labor force participation is consistently lower than labor force participation among fathers.[82] While child age does not greatly affect fathers' labor force participation, mothers of younger children experience a much larger participation gap.[83] Of all mothers, Hispanic mothers experience the lowest levels of labor force participation. Across race and ethnicity, participation gaps have been linked directly to a lack of structural support for women's full economic participation, and a lack of affordable, accessible child care is a major factor.[84]

Even for women who remain employed, issues with child care can cause them to miss work. Recent data show that in May 2023, 40,000 employed women reported not being at work due to child care problems, five times the number of men who reported child care-related absences. These disparate absences show how child care issues are disproportionately harming women's labor force participation—a key input into economic growth.[85] This time away from the labor market can also create long-term scarring effects, decreasing lifetime earnings and negatively impacting families' economic security as well as overall economic growth and resilience.[86]

In order to boost labor force participation, it is essential that high-quality child care is made affordable and accessible. Limiting the amount that families have to pay for child care as a percentage of their household income allows families to keep more money in their pockets. Each year, labor force exits due to child care needs are estimated to cost parents and caregivers $30-35 billion in lost income.[87] When lost productivity and revenue due to decreased labor force participation are included, the economic cost may be as high as $57 billion per year.[88]

Studies have found that capping the cost of early childhood education at 10% could generate significant positive economic effects, increasing GDP by 1.2% annually—$210.2 billion each year—by facilitating parents' reentry into the workforce.[89] For mothers and female caregivers in particular, every 1% reduction in out-of-pocket child care costs is associated with a 0.25% increase in labor force participation.[90] The recommendation for affordability calculated by HHS would put the cap on child care cost even lower, at 7% of household income. By setting the cap under 10%, the benefits to families and the economy would be even greater.

Each $1 invested in high-quality child care today could yield nearly $9 in future returns

Research has found that investment in early childhood education has long-lasting positive effects for the children who receive it and the broader economy. Research conducted by Nobel Prize-winning economist James Heckman into past early childhood education programs found that these programs generated $7 to $12 dollars in returns for every dollar invested.[91] People who participate in high-quality early childhood education grow up to be better educated and have higher earnings, and they are less likely to access income support programs or be involved in criminal activities. Benefits that accrue to individuals directly, as well as to the economy as a whole, include: better educated workers are more productive, higher earnings translate into higher tax revenues, reduced use of income support programs lowers government expenditures, and reduced crime translates to lower government spending on the criminal justice system. Altogether, every dollar invested in early childhood education today generates up to $8.60 in economic benefits. In other words, investments in early childhood education pay for themselves almost nine times over the long-term.

Not only are there long-term economy-wide benefits from the children who attend early childhood education, but there are spillover benefits from improved outcomes of the children of the children who attended preschool including decreased suspension rates, improvements in adult health, increased likelihood of employment, and lower rates of divorce.[92]

Given the extensive body of research finding positive returns for the entire economy from investment in early childhood education, focusing on the upfront costs of investments in early childhood education is misguided.[93,94,95] There are immediate short-term

benefits that balance out the cost of the investment, such as improved parental labor force participation. And in addition to the short-term benefits, the evidence is overwhelming that the long-term, broader economic returns greatly outweigh the initial cost of investing in early childhood education.

Nutrition assistance programs support working families with children and improve overall health and economic mobility

Nutrition assistance programs like the Supplemental Nutrition Assistance Program (SNAP); Special Supplemental Nutrition Program for Women, Infants, and Children (WIC); permanent summer grocery benefits; and universal school lunches are important tools for helping low-income families afford an adequate diet. Additionally, they protect families from hunger and financial hardship, reduce poverty, improve health, and support the overall economy.

Nutrition assistance programs prevented food insecurity from spiking during the COVID-19 pandemic

Overall, 10.2% of households were food insecure in 2021 and 10.5% were food insecure in 2020—essentially unchanged from the 10.5% in 2019.[96,97,98] These households were uncertain of having or unable to acquire enough food. Policy interventions ensured that food insecurity did not surge the way it did during the Great Recession.[99] During that period, the share of households that were food insecure rose from 11.1% in 2007 to 14.7% in 2009.[100] In the wake of the pandemic recession, the value of SNAP and WIC benefits were increased to help families afford food.

Congress increased SNAP benefits beginning in 2020 by providing authority for the U.S. Department of Agriculture (USDA) to approve state waiver requests for SNAP emergency allotments (EAs) while federal and state emergency declarations

were in effect during the pandemic.[101] This raised each household's benefits to the level of the SNAP maximum allotment. USDA subsequently revised the EA calculations in 2021 to include the lowest-income households so that they would also receive additional SNAP benefits each month. These households originally did not benefit from the emergency allotments as much, as they already received the maximum allotment or close to the maximum allotment. There was also a 15% increase to SNAP maximum allotments for much of 2021 until the USDA's update of the Thrifty Food Plan went into effect in October 2021, leading to a permanent 21% increase in maximum SNAP benefit levels.[102] Additionally, the American Rescue Plan increased the value of WIC's cash value benefits for the purchase of fruits and vegetables.[103]

Nutrition assistance programs support adequate diets for families and protect them from increased financial hardship

Programs like SNAP and WIC provide important nutritional support for working families with children. SNAP—the country's most important anti-hunger program—helped more than 41 million low-income people in the United States afford a nutritionally adequate diet on average each month in 2021.[104] Children are one of the groups who benefit most from this support with about two-thirds of SNAP participants consisting of families with children.[105] SNAP participation reduces food insecurity by as much as 30%, with an even more pronounced decline among children and those facing severe food insecurity.[106,107]

Recent changes to SNAP benefits allow families to better afford a healthy diet. In August 2021, the USDA updated the Thrifty Food Plan, which is a diet plan that is designed to be nutritionally adequate at a very low cost and is used as the basis for calculating SNAP's maximum benefit allotment.[108] This review, mandated by

the bipartisan 2018 Farm Bill, led to a permanent 21% increase in maximum SNAP benefit levels that began in October 2021. The review, the first since 2006, evaluated current food prices and dietary habits in a rigorous, data-driven process and marks the first time in its history that the Thrifty Food Plan has been adjusted to accurately reflect the realities of healthy eating today. The Thrifty Food Plan had become increasingly inadequate over the last 50 years as it only increased with inflation but did not factor in changes in dietary guidelines, consumption patterns, or constraints on working families.[109]

Similarly, WIC provides nutrition support to six million low-income pregnant, postpartum, and breastfeeding individuals, infants, and children who are deemed to be at nutritional risk.[110] It accomplishes this by providing specific types of foods that tend to be lacking in the diets of low-income women and young children, support for breastfeeding individuals or infant formula, and cash value benefits for the purchase of fruits and vegetables. These cash value benefits were increased in 2021 as part of the American Rescue Plan to provide participants with more fruits and vegetables.[111]

Additionally, Congress included permanent summer grocery benefits, an Electronic Benefit Transfer (EBT) program, in the government spending bill passed at the end of 2022, marking the creation of "the first new permanent federal food assistance program of this magnitude in nearly 50 years."[112,113] This means that low-income families including more than 30 million school-age children can receive grocery benefits during the summer.[114] Child hunger tends to rise during the summer as children who are eligible for free or reduced-price school meals struggle to access nutritional food.[115]

Nutrition assistance programs keep millions of people, particularly children, out of poverty

Food assistance programs are incredibly effective at targeting support to those who need it the most and are powerful anti-poverty tools. SNAP, for example, focuses on households with the fewest resources: about 92% of SNAP benefits go to households with incomes at or below the poverty line.[116] Additionally, the SNAP benefit formula provides larger benefits to households with the lowest incomes than those closer to the poverty line. An Analysis from the Center on Budget and Policy Priorities found that SNAP kept nearly eight million people—including 3.6 million children—above the poverty line each year before the pandemic.[117] A separate analysis from the Center on Budget and Policy Priorities found that SNAP produces one of the strongest anti-poverty effects of any federal program.[118]

SNAP is also an effective form of economic stimulus because it gets money into the economy quickly during a downturn as enrollment expands when the economy weakens. Low-income families are more likely to spend every last dollar on needs like food and shelter, meaning each dollar that goes to a SNAP recipient translates into an additional dollar spent. Data from 2017 show that nearly 78% of SNAP benefits are redeemed within two weeks of receipt and 96% are spent within a month.[119]

Nutrition assistance programs improve health outcomes, support childhood development, and ensure children fare better years later

Food insecurity and inadequate nutrition leads to health problems throughout one's life. Food insecurity is linked to a poorer diet, chronic health conditions such as high blood pressure and diabetes, and overall poorer health.[120] Food assistance enables low-income families to afford healthier food, which can lead to

more positive health outcomes and reduce health care costs in childhood and adulthood.

Receiving food assistance such as SNAP early in life can lead to improved health outcomes years later. Research found that pregnant mothers who received food assistance in the 1960s and 1970s saw positive effects on infant birth weight.[121] Another study showed that adults who received SNAP as young children had lower risks of obesity and other conditions related to heart disease and diabetes as adults.[122] Children who receive SNAP benefits tend to report better health status than those who are not SNAP participants, and their families are less likely to forgo health care to meet other household needs.[123] Similarly, research has shown that WIC participation is associated with more nutritious diets, healthier births, lower infant mortality rates, and increased access to preventative health care.[124,125]

Receiving food assistance also leads to reduced health care spending. One study found that adults who participate in SNAP have annual health care costs that are nearly 25%, or about $1,400, less on average than those who don't participate in SNAP.[126] Two other studies also found an association between SNAP participation and a reduction in health care costs by as much as $5,000 per person per year.[127] SNAP is also linked to greater medication adherence as those who are experiencing food insecurity are more likely to skip doses, take less medication than prescribed, or forgo medication altogether due to cost.[128] SNAP can reduce household spending on food and free up resources for things like medication.

Some nutrition assistance programs also include educational components. For example, all 50 states operate SNAP nutrition education programs to better equip SNAP participants to make

healthy food choices.[129] WIC also provides participants with counseling on healthy eating as well as breastfeeding support and health care referrals.[130]

Congress should expand SNAP as part of the Farm Bill reauthorization and increase WIC funding as part of the appropriations process

Congress should expand SNAP—the most important nutrition assistance program America has—when it reauthorizes the Farm Bill this fall. There are multiple ways to expand the program, including: raising benefit levels, reinstating emergency allotments that ended in early 2023, using the Low-Cost Food Plan instead of the Thrifty Food Plan to determine maximum benefit allotments, eliminating time limits on benefits for people struggling to find work, and extending benefits to all college students who meet SNAP income and eligibility requirements.

SNAP's emergency allotments ensured that food insecurity did not rise during the pandemic and provided economic stimulus, but they ended after February 2023.[131] Reinstating these allotments would ensure less food hardship and more nutritious diets, and would also enable households to spend resources on other needs. The USDA uses four different food plans to estimate the cost of a healthy diet across various price points.[132] The Thrifty Food Plan—which is what USDA currently uses to calculate SNAP's maximum benefit allotment—has the lowest cost of the four food plans. The Low-Cost Food Plan is the next one above that and would provide households with even more adequate nutrition.

Congress should also ensure that it provides sufficient funding through the appropriations process for WIC to maintain benefit levels for all eligible families and prevent the need for waiting lists. It should also maintain increased benefits for fruits and

vegetables in line with the recommendations of the National Academies of Sciences, Engineering, and Medicine (NAS), as it did beginning with the American Rescue Plan and in subsequent appropriations bills.[133]

The House Appropriations Subcommittee on Agriculture, Rural Development, Food and Drug Administration has advanced a bill that funds WIC at $800 million below what President Biden requested for fiscal year 2024—which would not be enough to ensure that benefit levels are maintained and waiting lists are avoided, especially as WIC participation is expected to continue growing.[134] It would also make cuts to the fruits and vegetables benefits for an estimated 1.5 million pregnant, postpartum, and breastfeeding individuals and 3.5 million children, which would go against the NAS recommendations.[135] The goal of WIC should be to serve all eligible families and provide support at a key point in development for pregnant, postpartum, and breastfeeding individuals, infants, and children.

Congress should remove barriers to accessing the safety net and modernize the application for these benefits

Congress should streamline applications for and the administration of proven safety-net programs and apply lessons learned from pandemic-era policies. People who are eligible for more than one type of benefit should be able to apply for them at one time, services should be provided online or by phone when possible, and benefits should be transferred electronically. The administration of WIC during the pandemic serves as a useful case study.

Pregnant individuals and parents of young children are often referred to WIC when they apply for Medicaid or SNAP, as it is assumed they are likely eligible for it as well. Eligible individuals

can also apply for WIC benefits at one of WIC's 10,000 local clinics, and state are increasingly making applications for WIC benefits available online.[136] This enables eligible individuals to apply for benefits in a way that works best for them. WIC applicants are generally required to attend certification appointments that determine eligibility and nutrition assessments to identify nutritional risks in person, with some exceptions.[137] However, during the pandemic, WIC agencies conducted these appointments by phone or videoconference under federal waivers to prevent the spread of COVID-19.[138] This also had a byproduct of removing barriers around work, child care, and transportation that may have otherwise prevented an applicant from attending an in-person appointment. WIC agencies also set up more methods for applicants and participants to submit documents electronically, which still allows for identity and income verification and a high level of program integrity.[139] Other modernization efforts like switching from paper vouchers to electronic benefit cards allow for a better user experience. Additionally, cards that can have benefits loaded onto them remotely offer participants a better user experience than ones that have information loaded onto a chip. The latter presented a challenge during the pandemic as WIC participants had to bring their cards to a WIC clinic to have their benefits added.[140] Expanding practices that make it easier for eligible individuals to access benefits like WIC will enable these programs to have a greater impact and reach a broader population.

Pandemic-era policies or expansions of existing policies that have proven successful can serve as a model for permanent extensions of these policies. For example, permanent summer grocery benefits (or Summer EBT) builds on the earlier success of Pandemic-EBT, which provided grocery benefits to low-income families with children during the summers of 2021 and 2022 and has proven to reduce food hardship.[141,142] As a permanent

program, Summer EBT will provide important food assistance to 30 million low-income children every summer.[143] Additionally, SNAP benefits were temporarily increased early in the pandemic through emergency allotments and other means. The USDA's update to the Thrifty Food Plan led to a permanent 21% increase in maximum SNAP benefit levels that began in October 2021.[144]

CHAPTER 3: BUILDING ON THE JOBS RECOVERY TO STRENGTHEN THE U.S. LABOR MARKET

As described in Chapter 1, the labor market in the United States has made incredible strides in the last two and a half years. The economy has routinely outperformed the labor force predictions of both private-sector forecasters and the non-partisan Congressional Budget Office. This strong recovery has pulled millions of people into the labor force, but policymakers must do more to make sure that more Americans benefit from stable and safe career opportunities.

Achieving this goal will involve both avoiding the policy mistakes of the past while also taking important proactive steps to grow the American workforce. That will mean investing in both the social safety net and in proven job training models while turning away from the ineffective work reporting requirements that fail to grow the labor force. It will also involve proactive regulations and government policies aimed at adapting to technological change driven by advances in artificial intelligence. Throughout this process, it is imperative that more workers can join a union and gain the significant economic benefits that come with collective action and worker representation.

This holistic approach to growing the labor market can build off the recent jobs boom that has already delivered measurable progress for American workers.

Strategies to further increase labor force participation

Since its peak in the early 2000s, the overall labor force participation rate in the United States has generally fallen.[145] The

Great Recession reduced labor supply considerably, and it took years to recover the jobs that were lost. Some groups, such as women and Hispanic people, were more severely affected than others.[146] The U.S. labor force participation rate also dropped precipitously at the beginning of the COVID-19 pandemic from 63.3% in February 2020 to 60.1% in April 2020.[147] Under the Biden administration, prime-age workers (or those aged 25-54) are participating in the labor force at higher rates than before the pandemic.[148,149] Fears that workers who exited the labor force would not come back have been largely allayed, as most "missing workers" have returned.[150]

The national labor force participation rate decreased by 2.9 percentage points from January 2008 (66.2%) to January 2020 (63.3%).[151] One key to understanding this decline since the 2008 financial crisis is the United States' aging population. In 2008, the first baby boomers were eligible to take their Social Security retirement.[152] As older workers exit the workforce, lower birth rates mean the labor pool is likely to stay low, absent a significant in-migration of prime-age adults.[153] Aging alone does not explain the lower labor supply, however, as rates of participation in the labor force by prime-age males have been nearly continuously decreasing since the 1950s.[154,155] The labor force participation rate was brought up by prime-age women entering the workforce in large numbers, but this rate too began to decline slightly after the late 1990s.[156]

Empirical evidence suggest a suite of policies that can buoy or raise the labor supply, especially if employed in concert. Labor demand continues to outpace labor supply in the post-pandemic economy, and ensuring that labor force participants are healthy; have proper training, education, and connectivity; and can access

affordable child care will give a boost to Americans working or looking for work.

Access to affordable health care raises labor supply and supports workers' performance

Providing for the health care of low-income or unemployed individuals and families leads to higher labor force participation. States that opted to expand Medicaid in 2014 generally saw an increase in labor supply.[157,158] Health coverage through Medicaid has helped workers across the country to look for employment and do a better job at work.[159,160] Poor physical and mental health, including chronic disease, are significant factors associated with workers exiting paid employment through disability insurance, unemployment, or early retirement.[161] Research indicates that employee well-being is associated with better job performance, lower absenteeism, and longevity of employment.[162] Providing affordable health care is thus important to maintaining a productive and effective workforce.

Improving educational access and attainment, including in fundamental skills like literacy, creates a larger and more skilled workforce

The evidence is clear that those with higher educational attainment typically have greater participation in the labor market and higher wages.[163,164] Higher educational attainment also helps reduce the time in which a worker is unemployed, while vocational education and training allow jobseekers to find employment faster and obtain higher-paying jobs.[165,166] Literacy is a crucial step toward reaching higher levels of education. Increased literacy in adults is associated with a higher chance of being employed and earning higher wages.[167]

Well-designed job and career training programs can match those currently out of the labor force with promising career opportunities

Effective active labor market policies and programs (ALMPs) give workers the skills and networks to enter the labor force and find gainful employment. State and local governments should design ALMPs to reflect the needs of their populations and ensure their programs promote equity. To do so, ALMPs should provide opportunities for vulnerable populations, such as those with limited work experience, dependent care obligations, low skills, or health limitations. Successful programs help individuals strengthen life skills, social integration, and motivation; develop work-related skills; assist potential workers in finding and applying to jobs; potentially subsidize employment, training, and mentoring; and provide follow-up support.[168] While ALMPs are an important way to improve labor force participation, the needs of vulnerable groups are complex and require a holistic approach. Consistent monitoring and evaluation of ALMPs means that policies can be more likely to respond to changes in the labor market, such as during a shock like a pandemic or in a transition to clean energy, and can better integrate with other policies intended to raise the labor supply.

Increased broadband access can connect more people with employment opportunities

Access to affordable and reliable internet helps job seekers find and apply for work. For low-income individuals, access to affordable internet could help increase labor force participation and decrease the chances of being unemployed.[169] The internet is now an essential tool for education, access to goods and services, and communication—all of which can support an individual when seeking or training for employment. Increasing access to broadband has greater effects on certain populations. Greater

usage of high-speed internet has been found to increase labor force participation and hours worked by married women with children.[170] Recent federal investment in expanding broadband and related infrastructure is likely to create, at its peak over 10 years, 23,000 new jobs nationwide.[171]

Benefits for families can help parents enter the labor force, but they take time to make a difference and require sustained funding and good implementation

Access to affordable and reliable child care is a large factor in determining the availability to work in certain populations. A lack of access to child care disproportionately affects women, single parents, families of color, those with immigrant status, and low-income families. Nationwide, the families of one in six Latino children aged five and younger experienced job changes related to a lack of child care. For Latina and Black mothers, center-based child care for two children consumed 42% and 56%, respectively, of household income in 2017, compared to 26% for white mothers.[172] Support for affordable child care, teleworking, and parental leave can create the necessary conditions for women with young children to join the labor force.[173]

Increased immigration can also grow the labor force while strengthening the broader economy

While increasing participation among the current population is important, one clear way to grow the labor force is by increasing immigration. As the baby boomer generation enters retirement age, and population growth continues to slow, there is a growing need for immigrants to both help fill vacant roles left by older Americans leaving the workforce and meet the employment needs of a growing economy.[174] Immigrants already play a vital role in the current economy, working across many economically

significant sectors like education and health services, finance and real estate, and construction.[175]

However, the United States should increase its number of immigrants and streamline the process to help meet the continued workforce needs throughout the occupational landscape.[176] Increasing employment-based immigration while ensuring that the country continues to be a welcome home for refugees and those seeking asylum is both in line with our nation's values and good for the economy. Countries like Canada have drastically increased their immigrant populations in recent years through common-sense immigration policies aimed in part at increasing economic dynamism.[177] Other more technical approaches include updating the list of Schedule A occupations, which would help bring in more immigrants who could fill employment shortages in identified fields where the United States faces a shortage.[178]

Economic evidence also shows that many of the concerns about the effect of immigrants on current workers are unfounded. Research shows that immigration does not bring down wages for similarly-skilled workers.[179] Other research shows that immigrants also support additional jobs because they bring complementary skills to those more common in the U.S.-born labor force, which can then support a "multiplier" effect that grows the broader labor force.[180,181] Immigrants also help to keep our economy more dynamic by moving between different labor markets in response to changing levels of demand.[182]

Work reporting requirements fail to expand the workforce while punishing those in need with unnecessary bureaucracy

There is a long-running assumption that those who receive social assistance choose to not work and must be compelled to do so.[183] But the reality is that most adults who receive assistance from

programs like Medicaid and the Supplemental Nutrition Assistance Program (SNAP) are already employed, while others are between jobs, attending school, caring for family members at home, or have an illness or disability that may prevent them from working. Data from the Kaiser Family Foundation shows that more than six in 10 adults who receive Medicaid are working full- or part-time, and a further 30% are students and caregivers or have a disability or illness.[184] Assuming that benefit recipients are choosing to not work also ignores structural labor market issues that may hinder some from working, such as discrimination in hiring, the lack of affordable and reliable child care and paid leave, and failure to provide accommodations to those who are sick or disabled.

Programs like Medicaid and SNAP—two of the most successful anti-poverty programs in America—provide nutrition health and health care assistance for millions of Americans, which can lay a foundation for them to join the labor force. It is difficult for those who are hungry and in poor health to look for and sustain work. Before the pandemic, Medicaid covered over 64 million people as the largest insurer in the country, while SNAP lifted over 7 million people, including more than 3 million children, above the poverty line.[185,186] Instituting work reporting requirements that block people from receiving this assistance would be counterproductive, especially without providing any additional supports to help people find jobs. The anti-poverty effects of these programs would also diminish under stricter work reporting requirements, as it would cut assistance without connecting people to jobs.

Evidence shows that work reporting requirements are ineffective at increasing employment or labor force participation

Economic studies show that work reporting requirements for social assistance programs achieve little to no progress towards

their supposed goal of increasing labor force participation. Instead, they are only effective at taking supports away from people. Numerous studies have shown that SNAP work requirements for adults who don't have kids or a disability have "no measurable impact on employment or earnings."[187] On the other hand, work reporting requirements are extremely effective at reducing program participation. Data from the Department of Health and Human Services show that work requirements could jeopardize Medicaid coverage and access for 21 million people, while the Center on Budget and Policy Priorities estimated that the Republicans' Default On America Act would have put Medicaid coverage at risk for more than 10 million Medicaid expansion enrollees in 32 states.[188,189] Another study found Virginia's work requirements helped reduce SNAP participation by 53% among adults who were subject to the requirements in the 18 months following their introduction.[190] And households without children aren't the only ones who lose benefits—another study found that increased administrative burdens reduced Medicaid and Children's Health Insurance Program coverage for families by 5.4% within the year after they were enacted.[191]

Evidence from states also show the harmful effects of short-lived Medicaid work reporting requirements, with thousands losing coverage and no increase in employment.[192,193] In Arkansas, more than 18,000 people lost Medicaid coverage in just the seven months after work requirements were instituted. Similarly, 80,000 people in Michigan and almost 17,000 people in New Hampshire would have lost coverage had the policies not been halted. In all three states, people who were working or who should have been eligible for exemptions lost coverage or would have been at risk of losing coverage. At the national level, these work requirements could mean millions of Americans, including those who are

working or who are exempt, losing their Medicaid coverage or SNAP benefits.

Work reporting requirements often mean that people who are already employed or exempt from the requirements must jump through additional hoops to get their benefits

People who are actively working could still lose their benefits because they would have to meet more complex administrative requirements to prove their eligibility. Confusing eligibility rules, ineffective outreach about program changes, and complex or inaccessible reporting systems prove to be serious hurdles for eligible beneficiaries.[194] They do nothing to encourage work; they just put more burdens on families who are already under financial strain and make it less likely they will receive their benefits.

Even though some people, such as those with children or those with serious health needs, disabilities, or substance use disorders, may be exempt from additional work reporting requirements, they could still get captured by the requirements and lose their assistance.[195,196,197,198] They too would have to meet complex administrative requirements and would not receive additional assistance in completing the steps to claim their exemptions. Evidence from Arkansas shows that people with disabilities who were exempt from Medicaid work requirements were still subject to the requirements due to narrow definitions around "able-bodied" and the difficulty in collecting the necessary documentation such as medical records, especially for the uninsured.[199] Instead of expanding work reporting requirements, Congress should expand eligibility for programs like Medicaid and SNAP that are incredibly effective at reducing poverty and supporting families and children.

Artificial intelligence and maintaining American leadership

The rapid rise of artificial intelligence (AI) tools has the potential to alter nearly all aspects of society with large but uncertain impacts on the economy and labor market. Generative AI has progressed quickly in the last few years—in particular with the release of ChatGPT—prompting governments to grapple with ways to encourage AI development within the bounds of ethical and national security concerns. AI tools may disrupt several industries from the music industry and questions of copywriting to manufacturing and human resources. Many questions remain around AI, including inaccurate decision-making and algorithmic bias (e.g. facial recognition doing a worse job of identifying Black female faces); lack of interpretability; information provenance (e.g. privacy concerns, deep fakes, and misinformation); and supply-chain issues. AI may also increase inequality if the large tech companies that own these AI tools consolidate their wealth and dominance. To maintain American leadership in AI and ensure a just integration of technology, the federal government, including the national labs, should work with technologists and other stakeholders to establish a safe and ethical structure for AI development. While there are a range of plausible scenarios of how this new technology transforms the economy and our workforce, substantial American leadership and public investment are needed to secure our competitiveness and national security while also ensuring that all U.S. citizens are uplifted by these changes and safeguarded against risks.

AI could fundamentally alter the U.S. labor market

AI may lead to fundamental changes in the U.S. labor market, and with its recent advancements, it is increasingly likely that the future of AI is the future of work. With AI tools, the economy may see potentially large savings in labor costs and productivity gains, leading to a possible 7% annual increase in global GDP.[200] AI

technologies could influence nearly every sector in the economy, which could decrease employment in certain sectors while expanding opportunity in others.

The tasks that AI targets may lead to job polarization, but recent work also suggests that tools like ChatGPT can narrow the productivity gap between lower skilled workers and those with more skills—potentially growing the middle class. Because routine tasks that are most susceptible to AI are predominantly in middle-paid occupations while non-routine tasks are in low and high-paid occupations, middle-income jobs may be most likely to change with an increase in AI tools.[201] However, a recent study showed that ChatGPT helped narrow the productivity gap between lower skilled workers and workers with more skills in a customer service context and could point to AI providing skills to grow the middle class.[202] High skill occupations are also exposed to AI tasks that involve detecting patterns, making judgment, and optimizing, such as clinical lab technicians, chemical engineers, optometrists, and power plant operators.[203] Thus, technological advances will impact the labor market in complicated and uncertain ways.

History (e.g. the advent of the dishwasher or the internet) shows that technological developments do not destroy overall employment but can render some roles obsolete and provide others with opportunities. Women are more at risk than men from losing their jobs to AI or other digital technologies for many reasons, including many that parallel those of gender inequities more broadly in STEM and in leadership positions (e.g. gender stereotypes).[204] The International Monetary Fund also calculated that a higher percentage of jobs (11%) held by women than by men are at risk for elimination due to AI and other technological advances. There have been reports of AI algorithms in hiring

processes being biased against women because of the data used to train the algorithms.[205] We must also account for complexity because AI will impact the working lives of women in different cultures and labor markets differently. AI has the potential to mitigate the corporate gender gap that broadly mirrors the STEM gap by removing bias in recruiting, reviews, and promotion decisions and by improving retention of female employees.[206]

Educating, training, and reskilling to meet the new challenges of an AI-informed and augmented labor market will become increasingly important to avoid job loss, especially for women and other historically disadvantaged groups.[207] Educating the future workforce to prepare people early on will be important, in particular increased gender and racial equity efforts in STEM fields to ensure groups are not left behind. Research conducted by the World Economic Forum and BCG showed that 95% of at-risk U.S. workers can be retrained for jobs that pay at or above what they make now and offer growth potential. Reskilling would be costly, but companies could profitably reskill 25% of their workforce—and 77% of workers could be retrained through government programs or incentives with a net cost benefit.[208,209] Further, Congress could adopt tax policies that encourage "human labor augmentation" within firms rather than ones that incentivize the substitution of technology for human labor and skill.[210]

To maintain American leadership in AI, the federal government should work with technologists to establish a safe and ethical structure for AI development

With these rapid developments in AI, both the Biden administration and Congress have begun working through what role the federal government can and should play in this space. In this exploding field, technologists are looking for structure and guidance from the government on safe and ethical AI development

while maintaining their own competitiveness. Sam Altman, the CEO of OpenAI, which created ChatGPT, went so far as to ask for government regulation of AI in a Senate hearing in May.[211] A multi-stakeholder approach is thus necessary with engagement from the government, private sector, technologists, and academia.[212] For example around AI and its impact on vulnerable groups (e.g. through its use in health care or due to privacy concerns), governments should create and encourage policies that consider this impact. Institutions have an essential role in fostering skill-equalizing work environments for women and other historically marginalized groups. The U.S. federal government can and should be at the forefront of coordinating a safe and ethical deployment of AI within the labor force and economy given our substantial density of AI technologists in Silicon Valley and its possible use cases across government and society.

Socially optimal applications of AI also provide an opportunity for governments to use the large datasets that they have access to combined with their need to make decisions under uncertainty to make better policy.[213] For example, Kleinberg and others found that for the decision on allowing a criminal defendant to post bail or requiring them to remain in prison, a machine learning algorithm suggests welfare gains for either crime reduction (up to 25%) or reduced incarceration (up to 42%) when compared to decisions made by a judge only.[214] Work has also shown that AI improved the targeting of COVID-19 relief in Togo using machine learning, satellite records, and mobile phone data.[215] The U.S. federal government has already begun to implement AI. For example, the Internal Revenue Service (IRS) uses it to improve taxpayer wait times, and the Centers for Medicare and Medicaid Services (CMS) has created AI competitions to predict health outcomes using Medicare data.[216]

Other work is also underway in the Biden administration and Congress to root out bias and promote equity and mitigate threats posed by AI—and should be built upon to further solidify American leadership in safe AI deployment. The Biden administration put out a blueprint for an AI bill of rights focused on five principles: safe and effective systems; algorithmic discrimination protections; data privacy; notice and explanation; and human alternatives, consideration, and fallback.[217] In February 2023, President Biden issued an executive order directing federal agencies to root out bias and promote equity in the design and use of new technologies including AI.[218]

Simultaneously, Congress has been ramping up efforts to understand AI and lay the groundwork for regulation. Bipartisan Senate and House caucuses complement work done in the administration and have taken leadership on organizing Member and staff-level briefings to increase AI literacy on Capitol Hill. Initial legislative proposals are currently underway.[219,220]

The research and development infrastructure in the U.S. has a strong role to play in AI safety and development

Further, the Biden administration is making large investments in AI research and development (R&D), and in May 2023, the National Science Foundation (NSF) announced $140 million in funding for seven new National Artificial Intelligence Research Institutes as part of a cohesive cross-government approach to address AI related opportunities and risks.[221] The new AI Institutes will advance foundational AI research on ethical and trustworthy technologies and on solutions and innovations on cybersecurity, climate change, the brain, and education and public health—all while supporting the development of a diverse AI workforce.

Responsible AI R&D is essential to execute science, energy, and security missions, and these efforts will require large public investments with associated substantial public benefits. The Department of Energy (DOE) has the capabilities and experience to provide leadership in this effort. DOE has proposed a new initiative to lead the nation and the world on trustworthy AI development: FASST or the Frontiers in Artificial intelligence for Science, Security, and Technology for the Nation. To initially fund this effort, a new research line item for DOE is necessary with at least $1 billion per year.[222] In consultation with the White House Office of Science and Technology Policy (OSTP), NSF has created a complementary roadmap for a National AI Research Resource (NAIRR) to enable the academic community to better utilize and expand AI within their own research.[223] In addition to the academically-focused NAIRR, the federal government should explore ways to enable small and medium size firms to access, use, and interpret AI tools.

The potential for other countries to get ahead of the U.S. and for malicious actors to use AI for malicious purposes highlights the need for the U.S. R&D infrastructure to understand how AI will impact all aspects of society from the societal impacts of wide-ranging AI use—particularly in the labor market—to impacts on democracy like data and election manipulation and privacy concerns.[224] Recent bipartisan legislation aims to protect Americans' data from unfriendly foreign nations. The bill would build upon federal government priorities to protect American health care records, geolocations, web browsing activity, and other information that malicious actors could use to harm American people and interests.[225]

Union representation supports the middle class while expanding worker power that can balance out corporate consolidation

Workers get significant economic benefits from labor unions, even if they are not members of a union themselves. While union membership rates among workers remain at historic lows, recent years have also seen increased union activity and a favorable turn in public opinion towards labor organizing.[226] New union organizing reflects a growing awareness of the economic benefits that unions have to offer all workers, including those who are not union members. Together, these efforts offer another way to counterbalance the growing trend of corporate consolidation that has for many decades tilted power in the economy in favor of wealthy companies and their shareholders.

Unionization brings higher wages, better benefits, and improved working conditions

Union workers earn an average of 10.2% more than their non-unionized peers even when comparing workers with similar education, occupation, and experience levels.[227] Unionized workers are also 18.3% more likely to have employer-provided health insurance compared with their non-union peers.[228] Moreover, employers for unionized workers pay 77.4% more per hour worked towards the cost of health insurance.

Workers in unions have more control over their schedule. Unionized workers are over 10 percentage points more likely than their non-unionized counterparts to know their work schedules more than a week in advance.[229] Getting work schedules earlier allows workers to make arrangements, such as for child care, sufficiently enough in advance to balance both work and care responsibilities.

There are broader spillover economic benefits for all workers in industries with high rates of unionization—even if individual workers are not themselves in a union. Unions set a standard for working conditions in industries in which they are prevalent.[230] If employers have to compete for workers who have a good chance of getting a union job, non-union employers have to pay higher wages and offer better benefits to attract and retain workers. As a result, average wages are higher in highly unionized industries even if a worker is not themselves in a union.

Unions play a critical role in narrowing racial and gender economic disparities

Today, unions play a critical role in narrowing racial economic disparities. For example, Black, Chinese and Latino workers have a long history of organizing for better wages and working conditions, even when they were excluded from established unions and lacked labor protections.[231,232,233] Many unions excluded Black workers and other workers of color—either explicitly or by creating unreasonably high barriers.[234,235,236,237] With the formation of the explicitly multiracial Congress of Industrial Organizations in 1935 and the passage of the Civil Rights Act in 1964, unions have increasingly become more inclusive. Today, 11.5% of Black workers are members of a union, the highest rate of any major racial group.[238]

Union representation narrows racial pay gaps. Collective bargaining increases the power of marginalized workers by standardizing pay grades based on skill level and strengthening protections against workplace discrimination.[239] Unionization increases pay for Black and Hispanic workers by 13.1% and 18.8% respectively, which is a greater wage premium than the 10.2% average wage boost for all unionized workers.[240] Increased income thanks to unionization also narrows racial wealth gaps.[241]

For example, Black households with unionized members have median wealth that is three times that of non-union Black households. By comparison, white households with unionized members have median wealth that is less than two times that of non-union white households.

In addition, union representation is important for women's economic security. In select industries such as teaching, unions have been shown to narrow gender pay gaps. Overall, hourly wages for female union workers are 4.7% higher than for their non-union counterparts.[242] In the female-dominated service industries, union workers make 52.1% more than their non-union counterparts.[243]

Supporting workers' right to organize is a key way to help boost wages and grow the middle class

Protecting and supporting workers' right to organize is critical to boost wages and improve job quality because unionization has such a positive impact on workers' wages. To bolster workers' ability to organize themselves, Congress and the Biden administration are taking a number of actions, including through the bipartisan Infrastructure Investment and Jobs Act and through the Inflation Reduction Act.

The Inflation Reduction Act incentivizes projects that pay prevailing wages and use registered apprentices, which together will strengthen demand for union workers.[244] Also, many of the jobs created by the bipartisan Infrastructure Investment and Jobs Act will be subject to the Davis-Bacon Act that sets wage and benefit rates for construction workers supported through federal contracts at existing market levels and ensures that they are not paid poverty wages.[245] In addition, President Biden issued an executive order requiring that all large federal construction

projects include a project labor agreement, a collective bargaining agreement for contractors and labor groups on certain projects worth more than $35 million.[246] Together, these efforts can help more workers get secure union jobs that create a pathway to the middle-class.

Historically, higher union representation is correlated with a larger and stronger middle-class, with declining unionization in recent decades often highlighted as one driver of greater income inequality.[247] Using policy to increase unionization can help reinvigorate both the American middle class while also investing in the clean energy transition, domestic manufacturing, and improving critical infrastructure. The Protecting the Right to Organize (PRO) Act, which passed the House during the 117th Congress, would further strengthen workers' ability to organize.[248]

CHAPTER 4: ENSURING FINANCIAL STABILITY AND ECONOMIC FREEDOM

As the United States strives to maintain the promise of opportunity and prosperity for all Americans, consumer protection, fair market competition among businesses, and financial stability are central to that goal. However current trends in bank behavior, monopolistic business practices, and private equity's increasing footprint throughout the economy—ranging from retail business, to nursing homes and hospitals—threaten this promise. The Biden administration and past congresses have taken steps to address each of these issues. Now, Congress must work with the administration to help guarantee a sound banking system, growth of stable, well-paid jobs, allow more Americans a fair chance at entrepreneurship, and ensure a free and competitive market that protects Americans from exploitative overcharges on goods and services.

Financial reforms are needed in light of the Silicon Valley Bank crisis

The recent failures of Silicon Valley Bank (SVB), Signature Bank, and First Republic Bank serve as a reminder of how contagion can threaten the U.S. banking sector, and in turn, the wider economy. The combined size of these three banks totaled $532 billion, which is larger in terms of total asset size than the 25 banks that failed during the 2008 financial crisis.[249] Silicon Valley Bank alone was the second largest bank failure in U.S. history.[250] Poor management and internal structure have been cited as the key reasons for the banks' failure. But these institutions, despite their size, were not subject to strict scrutiny due to recent changes in

U.S. law made under former President Trump. Fortunately, U.S. policymakers and regulators acted decisively to ensure that any risks to the broader economy were contained. This section outlines why these failures happened and how more appropriate regulation can help identify and address potential issues in the banking sector, to protect against future financial instability.

Recognition of interest rate risk is key to ensuring banking sector stability in a time of high inflation

As interest rates increase, the value of assets such as Treasury bonds or loans that banks hold on their balance sheets decline. As this occurs, the bank's net worth can decline and the risk that it will become insolvent and fail to pay back its depositors will rise. A bank's solvency is of the greatest concern to account holders with balances above the FDIC's $250,000 limit on insurable deposits, who may panic at signs of decline in asset value and pull their funds, further increasing stress on the bank.[251] This was a central issue for SVB which had 88% of deposits uninsured, as well as Signature Bank which had 90% of all deposits uninsured in the last quarter of 2022.[252] First Republic had 68% of all deposits uninsured, an amount that was significantly lower than the other two failed banks.[253] However, First Republic was known for issuing large, and long-term loans with low interest, which fell steeply in value as the Federal Reserve increased interest rates, further reducing bank value and sparking fear of insolvency among its uninsured depositors.[254, 255, 256]

Although there have not been any more bank failures in 2023 since First Republic Bank, some analysts believe that other banks may harbor a series of issues which have yet to be discovered.[257] If the Federal Reserve continues to raise its benchmark interest rate as expected, it is possible that other banks and financial institutions with similar asset compositions will come under added stress, if

they have failed to appropriately guard against their interest rate risk.[258] If these banks start to buckle, this could depress spending levels across the economy, suppress both employment and wages, and affect people's retirement savings.[259]

Previous rollbacks of financial regulations left significant regulatory gaps and insufficient supervision of SVB

Following the 2008 financial crisis, Congress passed the Dodd-Frank Act (Dodd-Frank), which aimed to prevent the sort of risky practices at financial institutions that had contributed to the crisis. These reforms introduced enhanced prudential standards (EPS) for financial institutions termed "systemically important financial institutions" (SIFI). Essentially all commercial banks holding at least $50 billion in assets, including SVB, were required to maintain higher levels of assets relative to their liabilities, had higher levels of federal oversight, and had to pass stress tests that gauged their ability to weather financial shocks.[260,261] The requirements allowed for greater protection of the financial system from widespread bank failure and guarded against the need for banks with poor practices to be bailed out by American taxpayers. They have also been cited as having created the conditions for continued health of the banking sector despite macroeconomic instability during the pandemic.[262]

However, in 2018 the Trump administration and a Republican Congress passed the Economic Growth, Regulatory Relief, and Consumer Protection Act (EGRRCPA) which among other provisions, increased the threshold for banks that qualified as SIFIs from $50 billion in assets to $250 billion, claiming that Dodd-Frank regulations were too burdensome. As a result of this, less than 10 banks remained under greater levels of oversight that Dodd-Frank had initially extended to thousands of large banks. [263]

This rollback weakened regulations that could have helped protect the wider financial system against poor management practices at SVB. Following the EGRRCPA's passage, SVB was allowed to set lower requirements for both minimum asset and liquidity levels. In addition, the new law reduced supervisory requirements for banks of SVB's size at the time, as well as made it harder for regulators to step in when concerned about mismanagement.[264] In addition, due to the regulatory changes made following EGRRCPA, the Federal Reserve could not quickly implement certain risk management requirements and supervisory tools to keep up with the bank's rapid growth. As a result of these regulatory rollbacks, SVB had not undertaken a Federal Reserve stress test, despite having more than $200 billion in assets at the end of 2022.[265,266,267] In a review of SVB's failure, the Federal Reserve Board of Governors highlighted issues within the bank's risk management program alongside its lack of a Chief Risk Officer for a period of months in 2022. [268] In addition, the review cited the bank's overreliance on a "highly concentrated business model" based in depositors from venture capital-backed firms and start-ups whose access to credit and ability to grow was reliant on the low-interest rate environment, and "a reliance on uninsured deposits" with more than 80% of deposits exceeding the Federal Deposit Insurance Corporation's (FDIC) threshold. [269]

Passage of the Secure Viable Banking Act and a consideration to change Accumulated Other Concentrated Income reporting is an important first step to ensuring avoidance of future bank failures

In 2018, the JEC Democratic staff under Senator Martin Heinrich highlighted how SVB would be exempt from regulatory scrutiny following the proposed regulatory rollback.[270] During the 118th Congress, Senator Heinrich has joined other Congressional Democrats in co-sponsoring the Secure Viable Banking Act,

which would reinstate the $50 billion threshold for EPS.[271,272] In line with the Federal Reserve's findings on SVB's failure, this legislation would enable regulators to more effectively execute their supervisory duties. Given the role played by the ratio of insured to uninsured deposits, it is also imperative that federal regulators require banks to create risk models and undergo stress testing to determine their levels of exposure in the event of a deposit run.

Furthermore, policymakers may consider changing "Accumulated Other Concentrated Income" (AOCI) reporting requirements for larger banks, to enhance assessment of interest rate risk. This accounting measure allows regulators to assess the change in the value of a bank's "assets for sale" (AFS) portfolios, which include Treasuries and other fixed-income securities whose value tend to fluctuate more readily with shifts in interest rates.[273,274] However, the value of these assets will not be recorded in the bank's net income measure until those assets are sold. Thus, lack of AOCI reporting may obfuscate interest rate risk exposure and regulators' view into potential volatility in a bank's capital.[275,276]

By 2019 SVB, Signature Bank, First Republic Bank, and other banks with total assets below $700 billion had the ability to "opt out" of reporting AOCI to regulators.[277,278] Each of the three failed banks did opt out when given the choice. Thus, prior to the banks' failures, regulators could not as readily assess or respond to potential losses to bank equity value, linked to increasing interest rates as they may have given AOCI reporting.[279,280] Requiring AOCI reporting for a wider range of large banks could therefore provide regulators with tools to help prevent future bank failures or crises in the banking system.

Curbing junk fees protects consumers from exploitation and enhances business competition

In recent years the proliferation of deceptive, additive fees has cost U.S. consumers billions of dollars. The Federal Trade Commission (FTC) terms such fees as "junk fees," and defines them as unfair or deceptive fees charged above the good or service's base cost. These fees are for additional goods or services that have too little to no added value to the consumer, or that the consumers would reasonably assume to be covered within the overall advertised price. For example, it is estimated that consumers have lost at least $28 billion per year in payment of additional fees for cable service in 2018.[281] In 2021, the Consumer Financial Protection Bureau (CFPB) reported that fees for overdrafts and nonsufficient funds in consumers' bank accounts had hit approximately $15.4 billion in bank revenues the prior year.[282] The CFPB also issued a report showing that late fees on credit cards had cost consumers $12 billion in 2020.[283]

Junk fees have wider implications for the overall market, increasing inequality and harming competition. While junk fees can eat away at the income and savings of all Americans, low-income communities and communities of color are disproportionately burdened by such fees. In addition, hidden fees can cause consumers to choose a good on the basis of a lower perceived price, and which they may not otherwise have chosen if they had been given the full price up front.

Junk fees are harming vulnerable communities

Empirical analysis in recent years has shown that low-income communities and communities of color are hit the hardest by junk fees. For example, a 2022 analysis from the Consumer Financial Protection Bureau (CFPB) found that on average, consumers residing in the lowest-income neighborhoods paid two times more

in late credit card fees than those living in the highest-income neighborhoods. Additionally, in majority-Black neighborhoods per 2010 census data, the average credit card late fees paid in 2019 were higher when compared to neighborhoods where Black individuals were in the minority.[284]

Other evidence shows how consumers of color, as well as low-income and young consumers, are adversely impacted by bank overdraft fees. A 2021 report from the Financial Health Network (FinHealth) shows that Black and Hispanic or Latino households spent $1.4 billion and $3.1 billion in overdraft fees, respectively, in 2020. In addition, FinHealth found that the probability a low- to moderate-income household had an overdraft on their checking account was almost twice as high as that of a high-income household in 2020. They also found that young people, who on average have less wealth and income than older Americans, were more likely than people aged 65 and older to have an overdraft on their account.[285]

Drip pricing hides the true cost that consumers pay, which harms consumers and hurts businesses that provide transparent pricing

By diminishing pricing transparency, businesses can deceive consumers from selecting the lowest overall price. This practice has been termed "drip pricing," where businesses will show an initial base price, and subsequently add on fees as the consumer moves through the online purchasing process. At the end of this process, the price that the consumer ultimately pays for the good or service is higher than the initial base price. The consumer also may not be able to compare this final, true price with other providers' final prices without taking additional time to move through the other providers' purchasing process. Research has found that consumers may be unwilling to look into other

providers' offers after spending substantial time on the drip pricing purchasing process.[286,287,288]

It follows that businesses engaging in transparent pricing could also be harmed by this practice, as transparent prices may appear higher than prices with hidden fees. This creates a perverse incentive where businesses feel the need to adopt drip pricing to protect their market share and avoid the opportunity cost of forgoing the higher profits that the practice offers.[289]

Enhancing regulation around junk fees will improve market conditions for businesses and consumers alike.

Recent studies have shown that regulation of junk fees have led to improved outcomes for consumers. For example, one study examining impacts of the CARD Act regulation of credit card fees found that it saved consumers $12.6 billion per year in borrowing costs.[290] The largest impacts of these savings were on the lowest credit score borrowers.[291] Research has also found that regulation that limits the magnitude of drip pricing increases consumer surplus.[292]

In the face of an increasing presence of junk fees, the Biden administration has introduced multiple measures to protect consumer well-being and increase competition among firms. In October 2022, the CFPB effectively banned the use of surprise overdraft fees and depositor fees by banks.[293] Then in February 2023, the CFPB proposed a rule to reduce the burden of excessive credit card late fees on Americans.[294] Most recently, in July 2023 the CFPB and Office of the Comptroller of the Currency (OCC) found that Bank of America (BoA) had illegally charged customers multiple overdraft fees on single transactions, opened unauthorized credit card accounts using their customers' sensitive information without their consent and charged fees on these

accounts, and withheld promised bonuses from credit card customers.[295] As a result, the CFPB ordered BoA to pay over $80 million to consumers, as well as $90 million in penalties to the CFPB.[296] The Biden administration's OCC also charged BoA $60 million in penalties for the illegal overdraft fees.[297] Moreover, in January 2023, the Biden administration's Federal Communications Commission began requiring internet companies to display an easy-to-understand label that includes all monthly fees.[298] This will enhance business competition by helping customers see which companies offer the cheapest prices. The FTC has also issued notices of proposed rulemaking regarding companies' "deceptive or unfair acts or practices relating to fees" and has opened investigations and filed lawsuits against companies that have charged illegal junk fees or charged Black and Latino consumers higher financing costs and fees. [299,300]

Expanding right to repair will increase market competition and support small business while enhancing economic freedom

In the past, Americans have been able to repair their own personal items, equipment, and vehicles themselves, or to choose to have these products repaired through an independent repair shop without restrictions. However, various modern manufacturers now limit this freedom, forcing consumers instead to pay a small number of major dealers to provide necessary parts or to repair their equipment. This comes at a large cost to consumers, including those who use the product for their business. According to the U.S. Public Interest Research Group, restrictions on repairs could cost an annual amount of $40 billion in the United States, or $330 per family on average.[301] In response to this wave of restrictive repair rules, 28 states across the political divide have introduced legislation that would codify the "right to repair" for a range of different products.[302,303] Expansion of the right to repair protects consumer choice, creates market conditions for greater

competition and lower prices, and allows for a better economic environment for small business—whether they be the product user or repair service provider.

Repair restrictions limit competition in the repair services market

Restrictions on repairs are imposed on what the Federal Trade Commission (FTC) calls "aftermarkets." These are markets for parts and services offered after the product's initial purchase. Some product manufacturers restrict the aftermarket to their company's supply of parts and services or will only allow an affiliate company to supply such parts and services.[304]

Current law prohibits companies from engaging in practices that restrict competition in aftermarkets. However, if these practices are deemed "procompetitive" a company may carry them out under current law even if they restrict competition. Procompetitive practices are those that a company needs to employ in order to ensure consumer and servicer safety, protect user privacy and data, allow for enhanced production and distribution, or maintain producer patented rights to their intellectual property.[305]

Frequently, producers cite a procompetitive reason for their need to engage in practices that restrict aftermarket competition.[306] However, the FTC found in their May 2021 report that these claims are not well-supported, which the FTC Chief Counsel for Development and Innovation reaffirmed in recent testimony.[307,308] Thus, manufacturers' reasoning for limiting competition does not appear to be as necessary for product success and safety as they claim. Meanwhile, companies imposing repair restrictions gain more market power and an unfair advantage over competing firms in the aftermarket. These practices can harm the U.S. economy through multiple sectors, and limit access to prosperity for a greater number of Americans.

Farmers, small businesses, and consumers have been harmed by restrictions on repairs

As repair restrictions have become more common, they can lead to a less diversified economy and market conditions where business stems from only a few large companies. The result is an economic system that yields profits primarily to high-earning suppliers, increases the cost burden of repairs on more Americans' incomes, and inhibits access to wealth-building opportunities in the United States by reducing small business formation.

Independent repair shops currently maintain a significant share of vehicles in the United States and support local economies.[309] They are also especially important to rural areas that do not have franchised dealerships.[310] Additionally, many Black-owned small businesses are in the repair and maintenance industries.[311] However, independent car repair businesses face limited access to the repair market due to the proliferation of certain repair restrictions. For example, as cars become increasingly reliant on proprietary software, these businesses face barriers to operation that can threaten their important role in the U.S. economy.

Farm equipment is another area where repair restrictions are negatively impacting vulnerable consumers and small businesses. As equipment like tractors and combines have become increasingly technologically advanced, farmers have called out manufacturer business practices that have stopped them from repairing their own equipment. Being unable to make these repairs themselves can force farmers to wait multiple days for the company's required servicer to come and complete repairs. This loss in workdays can lead to a significant loss in revenues.[312]

Finally, there is increasing concern regarding the right to repair for wheelchairs and medical equipment. Currently, some electric

wheelchair suppliers are limiting access to wheelchair components, as well as service manuals.[313] More broadly, since the COVID-19 pandemic, advocates have been calling on medical equipment manufacturers to allow for more accessible repair options, including allowing consumers to repair medical products at home.[314,315] Restricted access to such repairs leave disabled as well as ailing Americans with little options for maintenance, posing dangers to their health.

The Biden administration has acted through executive order and agency efforts to protect consumers, farmers, and small businesses from harmful repair restrictions

Right to repair policies build off of the Biden administration's work to increase economic liberty for all Americans by strengthening competition. As part of a broader whole-of-government effort to end anticompetitive behavior in the economy, the Federal Trade Commission has increased its enforcement of companies that violate the right to repair.[316,317] For example, in summer 2022 the FTC issued orders for three companies, including motorcycle manufacturer Harley-Davidson, to remove clauses voiding their warranties if consumers used independent repair shops.[318] This increased enforcement comes as other federal entities crack down on anticompetitive behaviors that harm consumers and small businesses.[319,320] Increasing competition, including through the right to repair, helps grow the economy by giving consumers the freedom to choose where to take their business.

The increasing presence of private equity is harming jobs and services in the real economy

Private equity investing—when investors purchase partial or full ownership of companies whose shares are not listed on a public

stock exchange—was once seen as a "niche" investment practice taken up by financial institutions, corporations, or individuals with high levels of wealth.[321,322] However, shifts in private equity investing began to occur in the early 1980s, as firms specializing in private equity fund management began to emerge.[323] Today private equity firms are described as a "critical component" of the greater financial system.[324] S&P reports that private equity firms' assets under management (AUM) grew by over 400% between 2010 and 2022, reaching $7.6 trillion in June of 2022.[325]

In addition to their increased influence in the financial sector, growth in private equity firm acquisitions is impacting key components of average Americans' lives. For example, private equity firms currently own at least 30% of all for-profit hospitals nationwide.[326] Moreover, private equity investment and ownership has become highly prevalent in low-wage industries including the retail and food service industry, affecting jobs, earnings, as well as prices and quality of goods and services.

Fund structure rewards managers for high-risk deals

There is concern among regulators that the common private equity fund structure incentivizes managers to seek out investments that have a higher risk of failure, as they aim to maximize profits.[327] In order to raise equity capital to make investments or acquisitions, private equity firms commonly set up a fund under a limited partnership with investors. The structure of these limited partnerships exposes general partners to low levels of risk, while allowing them to reap high rewards for a profitable deal. Individuals managing the firm act as the general partners of the fund, while outside investors act as the limited partners. The limited partnership yields the general partners greater control over the fund's management. Although the majority of the fund consists of investments from these outside investors, general partners

receive a larger share of the profits relative to their investment share. Typically, they earn carried interest on the returns equal to 20% of profits from fund investments as well as fund management fees. Therefore, private equity fund managers will have a small loss relative to the fund if the investment does not yield returns. However, fund managers will gain substantial profits relative to their investment, and those profits increase with higher returns, thus incentivizing managers to make riskier investments.[328,329,330]

Private equity purchases are often highly leveraged, and place the burden of debt repayment on the acquired company

Concerns over high-risk behavior also stem from the level of debt that private equity firms use when making acquisitions. Private equity acquisitions tend to be carried out through "leveraged buyouts," or buyouts where fund equity makes up a small fraction of the acquisition, with the larger fraction coming from debt. Often, 70% of the buyout will be carried out with debt, and 30% with equity.[331] The debt then frequently becomes part of the acquired company's liabilities, which it must pay off.[332] When revenues from the acquired entity are insufficient to pay off this debt, the result can be bankruptcy for the acquired entity, which in turn leads to job loss and loss of the services that the acquired entity had provided to the economy.[333] Policymakers, economists and advocates have noted the impact that such deals have had in major sectors including retail, food service and health, as discussed in greater detail below.

Private equity acquisitions are concentrated in low-wage industries, threatening job stability and pay for workers

Private equity firms have tended to focus their acquisitions on low-wage industries. In 2021, 1.5 million food service workers were employed by companies owned by private equity firms. The industry with the second greatest number of workers under a

private-equity-owned company was the retail industry, at 1.1 million workers, followed by the security and health care industries, which collectively held 1 million workers.[334]

While the number of workers in private equity-owned firms need not be a concern on its own, recent empirical evidence has shown that private equity firm ownership can harm worker wages and employment. For example, on average, workers' wages have been found to decline by 1.7% after a private equity acquisition.[335] Moreover, according to one study, within the first two years of private equity ownership, a company's employment declines by 4.4%.[336] Other studies have found high concentrations of job loss in the retail industry, and a net decline in employment among restaurants, as a result of private equity buyouts.[337,338]

Private equity acquisitions' impacts on services are especially concerning in the health care sector

Private equity's presence in the health care sector has been building since the 1990s, and has expanded its reach to different areas of the health care system. Previously, the health care sector was predominantly made up of nonprofits and public entities.[339] However, private equity is increasingly becoming a major player. Beginning with nursing homes and hospitals, which provided firms with consistent, large revenue streams, private equity has since expanded into other areas of the health care system including investment in or ownership of private physician practices, urgent care clinics, and independent emergency departments.[340] Notably, private equity investment in health care increased from $5 billion to $100 billion between the years 2000 and 2018.[341]

While research on the impact of private equity ownership of medical institutions is limited, some evidence has pointed to concerning trends. For example, private equity acquisitions of

hospitals appear to lead to lower-quality care when there is a high concentration of private equity ownership in the market.[342] Research has also shown that private equity ownership of health care establishments, ranging from private physician practices to nursing homes, has been associated with higher profits paired with potential over prescription of procedures, and shortages in medical devices.[343,344] A study specifically focused on the impact that private equity acquisitions have on nursing homes also found that private equity ownership was associated with higher rates of mortality, reduced compliance with Medicare standards of care, greater incidence of negative outcomes for patient health, and lower ratios of nurses to patients in their care.[345]

Given these results, an area of particular concern is private equity firms' increasing ownership of hospitals in underserved areas. A recent study found that hospitals under private equity ownership in 2018 tended to be in lower-income and rural areas. In line with the research referenced above, they also tended to have lower patient satisfaction scores and had a lower ratio of employees-per-occupied beds.[346] Recent studies have found private equity-owned rural hospitals also tended to be more concentrated in the south, with Texas having the greatest number of private equity owned hospitals and New Mexico having the greatest number of private equity-owned hospitals relative to total hospitals in the state.[347]

CHAPTER 5: ECONOMIC AND HEALTH RISKS POSED BY CLIMATE CHANGE

Climate change represents an existential threat to our way of life, including massive economic damages and health consequences from extreme events and transition risks as we move to clean energy. While fires in the western United States have been increasing in magnitude and frequency over the last several decades, the large fires in Canada in June 2023 showed that the smoke from these climate-exacerbated extreme events can and will increasingly affect the eastern United States. As more smoke impacts large population centers in the east, there will be potentially large impacts on our health care systems and in particular, on vulnerable populations' health, such as increased incidence of childhood asthma and increased heart and lung problems in historically disadvantaged groups.

To address the underlying driver of climate-exacerbated extreme events, the Biden administration has been at the forefront of regulating carbon emissions. The standards that the Environmental Protection Agency (EPA) proposed on May 11, 2023 for fossil fuel power plants will improve public health and provide substantial economic benefits while tackling the climate crisis.

Physical and transition risks from climate change jeopardize everyone's finances, from businesses to households and pension funds to local and Tribal governments. However, these different groups have significantly different capacities to respond to climate related challenges. To inform decision making across scales, data on climate risks and a workforce capable of interpreting that data accurately are sorely needed.

Climate change also threatens our public lands and the economic benefits that they provide through tourism, the recreation economy, and health advantages of being outside. Furthermore, catastrophic fires and other climate change impacts can harm these public lands, and they can shift forests from acting like sponges and soaking up carbon to being sources of atmospheric carbon, accelerating climate change and increasing wildfire risk.

Climate-exacerbated fires lead to massive economic damages

Climate change is making air quality worse around the country and across the globe, which is directly making people sicker. Within the United States, one clear and visible cause of poor air quality are the more frequent, destructive, and longer-lasting wildfires that fill the air with harmful smoke, including particulate matter.[348]

Since the 1980s, but especially in recent decades, western states have felt the increasing negative impacts of wildfires as they burn for longer and with more frequency.[349,350] The smoke that blanketed the eastern United States in early June 2023 underscores that the impacts of climate change and the fires it exacerbates will be felt nationwide.[351]

Altogether, research shows that wildfires in the United States cause tens to hundreds of billions of dollars in damages each year, which is a low-end estimate as there are many related market and non-market costs that we do not yet have reliable estimates for.[352] Direct expenditures include suppression and evacuation costs, and direct losses include natural resources; structures and property; utilities and infrastructure; loss of life, injuries, and health impacts from smoke; and economic impacts during incidents. Indirect economic costs are even more numerous. Indirect expenditures and loss of value are felt in our ecosystems and landscapes,

including necessary ecological restoration and loss of carbon capture abilities by the environment. Economic costs and losses include increased insurance premiums or loss of coverage and economic consequences across a range of labor and property concerns. Mitigation investments to try and address rising health and wellbeing costs are large and growing.

People face substantial health consequences from fires

Climate change worsens air quality through increased smoke from more frequent fires, hotter temperatures that increase smog, and many other effects.[353,354] Higher levels of air pollution, especially from fires, lead to premature deaths, more frequent pre-term births, and more asthma attacks, lung infections, and heart disease.[355,356,357,358,359,360] For wildfires in particular, the effects of heavy smoke on public health are harmful and most obvious, but fires also contribute to less visible but still damaging air pollutants that are more widespread, affecting air quality across the United States.[361]

The following graph shows that air pollution from wildfires has increased since at least 2006, with pollution from fires in western states driving the overall increase. Now eastern states are also seeing how damaging wildfire smoke can be to daily lives.[362]

Air Pollution from Fires Has Gotten Worse in Recent Years, Especially in Western States
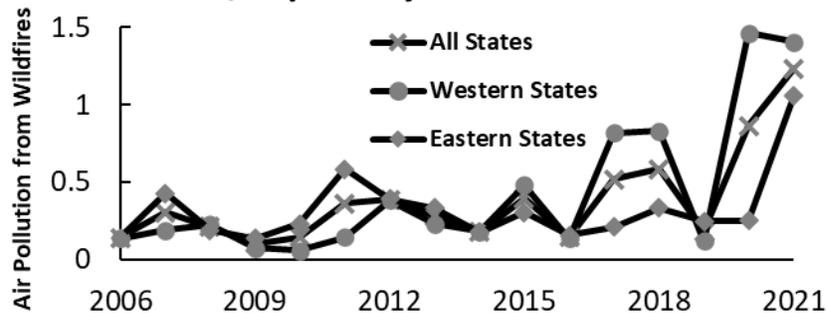
Source: O'Dell et al, 2019

Note: "Air Pollution from Wildfires" refers to annual mean smoke concentration in the contiguous U.S. in micrograms per meter cubed.

Fires also lead to large labor and learning losses

Fires can lead to increasingly costly labor impacts and learning losses. For example, workers who primarily do their jobs outside, such as agricultural or construction workers, are at risk for missed or diminished work days due to smoke. In California, one of the states hardest hit by large U.S. wildfires, Latinos make up 71% of agricultural workers, so this population subgroup is particularly hard hit.[363] All workers are at risk if they cannot reach their place of employment due to fires shutting down roads or if they need to take time off work to tend to their family or neighbors in the aftermath of a wildfire. Some may even leave the area altogether to mitigate their own future risks or to get a fresh start. A recent study showed that wildfire smoke reduced earnings in the United States by an average of $125 billion a year between 2007 and 2019, with a welfare cost of $92 billion.[364] Counties who have an above-median proportion of Black residents experience earnings losses that are about 60% larger. Students also suffer learning

losses if smoke or fires cause school closures or disruptions or if a family must temporarily evacuate.

Fires interrupt business and diminish property values

Fires directly and indirectly impact businesses and physical assets. Businesses' property and equipment are at risk from fires, but even if physical assets are not directly harmed, companies may face disruptions and supply chain issues due to evacuations, modified work hours due to wildfires and smoke, or road and transportation closures. Furthermore, even if a fire does not directly threaten a business, the utilities a business relies upon or their infrastructure may be impacted. Until utilities are repaired, many companies cannot operate or generate revenue to pay bills. Certain industries, like agriculture, ranching, forestry, and real estate may have their key assets threatened by fires and smoke. This can lead to diminished property values and increased insurance premiums for businesses and residences. This increased risk has recently led to two major insurance companies declining to insure new properties in California, putting additional burden on the FAIR Plan, a state-mandated insurance pool or a provider of last resort.[365]

Fires can deteriorate water quality and lead to erosion

Fires can also affect the quantity and quality of water during a fire and for years following. When a fire is actively burning, ash and pollutants can be deposited on streams, lakes, and reservoirs, and vegetation that holds soil in place and retains water is destroyed. Following a wildfire, rainwater can flush contaminants into water supplies. The destruction of vegetation makes landscapes more susceptible to erosion, landslides, and even flooding. Both natural and human-made substances can then be washed into water bodies and impact drinking water quality, discolor recreational waters, and potentially increase the risk of harmful algal blooms.[366] Due to the unpredictability of wildfires, planning for managing floods

and treating polluted water is challenging, and drinking-water utilities need information and tools to better prepare.

Addressing wildfire risks requires a holistic approach

Addressing wildfire risks requires a comprehensive strategy focused on better funding and staffing, proactive interventions, and better preparation in affected areas. Financial and policy bottlenecks, which are hindering more prescribed burning, must be addressed. More prescribed fires to minimize available fuels are needed on a large scale, particularly in the western United States where this approach has been less common than in the east.[367] One reason why states are reticent is because smoke from these prescribed fires counts towards a state's Clean Air Act (CAA) compliance. Currently the Environmental Protection Agency (EPA) classifies smoke from wildfires as "exceptional events," meaning that regulators can seek waivers to exclude this pollution from CAA compliance, and a recent EPA proposed rule suggests including prescribed fires under this designation as well. However, the process to exclude smoke from CAA compliance is labor intensive and happens slowly, so alternative policy solutions should also be investigated. In concert with more funding for prescribed burns, addressing this policy barrier would encourage more "productive" fire on the landscape. More funding for other preventative forest management practices like thinning would further lower fire risk.

While lowering fire risk through management is essential, we will still experience more fires and their impacts and need increased capacity to respond to these fires to protect people and property. Primarily, more funding is desperately needed to pay and retain firefighters. Six-hundred million dollars was included in the Bipartisan Infrastructure Law for temporary increases in firefighter pay, which has covered wildland firefighters since

October 2021. However, that funding is expected to run out by the end of the fiscal year, and so the U.S. Forest Service, Department of Interior Office of Wildland Fire, and Office of Personnel Management have collaborated on a draft legislative proposal to address these issues. The key pillars are increases in base pay for all wildland firefighters, half pay for firefighters while on deployment to a fire during their rest hours, increased caps for overtime pay available to wildland firefighters, and dedicated paid leave for firefighters to address physical and mental health concerns after deployment to a wildland fire.

The United States must build upon the landmark climate investments passed last year to facilitate clean energy transmission, clean up our power sector, and foster international climate action, while also working to recruit and retain more wildland firefighters who work on the front lines to prevent and contain these climate disasters.[368,369,370]

The EPA's new standards for fossil fuel power plants will improve public health while tackling the climate crisis

Carbon pollution not only impacts the climate but also the health of communities.[371] Ensuring we have clean air will improve lives and pay dividends for the U.S. economy. On May 11, 2023, EPA proposed new carbon pollution standards for coal and natural gas-fired power plants, which will deliver up to **$85 billion** in climate and public health benefits over the next two decades.[372] These standards will reduce carbon dioxide emissions and other pollutants from new and existing power plants, helping the United States achieve its climate goals while ensuring that people can breathe clean air. Importantly, the EPA estimates that these updated rules will have little impact on families' electricity bills.

Cutting pollution and emissions will save lives and improve health, and the EPA expects this rule to provide $85 billion in total climate and health benefits over the next 20 years

These regulations would help the United States avoid up to 617 million metric tons of carbon dioxide emissions over the next 20 years. Reducing fossil fuel emissions can profoundly impact people's lives, as many types of air pollution can cause serious and expensive health problems like premature deaths, pre-term birth, respiratory infections, and heart problems—all with associated household and health care costs. Cutting carbon emissions also reduces climate costs that come from changes in water supply and water quality due to both drought and extreme rainfall, the increased risk of storm surges and flooding along coasts, risks to the electric grid, and substantial disruptions to agriculture, including crop failures.

In 2030 alone, the lower emissions from this rule would provide $5.4 billion in climate and between $6.5 and $14 billion in health savings

In 2030 alone, the proposed standards would provide between $12 and $20 billion in climate and health benefits and prevent substantial health and economic costs across the U.S., including:
- approximately 1,300 fewer premature deaths,
- more than 800 fewer hospital and emergency room visits,
- more than 300,000 fewer asthma attacks,
- 38,000 fewer school absence days, and
- 66,000 fewer lost workdays.

The new standards would avoid 89 million tons of carbon dioxide emissions in 2030, which would be comparable to taking 22 million gasoline-powered cars off the road.

These new standards will benefit nearly every state but will be particularly important for states that are still heavily reliant on fossil fuel power plants

Florida, Texas, and Pennsylvania would see the largest climate benefits from this regulation with $557, $529, and $413 million in benefits respectively in 2030, but nearly every U.S. state would see tens to hundreds of millions of dollars in climate benefits.

The states with the largest potential climate benefits are also the states that would see the largest reduction in harmful carbon emissions. In Florida alone, the reductions in power plant emissions would be equivalent to keeping 2.3 million gasoline-powered cars off the road in 2030.

These new standards follow the best system of emissions reduction, utilizing cutting-edge technology

These new technology-based standards would require new fossil fuel-fired power plants to include technology in their construction that reduce harmful emissions. The proposal also establishes emission guidelines that include technological adaptations for states to pursue that would aim to limit carbon pollution from existing fossil fuel power plants.

As required by the Clean Air Act, this proposal balances the reduction in emissions alongside other factors like the available sources of energy, the costs of adaptation, and the range of existing technologies like carbon capture and storage and clean hydrogen. The EPA is also proposing to repeal the Affordable Clean Energy rule from 2019 because it does not reflect the best system for emissions reduction.

The economic benefits will likely be much larger, as reducing other pollutants can lead to better health outcomes

While the national-level health benefits are already large, the current calculations do not include the benefits of:

- fewer people having chronic responses to air pollution,
- the health effects from air pollutants not examined in the EPA's initial study,
- ecosystem effects,
- and visibility impairments, which affect outdoor recreation and national parks.

For context, the eastern U.S. experiences some of the largest fossil fuel-associated air pollution mortality globally, including 876 excess annual deaths of children due to lower respiratory infections across North America.[373] The impacts of avoiding these health and ecosystem issues are significant but are not included in the EPA's current analysis.

Reducing pollution from power plants will benefit many communities of color that historically have been exposed to dangerously high levels of pollution

Coal plants subject to the proposed standard are disproportionately located near Black communities and communities that are two times below the poverty level. The EPA is also aware of two existing power plants within Tribal jurisdictions that are potentially affected by this proposal. One is the Four Corners Steam Electricity Station on the Navajo Nation, which is within New Mexico's boundaries and will be retired in 2031. The other is Bonanza on the Uintah and Ouray Reservation located within Utah's boundaries and will retire in 2030. The new standards will help ensure localities most negatively affected by carbon pollution will become cleaner and healthier for their residents.

This proposal is also projected to reduce mercury emissions, which in turn will reduce mercury in fish that live in in waterbodies near affected powerplants. This reduction will most benefit communities that locally source their own food near affected powerplants, including minority and low-income households who are more likely to eat fish from the affected areas. Together, the EPA's new proposed rules for fossil-fuel power plants reflect a common-sense and best available technology approach to curbing emissions. This will improve Americans' health and economic well-being across the nation.

Importance of climate risk inclusion in financial modeling

Climate change threatens everyone's finances, from businesses to pension funds to local and Tribal governments. These risks stem from physical climate risks like extreme events, heat, and precipitation, and from transition risks as the world moves away from fossil fuels and certain assets that are reliant on fossil fuels become stranded assets. Simultaneously, environmental, social, and governance (ESG) investing presents an opportunity to meet a market demand for sustainable and responsible investing with $8.4 trillion under management that uses these sustainable methods.[374] Thus, including climate-related risks and opportunities in financial modeling of all kinds is incredibly important, and more information and workforce capacity to quantify these risks and interpret them for decision making are sorely needed.

Businesses face real and large financial risks from climate change

Businesses face substantial financial risks from the physical risks that climate change poses and from transition risks as the world moves away from fossil fuels. Physical assets owned by businesses and the supporting infrastructure and utilities that they

rely upon are at increasing risk from extreme events, stressed energy grids, and other climate impacts. A recent study found that 215 of the world's largest companies face nearly $1 trillion in combined risk from climate impacts.[375] The majority of risk is concentrated in the financial sector with almost 80% of risk reported there.

Financial markets are also threatened with $283 billion at risk in the U.S. as the world transitions away from fossil fuels.[376] Financial holdings that are tied to fossil fuel extraction or use could become stranded assets as the world moves away from those energy sources. A recent study in *Nature* calculated that under reasonable climate policy expectations, the present value of lost profits in the upstream oil and gas sector exceeds $1 trillion dollars.[377]

Climate change poses substantial risks to pension funds and individuals

Most of the market risk from stranded assets falls on private investors, especially in the OECD nations, with substantial exposure through pension funds and financial markets. A huge proportion of these individuals are in the United States and the United Kingdom, where individuals own 86% and 75% of potentially stranded assets in each respective country. This is in direct contrast to China, where 80% of potentially stranded assets are owned by the government.

Natural disasters are associated with increases in credit card debt, debt collection, mortgage delinquency, and foreclosure. Households that are already financially unstable or are part of historically disadvantaged communities tend to experience problems like the effects of hurricanes most seriously and are more likely to live in areas more susceptible to climate impacts.[378,379]

Local and Tribal governments face similar climate risks with a limited capacity to respond

Local governments also face significant climate-related risks. Municipal budgets can be impacted, and large-scale community infrastructure can be destroyed, such as roads, bridges, and public buildings.[380] A 2022 study showed that California wildfires between 1990 and 2015 had a negative and substantial effect on municipal budgets and caused a long-term increase in local government spending.[381]

Local and Tribal governments may also face transition risk if their finances are tied to industries that emit substantial greenhouse gases. For example, U.S. municipalities, states, and Tribes receive $85.2 billion in revenue each year from fossil fuels.[382] These revenue streams are expected to decline with or without climate action, but the uncertainty of the low-carbon transition poses additional risks to communities that have historically relied upon this income to support infrastructure, education, and public health.

To inform decision making across scales, more climate data is sorely needed

Climate-exacerbated disasters are pocketbook issues, and to prepare and respond, people need more information and tools. We are at the infancy of combining catastrophe risk models used in the insurance industry with long term climate data from the Intergovernmental Panel on Climate Change and other sources of projections to provide information on climate risk. Standards for these data and methods are needed to ensure transparency and robustness. In addition, there is a large amount of uncertainty in any of these future projections, and so standards, and potentially regulation, would be helpful in providing direction on which version of the future is correct.

The price tag for physical risk projections of fires, floods, or extreme heat at a specific physical location can reach into the millions. While the information generally needed to feed into these calculations is publicly available, the computing power and expert knowledge needed to accurately take global climate data and downscale it to the local level create large barriers to entry. Small municipalities, utilities, Tribes, and others with fewer resources are therefore at a disadvantage.[383]

Additional labor force capacity to interpret and utilize this information in decision making is essential to ensure broad and appropriate usage. As previously noted, climate-exacerbated extreme events hit the poor hardest and unmapped flood areas have an overrepresentation of people of color, and so additional resources and workforce development to handle climate data needed for planning and risk assessment should be aimed at these historically disadvantaged areas and communities.[384]

Public lands boost the economy and outdoor recreation

Public lands and their associated resources create economic opportunity and competitive advantage and improve health outcomes. Conservation broadly supports state and local economies and rural communities with tourism, outdoor recreation, and retirees accounting for large economic benefits.

Public lands can boost local economies

Public lands (including national parks and monuments) can boost local economies, drawing tourists and others, including retirees, seeking recreational and quality of life opportunities. In 2021, the outdoor recreation economy accounted for 1.9% ($454 billion) of U.S. gross domestic product (GDP).[385] At the state and local level, outdoor recreation generates $59.2 billion in state and local tax revenue annually.[386] Non-labor income is a major driver of growth

in local western economies, coming from dividends, interest, rent, and government transfers to individuals (such as social security).[387] Much of this growth has a significant age-related aspect and is tied to the aging U.S. population.

Counties with public lands are experiencing net positive migration and tend to have more ethnic and racial diversity.[388] Attracting new people is integral for the long-term health and strength of the West's economy, and in-migration to the non-metro West experienced 49% of all population growth from net in-migration from 2000 to 2010.[389]

Counties with public lands see faster employment and income growth

Areas with public lands in the United States saw increased economic growth across several metrics relative to other areas. For example, western non-metropolitan counties with more than 30% of the county's land base in federally protected status, such as national parks, monuments, or wilderness, saw jobs increase by 345% over the last 40 years in contrast to counties with no federal public lands that saw employment increase by only 83%.[390] These same counties with large shares of public lands also saw faster population and personal income growth on average.[391] The best performing counties are benefitting from nearby public lands in several ways, such as by supporting commodity sectors like timber, increasing tourism and recreational spending, and attracting entrepreneurs and retirees. High wage service industries are also using the West's public lands as a recruiting tool for innovative, high-performing talent who want to work near where they can enjoy outdoor recreation and natural landscapes. The Economic Research Service (ERS) of the U.S. Department of Agriculture found that job earnings in rural counties where

recreation is a key industry are $2,000 more per worker than workers in rural counties not focused on recreation.

The bipartisan Recovering America's Wildlife Act (RAWA) would encourage this growth by investing $1.3 billion in state fish and wildlife agencies and another $97.5 million in Tribal wildlife conservation efforts. Through this investment, RAWA would generate 33,600 direct jobs every year in industries ranging from construction to forestry, in addition to bolstering the outdoor recreation sector.[392]

Public lands influence local fiscal policies

Public lands also influence local fiscal policies, and New Mexico's management of revenue from state trust public lands is model fiscal policy. New Mexico invests all nonrenewable revenue generated from state trust lands in the Land Grant Permanent Fund (LGPF), which means nearly 90% of all state trust land revenue is allocated to the LGPF. Smart fiscal management has grown the LGPF to more than $23 billion as of June 2021.[393] This fund provides stable revenue (in FY2020 $784 million) to state beneficiaries, such as public schools. Distributions are expected to surpass $1 billion annually in the coming years.

Public lands play a critical role in improving health outcomes

The ERS of the U.S. Department of Agriculture found that tourism and recreation boost local economies while reducing poverty and improving education and health outcomes. Nearly half of Americans get less than the recommended physical activity, and public lands and parks play a critical role in encouraging healthy movement, particularly outside. Public lands and open space lowering stormwater management costs and by protecting underground water sources of drinking water.[394] Protecting wild animals and vegetation provides innumerable additional benefits

to nearby communities, and RAWA directs important investments towards accomplishing these goals.

Climate change poses a risk to continued health of U.S. public lands and the economic benefits they provide

Climate change threatens the continued health of U.S. public lands and their associated economic benefits. Extreme events exacerbated by climate change pose risks to the physical wellbeing of public lands from fires to hurricanes. Disasters may also hinder access to public lands if infrastructure is damaged or travel is limited. Hotter temperatures and smoky skies also limit the quantity of days when outdoor recreation is possible and healthy.

CHAPTER 6: STRENGTHENING STATE AND LOCAL ECONOMIES

As the economic recovery from the COVID-19 pandemic recession transitions into the current economic expansion, policymakers must ensure that economic growth is shared equally throughout the United States. Due to the landmark bills passed in the last Congress, and as a result of administrative actions taken by the Biden administration, there are new opportunities to expand employment in clean energy sectors, help address long-running health care worker shortages, spur local economic development, and improve housing affordability across the country.

The United States must expand investments in career and technical training to meet the needs of the clean energy transition

As the United States continues to transition away from fossil fuels and adopt cleaner forms of energy, there is a growing need for workers in a wide range of skilled trades and occupations to help build and maintain this new energy infrastructure. This work will include both solar installers and people who build wind turbines, as well as electricians to help expand the transmission grid and skilled contractors who will build new power plants, EV charging stations, and other clean energy infrastructure.

This need for trades workers creates an opportunity for millions of Americans to get good-paying jobs without having to earn a four-year college degree. In addition, new investments in clean energy infrastructure will be spread out across the country instead of being concentrated in a few coastal cities, meaning more communities stand to benefit from these new career opportunities.

The clean energy workforce is growing rapidly, and the United States currently does not have enough workers ready to meet the need

Even before the passage of the landmark climate provisions in the Inflation Reduction Act, the clean energy workforce was growing faster than the overall economy. From 2021 to 2022, the Department of Energy found that job growth in clean energy roles grew by 3.9%, outpacing the national employment growth rate of 3.1% over that same window.[395] The same report found that half of the new workers in the energy sector were women, which if the trend continues will help counteract the significant gender imbalance in the sector.[396] Looking forward, some estimates find that the investments in the Inflation Reduction Act will help create as many as 9 million new jobs in areas like clean energy, clean manufacturing, clean transportation, building efficiency, environmental justice, and natural infrastructure.[397,398] While forecasting the exact number of jobs created by a policy is difficult, when paired with the recent trend in job growth it is clear that jobs in the clean energy economy will grow significantly in the United States in the coming years.

This expanding need for people who can build and maintain clean energy infrastructure is occurring simultaneously with a long-term decline in the number of building trades workers, brought about by demographic trends and lagging investment in worker training.[399,400] The construction sector is still recovering from massive employment losses during the Great Recession, which contributes to a broader shortage of trades workers throughout the economy. For example, the Bureau of Labor Statistics forecasts that the United States will average 80,000 job openings for electricians every year until 2031, reflecting the growing need for these workers and the trend of older workers retiring.[401]

Community colleges and apprenticeship programs will play an increasing role in growing this workforce, including for people currently working in some fossil fuel industries

While headwinds will remain when it comes to filling clean energy roles, there are proven models in community colleges, trade schools, and registered apprenticeship programs that can train the next generation of workers to meet these needs. The Infrastructure Investment and Jobs Act is already investing $72 million in programs training people for clean energy careers outside of four-year degree institutions.[402] The Inflation Reduction Act (IRA) also supports the successful Registered Apprenticeship program that is funded through joint union and employer contributions.[403]

While these programs have demonstrated success in training new workers in an array of clean energy occupations, there is an emerging need to identify occupational training opportunities for people currently working in many fossil fuel industries. While it will take time, the overlapping skillsets required between people working in hydraulic fracturing and geothermal power, or between oilfield work and clean hydrogen production suggest a viable pathway for an employment transition for current energy sector workers.[404,405,406,407] As training programs expand to help meet the needs of the energy transition, policymakers must ensure that training is offered to help match current energy workers with similar positions focused on clean energy. Some recent data show that green job opportunities are growing in areas with higher shares of fossil fuel extraction workers, which is promising for the prospects of job availability for these newly-trained workers.[408] Several important tax credits in the IRA offer bonus credits for siting new clean energy facilities in communities that rely or have relied on fossil fuels for both jobs and local revenues.[409]

Clean energy jobs can also provide pathways into the middle class for a broad set of communities across the country

Making sure more people can train for and attain clean energy jobs is especially important given the opportunity these jobs offer for higher salaries that can springboard more Americans into the middle class. While the broad range of clean energy occupations pay different wages depending on the sector, electricians, construction managers, and wind turbine technicians all earned close to or above the national average salary.[410] One recent study also found that job listings for clean energy occupations were both more common in areas that currently rely on fossil fuel extraction and were in occupations that pay above the national average.[411] There is also an emerging contingent of labor and climate groups working together to expand worker protections and increase pay in a range of clean energy fields.[412,413]

There is already momentum for unionization in the energy field. The Department of Energy's recent energy employment report highlighted that the share of energy sector employees represented by a union was 11% last year, higher than the national unionization rate of 7%.[414] The report also found that unionized energy sector employers had an easier time filling job vacancies, likely due to the better pay, benefits, and worker safety available in unionized workplaces.[415]

Addressing health worker shortages in rural areas can improve population health while creating job opportunities

Addressing the rural health care worker shortage and creating pathways to allow supply to better meet demand are critical in protecting and improving the health and economic stability of rural communities. One important solution to the ongoing shortage are "grow your own" programs that look to train and equip local residents to fill shortages in their own communities. Americans

deserve access to health care regardless of where they reside, and addressing the rural health care worker shortage will mark a significant step toward creating that equity.

In total, 90% of rural counties face health care workforce shortages, jeopardizing health and economic outcomes

Rural areas in the United States are facing a health care shortage. Specifically, nine in ten rural counties face primary care workforce shortages in geographic areas and population groups.[416] In some areas, staffing shortages among all health care providers have even become severe enough to lead to hospital closures. Since 2010, 136 rural hospitals have closed, driven in part by lack of staff.[417]

The shortage of health care providers has significant negative impacts on the health and economic security of rural areas. Reduced numbers of available physicians have led to a 24% growth in wait times since 2004 and hospital closures have forced rural patients to travel 20 miles more on average to receive common care services.[418,419] Longer wait times and hospital closures cause patients to delay care due to travel or time restrictions, leading to worse health outcomes and greater mortality, as patients experience avoidable illness due to lack of treatment.[420,421] Traveling extended distances also has individual economic costs, including more time taken from work, child and family care arrangements, and costs for gas, food, and lodging. Additionally, greater rates of illness in a community can harm productivity, costing the economy hundreds of billions of dollars annually due to absence or the effects of working while sick.[422] Finally, each physician in a community generally supports multiple jobs and brings added revenue to the economy and the loss of these positions can decrease available employment and hinder economic growth.[423]

The demand for physicians is growing, but supply challenges are worsening the shortage in rural areas

The health care workforce shortage is being driven by growing demand for providers coupled with an insufficient supply of medical professionals. The main driver of growing demand is the aging population, as older adults require greater amounts of medical care.[424] Rural areas already have a higher rate of older residents aged 65 and older (19%) than urban areas (15%), and those rates are expected to grow significantly in the coming years.[425] By 2034, the U.S. population of people aged 65 and older is expected to grow by more than 40%.[426]

Challenges in the training and distribution of doctors are preventing supply from meeting rising demand in rural areas. Across the country, the number of medical school students is not rising fast enough to meet the growing need for doctors.[427] Additionally, students who do go to medical school face an extremely limited number of residency slots.[428] In rural areas, this lack of providers is magnified because these areas often struggle to attract and retain physicians as the areas themselves often have smaller economies, under-resourced schools, or other challenges that can lead doctors to opt for larger cities.[429] Often, these areas rely on physicians who are born or raised in a rural area as they are most likely to return to practice in these rural regions. However, the number of medical school entrants from rural areas declined by 28% from 2002 to 2017, potentially leading to a smaller number of medical school graduates who want to work in rural medical centers and heightening the need to focus on recruiting more rural medical school matriculants to improve these numbers for the future.[430]

Health worker shortages in rural areas pose particular risks to pregnant women, communities of color, and those on Tribal lands

Groups that have greater health care needs or are over-represented in rural areas bear a greater share of the burden created by health care worker shortages. Rural areas have a lower concentration of internal medicine physicians and OBGYN physicians compared to their female population aged 15-to-29.[431] This increases pregnancy risks for mothers in rural communities since lower levels of provider accessibility in a region is correlated with higher rates of maternal mortality.[432]

Furthermore, people of color are even more likely to feel the burden of lower access to health care in rural areas. Almost 1 in 4 rural Americans is a person of color or Indigenous person and rural communities of color usually experience the biggest health risks.[433,434] Limited access to health care is one of the reasons for higher health risks in non-white rural communities.[435] This is especially true for Indigenous communities on Tribal lands, where the Indian Health Service has long struggled with staffing shortages. Today, the overall vacancy rate for providers is 25%. These shortages are exacerbated by lower salaries, housing shortages and difficulties attracting providers to rural locations.[436]

Grow your own programs can create career pipelines into key health occupations for people from rural areas

Individuals with rural backgrounds are more likely to return to these areas to practice medicine.[437] Surveys have found that 30-52% of providers with rural backgrounds return to rural areas to practice, compared to only 11% of doctors overall.[438,439] Because of this, programs that focus on empowering rural students to pursue medicine and return to rural areas, known as "grow your own" programs, are a key component of bolstering the rural health care workforce. Many medical schools have already begun to

adopt this approach, with schools in largely rural states such as Alabama and Mississippi creating programs to recruit and support rural students.[440,441] These programs have already shown signs of success. Alabama's program has seen the vast majority of students who complete the program go on to practice in the state, mostly in rural areas. Mississippi's program has also seen success, adding 66 rural primary care doctors to the health care workforce to date with over 80% of those doctors remaining in rural areas even after their commitment to practice in a rural area, which is a required part of the program, runs out.[442] Because of the success seen with these programs, and the critical need to increase the number of rural physicians, expanding access to these programs to reach more students could play an important role in reducing the rural health care worker shortage.

Other initiatives that address the health care worker shortage can supplement grow your own programs

In addition to "grow your own" programs, a number of other initiatives have been enacted or introduced to reduce the shortage of health care workers both in rural areas specifically and across the nation. Existing national programs include the National Health Service Corps, which incentivizes newly trained doctors to work in high-need areas in exchange for debt relief.[443] Additionally, to address the impact of limited residency programs, the Teaching Health Center Graduate Medical Education Program provides funding for more primary care residencies, with a focus on rural and in-need areas.[444] Proposed programs include the Health Care Workforce Shortage Initiative, introduced in the FY24 budget, which would fund awards used to encourage innovative approaches to health care workforce recruitment and training, with an emphasis on supporting rural and underserved areas.[445] Similarly, Health Profession Opportunity Grants, if refunded, would provide training pathways to low-income individuals to

pursue non-physician health care roles such as nursing or medical assisting.[446,447]

Investing in anchor institutions can foster economic growth and technological innovation through potential agglomeration effects

Research shows that *anchor institutions*, such as universities, hospitals, and national laboratories can play an outsized role in local communities and economies, including by providing additional benefits outside of their core functions.[448] The economics literature also points to how clusters of firms and other institutions focused on similar industries can build off of each other through in what are known as *agglomeration effects* to spur both technological innovation and regional prosperity.[449] While the larger question of how to foster inclusive economic development is still unanswered, investments included in the CHIPS Act, Infrastructure Investment and Jobs Act, and Inflation Reduction Act can leverage these local effects to increase economic growth in more communities around the country.

Anchor institutions can play an important role in expanding economic opportunity in communities throughout the country

Anchor institutions are any large organization like a university, hospital, or government-run entity, like a national lab, that provides expanded benefits to their surrounding communities. These organizations provide direct benefits in terms of job creation and economic activity, especially since many sectors like education and health care are less impacted by the business cycle.[450] One estimate from the Federal Reserve Bank of Philadelphia found that hospitals and higher education institutions directly or indirectly provided jobs for 18 million people while creating $1.1 trillion in economic activity.[451]

Additionally, anchor institutions can have a profound effect on the surrounding communities through local hiring and procurement practices. Recent efforts by hospitals and university systems in Toledo, Boston, Philadelphia, and Newark show that anchor institutions can create job opportunities for people in the surrounding communities while supporting local businesses through both training and outreach programs or even by adding additional services meant to meet unaddressed community needs.[452,453,454] The local spillover benefits of national labs are comparatively under-explored compared to the research that has been completed on universities and hospitals, in part because there are fewer national labs overall.[455,456]

Leveraging agglomeration effects can both spur technological innovation and bolster local economies

Agglomeration effects describe the phenomenon where firms and other institutions in similar industries clustered near one another build off of one another to spur innovation and economic growth.[457] When studying agglomeration effects in the United States, researchers often highlight Silicon Valley, the research triangle in North Carolina, Boston, Seattle, and Pittsburgh as domestic examples of how geographic proximity, transportation infrastructure, and a shared pool of workers can create cycles of economic innovation.[458] One important study finds that patent filings increase when potential inventors move to these innovation clusters and benefit from the assembled resources.[459] This innovation increases overall economic growth for the country as a whole, while studies also highlight how these clusters also facilitate local economic growth.[460]

It follows from these findings that the United States should seek to both bolster its existing innovation clusters while also cultivating agglomeration effects in other regions that have yet to

experience these benefits. While starting such clusters from scratch could result in a net loss for the country, strategies that seek to build off of existing networks to cultivate innovation could increase both regional and national economic growth.[461,462]

Federal investments in local economic development in the CHIPS Act, Infrastructure Investment and Jobs Act, and Inflation Reduction Act can leverage these effects to foster equitable economic growth

The major bills passed during the 117th Congress facilitate significant investments in infrastructure, scientific research, semiconductor production, and climate technology, which could both strengthen anchor institutions and spur more agglomeration economies around the country.

The CHIPS and Science Act's investment in semiconductor manufacturing can help spur agglomeration benefits as new facilities come online close to one another. The child care services that recipient firms must provide to their employees are an example of the sort of anchor institution benefit that can benefit the broader community.[463] The bill also authorizes a significant increase in basic research funding, support for the national labs, and regional innovation hubs that can in turn bolster the local, regional, and national economic benefits described above.[464,465]

The Inflation Reduction Act's landmark investment in clean energy technology has already spurred billions of dollars in investment throughout the United States.[466] Much of these new projects are not centered around the large coastal cities that have dominated discussion of U.S. growth drivers in recent years, highlighting how the clean energy investments in this bill can spread out clean energy development to a larger number of U.S. regions. In fact, states in the mountain west and southwest have

led the nationwide resurgence in manufacturing investment growth in electronics, computer, and battery technology that began shortly after the passage of the IRA and CHIPS and Science Act.[467,468]

By supporting transportation infrastructure throughout the country, the Infrastructure Investment and Jobs Act will help aid the physical transfer of goods and people. The bill also funds regional hubs focused on clean hydrogen production, which, when taken together with funding from the IRA, could support regional economic development through clean energy technological innovation.[469]

These investments offer an opportunity for the federal government to work with state and local partners to make sure that the coming decades center around economic growth that both grows the middle class and expands opportunities to more parts of the county. While a promising ingredient, leveraging anchor intuitions and agglomeration effects are just a few key inputs that the U.S. will need to accomplish the goal of broadened economic growth. It will take years, if not decades, before we can gauge the success of the landmark investments passed in 2021 and 2022, but these laws represent a strong down payment on inclusive and effective regional economic development.

Guaranteeing housing affordability to ensure economic stability

For communities to thrive, people must have a stable and affordable place to live. Unfortunately, housing has become increasingly unaffordable in recent years, whether for renters or those looking to buy a home, and high housing costs have gone from being a largely coastal phenomenon to being a problem throughout the country. While recent steps by the Biden administration and Congressional Democrats have alleviated

some of the housing pressures that Americans face, the country will need significant action at the national, state, and local level to ensure housing affordability and stability for all.

Housing affordability is a challenge for Americans across the income spectrum

The cost of housing is rising at a more rapid pace than workers' wages. As the National Low Income Housing Coalition (NLIHC) reports from multiple studies, the rise in median rents in the U.S. have outpaced the rise in the national median household income, with the latter increasing only by 3.2%, and the former increasing by nearly 18%. Moreover, while lower-wage workers have seen the greatest percentage gains in their income when compared to all other income groups, that gain is not large enough to make up for the increase in rents.[470]

In addition, the Census Bureau found striking numbers on the amount of middle- to low-income renter households who are cost burdened, meaning that they spend over 30% of their monthly income on rent. As the Census notes, when a household is cost burdened by rent, they may be more likely to face difficulty in paying for their basic needs. Nearly 90% of households in the lowest-income quintile were cost burdened in 2021. Approximately 60% of renter households in the second-lowest income quintile were cost burdened in 2021, and about a quarter of all renter households in the middle quintile were cost burdened. Together, this means that nearly 20 million households were cost burdened in 2021, before the worst of the rent spikes due to COVID-19 had hit the market.[471] Viewed another way, if every renter who is cost burdened lived in a single state, it would be the largest state by number of households in the United States, at roughly double the number of households in Texas.[472]

Rural and Tribal communities face distinct housing affordability challenges that policymakers must address

In 2017, HUD released a series of studies which consisted of the first ever nationwide review of American Indian and Alaska Native households on Tribal lands. Among their findings, one study reported that while 5% of all U.S. households live in housing with physical damages or complications, 23% of all households in Tribal areas have a physical issue with their housing. They also note that homelessness in Tribal areas consists of overcrowding among households, rather than Tribal members living without a place to reside. While only 2% of U.S. households were reported to experience overcrowding, 16% of Tribal households experience the same.[473] More recently, the representatives of Tribal governments and housing authorities testified before Congress, emphasizing the need to increase the housing stock.[474] As Chairman Heinrich has emphasized, the federal government's adequate provision of public funds is a step toward fulfilling our mandated responsibility to support the economic prosperity of Tribal communities.[475,476]

Lawmakers and advocates are also concerned about affordable housing in rural areas. The "515 program" at the U.S. Department of Agriculture (USDA) requires rural multifamily building owners with low-interest USDA mortgages to maintain rent levels that are affordable for rural middle- and low-income individuals for the duration of the owner's mortgage.[477] USDA also has a rental assistance program for rural households, referred to as "Section 521," which subsidizes qualifying households' rent within Section 515-financed housing, to ensure rent makes up only 30% of those tenants' income.[478] However, Section 515 mortgages, which have 30- to 50-year terms, and which many owners entered into about 50 years ago, are beginning to mature. Following the loan maturity date, residents in these buildings will no longer qualify for the

Section 521 subsidies, and some building owners will no longer be required to set rents at an affordable rate.[479,480] According to the National Low Income Housing Coalition, over 21,000 rural units are within Section 515-financed buildings with mortgages maturing by 2027.[481] The number of affordable rental units that will be lost due to Section 515 mortgage maturity will only increase after that year. Chairman Heinrich and Democrats have been committed to resolving this issue, offering solutions such as ending the requirement for Section 521 rental assistance recipients to reside only in Section 515-financed housing.[482]

In addition, while the 515 program was created to incentivize construction and rehabilitation of affordable rural housing, lack of funding for the program has led to structures falling into disrepair, and a halt in construction since 2012.[483] Without sufficient funding for housing preservation, USDA estimates the rural affordable housing stock will drop from 400,000 to just over 66,000 by 2050.[484] Other programs created to support rural housing affordability under USDA have also been left without funding for years.[485] Potentially compounding this crisis, there are reports that the influx of high-income individuals from metropolitan areas has been driving up housing prices in rural areas throughout the pandemic period. Even as these individuals leave, the prices remain high.[486]

Government investment in housing for low-income Americans can provide the housing stability necessary to ensure economic stability, especially during economic crises

The Housing Choice Voucher (HCV) program, despite being the largest rental assistance program in the country, only funds about a quarter of those who are eligible due to funding constraints. If the program were fully funded, research suggests that it could lift an additional 9.3 million people out of poverty, and an estimated

24 million people who are severely rent burdened would be able to secure affordable housing.[487] In addition to expanding funding for the program, policies like the DEPOSIT Act would provide families with vouchers with additional funds to cover security deposits or other move-in costs that can be prohibitively expensive for many renters.[488]

Additionally, the emergency rental assistance (ERA) program created in response to the COVID-19 pandemic provides another strong blueprint for how the federal government can keep families stably housed in the face of economic crises. While the program took time to stand up, it helped nearly 4 million households pay their rent in 2021 and helped keep eviction rates lower than the historical average across the country.[489] By February 2022, the U.S. Department of the Treasury also reported that more than 80% of all ERA funds were provided to households with an income that is equal to or less than 50% of the area median income (AMI). This program was especially successful in places where state and local fund providers could streamline the application process and directly send funds to tenants when landlords were unresponsive. Together, the ERA program shows how the federal government can effectively deliver rental support that compliments the HCV program in times of need.[490]

Expanding tenants' right to counsel, rent stabilization, and Housing First programs can keep more people stably housed

Recent evidence also shows a range of strategies that can help people stay in their homes, prevent evictions, and help people transition out of homelessness. Tenant protections can be expanded through tenants' right to counsel in eviction cases to put renters on a more even footing with landlords. The American Civil Liberties Union (ACLU) found while 80% of all landlords have legal representation in housing court, only 3% of tenants

nationwide have legal representation.[491] As of June 2023, 17 cities, 4 states, and 1 county have passed tenants' right to counsel laws, which studies routinely find reduce the likelihood of eviction.[492,493]

Rent regulations place a limit on market rent increases, which can help renters from being priced out of an apartment where they currently live. While research has shown that rent stabilization laws do keep tenants from getting priced out, absent other policy reforms these caps can reduce housing supply and worsen housing quality as landlords decline to invest in an asset where the returns, in this case the monthly rent, are capped at a set amount that may not cover costs.[494] While the extent of the housing supply effect is unclear, given their role in maintaining affordability for current tenants, rent stabilization policies have a role to play alongside other reforms meant to strike a balance between tenant protections and housing availability.[495,496]

The housing first model for alleviating homelessness provides unhoused people with permanent housing and optional treatment services. The alternative model, frequently referred to as "treatment first" requires those seeking permanent housing to first graduate from a drug addiction or psychiatric treatment program to secure permanent housing. Studies of housing first programs have repeatedly shown that participation leads to a higher likelihood of housing stability than participation in treatment first programs, with similar levels of health benefits, and substantial cost savings per dollar invested.[497,498,499]

The Biden administration has taken important actions to expand housing supply and improve housing stability for renters

Federal supply interventions are needed to address the housing shortage, such as ensuring that financing is available for housing

construction and preservation. In 2022, the Biden administration published a plan that addresses these challenges. Included in their objectives, the administration committed to making financing available for construction of a larger variety of single- and multi-family housing units, including manufactured housing and smaller multifamily buildings. The administration also proposed increasing the availability of federally-backed loans offered for construction and ownership ("Construction to Permanent loans"), encouraging states, Tribal governments, and localities to utilize COVID relief funds towards growing the affordable housing stock in their areas, and making changes to key government programs that incentivize and help to fund affordable housing construction, such as the HOME Investment Partnerships Program and the Low Income Housing Tax Credit (LIHTC).[500]

In January 2023, the Biden administration released the "Blueprint for a Renters Bill of Rights," which outlines objectives to ensure tenant protections and affordable rent. Included in this plan was an announcement that the Federal Trade Commission (FTC) would investigate rental market practices that harm tenants.

The Biden administration has also tasked the Consumer Financial Protection Bureau (CFPB) with protecting tenants by among other efforts, collecting more data on housing practices that impede stable housing. The Department of Justice will also be reviewing rental markets to determine whether there is need for an update to guidance on anti-competitive practices as it applies to such markets.[501] These actions, along with those previously discussed, can help improve housing stability for renters.

ENDNOTES

[1] Bureau of Economic Analysis, "Gross Domestic Product, Fourth Quarter and Year 2022 (Third Estimate), GDP by Industry, and Corporate Profits," March 30, 2023, https://www.bea.gov/news/2023/gross-domestic-product-fourth-quarter-and-year-2022-third-estimate-gdp-industry-and.

[2] Federal Reserve Economic Data, Federal Reserve Bank of St. Louis, All Employees, Total Nonfarm, https://fred.stlouisfed.org/series/PAYEMS.

[3] Bureau of Labor Statistics, "Consumer Price Index Summary", June 13, 2023, https://www.bls.gov/news.release/cpi.nr0.htm.

[4] Bureau of the Fiscal Service, "Final Monthly Treasury Statement", September 2022, https://www.fiscal.treasury.gov/files/reports-statements/mts/mts0922.pdf.

[5] Glen Hendricks and Seth Hanlon, "The TCJA 2 Years Later: Corporations, Not Workers, Are the Big Winners," Center for American Progress, December 19, 2019, https://www.americanprogress.org/article/tcja-2-years-later-corporations-not-workers-big-winners/.

[6] Congressional Budget Office, "Estimated Budgetary Effects of Public Law 117-169, to Provide for Reconciliation Pursuant to Title II of S. Con. Res. 1," September 7, 2022, https://www.cbo.gov/system/files/2022-09/PL117-169_9-7-22.pdf.

[7] Federal Reserve Economic Data, Federal Reserve Bank of St. Louis, All Employees, Manufacturing. https://fred.stlouisfed.org/series/MANEMP.

[8] Federal Reserve Economic Data, Federal Reserve Bank of St. Louis, Real Gross Domestic Product, https://fred.stlouisfed.org/series/GDPC1.

[9] National Bureau of Economic Research, Business Cycle Dating Committee, https://www.nber.org/research/business-cycle-dating.

[10] Bureau of Economic Analysis, "Gross Domestic Product (Third Estimate), GDP by Industry, and Corporate Profits (Revised), First Quarter 2022", June 29, 2022 https://www.bea.gov/news/2022/gross-domestic-product-third-estimate-gdp-industry-and-corporate-profits-revised-first.

[11] Bureau of Economic Analysis, "Gross Domestic Product (Third Estimate), GDP by Industry, and Corporate Profits (Revised), 2nd Quarter 2022 and Annual Update," September 29, 2022, https://www.bea.gov/news/2022/gross-domestic-product-third-estimate-gdp-industry-and-corporate-profits-revised-2nd.

[12] Bureau of Economic Analysis, "NIPA Handbook Chapter 7: Change in Private Inventories," November 2019, https://www.bea.gov/system/files/2019-12/Chapter-7.pdf.

[13] Matthew Boesler, "Powell's Favored Inflation Gauge for Services Hits 10-Month Low," *Bloomberg News,* June 30, 2023, *https*://www.bloomberg.com/news/articles/2023-06-30/us-core-services-prices-post-smallest-advance-since-july-2022.

[14] Catherine Rampell, "How much did Congress lose by defunding the IRS? Way more than we thought." *The Washington Post*, June 14, 2023, https://www.washingtonpost.com/opinions/interactive/2023/irs-enforcement-costs-congress-funding/.

[15] U.S. Department of the Treasury, "The Potential Macroeconomic Effect of Debt Ceiling Brinksmanship," October 3, 2013, https://home.treasury.gov/news/press-releases/jl2178#:~:text=The%2030%2Dyear%20conventional%20fixed%2Drate%20mortgage%20spread%20over%20Treasury%20yields%20jumped%20by%20as%20much%20as%2070%20basis%20points%20late%20in%20the%20summer%20of%202011.%C2%A0.

[16] Joint Economic Committee, "Update: The Steep Costs of a Republican Default Crisis," May 2023, https://www.jec.senate.gov/public/_cache/files/5d11f575-d7f8-4fc7-af97-9f56450eda90/update---the-steep-costs-of-a-republican-default-crisis.pdf.

[17] Alan Rappeport and Joe Rennison, "A $1 Trillion Borrowing Binge Looms After Debt Limit Standoff", *The New York Times*, June 7, 2023, https://www.nytimes.com/2023/06/07/business/economy/debt-ceiling-borrowing-binge.html.

[18] Bureau of Labor Statistics, Seasonal Unemployment Rate, June 30, 2023, https://data.bls.gov/timeseries/LNS14000000.

[19] U.S. Department of Labor, "Unemployment Insurance Weekly Claims," July 6, 2023, https://www.dol.gov/ui/data.pdf.

[20] Courtenay Brown, "Job Market Milestone: Shrinking Employment Gap for Black Workers," Axios, April 5, 2023, https://www.axios.com/2023/04/05/job-market-black-workers.

[21] Lauren Kaori Gurley, Abha Bhattarai, and Naomi Nix, "Black unemployment rate hits record low 5 percent," *The Washington Post,* April 7, 2023, https://www.washingtonpost.com/business/2023/04/07/black-unemployment-rate-record-low/.

[22] David Autor, Arindrajit Dube, and Annie McGrew, "The Unexpected Compression: Competition at Work in the Low Wage Labor Market," National Bureau of Economic Research, Working Paper 31010, March 2023, https://www.nber.org/papers/w31010.

[23] Federal Reserve Bank of Atlanta, Wage Growth Tracker, Wage Level, June 30, 2023, https://www.atlantafed.org/chcs/wage-growth-tracker?panel=1.

[24] Federal Reserve Bank of Atlanta, Wage Growth Tracker, Wage Level, June 30, 2023, https://www.atlantafed.org/chcs/wage-growth-tracker?panel=1.

[25] Andrew Biggs, Anqi Chen, and Alicia H. Munnell, "How Did the Pandemic Affect Household Balance Sheets?," Center for Retirement Research, February 28, 2023, https://crr.bc.edu/how-did-the-pandemic-affect-household-balance-sheets/.

[26] Federal Reserve Economic Data, Federal Reserve Bank of St. Louis, Delinquency Rate on Single-Family Residential Mortgages, Booked in Domestic Offices, All Commercial Banks, https://fred.stlouisfed.org/series/DRSFRMACBS.

[27] Board of Governors of the Federal Reserve System, "Economic Well-Being of U.S. Households in 2022," May 2023, https://www.federalreserve.gov/publications/files/2022-report-economic-well-being-us-households-202305.pdf.

[28] Sharada Dharmasankar and Bhash Mazumder, "Have Borrowers Recovered from Foreclosures during the Great Recession?" *Chicago Fed Letter*, No. 370, 2016, https://www.chicagofed.org/publications/chicago-fed-letter/2016/370.

[29] Rachel Witkowski, "For People Under 30, Car Loan Delinquencies Hit a 15-Year High. Is the Economy Running Out of Gas?," *Forbes,* June 2, 2023, https://www.forbes.com/advisor/auto-loans/car-loan-late-payments/.

[30] Board of Governors of the Federal Reserve System, "Economic Well-Being of U.S. Households in 2022," May 2023, https://www.federalreserve.gov/publications/files/2022-report-economic-well-being-us-households-202305.pdf.

[31] As shown by the Supplemental Poverty Measure (SPM), which is a broader measure of poverty than the Official Poverty Measure (OPM). It accounts for cash and noncash benefits, federal and state taxes, and work and medical expenses, as well as geographic variation in poverty thresholds.

[32] John Creamer, Emily A. Shrider, Kalee Burns, and Frances Chen, "Poverty in the United States: 2021," U.S. Census Bureau, September 13, 2022, https://www.census.gov/library/publications/2022/demo/p60-277.html.

[33] Center on Poverty and Social Policy at Columbia University, "Historical Supplemental Poverty Measure Data," https://www.povertycenter.columbia.edu/historical-spm-data.

[34] Kalee Burns, Liana Fox, and Danielle Wilson, "Child Poverty Fell to Record Low 5.2% in 2021," U.S. Census Bureau, September 13, 2022,

https://www.census.gov/library/stories/2022/09/record-drop-in-child-poverty.html.

[35] Sharon Parrott, "In Pandemic's Second Year, Government Policies Helped Drive Child Poverty Rate to a Record Low, Cut Uninsured Rate, New Census Data Show," Center on Budget and Policy Priorities, September 13, 2022, https://www.cbpp.org/press/statements/in-pandemics-second-year-government-policies-helped-drive-child-poverty-rate-to-a.

[36] Kalee Burns, Liana Fox, and Danielle Wilson, "Child Poverty Fell to Record Low 5.2% in 2021," U.S. Census Bureau, September 13, 2022, https://www.census.gov/library/stories/2022/09/record-drop-in-child-poverty.html.

[37] Joint Economic Committee, "New Data and Studies Confirm the Enormous Economic Benefits Provided by the Expanded Child Tax Credit," April 14, 2022, https://www.jec.senate.gov/public/index.cfm/democrats/issue-briefs?ID=02FF0E7B-B179-45D4-AA71-28A353105572.

[38] Chuck Marr, Kris Cox, Sarah Calame, Stephanie Hingtgen, George Fenton, and Arloc Sherman, "Year-End Tax Policy Priority: Expand the Child Tax Credit for the 19 Million Children Who Receive Less Than the Full Credit," Center on Budget and Policy Priorities, December 7, 2022, https://www.cbpp.org/research/federal-tax/year-end-tax-policy-priority-expand-the-child-tax-credit-for-the-19-million.

[39] Joint Economic Committee, "The Expanded Child Tax Credit Dramatically Reduced Child Poverty in 2021," November 30, 2022, https://www.jec.senate.gov/public/index.cfm/democrats/issue-briefs?id=CD9DF1DD-39AF-4F31-9401-B2687B593E59.

[40] Unlike the poverty measures produced by the U.S. Census Bureau, the OECD measures poverty as the percentage of children who live in families that earn below 50% of the country's median income. This approach makes it easier to compare poverty rates across different countries and years.

[41] OECD, "Poverty rate," https://data.oecd.org/inequality/poverty-rate.htm.

[42] UNICEF, "Sweden, Norway, Iceland, Estonia and Portugal rank highest for family-friendly policies in OECD and EU countries," June 12, 2019, https://www.unicef.org/press-releases/sweden-norway-iceland-and-estonia-rank-highest-family-friendly-policies-oecd-and-eu.

[43] Mailman School of Public Health at Columbia University, "Germany: Summary," https://www.publichealth.columbia.edu/research/others/comparative-health-policy-library/germany-summary#:~:text=6-,HEALTH%20%26%20HEALTH%20SYSTEM,private%20health%20insurance%20(PHI).

[44] Yekaterina Chzhen, Anna Gromada, and Gwyther Rees, "Family Friendly Policies Report: Are the world's richest countries family friendly?," UNICEF, 2019, https://www.unicef-irc.org/family-friendly#:~:text=FIGURE%201%3A%20League%20Table%20%E2%80%93%20Indicators%20of%20national%20family%2Dfriendly%20policies%2C%202016.

[45] Alberto Alesina, Edward Glaeser, and Bruce Sacerdote, "Why Doesn't the United States Have a European-Style Welfare State?," Brookings Papers on Economic Activity, 2:2001, https://www.brookings.edu/wp-content/uploads/2001/06/2001b_bpea_alesina.pdf.

[46] Barbara A. Butrica, "A Review of Children's Savings Accounts," Urban Institute, March 2015, https://www.urban.org/sites/default/files/alfresco/publication-pdfs/2000157-A-Review-of-Childrens-Savings-Accounts.pdf.

[47] Emma Beswick, "Which country has the highest child benefits available to foreigners?," Euronews, August 17, 2018, https://www.euronews.com/2018/08/17/which-country-has-the-highest-child-benefits-available-to-foreigners-.

[48] Caroline Ratcliffe, "Child Poverty and Adult Success," Urban Institute, September 2015, https://www.urban.org/sites/default/files/publication/65766/2000369-Child-Poverty-and-Adult-Success.pdf.

[49] Areeba Haider, "The Basic Facts About Children in Poverty," Center for American Progress, January 12, 2021, https://www.americanprogress.org/article/basic-facts-children-poverty/.

[50] OECD, "Poverty rate," https://data.oecd.org/inequality/poverty-rate.htm.

[51] Kalee Burns, Liana Fox, and Danielle Wilson, "Child Poverty Fell to Record Low 5.2% in 2021," U.S. Census Bureau, September 13, 2022, https://www.census.gov/library/stories/2022/09/record-drop-in-child-poverty.html.

[52] Sophie Collyer, Megan Curran, Irwin Garfinkel, David Harris, Dominic Richardson, and Christopher Wimer, "A Step in the Right Direction: The Expanded Child Tax Credit Would Move the United States' High Child Poverty Rate Closer to Peer Nations," Columbia University, Center on Poverty and Social Policy, Children's Research and Education Institute, The UNICEF Innocenti–Global Office of Research and Foresight, Poverty and Social Policy Joint Report, Vol. 6, No. 7, October 25, 2022, https://www.povertycenter.columbia.edu/publication/2022/child-tax-credit-and-relative-poverty.

[53] Kalee Burns, Liana Fox, and Danielle Wilson, "Child Poverty Fell to Record Low 5.2% in 2021," U.S. Census Bureau, September 13, 2022, https://www.census.gov/library/stories/2022/09/record-drop-in-child-poverty.html.

[54] Zachary Parolin, Sophie Collyer, and Megan A. Curran, "Absence of Monthly Child Tax Credit Leads to 3.7 Million More Children in Poverty in January 2022," Columbia University Center on Poverty and Social Policy, Poverty and Social Policy Brief, Vol. 6, No. 2, February 17, 2022, https://www.povertycenter.columbia.edu/news-internal/monthly-poverty-january-2022.

[55] The U.S. Census Bureau releases Income, Poverty, and Health Insurance statistics from the Current Population Survey's Annual Social and Economic Supplement in September each year.

[56] U.S. Census Bureau, "Income, Poverty and Health Insurance Coverage in the United States: 2021," September 13, 2022, https://www.census.gov/newsroom/press-releases/2022/income-poverty-health-insurance-coverage.html.

[57] Zachary Parolin, Sophie Collyer, and Megan A. Curran, "Absence of Monthly Child Tax Credit Leads to 3.7 Million More Children in Poverty in January 2022," Columbia University Center on Poverty and Social Policy, Poverty and Social Policy Brief, Vol. 6, No. 2, February 17, 2022, https://www.povertycenter.columbia.edu/news-internal/monthly-poverty-january-2022.

[58] Center on Budget and Policy Priorities, "Policy Basics: The Supplemental Nutrition Assistance Program (SNAP)," June 9, 2022, https://www.cbpp.org/research/food-assistance/the-supplemental-nutrition-assistance-program-snap.

[59] U.S. Census Bureau, ACS 1-Year Estimates, https://data.census.gov/mdat/#/search?ds=ACSPUMS1Y2019&cv=FS%281,2%29&rv=AGEP_RC1&wt=PWGTP&AGEP_RC1=%7B%22S%22%3A%22Age%20recode%22,%22R%22%3A%22AGEP%22,%22W%22%3A%22PWGTP%22,%22V%22%3A%5B%5B%2218%3A99%22,%22Not%20Elsewhere%20Classified%22%5D,%5B%221%3A17,00%22,%22Children%22%5D%5D%7D.

[60] Jeff Carlson, "Senate Democrats Reintroduce Child Tax Credit Legislation," *Thomson Reuters*, June 15, 2023, https://tax.thomsonreuters.com/news/senate-democrats-reintroduce-child-tax-credit-legislation/.

[61] Joe Hughes, "Expanding the Child Tax Credit Would Help 60 Million Kids, Especially Those in Families with Low Incomes," Institute on Taxation and

Economic Policy, June 13, 2023, https://itep.org/child-tax-credit-expansion-would-help-60-million-kids/.

[62] Congress.gov, "H.R.3899 - To amend the Internal Revenue Code of 1986 to establish a refundable child tax credit with monthly advance payment," https://www.congress.gov/bill/118th-congress/house-bill/3899?s=3&r=3&q=%7B%22search%22%3A%5B%22%22%5D%7D.

[63] Vance Cariaga, "Child Tax Credit Could Be the Stimulus Payment Used as 'Bargaining Chip' for Tax Reform — Could Payments Come Close to $300 a Month?" *Yahoo Finance*, June 21, 2023, https://finance.yahoo.com/news/child-tax-credit-could-stimulus-115357424.html?guccounter=1&guce_referrer=aHR0cHM6Ly93d3cuZ29vZ2xlLmNvbS8&guce_referrer_sig=AQAAAJ-jKpJi8I7CNBo0wWxrxvwdpZ7XzXSVmFnSOUfKrbbJVS84eZqyxhvGsqao-NGcsskpKqGjAloS5OYKUen175y9iveh_WcI54z843dRiT50A-8HtefUTpLvBBcs6WcQDVhHtOwc_gGDu3TP2WBpLFc0deUqhiTb4CbHjub-4D2L#:~:text=Congressional%20Democrats%20are%20once%20again,2021%20American%20Rescue%20Plan%20Act.

[64] U.S. Senator Martin Heinrich, "Two-Generation Economic Empowerment Act," https://www.heinrich.senate.gov/priorities/issues/two-generation-economic-empowerment-act.

[65] Greg J. Duncan, Kathleen M. Ziol-Guest, and Ariel Kalil, "Early-Childhood Poverty and Adult Attainment, Behavior, and Health," *Child Development*, Vol. 81, No. 1, 306-325, January/February 2010, https://www.jstor.org/stable/40598980?seq=1#metadata_info_tab_contents.

[66] Raj Chetty, John N. Friedman, and Jonah Rockoff, "New Evidence on the Long-Term Impacts of Tax Credits," National Tax Association, 104th Annual Conference on Taxation, Vol. 104, 116-124, November 17-19, 2011, https://www.ntanet.org/wp-content/uploads/proceedings/2011/018-chetty-new-evidence-longterm-2011-nta-proceedings.pdf.

[67] Jacob Bastian and Katherine Michelmore, "The Long-Term Impact of the Earned Income Tax Credit on Children's Education and Employment Outcomes," *Journal of Labor Economics*, Vol. 36, No. 4, October 2018, https://www.journals.uchicago.edu/doi/abs/10.1086/697477.

[68] Hilary Hoynes, Diane Whitmore Schanzenbach, and Douglas Almond, Long-Run Impacts of Childhood Access to the Safety Net," *American Economic Review*, Vol. 106, No. 4, 903-934, April 2016, https://www.aeaweb.org/articles?id=10.1257/aer.20130375.

[69] Martha J. Bailey, Hilary W. Hoynes, Maya Rossin-Slater, and Reed Walker, "Is the Social Safety Net a Long-Term Investment? Large-Scale Evidence

from the Food Stamps Program," National Bureau of Economic Research, Working Paper 26942, April 2020, https://www.nber.org/papers/w26942.

[70] Jacob Bastian and Katherine Michelmore, "The Long-Term Impact of the Earned Income Tax Credit on Children's Education and Employment Outcomes," *Journal of Labor Economics*, Vol. 36, No. 4, October 2018, https://www.journals.uchicago.edu/doi/abs/10.1086/697477.

[71] Martha J. Bailey, Hilary W. Hoynes, Maya Rossin-Slater, and Reed Walker, "Is the Social Safety Net a Long-Term Investment? Large-Scale Evidence from the Food Stamps Program," National Bureau of Economic Research, Working Paper 26942, April 2020, https://www.nber.org/papers/w26942.

[72] Leah Hamilton, Stephen Roll, Mathieu Despard, Elaine Maag, Yung Chun, Laura Brugger, and Michal Grinstein-Weiss, "The impacts of the 2021 expanded child tax credit on family employment, nutrition, and financial well-being," Brookings Institution, April 13, 2022, https://www.brookings.edu/articles/the-impacts-of-the-2021-expanded-child-tax-credit-on-family-employment-nutrition-and-financial-well-being/.

[73] Irwin Garfinkel, Laurel Sariscsany, Elizabeth Ananat, Sophie M. Collyer, Robert Paul Hartley, Buyi Wang, and Christopher Wimer, "The Benefits and Costs of a Child Allowance," *Journal of Benefit-Cost Analysis*, Vol. 13, No. 3, 335-362, September 23, 2022, https://www.povertycenter.columbia.edu/news-internal/2021/child-allowance/cost-benefit-analysis.

[74] Nathaniel Hendren and Ben Sprung-Keyser, "A United Welfare Analysis of Government Policies," *Quarterly Journal of Economics*, Vol. 135, No. 3, 1209-1318, February 2020, https://scholar.harvard.edu/files/hendren/files/welfare_vnber.pdf.

[75] Child Care Aware of America, "Demanding Change: Repairing our Child Care System," https://www.childcareaware.org/demanding-change-repairing-our-child-care-system/?hsCtaTracking=bec2ce3a-c87b-4298-91ad-aa62f51bef1d%7Ca876b305-a391-4ed8-b8aa-0e4cdaa3c701.

[76] Child Care Aware, "The US and the High Price of Child Care: An Examination of a Broken System," https://www.childcareaware.org/our-issues/research/the-us-and-the-high-price-of-child-care-2019/.

[77] U.S. Department of the Treasury, "The Economics of Child Care Supply in the United States," September 2021, https://home.treasury.gov/news/press-releases/jy0354.

[78] Leila Schochet, "The Child Care Crisis Is Keeping Women Out of the Workforce," Center for American Progress, March 28, 2019, https://www.americanprogress.org/article/child-care-crisis-keeping-women-workforce/.

[79] Organisation for Economic Co-operation and Development, "Public spending on childcare and early education," OECD Family Database, February 2023, https://www.oecd.org/els/family/database.htm.

[80] Leila Schochet, "The Child Care Crisis Is Keeping Women Out of the Workforce," Center for American Progress, March 28, 2019, https://www.americanprogress.org/article/child-care-crisis-keeping-women-workforce/.

[81] Data Resource Center for Child and Adolescent Health, The Child and Adolescent Health Measurement Initiative, https://www.childhealthdata.org/browse/survey/results?q=8354&r=1.

[82] Federal Reserve Bank of San Francisco, "Mothers in a Pandemic Labor Market," May 6, 2021, https://www.frbsf.org/our-district/about/sf-fed-blog/mothers-labor-force-participation-declines-covid-19/.

[83] Joint Economic Committee, "Child Care Investment Is Crucial for Future Economic Growth," October 20, 2021, https://www.jec.senate.gov/public/index.cfm/democrats/2021/10/child-care-investment-is-crucial-for-future-economic-growth.

[84] Joint Economic Committee, "Strong Care Infrastructure Is Critical to Increasing Labor Force Participation and Driving Future Economic Growth," September 23, 2021, https://www.jec.senate.gov/public/index.cfm/democrats/2021/9/strong-care-infrastructure-is-critical-to-increasing-labor-force-participation-and-driving-future-economic-growth.

[85] Joint Economic Committee, "Child Care Investment Is Crucial for Future Economic Growth," October 20, 2021, https://www.jec.senate.gov/public/index.cfm/democrats/2021/10/child-care-investment-is-crucial-for-future-economic-growth.

[86] Leila Schochet, "The Child Care Crisis Is Keeping Women Out of the Workforce," Center for American Progress, March 28, 2019, https://www.americanprogress.org/article/child-care-crisis-keeping-women-workforce/.

[87] Elise Gould and Hunter Blair, "Who's paying now? The explicit and implicit costs of the current early care and education system," Economic Policy Institute, January 15, 2020, https://www.epi.org/publication/whos-paying-now-costs-of-the-current-ece-system/.

[88] ReadyNation Council for a Strong America, "Want to Grow the Economy? Fix the Child Care Crisis," January 2019, https://strongnation.s3.amazonaws.com/documents/602/83bb2275-ce07-4d74-bcee-ff6178daf6bd.pdf.

[89] Elise Gould and Hunter Blair, "Who's paying now? The explicit and implicit costs of the current early care and education system," Economic Policy Institute, January 15, 2020, https://www.epi.org/publication/whos-paying-now-costs-of-the-current-ece-system/.

[90] Josh Bivens, Emma García, Elise Gould, Elaine Weiss, and Valerie Wilson, "It's time for an ambitious national investment in America's children," Economic Policy Institute, April 6, 2016, https://www.epi.org/publication/its-time-for-an-ambitious-national-investment-in-americas-children/.

[91] James J. Heckman, Seong Hyeok Moon, Rodrigo Pinto, Peter A. Savelyev, and Adam Yavitza, "The Rate of Return to the High/Scope Perry Preschool Program," *J Public Econ*, 94(1-2): 114–128, February 1, 2010, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3145373/.

[92] Jorge Luis García, James J. Heckman, and Victor Ronda, "The Lasting Effects of Early Childhood Education on Promoting the Skills and Social Mobility of Disadvantaged African Americans," National Bureau of Economic Research, Working Paper 29057, July 2021, https://bfi.uchicago.edu/working-paper/the-lasting-effects-of-early-childhood-education-on-promoting-the-skills-and-social-mobility-of-disadvantaged-african-americans/.

[93] The White House, "The Economics of Early Childhood Investments," January 2015, chrome-https://obamawhitehouse.archives.gov/sites/default/files/docs/early_childhood_report_update_final_non-embargo.pdf.

[94] U.S. Department of the Treasury, "The Economics of Child Care Supply in the United States," September 2021, https://home.treasury.gov/news/press-releases/jy0354.

[95] Sam Abbott, "The child care economy," Washington Center for Equitable Growth, September 15, 2021, https://equitablegrowth.org/research-paper/the-child-care-economy/.

[96] Food insecurity as defined by the U.S. Department of Agriculture: "At times during the year, these households were uncertain of having or unable to acquire enough food to meet the needs of all their members because they had insufficient money or other resources for food. Food-insecure households include those with low food security and very low food security."

[97] U.S. Department of Agriculture, "Food Security Status of U.S. Households in 2021," June 20, 2023, https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-u-s/key-statistics-graphics/.

[98] Alisha Coleman-Jensen, Matthew P. Rabbitt, Christian A. Gregory, and Anita Singh, "Household Food Security in the United States in 2019," U.S.

Department of Agriculture, September 2020,
https://www.ers.usda.gov/publications/pub-details/?pubid=99281.

[99] Center on Budget and Policy Priorities, "Policy Basics: Special
Supplemental Nutrition Program for Women, Infants, and Children," October
5, 2022, https://www.cbpp.org/research/food-assistance/special-supplemental-
nutrition-program-for-women-infants-and-
children#:~:text=WIC%20provided%20an%20average%20value,-
19%20Pandemic%E2%80%9D%20below.

[100] Center on Budget and Policy Priorities, "Robust COVID Relief Bolstered
Economy and Reduced Hardship for Millions," March 6, 2023,
https://www.cbpp.org/research/poverty-and-inequality/robust-covid-relief-
bolstered-economy-and-reduced-hardship-for#_ftnref4.

[101] Center on Budget and Policy Priorities, "Policy Basics: The Supplemental
Nutrition Assistance Program (SNAP)," June 9, 2022,
https://www.cbpp.org/research/food-assistance/the-supplemental-nutrition-
assistance-program-snap.

[102] Joint Economic Committee, "Updated SNAP Benefit Levels Will Help 42
Million People and Add $31.8 Billion in Local Economic Activity Every
Year," September 16, 2021,
https://www.jec.senate.gov/public/index.cfm/democrats/issue-
briefs?ID=C9612C05-8504-4B39-82DB-E45C9E05B36C.

[103] Center on Budget and Policy Priorities, "Policy Basics: Special
Supplemental Nutrition Program for Women, Infants, and Children," October
5, 2022, https://www.cbpp.org/research/food-assistance/special-supplemental-
nutrition-program-for-women-infants-and-
children#:~:text=WIC%20provided%20an%20average%20value,%2D19%20
Pandemic%E2%80%9D%20below).

[104] Center on Budget and Policy Priorities, "Policy Basics: The Supplemental
Nutrition Assistance Program (SNAP)," June 9, 2022,
https://www.cbpp.org/research/food-assistance/the-supplemental-nutrition-
assistance-program-snap.

[105] Center on Budget and Policy Priorities, "Policy Basics: The Supplemental
Nutrition Assistance Program (SNAP)," June 9, 2022,
https://www.cbpp.org/research/food-assistance/the-supplemental-nutrition-
assistance-program-snap.

[106] Steven Carlson and Brynne Keith-Jennings, "SNAP Is Linked with
Improved Nutritional Outcomes and Lower Health Care Costs," Center on
Budget and Policy Priorities, January 17, 2018,
https://www.cbpp.org/research/food-assistance/snap-is-linked-with-improved-
nutritional-outcomes-and-lower-health-care#_ftnref14.

[107] Caroline Ratcliffe, Signe-Mary McKernan, and Sisi Zhang, "How Much Does the Supplemental Nutrition Assistance Program Reduce Food Insecurity?" *Am J Agric Econ*, 93(4): 1082–1098, July 12, 2011, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4154696/.

[108] Joint Economic Committee, "Updated SNAP Benefit Levels Will Help 42 Million People and Add $31.8 Billion in Local Economic Activity Every Year," September 16, 2021, https://www.jec.senate.gov/public/index.cfm/democrats/issue-briefs?ID=C9612C05-8504-4B39-82DB-E45C9E05B36C.

[109] Center on Budget and Policy Priorities, "Policy Basics: The Supplemental Nutrition Assistance Program (SNAP)," June 9, 2022, https://www.cbpp.org/research/food-assistance/the-supplemental-nutrition-assistance-program-snap.

[110] Center on Budget and Policy Priorities, "Policy Basics: Special Supplemental Nutrition Program for Women, Infants, and Children," October 5, 2022, https://www.cbpp.org/research/food-assistance/special-supplemental-nutrition-program-for-women-infants-and-children#:~:text=WIC%20provided%20an%20average%20value,%2D19%20Pandemic%E2%80%9D%20below).

[111] Center on Budget and Policy Priorities, "Policy Basics: Special Supplemental Nutrition Program for Women, Infants, and Children," October 5, 2022, https://www.cbpp.org/research/food-assistance/special-supplemental-nutrition-program-for-women-infants-and-children#:~:text=WIC%20provided%20an%20average%20value,%2D19%20Pandemic%E2%80%9D%20below).

[112] Elizabeth Chuck, "Omnibus bill includes two major provisions that would help keep children fed over the summer," *NBC News*, December 20, 2022, https://www.nbcnews.com/news/us-news/omnibus-bill-includes-two-major-provisions-help-keep-children-fed-summ-rcna62600.

[113] Zoë Neuberger, "Permanent Summer Grocery Benefits Are a Big Win for Children in Low-Income Families, Despite Disappointing Tradeoffs," Center on Budget and Policy Priorities, December 20, 2022, https://www.cbpp.org/blog/permanent-summer-grocery-benefits-are-a-big-win-for-children-in-low-income-families-despite#:~:text=The%20new%20Summer%20EBT%20benefits,children%20in%20families%20receiving%20SNAP.

[114] Zoë Neuberger, "Permanent Summer Grocery Benefits Are a Big Win for Children in Low-Income Families, Despite Disappointing Tradeoffs," Center on Budget and Policy Priorities, December 20, 2022, https://www.cbpp.org/blog/permanent-summer-grocery-benefits-are-a-big-win-for-children-in-low-income-families-

despite#:~:text=The%20new%20Summer%20EBT%20benefits,children%20i
n%20families%20receiving%20SNAP.

[115] Zoë Neuberger, "Permanent Summer Grocery Benefits Are a Big Win for
Children in Low-Income Families, Despite Disappointing Tradeoffs," Center
on Budget and Policy Priorities, December 20, 2022,
https://www.cbpp.org/blog/permanent-summer-grocery-benefits-are-a-big-
win-for-children-in-low-income-families-
despite#:~:text=The%20new%20Summer%20EBT%20benefits,children%20i
n%20families%20receiving%20SNAP.

[116] Center on Budget and Policy Priorities, "Policy Basics: The Supplemental
Nutrition Assistance Program (SNAP)," June 9, 2022,
https://www.cbpp.org/research/food-assistance/the-supplemental-nutrition-
assistance-program-snap.

[117] Center on Budget and Policy Priorities, "Policy Basics: The Supplemental
Nutrition Assistance Program (SNAP)," June 9, 2022,
https://www.cbpp.org/research/food-assistance/the-supplemental-nutrition-
assistance-program-snap.

[118] Danilo Trisi and Matt Saenz, "Economic Security Programs Reduce
Overall Poverty, Racial and Ethnic Inequities," Center on Budget and Policy
Priorities, July 1, 2021, https://www.cbpp.org/research/poverty-and-
inequality/economic-security-programs-reduce-overall-poverty-racial-and-
ethnic.

[119] U.S. Department of Agriculture Food and Nutrition Service, "Benefit
Redemption Patterns in SNAP: FY 2017," November 10, 2020,
https://www.fns.usda.gov/snap/benefit-redemption-patterns-fy-2017.

[120] Brynne Keith-Jennings, Joseph Llobrera, and Stacy Dean, "Links of the
Supplemental Nutrition Assistance Program With Food Insecurity, Poverty,
and Health: Evidence and Potential," *American Journal of Public Health* 109,
1636-1640, November 6, 2019,
https://ajph.aphapublications.org/doi/full/10.2105/AJPH.2019.305325.

[121] Brynne Keith-Jennings, Joseph Llobrera, and Stacy Dean, "Links of the
Supplemental Nutrition Assistance Program With Food Insecurity, Poverty,
and Health: Evidence and Potential," *American Journal of Public Health* 109,
1636-1640, November 6, 2019,
https://ajph.aphapublications.org/doi/full/10.2105/AJPH.2019.305325.

[122] Brynne Keith-Jennings, Joseph Llobrera, and Stacy Dean, "Links of the
Supplemental Nutrition Assistance Program With Food Insecurity, Poverty,
and Health: Evidence and Potential," *American Journal of Public Health* 109,
1636-1640, November 6, 2019,
https://ajph.aphapublications.org/doi/full/10.2105/AJPH.2019.305325.

[123] Center on Budget and Policy Priorities, "Policy Basics: The Supplemental Nutrition Assistance Program (SNAP)," June 9, 2022, https://www.cbpp.org/research/food-assistance/the-supplemental-nutrition-assistance-program-snap.

[124] Steven Carlson and Zoë Neuberger, "WIC Works: Addressing the Nutrition and Health Needs of Low-Income Families for More Than Four Decades," Center on Budget and Policy Priorities, January 27, 2021, https://www.cbpp.org/research/food-assistance/wic-works-addressing-the-nutrition-and-health-needs-of-low-income-families.

[125] Center on Budget and Policy Priorities, "Policy Basics: Special Supplemental Nutrition Program for Women, Infants, and Children," October 5, 2022, https://www.cbpp.org/research/food-assistance/special-supplemental-nutrition-program-for-women-infants-and-children#:~:text=WIC%20provided%20an%20average%20value,%2D19%20Pandemic%E2%80%9D%20below).

[126] Brynne Keith-Jennings, Joseph Llobrera, and Stacy Dean, "Links of the Supplemental Nutrition Assistance Program With Food Insecurity, Poverty, and Health: Evidence and Potential," *American Journal of Public Health* 109, 1636-1640, November 6, 2019, https://ajph.aphapublications.org/doi/full/10.2105/AJPH.2019.305325.

[127] Brynne Keith-Jennings, Joseph Llobrera, and Stacy Dean, "Links of the Supplemental Nutrition Assistance Program With Food Insecurity, Poverty, and Health: Evidence and Potential," *American Journal of Public Health* 109, 1636-1640, November 6, 2019, https://ajph.aphapublications.org/doi/full/10.2105/AJPH.2019.305325.

[128] Steven Carlson and Brynne Keith-Jennings, "SNAP Is Linked with Improved Nutritional Outcomes and Lower Health Care Costs," Center on Budget and Policy Priorities, January 17, 2018, https://www.cbpp.org/research/food-assistance/snap-is-linked-with-improved-nutritional-outcomes-and-lower-health-care#_ftnref14.

[129] Center on Budget and Policy Priorities, "Policy Basics: The Supplemental Nutrition Assistance Program (SNAP)," June 9, 2022, https://www.cbpp.org/research/food-assistance/the-supplemental-nutrition-assistance-program-snap.

[130] Center on Budget and Policy Priorities, "Policy Basics: Special Supplemental Nutrition Program for Women, Infants, and Children," October 5, 2022, https://www.cbpp.org/research/food-assistance/special-supplemental-nutrition-program-for-women-infants-and-children#:~:text=WIC%20provided%20an%20average%20value,%2D19%20Pandemic%E2%80%9D%20below).

[131] Dottie Rosenbaum, Katie Bergh, and Lauren Hall, "Temporary Pandemic SNAP Benefits Will End in Remaining 35 States in March 2023," Center on Budget and Policy Priorities, February 6, 2023, https://www.cbpp.org/research/food-assistance/temporary-pandemic-snap-benefits-will-end-in-remaining-35-states-in-march.

[132] U.S. Department of Agriculture, "SNAP and the Thrifty Food Plan," https://www.fns.usda.gov/snap/thriftyfoodplan.

[133] Zoë Neuberger, "WIC Needs Additional Funding to Avoid Forcing New Parents and Young Children Onto Waiting Lists," Center on Budget and Policy Priorities, June 12, 2023, https://www.cbpp.org/blog/wic-needs-additional-funding-to-avoid-forcing-new-parents-and-young-children-onto-waiting.

[134] Zoë Neuberger, "WIC Needs Additional Funding to Avoid Forcing New Parents and Young Children Onto Waiting Lists," Center on Budget and Policy Priorities, June 12, 2023, https://www.cbpp.org/blog/wic-needs-additional-funding-to-avoid-forcing-new-parents-and-young-children-onto-waiting.

[135] Zoë Neuberger, "WIC Needs Additional Funding to Avoid Forcing New Parents and Young Children Onto Waiting Lists," Center on Budget and Policy Priorities, June 12, 2023, https://www.cbpp.org/blog/wic-needs-additional-funding-to-avoid-forcing-new-parents-and-young-children-onto-waiting.

[136] Center on Budget and Policy Priorities, "Policy Basics: Special Supplemental Nutrition Program for Women, Infants, and Children," October 5, 2022, https://www.cbpp.org/research/food-assistance/special-supplemental-nutrition-program-for-women-infants-and-children#:~:text=WIC%20provided%20an%20average%20value,-19%20Pandemic%E2%80%9D%20below.

[137] Center on Budget and Policy Priorities, "Policy Basics: Special Supplemental Nutrition Program for Women, Infants, and Children," October 5, 2022, https://www.cbpp.org/research/food-assistance/special-supplemental-nutrition-program-for-women-infants-and-children#:~:text=WIC%20provided%20an%20average%20value,-19%20Pandemic%E2%80%9D%20below.

[138] Center on Budget and Policy Priorities, "Policy Basics: Special Supplemental Nutrition Program for Women, Infants, and Children," October 5, 2022, https://www.cbpp.org/research/food-assistance/special-supplemental-nutrition-program-for-women-infants-and-children#:~:text=WIC%20provided%20an%20average%20value,-19%20Pandemic%E2%80%9D%20below.

[139] Center on Budget and Policy Priorities, "Policy Basics: Special Supplemental Nutrition Program for Women, Infants, and Children," October 5, 2022, https://www.cbpp.org/research/food-assistance/special-supplemental-nutrition-program-for-women-infants-and-children#:~:text=WIC%20provided%20an%20average%20value,-19%20Pandemic%E2%80%9D%20below.

[140] Center on Budget and Policy Priorities, "Policy Basics: Special Supplemental Nutrition Program for Women, Infants, and Children," October 5, 2022, https://www.cbpp.org/research/food-assistance/special-supplemental-nutrition-program-for-women-infants-and-children#:~:text=WIC%20provided%20an%20average%20value,-19%20Pandemic%E2%80%9D%20below.

[141] Zoë Neuberger, "Permanent Summer Grocery Benefits Are a Big Win for Children in Low-Income Families, Despite Disappointing Tradeoffs," Center on Budget and Policy Priorities, December 20, 2022, https://www.cbpp.org/blog/permanent-summer-grocery-benefits-are-a-big-win-for-children-in-low-income-families-despite#:~:text=The%20new%20Summer%20EBT%20benefits,children%20in%20families%20receiving%20SNAP.

[142] Lauren Bauer, Krista Ruffini, and Diane Whitmore Schanzenbach, "An update on the effect of Pandemic EBT on measures of food hardship," Brookings Institution, September 29, 2021, https://www.brookings.edu/articles/an-update-on-the-effect-of-pandemic-ebt-on-measures-of-food-hardship/.

[143] Zoë Neuberger, "Permanent Summer Grocery Benefits Are a Big Win for Children in Low-Income Families, Despite Disappointing Tradeoffs," Center on Budget and Policy Priorities, December 20, 2022, https://www.cbpp.org/blog/permanent-summer-grocery-benefits-are-a-big-win-for-children-in-low-income-families-despite#:~:text=The%20new%20Summer%20EBT%20benefits,children%20in%20families%20receiving%20SNAP.

[144] Joint Economic Committee, "Updated SNAP Benefit Levels Will Help 42 Million People and Add $31.8 Billion in Local Economic Activity Every Year," September 16, 2021, https://www.jec.senate.gov/public/index.cfm/democrats/issue-briefs?ID=C9612C05-8504-4B39-82DB-E45C9E05B36C.

[145] Federal Reserve Economic Data, Federal Reserve Bank of St. Louis, Labor Force Participation Rate, Percent, Seasonally Adjusted, https://fred.stlouisfed.org/series/CIVPART.

[146] Shibata Ippei, "The distributional impact of recessions: The global financial crisis and the COVID-19 pandemic recession," *J Econ Bus*. May-Jun

2021, Vol. 115, No. 105971,
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9183946/.

[147] Federal Reserve Economic Data, Federal Reserve Bank of St. Louis, Labor Force Participation Rate, Percent, Seasonally Adjusted, https://fred.stlouisfed.org/series/CIVPART.

[148] Council of Economic Advisors, "The Labor Supply Rebound from the Pandemic,' April 17, 2023, https://www.whitehouse.gov/cea/written-materials/2023/04/17/the-labor-supply-rebound-from-the-pandemic/.

[149] Bureau of Labor Statistics, (Seas) Labor Force Participation Rate - 25-54 yrs., percent, https://beta.bls.gov/dataViewer/view/timeseries/LNS11300060.

[150] Council of Economic Advisors, "The Labor Supply Rebound from the Pandemic,' April 17, 2023, https://www.whitehouse.gov/cea/written-materials/2023/04/17/the-labor-supply-rebound-from-the-pandemic/.

[151] Bureau of Labor Statistics, (Seas) Labor Force Participation Rate - 25-54 yrs., percent, https://beta.bls.gov/dataViewer/view/timeseries/LNS11300060.

[152] Executive Office of the President of the United States, "The Labor Force Participation Rate Since 2007: Causes and Policy Implications," July 2014, https://obamawhitehouse.archives.gov/sites/default/files/docs/labor_force_participation_report.pdf.

[153] Executive Office of the President of the United States, "The Labor Force Participation Rate Since 2007: Causes and Policy Implications," July 2014, https://obamawhitehouse.archives.gov/sites/default/files/docs/labor_force_participation_report.pdf.

[154] Executive Office of the President of the United States, "The Labor Force Participation Rate Since 2007: Causes and Policy Implications," July 2014, https://obamawhitehouse.archives.gov/sites/default/files/docs/labor_force_participation_report.pdf.

[155] Michelle J.K. Osterman, Brady E. Hamilton, Joyce A. Martin, Anne K. Driscoll, and Claudia P. Valenzuela, "Births: Final Data for 2021," National Vital Statistics Reports, January 31, 2023, https://www.cdc.gov/nchs/data/nvsr/nvsr72/nvsr72-01.pdf.

[156] Executive Office of the President of the United States, "The Labor Force Participation Rate Since 2007: Causes and Policy Implications," July 2014, https://obamawhitehouse.archives.gov/sites/default/files/docs/labor_force_participation_report.pdf.

[157] Robert Kaestner, Bowen Garrett, Anuj Gangopadhyaya, and Caitlyn Fleming, "Effects of ACA Medicaid Expansions on Health Insurance Coverage and Labor Supply," National Bureau of Economic Research,

Working Paper 21836,
https://www.nber.org/system/files/working_papers/w21836/w21836.pdf.

[158] Bureau of Business and Economic Research, University of Montana, "The Economic Impact of Medicaid Expansion in Montana," April 2018, https://mthcf.org/wp-content/uploads/2018/04/BBER-MT-Medicaid-Expansion-Report_4.11.18.pdf.

[159] The Ohio Department of Medicaid, "Ohio Medicaid Group VIII Assessment: A Report to the Ohio General Assembly," 2016, https://medicaid.ohio.gov/wps/wcm/connect/gov/b0779c0a-5061-45f9-b441-9bf06e2f0070/Group-VIII-Assessment.pdf?MOD=AJPERES&CONVERT_TO=url&CACHEID=ROOTWORKSPACE.Z18_M1HGGIK0N0JO00QO9DDDDM3000-b0779c0a-5061-45f9-b441-9bf06e2f0070-nAURfxy.

[160] Renuka Tipirneni, John Ayanian, Jeffrey Kullgren, Susan Goold, Edith Kieffer, Tammy Chang, Adrianne Haggins, and Sarah Clark, Sunghee Lee, "Medicaid Expansion Helped Enrollees Do Better at Work or in Job Searches," Institute for Healthcare Policy and Innovation, University of Michigan, June 27, 2017, https://ihpi.umich.edu/news/medicaid-expansion-helped-enrollees-do-better-work-or-job-searches.

[161] Rogier M. van Rijn, Suzan J. W. Robroek, Sandra Brouwer, and Alex Burdof, "Influence of poor health on exit from paid employment: a systematic review," *Occupational and Environmental Medicine*, Vol. 71, 295-301, 2014, https://oem.bmj.com/content/71/4/295/.

[162] Peter Warr, "Well-being and the workplace," *Well-being: The foundations of hedonic psychology*, 392-412, Russell Sage Foundation,1999, https://psycnet.apa.org/record/1999-02842-020.

[163] Organization for Economic Co-operation and Development, "Indicator A3. How does educational attainment affect participation in the labour market?" *Education at a Glance 2022: OECD Indicators*, OECD Publishing, October 3, 2022, https://www.oecd-ilibrary.org/sites/0c0b63ae-en/index.html?itemId=/content/component/0c0b63ae-en.

[164] Bureau of Labor Statistics, "Education Pays, 2021," May 2022, https://www.bls.gov/careeroutlook/2022/data-on-display/education-pays.htm.

[165] Organization for Economic Co-operation and Development, "Indicator A3. How does educational attainment affect participation in the labour market?" *Education at a Glance 2022: OECD Indicators*, OECD Publishing, October 3, 2022, https://www.oecd-ilibrary.org/sites/0c0b63ae-en/index.html?itemId=/content/component/0c0b63ae-en.

[166] Maria Esther Oswald-Egg and Ursula Renold, "No experience, no employment: The effect of vocational education and training work experience

on labour market outcomes after higher education," *Economics of Education Review*, Vol. 80, February 2021, https://www.sciencedirect.com/science/article/pii/S0272775720305513.

[167] Maúna Soares de Baldini Rocha and Vladimir Ponczek, "The effects of adult literacy on earnings and employment," *Economics of Education Review*, Vol. 30, 755-764, August 2011, https://www.sciencedirect.com/science/article/abs/pii/S0272775711000483.

[168] Organization for Economic Co-operation and Development, "Building inclusive labour markets: active labour market policies for the most vulnerable groups," October 25, 2021, https://read.oecd-ilibrary.org/view/?ref=1112_1112680-u38fb4etmq&title=Building-inclusive-labour-markets-active-labour-market-policies-for-the-most-vulnerable-groups.

[169] George Zuo, "Wired and Hired: Employment Effects of Subsidized Broadband Internet for Low-Income Americans," *American Economic Journal: Economic Policy*, Vol. 13, No. 3, 447-482, August 2021, https://www.aeaweb.org/articles?id=10.1257/pol.20190648.

[170] Lisa Dettling, "Broadband in the Labor Market: The Impact of Residential High-Speed Internet on Married Women's Labor Force Participation," Federal Reserve Board, February 2015, https://www.federalreserve.gov/pubs/feds/2013/201365/201365pap.pdf.

[171] Government Accountability Office, "Telecommunications Workforce: Additional Workers Will Be Needed to Deploy Broadband, but Concerns Exist About Availability," December 15, 2022, https://www.gao.gov/products/gao-23-105626.

[172] The Annie E. Casey Foundation, "2023 Kids Count Data Book: 2023 State Trends in Child Well-Being," June 14, 2023, https://www.aecf.org/resources/2023-kids-count-data-book.

[173] Francesco Grigoli, Zsóka Kóczán, and Petia Topalova, "Wanted: Policies to Encourage and Enable Work in Advanced Economies," IMF Blog, April 9, 2018, https://www.imf.org/en/Blogs/Articles/2018/04/09/wanted-policies-to-encourage-and-enable-work-in-advanced-economies.

[174] New American Economy, "Immigration and America's Growth," March 26, 2020, https://data.newamericaneconomy.org/en/immigration-aging-workforce/.

[175] Joint Economic Committee, "The Contributions of Immigrants Are Essential to U.S. Economic Growth and Competitiveness," December 14, 2022, https://www.jec.senate.gov/public/_cache/files/bbe8da67-3ebf-4ac8-b3c1-62faca709e8b/final-immigrants-and-economy.pdf.

[176] Bipartisan Policy Center, "Reforming Employment-Based Immigration," July 27, 2022, https://bipartisanpolicy.org/report/reforming-employment-based-immigration/.

[177] Amelia Cheatham and Diana Roy, "What Is Canada's Immigration Policy?", Council on Foreign Relations, March 7, 2023, https://www.cfr.org/backgrounder/what-canadas-immigration-policy.

[178] Joint Economic Committee, "Modernizing the Schedule A Occupation List Can Help The United States Address Key Employment Shortages", June 30, 2023, https://www.jec.senate.gov/public/index.cfm/democrats/issue-briefs?ID=BDFE9EB0-1E17-4BA2-B3D0-C13A6CF31123.

[179] Arvind Magesan, "Nobel winner David Card shows immigrants don't reduce the wages of native-born workers," *The Conversation*, October 14, 2021, https://theconversation.com/nobel-winner-david-card-shows-immigrants-dont-reduce-the-wages-of-native-born-workers-169768.

[180] Dany Bahar, Carlos Daboin Contreras, and Greg Wright "The immigrant workforce supports millions of US jobs, " Brookings Institute, October 17, 2022, https://www.brookings.edu/blog/future-development/2022/10/17/the-immigrant-workforce-supports-millions-of-u-s-jobs/.

[181] Elior Cohen and Samantha Shampine, "Immigration Shortfall May Be a Headwind for Labor Supply", Federal Reserve Bank of Kansas City, May 11, 2022 https://www.kansascityfed.org/research/economic-bulletin/immigration-shortfall-may-be-a-headwind-for-labor-supply/#:~:text=Reduced%20immigration%20is,pre%2Dpandemic%20levels.

[182] Gaetano Basso and Giovanni Peri, "Internal Mobility: The Greater Responsiveness of Foreign-Born to Economic Conditions," *Journal of Economic Perspectives*, Vol. 34, No. 3, 77-90, 2020, https://www.aeaweb.org/articles?id=10.1257/jep.34.3.77.

[183] Ladonna Pavetti, Ed Bolen, Laura Harker, Allison Orris, and Alicia Mazzara, "Expanding Work Requirements Would Make It Harder for People to Meet Basic Needs," Center on Budget and Policy Priorities, March 15, 2023, https://www.cbpp.org/research/poverty-and-inequality/expanding-work-requirements-would-make-it-harder-for-people-to-meet#_ftnref6.

[184] Madeline Guth, Patrick Drake, Robin Rudowitz, and Maiss Mohamed, "Understanding the Intersection of Medicaid & Work: A Look at What the Data Say," KFF, April 24, 2023, https://www.kff.org/medicaid/issue-brief/understanding-the-intersection-of-medicaid-work-a-look-at-what-the-data-say/.

[185] U.S. Centers for Medicare & Medicaid Services, "State Medicaid and CHIP Applications, Eligibility Determinations, and Enrollment Data," February 1, 2020, https://data.medicaid.gov/dataset/6165f45b-ca93-5bb5-

9d06-db29c692a360/data?conditions%5b0%5d%5bresource%5d=t&conditions%5b0%5d%5bproperty%5d=preliminary_updated&conditions%5b0%5d%5bvalue%5d=U&conditions%5b0%5d%5boperator%5d=%3D&conditions%5b1%5d%5bresource%5d=t&conditions%5b1%5d%5bproperty%5d=report_date&conditions%5b1%5d%5bvalue%5d=02/01/2020&conditions%5b1%5d%5boperator%5d==.

[186] Center on Budget and Policy Priorities, "Program Participation Data Dashboard," May 5, 2023, https://apps.cbpp.org/program_participation/#table/357/snap.

[187] Ladonna Pavetti, Ed Bolen, Laura Harker, Allison Orris, and Alicia Mazzara, "Expanding Work Requirements Would Make It Harder for People to Meet Basic Needs," Center on Budget and Policy Priorities, March 15, 2023, https://www.cbpp.org/research/poverty-and-inequality/expanding-work-requirements-would-make-it-harder-for-people-to-meet#_ftnref6.

[188] U.S. Department of Health and Human Services, "FACT SHEET: Medicaid Work Requirements Would Jeopardize Health Coverage and Access to Care for 21 Million Americans," https://www.hhs.gov/sites/default/files/national-work-requirements-fact-sheet.pdf.

[189] Gideon Lukens, "McCarthy Medicaid Proposal Puts Millions of People in Expansion States at Risk of Losing Health Coverage," Center on Budget and Policy Priorities, April 21, 2023, https://www.cbpp.org/research/health/mccarthy-medicaid-proposal-puts-millions-of-people-in-expansion-states-at-risk-of.

[190] Colin Gray, Adam Leive, Elena Prager, Kelsey B. Pukelis, and Mary Zaki, "Employed in a SNAP? The Impact of Work Requirements on Program Participation and Labor Supply," National Bureau of Economic Research, Working Paper 28877, June 2021, https://www.nber.org/system/files/working_papers/w28877/w28877.pdf.

[191] Iris Arbogast, Anna Chorniy, and Janet Currie, "Administrative Burdens and Child Medicaid Enrollments," National Bureau of Economic Research, Working Paper 30580, October 2022, https://www.nber.org/papers/w30580.

[192] Federal rules do not permit states to institute work requirements, but some states have experimented with them, particularly during the Trump administration.

[193] Jennifer Wagner and Jessica Schubel, "States' Experiences Confirm Harmful Effects of Medicaid Work Requirements," Center on Budget and Policy Priorities, November 18, 2020,

https://www.cbpp.org/research/health/states-experiences-confirm-harmful-effects-of-medicaid-work-requirements.

[194] Jennifer Wagner and Jessica Schubel, "States' Experiences Confirm Harmful Effects of Medicaid Work Requirements," Center on Budget and Policy Priorities, November 18, 2020, https://www.cbpp.org/research/health/states-experiences-confirm-harmful-effects-of-medicaid-work-requirements.

[195] Ladonna Pavetti, Ed Bolen, Laura Harker, Allison Orris, and Alicia Mazzara, "Expanding Work Requirements Would Make It Harder for People to Meet Basic Needs," Center on Budget and Policy Priorities, March 15, 2023, https://www.cbpp.org/research/poverty-and-inequality/expanding-work-requirements-would-make-it-harder-for-people-to-meet#_ftnref6.

[196] Center on Budget and Policy Priorities, "Taking Away Medicaid for Not Meeting Work Requirements Harms People with Mental Health Conditions," March 10, 2020, https://www.cbpp.org/research/health/taking-away-medicaid-for-not-meeting-work-requirements-harms-people-with-mental.

[197] Center on Budget and Policy Priorities, "Taking Away Medicaid for Not Meeting Work Requirements Harms People with Disabilities," March 10, 2020, https://www.cbpp.org/research/health/taking-away-medicaid-for-not-meeting-work-requirements-harms-people-with.

[198] Center on Budget and Policy Priorities, "Taking Away Medicaid for Not Meeting Work Requirements Harms People With Substance Use Disorders," March 10, 2020, https://www.cbpp.org/research/health/taking-away-medicaid-for-not-meeting-work-requirements-harms-people-with-substance.

[199] Ladonna Pavetti, Ed Bolen, Laura Harker, Allison Orris, and Alicia Mazzara, "Expanding Work Requirements Would Make It Harder for People to Meet Basic Needs," Center on Budget and Policy Priorities, March 15, 2023, https://www.cbpp.org/research/poverty-and-inequality/expanding-work-requirements-would-make-it-harder-for-people-to-meet#_ftnref6.

[200] Goldman Sachs, "Generative AI could raise global GDP by 7%," 2023, https://www.goldmansachs.com/intelligence/pages/generative-ai-could-raise-global-gdp-by-7-percent.html.

[201] The White House, "The Impact of Artificial Intelligence On The Future Of Workforces In The European Union And The United States Of America," 2022, https://www.whitehouse.gov/wp-content/uploads/2022/12/TTC-EC-CEA-AI-Report-12052022-1.pdf.

[202] Erik Brynjolfsson, Danille Li, and Lindsey Raymond, "Generative AI at Work," National Bureau of Economic Research, Working Paper 31161, April 2023, https://doi.org/10.3386/w31161.

[203] The White House, "The Impact of Artificial Intelligence On The Future Of Workforces In The European Union And The United States Of America," 2022, https://www.whitehouse.gov/wp-content/uploads/2022/12/TTC-EC-CEA-AI-Report-12052022-1.pdf.

[204] Andrea Gallego, Matt Krentz, Miki Tsusaka, Nadjia Yousif, and Frances Brooks Taplett, "How AI Could Help—or Hinder—Women in the Workforce," Boston Consulting Group, May 13, 2019, https://www.bcg.com/publications/2019/artificial-intelligence-ai-help-hinder-women-workforce.

[205] Andrea Gallego, Matt Krentz, Miki Tsusaka, Nadjia Yousif, and Frances Brooks Taplett, "How AI Could Help—or Hinder—Women in the Workforce," Boston Consulting Group, May 13, 2019, https://www.bcg.com/publications/2019/artificial-intelligence-ai-help-hinder-women-workforce.

[206] Andrea Gallego, Matt Krentz, Miki Tsusaka, Nadjia Yousif, and Frances Brooks Taplett, "How AI Could Help—or Hinder—Women in the Workforce," Boston Consulting Group, May 13, 2019, https://www.bcg.com/publications/2019/artificial-intelligence-ai-help-hinder-women-workforce.

[207] Clementine Collett, Gina Neff, and Livia Gouvea Gomes, "The effects of AI on the working lives of women," UNESCO, 2022, https://unesdoc.unesco.org/ark:/48223/pf0000380861.

[208] World Economic Forum, "Towards a Reskilling Revolution Industry-Led Action for the Future of Work" Centre for New Economy and Society Insight Report," In collaboration with Boston Consulting Group, 2019, https://www3.weforum.org/docs/WEF_Towards_a_Reskilling_Revolution.pdf

[209] Andrea Gallego, Matt Krentz, Miki Tsusaka, Nadjia Yousif, and Frances Brooks Taplett, "How AI Could Help—or Hinder—Women in the Workforce," Boston Consulting Group, May 13, 2019, https://www.bcg.com/publications/2019/artificial-intelligence-ai-help-hinder-women-workforce.

[210] Brent Orrell, "AI and the Future of Work: Preparing the Workforce for an AI-Driven Economy," March 31, 2023, https://www.uschamber.com/technology/ai-and-the-future-of-work.

[211] Cecilia Kang, "OpenAI's Sam Altman Urges A.I. Regulation in Senate Hearing," *The New York Times*, May 16, 2023, https://www.nytimes.com/2023/05/16/technology/openai-altman-artificial-intelligence-regulation.html.

[212] UNESCO, "The effects of AI on the working lives of women," UNESCO, 2022, https://unesdoc.unesco.org/ark:/48223/pf0000380861.

[213] The White House, "The impact of artificial intelligence on the future of workforces in the European Union and the United States of America," 2022, https://www.whitehouse.gov/wp-content/uploads/2022/12/TTC-EC-CEA-AI-Report-12052022-1.pdf.

[214] Jon Kleinberg, Himabindu Lakkaraju, Jure Leskovec, Jens Ludwig, J., and Sendhil Mullainathan, "Human Decisions and Machine Predictions*," *The Quarterly Journal of Economics*, Vol. 133, No. 1, 237-293, 2017, https://doi.org/10.1093/qje/qjx032.

[215] Emily Aiken, Suzanne Bellue, Dean Karlan, Christopher Udry, and Joshua Evan Blumenstock, "Machine Learning and Mobile Phone Data Can Improve the Targeting of Humanitarian Assistance," *SSRN Electronic Journal*, 2021, https://doi.org/10.2139/ssrn.3889599.

[216] The White House, "The impact of artificial intelligence on the future of workforces in the European Union and the United States of America," 2022, https://www.whitehouse.gov/wp-content/uploads/2022/12/TTC-EC-CEA-AI-Report-12052022-1.pdf.

[217] The White House, "Blueprint for an AI Bill of Rights," 2022, https://www.whitehouse.gov/ostp/ai-bill-of-rights/.

[218] The White House, "Executive Order on Further Advancing Racial Equity and Support for Underserved Communities Through The Federal Government," February 16, 2023, https://www.whitehouse.gov/briefing-room/presidential-actions/2023/02/16/executive-order-on-further-advancing-racial-equity-and-support-for-underserved-communities-through-the-federal-government/.

[219] U.S. Senator Martin Heinrich, "Heinrich, Portman Launch Bipartisan Artificial Intelligence Caucus," March 13, 2019, https://www.heinrich.senate.gov/newsroom/press-releases/heinrich-portman-launch-bipartisan-artificial-intelligence-caucus.

[220] U.S. Congressman Michael McCaul, "Congressional AI Caucus Co-Chairs announce Vice-Chairs and new core initiative," March 30, 2022, https://mccaul.house.gov/media-center/press-releases/congressional-ai-caucus-co-chairs-announce-vice-chairs-and-new-core.

[221] U.S. National Science Foundation, "NSF announces 7 new National Artificial Intelligence Research Institutes," May 8, 2023, https://www.nsf.gov/news/news_summ.jsp?cntn_id=307446&org=BCS#:~:text=May%208%2C%202023&text=The%20U.S.%20National%20Science%20Foundation.

[222] U.S. Department of Energy Staff Briefing, "Artificial Intelligence: Update from the Department of Energy and the National Labs," June 22, 2023.

[223] National Artificial Intelligence Research Resource Task Force, "Strengthening and Democratizing the U.S. Artificial Intelligence Innovation Ecosystem An Implementation Plan for a National Artificial Intelligence Research Resource," 2023, https://www.ai.gov/wp-content/uploads/2023/01/NAIRR-TF-Final-Report-2023.pdf.

[224] The White House, "The impact of artificial intelligence on the future of workforces in the European Union and the United States of America," 2022, https://www.whitehouse.gov/wp-content/uploads/2022/12/TTC-EC-CEA-AI-Report-12052022-1.pdf.

[225] U.S. Senator Martin Heinrich, "Senators Heinrich, Wyden, Lummis Introduce Bipartisan Bill To Protect Americans' Data From Unfriendly Foreign Nations," *Los Almos Daily Post*, June 20, 2023, https://ladailypost.com/u-s-Senators-heinrich-wyden-lummis-introduce-bipartisan-bill-to-protect-americans-data-from-unfriendly-foreign-nations/.

[226] David Brancaccio and Rose Conlon, "Union membership fell in 2021, despite high-profile campaigns. Where do workers go from here?", *Marketplace*, January 30, 2022, https://www.marketplace.org/2022/01/31/union-membership-fell-in-2021-despite-high-profile-campaigns-where-do-workers-go-from-here/.

[227] Asha Banerjee, Margaret Poydock, Celine McNicholas, Ihna Mangundayao, and Ali Sait, "Unions are not only good for workers, they're good for communities and for democracy", Economic Policy Institute, December 15, 2021, https://www.epi.org/publication/unions-and-well-being/.

[228] Economic Policy Institute, "Unions help reduce disparities and strengthen our democracy," April 23, 2021, https://www.epi.org/publication/unions-help-reduce-disparities-and-strengthen-our-democracy/.

[229] Economic Policy Institute, "Unions help reduce disparities and strengthen our democracy," April 23, 2021, https://www.epi.org/publication/unions-help-reduce-disparities-and-strengthen-our-democracy/.

[230] Washington Center for Equitable Growth, "Factsheet: How strong unions can restore workers' bargaining power," May 1, 2020, https://equitablegrowth.org/factsheet-how-strong-unions-can-restore-workers-bargaining-power/.

[231] James Gilbert Cassedy, "African Americans and the American Labor Movement," *Prologue Magazine*, Vol. 29, No. 2, 1997, https://www.archives.gov/publications/prologue/1997/summer/american-labor-movement.html.

[232] Chris Fuchs, "150 Years Ago, Chinese Railroad Workers Staged the Era's Largest Labor Strike," *NBC News*, June 21, 2017,

https://www.nbcnews.com/news/asian-america/150-years-ago-chinese-railroad-workers-staged-era-s-largest-n774901.

[233] Zaragosa Vargas, "American Latino Theme Study: Labor," National Park Service, https://www.nps.gov/articles/latinothemelabor.htm.

[234] James Gilbert Cassedy, "African Americans and the American Labor Movement," *Prologue Magazine*, Vol. 29, No. 2, 1997, https://www.archives.gov/publications/prologue/1997/summer/american-labor-movement.html.

[235] Zaragosa Vargas, "American Latino Theme Study: Labor," National Park Service, https://www.nps.gov/articles/latinothemelabor.htm.

[236] Chris Fuchs, "150 Years Ago, Chinese Railroad Workers Staged the Era's Largest Labor Strike," *NBC News*, June 21, 2017, https://www.nbcnews.com/news/asian-america/150-years-ago-chinese-railroad-workers-staged-era-s-largest-n774901.

[237] Lesley Solomon, "Japanese Exclusion and the American Labor Movement: 1900 to 1924," *Education About* Asia, Vol. 17, No. 3, Association for Asian Studies, 2012, https://www.asianstudies.org/publications/eaa/archives/japanese-exclusion-and-the-american-labor-movement-1900-to-1924/.

[238] Bureau of Labor Statistics, "Union Members 2022," January 19, 2023, https://www.bls.gov/news.release/pdf/union2.pdf.

[239] Reckoning Trade, "How The PRO Act Impacts Marginalized Workers," July 7, 2021, https://reckoningtradeproject.org/2021/07/07/how-pro-act-impacts-marginalized-workers/.

[240] Economic Policy Institute, "Unions help reduce disparities and strengthen our democracy," April 23, 2021, https://www.epi.org/publication/unions-help-reduce-disparities-and-strengthen-our-democracy/.

[241] Aurelia Glass, David Madland, and Christian E. Weller, "Unions Help Increase Wealth for All and Close Racial Wealth Gaps," September 6, 2021, Center for American Progress, https://www.americanprogress.org/article/unions-help-increase-wealth-close-racial-wealth-gaps/.

[242] Heidi Shierholz, Margaret Poydock, John Schmitt, and Celine McNicholas "Latest data release on unionization is a wake-up call to lawmakers," Economic Policy Institute, January 20, 2022, https://www.epi.org/publication/latest-data-release-on-unionization-is-a-wake-up-call-to-lawmakers/.

[243] Economic Policy Institute, "Unions help reduce disparities and strengthen our democracy," April 23, 2021, https://www.epi.org/publication/unions-help-reduce-disparities-and-strengthen-our-democracy/.

[244] Jessie HF Hammerling, "The Inflation Reduction Act Charts a Path that is Pro-Climate and Pro-Worker," UC Berkeley Labor Center, August 18, 2022, https://laborcenter.berkeley.edu/ira-charts-a-path-that-is-both-pro-climate-and-pro-worker/.

[245] The White House, "FACT SHEET: The Bipartisan Infrastructure Investment and Jobs Act Creates Good-Paying Jobs and Supports Workers," August 3, 2021, https://www.whitehouse.gov/briefing-room/statements-releases/2021/08/03/fact-sheet-the-bipartisan-infrastructure-investment-and-jobs-act-creates-good-paying-jobs-and-supports-workers/.

[246] Zachary Phillips, "Despite Biden PLA order, non-union contractors can win federal projects," Construction Dive, February 24, 2022, https://www.constructiondive.com/news/project-labor-agreement-pla-union-iija-bidens-executive-order/619320/.

[247] Richard Freeman, Eunice Han, David Madland and Brendan V. Duke, "How Does Declining Unionism Affect The American Middle Class And Intergenerational Mobility?," National Bureau of Economic Research, Working Paper 21638, October 2015, https://www.nber.org/system/files/working_papers/w21638/w21638.pdf.

[248] Celine McNicholas, Margaret Poydock, and Lynn Rhinehart, "How the PRO Act restores workers' right to unionize," Economic Policy Institute, February 4, 2021, https://www.epi.org/publication/pro-act-problem-solution-chart/.

[249] Karl Russel and Christine Zhang, "3 Failed Banks This Year Were Bigger Than 25 That Crumbled in 2008," *The New York Times,* May 1, 2023, https://www.nytimes.com/interactive/2023/business/bank-failures-svb-first-republic-signature.html.

[250] Rebecca Burns, David Sirota, Julia Rock, and Andrew Perez, "Silicon Valley Bank chief pressed Congress to weaken risk regulations," *The Guardian,* March 11, 2023, https://www.theguardian.com/business/2023/mar/11/silicon-valley-bank-weaken-risk-regulations-svb.

[251] Christopher J. Neely and Michelle Clark Neely, "Interest Rate Risk, Bank Runs and Silicon Valley Bank," The Federal Reserve Bank of St. Louis, May 11, 2023, https://www.stlouisfed.org/publications/regional-economist/2023/may/interest-rate-risk-bank-runs.

[252] Federal Deposit Insurance Corporation, "Recent Bank Failures and the Federal Regulatory Response" Statement of Chairman Martin J. Gruenberg

before the U.S. Senate Committee on Banking, Housing and Urban Affairs, March 28, 2023, https://www.fdic.gov/news/speeches/2023/spmar2723.pdf.

[253] Karl Evers-Hillstrom, "Bidding for First Republic lasts into the night: A guide to the latest banking crisis," *The Hill,* April 20, 2023, https://thehill.com/business/3911002-what-to-know-about-first-republic-bank.

[254] Lawrence Delevingne, "Explainer: Why First Republic Bank failed and what JPMorgan's deal means," *Reuters*, May 1, 2023, https://www.reuters.com/business/finance/why-first-republic-bank-failed-what-jpmorgans-deal-means-2023-05-01/.

[255] Hannah Levitt, Jenny Surane, and Sonali Basak. "First Republic: Cheap, interest-only jumbo mortgages to Silicon Valley's elite fueled the bank's failure," *The Los Angeles Times,* May 1, 2023, https://www.latimes.com/business/story/2023-05-01/first-republic-silicon-valley-jumbo-mortgages-fueled-bank-failure.

[256] Ryan Hogg, "Why First Republic failed, and what it means for the rest of the banking industry," *Business Insider*, May 1, 2023, https://www.businessinsider.com/why-first-republic-failed-what-means-rest-banking-industry-2023-5.

[257] German Lopez, "Another Bank Failure," *The New York Times,* May 2, 2023, https://www.nytimes.com/2023/05/02/briefing/bank-failures-first-republic-bank.html.

[258] The Board of Governors of the Federal Reserve System, "Transcript of Chair Powell's Press Conference," June 14, 2023, https://www.federalreserve.gov/mediacenter/files/FOMCpresconf20230614.pdf.

[259] German Lopez, "Another Bank Failure," *The New York Times,* May 2, 2023, https://www.nytimes.com/2023/05/02/briefing/bank-failures-first-republic-bank.html.

[260] Douglas J. Elliott, "Regulating Systemically Important Financial Institutions That Are Not Banks," Brookings Institution, May 9, 2013, https://www.brookings.edu/research/regulating-systemically-important-financial-institutions-that-are-not-banks/.

[261] Rebecca Burns, David Sirota, Julia Rock, and Andrew Perez, "Silicon Valley Bank chief pressed Congress to weaken risk regulations," *The Guardian,* March 11, 2023, https://www.theguardian.com/business/2023/mar/11/silicon-valley-bank-weaken-risk-regulations-svb.

[262] Alice Abboud, Elizabeth Duncan, Akos Horvath, Diana Iercosan, Bert Loudis, Francis Martinez, Timothy Mooney, Ben Ranish, Ke Wang, Missaka Warusawitharana, and Carlo Wix "COVID 19 as a Stress Test: Assessing the

Bank Regulatory Framework," Board of Governors of the Federal Reserve System, Finance and Economics Discussion Series 2021-024, https://doi.org/10.17016/FEDS.2021.024.

[263] Alan Rappeport and Emily Flitter, "Congress Approves First Big Dodd-Frank Rollback," *The New York Times,* May 22, 2018, https://www.nytimes.com/2018/05/22/business/congress-passes-dodd-frank-rollback-for-smaller-banks.html.

[264] The Board of Governors of the Federal Reserve System, "Review of the Federal Reserve's Supervision and Regulation of Silicon Valley Bank," April 28, 2023, https://www.federalreserve.gov/publications/files/svb-review-20230428.pdf.

[265] The Board of Governors of the Federal Reserve System, "Review of the Federal Reserve's Supervision and Regulation of Silicon Valley Bank," April 28, 2023, https://www.federalreserve.gov/publications/files/svb-review-20230428.pdf.

[266] Mark Thompson, Liz Enochs, and Chris Isidore, "Silicon Valley Bank has a new owner. What it means for the bank crisis," *CNN Business,* March 27, 2023, https://www.cnn.com/2023/03/27/business/fdic-announces-first-citizens-purchase-silicon-valley-bank/index.html.

[267] Marc Labonte, "Silicon Valley Bank, Signature Bank, and P.L. 115-174: Part 2 (Issues Surrounding Their Failures)," Congressional Research Service, March 28, 2023, https://www.crs.gov/Reports/IN12130.

[268] The Board of Governors of the Federal Reserve System, "Review of the Federal Reserve's Supervision and Regulation of Silicon Valley Bank," April 28, 2023, https://www.federalreserve.gov/publications/files/svb-review-20230428.pdf.

[269] The Board of Governors of the Federal Reserve, "Review of the Federal Reserve's Supervision and Regulation of Silicon Valley Bank," April 28, 2023, https://www.federalreserve.gov/publications/files/svb-review-20230428.pdf.

[270] Joint Economic Committee, "Dodd-Frank Roll Back Bill: A Windfall for Big Banks," March 6, 2018, https://www.jec.senate.gov/public/index.cfm/democrats/2018/3/dodd-frank-roll-back-bill-a-windfall-for-big-banks.

[271] U.S. Senator Martin Heinrich, "Heinrich Joins Democrats in Push for More Regulations After Bank Failures, Press Release," March 16, 2023, https://www.heinrich.senate.gov/newsroom/in-the-news/heinrich-joins-democrats-in-push-for-more-regulations-after-bank-failures.

[272] Congress.gov, "S.817 – 118th Congress(2023-2024): The Secure Viable Banking Act," March 15, 2023, https://www.congress.gov/bill/118th-

congress/senate-bill/817?s=1&r=1&q=%7B%22search%22%3A%5B%22Secure+Viable+Banking+Act%22%5D%7D.

[273] The Securities and Exchange Commission, "Investment Securities," June 30, 2020, https://www.sec.gov/Archives/edgar/data/109380/000010938020000212/R12.htm.

[274] The Board of Governors of the Federal Reserve System, "Review of the Federal Reserve's Supervision and Regulation of Silicon Valley Bank," April 28, 2023, https://www.federalreserve.gov/publications/files/svb-review-20230428.pdf.

[275] Marc Labonte, "Silicon Valley Bank, Signature Bank, and P.L. 115-174: Part 2 (Issues Surrounding Their Failures)," CRS Insight, Congressional Research Service, March 28, 2023, https://www.crs.gov/Reports/IN12130.

[276] The Board of Governors of the Federal Reserve System, "Review of the Federal Reserve's Supervision and Regulation of Silicon Valley Bank," April 28, 2023, https://www.federalreserve.gov/publications/files/svb-review-20230428.pdf.

[277] Office of the Comptroller of the Currency, "Applicability Thresholds for Regulatory Capital and Liquidity Requirements: Final Rule," November 1, 2019, https://www.occ.treas.gov/news-issuances/bulletins/2019/bulletin-2019-52.html.

[278] The Federal Reserve Board of Governors, "Requirements for Domestic and Foreign Banking Organizations," October 19, 2019, https://www.federalreserve.gov/aboutthefed/boardmeetings/files/tailoring-rule-visual-20191010.pdf.

[279] First Republic Bank, "Basel III Regulatory Capital Disclosures," March 31, 2022, https://ir.firstrepublic.com/static-files/b347c339-588e-4d20-82cd-0a439f21e3a0.

[280] Marc Labonte, "Silicon Valley Bank, Signature Bank, and P.L. 115-174: Part 2 (Issues Surrounding Their Failures)," CRS Insight, Congressional Research Service, March 28, 2023, https://www.crs.gov/Reports/IN12130.

[281] Jonathan Schwantes, "How Cable Companies Use Hidden Fees to Raise Prices and Disguise the True Cost of Service," Consumer Reports, October 2019, https://advocacy.consumerreports.org/wp-content/uploads/2019/10/CR_WhatTheFeeReport_6F_sm-1.pdf.

[282] Consumer Financial Protection Bureau, "CFPB Research Shows Banks' Deep Dependence on Overdraft Fees," December 1, 2021, https://www.consumerfinance.gov/about-us/newsroom/cfpb-research-shows-banks-deep-dependence-on-overdraft-fees/.

[283] Consumer Financial Protection Bureau, "CFPB Finds Credit Card Companies Charged $12 Billion in Late Fee Penalties in 2020," March 29, 2022, https://www.consumerfinance.gov/about-us/newsroom/cfpb-finds-credit-card-companies-charged-12-billion-in-late-fee-penalties-in-2020/.

[284] Consumer Financial Protection Bureau, "Credit Card Late Fees," March 2022, https://files.consumerfinance.gov/f/documents/cfpb_credit-card-late-fees_report_2022-03.pdf.

[285] Stephen Arves and Meghan Greene, "Amid Resurgence of Interest in Overdraft, New Data Reveal How Inequitable It Can Be," Financial Health Network, September 3, 2021, https://finhealthnetwork.org/amid-resurgence-of-interest-in-overdraft-new-data-reveal-how-inequitable-it-can-be/.

[286] Alexander Rasch, Miriam Thöne, and Tobias Wenzel, "Drip pricing and its regulation: Experimental evidence*," Journal of Economic Behavior & Organization*, Vol. 176, 353-370, August 2020, https://doi.org/10.1016/j.jebo.2020.04.007.

[287] Shelle Santana, Steven K. Dallas, and Vicki G. Morwitz, "Consumer Reactions to Drip Pricing," *Marketing Science*, Vol. 39, No. 1, 188-210, January 15, 2020, https://doi.org/10.1287/mksc.2019.1207.

[288] The Council of Economic Advisers, "How Junk Fees Distort Competition," March 21, 2023, https://www.whitehouse.gov/cea/written-materials/2023/03/21/how-junk-fees-distort-competition/.

[289] Glenn Ellison and Sara Fisher Ellison, "Search, Obfuscation, and Price Elasticities on the Internet," *Econometrica*, Vol. 77, No. 2, 437-452, March 5, 2009, https://doi.org/10.3982/ecta5708.

[290] Sumit Agarwal, Souphala Chomsisengphet, Neale Mahoney, and Johannes Stroebel, "Regulating Consumer Financial Products: Evidence from Credit Cards," National Bureau of Economic Research, Working Paper 19484, September 2013, https://doi.org/10.3386/w19484.

[291] Sumit Agarwal, Souphala Chomsisengphet, Neale Mahoney, and Johannes Stroebel, "Regulating Consumer Financial Products: Evidence from Credit Cards," National Bureau of Economic Research, Working Paper 19484, September 2013, https://doi.org/10.3386/w19484.

[292] Alexander Rasch, Miriam Thöne, and Tobias Wenzel, "Drip pricing and its regulation: Experimental evidence*," Journal of Economic Behavior & Organization*, Vol. 176, 353-370, August 2020, https://doi.org/10.1016/j.jebo.2020.04.007.

[293] Consumer Financial Protection Bureau, "CFPB Issues Guidance to Help Banks Avoid Charging Illegal Junk Fees on Deposit Accounts," October 26, 2022, https://www.consumerfinance.gov/about-us/newsroom/cfpb-issues-

guidace-to-help-banks-avoid-charging-illegal-junk-fees-on-deposit-accounts/.

[294] Consumer Financial Protection Bureau, "CFPB Proposes Rule to Rein in Excessive Credit Card Late Fees," February 1, 2023, https://www.consumerfinance.gov/about-us/newsroom/cfpb-proposes-rule-to-rein-in-excessive-credit-card-late-fees/.

[295] Consumer Financial Protection Bureau, "CFPB Takes Action Against Bank of America for Illegally Charging Junk Fees, Withholding Credit Card Rewards, and Opening Fake Accounts," July 11, 2023, https://www.consumerfinance.gov/about-us/newsroom/bank-of-america-for-illegally-charging-junk-fees-withholding-credit-card-rewards-opening-fake-accounts/.

[296] Consumer Financial Protection Bureau, "CFPB Takes Action Against Bank of America for Illegally Charging Junk Fees, Withholding Credit Card Rewards, and Opening Fake Accounts," July 11, 2023, https://www.consumerfinance.gov/about-us/newsroom/bank-of-america-for-illegally-charging-junk-fees-withholding-credit-card-rewards-opening-fake-accounts/.

[297] Office of the Comptroller of the Currency, "OCC Assesses $60 Million Civil Money Penalty Against Bank of America Related to Bank's Overdraft Program," July 11, 2023, https://www.occ.treas.gov/news-issuances/news-releases/2023/nr-occ-2023-71.html.

[298] Federal Communications Commission, "Broadband Consumer Labels," March 23, 2023, https://www.fcc.gov/broadbandlabels.

[299] Federal Trade Commission, "Unfair or Deceptive Fees Trade Regulation Rule Commission Matter No. R207011, a Proposed Rule by the Federal Trade Commission," November 8, 2022, https://www.federalregister.gov/documents/2022/11/08/2022-24326/unfair-or-deceptive-fees-trade-regulation-rule-commission-matter-no-r207011.

[300] Federal Trade Commission, "FTC Sends More than $3.3 Million to Consumers Harmed by Passport Auto's Illegal Junk Fees and Discriminatory Practices," May 16, 2023, https://www.ftc.gov/news-events/news/press-releases/2023/05/ftc-sends-more-33-million-consumers-harmed-passport-autos-illegal-junk-fees-discriminatory-practices.

[301] Mae Anderson, "Without 'right to repair,' businesses lose time and money," *The Public Broadcasting Service,* August 10, 2021, https://www.pbs.org/newshour/economy/without-right-to-repair-businesses-lose-time-and-money.

[302] Ray Magliozzi, "Opinion: 'Car Talk' host: Independent auto shops deserve the right to repair your car," *The Washington Post,* September 28, 2022,

https://www.washingtonpost.com/opinions/2022/09/28/car-talk-ray-magliozzi-right-to-repair-law.

[303] Marcia Brown, "Right to repair notches a big win in Colorado," *Politico,* April 27, 2023, https://www.politico.com/newsletters/the-long-game/2023/04/27/right-to-repair-notches-a-big-win-in-colorado-00094022.

[304] Federal Trade Commission, "Nixing the Fix: An FTC Report to Congress on Repair Restrictions," May 2021, https://www.ftc.gov/system/files/documents/reports/nixing-fix-ftc-report-congress-repair-restrictions/nixing_the_fix_report_final_5521_630pm-508_002.pdf.

[305] Federal Trade Commission, "Nixing the Fix: An FTC Report to Congress on Repair Restrictions," May 2021, https://www.ftc.gov/system/files/documents/reports/nixing-fix-ftc-report-congress-repair-restrictions/nixing_the_fix_report_final_5521_630pm-508_002.pdf.

[306] Federal Trade Commission, "Nixing the Fix: An FTC Report to Congress on Repair Restrictions," May 2021, https://www.ftc.gov/system/files/documents/reports/nixing-fix-ftc-report-congress-repair-restrictions/nixing_the_fix_report_final_5521_630pm-508_002.pdf.

[307] Federal Trade Commission, "Nixing the Fix: An FTC Report to Congress on Repair Restrictions," May 2021, https://www.ftc.gov/system/files/documents/reports/nixing-fix-ftc-report-congress-repair-restrictions/nixing_the_fix_report_final_5521_630pm-508_002.pdf.

[308] Federal Trade Commission, "FTC Testifies Before California State Senate on Right to Repair," April 11, 2023, https://www.ftc.gov/news-events/news/press-releases/2023/04/ftc-testifies-california-state-senate-right-repair.

[309] Jason Unrau, "How will the Right to Repair bill affect car dealerships?" *CBT News*, February 7, 2022, https://www.cbtnews.com/how-will-the-right-to-repair-bill-affect-car-dealerships/.

[310] Ray Magliozzi, "Opinion: 'Car Talk' host: Independent auto shops deserve the right to repair your car," *The Washington Post,* September 28, 2022, https://www.washingtonpost.com/opinions/2022/09/28/car-talk-ray-magliozzi-right-to-repair-law.

[311] Federal Trade Commission, "Nixing the Fix: An FTC Report to Congress on Repair Restrictions," May 2021, https://www.ftc.gov/system/files/documents/reports/nixing-fix-ftc-report-

congress-repair-restrictions/nixing_the_fix_report_final_5521_630pm-508_002.pdf.

[312] Jesse Bedayn, "Colorado becomes 1st to pass 'right to repair' for farmers," *Associated Press,* April 25, 2023, https://apnews.com/article/colorado-right-to-repair-farming-equipment-1da00ea957fd1057bf522cb4725e62d4.

[313] Kaiser Health News, "Despite a First-Ever 'Right-to-Repair' Law, There's No Easy Fix for Wheelchair Users," *U.S. News and World Report,* May 31, 2022, https://www.usnews.com/news/health-news/articles/2022-05-31/despite-a-first-ever-right-to-repair-law-theres-no-easy-fix-for-wheelchair-users.

[314] Shuhan He, Debbie Lai, and Jarone Leeb, "The medical right to repair: the right to save lives," *Lancet*, Vol. 397, No. 10281, 1260-1261, April 3, 2021, https://doi.org/10.1016/S0140-6736(21)00445-1.

[315] Nathan Procter and Kevin O'Reilly, "Hospital Repair Restrictions," U.S. PIRG Education Fund, July 8, 2020, https://pirg.org/edfund/resources/hospital-repair-restrictions/.

[316] The White House, "Fact Sheet: Executive Order on Promoting Competition in the American Economy," July 9, 2021, https://www.whitehouse.gov/briefing-room/statements-releases/2021/07/09/fact-sheet-executive-order-on-promoting-competition-in-the-american-economy/.

[317] Federal Trade Commission, "FTC to Ramp Up Law Enforcement Against Illegal Repair Restrictions," July 21, 2021, https://www.ftc.gov/news-events/news/press-releases/2021/07/ftc-ramp-law-enforcement-against-illegal-repair-restrictions.

[318] Federal Trade Commission, "FTC announces three right-to-repair cases: Do your warranties comply with the law?" July 7, 2022, https://www.ftc.gov/business-guidance/blog/2022/07/ftc-announces-three-right-repair-cases-do-your-warranties-comply-law.

[319] The White House, "White House Competition Council," n.d., https://www.whitehouse.gov/competition/.

[320] The White House, "Executive Order on Promoting Competition in the American Economy," July 09, 2021, https://www.whitehouse.gov/briefing-room/presidential-actions/2021/07/09/executive-order-on-promoting-competition-in-the-american-economy/.

[321] CFA Institute, "Private Equity Investments," 2023, https://www.cfainstitute.org/en/membership/professional-development/refresher-readings/private-equity-investments.

[322] George W. Fenn, Nellie Liang, and Stephen Prowse, "The economics of the private equity market," *Federal Reserve Bulletin*, 1996, https://heinonline.org/HOL/P?h=hein.journals/fedred82&i=32.

[323] George W. Fenn, Nellie Liang, and Stephen Prowse, "The economics of the private equity market," *Federal Reserve Bulletin*, 1996, https://heinonline.org/HOL/P?h=hein.journals/fedred82&i=32.

[324] CFA Institute, "Private Equity Investments," 2023, https://www.cfainstitute.org/en/membership/professional-development/refresher-readings/private-equity-investments.

[325] Evan Gunter, Ruth Yang, and Leon Sinclair, "Private Markets: Still Waters Run Deep," *S&P Global,* April 18, 2023, https://www.spglobal.com/en/research-insights/featured/special-editorial/look-forward/private-markets-still-waters-run-deep.

[326] Lauren Coleman-Lochner, "Private Equity Owns 30% of For-Profit Hospitals, Tracker Says," *Bloomberg*, April 19, 2023, https://www.bloomberg.com/news/articles/2023-04-19/private-equity-is-buying-struggling-hospitals-is-that-part-of-the-problem#xj4y7vzkg.

[327] Carsten Bienz, Karin S. Thorburn, and Uwe Walz, "Fund ownership, wealth, and risk-taking: Evidence on private equity managers," *Journal of Financial Intermediation*, Vol. 54, April 2023, https://www.sciencedirect.com/science/article/pii/S1042957323000086.

[328] David Snow, "Private Equity: A Brief Overview," Private Equity International, https://www.law.du.edu/documents/registrar/adv-assign/Yoost_PrivateEquity%20Seminar_PEI%20Media's%20Private%20Equity%20-%20A%20Brief%20Overview_318.pdf.

[329] Carsten Bienz, Karin S. Thorburn, and Uwe Walz, "Fund ownership, wealth, and risk-taking: Evidence on private equity managers," *Journal of Financial Intermediation*, Vol. 54, April 2023, https://www.sciencedirect.com/science/article/pii/S1042957323000086.

[330] Steven N. Kaplan and Per Strömberg, "Leveraged buyouts and private equity," *Journal of Economic Perspectives,* Vol. 23, No. 1, 121-146, February 2009, https://www.aeaweb.org/articles?id=10.1257/jep.23.1.121.

[331] Eileen Appelbaum and Rosemary Batt, "How private equity firms are designed to earn big while risking little of their own," London School of Economics, January 23, 2017, https://blogs.lse.ac.uk/businessreview/2017/01/23/how-private-equity-firms-are-designed-to-earn-big-while-risking-little-of-their-own/.

[332] Eileen Appelbaum and Rosemary Batt, "How private equity firms are designed to earn big while risking little of their own," London School of Economics, January 23, 2017,

https://blogs.lse.ac.uk/businessreview/2017/01/23/how-private-equity-firms-are-designed-to-earn-big-while-risking-little-of-their-own/.

[333] Sajith Matthews and Renato Roxas, "Private equity and its effect on patients: a window into the future," International journal of health economics and management, May 23, 2022, https://doi.org/10.1007/s10754-022-09331-y.

[334] Cornell University ILR Worker Institute "Recordings: Workers Challenging Private Equity to Create Good Jobs," October 29, 2021, https://www.ilr.cornell.edu/worker-institute/blog/events/recordings-workers-challenging-private-equity-create-good-jobs.

[335] Steven J. Davis, John Haltiwanger, Kyle Handley, Ben Lipsius, Josh Lerner, and Javier Miranda, "The Economic Effects of Private Equity Buyouts," SSRN, July 8, 2021, https://ssrn.com/abstract=3465723.

[336] Dan Primack, "Private equity takeovers result in significant job losses," *Axios,* October 7, 2019, https://www.axios.com/2019/10/07/private-equity-employment-job-losses.

[337] Lester Picker, "Private Equity and Employment," National Bureau of Economic Research, The Digest, No. 1, January 2012, https://www.nber.org/digest/jan12/private-equity-and-employment.

[338] Shai Bernstein and Albert Sheen, "The Operational Consequences of Private Equity Buyouts: Evidence from the Restaurant Industry," The Review of Financial Studies, September 2016, http://www.jstor.org/stable/44014930.

[339] Tong Liu, "Bargaining with Private Equity: Implications for Hospital Prices and Patient Welfare," Northeastern University, November 1, 2022, https://damore-mckim.northeastern.edu/wp-content/uploads/2022/05/6_PEHealthcare_v25.pdf.

[340] Erin C. Fuse Brown, Loren Adler, Erin Duffy, Paul B. Ginsburg, Mark Hall, and Samuel Valdez, "Private equity investment as a divining rod for market failure: Policy responses to harmful physician practice acquisitions," Brookings Institution, October 5, 2021, https://www.brookings.edu/essay/private-equity-investment-as-a-divining-rod-for-market-failure-policy-responses-to-harmful-physician-practice-acquisitions/.

[341] Sajith Matthews and Renato Roxas, "Private equity and its effect on patients: a window into the future," International journal of health economics and management, May 23, 2022, https://doi.org/10.1007/s10754-022-09331-y.

[342] Sajith Matthews and Renato Roxas, "Private equity and its effect on patients: a window into the future," International journal of health economics and management, May 23, 2022, https://doi.org/10.1007/s10754-022-09331-y.

[343] Joseph D. Bruch, Suhas Gondi, and Zirui Song, "Changes in Hospital Income, Use, and Quality Associated With Private Equity Acquisition," *JAMA*

Internal Medicine, Vol. 180, No. 11, 1428-1435, August 24, 2020, https://jamanetwork.com/journals/jamainternalmedicine/fullarticle/2769549.

[344] Robert Tyler Braun, Hye-Young Jung, Lawrence P. Casalino, MD, Zachary Myslinski, and Mark Aaron Unruh, "Association of Private Equity Investment in US Nursing Homes With the Quality and Cost of Care for Long-Stay Residents," *JAMA Health Forum*, Vol. 2, No. 11, November 19, 2021, https://jamanetwork.com/journals/jama-health-forum/fullarticle/2786442.

[345] Atul Gupta, Sabrina T. Howell, Constantine Yannelis, and Abhinav Gupta, "Does private equity investment in healthcare benefit patients? Evidence from nursing homes," National Bureau of Economic Research, Working Paper 28474, February 2021, https://www.nber.org/papers/w28474.

[346] Joseph Bruch, Dan Zeltzer, and Zirui Song, "Characteristics of Private Equity-Owned Hospitals in 2018," *Annals of Internal Medicine*, Vol. 174, No. 2, 277-279, February 2021, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8299539/.

[347] Private Equity Stakeholder Project, "PESP Private Equity Hospital Tracker," 2023, https://pestakeholder.org/private-equity-hospital-tracker/.

[348] A.L. Westerling, H.G. Hidalgo, D.R. Cayan, and T.W. Swetnam, "U.S. Forest Wildfire Activity," *Science*, Vol. 313, No. 5789, 940-943, August 18, 2006, https://www.science.org/doi/10.1126/science.1128834.

[349] A.L. Westerling, H.G. Hidalgo, D.R. Cayan, and T.W. Swetnam, "U.S. Forest Wildfire Activity," *Science*, Vol. 313, No. 5789, 940-943, August 18, 2006, https://www.science.org/doi/10.1126/science.1128834.

[350] Anthony LeRoy Westerling, "Increasing western US forest wildfire activity: sensitivity to changes in the timing of spring," *Philosophical Transactions of the Royal Society B: Biological Sciences*, Vol. 371, No. 1696, 315-345, June 5, 2016, https://doi.org/10.1098/rstb.2015.0178.

[351] Marlene Lenthang and Phil Hesel, "Air quality: New York City has the worst air in the world as smoke from Canadian wildfires rolls in," *NBC News*, June 8, 2023, https://www.nbcnews.com/news/us-news/nyc-officials-announce-advisories-5-boroughs-alarming-air-quality-conc-rcna88090.

[352] Christian Crowley, Ann Miller, Robert Richardson, and Jacob Malcom, "Increasing Damages from wildfires warrant investment in wildland fire management," U.S. Department of Interior, May 25, 2023, https://www.doi.gov/sites/doi.gov/files/ppa-report-wildland-fire-econ-review-2023-05-25.pdf.

[353] Anthony LeRoy Westerling, "Increasing western US forest wildfire activity: sensitivity to changes in the timing of spring," *Philosophical*

Transactions of the Royal Society B: Biological Sciences, Vol. 371, No. 1696, June 5, 2016, https://doi.org/10.1098/rstb.2015.0178.

[354] Daniel J. Jacob, and Darrell A. Winner, "Effect of climate change on air Quality," *Atmospheric Environment*, Vol. 43, No. 1, 51-63, January 2009, https://doi.org/10.1016/j.atmosenv.2008.09.051.

[355] Rosana Aguilera, Thomas Corringham, Alexander Gershunov, and Tarik Benmarhnia, "Wildfire smoke impacts respiratory health more than fine particles from other sources: observational evidence from Southern California," *Nature Communications*, Vol. 12, No. 1493, March 5, 2021, https://doi.org/10.1038/s41467-021-21708-0.

[356] B. Ford, M. Val Martin, S.E Zelasky, E.V. Fischer, S.C. Anenberg, C.L. Heald, and J.R. Pierce, "Future Fire Impacts on Smoke Concentrations, Visibility, and Health in the Contiguous United States," *GeoHealth*, Vol. 2, No. 8, 229-247, July 6, 2018, https://doi.org/10.1029/2018gh000144.

[357] Sam Heft-Neal, Anne Driscoll, Wei Yang, Gary Shaw, Marshall Burke, "Associations between wildfire smoke exposure during pregnancy and risk of preterm birth in California," *Environmental Research*, Vol. 203, No. 111872, January, 2022, https://doi.org/10.1016/j.envres.2021.111872.

[358] Colleen E. Reid, Michael Brauer, Fay H. Johnston, Michael Jerrett, John R. Balmes, Catherine T. Elliott, "Critical Review of Health Impacts of Wildfire Smoke Exposure," *Environmental Health Perspectives*, Vol. 124 No. 9, September 2016, https://doi.org/10.1289/ehp.1409277.

[359] Jia C. Liu, Gavin Pereira, Sarah A. Uhl, Mercedes A. Bravo, Michelle L. Bell, "A systematic review of the physical health impacts from non-occupational exposure to wildfire smoke," *Environmental Research*, Vol. 136, 120-132, January 2015, https://doi.org/10.1016/j.envres.2014.10.015.

[360] Hao Chen, James M. Samet, Philip A. Bromberg, and Haiyan Tong, "Cardiovascular health impacts of wildfire smoke exposure," *Particle and Fibre Toxicology*, Vol. 18, No. 2, January 7, 2021, https://doi.org/10.1186/s12989-020-00394-8.

[361] Katelyn O'Dell, Kelsey Bilsback, Bonne Ford, Sheena E. Martenies, Sheryl Magzamen, Emily V. Fischer, and Jeffery R. Pierce, "Estimated Mortality and Morbidity Attributable to Smoke Plumes in the United States: Not Just a Western US Problem," *GeoHealth*, Vol. 5, No. 9, August 21, 2021, https://doi.org/10.1029/2021gh000457.

[362] Katelyn O'Dell, Kelsey Bilsback, Bonne Ford, Sheena E. Martenies, Sheryl Magzamen, Emily V. Fischer, and Jeffery R. Pierce, "Estimated Mortality and Morbidity Attributable to Smoke Plumes in the United States:

Not Just a Western US Problem," *GeoHealth*, Vol. 5, No. 9, August 21, 2021, https://doi.org/10.1029/2021gh000457.

[363] *All Things Considered*, *NPR*, "California Fires Result In Job And Income Loss For Seasonal Workers," October 19, 2017, https://www.npr.org/2017/10/19/558847348/california-fires-result-in-job-and-income-loss-for-seasonal-workers.

[364] Mark Borgschulte, David Molitor, and Eric Yongchen Zou, "Air Pollution and the Labor Market: Evidence from Wildfire Smoke," *The Review of Economics and Statistics*, 1-46, September 27, 2022, https://doi.org/10.1162/rest_a_01243.

[365] The California FAIR Plan, "About FAIR Plan," 2023, https://www.cfpnet.com/about-fair-plan/.

[366] U.S. Environmental Protection Agency, "Wildfires: How Do They Affect Our Water Supplies?," August 13, 2019, https://www.epa.gov/sciencematters/wildfires-how-do-they-affect-our-water-supplies.

[367] ENews, PoliticoPro, "Re: Docket ID No. EPA-HQ-OAR-2015-0072; Review of the National Ambient Air Quality Standards for Particulate Matter", March 28, 2023, Https://Subscriber.politicopro.com/Eenews/F/Eenews/?Id=00000188-B56b-D031-A7fc-B5ef36850000.

[368] U.S. Senator Martin Heinrich, "Heinrich Announces Transmission Permitting Reform Legislation," June 1, 2023, https://www.heinrich.senate.gov/newsroom/press-releases/heinrich-announces-transmission-permitting-reform-legislation.

[369] Joint Economic Committee, "The EPA's New Standards for Fossil Fuel Power Plants Will Improve Public Health While Tackling the Climate Crisis," June 7, 2023, https://www.jec.senate.gov/public/index.cfm/democrats/issue-briefs?id=4153A673-9856-4504-8EC5-46AE46D41C3A.

[370] U.S. Senator Martin Heinrich, "As Fire Season Begins, Heinrich, Luján Lead National Push to Increase Wildland Firefighter Recruitment and Retention," June 7, 2023, https://www.heinrich.senate.gov/newsroom/press-releases/as-fire-season-begins-heinrich-lujan-lead-national-push-to-increase-wildland-firefighter-recruitment-and-retention.

[371] Joint Economic Committee, "The EPA's New Standards for Fossil Fuel Power Plants Will Improve Public Health While Tackling the Climate Crisis," June 7, 2023, https://www.jec.senate.gov/public/index.cfm/democrats/issue-briefs?id=4153A673-9856-4504-8EC5-46AE46D41C3A.

[372] U.S. Environmental Protection Agency, "EPA Proposes New Carbon Pollution Standards for Fossil Fuel-Fired Power Plants to Tackle the Climate

Crisis and Protect Public Health," May 10, 2023, https://www.epa.gov/newsreleases/epa-proposes-new-carbon-pollution-standards-fossil-fuel-fired-power-plants-tackle.

[373] Karn Vohra, Alina Vodonos, Joel Schwartz, Eloise A. Marais, Melissa P. Sulprizio, Loretta J. Mickley, "Global mortality from outdoor fine particle pollution generated by fossil fuel combustion: Results from GEOS-Chem," *Environmental Research*, Vol. 195, No. 110754, April 2021, https://doi.org/10.1016/j.envres.2021.110754.

[374] U.S. Sustainable Investment Forum, "US SIF "Trends Report" Documents Sustainable Investment Assets Of $8.4 Trillion," December 13, 2022, https://www.ussif.org/blog_home.asp?Display=194.

[375] CDP, "Global Climate Analysis 2018," 2019, https://www.cdp.net/en/research/global-reports/global-climate-change-report-2018.

[376] Greogor Semieniuk, Philip B. Holden, Jean-Francois Mercure, Pablo Salas, Hector Pollitt, Katharine Jobson, Pim Vercoulen, Unnada Chewpreecha, Neil R. Edwards, and Jorge E.Viñuales, "Stranded fossil-fuel assets translate to major losses for investors in advanced economies," *Nature Climate Change*, Vol. 12, 532–538, May 26, 2022, https://doi.org/10.1038/s41558-022-01356-y.

[377] Greogor Semieniuk, Philip B. Holden, Jean-Francois Mercure, Pablo Salas, Hector Pollitt, Katharine Jobson, Pim Vercoulen, Unnada Chewpreecha, Neil R. Edwards, and Jorge E.Viñuales, "Stranded fossil-fuel assets translate to major losses for investors in advanced economies," *Nature Climate Change*, Vol. 12, 532–538, May 26, 2022, https://doi.org/10.1038/s41558-022-01356-y.

[378] Eleanor Krause and Richard V. Reeves, R. V., "Hurricanes hit the poor the hardest," Brookings, September 16, 2018, https://www.brookings.edu/blog/social-mobility-memos/2017/09/18/hurricanes-hit-the-poor-the-hardest/.

[379] Intergovernmental Panel on Climate Change, "Climate Change 2022: Impacts, Adaptation and Vulnerability," February 27, 2022, https://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_SummaryForPolicymakers.pdf.

[380] Yanjun Penny Liao and Anne McDarris, "Climate Financial Risk 101," Resources for the Future, https://www.rff.org/publications/explainers/climate-financial-risks-101/.

[381] Yanjun Penny Liao, Carolyn Kousky, "The Fiscal Impacts of Wildfires on California Municipalities," *Journal of the Association of Environmental and*

Resource Economists, Vol. 9, No. 3, May 2022,
https://doi.org/10.1086/717492.

[382] Yanjun Penny Liao and Anne McDarris, "Climate Financial Risk 101,"
Resources for the Future, https://www.rff.org/publications/explainers/climate-financial-risks-101/.

[383] Madison Condon, "Climate Services: The Business of Physical Risk,"
Social Science Research Network, March 22, 2023,
https://doi.org/10.2139/ssrn.4396826.

[384] Christopher Flavelle, Denise Lu, Veronica Penney, Nadja Popvich, and
John Schwartz, "New Data Reveals Hidden Flood Risk Across America," *The
New York Times,* June 29, 2020,
https://www.nytimes.com/interactive/2020/06/29/climate/hidden-flood-risk-maps.html.

[385] Bureau of Economic Analysis, "Outdoor Recreation Satellite Account,
U.S. and States, 2021," November 9, 2022, https://www.bea.gov/data/special-topics/outdoor-recreation.

[386] Joint Economic Committee, "Earth Day 2023: How the Recovering
America's Wildlife Act Benefits Our Planet and Our Economy," April 22,
2023, https://www.jec.senate.gov/public/index.cfm/democrats/2023/4/earth-day-2023-how-the-recovering-america-s-wildlife-act-benefits-our-planet-and-our-economy.

[387] Ray Rasker, "West Is Best: Protected Lands Promote Jobs and Higher
Incomes," Headwaters Economics, November 2012,
https://headwaterseconomics.org/economic-development/trends-performance/west-is-best-value-of-public-lands/.

[388] Peter Nelson, "Demographic Dynamics in Public Lands Counties, 1990-2016," Headwaters Economics, May 2019,
https://headwaterseconomics.org/public-lands/papl-nelson/.

[389] Ray Rasker, "West Is Best: Protected Lands Promote Jobs and Higher
Incomes," Headwaters Economics, November 2012,
https://headwaterseconomics.org/economic-development/trends-performance/west-is-best-value-of-public-lands/.

[390] Ray Rasker, "West Is Best: Protected Lands Promote Jobs and Higher
Incomes," Headwaters Economics, November 2012,
https://headwaterseconomics.org/economic-development/trends-performance/west-is-best-value-of-public-lands/.

[391] Megan Lawson, "Federal Lands in the West: Liability or Asset?,"
Headwaters Economics, February 21, 2017,
https://headwaterseconomics.org/public-lands/federal-lands-performance/.

[392] Joint Economic Committee, "Earth Day 2023: How the Recovering America's Wildlife Act Benefits Our Planet and Our Economy," April 22, 2023, https://www.jec.senate.gov/public/index.cfm/democrats/2023/4/earth-day-2023-how-the-recovering-america-s-wildlife-act-benefits-our-planet-and-our-economy.

[393] Haggerty, M., "Diversifying revenue on New Mexico state trust lands," Headwaters Economics, September 14, 2021, https://headwaterseconomics.org/tax-policy/new-mexico-state-land/.

[394] Trust for Public Land, "Economic & Health Benefits," 2023, https://www.tpl.org/resource/economic-health-benefits.

[395] U.S. Department of Energy, "United States Energy & Employment Report 2023," https://www.energy.gov/sites/default/files/2023-06/2023%20USEER%20EXEC%20SUMM-v2.pdf.

[396] U.S. Department of Energy, "United States Energy & Employment Report 2023," https://www.energy.gov/sites/default/files/2023-06/2023%20USEER%20EXEC%20SUMM-v2.pdf.

[397] Bluegreen Alliance, "9 Million Jobs from Climate Action: The Inflation Reduction Act," https://www.bluegreenalliance.org/site/9-million-good-jobs-from-climate-action-the-inflation-reduction-act/.

[398] Robert Pollin, Chirag Lala, and Shouvik Chakraborty, "Job Creation Estimates Through Proposed Inflation Reduction Act," Political Economy Research Institute, August 4, 2022, https://peri.umass.edu/publication/item/1633-job-creation-estimates-through-proposed-inflation-reduction-act.

[399] Associated Builders and Constructors, "Construction Workforce Shortage Tops Half a Million in 2023, Says ABC," February 9, 2023, https://www.abc.org/News-Media/News-Releases/entryid/19777/construction-workforce-shortage-tops-half-a-million-in-2023-says-abc.

[400] Garo Hovnanian, Ryan Luby, and Shannon Peloquin, "Bridging the labor mismatch in US construction," McKinsey & Company, March 28, 2022, https://www.mckinsey.com/capabilities/operations/our-insights/bridging-the-labor-mismatch-in-us-construction.

[401] Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook*, Electricians, May 15, 2023, https://www.bls.gov/ooh/construction-and-extraction/electricians.htm.

[402] U.S. Department of Energy, Office of Efficiency & Renewable Energy, "New Clean Energy Workforce Training Funding Available," December 7, 2022, https://www.energy.gov/eere/iedo/articles/new-clean-energy-workforce-training-funding-available.

[403] ApprenticeshipUSA, "Inflation Reduction Act Apprenticeships Resources," https://www.apprenticeship.gov/inflation-reduction-act-apprenticeship-resources.

[404] Ryan Cooper, "Why geothermal energy should be Biden's easy answer to the fracking question," *The Week*, October 22, 2020, https://theweek.com/articles/945019/why-geothermal-energy-should-bidens-easy-answer-fracking-question.

[405] David Biello, "Fracking Could Help Geothermal Become a Power Player," *Scientific American*, July 29, 2013, https://www.scientificamerican.com/article/fracking-for-renewable-power-geothermal/.

[406] Trent Jacobs, "Canadian Operator Works To Transform an Oil Field Into a Hydrogen Factory," *Journal of Petroleum Technology*, March 1, 2021, https://jpt.spe.org/canadian-operator-works-to-transform-an-oil-field-into-a-hydrogen-factory.

[407] Chris, Baraniuk, "'Gold Hydrogen' Is an Untapped Resource in Depleted Oil Wells," *Wired*, November 24, 2022, https://www.wired.com/story/gold-hydrogen/.

[408] E. Mark Curtis, "Green Energy Jobs in the US: What Are They, and Where Are They?" National Bureau of Economic Research, Working Paper 30332, https://www.nber.org/system/files/working_papers/w30332/w30332.pdf.

[409] Interagency Working Group on Coal & Power Plant Communities & Economic Revitalization, "Tax Credits," https://energycommunities.gov/funding-opportunities/tax-credits/.

[410] Bureau of Labor Statistics, "May 2022 National Occupational Employment and Wage Estimates," April 25, 2023, https://www.bls.gov/oes/current/oes_nat.htm#00-0000.

[411] E. Mark Curtis, "Green Energy Jobs in the US: What Are They, and Where Are They?" National Bureau of Economic Research, Working Paper 30332, https://www.nber.org/system/files/working_papers/w30332/w30332.pdf.

[412] Climate Jobs National Research Center, "Our Plan: Labor Leading on Climate," https://www.cjnrc.org/our-plan-labor-leading-on-climate/.

[413] Bluegreen Alliance, "Good Jobs" https://www.bluegreenalliance.org/work/clean-jobs/.

[414] U.S. Department of Energy, "United States Energy & Employment Report 2023," 2023, https://www.energy.gov/sites/default/files/2023-06/2023%20USEER%20EXEC%20SUMM-v2.pdf.

[415] United States Department of Energy, "United States Energy & Employment Report 2023," 2023,

https://www.energy.gov/sites/default/files/2023-06/2023%20USEER%20EXEC%20SUMM-v2.pdf.

[416] Joint Economic Committee calculations using the Health Resources and Services Administration's primary care health professional shortage area data.

[417] American Hospital Association, "Rural Hospital Closures Threaten Access. Solutions to Preserve Care in Local Communities," September 2022, https://www.aha.org/system/files/media/file/2022/09/rural-hospital-closures-threaten-access-report.pdf.

[418] Merritt Hawkins, "AMN Healthcare Survey: Physician Appointment Wait Times Up 8% from 2017, Up 24% from 2004," September 12, 2022, https://www.merritthawkins.com/physician-appointment-wait-times-up-from-2017/#:~:text=AMN%20Healthcare%20Survey%3A%20Physician%20Appointment%20Wait%20Times%20Up%208%25%20from%202017%2C%20Up%2024%25%20from%202004.

[419] U.S. Government Accountability Office, "Rural Hospital Closures: Affected Residents Had Reduced Access to Health Care Services," January 21, 2021, https://www.gao.gov/products/gao-21-93#:~:text=When%20rural%20hospitals,drug%20abuse%20treatment.

[420] Ana B. Ibarra, "Have You Seen a Doctor Lately? Delays Likely Trigger Deaths, Poor Health," CAL Matters, September 27, 2021, https://calmatters.org/health/2021/04/doctor-visits-deaths-diseases/.

[421] Julia C. Prentice and Steven D. Pizer, "Delayed Access to Health Care and Mortality," *Health Services Research*, Vol. 42, No. 2, 644-662, April 2007, https://europepmc.org/backend/ptpmcrender.fcgi?accid=PMC1955366&blobtype=pdf.

[422] CDC Foundation, "Worker Illness and Injury Costs U.S. Employers $225.8 Billion Annually," January 28, 2015, https://www.cdcfoundation.org/pr/2015/worker-illness-and-injury-costs-us-employers-225-billion-annually.

[423] IQVIA, "The National Economic Impact of Physicians," January 2018, https://www.physicianseconomicimpact.org/pdf/FullStateReports/US-Study.pdf.

[424] IHS Markit Ltd., "The Complexities of Physician Supply and Demand: Projections From 2019 to 2034," Association of American Medical Colleges, June 2021, https://www.aamc.org/media/54681/download?attachment.

[425] John Cromartie, "Rural Aging Occurs in Different Places for Very Different Reasons," U.S. Department of Agriculture, December 20, 2018, https://www.usda.gov/media/blog/2018/12/20/rural-aging-occurs-different-places-very-different-reasons.

[426] IHS Markit Ltd., "The Complexities of Physician Supply and Demand: Projections From 2019 to 2034," Association of American Medical Colleges, June 2021, https://www.aamc.org/media/54681/download?attachment.

[427] IHS Markit Ltd., "The Complexities of Physician Supply and Demand: Projections From 2019 to 2034," Association of American Medical Colleges, June 2021, https://www.aamc.org/media/54681/download?attachment.

[428] Patrick Boyle, "Medical school enrollments grow, but residency slots haven't kept pace," Association of American Medical Colleges, September 3, 2020, https://www.aamc.org/news/medical-school-enrollments-grow-residency-slots-haven-t-kept-pace.

[429] Peter Jaret, "Attracting the next generation of physicians to rural medicine," Association of American Medical Colleges," February 3, 2020, https://www.aamc.org/news/attracting-next-generation-physicians-rural-medicine#:~:text=Encouraging%20young%20doctors,Osteopathic%20Medicine.

[430] Peter Jaret, "Attracting the next generation of physicians to rural medicine," Association of American Medical Colleges," February 3, 2020, https://www.aamc.org/news/attracting-next-generation-physicians-rural-medicine#:~:text=What%E2%80%99s%20more%2C%20the,medical%20student%20body.

[431] National Center for Health Workforce Analysis, "State of the Maternal Health Workforce Brief," August 2022, https://bhw.hrsa.gov/sites/default/files/bureau-health-workforce/data-research/maternal-health-workforce-brief-2022.pdf.

[432] John E. Snyder, Anne L. Stahl, Robin A. Streeter and Michelle M. Washko, "Regional Variations in Maternal Mortality and Health Workforce Availability in the United States," *Annals of Internal Medicine*, Vol. 173, No. 11, 45-54, December 1, 2020, https://www.acpjournals.org/doi/10.7326/M19-3254.

[433] Hanna Love and DW Rowlands, "Mapping rural America's diversity and demographic change," Brookings Institution, September 28, 2021, https://www.brookings.edu/blog/the-avenue/2021/09/28/mapping-rural-americas-diversity-and-demographic-change/#:~:text=Contrary%20to%20the,2020%20(Figure%201).

[434] Katy Backes Kozhimannil and Carrie Henning-Smith, "Missing Voices In America's Rural Health Narrative," Health Affairs Blog, April 10, 2019, https://www.healthaffairs.org/content/forefront/missing-voices-america-s-rural-health-narrative.

[435] Katy Backes Kozhimannil and Carrie Henning-Smith, "Missing Voices In America's Rural Health Narrative," Health Affairs Blog, April 10, 2019,

https://www.healthaffairs.org/content/forefront/missing-voices-america-s-rural-health-narrative.

436 Natalia V. Oster, Susan M. Silkmna and Bianca K. Frogner, "Health Workforce Issues in American Indian and Alaska Native (AI/AN) Populations," Center for Health Workforce Studies, University of Washington, July 2022, https://familymedicine.uw.edu/chws/wp-content/uploads/sites/5/2022/07/2022_AI_AN_Workforce_RR_Brief.pdf.

437 American Academy of Family Physicians, "Rural Practice, Keeping Physicians In (Position Paper)," 2002, https://www.aafp.org/about/policies/all/rural-practice-keeping-physicians.html.

438 Ian T. MacQueen, Melinda Maggard-Gibbons, Gina Capra, Laura Raaen, Jesus G. Ulloa, Paul G. Shekelle, Isomi Miake-Lye, Jessica M. Beroes and Susanne Hempel, "Recruiting Rural Healthcare Providers Today: a Systematic Review of Training Program Success and Determinants of Geographic Choices," *J Gen Intern Med*, Vol. 3, No. 2, 191-199, February 2018, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5789104/#:~:text=The%20fact%20that%2030%20to%2052%25%20of%20providers%20from%20rural%20backgrounds%20reported%20entering%20rural%20practice%20is%20promising.

439 Peter Jaret, "Attracting the next generation of physicians to rural medicine," Association of American Medical Colleges, February 3, 2020, https://www.aamc.org/news/attracting-next-generation-physicians-rural-medicine#:~:text=Encouraging%20young%20doctors,Osteopathic%20Medicine.

440 Rural Medical Scholars Program, College of Community Health Services, The University of Alabama, https://cchs.ua.edu/rural-programs/rmsp/.

441 Mississippi Rural Physician Scholarship Program, The University of Mississippi, https://www.umc.edu/Office%20of%20Academic%20Affairs/For-Students/Academic%20Outreach%20Programs/Mississippi%20Rural%20Physicians%20Scholarship%20Program/Mississippi%20Rural%20Physicians%20Scholarship%20Program.html.

442 James Carter and Wahnee Sherman, "Looking back on fifteen years of the Mississippi Rural Physicians Scholarship Program," *Journal of the Mississippi State Medical Association,* Vol. 64, No. 1, January 18, 2023, https://jmsma.scholasticahq.com/article/68059-looking-back-on-fifteen-years-of-the-mississippi-rural-physicians-scholarship-program.

443 Health Resources Administration, National Health Service Corps, "Who We Are," https://nhsc.hrsa.gov/.

[444] Health Resources and Services Administration, "Teaching Health Center Graduate Medical Education (THCGME) Program," May 2023, https://bhw.hrsa.gov/funding/apply-grant/teaching-health-center-graduate-medical-education.

[445] Andrea Price-Carter, "Health Care Workforce Supported in FY24 Budget," Leading Age, March 10, 2023, https://leadingage.org/health-care-workforce-supported-in-fy24-budget/.

[446] Office of Family Assistance, "About Health Profession Opportunity Grants," February 21, 2023, https://www.acf.hhs.gov/ofa/programs/hpog/about.

[447] Congress.gov, "S.3189 – 117th Congress (2021-2022): Pathways to Health Careers Act," November 4, 2021, https://www.congress.gov/bill/117th-congress/senate-bill/3189/text?s=2&r=26&q=%7B%22search%22%3A%5B%22%22%5D%7D.

[448] Charles Rutheiser, "The Promise and Prospects of Anchor Institutions: some thoughts on an emerging field," U.S. Department of Housing and Urban Development, Office of Policy Development and Research, 2011, https://www.huduser.gov/portal/pdredge/pdr_edge_hudpartrpt_062211.html.

[449] Kathleen Bolter and Jim Robey, "Agglomeration Economies: A Literature Review," The Fund for Our Economic Future, 2020, https://research.upjohn.org/cgi/viewcontent.cgi?article=1256&context=reports

[450] Patrick T. Harker, "Introducing the Anchor Economy Initiative: 'Eds and Meds' and Their Economic Impact" Federal Reserve Bank Philadephia, October 11, 2022, https://www.philadelphiafed.org/community-development/workforce-and-economic-development/221011-university-of-north-carolina#:~:text=Eds%20and%20meds%20also,economies%20than%20those%20without.

[451] Patrick Harker, Deborah Diamond, Dabin Reed, "Anchor Impacts: Understanding the Role of Higher Education and Hospitals in Regional Economics," Federal Reserve Bank Philadelphia, https://www.philadelphiafed.org/-/media/frbp/assets/community-development/reports/anchor-economy-report-92022.pdf.

[452] Susan Fitter Harris, "Anchor Institutions Open Doors in Their Communities," LISC, 2017, https://www.lisc.org/our-resources/resource/anchor-institutions-open-doors-their-communities/.

[453] Emily Warren, "The Role of Anchor Institutions in Supporting Local Communities," ICIC, https://icic.org/blog/role-anchor-institutions-supporting-local-communities/.

[454] The National Academies of Sciences, "Communities in Action: Pathways to Health Equity," 2018, https://nap.nationalacademies.org/resource/24624/anchor-institutions/.

[455] Scott Andes, Mark Muro, and Matthew Step, "Going Local: Connecting the National Labs to their Regions to Maximize Innovation and Growth." Brookings Institute, September 10, 2014, https://www.brookings.edu/articles/going-local-connecting-the-national-labs-to-their-regions-to-maximize-innovation-and-growth/.

[456] J. Stephen Rottler, "Sandia National Laboratories as a Catalyst for Regional Growth," National Library of Medicine, 2012, https://www.ncbi.nlm.nih.gov/books/NBK115038/.

[457] Kathleen Bolter and Jim Robey, "Agglomeration Economies: A Literature Review," The Fund for our Economic Future, 2020, https://research.upjohn.org/cgi/viewcontent.cgi?article=1256&context=reports

[458] Enrico Moretti, "The Effect of High -Tech Clusters on the Productivity of Top Inventors," National Bureau of Economic Research, Working Paper 26270, August 2021, https://www.nber.org/system/files/working_papers/w26270/w26270.pdf.

[459] Enrico Moretti, "The Effect of High -Tech Clusters on the Productivity of Top Inventors," National Bureau of Economic Research, Working Paper 26270, August 2021, https://www.nber.org/system/files/working_papers/w26270/w26270.pdf.

[460] Edward L. Glaeser and Albert Saiz, "The Rise of the Skilled City," National Bureau of Economic Research, Working Paper 10191, December 2003, https://www.nber.org/system/files/working_papers/w10191/w10191.pdf.

[461] Ryan Buscaglia and Melissa Roberts Chapman, "Cluster Development is the New Economic Development," Federation of American Scientists, January 12, 2023, https://fas.org/publication/cluster-development-is-the-new-economic-development/.

[462] Catherine Hausman, "Principles for Public Investment in Climate-Responsible Energy Innovation," Brookings Institute, April 2023, https://www.brookings.edu/wp-content/uploads/2023/04/Hausman-Climate-Policy-Proposal-1.pdf.

[463] Timothy J. Bartik, Aaron Sojourner, and Kathleen Bolter, "The CHIPS and Science Act is a chance for businesses and local leaders to collaborate on a stronger child care system," Brookings Institute, June 2, 2023, https://www.brookings.edu/articles/the-chips-and-science-act-is-a-chance-for-businesses-and-local-leaders-to-collaborate-on-a-stronger-child-care-system/.

[464] President Joe Biden, "Fact Sheet: CHIPS and Science Act Will Lower Costs, Create Jobs, Strengthen Supply Chains, and Counter China," The White House, August 9, 2022, https://www.whitehouse.gov/briefing-room/statements-releases/2022/08/09/fact-sheet-chips-and-science-act-will-lower-costs-create-jobs-strengthen-supply-chains-and-counter-china/.

[465] Mark Muro, Joseph Parilla, and Martha Ross, "What state and local leaders need to know about the federal government's regional Tech Hubs competition," Brookings Institute, May 16, 2023, https://www.brookings.edu/articles/what-state-and-local-leaders-need-to-know-about-the-federal-governments-regional-tech-hubs-competition/.

[466] Dan McCarthy and Maria Virginia Olano, "The remarkable upsurge in US Clean energy manufacturing, in charts," *Canary Media*, June 6, 2023, https://www.canarymedia.com/articles/clean-energy-manufacturing/the-remarkable-upsurge-in-usclean-energy-manufacturing-in-charts.

[467] Eric Van Nostrand, Tara Sinclair, and Samarth Gupta, "Unpacking the Boom in U.S. Construction of Manufacturing Facilities," U.S. Department of the Treasury, June 27, 2023, https://home.treasury.gov/news/featured-stories/unpacking-the-boom-in-us-construction-of-manufacturing-facilities.

[468] Connor O'Brien, "Factory Boom in the Mountain West and Upper Midwest Accelerated into the Spring," Economic Innovation Group, June 13, 2023, https://eig.org/manufacturing-construction-boom/.

[469] U.S. Department of Energy, Office of Clean Energy Demonstrations, "Regional Clean Hydrogen Hubs," https://www.energy.gov/oced/regional-clean-hydrogen-hubs.

[470] Andrew Aurand, Mackenzie Pish, Ikra Rafi, and Diane Yentel, "Out of Reach," National Low Income Housing Coalition, 2023, https://nlihc.org/oor.

[471] Peter J. Mateyka and Jayne Yoo, "Share of Income Needed to Pay Rent Increased the Most for Low-Income Households From 2019 to 2021," United States Census Bureau, March 2, 2023, https://www.census.gov/library/stories/2023/03/low-income-renters-spent-larger-share-of-income-on-rent.html.

[472] United States Census Bureau, "Quick Facts: Households, 2017-2021," https://www.census.gov/quickfacts/geo/chart/US/HSD410221.

[473] United States Department of Housing and Urban Development, Office of Policy Development and Research, "Housing Needs of American Indians and Alaska Natives in Tribal Areas," January 2017, https://www.huduser.gov/portal/sites/default/files/pdf/HNAIHousingNeeds.pdf.

[474] U.S. House of Representatives Committee on Appropriations, "Oversight Hearing – Tribal Perspectives on Housing and Transportation," April 28,

2023, https://appropriations.house.gov/legislation/hearings/oversight-hearing-tribal-perspectives-housing-and-transportation.

[475] U.S. Department of Health and Human Services, "Fact Sheet: American Indians and Alaska Natives – Trust Responsibility," https://www.acf.hhs.gov/ana/fact-sheet/american-indians-and-alaska-natives-trust-responsibility.

[476] Senator Martin Heinrich, "Heinrich, Bennet Introduce Bill to Expand and Improve Tribal Access to Clean Water," July 16, 2021, https://www.heinrich.senate.gov/newsroom/press-releases/heinrich-bennet-introduce-bill-to-expand-and-improve-tribal-access-to-clean-water.

[477] U.S. Department of Housing and Urban Development, "Rural Rental Housing Loans (Section 515)," September 2002, https://www.hud.gov/sites/documents/19565_515_RURALRENTAL.PDF.

[478] The Housing Assistance Council, "USDA Rural Rental Assistance Program (Section 521)," June 2008, https://ruralhome.org/wp-content/uploads/storage/documents/rd521ra.pdf.

[479] Lance George, Michael Feinberg, Keith Wiley, Leslie Strauss, Christina Davila, and Dan Stern, "Rental Housing for a 21st Century Rural America," Housing Assistance Council, September 2018, https://ruralhome.org/rural-america-is-losing-its-affordable-rental-housing/.

[480] Leslie R. Strauss, "USDA Rural Rental Housing Programs," National Low Income Housing Coalition, 2019, https://nlihc.org/sites/default/files/AG-2019/04-13_USDA-Rural-Rental-Housing-Programs.pdf.

[481] Leslie R. Strauss, "USDA Rural Rental Housing Programs," National Low Income Housing Coalition, 2019, https://nlihc.org/sites/default/files/AG-2019/04-13_USDA-Rural-Rental-Housing-Programs.pdf.

[482] The Housing Assistance Council, "Senate and House Committees Adopt Different Figures for FY24 USDA Spending," June 18, 2023, https://ruralhome.org/usda-housing-funding-fy24/.

[483] National Low Income Housing Coalition, "Housing Needs in Rural America," March 31, 2021, https://nlihc.org/sites/default/files/Housing-Needs-in-Rural-America.pdf.

[484] United States Senate Committee on Banking, Housing and Urban Affairs, Subcommittee on Housing, Transportation, and Community Development, "Statement by Xochitl Torres Small, Undersecretary for Rural Development," May 25, 2022, https://www.banking.senate.gov/imo/media/doc/Small%20HTCD%20Testimony%205-25-22.pdf.

[485] National Low Income Housing Coalition, "Housing Needs in Rural America," March 31, 2021, https://nlihc.org/sites/default/files/Housing-Needs-in-Rural-America.pdf.

[486] Shannon Pettypiece, "The remote workers have left, but the housing havoc they created remains," *NBC News,* February 6, 2023, https://www.nbcnews.com/politics/economics/remote-workers-left-housing-havoc-created-remains-rcna68874.

[487] Will Fischer, Sonya Acosta, and Erik Gartland, "More Housing Vouchers: Most Important Step to Help More People Afford Stable Homes," Center on Budget and Policy Priorities, May 13, 2021, https://www.cbpp.org/research/housing/more-housing-vouchers-most-important-step-to-help-more-people-afford-stable-homes#vouchers-reduce-homelessness-and-housing-cbpp-anchor.

[488] Office of Senator Martin Heinrich, "The DEPOSIT Act," June 6, 2023, https://www.heinrich.senate.gov/imo/media/doc/deposit_act_one_pager.pdf.

[489] Peter Hepburn, Olivia Jin, Joe Fish, Emily Lemmerman, Anne Kat Alexander, and Matthew Desmond, "Preliminary Analysis: Eviction Filing Patterns in 2021," Princeton University Eviction Lab, March 8, 2022, https://evictionlab.org/us-eviction-filing-patterns-2021/.

[490] U.S. Department of the Treasury, "New Treasury Data Shows Over 80% of Emergency Rental Assistance Delivered to Lowest-Income Households," February 24, 2022, https://home.treasury.gov/news/press-releases/jy0606.

[491] The American Civil Liberties Union and the National Coalition for a Civil Right to Counsel, "No Eviction without Representation," n.d., https://www.aclu.org/report/no-eviction-without-representation?redirect=evictionbrief.

[492] National Coalition for a Civil Right to Counsel, "The Right to Counsel for Tenants Facing Eviction: Enacted Legislation," July 2023, http://civilrighttocounsel.org/uploaded_files/283/RTC_Enacted_Legislation_in_Eviction_Proceedings_FINAL.pdf.

[493] The American Civil Liberties Union and the National Coalition for a Civil Right to Counsel, "No Eviction without Representation," n.d., https://www.aclu.org/report/no-eviction-without-representation?redirect=evictionbrief.

[494] Brianne Schell and Kerri McGowan Lowrey, "Health and Affordable Housing Fact Sheet," The Network for Public Health Law, October 2021, https://www.networkforphl.org/wp-content/uploads/2021/11/Fact-Sheet-Rent-Control-and-Stabilization.pdf.

[495] Urban Institute, "Rent Control," January 2019, https://www.urban.org/sites/default/files/publication/99646/rent_control._what_does_the_research_tell_us_about_the_effectiveness_of_local_action_1.pdf.

[496] Manuel Pastor, Vanessa Carter, and Maya Abood, "Rent Matters: What are the Impacts of Rent Stabilization Measures?" University of Southern California Dornsife Program for Environmental and Regional Equity, October 2018, https://dornsife.usc.edu/eri/wp-content/uploads/sites/41/2023/01/2018RentMattersPERE.pdf.

[497] Jack Tsai, Alvin S. Mares, and Robert A. Rosenheck, "A multi-site comparison of supported housing for chronically homeless adults: 'Housing first' versus 'residential treatment first,'" Psychological Services, Vol. 2, No. 4, 219-232, August 7, 2011, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3151537/.

[498] Yinan Peng, Robert A. Hahn, Ramona K.C. Finnie, Jamaicia Cobb, Samantha P. Williams, Jonathan E. Fielding, Robert L. Johnson, Ann Elizabeth Montgomery, Alex Schwartz, Carles Muntaner, Veronica Helms Garrison, Beda Jean-Francois, Benedict I. Truman, Mindy T. Fullilove, and Community Preventive Services Task Force, "Permanent Supportive Housing with Housing First to Reduce Homelessness and Promote Health among Homeless Populations with Disability: A Community Guide Systematic Review, Journal of public health management and practice," Journal of Public Health Management and Practice, Vol. 26, No. 5, 404-411, October 13, 2021, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8513528/.

[499] The National Low Income Housing Coalition and the National Alliance to End Homelessness, "The Case for Housing First," January 28, 2020, https://endhomelessness.org/wp-content/uploads/2020/03/Housing-First-Research-NAEH-NLIHC-Handout.pdf.

[500] The White House, "President Biden Announces New Actions to Ease the Burden of Housing Costs," May 16, 2022, https://www.whitehouse.gov/briefing-room/statements-releases/2022/05/16/president-biden-announces-new-actions-to-ease-the-burden-of-housing-costs/.

[501] The White House, "Fact Sheet: Biden-Harris Administration Announces New Actions to Protect Renters and Promote Rental Affordability," January 25, 2023, https://www.whitehouse.gov/briefing-room/statements-releases/2023/01/25/fact-sheet-biden-harris-administration-announces-new-actions-to-protect-renters-and-promote-rental-affordability/.

Views of Vice Chairman David Schweikert

The Employment Act of 1946 declares:

> It is the continuing policy and responsibility of the Federal Government […] to promote maximum employment and production, increased real income, balanced growth, a balanced Federal budget, adequate productivity growth, proper attention to national priorities, achievement of an improved trade balance […] and reasonable price stability.[1]

The Employment Act underscores the goal of affording "useful employment opportunities, including self-employment, for those able, willing, and seeking work."[2] Emphasizing the role of "free competitive enterprise" instead of "Federal Government control" over the economy, it places a "primary emphasis on the expansion of private employment."[3] It encourages reducing Federal outlays as a share of GDP (gross domestic product) to "the lowest level consistent with national needs and priorities."[4] The Employment Act further declares "that inflation is a major national problem requiring improved government policies" addressing "improved and coordinated fiscal and monetary management, the reform of outmoded rules and regulations, [and] the correction of structural defects in the economy that prevent or seriously impede competition in private markets."[5]

Today we are losing ground on fulfilling these essential responsibilities. The labor force participation rate for prime-age men (those ages 25–54) has declined since the 1960s and stands near its all-time low. Real GDP growth and productivity growth have dramatically slowed since the 1980s. As a share of GDP, Federal debt held by the public is projected to reach 115 percent by FY2033—breaking the record set due to World War II

spending.[6] The Social Security and Medicare Part A trust funds are projected to become insolvent in FY2033, entailing automatic and severe benefit cuts that could double the rate of senior poverty throughout the U.S.[7] The trade balance has badly deteriorated. Inflation has soared to a four-decade high while wage growth has not kept up. The purchasing power of a dollar has fallen by almost 16 percent since January 2021. Under the Biden Administration, America's families, especially the poorest, are falling further and further behind.

These macroeconomic failures underscore the important role of the U.S. Congress Joint Economic Committee. Established by the Employment Act, the purpose of the Committee is to provide expert advice to Congress on economic policymaking. For example, the Joint Economic Committee provided the intellectual leadership behind the bipartisan fiscal reforms that helped squash inflation during the Reagan Administration.[8] As a result, the U.S. saw three decades of low inflation and greater economic stability.[9]

The Joint Economic Committee has a statutory obligation to report "its findings and recommendations with respect to each of the main recommendations" in the 2023 *Economic Report of the President* (henceforth the *Report*).[10] Unfortunately, the Biden Administration has proposed doubling down on the failed policies of the past. The Administration's proposals to expand the scope of government would further worsen economic growth, further diminish the participation of prime-age men, and further curtail market competition and technological innovation.

The Republican section of the 2023 *Joint Economic Report* (henceforth the *Response*) delivers its findings and recommendations in five chapters.

Chapter 1 ("The Fiscal Roots of Inflation") explains the nation's unsustainable fiscal path and its inflationary consequences. The

re-emergence of high and volatile inflation during 2021 and 2022 is best explained by the large, unbacked fiscal expansion undertaken by the Biden Administration, such as the ironically titled "Inflation Reduction Act." The chapter further argues that inflation is not explained by a sudden outburst of "corporate greed." This rhetorical excuse chasing to justify preferred policies only serves to increase political partisanship—it does nothing to address our economic problems.

Figure 0-1: Bidenomics Has Stalled Our Recovery.
U.S. Real Gross Domestic Income Is Still $773 Billion Below Trend.

Source: BEA (NIPA Table 1.17.1. line 2). JEC calculations. Trend line fitted to pre-pandemic data.
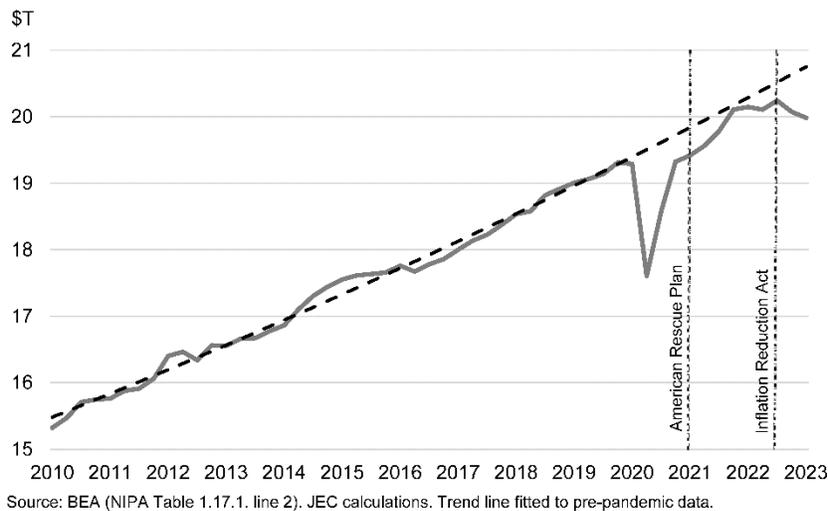
Chapter 2 ("A Framework for U.S. Debt Stabilization") highlights the ballooning U.S. debt-to-GDP ratio, which is set to rise to 115 percent by FY2033 and 181 percent by FY2053. It explains the importance of fiscal responsibility for creating long-run price stability in a fiat money economy. This chapter offers a framework for stabilizing the Federal debt by reducing the primary deficit as a share of GDP, increasing real GDP growth, and reducing Federal borrowing costs. It concludes by exploring proposals for improving U.S. budgeting and debt management.

Chapter 3 ("The Social Costs of Obesity") measures some of the personal and economic costs of obesity. As I have long argued, demographics and disease are primary drivers of our debt. This chapter details how obesity and obesity-related diseases will contribute $5.6 trillion to the primary deficit over the next decade.

Chapter 4 ("How (Not) to Increase Economic Growth") estimates the macroeconomic effects of the Biden Administration's proposals to increase taxes by $4.7 trillion over the next 10 years. Contrary to their analysis, these proposals would severely inhibit long-run U.S. real GDP growth. This chapter also rebuts the notion that hiking taxes is about "fairness," contrary to the impression given by the *Report*. The Federal government is predominantly financed by taxes paid by households in the top income quintile.

Chapter 5 ("Getting Prime-Age Men Back to Work") evaluates the long-term decline in prime-age men's labor force participation and highlights several contributing government-created barriers. It surveys potential reforms for increasing their participation and estimates the value of doing so could expand annual GDP by $215 billion, grow government revenue by $400 billion over the next 10 years, and increase average household income by $1,325 per year.

We have reached the point where we can no longer play politics with our nation's fiscal health. It is time to come together, as well as to be open and honest about our nation's fiscal challenges. That is our moral obligation to the communities we serve.

Chapter 1: The Fiscal Roots of Inflation

The Biden Administration has failed in its responsibility under the Employment Act to "promote […] price stability."[11] Worse, prices have risen faster than wages, leaving workers behind. The burden of inflation likely has disproportionately fallen on lower-income Americans. This chapter provides analysis showing that the recent surge of inflation was caused by the Administration's reckless fiscal policy, not a sudden outbreak of so-called "corporate greed."[12] Over the long-run, restoring price stability will require Congress to restore fiscal responsibility.

In 2022, Inflation Surged to a Four-Decade High

Inflation spiked during the first two years of the Biden Administration. The CPI-U (Consumer Price Index for All Urban Consumers: All Items) rose by 7.0 percent in 2021, the highest rate in four decades. It increased by another 6.5 percent in 2022 (Figure 1-1).[13] This rate of inflation is more than triple the Federal Reserve's 2 percent annual target.[14] In total, the national average of consumer prices rose by 14 percent during 2021 and 2022.[15] Price increases in some metropolitan regions were substantially higher, such as Phoenix (20.3 percent), Miami and Tampa (19.3 percent), and Atlanta (18.6 percent).[16]

Contrary to the assessment of President Biden's CEA (Council of Economic Advisers) in 2021, inflation has not been "transitory."[17] The prices of necessities have grown particularly fast. Over President Biden's first two years, home food prices rose by 19 percent, home energy prices rose by 39 percent, shelter prices (such as rents) rose by 12 percent, clothing prices rose by 9 percent, new vehicle prices rose by 18 percent, and gas prices rose by 47 percent.[18]

Figure 1-1: Percent Change in the Consumer Price Index (CPI-U),
All Items, December to December
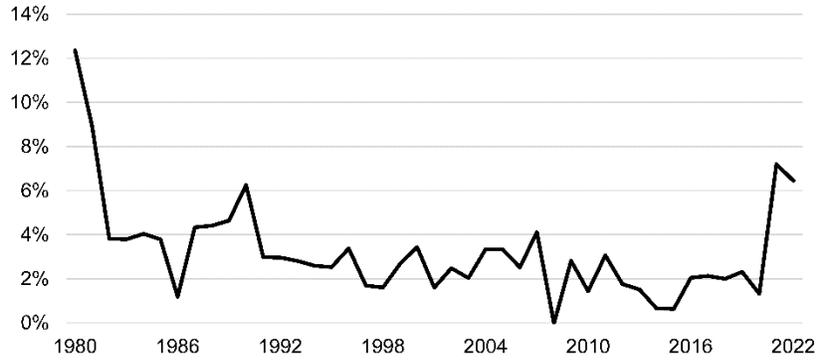
Source: BLS (series ID: CUSR0000SA0)

Figure 1-2: Percent Change in the Personal Consumption
Expenditures (PCE) Price Index, December to December
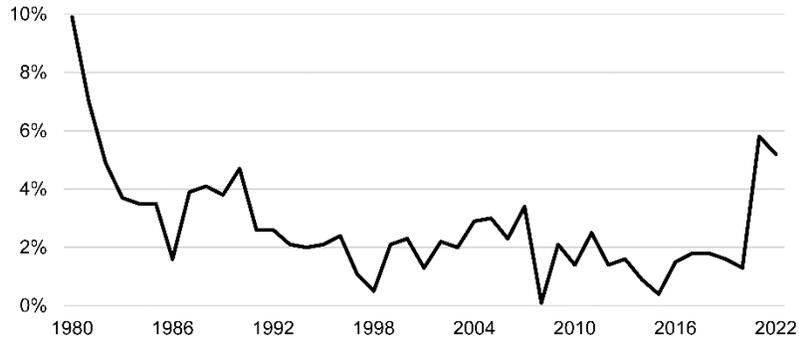
Source: BEA (NIPA Table 2.8.7. line 1)

Figure 1-3: Percent Change in the Gross Domestic Product (GDP)
Price Index, Q4 to Q4
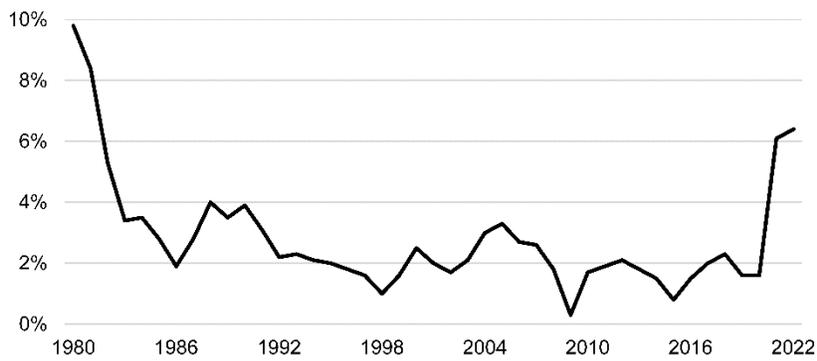
Source: BEA (NIPA Table 1.1.4. line 1)

There has been a decades-long debate about whether (or to what degree) the CPI-U overstates inflation.[19] Regardless, alternative measures of inflation also show that U.S. inflation reached a four-decade high during the first two years of the Biden Administration.

- The chained CPI-U for all urban consumers (C-CPI-U) is an improved version of the CPI that better accounts for changes in consumption patterns in response to changing prices.[20] C-CPI-U rose by 6.5 percent in 2021 and 6.6 percent in 2022.[21]
- The percent change in the PCE (personal consumption expenditures) price index is the Federal Reserve System's preferred inflation gauge.[22] The PCE price index suggests that inflation reached 4.0 percent and 6.3 percent in 2021 and 2022, respectively (Figure 1-2).[23]
- The percent change in the GDP (gross domestic product) price index measures inflation across the entire U.S. economy, including the price of investment goods.[24] GDP inflation was 4.5 percent and 6.0 percent in 2021 and 2022, respectively (Figure 1-3).[25]

Inflation has remained stubbornly high in H1 2023. Moreover, although the inflation rate has slowed from its four-decade high, consumer goods and services generally remain much more expensive than before. As of June 2023, consumer prices are 15.7 percent higher than when President Biden took office in January 2021.[26] In other words, contrary to the president's initial claim, these price increases have not turned out to be "temporary."[27]

Inflation Is a Greater Burden for the Poorest Households

Economic inequality may compound the harm of high inflation.[28] The CEA notes that lower-wage workers (such as service workers) have seen higher rates of earnings growth than average.[29] Nevertheless, research has shown that lower-income households also tend to experience above-average inflation. For example,

Greg Kaplan and Sam Schulhofer-Wohl estimate that between Q3 2004 and Q3 2013, "average inflation cumulates to 33 percent for households with incomes below $20,000 but just 25 percent for households with incomes above $100,000."[30]

Inflation may disproportionately burden lower-income workers because they tend to consume a higher proportion of their incomes.[31] Shutao Cao et al. estimate that a 3 percent increase in inflation reduces well-being by 13 percent of one-year consumption and that this is "mostly borne by the poor and old" who "hold 10 times more money per unit of consumption than their young and rich counterparts."[32]

Average Wages Have Not Kept Up With Rising Prices

Americans' wages have not kept up with rising consumer prices. After adjusting for CPI-U inflation, the BLS (Bureau of Labor Statistics) reports that AHE (average hourly earnings) fell by 2.0 percent and 1.6 percent in 2021 and 2022, respectively.[33] Since President Biden took office, real AHE have fallen by about 3.2 percent.[34] These real wage declines are consistent with a long economic literature emphasizing wage stickiness due to employment contracts and labor search frictions.[35] As both Milton Friedman and Edmund Phelps hypothesized, nominal wages have been slow to adapt to unexpected inflation.[36] In this way, the worker shortage described by the *Report* can be understood as a consequence of inflation, not its cause (see Figures 1-4 and 1-5).

While the *Report* notes nominal AHE rose faster for lower-wage workers, households facing higher inflation rates require greater nominal wage growth just to keep up.[37] For example, the inflation-adjusted AHE for production and nonsupervisory employees fell by 1.5 percent and 0.8 percent in 2021 and 2022, respectively.[38] Differences in household-level inflation can exacerbate economic inequality. For example, Philip Hoffman et al. document that

Figure 1-4: Labor Market Equilibrium

Real Wages
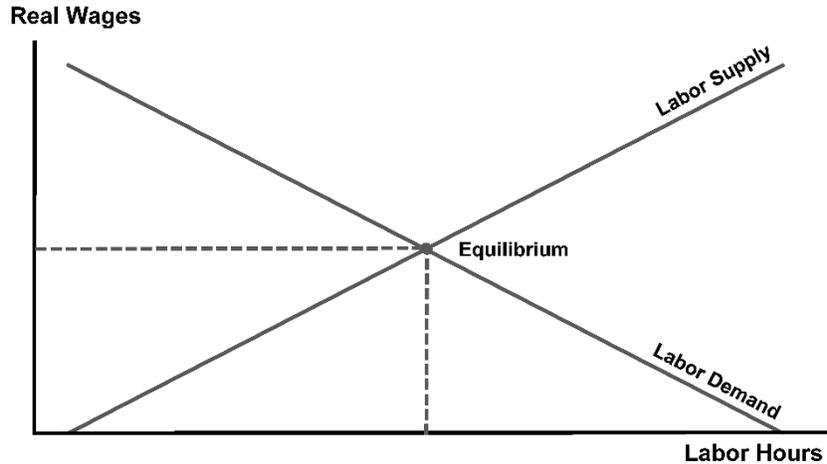
The **labor demand curve** shows the quantity of labor that firms would hire at each level of wages. Profit maximizing firms hire labor to the point that the wage equals the marginal product of labor. The **labor supply curve** shows the quantity of labor that workers would offer at each level of wages. The **equilibrium point** is the intersection of the labor supply and labor demand curves. It is the level of wages and labor supplied and demanded satisfactory to both workers and firms, clearing the market.

Figure 1-5: Unexpected Inflation and Labor Market Disequilibrium

Real Wages
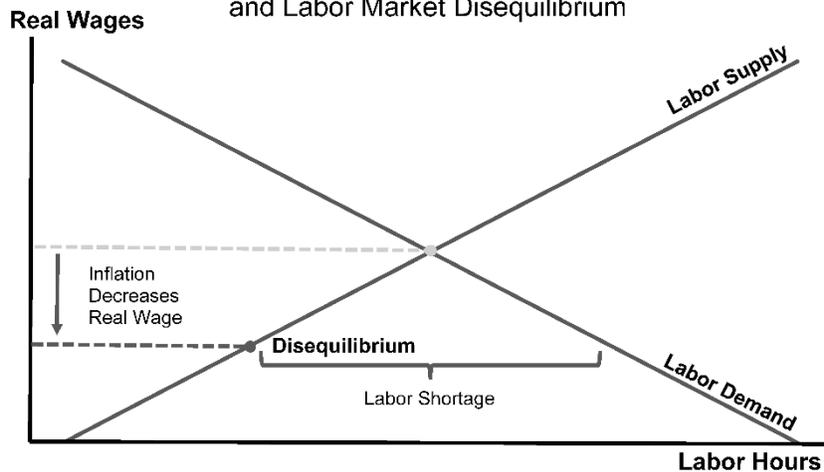
The unexpected increase in consumer prices reduces the prevaling real (i.e., inflation adjusted) wage below its market-clearing level. At this disequilibrium outcome, labor demanded is greater than labor supplied. This labor shortage persists until wages rise enough to return the real wage to the equilbrium.

rising food and fuel prices drove up inequality in Europe from 1500 to 1815.[39] They document that globalization between 1815 and 1914 helped reverse this trend by lowering the price of grain.

As the *Report* correctly notes, AHE growth can also reflect changes to the composition of the labor force, not just individual wage growth.[40] Lower-wage service workers suffered disproportionate job losses in 2020 because of the COVID-19 pandemic and government restrictions on in-person economic activity.[41] Because AHE is not adjusted for industry composition, the re-entry of these workers may downwardly bias measured AHE growth.

The *Report* instead suggests using the ECI (Employment Cost Index), which is composition adjusted.[42] Using the ECI, real total compensation fell by 2.6 percent and 1.4 percent in 2021 and 2022, respectively.[43] Average real earnings began recovering in H2 2022, but even returning to pre-2021 real earnings will not undo the real income losses suffered for the past two and a half years.[44]

Accounting Alone Is Insufficient to Understand Inflation

As Americans have again felt the pain of high inflation, the cause of that inflation has become the topic of public debate. Many commentators have attempted to explain the factors driving inflation by breaking down the "contributions" to overall inflation from various sub-categories. The different metrics of inflation presented earlier (CPI-U, PCE, and GDP) can be broken down into growth of different subcategories. For example:

- food prices, energy prices, shelter prices, and other prices;[45]
- business profits, labor costs, taxes, and import prices;[46] or
- the money supply, money velocity, and real GDP.[47]

However, these are accounting identities, meaning that the terms are defined such that the relationships are always true.

Commentators have then tried to infer the causes of inflation from events correlated with price increases in these sub-categories.

- Seeing a large rise in energy prices, some have argued that the cause of inflation was the Russo-Ukrainian War.
- Seeing a large rise in import prices, some have argued that the cause of inflation was pandemic-era supply chain stress.
- Seeing a large rise in the money supply, some have argued that the cause of inflation was overly easy monetary policy.
- Seeing a large rise in corporate profits, some have argued that the cause of inflation was firms raising prices above costs.

However, as the *Report* acknowledges, economists cannot infer causal relationships from accounting identities alone.[48] Among many other economists, Richard Lipsey stressed this distinction in his critique of Keynesian economics.[49] Indeed, this distinction is a special case of Kant's analytic-synthetic distinction.[50] In the case of inflation, economists cannot determine the cause of inflation by tautologically decomposing inflation into "contributions" from suggestively named categories.

Rather, accounting identities are only the starting point for economic analysis. As Friedman emphasized, understanding causality also requires making behavioral assumptions and distinguishing between competing assumptions based on their predictive ability and parsimony.[51] In other words, analysis of causality requires applying economic theory. Economists also need to distinguish between changes in relative prices and changes in the overall price level. Understanding the cause of inflation, in other words, requires an explanation of *why prices tend to rise together*, not why one price rose relative to others.

While the *Report* reviews many hypotheses for inflation, it does not defend any specific hypothesis. Instead, it sidesteps the need

for more rigorous analysis by proposing an ecumenical acceptance of all proposed explanations.[52]

> The possible causes discussed here likely played some role in the level and elevated nature of inflation in 2022—and the pandemic was a large exacerbating cause to each. Interactions between causes likely worsened inflation. Frequently cited hypotheses include the shock to energy, food, and other commodity prices associated with Russia's invasion of Ukraine; pandemic-related supply chain issues; the extension of zero interest rate monetary policy and accompanying quantitative easing; household transfers legislated as part of the CARES Act, the American Rescue Plan, and related legislation; and households' accumulative of "excess savings."[53]

The problem with this approach is that any observation can be rationalized by assuming enough *ad hoc* causes. Over 2,000 years ago, Aristotle explained the principle of parsimony: "[w]e may assume the superiority *ceteris paribus* of the demonstration which derives from fewer postulates or hypotheses."[54] In other words, progress can often be made by using simpler assumptions to engage complex puzzles.[55] In a survey of Nobel laureates in economic science, almost all respondents said that simplicity was an explanatory virtue and emphasized the role of simplicity in their own research.[56]

Fiscal Theory Explains Recent U.S. Inflation

Of the competing explanations, the fiscal theory of the price level provides a predictive and parsimonious explanation for the dramatic surge of inflation during 2021 and 2022. Specifically, in a fiat money economy inflation occurs when government debt

rises relative to people's expectations about future surpluses to repay the debt. Boiled down, fiscal theory is the hypothesis that "persistent high inflation is always and everywhere a fiscal phenomenon," albeit often one with a central bank accomplice.[57]

Using a simple model for illustration, JEC economists estimate that President Biden's deficit spending caused a 17.1 percent cumulative inflation, compared with the observed CPI inflation of 15.7 percent from January 2021 to June 2023 (see Box 1-1).[58] The model's key assumption is that the public does not expect the "emergency" spending undertaken during the Biden Administration (e.g., the American Rescue Plan, the Inflation Reduction Act, and Infrastructure Investment and Jobs Act) to be repaid via future primary surpluses.

Many fiat-money-issuing countries have resorted to inflationary finance in emergencies. For example, Francesco Bianchi and Leonardo Melosi cite President Roosevelt's use of two budgets during the Depression: a "regular budget" that he committed to balance, and an "emergency budget" that he did not clearly commit to balance.[59] Bianchi and Melosi propose an analogous strategy for preventing a pernicious deflationary spiral when the Federal Reserve's monetary policy stimulus is constrained by the zero lower bound on overnight interest rates.

Yet, the economy was not at risk of deflation when President Biden took office. The recession had long ended, and the U.S. economy was rapidly recovering.[60] As Veronique de Rugy notes, the Biden Administration's fiscal stimulus was two or three times more than the output gap.[61] Even top economists from prior Democratic administrations sounded the alarm about fiscal stimulus (see Box 1-2). Sophisticated models also point to the role of fiscal policy in driving U.S. inflation. Oscar Jorda et al. estimate that fiscal policy may have raised U.S. inflation in 2021 by about 3.5 percentage points.[62] Using a general equilibrium model,

Bianchi, Renato Faccini, and Melosi "conclude that unfunded spending has played an important role for accounting for inflation dynamics, both historically and in the post-pandemic period."[63]

> **Box 1-1: Applying a Simple Model of Fiscal Theory**
>
> Consider a one-period model with perfectly flexible prices, constant interest rates, short-term government debt, and no risk premia.[64] The public owns B dollars of outstanding one-period, zero-coupon government bonds, which the government pays by printing new money. The government also taxes the public the quantity Ps, where P is the price level (dollars needed to buy a basket of goods) and s is the amount of real tax payments (quantity of baskets of goods that are taxed). In equilibrium, the price level adjusts so that the total amount of tax revenue equals the total amount of bond payments. Re-arranging terms, the equilibrium price level is given by:
>
> $$P = \frac{B}{s}$$
>
> As a comparative statics exercise, instead consider the equilibrium price level P* given B* of outstanding bonds, all else equal. The predicted inflation (percentage increase in the price level) equals the percent increase in the outstanding bonds.
>
> $$100\left(\frac{P^*}{P} - 1\right) = 100\left(\frac{B^*s}{Bs} - 1\right) = 100\left(\frac{B^*}{B} - 1\right)$$
>
> Between January 2021 and May 2023, CBO's projection for Federal debt held by the public in FY2030 rose by 17.1 percent. Gross Federal debt rose by a similar percentage. This simple fiscal theory model predicts that (assuming no change in the expected path of primary surpluses) the Biden Administration's deficit spending would create a 17.1 percent cumulative inflation.

Although titled as the Inflation Reduction Act, Democrats' green energy and healthcare subsidies will expand the deficit and further fuel inflation. The Penn Wharton budget model projects the package adds $750 billion to the deficit over 10 years.[65]

Box 1-2: Left-Leaning Economists Warned About Inflation

Larry Summers (previously Treasury Secretary for the Clinton Administration and Director of the National Economic Council for the Obama Administration) warned in 2021 that the $1.9 trillion ARP (American Rescue Plan) was "the least responsible macroeconomic policy we've had in the last 40 years."[66] In 2022, Summers described the ARP as "a serious error" that "set the stage for the inflation."[67]

Janet Yellen (current Treasury Secretary, previously appointed Chairwoman of the Federal Reserve by President Obama and served as CEA Chairwoman for President Clinton) privately "worried about accumulating too much federal debt and risking higher inflation" and preferred a much smaller ARP package.[68]

Both Jason Furman (previously Chairman of the CEA for President Obama) and Steven Rattner (economic adviser to the Obama Administration) described the oversized ARP as the "original sin" of surging inflation.[69]

Fiscal Theory Makes Sense of Alternative Explanations

The ability for a simple fiscal theory model to predict U.S. inflation (at least within reasonable magnitudes) undercuts the motivation to introduce other *ad hoc* causes. Rather, insofar as these other factors matter quantitatively, they matter *vis-à-vis* their impact on government debt and expected future surpluses.

For example, consider the Federal Reserve's LSAPs (large-scale asset purchases, also known as quantitative easing, or QE) during the pandemic. LSAPs are financed by expansions of the money

base, such as reserves and physical currency. Drawing on the quantity theory of money, Joshua Hendrickson and others have hypothesized that the recent spike in inflation was caused by large increases in the money supply.[70]

However, quantity theory incorrectly predicted double-digit inflation during the Federal Reserve's initial LSAP programs in the 2010s following the Great Recession.[71] The failure of quantity theory in this episode may owe to a breakdown of a stable money demand function in an economy with interest paying money and liquid government bonds. In such an economy, the public views money and bonds as perfect substitutes, and any increase to the money stock is offset by a decrease in money velocity.[72] The public may have interpreted the Federal Reserve's asset purchases during the pandemic as a fiscal commitment to not raise primary surpluses (i.e., permanently increasing the stock of U.S. debt).

Similarly, public deficits mechanically create private surpluses.[73] Under Ricardian equivalence, the resulting "excess savings" will not be spent if the public anticipates that they will be taxed this amount in the future.[74] However, absent a credible commitment of future surpluses, these "excess savings" will be spent, driving up aggregate demand and raising the price level.[75]

Moreover, "transitory" supply-side shocks (e.g., Russia's invasion of Ukraine and resulting disruptions to global trade) can result in permanent increases in the price level (not just temporary changes to relative prices) insofar as those shocks temporarily lower economic activity, and the correspondingly higher government deficits are not offset by increases to future primary surpluses. JEC economists anticipate exploring these relationships in future work.

"Corporate Greed" Ignores Basic Economics

President Biden and others have attempted to shift the blame for inflation away from their fiscal policy to so-called "corporate

greed."[76] The *Report* suggests that inflation could have been exacerbated by firms exercising "market power" to increase their prices more than their increase in costs. Citing research from the Federal Reserve Bank of Boston, the *Report* argues, "More U.S. industries have become dominated by a few, large firms over the last 20 years. There is some evidence that these firms increase prices in response to cost increases more than firms without market power would have done in the past."[77]

However, the corporate-greed hypothesis is particularly ill-suited for explaining the surge of inflation. To begin, consider the Bertrand model, the standard model of imperfect competition among price-setting firms. For illustration, assume that each firm produces homogenous products at constant marginal costs and faces a downward sloping market demand curve (Figure 1-6).[78]

All firms attempt to maximize profit by selling their product for a price above their marginal cost. Each firm's profit is the number

Figure 1-6: Bertrand Competition

Price

Equilibrium   **Firm 2 Marginal Cost**

Firm 1 Markup

Firm 1 Marginal Cost

Demand

Quantity
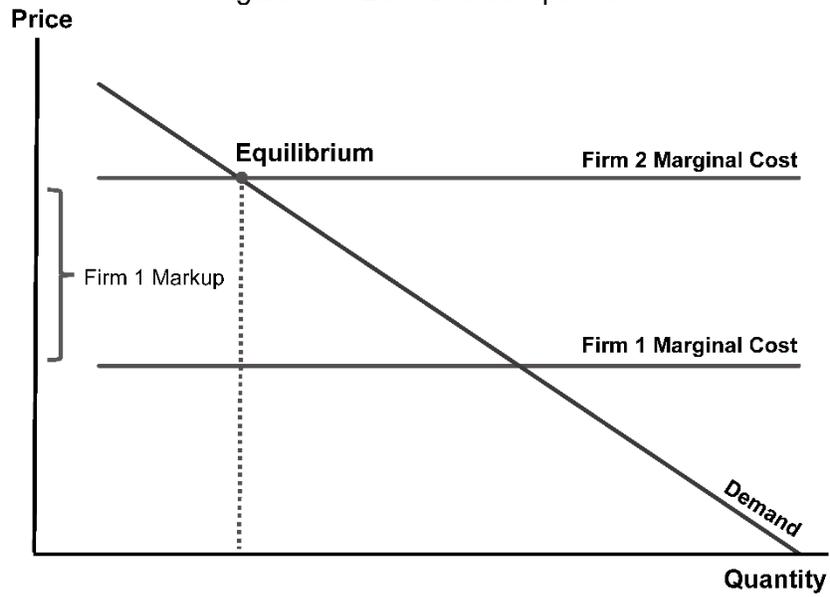
Figure 1-7: Bertrand Competition
with Higher Production Costs

Price

Equilibrium   **Firm 2 Marginal Cost**

Firm 1 Markup   **Firm 1 Marginal Cost**

Increased Marginal Cost

Demand

Quantity
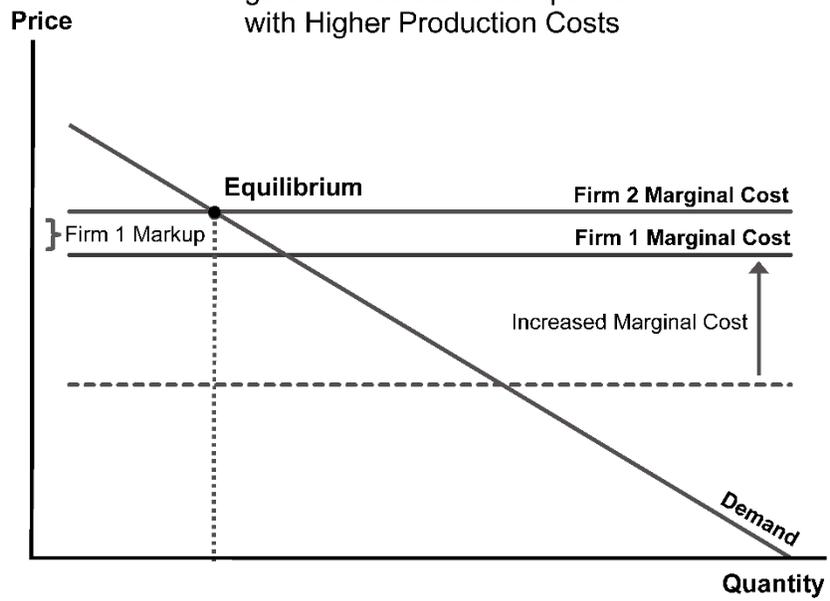
of units sold times its markup (i.e., difference between its sale price and its own marginal cost). Consumers will purchase from the lowest-price firm.[79] The unique Nash equilibrium of this game suggests that the least-cost firm will be able to sell its products for a price equal to the marginal cost of the next-best competitor, thereby earning positive profits and serving the entire market.

Importantly, the potential for competition from other firms imposes market discipline on the incumbent, even though the firm serves the entire market demand. For example, this price-setting firm cannot arbitrarily raise its prices without harming its own profits—even a marginal increase in price would reduce its profits to zero. In this way, the competition driven by "corporate greed" (i.e., firms attempting to maximize profits) prevents the very abuse that the Biden Administration and others blame for inflation.

Moreover, even small amounts of competition are sufficient to approximate the perfectly competitive benchmark. In the Bertrand model, if the difference in marginal costs of production between firms is sufficiently small, then prices can be arbitrarily close to their perfectly competitive level (see Figure 1-7). Insofar as the incumbent firm's cost advantage comes from non-excludable resources (e.g., employing a workforce with better human capital) competition over those factors will compress firm markups.

This means that a firm also has an incentive to create excludable technology through R&D (research and development) to reduce its marginal cost.[80] Doing so will raise its profits without raising the price that consumers pay. Conversely, all else equal, even an increase in the marginal cost of the lowest-cost firm will not increase prices. The firm-specific increase in marginal cost will reduce the firm's profits until the point that it is no longer the

lowest-cost firm. At that point, the next-best competitor will service all consumers at only a marginally higher price.

In practice, market competition will never be "perfect" in the sense of the perfectly competitive benchmark.[81] Neither does this market "imperfection" imply the superiority of Federal control over private competitive enterprise. Rather, Congress should be skeptical of the Biden Administration's appeals to "competition" to justify greater regulation of specific markets.[82] Greater government control is often the means by which politically-favored firms exclude competitors at the expense of the American people—exactly what the regulations are ostensibly intended to avoid.[83] F. A. Hayek summarizes the fundamental question about competition policy as being "that we should worry much less about whether competition in a given case is perfect and worry much more about whether there is competition at all."[84]

Market Concentration Is Not Market Power

The Bertrand model underscores one of the serious methodological problems of the Federal Reserve Bank of Boston paper.[85] Fundamentally, the paper attempts to estimate the relationship between market concentration (as a proxy for market power) and the pass-through of input costs into output prices (see Box 1-3 for a discussion of the contribution of price markups to inflation). However, economists widely recognize that "market concentration" is not informative about market power.[86]

> Perhaps the deepest conceptual problem with concentration as a measure of market power is that it is an outcome, not an immutable core determinant of how competitive an industry or market is […] As a result, concentration is worse than just a noisy barometer of market power.

> Instead, we cannot even generally know which way
> the barometer is oriented.[87]

For this reason, the industrial organization literature has long abandoned using regressions of price on market concentration.[88]

As an illustration, consider a Bertrand model with the lowest-cost firm having a marginal cost only just below the marginal cost of the second-lowest cost firm (like Figure 1-6). In equilibrium, the industry's Herfindahl-Hirschman Index would be 1 (indicating maximum concentration) but potential competition would reduce markups to nearly zero (the perfectly competitive benchmark).[89]

There are also several important data issues with the Federal Reserve Bank of Boston paper. Notably, the authors use data from Compustat. However, one study explains that:

> Industry concentration measures calculated using
> Compustat data, which only cover the public firms
> in an industry, are poor proxies for actual industry
> concentration. These measures have correlations of
> only 13 percent with the corresponding U.S.
> Census measures, which are based on all public and
> private firms in an industry.[90]

Subsequent research supports this conclusion.[91] The Federal Reserve Bank of Boston authors also drop many industries from their analysis, including all retail sectors.[92] In other words, their measure of prices excludes one of the most important sectors for American households.

Box 1-3: Be Skeptical of Estimates of Markup Shocks

Within the NK (New Keynesian) literature, it is common to attempt to explain inflation via exogenous, time-varying "price markup shocks" by monopolistically competitive firms in the intermediate goods sector.[93] These theorized shocks serve two key

purposes: providing an additional degree of freedom for fitting the historical data and imposing on the log-linearized model a tradeoff between stabilizing inflation and the output gap.[94]

To analyze the relative contribution of different causes of inflation, Jai Kedia, re-estimated the model of Frank Smets and Rafael Wouters with recent U.S. macroeconomic data.[95] (The SW2007 model is a standard workhorse in the NK literature). Like the accounting exercises discussed previously, this model can decompose overall inflation into the constituent contributions from different economic sectors. Unlike the accounting exercises, however, the model incorporates economic assumptions that purport to identify the causal roles of the various contributions.

Kedia's shock decomposition suggests that both price markups and monetary policy were economically significant causes of surging PCE inflation in 2021 and 2022. Conversely, his analysis purports to show that fiscal policy reduced inflation in this period.

However, the markup shocks in the SW2007 model do not correspond to "markups" in the industrial organization literature. Rather, the "markup shocks" in SW2007 are merely the residual of the model's Phillips curve. The size of SW2007's estimated "markup shocks" suggest that the Phillips curve is unable to rationalize the recent surge in inflation following decades of muted inflation since the mid-1980s.

Finally, the SW2007 model has many *ad hoc* features (e.g., investment adjustment costs, habit persistence, and autocorrelated errors) that make its results vulnerable to the Lucas critique under a policy regime change.[96] Notably, the model is super-Ricardian, essentially assuming away the possibility of a permanently unbacked fiscal expansion. As a result, it assumes away the possibility of the U.S. returning to the fiscally led policy regime of the 1960s.[97] It is this precisely possibility that one wants to test.

To be clear: This discussion is not a criticism of Kedia. He sensibly applied a workhorse model to provide policymakers insight on an important and time-sensitive policy problem. This approach is a better than inventing a new, untested model.[98] His result also underscores the importance of understanding and questioning the assumptions underlying macroeconomic models. It also suggests caution when interpreting the results of large-scale macroeconomic models, especially those whose causal inferences are not robust to misspecification or changes in policy regimes.

CHAPTER 2: A FRAMEWORK FOR U.S. DEBT STABILIZATION

The growth of U.S. Federal debt is on an unsustainable and potentially ruinous path. The par value of Federal debt held by the public reached $24 trillion in FY2022, which is a greater than sevenfold increase since 2001.[99] The debt burden is nearly 100 percent of GDP (gross domestic product).[100] The dollar lost over 70 percent of its consumer purchasing power since 2001, and inflation recently hit a four-decade high.[101] Unless Congress changes course, the publicly-held debt-to-GDP ratio will continue to dramatically rise, risking even greater reductions in the dollar's value. To avert the looming risk of high inflation, Congress should stabilize the publicly-held debt-to-GDP ratio. This can be done by (1) reducing the primary deficit as a percent of GDP, (2) increasing the growth rate of real GDP, and (3) reducing the real interest rate paid on Federal debt.

The U.S. Fiscal Outlook is Dire

The CBO (Congressional Budget Office) projects that the Federal budget deficit will exceed $1.5 trillion in FY2023.[102] It will be the third largest in U.S. history, exceeding the $1.4 trillion deficit in FY2009 after the financial crisis.[103] CBO projects that the deficit will only worsen over the coming decades, rising above its FY2020 all-time high ($3.1 trillion) by FY2037.[104] Unless Congress changes course, a typical year's deficit will soon be greater than when substantial portions of the economy were shut down during the COVID-19 pandemic.[105] CBO projects that the main driver of deficit increase will be "increasing net interest costs and the growth of spending on major healthcare programs and Social Security."[106] (See Figure 2-1 for projected spending.)

Figure 2-1: FY2033 Projected Outlays, Excluding the Effects of Offsetting Receipts
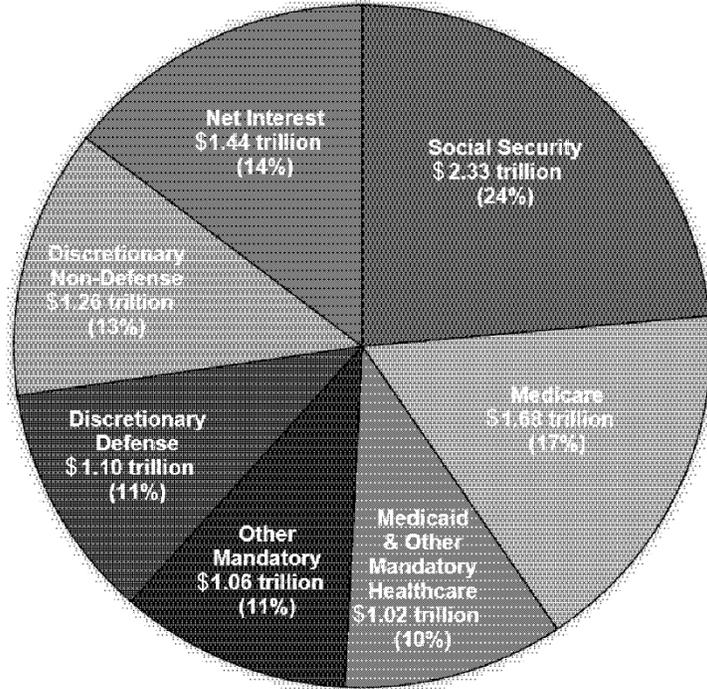
Source: CBO (May 2023 Update to the Budget Outlook).

Figure 2-2: Federal Debt Held by the Public as a Percent of GDP
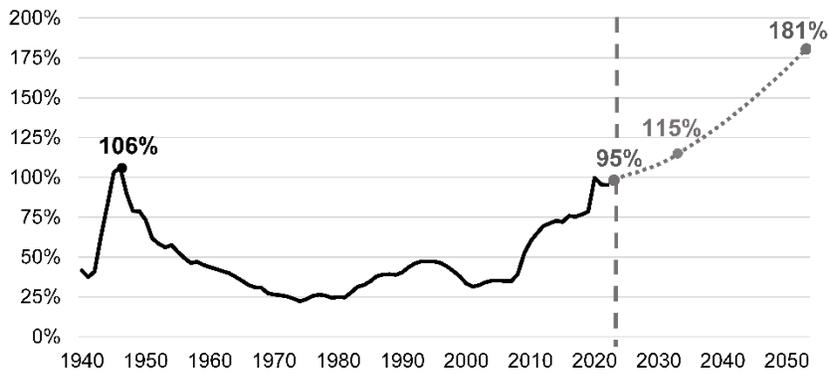
Source: OMB (FY2024 President's Budget Table 7.1), CBO (June 2023 Long-Term Budget Outlook).

As a result of rising deficits, CBO projects that publicly held U.S. Federal debt will rapidly increase. CBO projects that Federal debt held by the public will grow to 115 percent of GDP by FY2033 (see Figure 2-2).[107] This debt-to-GDP ratio would be the highest in U.S. history, even surpassing the burden undertaken to fight World War II (106 percent of GDP in FY1946).[108] However, unlike the World War I and World War II deficits, which were followed by subsequent surpluses and falling debt-to-GDP ratios, CBO projects that the debt-to-GDP ratio will continue rising to 181 percent by FY2053.[109] Even these dire projections may be too rosy (see Box 2-1).

Despite rising debt-to-GDP ratios, a decline in U.S. real interest rates over the past several decades has (so far) slowed the growth of net interest costs.[110] As detailed by President Obama's CEA (Council of Economic Advisers), several trends may have contributed to this decline in interest rates. Commonly cited examples include slowing productivity growth, shifting demographics, a global "glut" of savings, and a global "shortage" of safe assets.[111] Moreover, Kenneth Rogoff, Barbara Rossi, and Paul Schemlzing have documented a multi-century decline in real interest rates across many countries, with a sharp drop during the twentieth century.[112]

Although some have argued that the downward trend of interest rates will continue, Congress should question that assumption and consider the balance of risks.[113] While the historical decline in real interest rates is suggestive of a continued decline, a large literature warns against putting too much faith in statistical estimates of long-term trends.[114] Even if the long-run trend continues, Congress should evaluate the risk of a short-run deviation. As John Maynard Keynes famously cautioned:

> The *long run* is a misleading guide to current affairs. *In the long run* we are all dead. Economists

> set themselves too easy, too useless a task if in
> tempestuous seasons they can only tell us that when
> the storm is long past the ocean is flat again.[115]

For example, Rogoff, Rossi, and Schemlzing identify four historical eras of low real interest rates.[116] Each era abruptly ended. Today, even a small interest rate increase could dramatically increase net interest costs. For example, consider a three-decade deviation that raises interest rates by one percentage point more than projected by the CBO. Brian Riedl estimates that would increase net interest costs by $30 trillion over thirty years.[117] In the context of sovereign debt, the "short run" could constitute decades.

Box 2-1: Are CBO's Projections Overly Optimistic?

CBO's baseline projections for the debt and deficit have consistently been too optimistic since 2000 (see Figure 2-3).[118] In part, CBO's overly optimistic projections reflect its assumption "that current laws generally remain unchanged."[119] A statutory requirement under the Balanced Budget and Emergency Deficit Control Act of 1985, this assumption is reasonable insofar as the baseline is a benchmark used to score new legislation.[120] However, Congress has an incentive to further increase deficit spending because future generations will bear the financial burden but do not get a vote.[121] Hence, if treated as an unconditional forecast, then CBO's projections may be downwardly biased.

Figure 2-3: CBO 10-Year Projections Generally Undershoot Actual Debt-to-GDP Ratio

Source: BEA (NIPA Table 1.17.1. line 1), CBO (January 2007, January 2008, January 2009, January 2010, January 2011, January 2012, Feburary 2013, Feburary 2014, January 2015, January 2016, January 2017, April 2018, January 2019, January 2020, Feburary 2021, May 2022, and May 2023 Long-Term Budget Outlooks).

Box 2-2: Higher Debt Lowers Growth, Raises Interest Rates

An array of recent academic research has found that economic growth slows once debt-to-GDP ratios exceed roughly 80 percent.[122] A majority of these studies find that the relationship between debt-to-GDP and growth is convex, meaning that higher debt-to-GDP ratios appear to be increasingly harmful to economic growth—and therefore the ability to pay down Federal debt.[123] In response to a question on the matter, CBO experts responded that their projections account for the tendency of higher sovereign debt to reduce economic growth by increasing interest rates and crowding out private investment.[124]

CBO also notes that costs to service publicly-held debt will rise if rising debt-to-GDP ratios raise interest rates.[125] While estimates vary, several economists have found that a one percentage point increase in the debt-to-GDP ratio raises interest rates by several basis points.[126] Research by Ernie Tedeschi (Chief Economist for President Biden's Council of Economic Advisers) estimates that interest rates rise by about 4 basis points for each percentage point increase in the debt-to-GDP ratio.[127]

Price Stability Requires Fiscal Responsibility

If government attempts to indefinitely increase its debt as a share of GDP, then it will necessarily produce high inflation that devalues its fiat currency and its fiat-currency denominated debt. As Adam Smith explained, the value of fiat money ultimately depends on fiscal policy:

> A prince who should enact that a certain proportion of his taxes should be paid in a paper money of a certain kind might thereby give a certain value to this paper money, even though the term of its final discharge and redemption should depend altogether upon the will of the prince.[128]

As discussed in Chapter 1, absent a credible commitment of repaying today's deficits with future primary surpluses, deficit spending will raise aggregate demand, pushing up prices across the entire economy. Ultimately, *price stability requires fiscal responsibility*.

Michael Woodford demonstrates that the relationship between price stability and long-run debt sustainability holds in a wide class of macroeconomic models used by professional economists.[129] If the government does not commit to stabilizing its long-term debt as a share of GDP, then even "tight" monetary policy cannot avert high and volatile inflation. As Thomas Sargent

and Neil Wallace famously pointed out with their "unpleasant monetarist arithmetic," tight monetary policy can even worsen inflation when government does not commit to offsetting its higher interest costs by raising primary surpluses.[130] Moreover, as the debt burden rises, the government's incentive for opportunistic inflation (or "state-contingent default") also rises.[131] In turn, that increases the risk of a run by rational, forward-looking creditors. John Cochrane warns:

> As with all runs, once a run on the dollar began, it would be too late to stop it. Confidence lost is hard to regain. It is not enough to convince this year's borrowers that the long-term budget problem is solved; they have to be convinced that next year's borrowers will believe the same thing. It would be far better to find ways to avert such a crisis than to be left searching for ways to recover from it.[132]

In other words, once the alarm bells of a crisis start ringing, it will be too late for Congress to act. Rising inflation and interest rates would devalue U.S. Treasuries held by retirement accounts, pension funds, banks, and derivatives exchanges. As has happened throughout history, a sovereign debt crisis could precipitate a domestic banking crisis or a foreign exchange crisis. The next time would not be different (see Box 2-3).[133]

Box 2-3: Foreshadowing the Consequences of a Run on the Dollar

The U.S. received a warning shot across the bow of the Federal budget in September 2019 when stress in dollar funding markets caused overnight interest rates to spike. The Secured Overnight Financing Rate (a key reference rate) exceeded 5 percent, more than doubling in a single day.[134] This interest rate spike devalued bank capital and derivatives collateral, which prompted an emergency intervention by the Federal Reserve. More recently,

amid rising inflation and interest rates, the U.S. experienced the second- and third-largest bank failures in its history.[135]

The United Kingdom experienced similar tremors in September 2022 when the Chancellor of the Exchequer announced a "mini budget" that would dramatically raise the U.K. deficit.[136] While the government argued that the package would enhance long-run economic growth, markets swiftly repriced the sterling's risk. In turn, U.K. pension funds suffered substantial losses. Like the Federal Reserve's actions during September 2019, the Bank of England intervened with an emergency program of bond purchases.[137]

There is Still Time to Act

There is still time for Congress to restore long-run price stability. The fiscal roots of inflation imply that Congress should focus on stabilizing the debt-to-GDP ratio. This chapter proposes a framework for U.S. debt stabilization, drawing on Olivier Blanchard's 2019 presidential address to the American Economic Association and subsequent research.[138] The framework depends on the relationship between three key macroeconomic variables:

1. the inflation-adjusted growth rate of the U.S. economy ("g");
2. the inflation-adjusted interest rate on U.S. Federal debt ("r");
3. and the primary deficit the U.S. Federal government ("p").[139]

As a simplifying assumption, assume that r and g are constants equal to their long-run averages. Where t denotes time, the growth of the debt-to-GDP ratio is given as follows.[140]

$$\frac{d}{dt}\left(\frac{\text{Debt}_t}{\text{GDP}_t}\right) = (r - g) \times \frac{\text{Debt}_t}{\text{GDP}_t} + \frac{p_t}{\text{GDP}_t}$$

As an example, assume that the real interest rate on Federal debt (r) is less than the growth rate of the economy (g). In this scenario, by balancing receipts and outlays such that the primary deficit is

zero, Congress can reduce the debt-to-GDP ratio without paying down any debt. In practical terms, Congress would simply roll over the entire stock of Federal debt forever and issue new debt to make net interest payments. Although the Federal debt will grow at rate r, the economy will grow faster at rate g, and so the debt-to-GDP ratio will gradually decrease. Alternatively, Congress could stabilize the debt-to-GDP ratio at its current level by running a primary deficit no greater than g – r percent of GDP.

Current CBO projections suggest that g = 1.7 percent and r = 1.2 percent.[141] If Congress adopted policies to reduce the primary deficit to zero, then the debt-to-GDP ratio would decline by 0.5 percent per year. Accounting for compounding, the debt-to-GDP ratio would halve every 138 years.[142] Alternatively, Congress could run a 0.5 percent of GDP primary deficit each year without raising the debt-to-GDP ratio.

Owing to the political difficulties of consistently achieving a long-term primary deficit of zero, JEC economists instead propose stabilizing the debt-to-GDP ratio at current levels through actions that achieve three key objectives.

1. Reduce the primary deficit by addressing discretionary spending and entitlement programs.
2. Raise real GDP growth by enacting pro-competition, pro-innovation, and pro-labor force participation reform.
3. Reduce real interest rates by committing to credible fiscal rules and improving Treasury debt management.

Like the legs of a stool, all three objectives play a critical role in setting the United States down the path of fiscal responsibility and price stability.

Box 2-4: Debt-to-Consumption as an Alternative to the Debt-to-GDP Ratio

From an econometric perspective, one of the reasons to favor the use of the debt-to-GDP ratio, as opposed to the Federal debt by the public by itself, is to remove the stochastic trend in latter variable. This detrending helps to make debt burdens more comparable across time. In principle, the debt-to-consumption ratio may be a superior metric because consumption is less volatile than other components of national income. In fact, the relative stability of personal consumption expenditures to income is a key prediction of the permanent income hypothesis.[143]

Box 2-5: r vs. g

Importantly, the condition of r < g is not a blank check for unlimited government spending on free childcare, free healthcare, free housing, free pre-K, free college, student debt cancellation, national high-speed rail, expanded Social Security, or any other particular programmatic preference.[144] Although r and g are assumed to be constant in this analysis, they are endogenous to current *and expected* debt-to-GDP ratios. High current and expected ratios will tend reduce g and raise r, reinforcing the tendency for growing debt-to-GDP levels to further accelerate.

While there is not an *ex ante* "maximum" limit to the debt-to-GDP ratio and modern states may be able to sustain higher debt burdens than in centuries past, these values are also highly uncertain. Keep in mind that r and g are estimated with considerable uncertainty. This inherent uncertainty about r and g should motivate Congress to leave a sufficient buffer between the actual deficit and the potentially sustainable deficit (g – r percent of GDP).

Furthermore, when both r and g are close, small changes in either parameter can produce outsized effects on the long-run path of debt-to-GDP. A debt-to-GDP ratio that falls towards zero when g > r may become explosive when r > g. In fact, Thomas Piketty

famously argued that r > g in the long-run.[145] If correct, this would imply that the U.S. would need to run primary surpluses (not merely a sufficiently low deficit) to prevent debt-to-GDP from spiraling higher and higher. JEC economists anticipate further exploring these issues in future research.

Congress Should Seek Practical, Bipartisan Solutions

Reducing the Primary Deficit Will Require Entitlement Reform
Reducing the primary deficit will require Congress to tackle entitlement reform. Budget expert Charles Blahous estimates that "almost three-fifths of the Federal government's long-term fiscal imbalance derives from policy decisions made in 1965–1972."[146] He attributes almost the entire fiscal imbalance to ongoing spending growth in three categories: Medicare (47 percent), Medicaid and the 2010 Affordable Care Act (22 percent); and Social Security (15 percent).[147] Successful deficit reduction must include these programs, which amount to 84 percent of the fiscal imbalance.

Social Security and Medicare Part A (hospital insurance) are in especially precarious positions. CBO projects that (on a consolidated basis) the Social Security trust funds will be exhausted in FY2033, at which point Social Security benefits would automatically be cut by an estimated 25 percent.[148] Similarly, CBO projects that the Medicare trust fund will be exhausted in 2033, also triggering automatic benefit cuts.[149]

Facing the prospect of automatic benefit cuts or deficit-financed entitlements, Congress has long debated the financing of these programs, often bogging down on the question of "Who pays?"[150] Yet Congress must also focus on reducing the long-run costs of these programs. Certain diseases, such as diabetes, disproportionately contribute to rising Medicare and Medicare costs.[151] Chapter 3 estimates that obesity-caused illnesses will cost

government healthcare programs about $4.1 trillion over the next 10 years, or about 42 percent of the Federal primary deficit incurred over the same period.

The rising costs of healthcare are also driven in part by the Baumol effect, which is the tendency for costs to increase in industries with slower labor productivity growth and barriers to employment, relative to industries with faster productivity growth (see Figure 2-4).[152] To reduce healthcare costs, Congress could remove regulatory red tape inhibiting productivity in the healthcare sector. This would include encouraging the development of new consumer medical devices and new drugs.

Figure 2-4: The Baumol Effect
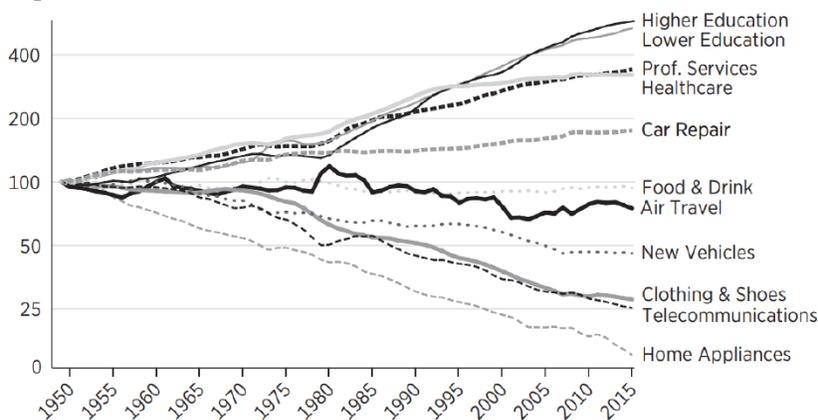
Source: Figure taken from Helland and Tabarrok (2019). Prices are normalized to 100 in 1950, ratio scale.

For example, COVID-19 presented a useful case study of how burdensome FDA regulations restrict the adoption of beneficial technology.[153] Congress may consider policies to eliminate government-imposed employment barriers to entering medical professions, such as easing restrictions on the immigration of high-skilled doctors and nurses.[154] Reforms to reduce barriers to telehealth provision would similarly be helpful (see Chapter 5). Congress could also explore incentives to find a cure for diabetes by launching an effort like Project Warp Speed.[155]

Unfortunately, the President's price controls (implemented in the Inflation Reduction Act) will dramatically slow the growth of research and development spending on new, beneficial drugs. As University of Chicago economists Tomas Philipson and Troy Durie explain:

> A large academic literature estimates the effect of future drug revenues on R&D spending and finds that on average that a 1 percent reduction in revenue leads to a 1.5 percent reduction in R&D activity. We find that H.R. 5376 [Inflation Reduction Act of 2022] will reduce revenues by 12.0 percent through 2039 and therefore that the evidence base predicts that R&D spending will fall about 18.5 percent, amounting to $663 billion. We find that this cut in R&D activity leads to 135 fewer new drugs. This drop in new drugs is predicted to generate a loss of 331.5 million life years in the U.S., 31 times as large as the 10.7 million life years lost from COVID-19 in the U.S. to date.[156]

Congress could also consider raising additional revenue. *However*, Congress should be skeptical of proposals to enact new taxes, raise marginal tax rates, or increase the complexity of the tax code. These efforts will be counterproductive insofar as they create additional drags on long-run economic growth. For example, a tax hike that increases revenue by 0.1 percent of GDP but slows real GDP growth by 0.2 percent per year will *accelerate* the growth of debt-to-GDP. Moreover, even if it were possible to close the deficit with additional revenue alone, it would require dramatically expanding the tax burden of most Americans.[157] In practice, a review of fiscal adjustments from 1995 to 2019 finds that successful fiscal consolidations tend to be primarily the result of reductions in spending, not increases in tax revenues.[158]

Conversely, while Congress may be able to raise additional revenue with targeted tax reform that simplifies the code and broadens the base, it must weigh the estimated increase in economic growth against the decrease in revenue. In this respect, not all tax cuts are equal. These considerations underscore the need for CBO and the JCT (Joint Committee on Taxation) to dynamically score budget legislation.[159] It also underscores the need for OIRA (Office of Information and Regulatory Affairs) and Federal agencies to conduct cautious cost-benefit analyses of new rulemakings (see Chapter 5 for a discussion of the Department of Labor's proposed revision to the test of independent contractor status).[160]

Raising Long-Run Growth Will Require Reform

Congress should also consider proposals for raising the long-run growth rate of the U.S. economy, which has dramatically slowed from its post-World War II norm. Higher economic growth has a double benefit for reducing the debt-to-GDP ratio: the GDP denominator grows faster, while the larger tax base raises revenue to reduce the primary deficit. Unfortunately, the President's taxation and regulatory proposals would significantly reduce U.S. long-run growth by lowering the capital stock and limiting productivity growth. Chapter 4 estimates those effects.

Congress should also consider proposals for bringing prime-age men back into the workforce. Since the Bureau of Labor Statistics began tracking participation in the 1940s, the rate of labor force participation by prime-age males has fallen from around 97 percent to just 89 percent today. Today, about 1 in 9 men between the ages of 25 and 54 (those in the "prime" of their working years) are not in the workforce. Twenty-five percent of them have an atypical reason (or perhaps no reason) for their inactivity.[161] Chapter 5 considers ways of bringing these men back into the

workforce, which would increase their income as well as improve economic growth and expand tax receipts.

Improved Debt Management May Lower Interest Rates

Finally, it is important that Congress credibly commit to the fiscal and economic reforms that it undertakes. Past attempts at lasting reform have proved fleeting. For example, in 2011, Congress passed the Budget Control Act (BCA), which provided for across-the-board budget cuts ("sequestration") if a bipartisan fiscal committee failed to agree on budget reform. While the committee did fail, Congress regularly undermined the resulting sequestration by renegotiating the BCA.[162]

This suggests that Congress should structure any budget rules with the future political environment and its consequent pressures in mind. For example, one approach put forth by Jerry Brito uses the BRAC (Base Realignment and Closure) Commissions in the 1980s and 1990s as a model of fiscal reform.[163] Others have suggested that Congress adopt "fiscal rules" to improve the budget process, perhaps like the successful "Swiss debt brake" policy.[164] Whatever the details, a credible plan to stabilize U.S. debt may itself help lower interest rates by improving the perceived creditworthiness of the United States.

Congress may also consider steps to improve Treasury market liquidity, which has deteriorated in recent years.[165] The Treasury market has historically been among the deepest and most liquid financial markets in the world, reducing Treasury yields and lowering net interest costs.[166] Conversely, rising illiquidity raises the cost of financing the national debt. Along these lines, Congress could also consider reforms to U.S. debt management that would improve liquidity, such as refinancing long-term bonds into perpetuities.[167] These highly liquid securities would also allow Treasury to lock-in its long-term financing costs.

Finally, Congress should also be cautious of the use of quantitative easing (QE) by the Federal Reserve. The Department of Treasury seeks to finance the debt "at least cost over time," but QE can undermine U.S. debt management by reducing the average duration of U.S. government liabilities.[168] QE also undercuts U.S. fiscal discipline by allowing the option of "backdoor spending."[169] In turn, this option also compromises the Federal Reserve's operational independence necessary for conducting monetary policy to achieve its dual mandate (maximum employment and price stability).[170] Congress should be attentive to the deliberations and decisions of the Federal Reserve's upcoming review of its monetary policy strategy, tools, and communications.[171]

CHAPTER 3: THE SOCIAL COSTS OF OBESITY

A critical element of stabilizing the debt-to-GDP ratio is reducing the primary deficit (see Chapter 2). This in turn requires decreasing mandatory spending, which accounts for almost two-thirds of annual Federal expenditures.[172]

Medicare presents an opportunity for substantial savings without drastically changing the nature of the program. Federal healthcare spending totaled $1.7 trillion in FY2022 and is expected to cost more than $22 trillion over the next 10 years according to CBO's projections. Medicare and Medicaid account for most of these outlays, with Medicare spending alone projected to exceed $1 trillion dollars in FY2023.[173] By FY2033, CBO projects that Medicare spending will nearly double, and annual Federal expenditures on healthcare are expected to approach $3 trillion.[174]

Obesity is a Major Driver of Federal Healthcare Spending

Addressing the acceleration in mandatory spending requires identifying those diseases that impose the largest financial burden, or which offer the most practical means of cost reduction. Obesity and obesity-related diseases fit both categories. Obesity is one of the largest contributors to Medicare and Medicaid spending, and recent medical innovations seem effective at reducing obesity.

Obesity is a causal risk factor for many other diseases, including (but not limited to) diabetes, cardiovascular disease (e.g., heart attack and stroke), sleep apnea, and cancer.[175] One out of every three heart attack or stroke deaths and one in twelve cancer deaths are associated with being overweight or obese.[176] It has also been linked to impaired mental health.[177] Obesity has been found to substantially reduce lifespan, with life expectancy decreasing as BMI (Body Mass Index) increases (see Box 3-1 for a discussion of BMI).[178] The share of American adults who qualify as being

Class 1 obese (BMI ranging from 30–35), Class 2 obese (BMI ranging from 35–40), and Class 3 obese (BMI above 40) has been rising steadily over the past two decades (see Figure 3-1).[179]

Figure 3-1: Increasing Obesity Among Adults in the United States
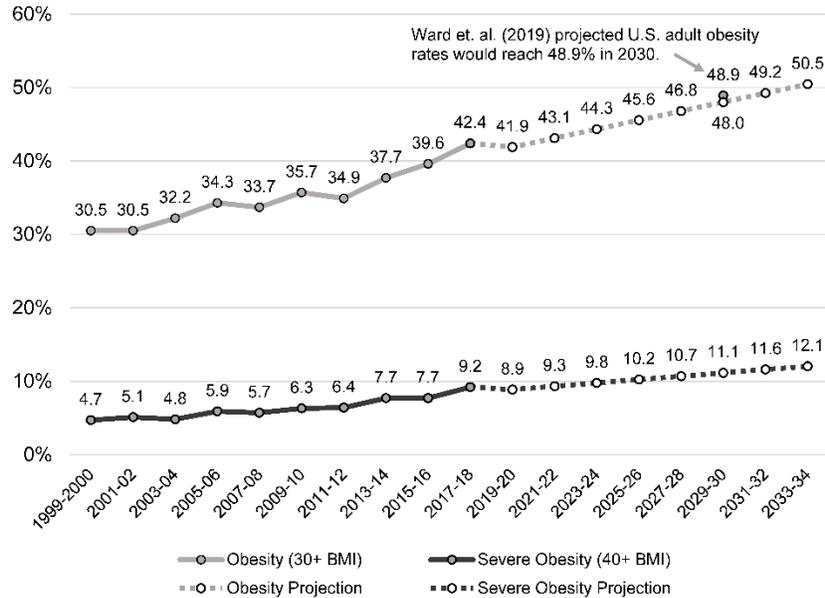
Source: NCHS (*National Health and Nutrition Examination Survey: 1999-2018*), Ward et al. (2019). JEC calculations, see Box 3-2 for methodology.

These trends are particularly concerning given that spending on obesity and obesity-related diseases is concentrated the most among individuals with Class 2 and 3 obesity.[180] Research suggests there is a dramatic increase in healthcare costs among those with BMIs above 35, even compared to those who qualify as overweight or Class 1 obese.[181] A 10 percent reduction in BMI for a person with a starting BMI of 44 was associated with a $10,992 annual reduction in medical care costs, while the same proportional reduction in BMI reduced medical costs by only $629 for someone with a starting BMI of 34.[182]

Based on recent research, JEC economists estimate that in 2023 obesity will cause $5,155 in average excess medical costs per

person suffering from the condition.[183] This corresponds to $520 billion in total additional healthcare costs in 2023 alone.[184] Over the 2024–2033 period, JEC economists project that the combined Medicare and Medicaid spending on obesity and obesity-related diseases will total $4.1 trillion.

Box 3-1: Background on the Body Mass Index (BMI)

In 2023, an estimated 44.3 percent of American adults were classified as obese, defined as having a body mass index (BMI) greater than or equal to 30.[185] Within this definition there are further classifications that represent the degree of obesity. Class 1 is defined as having a BMI between 30 and 34.9, Class 2 is between 35 and 39.9, and Class 3 is 40 or higher.[186] These classes, while somewhat arbitrarily defined, are relevant because increasing BMI is causally linked to morbidity, mortality, and the associated healthcare costs.[187] The BMI categories are shown in Table 3-1.

Table 3-1: Body Mass Index (BMI) Categorical Information

Medical Classification	BMI Range
Underweight	Under 18.5
Normal Weight	18.5 – 24.9
Overweight	25 – 29.9
Obesity (Class 1)	30 – 34.9
Obesity (Class 2)	35 – 39.9
Obesity (Class 3) (also referred to as severe obesity)	Above 40

BMI provides a rough standardization of individual weight, but the crudeness of the metric (see Equation 3-1) does not account for individual variations in body composition, such as muscle mass. It was developed in the mid-1800s by Adolphe Quetelet, a Belgian statistician, as a population-level tool to assess obesity and

its associated health risks.[188] BMI rose to prominence in the 1990s when the World Health Organization adopted the metric as the official screening index for obesity.[189]

$$BMI = \frac{weight\ (kg)}{height^2\ (m)}$$

Imperial System: $BMI = \frac{weight(lb)\ x\ 703}{height^2\ (in)}$

Equation 3-1: Body Mass Index (BMI) Calculation

While BMI is insufficient as a sole measure of individual health, in the aggregate it serves as a valuable tool for analyzing public health. The CDC (Centers for Disease Control and Prevention) notes that while BMI "should not be used as a diagnostic tool" the "longstanding application of BMI contributes to its utility at the population level" and that "BMI should be used as a measure to track weight status in populations."[190]

The Elderly Suffer from Rising Obesity Rates

The rising rate of obesity among the elderly is another concerning trend that will likely have a substantial impact on mandatory spending. Approximately 35 percent of adults over the age of 65 were classified as obese in 2010.[191] Similarly, the prevalence of moderate (Class 2) and severe obesity (Class 3) in nursing homes grew from 14.7 percent in 2000 to 23.9 percent in 2010.[192] This increase may simply imply an increase in the existing population of obese persons over the age of 65 seeking care in nursing homes. However, it may also reflect a general demographic trend of rising rates of obesity among the elderly. That development would be concerning given the population bulge of the baby boom generation, which for most of the last 70 years has represented the largest age-identified subset of population (see Figure 3-2) and who started entering retirement age around 2010.

In 2019, 16 percent of the adult population were aged 65 or older, but that share is projected to rapidly increase, reaching almost 25 percent by 2060.[193] If both the share of the population that is over 65 and the rate of obesity continues to rise, Medicare and Medicaid expenditures will likely exceed CBO projections. Halting and reversing these trends is critical to reducing the primary deficit.

Obesity Reduces Life Expectancy

Obesity also imposes significant costs on the individual, most notably a shorter life lifespan. Medical research suggests that Class 1 and Class 2 obesity may reduce life expectancy by about 2–4 years, while Class 3 obesity can reduce it by up to 14 years.[194] It has been theorized that increases in obesity rates in the U.S. have been a major contributor to slowing improvements in the mortality rate in the U.S. over the past 20 years.[195] Increases in BMI from 1988 to 2011 are estimated to have reduced the average person's life expectancy at age 40 by almost a full year.[196] Since 2011, the prevalence of obesity among Americans has risen further, from 34.9 percent to 44.3 percent.[197]

Figure 3-2: Illustrating the Baby Boom
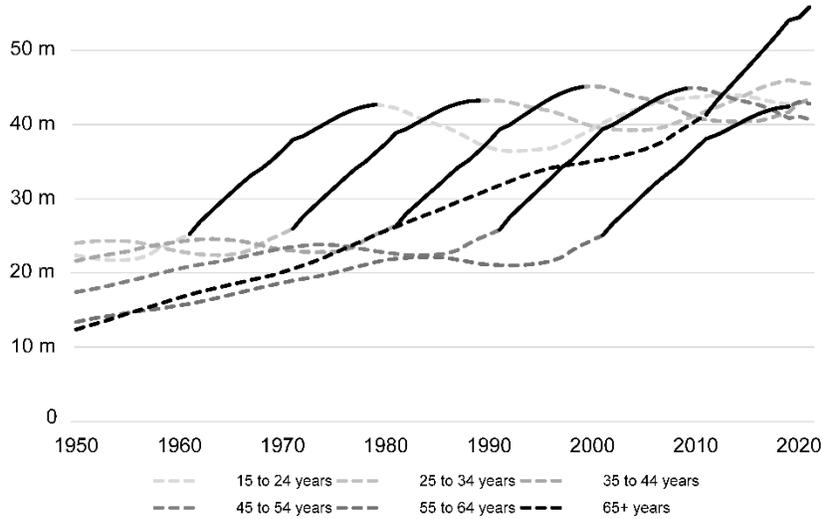
Furthermore, the substantial increases in Class 3 obesity since 2011 has likely exacerbated the disease's reduction in life expectancy. Figure 3-3 illustrates the increased harm caused by increasing obesity.[198] Using recent research, JEC economists estimate that obesity is responsible for *4.7* YLL (years of life lost) for the average person suffering from the disease (see Box 3-2).[199]

Much of the direct benefit of increased lifespan would go to women, as well as Black and low-income adults. Research by Ward et al. suggests that Class 3 obesity will be the most common BMI category for these three demographic groups by 2030.[200] Because reducing obesity carries with it employment, productivity, and income benefits (see the following section), it might also contribute to reducing income inequality.

Figure 3-3: Life Expectancy for 18-Year Olds Given Their BMI Class
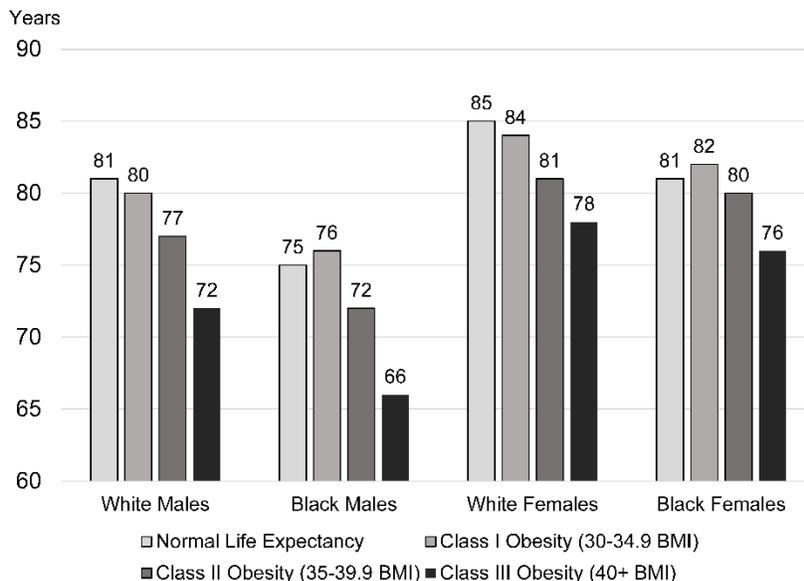
Source: Finkelstein et. al., (2012) *Individual and Aggregate Years-of-life-lost Associated With Overweight and Obesity.* The study only observed indivudals who have never smoked.

While the prospect of eliminating or substantially curtailing obesity may seem unrealistic right now, so did the idea of moving U.S. culture away from smoking in the 1960s. Rates of adult smokers in the mid-1960s parallel current rates of obesity.[201] Moving away from that unhealthy paradigm took decades of concerted effort but was worth it for the number of lives saved.[202]

The comparison between obesity and smoking is even more apt because the harm caused by obesity is like the harm caused by smoking. A recent long panel study suggests that the Years of Life Lost (YLL) due to smoking corresponds to a 4.3-year decrease in life expectancy for the smoker.[203] If there were a way to eliminate obesity, it would add the equivalent of 515 million person-years of additional life for those with the disease. Expressed another way, the additional life expectancy gained from eliminating obesity is equivalent to the entire expected lifetimes of the population of Indiana (about 6.75 million people).[204]

Box 3-2: Ending Obesity Would Raise Life Expectancy

Several high-quality studies have evaluated the effect of obesity on YLL. A 2009 collaborative analysis of 57 studies covering nearly 900,000 participants published in The Lancet found that moderate obesity (which they characterize as BMI between 30 and 35—Class 1 obesity) is associated with 2–4 YLL, while severe obesity (which they characterize as BMI between 40 and 45) is associated with 8–10 median YLL.[205] The authors suggest that the mortality effect of severe obesity is comparable with that of smoking, and that the progressively higher mortality for overweight and obese individuals (BMI greater than 25) is "mainly due to vascular disease and is probably largely causal."[206]

A 2014 PLOS-Medicine (Public Library of Science) journal article by Kitahara et al. examined severe obesity more closely, finding that mortality continues to increase as BMI increases.[207] They find that a BMI falling in the range from 40–45 is associated with 6.5 YLL, while a BMI falling between 45–50, 50–55, and 55–60 is associated with 8.9 YLL, 9.8 YLL, and 13.7 YLL, respectively. They calculate the weighted average decrease in life expectancy for severe obesity as 7.2 YLL for BMI greater than 40.

JEC economists elected to use the upper estimate of 4 YLL from the Lancet research for persons qualifying as Class 1 and Class 2 obese, and 7.2 YLL for Class 3 obesity, owing to Kitahara et al.'s more nuanced approach. Given the proportion of people projected to qualify as Class 1 and 2 obese (34.6 percent) and Class 3 obese (9.7 percent) in 2023, they estimate that obesity in the U.S. is currently responsible for 4.7 YLL for obese persons specifically and 2.1 YLL across the entire population, similar to previous estimates.[208] Combining these estimates with the relevant projected populations of Class 1, 2, and 3 obesity suggests that obesity is currently responsible for 515 million years of life lost. Dividing this aggregate estimate by the CDC's current estimate of

life expectancy (76.4 years) transforms this estimate into the number of person-lives to provide a relevant comparison: 6.75 million, equivalent to the entire population of Indiana.[209]

Obesity Carries High Economic Costs

The public health research on obesity generally separates the costs associated with obesity into the healthcare costs directly associated with treatment of obesity-related illnesses, and the indirect costs that obesity imposes on labor supply, labor productivity, and human capital. The following discussion of the costs imposed by obesity should be regarded as a starting point, because it is likely that there are other costs created by obesity than those listed here.

Direct Costs: Healthcare Expenditures
There is a large public health literature that addresses government spending on healthcare attributable to obesity. Box 3-3 briefly reviews the literature and provide projections of the future rates of adult obesity and the likely future government share of per-person obesity-related medical expenditures. JEC economists project that the share of U.S. adults who qualify as obese will rise from around 44 percent in 2023 to 50.5 percent in 2033. Similarly, JEC economists also project that the excess annual healthcare cost (expressed in current dollars) attributable to obesity will rise from $3,919 for non-severe obesity and $9,591 for severe obesity in 2023 to $5,790 for non-severe obesity and $14,168 for severe obesity in 2033. In turn, projected government expenditures attributable to obesity will sum to $4.1 trillion over 2024–2033.

Indirect Costs: Labor Supply, Productivity, and Human Capital
Using their projections of future obesity rates (see Box 3-3) and their estimation of obesity's reduction of life expectancy, JEC economists also estimated the decrease in labor supply attributable

to obesity (see Box 3-4). This occurs as workers afflicted with obesity and obesity-related illnesses drop out of the labor market, retire, or die earlier than they would have otherwise.

JEC economists estimate that current obesity rates are responsible for a 2.5 percent reduction in aggregate labor supply, which corresponds to a 2.0 percent reduction in the level of real GDP. From 2024–2033, this labor supply reduction represents a potential GDP loss of $5.6 trillion, which corresponds to a $1.0 trillion reduction in Federal tax receipts over the same period.

For workers suffering from obesity, public health research has frequently documented obesity-caused reductions to their labor productivity. The effects are separated into "absenteeism" (missing work due to obesity-attributed illness) and "presenteeism" (reduced output on the job attributable to obesity).

JEC economists assume that each is responsible for approximately a 1 percent decrease in labor productivity for obese workers on average, leading to a loss of $2.6 trillion in potential GDP over the 2024–2033 budget window (see Box 3-5). This corresponds to a $470 billion reduction in Federal tax receipts over the same period.

In future work, JEC economists anticipate investigating the effect of obesity on the accumulation of physical and human capital. However, such a long-run effect would generally be outside the typical 10-year budget period. Nevertheless, over decades, even "small" increases in the growth rate of the economy can dramatically increase real GDP. For example, a longer life expectancy would incent workers to save more for retirement, increasing the supply of savings available for investment in the size and quality of the capital stock. Also, a longer life expectancy would also incent workers to develop more human capital because the returns would accumulate over a longer career. The improvements to the labor supply and capital stock would tend to

raise the level of real GDP. Moreover, insofar as some of the improvements to the labor supply and capital stock were dedicated to R&D, they would tend to raise the growth rate of real GDP.

Box 3-3: Government to Spend $4.1T on Obesity from 2024–2033

JEC economists use a variety of academic research and government data sources to construct a projection of current and future obesity-related government spending (such as by Medicare and Medicaid). According to these estimates, the government will spend approximately $283 billion on obesity-related direct health costs in 2023, rising to $526.5 billion by 2033. As a result, the total projected government expenditure on obesity-related direct health costs over the 2024–2033 10-year budget window is $4.1 trillion.

These estimates suggest that obesity-related direct health care costs will constitute 12.3 percent of the $33.0 trillion in total spending on major health programs projected CBO over 2024–2033.[210] In other words, obesity is responsible for about 1 out of every 8 government healthcare dollars.

This amount is comparable to previous estimates of the proportion of obesity-related Medicare and Medicaid expenditures, and to the increase of those costs as the rate of obesity has risen. Finkelstein et al. and Wolf and Colditz estimate that in the late 1990s aggregate obesity-attributed medical expenditures accounted for around 5.5 percent of total national health expenditures.[211] Finkelstein et al. estimate that in 2008 obesity-related healthcare costs accounted for almost 10 percent of all medical spending, and for 8.5 percent and 11.8 percent of Medicare and Medicaid spending, respectively.[212] That was slightly higher than data analyzed by Biener et al., which found that from 2010–2015 an average of 6.86 percent of national Medicare expenditures and 8.48 percent of Medicaid expenditures were attributable to obesity-related illness.[213] Using Biener et al.'s 2001–2015 data to

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forecast future expenditures suggests that obesity-related healthcare costs should account for 9 percent of all medical spending in 2023 and almost 11 percent in 2034.[214]

A review of the body of research estimated that obesity-related direct healthcare costs had already reached $98 billion by 2008. However, another research paper by Biener et al. (which uses different data) suggests that as of 2013 28.2 percent ($342 billion) of total health care spending was already devoted to treating obesity-related illnesses.[215] It is fair to say that there does not yet seem to be a consensus—even within research teams—regarding the share of total medical costs that are attributable to obesity.

Prescription drugs have been found make up the largest portion of obesity-related direct health costs. Biener et al. estimated that from 2010–2015 13 percent of all prescription drug costs were attributable to obesity-related illness.[216] Finkelstein et al. similarly estimate that in 2008 15 percent of all prescription drug costs were obesity-related.[217]

Forecasting Future Prevalence of Obesity
JEC economists project the prevalence of obesity in the adult population using data from the National Health and Nutrition Examination Survey (see Figure 3-1).[218] Although it is difficult to know what exactly the future prevalence of obesity will be, recent research from the National Health Statistics Reports evaluating obesity data obtained just before the COVID-19 pandemic (which added 2019–March 2020 data to the 2017–2018 data) closely matched the JEC projection's first data point for 2019–2020 (41.9 percent of adults qualified as obese and 9.2 percent qualified as severely obese, while the projections were 41.9 percent and 8.9 percent).[219]

The current distribution of obesity by age group suggests that population dynamics over the next 10 years do not appear likely

to deviate from the prior 20-year trend. The NHSR identifies the rates of obesity by age group. The data collected over the 2017–March 2020 time period indicates that 39.8 percent of adults aged 20–39, 44.3 percent of adults aged 40–59, and 41.5 percent of adults older than 59 qualified as obese.[220] Similarly, 9.7 percent of adults aged 20–39, 10.7 percent of adults aged 40–59, and 6.1 percent of adults older than 59 qualified as severely obese.[221] More than 20 percent of children ages 6–19 qualified as obese, with nearly a third of obese children qualifying as severely obese.[222] Moreover, almost 60 percent of current children are projected to qualify as obese by the age of 35.[223]

The projection suggests that by 2033 a majority (50.5 percent) of the U.S. adult population will qualify as obese. The likelihood of this outcome is supported by previous research published in the New England Journal of Medicine, which uses more nuanced and sophisticated statistical techniques to project that a near-majority (48.9 percent) of the U.S. adult population will qualify as obese by 2030 (JEC economists' projection for 2030 is 48.0 percent).[224]

Obesity-Related Health Expenditures Issues
There has been no shortage of research on the costs associated with obesity-related healthcare. JEC economists use estimates from several high-quality studies and their projections of future obesity rates to estimate the annual total direct healthcare costs of obesity and the portion of that amount covered by government funding.

A 2021 study by Cawley et al. examined obesity-related direct healthcare costs from 2001 through 2016. JEC economists selected Cawley et al.'s estimates of the average annual excess medical costs due to obesity ($2,782, aggregated over all obesity classes during the 2011–2016 time period, 2017 dollars) due to the breadth of data they considered and because the value represented a mid-range estimate compared with similar options ($1,861 per Ward et al., $3,429 per Biener et al., and $3,920 per Lopez et al.

for direct excess healthcare costs derived from similar time periods; 2011–2016 for Cawley et al. and Ward et al., 2013 for Biener et al., and 2018 for Lopez et al.).[225]

Cawley et al. found that the average annual excess cost attributable to obesity-related healthcare effectively doubled a normal weight patient's average annual medical expenses.[226] Similar to other research, they found that the cost of medical care rose in conjunction with BMI: Persons qualifying as Class 1 obese experienced 68 percent higher annual healthcare costs, and persons qualifying as Class 2 and Class 3 experienced 120 percent and 234 percent increases, respectively.[227] Using their data JEC economists estimate that non-severe obesity (Class 1 and 2) accounted for an average $2,580 in excess annual medical costs per obese person during the later period of their data (2011–2016), and severe obesity (Class 3) accounted for $6,312 in excess annual medical costs over the same time period.[228]

An analysis of Cawley et al.'s inflation-adjusted data indicates that per patient obesity healthcare costs grew at an annual rate of around 2 percent over the 16-year period that their data covers.[229] This mirrors what other research has found—that obesity-related healthcare costs have increased so rapidly over the last three decades primarily because the numbers of people qualifying as obese has risen, rather than the cost of care.[230] Nonetheless, a 2 percent annual rate of change can compound to substantial increase over longer periods of time. This rate of increase is included along with inflation-adjustments in forecasting the future cost of obesity-related healthcare.

JEC economists combine their projections of excess per person obesity-related healthcare costs ($3,919 for Class 1 and Class 2 obesity in 2023, and $9,591 for Class 3) with the projections for the U.S. population which they project qualify as Class 1 or Class 2 obese (85.6 million in 2023) and Class 3 obese (24.1 million in

2023) over the period from 2024 through 2033 to estimate the 10-year aggregate national direct cost of obesity-related healthcare. They multiply these amounts by the estimated government share of these costs (50 percent) to produce the final estimate, $4.1 trillion in obesity-related government expenditures from 2024–2033.[231]

Box 3-4: Obesity's Effect on Labor Supply

The analysis in Box 3-2 suggests that obesity is responsible for an average of 2.1 Years of Life Lost (YLL) across the entire U.S. population. Based on CDC life expectancy estimates, this corresponds to a 2.5 percent decrease in life expectancy. JEC economists estimate that, in effect, obesity currently reduces labor supply by 2.0 percentage points (this assumes the ratio of the average number of working years before retirement and the average length of life following entering the workforce is approximately 0.80).

They apply this increase to labor supply in equal increments over 5 years to account for the estimate representing a long-run effect. Information from the Congressional Budget Office has indicated that labor income accounts for an 80 percent share of potential (i.e., long-run) GDP. JEC economists apply the estimate of increased labor supply to the estimates of the labor portion of GDP projected from 2024–2033 to estimate the total cost imposed on potential GDP by obesity (which is equivalent to the cost to GDP of current obesity rates). They then multiply this amount by 18.2 percent, the CBO's estimate of the share of Federal tax receipts from aggregate economic activity.[232]

JEC economists estimate that obesity-related decreases in labor supply will cost the U.S. economy $5.6 trillion from 2024–2033. Approximately $1.0 trillion of this amount would have accrued to the Federal government as tax receipts.

Box 3-5: Obesity's Effect on Labor Productivity

The effect of obesity on labor productivity can be separated into "absenteeism" and "presenteeism" effects (being absent from work and being present, but less productive than otherwise possible). Research by Kudel et al. illustrates that obese workers are absent from their job approximately twice as often as normal weight workers. This corresponds to 2–2.5 extra days of absence each year, which is approximately 1 percent of working days.

JEC economists estimate the labor productivity lost to presenteeism with the simple assumption that the average obese worker, if they were a healthier weight, would perform an extra 5 minutes of work over the typical 8-hour workday. This corresponds to a 1 percent increase in output.[233]

By applying this 2 percent increase in labor productivity to potential GDP (see Box 3-4) and adjusting by the proportion of the U.S. adult population projected to qualify as obese during the 2024–2033 window, JEC economists estimate that obesity will be responsible for $2.6 trillion in lost economic activity, and $470 billion fewer Federal tax receipts.

Another way to estimate the effect of obesity on labor productivity is through wage comparisons, assuming that wages are a reasonable indicator of productivity. Biener et al. reports that a 10 percent increase in BMI reduced the earnings of women by 1.86 percent and of men by 3.27 percent.[234] However, it can be difficult to determine the extent to which discrimination against persons with obesity may confound the productivity signal in wages.

JEC economists believe that a 2 percent estimate of the reduced labor productivity of workers suffering from obesity represents a substantially cautious estimate—the true effect is likely substantially larger.

> Based on 1994 data, Wolf and Colditz found evidence suggesting that lost productivity due to obesity was nearly equivalent to the direct medical costs.[235] This perhaps provides a useful upper bound for considering what the non-medical, indirect economic cost of obesity might be. Based on their analysis, the labor productivity cost of obesity would be worth $565 billion in 2023, equivalent to a 6 percent reduction in productivity.

Addressing Obesity is Difficult but Important

Addressing obesity is no easy task for policymakers. One must inevitably balance between preserving individual liberty while reducing the severe costs imposed on others. At a minimum, government policies should not encourage poor health decisions by worsening moral hazard. Moral hazard occurs when someone does not bear the full consequences of their risky decisions, incenting them to take greater risks than they would otherwise.

Automobile seatbelts and airbags are a typical example of how episodes of moral hazard can occur. As the riskiness of harm due to driving has fallen, researchers have documented that automobile drivers (likely unconsciously) have increased the aggressiveness of their driving habits. In the era before safety devices were widespread, drivers experienced a larger penalty for riskier driving, which would have motivated corresponding risk-reducing behavior. Research following the widespread adoption of automobile air bags finds evidence of offsetting driver behavior (increased aggressive driving) in response to the decreased riskiness of driving.[236] Unfortunately, these costs also appear to have been borne by higher rates of injuries and fatalities among pedestrians and bicyclists.

Similarly, academic research has found that when individuals bear less of their medical costs, they are more likely to consume more

healthcare.[237] Finding policy solutions to obesity requires foresight to ensure that the potential for unintended consequences, such as those caused by moral hazard, are minimized.

Reforming Nutrition Assistance Programs
In weighing these interests, government should thus find ways to incentivize behavior that either lowers risk or promotes positive behavior. At a minimum, the government also must ensure that it is not incentivizing unhealthy behavior. Government nutrition programs like SNAP (Supplemental Nutrition Assistance Program), are likely contributing to unhealthy behaviors and certain aspects should therefore be reevaluated.

SNAP was created in 1964 to assist low-income families with food purchases to avoid malnutrition. Since its creation, economic conditions and public nutrition in the U.S. have substantially changed. When the program began, the primary problem to be solved was that of caloric deficiency—thankfully, that has been achieved. Perhaps, however, it was overachieved. Today, the largest nutrition-related problems facing low-income Americans are unhealthy diets and obesity rates rising much faster than average.[238]

There is concern among academic researchers that SNAP may be contributing to poor nutritional food choices and, therefore, obesity.[239] As the program currently stands, SNAP benefits can be used on a wide variety of foods, including unhealthy foods. While this approach respects individual autonomy, it may be empowering self-destructive behaviors. Research estimates that 23 percent of the value of SNAP benefits are used on objectively unhealthy foods such as sodas, desserts, chips, and candy, meaning that the U.S. government funds approximately $25 billion dollars in junk food purchases every year.[240]

USDA research has found that "lower nutritional quality of household food acquisitions was associated with SNAP participation status."[241] This finding coincides with academic research that found that SNAP participants had a poorer diet than income-eligible non-participants.[242] While there may not be a causal effect of SNAP participation exacerbating unhealthy diets, these studies indicate that there is room for government food assistance programs to improve to encourage better health outcomes for the participants.

Economics of SNAP
The U.S. spent over $110 billion on SNAP in FY2021, but this figure fails to capture the full cost that the U.S. is paying due to the adverse health outcomes it is likely creating.[243] SNAP subsidies have increased caloric intake at a time when obesity is arguably the largest health issue in the U.S. This means that Medicaid and Medicare healthcare provisions, combined with SNAP benefits that facilitate unhealthy diets, create a government externality. A government externality is like a market externality, with the difference being that the connection by which others bear the external costs is artificially created by government policy, rather than arising due to market imperfection.[244]

In this case, a large part of the social cost imposed by obesity is due to government funding of healthcare (34 percent of all healthcare costs are covered by government programs).[245] This is not necessarily an argument against government healthcare programs, but rather a rigorous identification of the structure of the problem at hand. To the extent that government externalities are exacerbated by other government policies, like SNAP, which could be mitigated with sensible reforms, all parties should engage in such inquiry with an open mind.

There is a clear argument to pursue SNAP reforms that would encourage healthy diets. This might include limiting junk food

purchases with SNAP benefits or rewarding making changes that lead to positive health outcomes. At a minimum, the Federal government should consider banning soda purchases using SNAP benefits. Soda accounts for the largest expenditure of SNAP benefits, and it (as well as other sugary drinks) has been clearly linked to adverse health outcomes.[246] Insofar as the Federal government continues to fund nutrition programs, it should at least ensure that the programs deliver better health for low-income Americans. SNAP presents a clear lever to address obesity, but fixing its flaws is only a small step toward solving the problem.

Medical Innovations and Obesity Care
To address obesity, the Federal government must also create an environment in which medical innovation can thrive. This requires a regulatory system in which entrepreneurs are rewarded for innovations without undue regulatory or bureaucratic burdens. Full success of this goal would result in the rapid creation of new medicines, therapies, and technologies as well as swift reduction of the cost and price of existing healthcare products.

Recent and ongoing research has identified that a category of existing drugs can effectively reduce the BMI of individuals, which in turn should help prevent the associated conditions of obesity (heart disease, cancer, diabetes, etc.)[247] For example, GLP-1s (Glucagon-like Peptid-1 Receptor Agonists) have been approved for diabetes care for almost two decades, but were only recently approved for use as a weight loss therapy.[248] They have been observed to reduce the weight of non-diabetic patients suffering from obesity by between 6.1 and 17.4 percent.[249] This area of medical science is moving exceptionally fast, though, and recent trials have shown results suggesting that body weight losses of 24 percent in under a year are possible.[250]

The ongoing innovations in GLP-1 drugs have tremendous potential to address the obesity crisis. However, their cost is likely

to inhibit their widespread use. Without insurance, these drugs can be expected to cost around $900 a month.[251] Finding ways to reduce these costs, whether it be through greater competition in prescription drug markets or by easing barriers to production, would likely result in greater access to these drugs and their benefits.

Additionally, weight loss drugs such as GLP-1s are explicitly prohibited from being covered by Medicare Part D as their use for weight loss is classified as a "cosmetic treatment."[252] Given the substantial savings to Medicare that could be achieved by reductions in obesity, this should be reconsidered. Recent research suggests that if this were to change, Medicare could save $175 billion over the first 10 years.[253] Furthermore, the fact that GLP-1 drugs use for weight loss is covered by Federal health insurance for government workers suggests that simple fairness be applied in making them available for Federal healthcare program recipients.[254]

Given the estimates of average expenditures due to excess annual healthcare costs attributable to obesity, as the costs of these drugs fall, the benefit to government healthcare programs could become quite large. JEC economists estimate that the 2023 excess healthcare cost for each severely obese person is $9,591. Public healthcare costs tend to be higher, resulting in an estimated 2023 excess healthcare cost for each severely obese person of $10,634.

These drugs may provide the potential to achieve a net decrease in government expenditures while at the same time achieving better health outcomes—such two-for-one deals in public policy are rare. Given public health research that finds that a large proportion of healthcare spending on obese persons is concentrated on those who are severely obese, it may be most effective to initially concentrate GLP-1 spending on that population.

Healthcare Patent Policy

The U.S. is the world's leading innovator in pharmaceutical development, but domestic healthcare consumers pay higher prices than healthcare consumers abroad. This is partially due to free riding by other countries, who refuse to provide patent protection for U.S.-developed drugs. They demand instead that the drugs be priced at the marginal production cost, which does not cover the cost of research and development.[255] It is estimated that patented drugs are priced five times higher in the U.S. as their unpatented equivalents in foreign markets.[256] Addressing this is not easy but there are several policies that can be pursued to reduce prices.

Price competition in the U.S. could be facilitated by expedited review for generic drugs, allowing them to get to market more quickly.[257] In particular, there's a case for expedited review for biosimilar drugs already in widespread use. It would be valuable most when only one drug of that type is available to the public.

Policies that increase drug price transparency and empower consumers to make educated decisions regarding medicine choices would also help. Allowing and encouraging patients to shop around and pursue drugs at cheaper costs would incentivize greater competition among producers and retailers. To facilitate this, instead of patients' prescriptions being managed entirely by third parties, patients could instead have the power to seek out lower costs for their prescriptions and choose which brands best suit their needs.

CHAPTER 4: HOW (NOT) TO INCREASE ECONOMIC GROWTH

The first two and a half years of the Biden Administration focused on bolstering the COVID-19 economic recovery with unprecedented levels of government spending. The *Report*, and the president's own public statements, make it clear that the Biden Administration believes that the economy requires the Federal government to act as a director and co-investor to achieve long-run economic growth.[258] This soft nationalization has taken the form of investing in infrastructure (defined so broadly as to include consumption) and subsidizing favored industries.[259]

The result has been unsustainably high levels of deficit spending. In turn, the White House has proposed numerous tax increases for 2024 (see Table 4-1 and Table 4-2).[260] Their justification for the increases suggests the new funding would be used to partially reduce the deficit and to also fund programs on other issues, such as income inequality and the depletion of the Medicare trust fund. The OMB (Office of Management and Budget) estimates the White House's proposed policies would increase taxes by $4.7 trillion dollars over the next 10 years, almost $3 trillion of which would come from increased corporate taxes, and the balance would be collected from high-income and high-net worth households.[261] This chapter focuses on two topics:

First, the chapter examines the economic growth effects of the mostly unmentioned requirement of "Bidenomics"—that massive spending increases require commensurate tax increases, predominantly to be imposed on corporations.[262] While the Biden Administration's overarching goal—to enhance economic growth—is laudable, the chapter illustrates how the president's preferred policies would backfire.

Second, the chapter addresses a core premise of Bidenomics: that the tax system of the United States is intrinsically unfair. The chapter illustrates how the U.S. tax code, understood holistically, is one of most "progressive" among advanced economies. Those who insist that the U.S. is lagging other, ostensibly more civilized, countries and who argue for greater redistribution because of "fairness" are incorrect.

The Biden Administration has been clear about its objective: to increase tax revenue by taking a larger part of the income of those who earn the most (and who already pay the largest proportion of taxes). But these changes will reduce savings, wages, and income. In turn, these changes will indirectly harm the same families that the President articulates a desire to help. In short, the policies behind catchphrases like "investing in the economy" and "ensuring the wealthy and big corporations pay their fair share" will not have the effect that the Administration says it desires.[263]

While hiking taxes on high-income households and corporations to subsidize favored industries may seem like a simple way to increase economic growth, it will backfire. In that way, using the large literature on the determinants of economic growth, this chapter argues that "government greed" will not pay off.

Table 4-1: Selected Individual Tax Increases in President Biden's Proposed Budget

- Increase the top tax rate on individual income from 37 percent to 39.6 percent
- Impose a 25 percent minimum tax on unrealized gains for taxpayers with net wealth over $100 million
- Tax unrealized capital gains over $5 million at death
- Raise tax rate on capital gains and qualified dividends over $1 million to 39.6 percent
- Expand the tax base of the Net Investment Income Tax (NIIT) to include non-passive business income
- Increase the NIIT tax rate from 3.8 percent to 5 percent
- Increase the additional Medicare tax rate from 0.9 percent to 2.1 percent
- Treat carried interest as ordinary income
- Create new limitations on high-income taxpayers with large retirement account balances and increase minimum required distributions

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- Create new limitations on high-income taxpayers with large retirement account balances and increase minimum required distributions

Table 4-2: Selected Corporate Tax Increases in President Biden's Proposed Budget

- Increase the corporate tax rate from 21 percent to 28 percent
- Increase the Global Intangible Low-Taxed Income (GILTI) minimum tax rate from 10.5 percent to 21 percent, as well as and other changes
- Adopt the undertaxed profits rule on large multinational firms
- Repeal several deductions on foreign gross income (Section 265 and 904(b))
- Increase the excise tax on stock buybacks from 1 percent to 4 percent
- Changes to the limit of deductibility of excessive employee remuneration
- Repeal the deduction for foreign-derived intangible income (FDII)
- Make permanent the limitation on excess business losses

Tax Hikes Would Kill the Post-Pandemic Recovery

Understanding the Biden Administration's Tax Proposals
The Biden Administration has proposed both vertical and horizontal corporate tax changes to reduce the Federal deficit and finance new programs. Vertical changes are those that increase the *statutory* tax rate on corporate profits or distribution of those profits to corporate owners (e.g., investors, see Box 4-1). Horizontal changes are tax reforms that serve to increase the *effective* corporate income tax rate without affecting statutory tax rates. Figure 4-1 shows the effect of the Biden Administration's tax proposals, which would make the United States the only country in the OECD (Organization for Economic Cooperation

and Development) where the combined statutory tax rate on corporate income and its distribution would exceed 60 percent.

Figure 4-1: OECD Comparison of Statutory Tax Rates on Dividend Income

Country	Rate
LATVIA	20%
ESTONIA	20%
HUNGARY	23%
GREECE	26%
SLOVAK REPUBLIC	27%
LITHUANIA	28%
POLAND	34%
TÜRKIYE	36%
SWITZERLAND	38%
ICELAND	38%
CZECH REPUBLIC	38%
NEW ZEALAND	39%
COSTA RICA	41%
LUXEMBOURG	41%
SLOVENIA	41%
MEXICO	42%
FINLAND	43%
ITALY	44%
JAPAN	44%
SWEDEN	44%
CHILE	44%
AUSTRIA	45%
NETHERLANDS	46%
SPAIN	46%
AUSTRALIA	47%
UNITED STATES (CURRENT)	47%
BELGIUM	48%
ISRAEL	48%
GERMANY	48%
PORTUGAL	51%
FRANCE	51%
NORWAY	52%
UNITED KINGDOM	55%
DENMARK	55%
CANADA	55%
IRELAND	57%
KOREA	59%
UNITED STATES (UNDER BIDEN'S PLAN)	66%

Source: OECD (*Tax Database Table II.4., Overall Statutory Tax Rates on Dividend Income*),
Tax Foundation (*Biden's FY 2024 Budget Would Result in More Than $4.5 Trillion in Gross Tax Increases*)

It is worth reemphasizing that statutory tax rates alone are insufficient to understand the incidence and effects of corporate taxation. Identical statutory rates may have substantively different economic effects once deductions, regulations on capital investment, targeted tax credits and other subsidies, etc., are considered.

Box 4-1: Investors are Double Taxed

The existence of corporate taxes combined with individual taxes on capital gains or dividends means that each corporation's profit is taxed twice: First at corporate level and later at the individual level when the shareholder receives income from stock dividends or realizes capital gains.[264] For example, under the Biden Administration's proposed changes, corporate profits of $100 would be taxed at a rate of 28 percent, leaving $72 available to distribute as dividends. Individual investors taxed at the highest marginal rate (39.6 percent) would then receive only $43.50.[265] This application of both corporate and individual tax rates would result in an effective tax rate of 56.5 percent for some investors (see Figure 4-2). Nor does this happen in a vacuum. In an environment where other countries are lowering taxes on investment and capital is increasingly internationally mobile, decreased returns on investments in the U.S. may well motivate domestic and foreign investors to look for greener, and more profitable, pastures.

Figure 4-2: Double Taxation on Corporate Profits

$100	$28	$28.5
	$72	$28
		$43.5
Pre Tax Corporate Profits	Post-CIT Corporate dividends	Post-PIT Dividends

▫ Income   ▪ Corporate Income Tax   ▪ Personal Income Tax
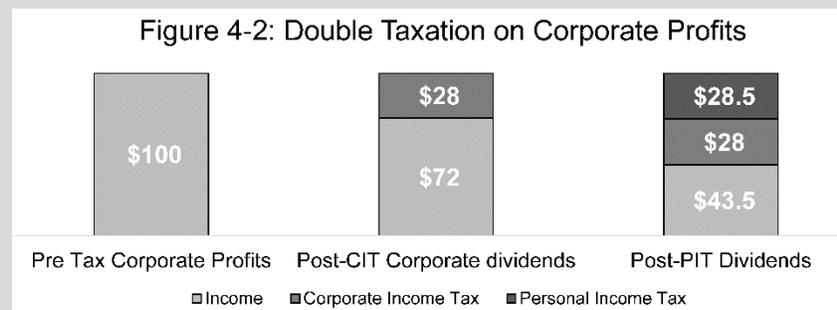
Corporate Tax Changes Motivate New Tax Avoidance Strategies
The importance of effective tax rates (and their interactions) is seen in the difficulty that governments have in taxing corporate profits. While behavioral economics has challenged the idea that individuals solely practice rational analysis, economically rational behavior is readily observable in corporate decision making. Tax increases motivate increased lobbying by special interest groups

to either defend against the threat of increased costs or to position themselves for a bigger portion of subsequent government handouts. Business leaders' motivation to maximize profits leads to innovative tax minimization strategies, such as moving operations to lower-tax environments or by changing production methods.

This tendency to quickly respond to tax changes (and often to preemptively begin adapting to anticipated changes) helps explain why economic research finds that corporate income taxes are one of the most economically harmful forms of taxation. Not only do business leaders swiftly develop strategies to minimize their effective tax rate, but the actions they take in doing so often lead to lower relative rates of aggregate economic growth.

In short, higher corporate tax rates mean higher costs and therefore lower returns to investment. Decreased incentive to invest in businesses that operate in the higher-tax country leads to a decline in GDP growth, reducing total future tax revenues.[266]

Raising Corporate Taxes Will Likely Harm Economic Growth
Economic growth is sensitive not only to the overall level of taxation but also to which kinds of taxes are used and how the tax burden is distributed. Contrary to their stated desire for economic growth, the Biden Administration's proposals to increase taxation of corporations and higher income households will have an adverse impact on the economy. This is especially likely when such taxes target the types of income (e.g., investment) that are the font of new job creation, and which are highly mobile and sensitive to variations in rates of return.

Taxation—like any change in payoffs—intrinsically distorts incentives and changes behavior. Taxation of corporations and capital reduce the incentive to invest. Taxes on income reduce the incentive to work. And the progressivity of tax systems reduces

the entrepreneurial incentive to take greater risks in pursuit of higher returns. The extent to which any tax policy inhibits the corresponding economic activity is an empirical issue, but the direction of the effect is well-established.

For example, a study by Jens Arnold and Cyrille Schwellnus reports that a shift of one percent of tax collections from corporate and income taxes to property or consumption taxes would increase GDP per capita by between 0.25 percent and 1 percent over the long-run.[267] Compared to the current economy, their estimates suggest there may be up to $265 billion more economic activity, $1,600 increased income per household, and a $48 billion increase in Federal tax receipts—meaning that a simple shift of the target of taxes could increase tax collections by 1.5 percent. The authors also find that this boost in growth is partially determined by the level of tax progressivity.

Prior to the passage of the 2017 Tax Cuts and Jobs Act, the Council of Economic Advisers produced a survey of the academic research that illustrated the negative relationship between the corporate income tax rate and companies' decisions to invest or expand.[268] While there is not a consensus on the specific degree to which corporate income taxes affect businesses' decision on where to locate their operations, there is ample evidence showing that lower rates are associated with higher probabilities of opening new manufacturing plants. The results of those studies showed a wide range of estimated effects of corporate taxation on business investment, with the average results suggesting that a one percent increase in the effective corporate income tax was associated with a three to four percent decrease in the rate of plant openings.[269]

Box 4-2: High Corporate Tax Rates Reduce Growth
Most academic studies have found strong negative correlations between economic growth and income and corporate tax rates. Young Lee and Robert Gordon found that a reduction in the

corporate tax rate by 10 percentage points would raise the annual economic growth rate by one to two percentage points.[270] Similarly, Karel Mertens and Morten Ravn find that a reduction of just one percent in the average corporate income tax rate would raise real GDP per capita by 0.6 percent after a full year, with the effect persisting over time.[271] They also find changes in corporate tax rates are approximately revenue neutral, meaning that higher rates of taxation do not bring in meaningful additional tax receipts. This suggests that adjusting corporate tax rates is a poor tool to achieve deficit reduction goals.[272] Robert Barro and Charles Redlick use almost a hundred years of data to show that not only does taxing corporate income reduce economic growth, but that the net effect on economic growth is negative even when paired with public spending enabled by the tax.[273] In other words, the Biden Administration's intent to increase corporate taxes and use the resulting revenue for government-led investments in particular industries is likely to lead to slower economic growth.[274]

The impact of changes in corporate income taxes vary from industry to industry and from firm to firm. For example, evidence shows that corporate income taxes reduce total factor productivity, and that this effect is more pronounced in industries that are characterized by high corporate profitability.[275] Similarly, increases to the marginal personal income tax rates for higher-earning households are found to impede long-run productivity. This effect works by inhibiting entrepreneurial activity and is estimated to increase in strength in conjunction with the level of entrepreneurial activity in an industry. For example, Jens Arnold and Cyrille Schwellnus find that a change in corporate taxes from 35 percent to 30 percent would yield a substantial increase (0.4 percentage points higher) in the annual total factor productivity growth rate over 10 years for firms in industries with median profitability relative to firms in industries with the lowest level of profitability.[276]

Raising Corporate Tax Rates Hurts Wages, Investment Returns, and Savings

President Biden and the White House have repeatedly declared that no person earning less than $400,000 would experience a tax increase under their proposed policies.[277] This amounts to an unrealistic attempt to finance a vast expansion of government spending through only 2 percent of the population. Meanwhile, due to the surge of inflation since President Biden took office, that $400,000 income today has lost $64,000 worth of value.

While it is true that households earning less than $400,000 would not see any *direct, statutory* increase in their tax rates, the proposed reforms will indeed affect their wages and their investments/savings. The latter (pensions, Individual Retirement Accounts, etc.) will be reduced by the higher corporate income tax rate. In part, this is because if the government takes a larger cut of corporate profits, there is necessarily less to be disbursed as dividends.

As widely recognized in economics, the incidence of a particular tax—those who bear the burden of the tax because of pass-through effects—is dependent on the market structure; it is rare for any tax to be borne fully by the entity responsible for paying the tax. The specific impacts of raising corporate income taxes depends on many factors, with the asymmetry in mobility between capital and labor being particularly important. As the mobility of investment capital to move to higher-return opportunities increases, the share of corporate income tax increases that is borne by workers also increases. Employees at companies that can make organizational changes to avoid part of the tax increase may be relatively less affected (see Boxes 4-3 and 4-4).

Box 4-3: Recent Research on Corporate Tax Incidence

Research on the effect of corporate tax increases on wages is less straightforward than the research on corporate and economy-wide

growth rates. Consequently, there is less consensus among economists on the degree to which wages or employment decrease because of corporate income tax increases. For example, separate meta-analyses by Stephen Entin and James Nunns estimate the pass-through effect of corporate taxation on labor to be 40–70 percent and 20 percent, respectively.[278]

In addition, not all employees of a company are necessarily affected in the same way. Recent research by William G. Gale and Samuel Thorpe suggests that when rent sharing is concentrated among high-income workers, the corporate tax can remain quite progressive in most plausible models of rent sharing, meaning that low-wage workers are relatively unaffected by changes to the corporate income tax.[279] As before though, other recent research suggests the opposite, showing that lower-skilled, young, and female employees bear a larger share of the tax burden.[280]

Box 4-4: The Administration's Agenda Will Harm the Recovery

The Biden Administration's corporate and high-earner income tax proposals are not new. Most of the proposed tax code changes have been circulating since 2020, meaning that research on the likely effects of these policies is already available.

Kevin Hassett and his coauthors estimated that full economic agenda proposed by President Biden while he was campaigning for office would reduce full-time equivalent employment per person by about 3 percent, the capital stock per person by about 15 percent, real GDP per capita by more than 8 percent, and real consumption per household by about 7 percent.[281] However, not all of the proposals they analyzed match the tax code changes proposed for the FY2024 Federal budget. Some regulatory provisions (those regarding the energy and electric vehicle industries) have already been passed as part of the Infrastructure Investment and Jobs Act of 2022. Similarly, bonus depreciation

began phasing out in 2022, while the expensing of research and development has already phased out.

On the other hand, Hassett and his coauthors did not analyze for the more recent proposals of a 4 percent tax on stock buybacks or the 25 percent minimum income tax on households with over $100 million of wealth. This means that their research likely underestimates the harmful effects on employment, capital, household consumption, and economic growth.[282]

Casey Mulligan conducts a similar analysis to Hassett et al., finding that the real GDP per capita would decrease by 4 to 5 percent over the long run (equivalent to a permanent decrease of $8,000 per household). He concludes that policies contained in President Biden's economic agenda would reduce productive capital by 7 to 12 percent over the long-run and cause the loss of about 3 million jobs.[283]

Kyle Pomerleau also provided an analysis and included a comparison of the marginal effective total tax rate included in President Biden's campaign proposal with the projected tax provisions in 2030 (that is, based on the law as it was in 2020, allowing temporary provisions to expire).[284] He finds that by 2030 the marginal effective tax rate for overall business investment under the president's campaign proposal would have increased by more than 7 percent, while that for corporate investment would increase by more than 12 percent. His analysis also showed that when looking at the source of financing investment, Biden's campaign proposal would raise taxes by 8.8 percent for equity-financed investment but only 0.6 percent for that financed with debt.

Researchers at the Tax Foundation have analyzed the effect of many of the tax changes proposed in the FY2024 Budget using a general equilibrium model.[285] They estimate that, because of these

proposed changes, GDP would decrease by 1.3 percent over the long run, caused in part by a one percent decline in wages and a loss of 335,000 full-time equivalent jobs. Most of the negative economic impact they project is attributable to the increase of the corporate income tax rate from 21 percent to 28 percent. While the Tax Foundation's estimates are somewhat more modest than the prior analyses, their estimates are focused on the higher probability tax code changes, leaving out of the modelling some provisions whose implementation is more uncertain.[286]

There Will Be No Relief Valve from the Biden Administration's Business Tax Proposals

Projecting the specific effects of corporate income tax changes is often difficult because there are multiple factors affecting causality, multiple paths through which the effects can flow, and often simultaneous implementation of other taxes that can either exacerbate or reduce the effects. For example, Thornton Matheson and his coauthors find that the surge in foreign direct investment in the U.S. following the 2017 Tax Cuts and Jobs Act (TCJA) appears to have been driven largely by contemporaneous macroeconomic factors rather than the reduction in corporate tax rates.[287] They also found that the increased retention of profits was attributable to the reduction of tax rates. However, the authors also highlight that their research cannot be generalized as an argument against the use of lower corporate taxes to enhance economic growth, since by 2018 the U.S. economy had been expanding consistently for eight years, so corporate investment may already have peaked.

Box 4-5: Without Profit Shifting, U.S. Capital Investment Will Fall

Changes in corporate taxation can lead to "profit shifting" within multinational companies. This is the practice of transferring intangible assets (such as patents) between subsidiaries so that the

assets accrue most of their profits in low-tax countries. According to the CEA, by 2016 U.S. multinationals reinvested 70 percent of foreign profits overseas, rather than repatriate it to the U.S.[288] Gabriel Zucman et. al. calculated that the share of foreign profits booked in tax havens remained stable at around 50 percent between 2015 and 2020.[289] They further estimated that the percentage of profits booked abroad by multinational companies only fell 3–5 percent after the 2017 Tax Cuts and Jobs Act was passed.[290] They primarily attributed the decrease to substantial changes by six large corporations, most likely due to repatriation of intellectual property to the United States.

Josh Heckemeyer and Michael Overesch synthesize the findings of 27 studies, predicting that the tax semi-elasticity for pre-tax profit is about 0.8. This means that a given 1 percent arbitrage opportunity between two different countries, the profit realized in the higher-tax country will decrease by 0.8 percent.[291]

According to Tim Dowd and his coauthors, this elasticity depends on whether the country is a high-tax or low-tax country.[292] They found that a 1 percent reduction in the statutory corporate income tax rate has a much bigger impact when the country is considered a low-tax country than when its tax rate is high. Applying this to the 2017 corporate tax rate reductions from 35 percent to 21 percent, which can be modeled as 14 one percent cuts applied simultaneously, means that most of the positive effects on profits occurred on the last steps when the country became an average-tax country. This implies that raising the rate to the halfway point of 28 percent would be almost as bad for businesses as going back to the pre-TCJA corporate income tax rate of 35 percent.[293]

The effect of profit shifting is also important when measuring the effect of taxes on capital accumulation. Fatih Guvenen et al. estimate that 38 percent of the income attributed to U.S. direct investment abroad is re-attributable to the United States, resulting

in an understatement of U.S. GDP and productivity growth rates in the late 1990's and early 2000's, as well as overestimation of labor's share of income.[294]

Guvenen et al.'s research findings are important when analyzing the changes proposed by the Biden Administration as it attempts to maximize the tax receipts from corporations by raising taxes on their foreign income and closing the possibility of using low tax countries to shift profits abroad. Their research suggests that the Biden Administration's approach could cause a much deeper drop in capital intensity and productivity than previous estimates. Supporting this concern, Suarez Serrato finds that firms with limited access to tax havens could see an increase in the cost of domestic investment, leading to a decrease in both in capital accumulation and domestic employment.[295]

Box 4-6: Long-Run Estimates for the Corporate Sector

A comprehensive estimate of the effect of the president's tax proposals is a complex task that would require an analysis as long as the *Response* itself. Each sector is affected in different ways, investors can substitute ways to raise capital, and changes in regulations can have an impact in the cost of doing business. Moreover, there are also future external factors to include when simulating the output of the economy in the short and medium term. Nevertheless, while simple, the Neoclassical Growth Model is a good tool to predict the impact of changes in tax policy in the long term.[296]

The model in equilibrium is derived from the basic firm problem where output is defined as:

$$Y = TFP * F(K, L)$$

where, Y is the total output, TFP is the total factor productivity, K is a measurement of capital employed, and L is the amount of labor

used in production. The function F represents the transformation of inputs into final production.

The model predicts that changes in the total output can be explained from either a change in the use of the factors, or by technological change.

$$\Delta Y = \Delta TFP + (S_L \Delta L + S_K \Delta K)$$

Where Δ represents a percent change of a variable ($\Delta X = \partial X / X$), and S_K, S_L represent the share of revenue attributable to the cost of each input factor. Another way to represent this is as a marginal change of the costs which, in the case of constant returns to scale can be rewritten as:

$$\Delta TFP = S_L \Delta \frac{W}{P} + S_K \Delta \frac{R}{P} = S_L \Delta w + S_K \Delta r$$

where W represents nominal wages (w, real), R represents the nominal return to capital (r, real), and P is the price of the final product. Now, suppose that capital-based income is taxed by a fraction, τ. [297] Since the Neoclassical Growth Model assumes that capital is perfectly elastic in the long-run, any change in the after-tax income has to be counteracted by a similar change in the return to capital.[298] This means that, $\Delta r = -\Delta(1 - \tau)$, where $(1 - \tau)$ is the after-tax portion of the returns to capital.

If the total factor productivity remains constant ($\Delta TFP = 0$), then one can rewrite the equations above into three equations summarizing the effects of tax change:

- Changes in real wages: $\Delta w = \frac{S_K}{S_L} \Delta(1 - \tau)$
- Capital intensity: $\Delta K - \Delta L = \frac{1}{S_L} \sigma \Delta(1 - \tau)$
- Average labor productivity: $\Delta Y - \Delta L = \frac{S_K}{S_L} \sigma \Delta(1 - \tau)$

See this chapter's appendix for additional details on the derivation.

Under the current legislation, an investor's average post-tax dividend $(1 - \tau_{corp})(1 - \tau_{divd})$ would be 67.4 cents for every dollar in C-type corporate profits. Under the new legislation, it would be 59.4 cents, which implies a drop of 8 cents or 12 percent of the original income. Replacing the equations defined above:

- Changes in real wages:
$$\Delta w = \frac{S_K}{S_L}\Delta(1 - \tau) = \frac{2}{3}(-0.1196) = -0.0797$$

- Changes in capital intensity:
$$\Delta K - \Delta L = \frac{1}{S_L}\sigma\Delta(1 - \tau) = \frac{5}{3}(-0.1196) = -0.199$$

- Changes in average labor productivity:
$$\Delta Y - \Delta L = \frac{S_K}{S_L}\sigma\Delta(1 - \tau) = \frac{2}{3}(-0.1196) = -0.0797$$

That is, JEC economists estimate that the Biden Administration's proposed tax increases would decrease wages and labor productivity by 8 percent, in combination with nearly a 20 percent reduction in capital intensity.

The relationships presented above are not a perfect model of the of Budget for FY2024. A more accurate predictive model would need a more complex set of equations, including more variables like depreciation rates and inflation, and taxes directly affecting employment. Also, the model limits the analysis to the case of C-corporations that finance through selling corporate equity. Changes in taxes imply changes in relative costs, provoking a migration of entrepreneurial activity towards pass-through entities, and C-corporations using debt instead of equity to raise capital. Moreover, the results do not include unanticipated future shocks, in the same way that TCJA could not anticipate the effects of the global pandemic of 2020, nor future changes in tax policy.

However, the high elasticity of capital, in combination with the closure of legal provisions of alleviating the corporate tax burden, makes it plausible that the impact to the economy of the Biden Administration's tax proposals would be larger than the sum of individual changes.

Anticipated Tax Hikes Have Negative Effects Today

The price theory model in Box 4-6 estimates the long-run outcome of the Biden Administration's tax hike, modeling the taxes as an unexpected economic shock. But when a change in tax policy can be anticipated, rational economic agents will often start adjusting before that new policy is implemented.

For example, if businesses anticipate a tax increase next year, they will start reducing investment today, which means that the availability of investment capital will begin to decline as it will depreciate faster than the new capital created. Once the new corporate tax policies are implemented, the system will continue evolving towards the new steady state.[299]

If the tax policy legislation fails, economic agents will incorporate this revised expectation of the future and the economy will gradually return to its previous state. However, if these investors (or some portion of them) believe that the tax policy will be approved at some point in the future, the original equilibrium will not be reattained, as shown in Figure 4-3.

Figure 4-3: The Dynamic Effect of Anticipated Taxes
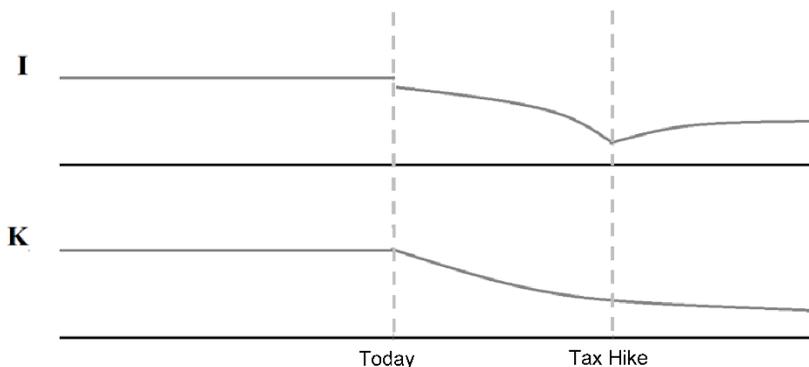
The public has seen the Biden Administration advocate for its preferred tax changes over the last three years. These are not small changes, and if investors believe their implementation to be somewhat probable, long-term corporate investments would be lower than in a scenario absent such a threat. In other words, it is possible that the incomplete post-pandemic recovery is partially attributable to reduced levels of investment due to these tax policies that have been proposed, but not implemented.

This scenario would also imply that if the Biden Administration's preferred tax reform is passed, the reduction in wages and productivity would be somewhat smaller than projected in Box 4-6, because rational investors are already hedging their bets about the potentially reduced stock of investment capital in the future.

The scenario also serves as a lesson of how political rhetoric about taxes can affect economic growth. Even if the tax increase never materializes, the mere potential of its passage can be enough to reduce economic growth.

Moreover, the stock of capital available to invest would change not only quantitatively but also qualitatively, disfavoring the long-term tangible investments that help stimulate structural growth. This is one of the reasons that countries in Latin America, where

changes in governments have led to abruptly different tax policies, find it hard to attract long-term foreign investment. The possibility that the next election could render the investments worthless decreases the expected payoff for investing.

The U.S. Tax System is not "Unfair"

The U.S. Tax System is Highly Progressive
As it describes the Biden Administration's proposed tax reforms, the President's Budget for FY2024 repeats the term "fair share" nineteen times. The rhetoric that the U.S. tax system is unfair has been taken up by many political figures, arguing that the wealthy do not contribute a sufficient portion of taxes. The argument implies that the working class is burdened with paying more taxes than is appropriate to make up the difference.

The data do not support this view. While exceptions to the rule exist, higher income households account for an increasingly disproportionate amount of total tax collections. When net taxes are considered (accounting for government redistribution of income), the situation becomes even more lopsided.

Figure 4-4 shows the proportion of total Federal taxes paid by each income quintile of households from 1979 through 2019. The taxes collected from the top 20 percent of households went from 55 percent of all Federal tax receipts in 1979 to almost 70 percent by 2019. This share is even higher when focusing on income tax liability (see Figure 4-5). The top quintile accounts for 90 percent of all income tax receipts, while the lowest two quintiles experience a net negative tax liability due to government transfers.

Figure 4-4: Shares of Household Federal Tax Liabilities
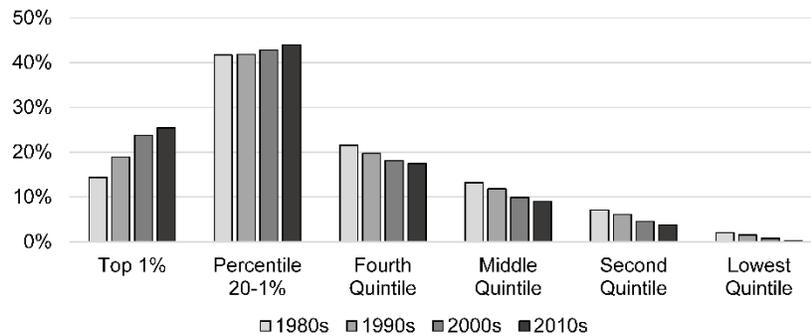
Source: CBO (November 2022 report *The Distribution of Household Income, 2019*)

Figure 4-5: Shares of Personal Income Tax Liabilities,
Accounting for Transfers
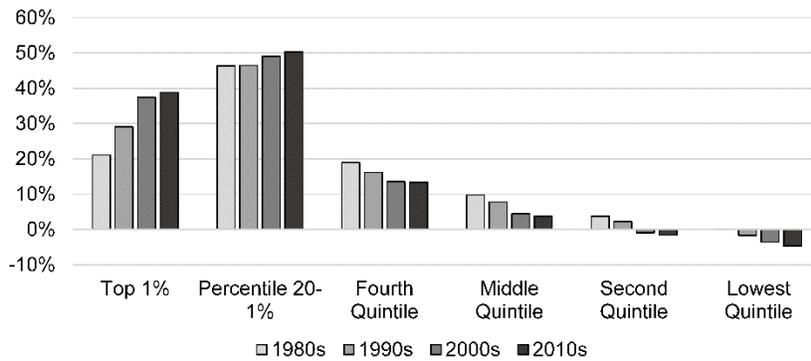
Source: CBO (November 2022 report *The Distribution of Household Income, 2019*)

While a large part of the U.S. population appears to believe that the top 1 percent of households find ways to avoid paying any taxes, the reality is that these households have consistently contributed a disproportionate and increasing share of tax collections. Notably, this steady increase in the share of total government revenues contributed by the top quintile has occurred *despite* multiple large-scale tax reforms in recent years.

- Tax Reform Act of 1986
- Taxpayer Relief Act of 1997
- Economic Growth and Tax Relief Reconciliation Act of 2001

- Jobs and Growth Tax Relief Act of 2003 plus extensions
- Tax Cuts and Jobs Act of 2017

Another oft-repeated accusation against the modern U.S. tax system is that modern Federal deficits are caused by improperly low marginal income tax rates, especially on the highest income households. This argument may seem superficially accurate because *statutory* personal income tax rates were indeed higher in the past. The highest marginal tax rate exceeded 90 percent in the 1940s and 1950s before being lowered to 70 percent from 1964 until 1982.[300] The top marginal income tax rate was decreased to 50 percent in 1982 and to 28 percent in 1986, before being increased to between 35–39.6 percent from the early 1990s until today.[301] Throughout this period, however, the *effective* tax rate on the highest earners has been fairly consistent, suggesting that arguments premised on prior statutory tax rates are irrelevant (see Figure 4-6).[302] This is another indication that Federal deficits are a spending problem, not a revenue problem.

Figure 4-6: Revenue and Outlays as a Percent of GDP
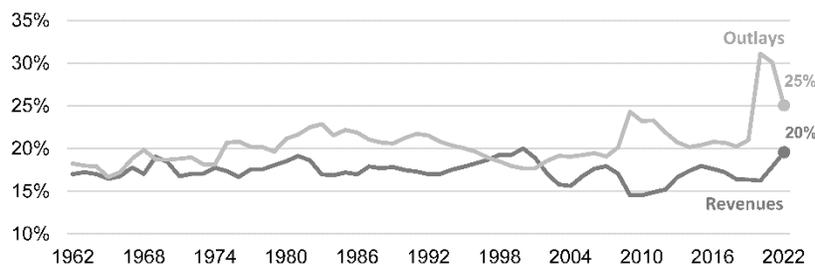
Source: CBO (February 2023 report *The Budget and Economic Outlook: 2023 to 2033*)

Figure 4-7 illustrates that the average individual income tax rates (15 percent for the top quintile and 20–25 percent for the top 1 percent of earners) have been consistent since at least 1979, despite the multiple substantial changes in tax brackets that have

occurred since then. In comparison, the average individual income tax rates for the lower four quintiles have trended lower, with the second-highest quintile currently paying about 5 percent of their income in taxes while the lowest two quintiles effectively experience negative income tax rates (see Figure 4-7).

Figure 4-7: Average Federal Individual Income Tax Rate, Including Tax Credits and Deductions
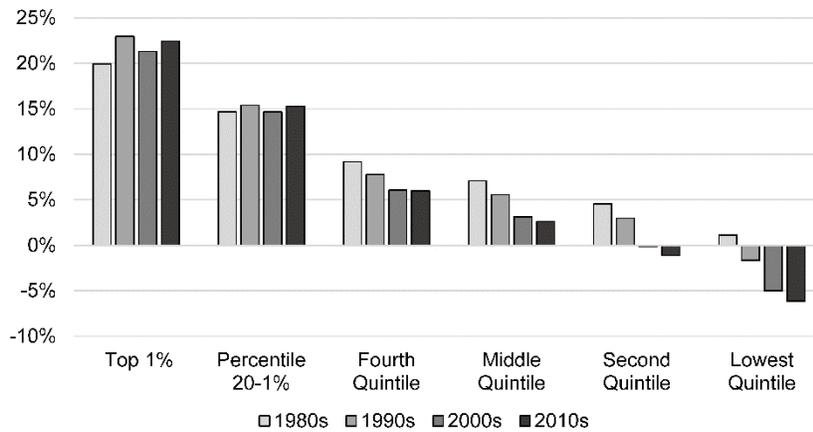
Source: CBO (November 2022 report *The Distribution of Household Income, 2019*)

The U.S. Tax System Is More Progressive Than Most Other Advanced Economies

Another common argument in favor of raising taxes is that the United States does not tax wealthy households as much as some other OECD countries. While it is true that the top marginal personal income tax rates are higher, especially in Europe, there are several additional factors to consider.

First, most comparisons only consider taxes levied by the central government, meaning they omit sub-national (e.g., state) tax collections which have a larger role in U.S. government finances.[303] For example, under President Biden's FY2024 budget proposal, the combined Federal and state top marginal personal income tax would exceed 54 percent and 52 percent in New York and California respectively.[304] Nor is this the whole story, since

multiple states omit income taxes entirely, preferring to primarily fund government operations on sales, property, or severance taxes.

Moreover, this class of argument completely ignores that the same countries often have a less progressive tax structure than the United States. As shown, the lower income quintiles in the U.S. effectively receive a negative income tax—their counterparts in the OECD generally face positive tax rates, especially in countries that use VAT (Value-Added Taxes).[305]

Furthermore, despite having low top marginal income tax rates, the United States is in the top half of countries in terms of revenue collected from distributionally-progressive taxes (like personal and corporate income) while near the bottom in tax collection from distributionally-neutral taxes (like VAT and sales taxes).[306]

Finally, U.S. corporate tax policy is not an outlier compared to other advanced economies. The reduction in corporate tax rates in the 2017 Tax Cuts and Jobs Act is best understood as the U.S. catching up to a worldwide trend originating in the 1980s (see Figure 4-8). Its corporate income tax remains above the median of similar taxes across the world (see Figure 4-9). If progressive tax outcomes are the metric that determines fair tax policy, then the U.S. is a world leader in fair taxes.

Figure 4-8: Net Corporate income tax rate in OECD Countries
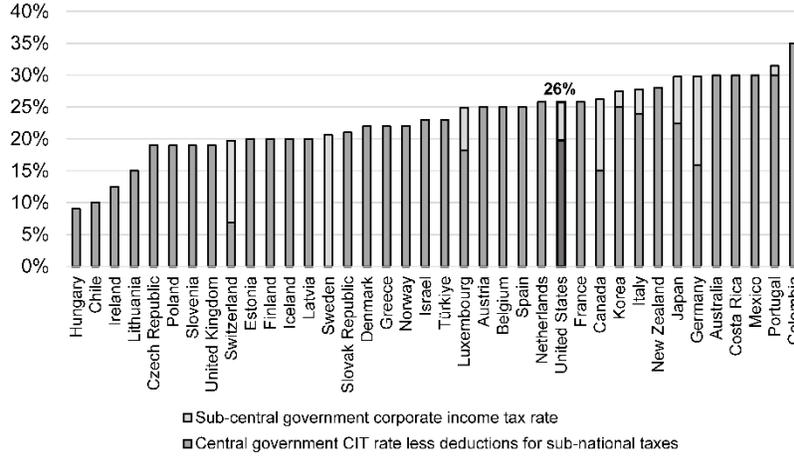
Source: OECD (*2022 National and Subnational Corporate Income Tax Rates*).

Figure 4-9: Comparison of Net Corporate Tax Rates
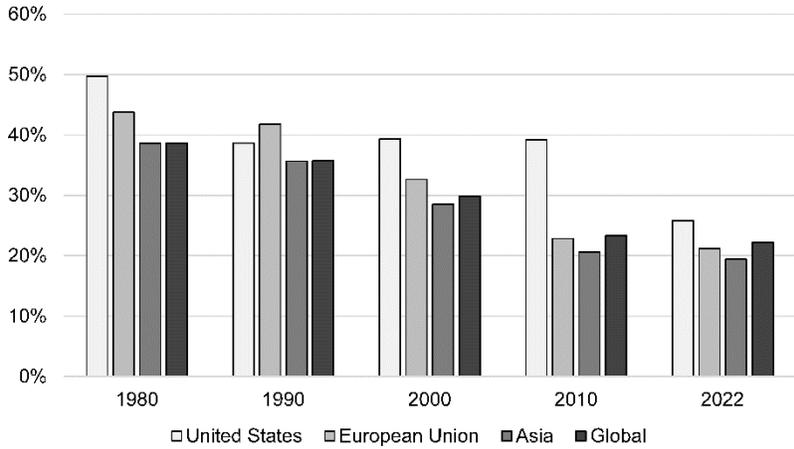
Source: OECD (Table II.1. Statutory corporate income tax rate)

Appendix: Deriving the Neoclassical Growth Model

Model

The basic output function is defined as:

$$Y = TFP * F(K, L)$$

where, Y is the total output, TFP is the total factor productivity, K is a measurement of capital employed, and L is the amount of labor used in production. The function F represents the transformation of inputs into final production.

When constant returns to scale are assumed, there are two ways to measure changes in the system. First, changes in the factors:

$$\Delta Y = \Delta TFP + (S_L \Delta L + S_K \Delta K)$$

Where Δ represents a percent change of a variable ($\Delta X = \partial X / X$), and S_K, S_L represent the share of revenue attributable to the cost of each input factor. Second, changes in the prices:

$$\Delta TFP = S_L \Delta \frac{W}{P} + S_K \Delta \frac{R}{P} = S_L \Delta w + S_K \Delta r$$

where W represents nominal wages (w, real), R represents the nominal return to capital (r, real), and P is the price of the final product.

Assume that capital is perfectly elastic in the long-run, therefore, $\Delta R = -\Delta(1 - \tau)$.

If the total factor productivity remains constant ($\Delta TFP = 0$), the one can derive the equations for changes in the business sector:
Real Wages:

$$S_L \Delta w + S_K \Delta r = 0$$

$$\Delta w = -\frac{S_K}{S_L} \Delta r$$

$$\Delta w = \frac{S_K}{S_L} \Delta(1 - \tau)$$

Capital Intensity:

First, define elasticity as $\sigma = \frac{(\Delta K - \Delta L)}{(\Delta W - \Delta R)}$

$$\Delta K - \Delta L = \sigma(\Delta W - \Delta R)$$

Replacing ΔW with $\frac{S_K}{S_L} \Delta(1 - \tau)$ and ΔR with $-\Delta(1 - \tau)$

$$\Delta K - \Delta L = \sigma(\frac{S_K}{S_L} \Delta(1 - \tau) - (-\Delta(1 - \tau)))$$

$$\Delta K - \Delta L = \sigma(\frac{S_K}{S_L} + 1)\Delta(1 - \tau)$$

$$\Delta K - \Delta L = \sigma \frac{S_K + S_L}{S_L}\Delta(1 - \tau)$$

Given the assumption of constant returns to scale, $S_K + S_L = 1$

$$\Delta K - \Delta L = \frac{1}{S_L} \sigma \, \Delta(1 - \tau)$$

Average Labor Productivity:

Taking the equation representing percentual change in total output and taking $\Delta TFP = 0$,

$$\Delta Y = S_L \Delta L + S_K \Delta K$$

Subtracting ΔL on both sides and replacing $S_L = 1 - S_K$

$$\Delta Y - \Delta L = (1 - S_K)\Delta L + S_K \Delta K - \Delta L$$

$$\Delta Y - \Delta L = S_K \Delta K - S_K \Delta L$$

$$\Delta Y - \Delta L = S_K(\Delta K - \Delta L)$$

Using the form of capital intensity, $\Delta K - \Delta L = \frac{1}{S_L} \sigma \, \Delta(1 - \tau)$

$$\Delta Y - \Delta L = S_K \left(\frac{1}{S_L} \sigma \Delta(1 - \tau) \right)$$

$$\Delta Y - \Delta L = \frac{S_K}{S_L} \sigma \Delta(1 - \tau)$$

Calibration

We follow the standard literature for the first two components, assuming S_K=0.4, and σ=1.[307]

The last component to estimate is the changes in taxes. This is a little bit more complex because the income received from investing in C-corporations has two layers of taxation (see Box 4-1).[308] Moreover, not all investors will be affected in the same way. Therefore, $\Delta(1 - \tau)$ cannot be taken as the simple addition of tax rates. Table 4-3 shows the effective tax rates on capital before and after credits using the latest Internal Revenue Service data.[309] To estimate the change in the after-tax returns, use the second set of columns in the table. The table shows that the overall after-credit tax rate closely follows the rate paid by the largest companies.

Table 4-3: Average Corporate Income Tax Rates[310]

RETURNS OF ACTIVE CORPORATIONS, OTHER THAN FORMS 1120S, 1120-REIT, AND 1120-RIC								
Size of business receipts	Percentage income tax over income subject to tax before credits				Percentage income tax over income subject to tax after credits			
	2016	2017	2018	2019	2016	2017	2018	2019
Total	35.1	35.8	20.6	21.5	24.9	26.4	12.5	14.8
< $25K	33.3	33.0	21.3	21.8	30.1	31.1	16.4	16.6
$25–100K	20.3	23.8	20.6	−	19.6	23.7	20.1	20.2
$100–250K	19.9	20.2	20.9	21.4	19.5	19.7	19.6	20.2
$250–500K	22.8	22.5	21.1	21.1	21.7	22.0	20.4	19.0
$500–1M	24.5	24.6	21.4	21.3	23.9	23.7	19.3	20.7
$1–5M	29.1	29.9	21.3	21.4	27.8	28.4	20.3	20.4
$5–10M	33.7	32.7	21.7	21.3	31.9	31.1	19.9	20.0
$10–50M	34.6	34.0	21.7	21.5	32.4	31.7	19.7	19.5
$50–100M	34.8	34.3	21.6	21.3	31.3	32.3	18.9	18.0
$100–250M	35.3	35.2	21.5	21.3	32.0	30.1	18.4	18.5
$250–500M	35.2	35.2	21.4	21.4	30.0	31.5	16.8	17.7
$500–1B	35.3	35.5	21.7	21.7	28.0	30.3	15.9	17.2
> $1B	35.2	36.3	20.5	22.2	23.8	25.4	11.6	14.2

Note that this data is prior to Inflation Reduction Act's Corporate Alternative Minimum Tax (CAMT), which imposed a 15 percent minimum tax on the net income reported in large corporations' financial statements.

Use the 2019 data from Table 4-3 if corporations in the highest bracket (greater than $1 billion) pay 15 percent on profits (after credits) while the rest pay their listed tax rate in the rightmost column. Given that companies with receipts over $1 billion represent around 80 percent of total tax receipts, the corporate income tax rate on taxable income would be 15.5 percent. That is, $(1 - \tau_c^{pre}) = 0.845.$[311]

The Biden Administration's proposed tax reform applies a generalized tax increase to domestic and foreign profits, trying to close every provision that companies might use to avoid the tax increase. Therefore, the estimate relies on a simplifying assumption that business see their taxes on profit rise by 7 percent higher across the board, that is $\left(1 - \tau_c^{post}\right) = 0.775$.

Next, calculate the changes in taxes on dividends. The Biden Administrations tax proposal would restore the top marginal individual income tax rate to 39.6 percent and would also tax qualified dividends as ordinary income for those earning over $1 million in a year. Using Internal Revenue Service data for personal income tax, JEC economists estimate the rates for ordinary dividends using the amounts reported for each bracket and the average income tax paid over taxable income. [312] Since qualified dividends are currently taxed at a different rate, JEC applied those preferential rates to each corresponding bracket. Using this methodology, the value of the overall pre-reform tax rate on dividends as τ_d^{pre} is 0.202.

The post-reform rate is calculated in a similar way but changes the rates of the higher earners to the average rates of 2016, which is the last year before there were discussions about possible tax cuts.[313] JEC estimates τ_d^{post} as 0.234.

If the investor pays income tax for each dollar of profit that was also subject to the corporate tax, then the average investor that invests in the average C-type corporation, would see their post-tax share of the corporate profit reduced by more than eight cents for every dollar:

$$\left.\begin{aligned} (1 - \tau^{post}) &= \left(1 - \tau_c^{post}\right)\left(1 - \tau_d^{post}\right) = 0.775 * 0.766 = 0.594 \\ (1 - \tau^{pre}) &= \left(1 - \tau_c^{pre}\right)\left(1 - \tau_d^{pre}\right) = 0.845 * 0.798 = 0.674 \end{aligned}\right\}$$

This represents almost a 12 percent decrease in income received. Replacing the equations defined above:

- Changes in Real Wages:
$$\Delta w = \frac{S_K}{S_L}\Delta(1 - \tau) = \frac{2}{3}(-0.1196) = -0.0797$$

- Changes in Capital Intensity:
$$\Delta K - \Delta L = \frac{1}{S_L}\sigma\Delta(1 - \tau) = \frac{5}{3}(-0.1196) = -0.199$$

- Changes in Average Labor Productivity:
$$\Delta Y - \Delta L = \frac{S_K}{S_L}\sigma\Delta(1 - \tau) = \frac{2}{3}(-0.1196) = -0.0797$$

That is, project that the Biden Administration's proposed tax increases will decrease wages and labor productivity by 8 percent, in combination with nearly a 20 percent reduction in capital intensity.

CHAPTER 5: GETTING PRIME-AGE MEN BACK TO WORK

Prime-age men's labor force participation has trended consistently downward for 60 years. One in nine men between the ages of 25 to 54 is now a non-participant in the workforce—more than triple the rate recorded during the 1950s.[314]

This reduction in labor supply has had profound socioeconomic and fiscal effects. If 25 percent of inactive prime-age men could be re-integrated into the workforce, JEC economists' projections show that:

- the economy (measured as GDP) would be $215 billion larger,
- the Federal government would collect an additional $400 billion from 2024–2033,
- average household income would increase by $1,325.

There are a variety of explanations for the increase in prime-age men's inactivity, but perhaps the most credible answer is that each factor increasing prime-age men's inactivity tends to reinforce the others.

- Rising participation in state and Federal disability programs, as well as other income support programs and the support of family members, allows inactive prime-age men to avoid destitution.
- The social pressures and self-esteem that kept men in the workforce, such as the potential for marriage and the prospects for a satisfactory job, have decreased.
- Institutional barriers to work, such as occupational licenses, have reduced employment opportunities.

The Bureau of Labor Statistics forecasts that the decline in prime-age men's labor force participation will continue over the next

decade, constraining economic growth.[315] Two policy proposals that could help reverse this trend are:

- expand employers' ability to invest in worker education and training, and
- protect the supply of independent work opportunities that allow workers to easily reconnect with the workforce.

Growth of the U.S. Labor Supply Faces Headwinds

The U.S. labor market has seen substantial changes in the post-WW2 era. Men's overall labor force participation has trended steadily downward from a peak of 86.6 percent in 1948, while women's overall labor force participation rose to a peak of 60 percent in 1999 (see Figure 5-1). Combined overall labor force participation peaked in the same year. More specifically, men's *prime-age* (ages 25–54) labor force participation peaked at almost 98 percent in the 1950s but has since gradually decreased. Women's prime-age labor force participation rose along with the general trend, and recently exceeded its previous 1999 peak. As of mid-2023, men's labor force participation is roughly 11 percentage points higher than that of women across most age brackets—but the gap is noticeably smaller than the 16-percentage point difference that existed in 2008.

The growth of U.S. labor supply faces headwinds over the next decade, most notably due to the ongoing shift of the baby boom generation from the workforce to retirement (see Figure 5-2), but also from the long-run decreased participation of prime-age men in the labor market (see Figure 5-3). The overall workforce growth rate has gradually slowed due to these demographic trends, which has contributed to recent slower economic growth, reduced tax receipts, increased government spending, and greater social and socioeconomic dysfunction. Importantly, as Congress considers policies to address our ailing workforce, it is important to ensure

that those policies do not inadvertently push out productive older workers who would otherwise remain in the labor force.

The retirement of baby boomers was anticipated, but the exit of prime-age men from the workforce has been a surprise. Prime-age men's labor force participation rate (LFPR) is 8 percentage points lower than its 1950s peak—if the same participation rate applied today there would be 5.5 million more participants in the labor market and the economy would be approximately 6 percent ($1.6 trillion) larger.[316] The phenomenon has motivated much discussion and analysis, including previous research by the CEA (Council of Economic Advisers) and JEC (Joint Economic Committee), but it is difficult to determine the primary cause driving the trend.[317]

Figure 5-1: U.S. Labor Force Participation Rates
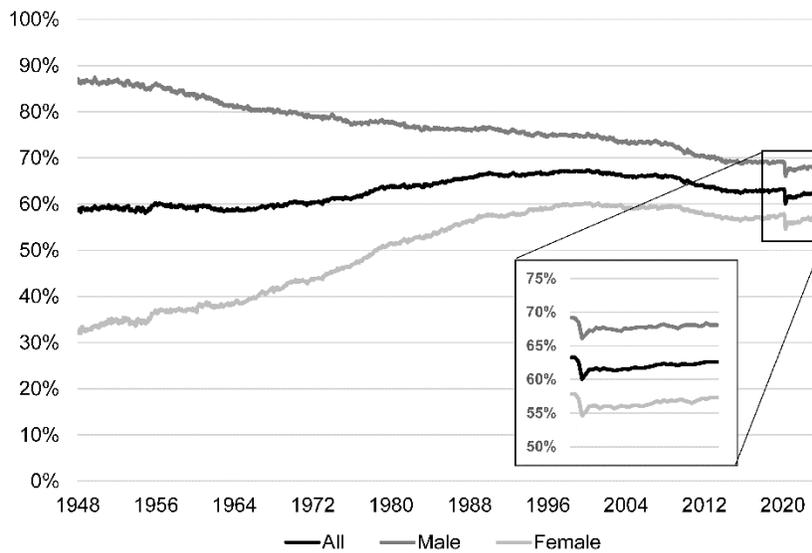
Source: BLS (Series IDs: LNS11300000, LNS11300001, LNS11300002). Magnified section observes January 2020 to June 2023.

Figure 5-2: Growth Rate of U.S. Labor Force
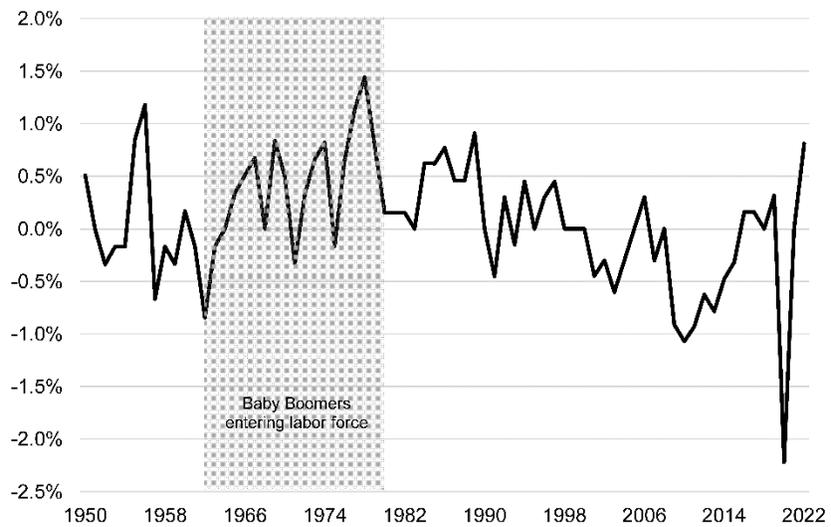
Source: BLS (Series ID: LNS11300000).

Figure 5-3: Generational Decline of Male Labor Force Participation
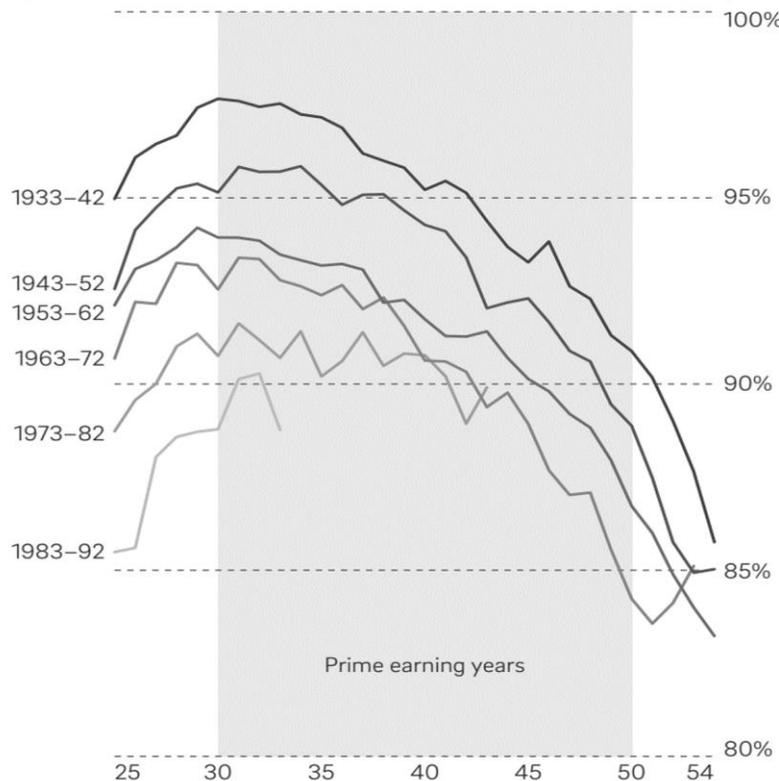
Source: Figure taken from the Federal Reserve Bank of Philadelphia, (Fourth Quarter 2017).

Inactive Prime-Age Men are Heterogenous

Nonparticipation in the workforce (abbreviated as "inactive" or "NILF" for "not in the labor force") describes the third potential workforce status, alongside workers who are employed and those who are counted as officially unemployed.[318] These statistics are estimated for the "non-institutional population," meaning the large majority of the population which are not part of the military, incarcerated, or living under supervised medical care.[319] Prior to 1970, less than 4 percent of prime-age men were inactive but as of 2023 this figure is now 11 percent.

The same Bureau of Labor Statistics survey that provides information on labor force participation also asks the respondents the reason for their inactivity. Based on this self-report, the prime-age men who are inactive can be categorized into 5 groups:

- Students
- Early retirees
- Family care providers
- Those for whom disability prevents work
- Some other reason (or no reason) for inactivity

Students, early retirees, and family care providers make up the smallest categories of inactive prime-age men. Each group has increased in size over previous decades, as higher-education enrollment has expanded (see Figure 5-4), workers have exercised early-retirement options (mostly attributable to government workers and military service members) and men have taken greater roles as family caregivers.[320] Despite the growth of each, these three groups in combination account for less than a third of prime-age inactive men (see Figure 5-5).

Figure 5-4: College Enrollment by Age and Sex
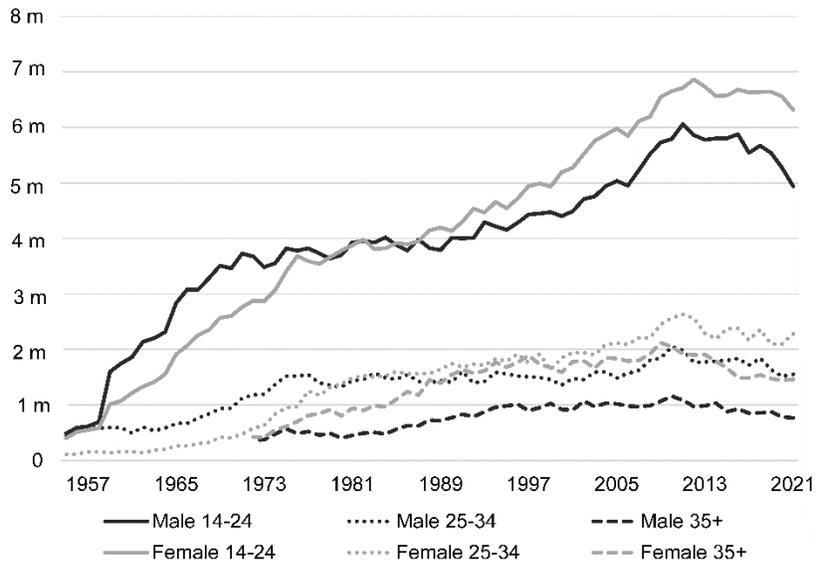
Source: U.S. Census Bureau (CPS, *Historical Time Series Tables on School Enrollment, Table A-6*).
Data for students aged 35 and over not avaliable before 1972.

Figure 5-5: Reason for Male Labor Force Inactivity
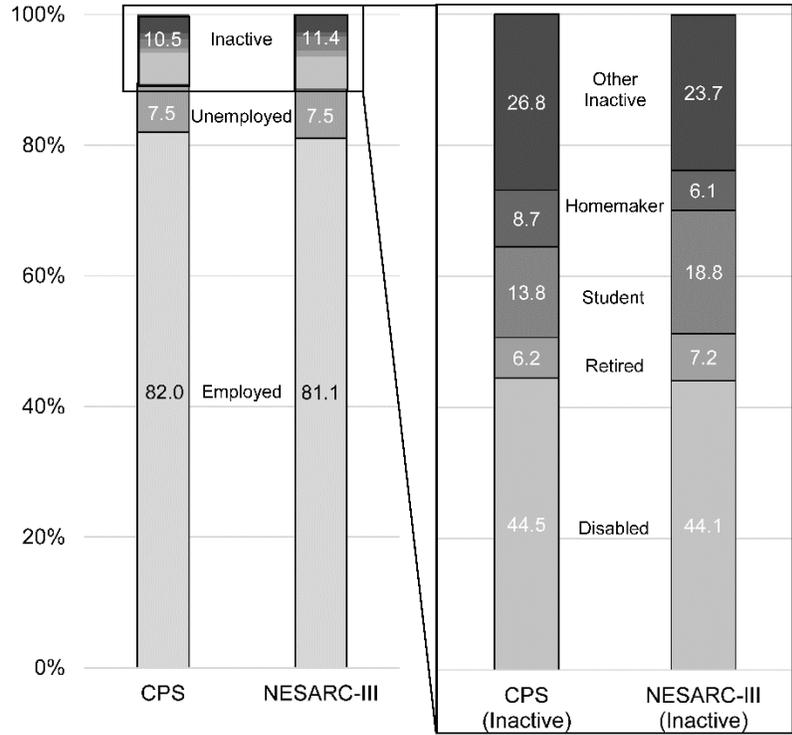
Those reporting that a permanent disability renders them unable to work make up the largest group (approximately 44 percent) of prime-age inactive men.[321] They account for a smaller share of all inactive prime-age men than in prior decades, but still represent almost half of the increase in prime-age inactive men.[322] The sizeable increase of this group is somewhat surprising, given the substantial improvements in workplace safety, physical therapy, and decline in physically-demanding jobs.[323] Growth in the number of men receiving Federal and state disability benefits accounts for most of this increase in inactivity.[324] Interestingly, though perhaps not entirely unexpected, even non-disabled prime-age inactive men are more likely to report being in poor physical

and mental health (see Box 5-1 for a discussion of how telehealth reforms could improve prime-age men's access to healthcare).[325]

Box 5-1: Improving Access to Telehealth

State regulations severely inhibit the provision of telehealth services. This is because most state medical licensing regulations stipulate that the provision of medical service occurs wherever the patient is located, not the medical provider. As a result, any telehealth provider who even provides a modicum of service to a patient in another state must be licensed in that state, or else risk legal action for practicing without a license.

This approach to licensing has balkanized the U.S. medical system. In the 1990s, as long-distance phone call rates fell and inexpensive telehealth became a feasible option, it was the threat of action by the Federal government that motivated states to create the Nurse Licensure Compact to allow for mutual recognition of nursing licenses. However, the movement faltered after less than half of states joined the compact.[326] Following expansions in broadband internet availability and the development of Wi-Fi and smartphones that would have enabled telehealth to reach many more patients, the Federal government again began to move toward solving the restrictions on telehealth.[327] This motivated states to replace the NLC with the enhanced Nurse Licensure Compact (eNLC), which as of July 2023 has 41 members (39 states and 2 territories).[328] Multiple other medical licensure compacts have been created to expand the potential of telehealth, as well as facilitate the movement of healthcare providers throughout the country.

While this progress is laudable, it is not sufficient. Many states remain holdouts to the medical licensure compacts. In addition, most states have rolled back their temporary authorizations for out-of-state mental health providers practice under their existing license during the COVID-19 pandemic.[329] Research suggests that

a substantial portion of prime-age men's disengagement from the workforce is attributable to mental health difficulties and other health issues including substance abuse.[330] Such services are easily provided via telehealth, which would substantially reduce the monetary and logistical cost of the counseling sessions that could help inactive prime-age men turn their lives around.

Regulation of interstate commerce is the domain of the Federal government, and the creation of Federal licenses for telehealth providers would vastly expand the availability of such services. These Federal licenses should be limited in application to the specific situations where healthcare workers provide services across states lines—within-state provision of medical services would remain the domain of the state government. The Federal licenses could be patterned after the already-successful compact licenses, and a Federal licensing regime should not overrule states which have signed a compact governing the cross-border provision of medical services with each other. In such cases, the compact should govern such cross-border services rather than the Federal license. In short, the Federal license would only apply to situations where either the telehealth practitioner or the patient is in a non-compact state.

The Value of Increasing Prime-Age Men's Activity

Each of the first four groups of inactive prime-age men arguably has a reasonable rationale for their inactivity, but the fifth group does not fit into any of the previous explanations. Around 25 percent of inactive men belong to this other group, corresponding to approximately 1.8 million potential workers—equivalent to 1 percent of the current workforce.[331] The economic, fiscal, and social value achieved from these individuals' return to the workforce could be considerable (see Box 5-2).

This goal is not impossible. Although many inactive prime-age men seem fully disconnected from the workforce—having neither worked or looked for employment in over a year—this point-in-time snapshot approach misses that there is substantial churn in and out of the workforce for the rest.[332] This means that a typical data analysis would effectively undercount the number of "in-and-outs" and overcount the number of "dropouts" (because each dropout would be counted multiple times across ongoing surveys).[333] The in-and-outs are a prime group to target for policies that would help reconnect them with the workforce.

Box 5-2: Benefits of Improving Men's Labor Force Participation

There are several economic benefits that could be realized by reconnecting a quarter of inactive prime-age men to the workforce.

Economic Growth

JEC economists follow the Congressional Budget Office's (CBO) methodology for estimating the long-run economic effect of an increase to labor supply.[334] The data for the CBO's "Budget and Economic Outlook: 2023 to 2033" show that their models estimate the projected labor share of income from the nonfarm/business sector is 0.671.[335] This sector accounts for approximately 75 percent of the economy.[336] The labor share of income for the other economic sectors (agriculture, government, non-profit, and household) is close to 1.0.[337]

Using this information, JEC constructed a weighted average that models the elasticity of potential output growth (which corresponds to the long-run growth in real Gross Domestic Product) with respect to increases in labor supply. A 1 percent increase in labor supply, effectively that which would result from reconnecting 25 percent of inactive prime-age men with the workforce, would expand the economy by 0.80 percent. This

corresponds to a permanent increase in annual economic activity worth $215 billion (2023 dollars).

Fiscal Effects

JEC economists follow the CBO's methodology for estimating the effect of long-run economic growth on tax receipts. Federal revenues are projected to average 18.2 percent of GDP from 2023–2033.[338] They use this, in conjunction with CBO's GDP projections and the previous estimate that reconnecting 25 percent of currently inactive prime-age men to the labor force would increase long-run economic activity by 0.80 percent, to estimate that Federal receipts would rise by around $400 billion over 2024–2033.[339]

Household Income

Following the CBO's methodology, JEC economists use the anticipated long-run increase in GDP to estimate the associated increase in average household income. Multiplying the increase in long-run GDP by the derived labor income share of long-run GDP (0.80, see above), produces the long-run anticipated growth in worker incomes, estimate to be $175 billion annually in 2023 dollars. This is equivalent to a $1,325 permanent increase in average household income (however, the increase is likely to predominantly occur at the lower end of the income distribution because inactive prime-age men generally have lower education attainment than average).[340]

Why Are Prime-Age Men Increasingly Inactive?

There are two general categories of explanations for prime-age men's declining labor force participation: supply-side factors and demand-side factors (see Boxes 5-3, 5-4, and 5-5). To a limited extent, each avenue may influence the other. For example, if some workers reduce their supply of labor due to other sources of

income, employers may increase their investment in labor-saving capital in response to the upward pressure on wages that the labor shortfall causes.[341] This could lead to permanent changes in the demand for labor, as broad application of the new technology may diminish labor demand beyond the original reduction in labor supply.

Box 5-3: The Structure of Labor Supply

Looking at the situation from workers' point of view, the most basic model in labor economics evaluates the fundamental tradeoff that workers make between consumption and leisure. According to this model, workers maximize their wellbeing, or utility (U), by devoting a portion of their time to productive activities (Work) that enable consumption (C), and allocate their remaining time to leisure (L, a term that serves as a catch-all to denote non-productive activities, such as sleep, entertainment, socialization, etc.). The ability to maximize utility is constrained by the individual's budget for time and money.

Maximize U(C, L), subject to:

Time Budget = Work + Leisure

Consumption ≤ Work*Wage + Other Income

A given worker's response to a change in their wage or other income will depend on their utility function (and where they are on their utility function). In this simplistic scenario, a (rational) worker will allocate their time budget such that the marginal benefit of an additional unit of consumption and leisure are equivalent. At such an equilibrium, and holding all other things constant, a wage increase would likely motivate them to devote more time to work, until the tradeoff between marginal changes in work and leisure again equalizes. Alternately, if their income from other sources increases, they will likely decrease the time they

devote to work until the marginal benefit of consumption and leisure equalizes.[342]

A small but important expansion to this simplistic model would include accounting for the worker's reservation wage. A worker's reservation wage is effectively their opportunity cost of working—the minimum compensation they require to enter the workforce. An individual's reservation wage depends on their other sources of income, such as whether their household contains other workers or receives social welfare benefits, and the value of the time they devote to household production activities.

Reservation Wage = f(Household Production, Other Income)

Adding household production transforms the model:

Maximize U(C, L), subject to:

Time Budget = Work + Leisure + Household Production

Consumption ≤ Work*Wage + Other Income + Household Production

Again, a rational individual will tend to allocate their time such that the marginal effect on their utility from consumption and leisure are equal. Like before, an increase to the value of household production would tend to decrease the time allocated to work and leisure. A common example of this is seen when parents make the decision to reduce the amount of time devoted to outside work (and leisure) to provide care for a newborn baby.

Another relevant expansion to the model would be to include the non-pecuniary value of work and household production. This is the utility that an individual derives from a productive activity, or from the indirect benefits it provides, separate from the utility of the consumption it allows. It can be positive if the individual is employed in a job they enjoy, perhaps because of friendly

coworkers that form a supportive community, or because they find meaning in what they produce, or due to the social status the job provides. It can also be negative if the worker feels their skills are improperly matched to their job, or if they lack a sense of autonomy or control over their efforts, or if the job interferes with a healthy work-life balance.

Adding the non-pecuniary value of work and household production transforms the model:

Maximize U(C, L, NPV), subject to:

Time Budget = Work + Leisure + Household Production

Consumption ≤ Work*Wage + Other Income + Household Production

The inclusion of the non-pecuniary value of work adds substantial complexity, because different jobs and different forms of household production will provide different amounts of non-pecuniary value to each person. However, it could be relevant to the issue of prime-age men's inactivity if those who are inactive perceive that the non-pecuniary value of available jobs have changed over time.

Box 5-4: Supply-Side Explanations for Men's Inactivity

There are several supply-side explanations as to why prime-age men's inactivity has increased. The first suggests that expansions to government income assistance—predominantly Social Security Disability Insurance (SSDI) and Supplemental Security Income (SSI)—have increased the other income category, leading to reductions in the supply of labor by those workers (See Box 5-3 for a discussion of how workers make labor supply decisions). For example, reforms to the SSDI program in the 1980s expanded eligibility for mental health conditions, as well as other qualifying criteria, increasing the payoff for workers to exit the labor market

completely to substantiate their request for approval.[343] Furthermore, because income is fungible, a prime-age man's labor force participation can be affected by others in his household who work or have been approved for government income assistance. Inactive prime-age men are substantially more likely than employed prime-age men to live with a relative who heads the household and provides for expenses.[344]

Another supply-side explanation proposes that improvements to the quality of leisure activities have effectively increased prime-age men's reservation wage, leading the workers with the lowest expected income to exit the labor market or delay entering it. Indeed, the American Time Use Survey shows that inactive prime-age men on average spend about 7.5 hours each day on leisure activities.[345]

Third, if the type of jobs available have substantially changed (or if prime-age men's expectations of the benefits that work should provide has changed), then the implicit value provided by employment may have decreased. The gradual ascent of the service economy in the U.S. may have reduced the availability of blue-collar jobs while women overtaking men in college education may have caused the marriage market for lesser-educated men to become increasingly difficult.[346]

Research published by the Federal Reserve Bank of Richmond suggests that the decline in marriage rates is associated with a quarter of the 8.4 percent decline in average annual work hours by prime-age men from 1979 and 2018.[347] If the implicit rewards gained from employment have decreased, it would help explain why, even in the current labor market where there are more than 1.5 jobs for each job seeker, inactive prime-age men are not returning to the labor market in larger numbers.[348]

Lastly, there has been an outsized increase in occupational licensing regulations, rising from covering 5 percent of jobs in the 1950s to 25 percent of current jobs.[349] These changes, as well as the overall increase in higher-educated workers competing for jobs, may have closed off higher-pay and higher-value employment for some men, leading them to exit the labor force completely rather than accept a lackluster job. This phenomenon may also play a role in why so many men have delayed or abandoned attaining higher education.[350]

A combination of explanations seems to be the most likely answer to prime-age men's increasing inactivity. Increased access to other sources of income, including government assistance, opens to door to reduced labor force participation. This is exacerbated by higher value entertainment options, which increase a worker's reservation wage. In fact, many modern video games are explicitly structured to reward progress in ways designed to keep the player occupied for longer time periods. Interestingly, in many cases this progression mimics the gradual accumulation of mastery (and in some cases places demands on the players resembling the completion of work-like activities).[351] This perhaps addresses the intrinsic human need to feel productive that might otherwise lead a person to gravitate back toward employment. Furthermore, women have reversed the education gap that existed prior to 1982 and now receive almost 60 percent of bachelor's degrees.[352] To the extent that this dims the marriage prospects for lesser-educated men, they may make a rational (given their reduced expectations) choice to avoid the effort needed to pursue stable employment that would improve their opportunity for marriage.

Box 5-5: Demand-Side Explanations for Men's Inactivity
JEC economists take a somewhat simpler approach in looking at the situation from employers' point of view (accounting for shifts in labor demand). Employers use a combination of labor and

capital to produce products and services that customers desire. The specific types of labor and capital used, and the ways that they are combined, depends on which production technology is used, which in turn depends on the location of production (and thereby availability and cost of each potential input), the cost of transportation, access to consumer markets, and customer perception, among other factors. Explicitly modeling these elements is unnecessary to the discussion at hand, however.

The primary demand-side issue relevant to the issue of prime-age men's rising inactivity is the long-term decrease in manufacturing jobs due to increases in automation and international trade (see Figure 5-6). Furthermore, manufacturing today generally requires a more advanced skillset than in previous decades, meaning that lesser-educated workers may have had a harder time finding employment as the industry modernized.[353] Some researchers have argued that these trends are predominantly responsible for prime-age men leaving the labor market—that the subset of prime-age men who previously would have worked in manufacturing-related employment either do not have the necessary skills (or else are unwilling) to work in the service sector, which has accounted for a large share of job growth over the past several decade.[354]

Figure 5-6: Changing Employment Composition

Source: BLS (Series IDs: CES0000000001, CES3000000001, CES0700000001, CES9000000001).
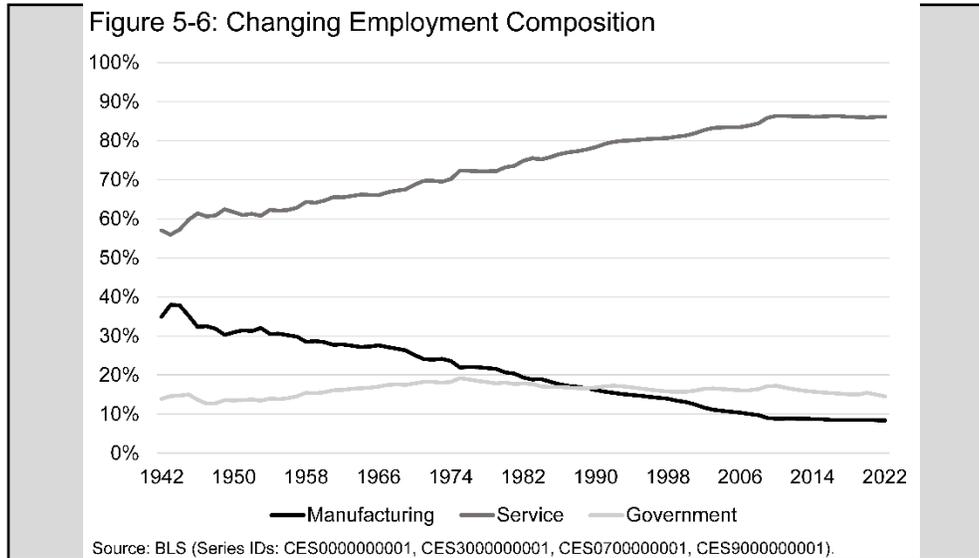
Reforms to Help Reconnect Inactive Prime-Age Men

Tax Regulations Inhibit Human Capital Investments

Higher education and trade-specific training are well-documented means for workers to increase their future earnings. In essence, the advanced education improves a worker's productivity (also known as their "human capital"), which then enables access to jobs with higher compensation. This is good for the worker, good for their employer, good for the customers thereby served, and good for the entire economy.

However, current tax regulations force most workers to make this investment themselves, before being hired at a job that would use their skills. This leads to a risky decision, wherein the worker must effectively guess which education option would be most valued by their future employers, and then often go into debt to pay for the education, with the hope that their future earnings will be sufficient to pay off the loan.

Although experience proves that this approach is feasible for many workers, it also showcases that many workers do not have sufficient information to make the right decision about which school or training center to attend, or even which career to select. Meanwhile, employers regularly complain that they face a skills gap, where the workers available for them to hire do not possess the combinations of skills that they desire.[355]

A relatively simple reform to tax law could improve this inefficient paradigm by allowing employers to claim as a business expense the cost of worker training which prepares the worker to practice a new trade.[356] Doing so would put worker-based expenses on equal footing with physical capital-based expenses.

The Federal government currently expends approximately $20 billion each year on employment and training (E&T) programs.[357] These are intended to improve workers' employability and facilitate career shifts, especially in regions where economic changes have reduced employment in previously strong industries. However, research has shown that these programs generally provide a poor return on investment.[358] A revenue-neutral reform could involve reducing spending on these existing programs and repurposing it to partially cover the cost of employer-directed training programs (via expensing) that would more directly provide workers with the specific skills needed for career success.

Maintaining Access to Independent and Flexible Jobs
The DOL (Department of Labor) has proposed a substantial change to its worker classification test which would make it meaningfully more difficult for companies to utilize independent contractors.[359] The existing test prioritizes two job characteristics (opportunity for profit or loss depending on managerial skill and the nature and degree of control a worker exercises over their activities) to serve as core factors of whether a worker qualified as an independent contractor. It identified three other factors (the

degree of permanence of the work relationship, the worker's skill and initiative, and whether the work performed was an integral part of the employer's business) that could overrule the core factors in unusual circumstances. This version of the test provides clarity for employers and workers as to the appropriateness of their professional relationship. This clarity then facilitates economic activity and investment for future growth, increasing the number of independent work opportunities available.

The DOL's proposed change to the worker classification test would (among other things) weight the five factors equally and introduce a sixth (whether the worker is economically dependent on the employer). In subsequent legal suits, this framework would allow the presiding judge to declare any factor, or combination of factors, to be the most important, substantially increasing the risk that companies face for business models that utilize independent contractors. Furthermore, the proposed rule change allows additional, unspecified factors to be considered in post hoc worker classification determinations, elevating the risk of using such business models to unseen heights. The proposed DOL rule stifles the ability for businesses to employ a flexible workforce which in turn impedes their ability to expand.

This rule change is relevant to the labor force participation of prime-age men because gig-style and other temporary independent contracting jobs are often the last rung on the economic ladder, both for those on their way up and those on their way down. The ubiquitousness and flexibility of these jobs, especially the self-determined scheduling that many provide, is exactly what those workers need to accommodate whatever life's struggles they are experiencing. The DOL's proposed rule would restrict one of the important ways that prime-age men who are teetering on the brink of exit can maintain their connection to employment, as well as the easiest avenue through which non-participants can rejoin the

workforce. DOL should reevaluate their proposed rule to provide greater clarity for the worker classification test and to explicitly model the effects it would have on inactive prime-age men in their cost-benefit analysis.

REFERENCES

Ali, Ashiq, Sandy Klasa, and Eric Yeung. "The Limitations of Industry Concentration Measures Constructed with Compustat Data: Implications for Finance Research." *Review of Financial Studies* 22, no. 10 (October 2009): 3829–71. https://doi.org/10.1093/rfs/hhn103.

Alves, Sergio Afonso Lago. "Lack of divine coincidence in New Keynesian models." *Journal of Monetary Economics* 67, no. 1 (October 2014): 33–46. https://doi.org/10.1016/j.jmoneco.2014.07.002

American Diabetes Association (ADA). "The Economic Costs of Diabetes in the U.S. in 2017." *Diabetes Care* 41, no. 5 (May 2018): 917–28. https://doi.org/10.2337/dci18-0007.

American Lung Association. "Overall Tobacco Trends." *Tobacco Trends Brief*. Accessed July 3, 2023. https://archive.is/383pv.

Anbil, Sriya, Alyssa Anderson, and Zeynep Senyuz, "What Happened in Money Markets in September 2019?" FEDS Notes. Washington: Board of Governors of the Federal Reserve System, February 27, 2020. https://doi.org/10.17016/2380-7172.2527.

Andreyeva, Tatiana, Amanda S. Tripp, and Marlene B. Schwartz. "Dietary Quality of Americans by Supplemental Nutrition Assistance Program Participation Status a Systematic Review." *American Journal of Preventive Medicine* 49, no. 4 (October 2015): 594–604. https://doi.org/10.1016/j.amepre.2015.04.035

Aristotle. "Posterior Analytics." In *The Basic Works of Aristotle*. Edited by Richard McKeon. New York: Random House, 1941.

Armantier, Olivier, Giorgio Topa, Wilbert van der Klaauw, and Basit Zafar. "An Overview of the Survey of Consumer Expectations." FRBNY Staff Report 800. New York: Federal Reserve Bank of New York, November 2016. https://newyorkfed.org/medialibrary/media/research/staff_reports/sr800.pdf.

Arnold, Jens, and Cyrille Schwellnus. "Do Corporate Taxes Reduce Productivity and Investment at the Firm Level? Cross-Country Evidence from the Amadeus Dataset." OECD Economics Department Working Papers 641. Paris: Organization Economic Cooperation and Development, September 2008. https://doi.org/10.1787/236246774048.

Arrow, Kenneth. "Economic Welfare and the Allocation of Resources for Invention." In *The Rate and Direction of Inventive Activity: Economic and Social Factors*. Princeton: Princeton University Press, 1962: 609–26. https://jstor.org/stable/j.ctt183pshc.26.

Atlas, Scott W. "How to Reduce Prescription-Drug Prices: First, Do No Harm." *Wall Street Journal*, February 13, 2019. https://archive.ph/zeqNt.

Austin, Benjamin, Edward Glaeser, and Lawrence Summers. "Jobs for the Heartland: Place-Based Policies in 21st-Century America." Brookings Papers on Economic Activity 2018, no. 1 (Spring 2018). https://brookings.edu/wp-content/uploads/2018/03/AustinEtAl_Text.pdf.

Baker, Peter, and Clifford Krauss. "Biden Accuses Oil Companies of 'War Profiteering' and Threatens Windfall Tax." *New York Times*, October 31, 2022. https://archive.ph/CFoyj.

Ball, Lawrence, N. Gregory Mankiw, and Ricardo Reis. "Monetary Policy for Inattentive Economies." *Journal of Monetary Economics* 52, no. 4 (May 2005): 703-25. https://doi.org/10.1016/j.jmoneco.2005.03.002.

Barnichon, Regis, Luiz E. Oliveira, and Adam H. Shapiro. "Is the American Rescue Plan Taking Us Back to the 60's?" *FRBSF Economic Letter* 2021–27. San Francisco: Federal Reserve Bank of San Francisco, October 2021. https://frbsf.org/wp-content/uploads/sites/4/el2021-27.pdf.

Bartlett, Bruce. "The Joint Economic Committee in the Early 1980s: Keynesians versus Supply Siders." *Journal of Policy History* 27, no. 1 (January 2015): 184-95. https://doi.org/10.1017/S0898030614000402.

Barro, Robert J. "Are Government Bonds Net Wealth?" *Journal of Political Economy* 82, no. 6 (November/December 1974): 1095–117. https://doi.org/10.1086/260266.

Barro, Robert J., Charles J. Redlick. "Macroeconomic Effects from Government Purchases and Taxes." *Quarterly Journal of Economics* 126, no. 1 (February 2011): 51–102, https://doi.org/10.1093/qje/qjq002.

———. "On the Determination of the Public Debt." *Journal of Political Economy* 87, no. 5 (October 1979): 940–71. https://doi.org/10.1086/260807.

Barro, Robert J, and Jason Furman. "Macroeconomic Effects of the 2017 Tax Reform." *Brookings Papers on Economic Activity* 2018, no. 2 (Spring 2018). https://brookings.edu/articles/macroeconomic-effects-of-the-2017-tax-reform/.

Bernanke, Ben S. "Permanent Income, Liquidity, and Expenditure on Automobiles: Evidence from Panel Data." *Quarterly Journal of Economics* 99, no. 3 (August 1984): 587-614. https://doi.org/10.2307/1885966.

Bernstein, Jared, and Ernie Tedeschi. "Pandemic Prices: Assessing Inflation in the Months and Years Ahead." Council of Economic Advisers, April 12, 2021. https://archive.is/SGZgE.

Bianchi, Francesco, and Leonardo Melosi. "The Dire Effects of a Lack of Monetary and Fiscal Coordination," *Journal of Monetary Economics* 104 (June 2019): 1-22. https://doi.org/10.1016/j.jmoneco.2018.09.001.

Bianchi, Francesco, and Leonardo Melosi. "Inflation as a Fiscal Limit." Working Paper 2022-37. Chicago: Federal Reserve Bank of Chicago, September 2022. https://chicagofed.org/publications/working-papers/2022/2022-37.

Bianchi, Francesco, Renato Faccini, and Leonardo Melosi. "A Fiscal Theory of Persistent Inflation." NBER Working Paper 30727. Cambridge: National Bureau of Economic Research, December 2022. https://doi.org/10.3386/w30727.

Biden, Joseph R. "Remarks by President Biden on the Economy." White House, July 19, 2021. https://archive.is/oog0l.

Biener, Adam, John Cawley, and Chad Meyerhoefer. "The High and Rising Costs of Obesity to the U.S. Health Care System." *Journal of General Internal Medicine* 32, Suppl. 1 (April 2017): 6–8. https:/doi.org/10.1007/s11606-016-3968-8.

———. "The Impact of Obesity on Medical Care Costs and Labor Market Outcomes in the U.S." *Clinical Chemistry* 64, no. 1 (January 2018): 108–17. https://doi.org/10.1373/clinchem.2017.272450.

Bishop, Mason M. "Landscape Study of Federal Employment and Training Programs." American Enterprise Institute. January 2020. https://aei.org/wp-content/uploads/2020/01/Landscape-Study-of-Federal-Employment-and-Training-Programs-2.pdf.

Bisin, Alberto. review of *The Deficit Myth*, by Kelton. *Journal of Economic Literature* 58, no. 4 (December 2020): 1199–201. https://jstor.org/stable/27030507.

Blahous, Charles. "Why Federal Deficits are Skyrocketing and How to Fix Them." Policy Spotlight. Arlington: Mercatus Center at George Mason University, March 2022. https://mercatus.org/media/75511.

Blanchard, Olivier J. "Public Debt and Low Interest Rates." *American Economic Review* 109, no. 4 (April 2019): 1197–229. https://doi.org/10.1257/aer.109.4.1197.

Blanchard, Olivier J., and Ben S. Bernanke. "What Caused the U.S. Pandemic-Era Inflation?" NBER Working Paper 31417. Cambridge: National Bureau of Economic Research, June 2023. https://doi.org/10.3386/w31417.

Blanchard, Olivier J., and Jordi Galí. "Real Wage Rigidities and the New Keynesian Model." *Journal of Money, Credit, and Banking* 39, no. 1 (January 2007): 35–65. https://doi.org/10.1111/j.1538-4616.2007.00015.x.

Blanchard, Olivier J., and John Simon. "The Long and Large Decline in U.S. Output Volatility." *Brookings Papers on Economic Activity* 2001, no. 1 (July 2001): 135–64. https://doi.org/10.1353/eca.2001.0013.

Blandin, Adam, John Jones, and Fang Yang. "Marriage and Work among Prime-Age Men." Working Paper 23-02. Richmond: Federal Reserve Bank of Richmond, January 13, 2023. https://doi.org/10.21144/wp23-02.

Board of Governors of the Federal Reserve System (Board of Governors). *Financial Stability Report*. Washington: Board of Governors of the Federal Reserve System, May 2023. https://federalreserve.gov/publications/files/financial-stability-report-20230508.pdf.

———. "Statement on Longer-Run Goals and Monetary Policy Strategy." In *Monetary Policy Report*. Washington: Board of Governors of the Federal Reserve System, June 2023. https://federalreserve.gov/monetarypolicy/files/20230616_mprfullreport.pdf.

Boccia, Romina. "How a Better Budget Control Act Would Limit Spending and Control Debt." Briefing Paper 156. Washington: Cato Institute, May 2023. https://cato.org/sites/cato.org/files/2023-05/briefing-paper-156.pdf.

Boccia, Romina, and Justin Bogie. "Reform the Budget Control Act Spending Caps." Backgrounder 3262. Washington: Heritage Foundation, November 2017. https://heritage.org/budget-and-spending/report/reform-the-budget-control-act-spending-caps.

Boskin, Michael J., Ellen R. Dulberger, Robert J. Gordon, Zvi Griliches, Dale W. Jorgenson. "The CPI Commission: Findings and Recommendations." *American Economic Review: Papers and Proceedings* 87, no. 2 (May 1997): 78–83. https://jstor.org/stable/2950888.

Boushey, Heather and Helen Knudsen. "The Importance of Competition for the American Economy." Council of Economic Advisers, July 9, 2021. https://archive.is/vZC9y.

Bräuning, Falk, José L. Fillat, and Gustavo Joaquim. "Cost-Price Relationships in a Concentrated Economy." *Current Policy Perspectives* 94265. Boston:

Federal Reserve Bank of Boston, May 2022. https://bostonfed.org/-
/media/Documents/Workingpapers/PDF/2022/ cpp20220523.pdf.

Brito, Jerry. "The BRAC Model for Spending Reform." Mercatus on Policy 70,
Arlington: Mercatus Center at George Mason University, February 2010.
https://mercatus.org/research/policy-briefs/brac-model-spending-reform.

Broughel, James. "A Primer on Regulatory Impact Analysis." Policy Brief. Arlington:
Mercatus Center at George Mason University, May 2023.
https://mercatus.org/research/policy-briefs/primer-regulatory-impact-
analysis.

Buchanan, James M., and Richard E. Wagner. *Democracy in Deficit: The Political
Legacy of Lord Keynes*. Indianapolis: Liberty Fund, 2000.

Bureau of Economic Analysis (BEA). "Table 1.1.4 Price Indexes for Gross Domestic
Product" (Table 1.1.4.). National Income and Product Accounts. Accessed
July 18, 2023. https://apps.bea.gov/iTable/?reqid=19.

———. "Table 2.3.4 Price Indexes for Personal Consumption Expenditures by Major
Type of Product" (Table 2.3.4). National Income and Product Accounts.
Accessed July 18, 2023. https://apps.bea.gov/iTable/?reqid=19.

Bureau of Labor Statistics (BLS). "All employees, government, seasonally adjusted"
(CES9000000001). Accessed July 18, 2023.
https://data.bls.gov/timeseries/CES9000000001.

———. "All employees, government, seasonally adjusted" (CES9000000001).
Accessed July 18, 2023. https://data.bls.gov/timeseries/CES9000000001.

———. "All employees, manufacturing, seasonally adjusted" (CES3000000001).
Accessed July 18, 2023. https://data.bls.gov/timeseries/CES3000000001.

———. "All employees, service-providing, seasonally adjusted" (CES0700000001).
Accessed July 18, 2023. https://data.bls.gov/timeseries/CES0700000001.

———. "All employees, total nonfarm, seasonally adjusted" (CES0000000001).
Accessed July 18, 2023. https://data.bls.gov/timeseries/CES0000000001.

———. "All items in Atlanta-Sandy Springs-Roswell, GA, all urban consumers,
not seasonally adjusted" (CUURS35CSA0,CUUSS35CSA0). Accessed July
18, 2023. https://data.bls.gov/timeseries/CUURS35CSA0,CUUSS35CSA0.

———. "All items in Miami-Fort Lauderdale-West Palm Beach, FL, all urban
consumers, not seasonally adjusted" (CUURS35BSA0,CUUSS35BSA0).
Accessed July 18, 2023.
https://data.bls.gov/timeseries/CUURS35BSA0,CUUSS35BSA0.

———. "All items in Phoenix-Mesa-Scottsdale, AZ, all urban consumers, not seasonally adjusted" (CUURS48ASA0,CUUSS48ASA0). Accessed July 18, 2023. https://data.bls.gov/timeseries/CUURS48ASA0,CUUSS48ASA0.

———. "All items in Tampa-St. Petersburg-Clearwater, FL, all urban consumers, not seasonally adjusted" (CUURS35DSA0,CUUSS35DSA0). Accessed July 18, 2023. https://data.bls.gov/timeseries/CUURS35DSA0,CUUSS35DSA0.

———. "All items in U.S. city average, all urban consumers, seasonally adjusted." (CUSR0000SA0). Accessed July 3, 2023. https://data.bls.gov/timeseries/CUSR0000SA0.

———. "All items in U.S. city average, urban wage earners and clerical workers, seasonally adjusted" (CWSR0000SA0). Accessed July 3, 2023. https://data.bls.gov/timeseries/CWSR0000SA0.

———. "Average hourly earnings of all employees, total private, seasonally adjusted" (CES0500000003). Accessed July 3, 2023. https://data.bls.gov/timeseries/CES0500000003.

———. "Average hourly earnings of production and nonsupervisory employees, total private, seasonally adjusted" (CES0500000008). Accessed July 3, 2023. https://data.bls.gov/timeseries/CES0500000008.

———. "Current Economic Situation." May 2023.

———. "Female Labor Force Participation Rate, seasonally adjusted" (LNS11300002). Accessed July 18, 2023. https://data.bls.gov/timeseries/LNS11300002.

———. "Job Openings and Labor Turnover Survey." April 2023.

———. "Labor Force Participation Rate, seasonally adjusted" (LNS11300000). Accessed July 18, 2023. https://data.bls.gov/timeseries/LNS11300000.

———. "Male Labor Force Participation Rate, seasonally adjusted" (LNS11300001). Accessed July 18, 2023. https://data.bls.gov/timeseries/LNS11300001.

Cao, Shutao, Césaire A. Meh, José-Víctor Ríos-Rull, and Yaz Terajima. "The Welfare Cost of Inflation Revisited: The Role of Financial Innovation and Household Heterogeneity." *Journal of Monetary Economics* 118 (March 2021): 336–80. https://doi.org/10.1016/j.jmoneco.2020.11.004.

Cawley, John, et al. "Savings in Medical Expenditures Associated with Reductions in Body Mass Index Among U.S. Adults with Obesity, by Diabetes Status." *Pharmacoeconomics* 33, no. 7 (July 2015): 707–22. https://doi.org/10.1007/s40273-014-0230-2.

281

Centers for Disease Control and Prevention (CDC). "Body Mass Index: Considerations
for Practitioners." CDC Stacks, February 8, 2011.
https://stacks.cdc.gov/view/cdc/25368.

———. "Prevalence of Obesity and Severe Obesity Among Adults: United States,
2017–2018." Data Brief 360. Washington: National Center for Health
Statistics, February 2020. https://cdc.gov/nchs/data/databriefs/db360_tables-
508.pdf#page=4.

———. "Promoting Health for Older Adults." Chronic Disease Fact Sheet, September
2022.
https://cdc.gov/chronicdisease/resources/publications/factsheets/promoting-
health-for-older-adults.htm.

Clark, John M. "Toward a Concept of Workable Competition." *American Economic
Review* 30, no. 2 (June 1940): 241–56. https://jstor.org/stable/1807048.

Coase, Ronald H. "The Problem of Social Cost." *Journal of Law & Economics* 3
(October 1960): 1–44. https://jstor.org/stable/724810.

Cochrane, John H. "A Critique of the Application of Unit Root Tests." *Journal of
Economic Dynamics and Control* 15 (April 1991): 275–84.
https://doi.org/10.1016/0165-1889(91)90013-Q.

———. "A New Structure for U.S. Federal Debt," Economics Working Paper 15108.
Stanford: Hoover Institution, May 2015.
https://www.hoover.org/sites/default/files/research/docs/15108_-_cochrane_-
_a_new_structure_for_us_federal_debt_0.pdf.

———. *Fiscal Theory of the Price Level*. Princeton: Princeton University Press, 2023.

———. "Inflation in the Shadow of Debt." *National Affairs* 9 (Fall 2011).
https://archive.is/mwMs7.

———. "Michelson-Morley, Fisher, and Occam: The Radical Implications of Stable
Quiet Inflation at the Zero Lower Bound." *NBER Macroeconomics Annual*
32, (2017): 113–226. https://doi.org/10.1086/696050.

———. "Years of Magical Thinking," review of *The Deficit Myth*, by Kelton. *Wall
Street Journal*, June 5, 2020. https://archive.is/8sZXT.

Coglianese, John. "The Rise of In-and-Outs: Declining Labor Force Participation of
Prime-age Men." Job Market Paper, 2018.
https://johncoglianese.com/publication/in-and-outs/.

Congressional Budget Office (CBO). *An Update to the Budget Outlook: 2023 to 2033*.
May 2023. https://cbo.gov/publication/59096.

———. *CBO Explains the Statutory Foundations of its Budget Baseline*. May 2023. https://cbo.gov/publication/58955

———. *CBO's 2023 Long-Term Projections for Social Security.* June 2023. https://cbo.gov/publication/59184.

———. *Federal Debt: A Primer*. March 2020. https://cbo.gov/publication/56165.

———. *How the Fiscal Responsibility Act of 2023 Affects CBO's Projections of the Federal Deficit*. June 2023. https://cbo.gov/publication/59235.

———. *Options for Reducing the Deficit, 2023 to 2032*, vol. 1, *Larger Reductions.* December 2007. https://cbo.gov/publication/58164.

———. *Taxing Capital Income: Effective Marginal Tax Rates Under 2014 Law and Selected Policy Options.* December 2014. https://cbo.gov/publication/49817.

———. *The 2023 Long-Term Budget Outlook*. June 2023. https://cbo.gov/publication/59014.

———. *The Budget and Economic Outlook: 2023 to 2033*. February 2023. https://cbo.gov/publication/58848.

———. *The Demographic Outlook: 2023 to 2053*. January 2023. https://cbo.gov/publication/58612.

———. *The Distribution of Household Income, 2019*. November 2022. https://cbo.gov/publication/58353.

———. *The Macroeconomic and Budgetary Effects of Federal Investment*. June 2016. https://cbo.gov/sites/default/files/114th-congress-2015-2016/reports/51628-Federal_Investment.pdf.

Council of Economic Advisers (CEA). *Economic Report of the President*. March 2023. https://govinfo.gov/app/ details/ERP-2023/.

———. *Government Employment and Training Programs: Assessing the Evidence on Their Performance*. June 2019. https://trumpwhitehouse.archives.gov/wp-content/uploads/2019/06/Government-Employment-and-Training-Programs.pdf.

———. *Long-Term Interest Rates*: A Survey. July 2015. https://obamawhitehouse.archives.gov/sites/default/files/docs/interest_rate_report_final.pdf.

———. *Occupational Licensing: A Framework for Policymakers*. July 2015. https://obamawhitehouse.archives.gov/sites/default/files/docs/licensing_report_final_nonembargo.pdf.

———. *Reforming Biopharmaceutical Pricing at Home and Abroad*. February 2018. https://trumpwhitehouse.archives.gov/wp-content/uploads/2017/11/CEA-Rx-White-Paper-Final2.pdf.

———. *The Growth Effects of Corporate Tax Reform and Implications for Wages*. October 2017. https://trumpwhitehouse.archives.gov/sites/whitehouse.gov/files/images/Corporate%20Tax%20Reform%20and%20Growth%20Final.pdf.

———. *The Long-Term Decline in Prime-age Male Labor Force Participation*. June 2016. https://obamawhitehouse.archives.gov/sites/default/files/page/files/20160620_cea_primeage_male_lfp.pdf.

Crust, Erin E., Mary C. Daly, and Bart Hobijn. "The Illusion of Wage Growth." *FRBSF Economic Letter* 2020-26. Federal Reserve Bank of San Francisco, August 2020. https://doi.org/10.24148/wp2016-04.

Darden, Michael, Donna B. Gilleskie, and Koleman Strumpf. "Smoking and Mortality: New Evidence from a Long Panel." *International Economic Review* 59, no. 3 (August 2018): 1571–1619. https://doi.org/10.1111/iere.12314.

de Rugy, Veronique. "Inflation is Largely a Demand-Side Problem." *Shoring Up Supply: Hearing before the United States Committee on Banking, Housing, and Urban Affairs*. 117th Cong. 51, March 22, 2022. https://banking.senate.gov/imo/media/doc/De%20Rugy%20Testimony%203-22-224.pdf.

de Rugy, Veronique, and Jack Salmon. "Flattening the Debt Curve: Empirical Lessons for Fiscal Consolidation." Mercatus Center, (Arlington, VA: Mercatus Center at George Mason University, July 2020). https://mercatus.org/media/71771.

Demsetz, Harold. "Industry Structure, Market Rivalry, and Public Policy." *Journal of Law & Economics* 16, no. 1 (April 1973): 1-9. https://doi.org/10.1086/466752.

Dotsey, Michael, Shigeru Fujita, and Leena Rudanko. "Where is Everybody? The Shrinking Labor Force Participation Rate." *Economic Insights*, no 4 (Philadelphia: Federal Reserve Bank of Philadelphia, Q4 2017): 17-23. https://philadelphiafed.org/-/media/frbp/assets/economy/articles/economic-insights/2017/q4/eiq417.pdf.

Dowd, Time, Paul Landefeld, and Anna Moore. "Profit Shifting of U.S. Multinationals." *Journal of Public Economics* 148, (April 2017): 1-13. https://doi.org/10.1016/j.jpubeco.2017.02.005.

Dubina, Kevin, et al. "Projections Overview and Highlights, 2021–31." *Monthly Labor Review*, November 2022. https://bls.gov/opub/mlr/2022/article/projections-overview-and-highlights-2021-31.htm.

Dynan, Karen E., Jonathan Skinner, and Stephen P. Zeldes. "Do the Rich Save More?" *Journal of Political Economy* 112, no. 2 (April 2004): 397-444. https://doi.org/10.1086/381475.

Eberstadt, Nicholas, and Evan Abramsky. "What Do Prime-Age 'NILF' Men Do All Day? A Cautionary on Universal Basic Income." *Institute for Family Studies*, February 8, 2021. https://ifstudies.org/blog/what-do-prime-age-nilf-men-do-all-day-a-cautionary-on-universal-basic-income.

Edwards, Chris. "Farm Bill 2023 and Obesity," *Cato at Liberty*, April 6, 2023. https://cato.org/blog/farm-bill-2023-obesity.

Employment Projections Program. "Table 3.3 Civilian Labor Force Participation Rates by Age, Sex, Race, and Ethnicity, 2001, 2011, 2021, and Projected 2031." U.S. Bureau of Labor Statistics, September 8, 2022. https://bls.gov/emp/tables/civilian-labor-force-participation-rate.htm.

Enache, Christina. "Corporate Tax Rates around the World, 2022." *Tax Foundation*, December 13, 2022. https://taxfoundation.org/publications/corporate-tax-rates-around-the-world/.

Engen, Eric M., and Glenn R. Hubbard. "Federal Government Debt and Interest Rates." *NBER Macroeconomics Annual* 19 (2004): 83-138. https://nber.org/papers/w10681.

Entin, Stephen. "Labor Bears Much of the Cost of the Corporate Tax." Tax Foundation Special Report no. 238, (October 2017). https://files.taxfoundation.org/20181107145034/Tax-Foundation-SR2382.pdf.

Farren, Michael D. "Bridging the Skills Gap." September 7, 2017. https://mercatus.org/students/research/federal-testimonies/bridging-skills-gap.

Farren, Michael D., and Kelly June Stout. "Solving the Skills Gap." Unpublished Working Paper, 2023.

Farren, Michael D. and Christopher M. Russo. Conversation with Congressional Budget Office's Macroeconomic Analysis Division staff. June 29, 2023.

Farren, Michael D. Conversation on the Economic Growth Effect of the Debt-to-GDP Ratio and the Congressional Budget Office (CBO) methodology with CBO Macroeconomic Analysis Division staff. July 11, 2023.

Faust, Jon. "Near Observational Equivalence and Theoretical Size Problems with Unit Root Tests." *Econometric Theory* 12, no. 4 (October 1996): 724-31. https://doi.org/10.1017/S0266466600007003.

Federal Reserve Bank of New York (FRBNY). "Short-Term Inflation Expectations Decline Further; Households Become Slightly More Pessimistic About Credit Conditions." June 12, 2023. https://archive.is/Ab2Fq.

Federal Reserve Bank of Philadelphia (FRBP). "Second Quarter 2023 Survey of Professional Forecasters." May 12, 2023. https://archive.is/jrjtu.

Finkelstein, Eric A., Justin G. Trongdon, Joel W. Cohen, and William Dietz. "Annual Medical Spending Attributable to Obesity: Payer-And Service-Specific Estimates: Amid Calls for Health Reform, Real Cost Savings Are More Likely to be Achieved through Reducing Obesity and Related Risk Factors." *Health Affairs* 28, no. Supplement 1 (January 2009): 822–31. https://doi.org/10.1377/hlthaff.28.5.w822.

Finkelstein, Eric A., et al. "Individual and Aggregate Years-of-life-lost Associated with Overweight and Obesity." *Obesity* 18, no. 2 (September 2012). https://doi.org/10.1038/oby.2009.253.

———. "National Medical Spending Attributable to Overweight and Obesity: How Much, and Who's Paying? Further Evidence That Overweight and Obesity Are Contributing to the Nation's Health Care Bill at a Growing Rate." *Health Affairs* 22, no. 11 (January 2003): 219-26. https://doi.org/10.1377/hlthaff.W3.219.

Fischer, Stanley. "Long-Term Contracts, Rational Expectations, and the Optimal Money Supply Rule." *Journal of Political Economy* 85, no. 1 (February 1977): 191-206. https://doi.org/10.1086/260551.

Fisher, Irving. "*The Purchasing Power of Money*." New York: MacMillan, 1911.

Françoise, Drumetz and Pfister Christian. "The Meaning of MMT." Banque de France Working Paper 883 (September 2021). https://publications.banque-france.fr/en/meaning-mmt.

Freeman, James. "Another Surge of Greed in the Biden Era?" *Wall Street Journal*. October 4, 2022. https://archive.is/pFeQN.

———. "The Biden Era of Greed?" *Wall Street Journal*. November 26, 2021. https://archive.is/L4msw.

Friedman, Milton. "The Methodology of Positive Economics" In *Essays in Positive Economics*. Chicago: University of Chicago Press, 1953.

———. "The Role of Monetary Policy." *American Economic Review* 58, no. 1 (March 1968): 1–17. https://jstor.org/stable/1831652.

———. *A Theory of the Consumption Function*. Princeton: Princeton University Press, 1957.

Fryar, Cheryl D., Margaret D. Carroll, Joseph Afful. "Prevalence of Overweight, Obesity, and Severe Obesity Among Children and Adolescents Aged 2-19 Years: United States, 1963–1965 Through 2017–2018." Washington: National Center for Health Statistics, December 2020. https://archive.ph/tQ5HS.

Fuest, Celemens, Andreas Peichl, and Sebastian Siegloch. "Do Higher Corporate Taxes Reduce Wages? Micro Evidence from Germany." *American Economic Review* 108, no. 2 (February 2018): 393–418. https://doi.org/10.1257/aer.20130570.

Furman, Jason, and Lawrence H. Summers. "Who's Afraid of Budget Deficits?" *Foreign Affairs,* March/April 2019. https://foreignaffairs.com/united-states/whos-afraid-budget-deficits.

Gale, William G., and Samuel Thorpe. "Rethinking the Corporate Income Tax: The Role of Rent Sharing." Tax Policy Center. May 2022. https://taxpolicycenter.org/publications/rethinking-corporate-income-tax-role-rent-sharing.

Galí, Jordi. "Monopolistic Competition, Business Cycles, and the Composition of Aggregate Demand." *Journal of Economic Theory* 63, no. 1 (June 1994): 73–96. https://doi.org/10.1006/jeth.1994.1033.

Gamber, Edward and John Seliski. "The Effect of Government Debt on Interest Rates." CBO Working Paper 2019-01. Washington: Congressional Budget Office, March 2019. https://cbo.gov/publication/55018.

Garbade, Kenneth D. "The Emergence of 'Regular and Predictable' as a Treasury Debt Management Strategy." *FRBNY Economic Policy Review* 13, no. 1 (March 2007): 56. https://newyorkfed.org/research/epr/07v13n1/0703garb.html.

Garcia-Bernardo, Javier, Petr Janský, Gabriel Zucman. "Did the Tax Cuts and Jobs Act Reduce Profit Shifting by U.S. Multinational Companies?" NBER Working Paper 30086. Cambridge: National Bureau of Economic Research, May 2022. https://doi.org/10.3386/w30086.

Garvey, Timothy W., et al. "Two-year Effects of Semaglutide in Adults with Overweight or Obesity: The STEP 5 Trial." *Nature Medicine* 28 (2022): 2083–91. https://doi.org/10.1038/s41591-022-02026-4.

Gesley, Jenny. "Switzerland: Implementation of Article 126 of the Swiss Constitution – The "Debt Brake." Law Library of Congress 2016-013803 (June 2026). https://archive.ph/JVnFj.

Giandrea et al. "Estimating the U.S. Labor Share." Bureau of Labor Statistics, February 2017. https://doi.org/10.21916/mlr.2017.7.

Government Accountability Office (GAO). "Employment and Training Programs: Department of Labor Should Assess Efforts to Coordinate Services Across Programs." March 28, 2019. https://gao.gov/products/gao-19-200.

———. "Multiple Employment and Training Programs: Providing Information on Colocating Services and Consolidating Administrative Structures Could Promote Efficiencies." January 2011. https://archive.ph/5PsiV.

Griswold, Daniel, and Jack Salmon. "Lower Barriers to Immigrant Healthcare Workers to Help Combat the COVID-19 Pandemic." Policy Brief. Arlington: Mercatus Center at George Mason University, April 2019.

Guvenen, Faith, Raymond J. Mataloni Jr., Dlyan G. Rassier, and Kim J. Ruhl. "Offshore Profit Shifting and Aggregate Measurement: Balance of Payments, Foreign Investment, Productivity and the Labor Share." *American Economic Review* 112, no. 6 (2022): 1848–84. https://doi.org/10.1257/aer.20190285.

Hall, George J., and Thomas J. Sargent. "Three World Wars: Fiscal-monetary Consequences." *Proceedings of the National Academy of Sciences* 119, no. 18 (March 2022): e2200349119. https://doi.org/10.1073/pnas.2200349119.

Hall, Robert E., and Frederic S. Mishkin. "The Sensitivity of Consumption to Transitory Income: Estimates from Panel Data on Households." *Econometrica* 50, no. 2 (March 1982): 461–81. https://doi.org/10.2307/1912638.

Hall, Robert E. "Employment Fluctuations with Equilibrium Wage Stickiness." *American Economic Review* 95, no. 1 (March 2005): 50-65. https://doi.org/10.1257/0002828053828482.

———. "Stochastic Implications of the Life Cycle-Permanent Income Hypothesis: Theory and Evidence." *Journal of Political Economy* 86, no. 6 (December 1978): 971-87. https://doi.org/10.1086/260724.

Hansen, Neils-Jakob, Frederik Toscani, and Jing Zhou. "Euro Area Inflation after the Pandemic and Energy Shock: Import Prices, Profits and Wages." International Monetary Fund Working Paper 23, no. 131 (June 2023). https://imf.org/en/Publications/WP/Issues/2023/06/23/Euro-Area-Inflation-after-the-Pandemic-and-Energy-Shock-Import-Prices-Profits-and-Wages-534837.

Hassett, Kevin, Casey B. Mulligan, Timothy Fitzgerald, Cody Kallen. "An Analysis of Vice President Biden's Economic Agenda: The Long Run Impacts of its Regulation, Taxes, and Spending." Hoover Institution, October 2020. https://hoover.org/research/analysis-vice-president-bidens-economic-agenda-long-run-impacts.

Hayek, Friedrich A. "The Meaning of Competition." *Econ Journal Watch* 13, no. 2 (May 2016): 370. https://econjwatch.org/articles/the-meaning-of-competition.

Heckenmeyer, Josh H., and Michael Overesch. "Multinationals' Profit Response to Tax Differentials: Effect Size and Shifting Channels." *Canadian Journal of Economics* 50, no. 4, (November 2017): 965-94. https://doi.org/10.1111/caje.12283.

Helland, Eric, and Alex Tabarrok. *Why Are the Prices So Damn High?* Arlington: Mercatus Center at George Mason University, 2019.

Hendrickson, Joshua R. "Is the Quantity Theory of Money Dead? Lessons from the Pandemic." Mercatus Special Study. Arlington: Mercatus Center at George Mason University, January 2023. https://mercatus.org/media/160896.

Hicks, John R. "Mr. Keynes and the 'Classics'; A Suggested Interpretation." *Econometrica* 5 (April 1937): 147-59. https://doi.org/10.2307/1907242.

Hirschman, Albert O. "The Paternity of an Index." *American Economic Review* 54, no. 5 (September 1964). https://jstor.org/stable/1818582.

His Majesty's Treasury, "The Growth Plan 2022." UK Government Policy Paper CP 743 (September 2022). https://gov.uk/government/publications/the-growth-plan-2022-documents.

Hodge, Scott. "No Country Leans on Upper-Income Households as Much as U.S." Tax Foundation, March 21, 2011. https://archive.ph/xXx8y.

Hoffman, Philip T., David S. Jacks, Patricia A. Levin, and Peter H. Lindert. "Real Inequality in Europe since 1500." *Journal of Economic History* 62, no. 2 (June 2002): 322-55. https://jstor.org/stable/2698183.

Holston, Kathryn, Thomas Laubach, and John C. Williams. "Measuring the Natural Rate of Interest: International Trends and Determinants." *Journal of International Economics* 108, Supplemental 1 (May 2017): S39-S75. https://doi.org/10.1016/j.jinteco.2017.01.004.

Internal Revenue Service (IRS). "SOI Tax Stats - Corporation Income Tax Returns Complete Report (Publication 16)." Table 3.3. 2016-2019. https://irs.gov/statistics/soi-tax-stats-corporation-income-tax-returns-complete-report-publication-16.

———. "SOI Tax Stats - Individual Statistical Tables by Size of Adjusted Gross Income." Table 1.4. 2016, 2019. https://irs.gov/statistics/soi-tax-stats-individual-statistical-tables-by-size-of-adjusted-gross-income.

Interstate Commission of Nurse Licensure Compact Administrators. "NLC States." July 2023. https://nursecompact.com/files/NLC_Map.pdf.

Ireland, Peter N. "The Real Balance Effect." NBER Working Paper 8136. Cambridge: National Bureau of Economic Research, February 2001. https://doi.org/10.3386/w8136.

Jaffe, Sonia, Robert Minton, Casey B. Mulligan, and Kevin M. Murphy. *Chicago Price Theory*. Princeton, Princeton University Press, 2019.

Jastreboff, Ania, M., et al. "Triple-Hormone-Receptor Agonist Retatrutide for Obesity — A Phase 2 Trial." *The New England Journal of Medicine* (June 2023). https://doi.org/10.1056/NEJMoa2301972.

Jensterle, Mojca, Manfredi Rizzo, Martin Haluzik, and Andrej Janes. "Efficacy of GLP-1 RA Approved for Weight Management in Patients With or Without Diabetes: A Narrative Review." *Advances in Therapy* 39, no. 6 (May 2022): 2452-67. https://doi.org/10.1007/s12325-022-02153-x.

Jiang, Zhengyang, Hanno Lustig, Stijn Van Nieuwerburgh, and Mindy Z. Xiaolan. "What Drives Variation in the U.S. Debt/Output Ratio? The Dogs that Didn't Bark." NBER Working Paper 29351. Cambridge: National Bureau of Economic Research, May 2022. https://doi.org/10.3386/ w29351.

Johansson, Åsa et al. "Taxation and Economic Growth." OECD Economics Department Working Paper 620. Paris: Organization for Economic Cooperation and Development, July 2008. https://doi.org/10.1787/241216205486.

John Hopkins Medicine. "Overview of Obesity." https://archive.ph/IBAUy.

Joint Economic Committee (JEC). "Inactive, Disconnected, and Ailing: A Portrait of Prime-age Men Out of the Labor Force." U.S Congress Joint Economic Committee, Social Capital Project, September 2018. https://jec.senate.gov/public/_cache/files/4a929c09-9936-47eb-89e3-a77fd3fcd139/3-18-jec-report-inactive-disconnected.pdf.

Jorda, Oscar, Celeste Liu, Fernanda Nechio, and Fabian Rivera-Reyes. "Why Is U.S. Inflation Higher than in Other Countries?" *FRBSF Economic Letter* 2022-07. San Francisco: Federal Reserve Bank of San Francisco, March 2022. https://frbsf.org/wp-content/uploads/sites/4/el2022-07.pdf.

Kant, Immanuel. *The Critique of Pure Reason*. Translated by Paul Guyer and Allen W. Wood. 2nd ed. Cambridge: Cambridge University Press, 1781/1998.

Kaplan, Greg, and Sam Schulhofer-Wohl. "Inflation at the Household Level." *Journal of Monetary Economics* 91, no. 1 (November 2017): 19–38. https://doi.org/10.1016/j.jmoneco.2017.08.002.

Kedia, Jai. "Standard Econ Model Bridges the 'Unfortunate Events' and 'Original Sin' Explanations for Inflation." *Cato at Liberty*, June 7, 2023. https://archive.ph/9XZkK.

Keil, Jan. "The Trouble with Approximating Industry Concentration from Compustat." *Journal of Corporate Finance* 45, no. 1 (August 2017): 467–79. https://doi.org/10.1016/j.jcorpf in.2017.05.019.

Kelton, Stephanie. *The Deficit Myth: Modern Monetary Theory and the Birth of the People's Economy.* New York: PublicAffairs, 2020.

Keynes, John Maynard. *A Tract on Monetary Reform.* London: MacMillan, 1924.

Kitahara, Cari M. et al. "Association Between Class III Obesity (BMI of 40-59 kg/m2) and Mortality: A Pooled Analysis of 20 Prospective Studies." *PLOS Medicine* 8, no. 11 (July 2014). https://doi.org/10.1371/journal.pmed.1001673/.

Kreps, David M. *Microeconomic Foundations I: Choice and Competitive Markets.* Princeton: Princeton University Press, 2013.

———. *Microeconomic Foundations II: Imperfect Competition, Information, and Strategic Interaction*. Princeton: Princeton University Press, 2023.

Krueger, Alan B. "Where Have All the Workers Gone? An Inquiry into the Decline of the U.S. Labor Force Participation Rate." *Brookings Papers on Economic Activity* 2017, no. 2 (2017): 1–87, https://doi.org/10.1353/eca.2017.0012.

Krugman, Paul R. "It's Baaack: Japan's Slump and the Return of the Liquidity Trap." *Brookings Papers on Economic Activity* 2, no. 2 (1998): 137–205. https://doi.org/10.2307/2534694.

Lago Alves, Sergio Afonso. "Lack of Divine Coincidence in New Keynesian Models." *Journal of Monetary Economics* 67, no. 1 (October 2014): 33–46. https://doi.org/10.1016/j.jmoneco.2014.07.002.

Laubach, Thomas. "New Evidence on the Interest Rate Effects of Budget Deficits and Debt." Federal Reserve Finance and Discussion Series (May 2023). https://federalreserve.gov/econres/feds/new-evidence-on-the-interest-rate-effects-of-budget-deficits-and-debt.htm.

Laubach, Thomas and John C. Williams. "Measuring the Natural Rate of Interest." *Review of Economics and Statistics* 85, no. 4 (November 2003): 1063–70. https://jstor.org/stable/3211826.

Lee, Young et al. "Causal Association of Obesity and Dyslipidemia with Type 2 Diabetes: A Two-Sample Mendelian Randomization Study." *Genes* 13, no. 12 (December 2022): 2407. https://doi.org/10.3390/genes13122407.

Lee, Young, and Roger H. Gordon. "Tax Structure and Economic Growth." *Journal of Public Economics* 89, no. 5 (June 2005): 1027–43. https://doi.org/10.1016/j.jpubeco.2004.07.002.

Lichter, Daniel T., Joseph P. Price, and Jeffrey M. Swigert. "Mismatches in the Marriage Market," *Journal of Marriage and Family* 82, no. 2 (2020): 796–809, https://doi.org/10.1111/jomf.12603.

Lipsey, Richard G. "The Foundations of the Theory of National Income: An Analysis of Some Fundamental Errors." In *Essays in Honour of Lord Robbins*, Maurice Peston and Bernard Corry. London: Weidenfeld and Nicolson, 1972: 303–42.

Livingood Jr., William C., John P. Allegrante, and Lawrence W. Green. "Culture Change from Tobacco Accommodation to Intolerance: Time to Connect the Dots." Health Education & Behavior 43, no. 2 (April 2016): 133–8. https://doi.org/10.1177/1090198115626914.

Longstaff, Francis A. "The Flight-to-Liquidity Premium in U.S. Treasury Bond Prices." *Journal of Business Economics* 77, no. 3 (July 2004): 511–26. https://doi.org/10.1086/386528.

Lopez, Claude, Joseph Bendix, and Ken Sagynbekov. "Weighing Down America: 2020 Update a Community Approach Against Obesity." Preprint. Washington: Milken Institute, 2020. https://ssrn.com/abstract=3743879.

Lucas, Robert E. "Econometric Policy Evaluation: A Critique." *Carnegie Rochester Conference Series on Public Policy* 1 (1976): 19–46. https://doi.org/10.1016/S0167-2231(76)80003-6.

Lucas, Robert E., and Nancy L. Stokey. "Optimal Fiscal and Monetary Policy in An Economy without Capital." *Journal of Monetary Economics* 12, no. 3 (1983): 55–93. https://doi.org/10.1016/0304-3932(83)90049-1.

Lynch, Megan S., and Jane G. Gravelle. "Dynamic Scoring in the Congressional Budget Process." CRS Report R46233 (March 2023). https://crsreports.congress.gov/product/pdf/R/R46233.

Mancino, Lisa, Joanne Guthrie, Michele Ver Poege, and Biing-Hwaan Lin. "Nutritional Quality of Foods Acquired by Americans: Findings from USDA's National Household Food Acquisition and Purchase Survey." United States Department of Agriculture. February 2018. https://ers.usda.gov/webdocs/publications/87531/eib-188.pdf?v=1335.4.

Mankiw, Gregory N. "A Skeptics Guide to Modern Monetary Theory." *American Economic Review Papers and Proceedings* 110 (May 2020): 141–44. https://doi.org/10.1257/pandp.20201102.

March, Raymond J. "The FDA and COVID-19: A Political Economy Perspective." *Southern Economic Journal* 87, no. 4 (2021): 1210–28. https://doi.org/10.1002/soej.12494.

Mass, Steve. "Moral Hazard and Adverse Selection in Health Insurance." NBER Digest 4. Washington: National Bureau of Economic Research, April 2016. https://archive.ph/7O8na.

Matherson, Thornton, Alexander Klemm, Laura Power, and Thomas Brosy. "The Impact of the Tax Cuts and Jobs Act on Foreign Investment in the United States." IMF Working Paper 22/79. Washington: International Monetary Fund, 2022. https://imf.org/-/media/Files/Publications/WP/2022/English/wpiea2022079-print-pdf.ashx.

McAleer, Michael. "Simplicity: Views of Some Nobel Laureates in Economic Science." In *Simplicity, Inference and Modeling: Keeping it Sophisticatedly Simple*. Edited by Arnold Zellner, Hugo A. Keuzenkamp, and Michael McAleer. Cambridge: Cambridge University Press (2004): 292–6.

McClelland, Robert B., and Nikhita Airi. "Effective Income Tax Rates Have Fallen for The Top One Percent Since World War II." Tax Policy Center, September 15, 2021. https://archive.is/1KT8b.

Mckee, Alexis M., et al. "Obesity in the Elderly." In *Endotext*. Edited by Kenneth R. Feingold, et. al. South Dartmouth: National Library of Medicine, 2021. https://pubmed.ncbi.nlm.nih.gov/30379513/.

Mertens, Karel, and Morten O. Ravn. "The Dynamic Effects of Personal and Corporate Income Tax Changes in the United States." *American Economic Review* 103, no. 4 (June 2013):1212–47, https://doi.org/10.1257/aer.103.4.1212.

Michel, Adam N. "Biden's Math of Just Taxing the Rich Doesn't Add Up." *Cato At Liberty*, March 2023. https://archive.is/agrus.

Miller, Nathan et al. "On the Misuse of Regressions of Price on the HHI in Merger Review." *Journal of Antitrust Enforcement* 10, no. 2 (July 2022): 248–59. https://doi.org/10.10 93/jaenfo/jnac009.

Miller, Rich, and Laura Davison. "Biden's $1.9 Trillion Win on Covid Aid Hobbles Rest of Agenda." *Bloomberg.* February 28, 2022. https://archive.is/HBn4O.

Mulligan, Casey B. "The Economic Effects of Joe Biden's Tax Plans." Committee to Unleash Prosperity, October 2020. https://archive.ph/4aD3O.

———. "Economic Activity and the Value of Medical Innovation during a Pandemic." *Journal of Cost Analysis* 12, no. 3 (June 2021): 420–440, https://doi.org/10.1017%2Fbca.2021.5.

———. "How Chicago Economics Helped End a Pandemic." Unpublished Manuscript, February 2021. http://warpspeed.chicagopricetheory.com.

Mulligan, Casey. "The Economic Effects of Joe Biden's Tax Plans" Committee to Unleash Prosperity, October 2020. https://archive.ph/4aD3O.

National Bureau of Economic Research (NBER). "Determination of the April 2020 Trough in U.S. Economic Activity." July 19, 2021. https://archive.ph/IxIqv.

National Center for Education Statistics. "Digest of Education Statistics. Table 318.10 Degrees Conferred by Postsecondary Institutions, by Level of Degree and Sex of Student: Selected Years, 1869-70 through 2029-30." October 2021. https://nces.ed.gov/programs/digest/d21/tables/dt21_318.10.asp.

Negowetti, Nicole E. "The SNAP Sugar-Sweetened Beverage Debate: Restricting Purchases to Improve Health Outcomes of Low-Income Americans." *Journal of Food Law & Policy* 14, no. 1 (2018). https://scholarworks.uark.edu/jflp/vol14/iss1/11.

Neuman, Tricia, and Juliette Cubanski. "What Could New Anti-Obesity Drugs Mean for Medicare?" Kaiser Family Foundation, May 2023. https://archive.ph/lgFDN.

Nunns, James R. "How TPC Distributes the Corporate Income Tax," Tax Policy Center. September 13, 2012. https://archive.ph/prjGz.

Obstfeld, Maurice, and Kenneth Rogoff. "The Six Major Puzzles in International Macroeconomics: Is There a Common Cause?" *NBER Macroeconomics Annual* 15 (2000): 339–90. https://doi.org/10.1086/654423.

Office of Management and Budget (OMB). "Budget of the U.S. Government Fiscal Year 2024." March 2023. https://whitehouse.gov/wpcontent/uploads/2023/03/budget_fy2024.pdf.

Ogden, Cynthia L. et al. "Prevalence of Obesity Among Adults, by Household Income and Education-United States, 2011-2014." *Morbidity and Mortality Weekly Report* 66, no. 50 (December 2017): 1369-73. http://dx.doi.org/10.15585/mmwr.mm6650a1.

Organization for Economic Co-operation and Development (OECD). "Revenue Statistics - OECD countries: Comparative Tables." Chapter 3 – Table 3.15, Tax revenues of subsectors of general government as percent of total tax revenue." Accessed on July 7, 2023. https://stats.oecd.org/Index.aspx?QueryId=78524.

———. "Statutory Corporate Income Tax Rates." Accessed July 7, 2023.
https://stats.oecd.org/Index.aspx?DataSetCode=CTS_CIT.

———. "Tax Database: Table II.4. Overall Statutory Tax Rates on Dividend Income."
Accessed July 2023.
https://stats.oecd.org/index.aspx?DataSetCode=TABLE_II4#.

Pager, Tyler, and Jeff Stein. "Biden Privately Called Lawrence Summers, a Critic of
White House Agenda, to Discuss Economy." *Washington Post*. June 3, 2021.
https://archive.is/0Nwmc.

Patel, Ketan B., and Santiago I. Sordo Palacios. "UK Pension Market Stress in 2022—
Why It Happened and Implications for the U.S." *Chicago Fed Letter* 480.
Chicago: Federal Reserve Bank of Chicago, June 2023.
https://doi.org/10.21033/cfl-2023-480.

Patinkin, Don. *Money Interest, and Prices*. 2nd ed. New York: Harper and Row, 1965.

Peltzman, Sam. "Toward a More General Theory of Regulation." *Journal of Law &
Economics* 19, no. 2 (August 1976): 211-240. https://jstor.org/stable/725163.

Peterson, Steven, George Hoffer, and Edward Millner. "Are Drivers of Air-Bag-
Equipped Cars More Aggressive? A Test of the Offsetting Behavior
Hypothesis." *Journal of Law and Economics* 38, no. 2 (October 1995): 251–
64. https://doi.org/10.1086/467331.

Peter G. Peterson Foundation. "Healthcare Spending in the United States Remains
High." April 2023. https://pgpf.org/blog/2023/04/healthcare-spending-in-the-
united-states-remains-high.

Piketty, Thomas. *Capital in the Twenty-First Century*. Cambridge: Harvard University
Press, 2014. http://jstor.org/stable/j.ctt6wpqbc.

Phelps, Edmund S. "Phillips Curves, Expectations of Inflation and Optimal
Unemployment over Time." *Economica* 34, no. 135 (August 1967): 254–81.
https://doi.org/ 10.2307/2552025.

Philipson, Tomas J., and Troy Durie. "The Impact of HR 5376 on Biopharmaceutical
Innovation and Patient Health." University of Chicago Issue Brief,
November 29, 2021.
https://ecchc.economics.uchicago.edu/files/2021/08/Issue-Brief-Drug-
Pricing-in-HR-5376-11.30.pdf.

Piketty, Thomas. *Capital in the Twenty-First Century*. Cambridge Massachusetts:
Belknap Press of Harvard University Press, 2014.

Pomerleau, Kyle. "The Tax Burden on Business Investment under Joe Biden's Tax Proposals." American Enterprise Institute, September 8, 2020. https://archive.ph/GHAxh.

Preston, Samuel H. et al. "The Role of Obesity in Exceptionally Slow U.S. Mortality Improvement." *Proceedings of the National Academy of Sciences of the United States of America* 30, no. 155 (January 2018): 957–61. https://doi.org/10.1073/pnas.1716802115.

Prospective Studies Collaboration. "Body-Mass Index and Cause-Specific Mortality in 900,000 Adults: Collaborative Analyses of 57 Prospective Studies." *Lancet* 373, no. 9669 (March 2009): 1083–96. https://doi.org/10.1016/S0140-6736(09)60318-4.

Purnell, Jonathan Q. "Definitions, Classification, and Epidemiology of Obesity." In *Endotext*. Edited by Kenneth R. Feingold, et. al. South Dartmouth: National Library of Medicine, 2023. https://ncbi.nlm.nih.gov/books/NBK279167.

Quetelet, Lambert Adolphe. "A Treatise on Man and the Development of His Faculties. 1842." *Obesity Research* vol. 2, no. 1 (January 1994): 72–85. https://doi.org/10.1002/j.1550-8528.1994.tb00047.x.

Rattner, Steven. "I Warned the Democrats About Inflation." *New York Times*. November 16, 2021. https://archive.is/c32xy.

Reeves, Richard V., and Ember Smith. "The Male College Crisis is Not Just in Enrollment, but Completion." Commentary. Washington: Brookings Institution, October 8, 2021. https://brookings.edu/articles/the-male-college-crisis-is-not-just-in-enrollment-but-completion.

Reinhart, Carmen M., and Kenneth S. Rogoff. "Growth in a Time of Debt." *American Economic Review* 100, no. 2 (May 1, 2010): 573–78. https://doi.org/10.1257/aer.100.2.573.

———. *This Time is Different: Eight Centuries of Financial Folly.* Princeton, Princeton University Press, 2011.

Reinhart, Carmen M., Vincent Reinhart, and Kenneth S. Rogoff. "Public Debt Overhangs: Advanced-Economy Episodes since 1800." *Journal of Economic Perspectives* 26, no. 3 (2012): 69-86. https://doi.org/10.1257/jep.26.3.69.

Renshaw, Jarrett. "Analysis: Biden's IRA Climate Bill Won't Cut Deficit as Expected." *Reuters*, June 16, 2023. https://archive.is/JBLeL.

Riedl, Brian. "How Higher Interest Rates Could Push Washington Toward a Federal Debt Crisis." Manhattan Institute Report, December

2021. https://manhattan.institute/article/how-higher-interest-rates-could-push-washington-toward-a-Federal-debt-crisis.

Rogoff, Kenneth S., Barbara Rossi, and Paul Schmelzing. "Long-Run Trends in Long-Maturity Real Rates." NBER Working Paper 30475 (October 2022): 1-16. https://doi.org/ 10.3386/w30475.

Russo, Christopher M. "Safeguarding the Federal Reserve's Independence." Testimony before the Subcommittee on National Security, International Development, and Monetary Policy of the House Committee on Financial Services, September 23, 2021. https://mercatus.org/research/Federal-testimonies/safeguarding-Federal-reserves-independence.

———. "Tailoring Liquidity Rules Did Not Cause the Failure of Silicon Valley Bank." Joint Economic Committee, May 16, 2023.

https://jec.senate.gov/public/index.cfm/republicans/2023/5/tailoring-liquidity-rules-did-not-cause-the-failure-of-silicon-valley-bank.

Salmon, Jack. "Personal Communication: Updated Table for Debt and Growth Literature Review." May 24, 2023.

———. "The Impact of Public Debt on Economic Growth." *Cato Journal* 41, no. 3 (Fall 2021). https://cato.org/cato-journal/fall-2021/impact-public-debt-economic-growth.

Sargent, Thomas J. "Six Essays in Persuasion." In *Rational Expectations and Inflation*. 3rd Edition. Princeton: Princeton University Press, 2013. https://jstor.org/stable/j.ctt2jc97n.16.

Sargent, Thomas J., and Neil Wallace. "Some Unpleasant Monetarist Arithmetic." *Federal Reserve Bank of Minneapolis Quarterly Review* (Fall 1981): 1-15. https://doi.org/10.21034/qr.531.

Sarwer, David B., and Heather M. Polonsky. "The Psychosocial Burden of Obesity." *Endocrinology and Metabolism Clinics of North America* 45, no. 3 (September 2016): 677-88. https://doi.org/10.1016/j.ecl.2016.04.016.

Sauter, Michael B. "Here's the Average Cost of College Tuition Every Year since 1971." *USA Today*, May 18, 2019. https://usatoday.com/story/money/2019/05/18/cost-of-college-the-year-you-were-born/39479153/.

Schmelzing, Paul. "Eight Centuries of Global Real Interest Rates, R-G, and the 'Suprasecular' Decline, 1311-2018." Bank of England Staff Working Paper 845, (January 2020): 1-108. https://bankofengland.co.uk/working-paper/2020/eight-centuries-of-global-real-interest-rates-r-g-and-the-suprasecular-decline-1311-2018.

Selgin, George. *The Menace of Fiscal QE.* Washington, DC: Cato Institute, 2020.

Shackleton, Robert. "Estimating and Projecting Potential Output Using CBO's Forecasting Growth Model." *Congressional Budget Office*, February 2018. https://cbo.gov/system/files/115th-congress-2017-2018/workingpaper/53558-cbosforecastinggrowthmodel-workingpaper.pdf.

Singleton, Chelsea R. et al. "Examining Disparities in Diet Quality Between SNAP Participants and Non-Participants Using Oaxaca-Blinder Decomposition Analysis." *Preventative Medicine Reports* 28, no. 19 (May 2020). https//doi.org/10.1016/j.pmedr.2020.101134.

Smets, Frank, and Rafael Wouters. "Shocks and Frictions in U.S. Business Cycles: A Bayesian DSGE Approach." *American Economic Review* 97, no. 3 (June 2007): 586-606. https://doi.org/10.1257/aer.97.3.586.

Smialek, Jeanna. "Democrats Blast Corporate Profits as Inflation Surges." *New York Times*, January 3, 2022. https://archive.ph/nfjKs.

Smith, Adam. *An Inquiry Into the Nature and Causes of the Wealth of Nations.* New York: Modern Library, 1776/1994.

Solon, Gary, Robert Barsky, and Jonathan A. Parker. "Measuring the Cyclicality of Real Wages: How Important is Composition Bias." *Quarterly Journal of Economics* 109, no. 1 (February 1994): 1–25. https://doi.org/10.2307/2118426.

Steinsson, Jón. "Optimal Monetary Policy in an Economy with Inflation Persistence." *Journal of Monetary Economics* 50, no. 7 (October 2003): 1425–56. https://doi.org/10.1016/j.jmoneco.2003.08.008.

Stierman, Bryan et al. "National Health and Nutrition Examination Survey 2017–March 2020 Prepandemic Data Files Development of Files and Prevalence Estimates for Selected Health Outcomes." *National Health Statistics Reports* 158 (June 2023). http://doi.org/10.15620/cdc:106273.

Stigler, George J. "The Theory of Economic Regulation." *Bell Journal of Economics and Management Science* 2, no. 1 (Spring 1971): 3–21. https://doi.org/10.2307/3003160.

Stock, James H., and Mark W. Watson. "Has the Business Cycle Changed and Why?" *NBER Macroeconomics Annual* 17. (2002):159-218. https://doi.org/10.1086/ma.17.3585284.

Suárez Serrato, Juan Carlos. "Unintended Consequences of Eliminating Tax Havens." NBER Working Paper 24850 (December 2019). http://doi.org/10.3386/w24850.

Suderman, Peter. "Young Men Are Playing Video Games Instead of Getting Jobs. That's OK. (For Now.)" *Reason*, July 2017. https://archive.ph/w933r.

Svensson, Lars E.O. "How Should Monetary Policy Be Conducted in an Era of Price Stability?" *In New Challenges for Monetary Policy.* 1999. https://kansascityfed.org/Jackson%20Hole/documents/3547/1999-S99sven.pdf.

Syverson, Chad. "Macroeconomics and Market Power: Context, Implications, and Open Questions." *Journal of Economic Perspectives* 33, no. 3 (Summer 2009): 23-43. https://doi.org/10.1257/jep.33.3.23.

Tankersley, Jim. "Rising Prices, Once Seen as Temporary, Threaten Biden's Agenda." *New York Times*, October 26, 2021. https://archive.is/UrJVS.

Tax Foundation. "Historical Federal Individual Income Tax Rates & Brackets, 1862-2021." August 24, 2021. https://archive.ph/yZavG.

Tax Policy Center. "Historical Shares of Federal Tax Liabilities for All Households." January 9, 2023. https://archive.ph/DqL9I.

Taylor, John B. "Aggregate Dynamics and Staggered Contracts." *Journal of Political Economy* 88, no. 1 (February 1980): 1–23. https://doi.org/10.1086/260845.

Tedeschi, Ernie. "Deficits are Raising Interest Rates. But Other Factors are Lowering Them." Bonothesauro blog, February 19, 2019. https://archive.ph/47doS.

Thornton, Daniel B. "The Rule of 69 in Perspective: A Note on the Force of Interest." *Journal of Business* 49, no. 4 (October 1976): 515–6. https://jstor.org/stable/2352382.

Trantidis, Aris. "Government Externalities." *Public Choice*, July 5, 2023. https://doi.org/10.1007/s11127-023-01068-7.

Tsai, Albert G., David F. Williamson, and Henry A. Glick. "Direct Medical Cost of Overweight and Obesity in the USA: A Quantitative Systematic Review." *Obesity Reviews* 12, no. 1 (January 2011): 50–61. https://doi.org/10.1111/j.1467-789X.2009.00708.

Ullmann, Owen. *Empathy Economics: Janet Yellen's Remarkable Rise and Her Drive to Spread Prosperity to All*. New York: PublicAffairs, 2022.

United States Census Bureau. "Annual Estimates of the Resident Population for the United States, Regions, States, District of Columbia, and Puerto Rico: April 1, 2020 to July 1, 2022." April 2020. https://www2.census.gov/programs-surveys/popest/tables/2020-2022/state/totals/NST-EST2022-POP.xlsx.

United States Department of Agriculture. "Food Security and Nutrition Assistance." USDA Economic Research Service, October 2022. https://archive.is/oVz8d.

United States Department of Labor. "Employee or Independent Contractor Classification under the Fair Labor Standards Act." Wage and Hour Division, October 13, 2022. https://regulations.gov/docket/WHD-2022-0003/document.

United States Food & Drug Administration (FDA). "FDA Approves New Drug Treatment for Chronic Weight Management, First Since 2014." June 2021. https://fda.gov/news-events/press-announcements/fda-approves-new-drug-treatment-chronic-weight-management-first-2014.

United States Office of Personnel Management (OPM). "Prevention and Treatment of Obesity." January 2023. https://opm.gov/healthcare-insurance/healthcare/carriers/#url=Letters.

United States Treasury Department. *How Much Has the U.S. Government Spent this Year?* Fiscal Data, 2023. https://fiscaldata.treasury.gov/americas-finance-guide/federal-spending/.

University of Oxford. "Moderate Obesity Takes Years Off Life Expectancy." March 2009. https://ox.ac.uk/news/2009-03-18-moderate-obesity-takes-years-life-expectancy.

Unrath, Matthew, Jessica Semega, and Melissa Kollar. "The Impact of Inflation Adjustments on CPS ASEC Income Statistics." SEHSD Working Paper 2022-10. Washington: United States Census Bureau, April 2022. https://census.gov/library/working-papers/2022/demo/SEHSD-wp2022-10.html.

van den Broek-Altenberg, Eline, Adam Atherly, and Evon Holladay. "Changes in Healthcare Spending Attributable to Obesity and Overweight: Payer- and Service-Specific Estimates." *BMC Public Health* 22, no. 962 (May 2022). https://doi.org/10.1186/s12889-022-13176-y.

Vartia, Laura. "How Do Taxes Affect Investment and Productivity? – Industry Level Analysis of OECD Countries." OECD Economics Department Working Papers 656. Paris: Organization for Economic Cooperation and Development, December 2008. https://doi.org/10.1787/230022721067.

Verbrugge, Randal J., and Saeed Zaman. "Whose Inflation Expectations Best Predict Inflation?" *Economic Commentary* 2021–19. Cleveland: Federal Reserve Bank of Cleveland, October 2021. https://doi.org/10.26509/frbc-ec-202119.

Ward, Alice Sexton et al. "Benefits of Medicare Coverage for Weight Loss Drugs," White Paper. Leonard D. Schaeffer Center for Health Policy & Economics,

University of Southern California, April 2023, https://doi.org/10.25549/4rf9-kh77.

Ward, Zachary J. et al. "Simulation of Growth Trajectories of Childhood Obesity into Adulthood." *New England Journal of Medicine* 377, no. 22 (November 2017): 2145–53. https://doi.org/10.1056/NEJMoa1703860.

———. "Projected U.S. State-Level Prevalence of Adult Obesity and Severe Obesity." (December 2019). https://doi.org/10.1056/NEJMsa1909301.

———. "Association of Body Mass Index with Health Care Expenditures in the United States by Age and Sex." *PLOS ONE* 16, no. 3 (March 2021): e0247307. https://doi.org/10.1371/journal.pone.0247307.

Watson, Garrett et al. "Details and Analysis of President Biden's Fiscal Year 2024 Budget Proposal." Tax Foundation, March 2023. https://archive.ph/xT2Wb.

Weaver, David A. *The Distributional Consequences of a "No Action" Scenario: Updated Results*, Policy Brief 2005-01. Washington: Social Security Administration, July 2005. https://ssa.gov/policy/docs/policybriefs/pb2005-01.pdf.

Weil, Philippe. "Is Money Net Wealth?" *International Economic Review* 32, no. 1 (February 1991): 37-53. https://doi.org/10.2307/2526930.

Whelan, Karl. "A Guide to the Use of Chain Aggregated NIPA Data." *Finance and Economics Discussion Series* 2000-35. Washington: Board of Governors of the Federal Reserve System, June 2000. https://federalreserve.gov/pubs/feds/2000/200035/200035pap.pdf.

Whitlock, Gary et al. "Body-mass Index and Cause-specific Mortality in 900,000 Adults: Collaborative Analyses of 57 Prospective Studies." *Lancet* 373, no. 9669 (March 2009):1083-96. https://doi.org/10.1016/S0140-6736(09)60318-4.

Wilson, Amelia. "How Much Does Ozempic Cost Without Insurance?" *Ro*, March 2023. https://ro.co/weight-loss/ozempic-cost-without-insurance/.

Winship, Scott. "Debunking Disagreement Over Cost-Of-Living Adjustment." *Forbes*, June 15, 2015. https://archive.is/2GovB.

———. "What's Behind Declining Male Labor Force Participation: Fewer Good Jobs or Fewer Men Seeking Them?" Mercatus Research, (Arlington, VA: Mercatus Center at George Mason University, December 2017).

———. "Declining Prime-Age Male Labor Force Participation: Why Demand-and Health-Based Explanations Are Inadequate." Working Paper, (Arlington, VA: Mercatus Center at George Mason University, September 2017).

Wolf, Anne M. and Graham A. Colditz. "Current Estimates of the Economic Cost of Obesity in the United States." *Obesity Research* 6, no. 2 (1998): 97–106. https://doi.org/10.1002/j.1550-8528.1998.tb00322.

Woodford, Michael. "Fiscal Requirements for Price Stability." *Journal of Money, Credit, and Banking* 33, no. 3 (August 2001): 669-728. https://doi.org/10.2307/2673890.

World Health Organization (WHO). *Physical Status: The Use and Interpretation of Anthropometry*. https://pubmed.ncbi.nlm.nih.gov/8594834/.

Xu, Jiaquan et al. "Mortality in the United States, 2021." Centers for Disease Control and Prevention. December 2022.

York, Erica, Garrett Watson, and Alex Durante. "Biden's FY 2024 Budget Would Result in More Than $4.5 Trillion in Gross Tax Increases." Tax Foundation*,* March 2023. https://archive.ph/ESbtA.

Zencare. "COVID-19: Teletherapy Across State Lines [Updated Jan 2021]." The Couch blog, March 26, 2020. https://archive.ph/ekFRa.

Zhang, Whitney. "The Real Interest Rate Decline in Long Historical Perspective." *NBER Digest* 12, December 2022. https://archive.is/ryPl7.

ENDNOTES

[1] 15 U.S.C. 21 § 1021(a).

[2] 15 U.S.C. 21 § 1021(a).

[3] 15 U.S.C. 21 § 1021(a), (e), (f).

[4] 15 U.S.C. 21 § 1021(j).

[5] 15 U.S.C. 21 § 1021(c).

[6] CBO, *Fiscal Responsibility Act of 2023*, 2, Table 1.

[7] CBO, *Projections for Social Security*, 9; CBO, *Outlook*, 18, footnote 17; SSA, *The Distributional Consequences of a "No Action" Scenario: Updated Results*, 2.

[8] See (e.g.) Bartlett, "The Joint Economic Committee in the Early 1980s," 186; Bianchi and Melosi "Inflation as a Fiscal Limit," 2.

[9] See (e.g.) Blanchard and Simon, "The Long and Large Decline in Output Volatility"; Stock and Watson, "Has the Business Cycle Changed? Evidence and Explanations."

[10] 15 U.S.C. 21 § 1024(b)(3).

[11] 15 U.S.C. 21 § 1021(a).

[12] Freeman, "The Biden Era of Greed?"; Freeman, "Another Surge of Greed in the Biden Era?"

[13] CEA, *Report*, p.482, Table B-38.

[14] The Federal Reserve's preferred inflation gauge is the annual change in the personal consumption expenditures (PCE) price index, while the CPI-U is better known by the

public and policymakers. During the prior decades of low and stable inflation, CPI-U inflation tended to run only slightly higher than PCE inflation, although the difference widened during inflation's surge.

[15] CEA, *Report*, p.482, Table B-38. JEC calculation.

[16] BLS, CUURS48ASA0,CUUSS48ASA0; BLS, CUURS35BSA0,CUUSS35BSA0; BLS, CUURS35DSA0,CUUSS35DSA0; BLS, CUURS35CSA0,CUUSS35CSA0; JEC calculation.

[17] See (e.g.) Bernstein and Tedeschi, "Pandemic Prices."

[18] CEA, *Report*, p.482, Table B-38.

[19] See (e.g.) Boskin, et al., "The CPI Commission."

[20] Unrath, Semega, and Kollar, "The Impact of Inflation Adjustments."

[21] CEA, *Economic Report*, 482, Table B-38.

[22] Board of Governors, "Statement on Longer-Run Goals and Monetary Policy Strategy."

[23] BEA, Table 1.1.4. line 2. JEC calculation.

[24] See (e.g.) Whelan, "A Guide to the Use of Chain Aggregated NIPA Data."

[25] BEA, Table 1.1.4. line 1. JEC calculation.

[26] BLS, CUSR0000SA0; JEC calculation (total growth, Jan 2021 to May 2023).

[27] See (e.g.) Biden, "Remarks by President Biden on the Economy."

[28] If welfare costs are convex, then apply Jensen's inequality. For a statement of Jensen's inequality, see Kreps "*Microeconomic Foundations I: Choice and Competitive Markets,*" 125.

[29] CEA, *Report*, 74.

[30] Kaplan and Schulhofer-Wohl, "Inflation at the Household Level," 20.

[31] Dynan, Skinner, and Zeldes, "Do the Rich Save More?" 434.

[32] Cao et. al., "The Welfare Cost of Inflation Revisited."

[33] BLS, CES0500000003; BLS, CUSR0000SA0; JEC calculation.

[34] BLS, CES0500000003; BLS, CUSR0000SA0; JEC calculation.

[35] See (e.g.) Fischer, "Long-Term Contracts, Rational Expectations, and the Optimal Money Supply Rule."; Taylor, "Aggregate Dynamics and Staggered Contracts."; and Hall, "Employment Fluctuations with Equilibrium Wage Stickiness."

[36] See Friedman, "The Role of Monetary Policy"; and Phelps, "Phillips Curves, Expectations of Inflation and Optimal Unemployment over Time."

[37] CEA, *Report*, 74.

[38] BLS, CES0500000008; BLS, CWSR0000SA0; JEC calculation.

[39] Hoffman et. al., "Real Inequality in Europe since 1500," 322.

[40] See (e.g.) Solon, Barsky, and Parker, "Measuring the Cyclicality of Real Wages."

[41] Crust, Daly, and Hobijn, "The Illusion of Real Wage Growth."

[42] CEA, *Report*, 74.

[43] CEA, *Report,* p.475, Table B-31; p.482, Table B-38.

[44] BLS, CUSR0000SA0; BLS, CES0500000003; JEC calculation.

[45] CEA, *Report,* 66.

[46] Hansen, Toscani, and Zhou, "Euro Area Inflation after the Pandemic and Energy Shock."

[47] See the well-known equation of exchange, formalized by Fisher's *The Purchasing Power of Money*.

[48] CEA, *Report*, 66.

[49] Lipsey, "The Foundations of the Theory of National Income."

[50] Kant, *The Critique of Pure Reason*, B10.

[51] Friedman, "Methodology of Positive Economics."

[52] CEA, *Report*, 68–71.

[53] CEA, *Report*, 71–2.

[54] Aristotle, "Posterior Analytics," 150. See also (e.g.) Kant, "*The Critique of Pure Reason*," B681.

[55] See (e.g.) Obstfeld and Rogoff, "The Six Major Puzzles in International Macroeconomics."

[56] McAleer, "Simplicity."

[57] Sargent, "Six Essays in Persuasion."

[58] BLS, CUSR0000SA0; JEC calculation (growth from Jan 2021 to May 2023).

[59] Bianchi and Melosi, "The Dire Effects of the Lack of Monetary and Fiscal Coordination," 34.

[60] The recession ended in April 2020. NBER, "Trough in U.S. Economic Activity."

[61] de Rugy, "Inflation is Largely a Demand-Side Problem," 3–4.

[62] Jorda, et al., "Why Is U.S. Inflation Higher than in Other Countries?"

[63] Bianchi, Faccini, Melosi, "A Fiscal Theory of Trend Inflation," 4.

[64] See Cochrane, *Fiscal Theory of the Price Level*, 5–8.

[65] Renshaw, "Biden's IRA Climate Bill Won't Cut Deficit."

[66] Pager and Stein, "Biden Privately Called Lawrence Summers."

[67] Miller and Davison. "Biden's Win on Covid Aid Hobbles Rest of Agenda."

[68] Ullmann, *Empathy Economics*, 368.

[69] Tankersley, "Rising Prices, Once Seen as Temporary, Threaten Biden's Agenda"; Rattner, "I Warned the Democrats About Inflation."

[70] Hendrickson, "Is the Quantity Theory of Money Dead?"

[71] See (e.g.) Cochrane, "Michelson-Morley, Fisher, and Occam."

[72] Hicks, "Mr. Keynes and the 'Classics'"; Krugman, "It's Baaack"; Svensson, "How Should Monetary Policy Be Conducted in an Era of Price Stability?"

[73] Savings identity for the world as a whole: private savings less investment equals gov spending less taxes.

[74] See Barro, "Are Government Bonds Net Wealth?"; Barro and Redlick, "On the Determination of the Public Debt"; Weil, "Is Money Net Wealth?"

[75] See Patinkin's *Money Interest, and Prices*; Ireland, "The Real Balance Effect."

[76] See (e.g.) Baker and Krauss, "Biden Accuses Oil Companies of 'War Profiteering' and Threatens Windfall Tax"; Smialek, "Democrats Blast Corporate Profits as Inflation Surges."

[77] CEA, *Economic Report*, 75; Bräuning, Fillat, and Joaquim, "Cost-Price Relationships in a Concentrated Economy."

[78] As an important auxiliary assumption, these facts are common knowledge to all firms.

[79] Assume that if the lowest price firm is not unique, then consumers randomize between the lowest price firms.

[80] Cf. Arrow, "Economic Welfare and the Allocation of Resources for Invention."

[81] Clark, "Toward a Concept of Workable Competition."

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[82] Cf. Boushey and Knudsen, "The Importance of Competition."

[83] See (e.g.) Stigler, "The Theory of Economic Regulation"; Peltzman, "Toward a More General Theory of Regulation."

[84] Hayek, "The Meaning of Competition."

[85] Bräuning, Fillat, and Joaquim, "Cost-Price Relationships in a Concentrated Economy."

[86] Demsetz, "Industry Structure, Market Rivalry, and Public Policy."

[87] Syverson, "Macroeconomics and Market Power," 4.

[88] Miller, et al., "On the Misuse of Regressions of Price on the HHI."

[89] The HHI (Herfindahl-Hirschman Index) is a common measure of market concentration. See (e.g.) Hirschman, "The Paternity of an Index," 761.

[90] Ali, Klasa, and Yeung, "Limitations of Industry Concentration Measures," 3839.

[91] Keil, "Trouble with Approximating Industry Concentration from Compustat."

[92] Bräuning, José, and Joaquim, "Cost-Price Relationships in a Concentrated Economy," p.4, footnote 4.

[93] Formally, these shocks might be modeled as a stochastic elasticity of substitution among production inputs. See (e.g.) Galí, "Monopolistic Competition, Business Cycles, and the Composition of Aggregate Demand"; Steinsson, "Optimal Monetary Policy in an Economy with Inflation Persistence"; Ball, Mankiw, and Reis, "Monetary Policy for Inattentive Economies."

[94] See Blanchard and Galí, "Real Wage Rigidities and the New Keynesian Model." For a related analysis of the NK model's nonlinear equilibrium conditions, see Alves, "Lack of divine coincidence in New Keynesian models."

[95] Smets and Wouters, "Shocks and Frictions in U.S. Business Cycles"; Kedia, "Standard Econ Model Bridges the 'Unfortunate Events' and 'Original Sin' Explanations for Inflation."

[96] Lucas, "Econometric Policy Evaluation: A Critique."

[97] For discussion, see (e.g.) Barnichon, Oliveira, and Shapiro, "Is the American Rescue Plan Taking Us Back to the 60's?"

[98] Cf. Blanchard and Bernanke, "What Caused the U.S. Pandemic-Era Inflation?"

[99] Calculated using CEA, *Report,* 490, Table B-45. "Federal debt held by the public" excludes Federal debt held by government accounts (e.g., the trust funds for Social Security, Medicare, Federal civilian retirement, military retirement, and unemployment insurance). "All else being equal, an increase in government borrowing reduces the amount of money available to other borrowers, putting upward pressure on interest rates and reducing private investment." CBO, *Federal Debt: A Primer*, 1.

[100] Calculated using CEA, *Report,* 491, Table B-46.

[101] Calculated as the percentage increase in the consumer price index (CPI-U) from 2001 to 2022 (using annual compounding) using CEA, *Report,* 482, Table B-38. The measurement of inflation using economists' preferred index, the chained consumer price index (C-CPI-U) is similar (62.1 percent increase from 2001 through 2022 versus 70.1 percent using the CPI-U).

[102] CBO*, How the Fiscal Responsibility Act of 2023 Affects CBO's Projections of Federal Deb*t, 2, Table 1.

[103] Historical deficits obtained from CEA, *Report*, 490, Table B-45.

[104] Calculated using CBO, *The 2023 Long-Term Budget Outlook*, Supplemental Table 1. Multiply "Revenues Minus Total Spending" with "GDP (Billions of dollars)" and divide by -100. N.b., CBO's long-term projections are adjusted to remove the effects of "timing shifts" when the start of the fiscal year (October 1) falls on a weekend. For this reason, deficit projections obtained from Supplemental Table 1 may slightly differ from those in CBO, *An Update to Budget Outlook: 2023 to 20233*, 2, Table 1.

[105] By one estimate, the April "shutdown" reduced economic output by about 25% below its short-run potential. See Mulligan, "Economic Activity and the Value of Medical Innovation during a Pandemic," 1–21, https://doi.org/10.1017%2Fbca.2021.5.

[106] CBO, *The Budget and Economic Outlook: 2023 to 2033*, 2.

[107] CBO*, How the Fiscal Responsibility Act of 2023 Affects CBO's Projections of Federal Debt*, 3, Table 2.

[108] CBO, *An Update to the Budget Outlook: 2023 to 2033*, 8, Figure 2.

[109] CBO, *The 2023 Long-Term Budget Outlook*, 7, Table 1-1. For comparison of fiscal policy during the COVID-19 pandemic and the two world wars, see Hall and Sargent, "Three World Wars."

[110] Laubach and Williams, "Measuring the Natural Rate of Interest."; Holston, Laubach, and Williams, "Measuring the Natural Rate of Interest: International Trends and Determinants."

[111] CEA, *Long-Term Interest Rates: A Survey*. 34–39

[112] See Schmelzing, "Eight Centuries of Global Real Interest Rates."; Rogoff, Rossi, and Schmelzing, "Long-Run Trends in Long-Maturity Real Rates."; Zhang, "The Real Interest Rate Decline."

[113] C.f. Furman and Summers, "Who's Afraid of Budget Deficits?"

[114] There is a near observational equivalence between unit root processes and trend stationary processes. See (e.g.) Cochrane, "A Critique of the Application of Unit Root Tests."; Faust, "Near Observational Equivalence."

[115] Keynes, *A Tract on Monetary Reform*.

[116] Rogoff, Rossi, and Schmelzing, "Long-Run Trends in Long-Maturity Real Rates," 25–26.

[117] Riedl, "How Higher Interest Rates Could Push Washington Toward a Federal Debt Crisis," 15.

[118] Jiang, Lustig, Nieuwerburgh, and Xiaolan, "What Drives Variation in the U.S. Debt/Output Ratio?"

[119] CBO, *An Update to the Budget Outlook: 2023 to 2033*, 1.

[120] 2 U.S.C. § 907(b)(1). For additional details, see CBO, *CBO Explains the Statutory Foundations of its Budget Baseline,* 3.

[121] Buchanan and Wagner, *Democracy in Deficit.*

[122] Salmon, "The Impact of Public Debt on Economic Growth," Cato Journal 41, no. 3 (Fall 2021): 503; Salmon, "Personal Communication: Updated Table for Debt and Growth Literature Review," May 24, 2023; Reinhart and Rogoff, "Growth in a Time of Debt."; Reinhart, Reinhart, and Rogoff, "Public Debt Overhangs."

[123] Jack Salmon, "The Impact of Public Debt on Economic Growth," Cato Journal 41, no. 3 (Fall 2021): 503.

[124] Farren, Michael D. "Conversation on the Economic Growth Effect of the Debt-to-GDP Ratio and the Congressional Budget Office Methodology,"

[125] CBO, *Federal Net Interest Costs: A Primer*, 1.

[126] See (e.g.) Laubach, "New Evidence on the Interest Rate Effects of Budget Deficits and Debt."; Engen and Hubbard, "Federal Government Debt and Interest Rates."; Gamber and Seliski, "The Effect of Government Debt on Interest Rates.";

[127] Tedeschi, "Deficits are Raising Interest Rates."

[128] Smith, *Wealth of Nations,* Book II, Chapter II (continuation).

[129] Woodford, "Fiscal Requirements for Price Stability."

[130] Sargent and Wallace, "Some Unpleasant Monetarist Arithmetic," 1–15.

[131] Lucas and Stokey, "Optimal Fiscal and Monetary Policy in An Economy without Capital."

[132] Cochrane, "Inflation in the Shadow of Debt," 74.

[133] Reinhart and Rogoff, *This Time is Different: Eight Centuries of Financial Folly*.

[134] Anbil, Anderson, and Senyuz, "What Happened in Money Markets in September 2019?"

[135] See (e.g.) Russo, "Tailoring Liquidity Rules Did Not Cause the Failure of Silicon Valley Bank."

[136] His Majesty's Treasury, "The Growth Plan 2022."

[137] Patel and Sordo Palacios, "UK Pension Market Stress in 2022."

[138] Blanchard, "Public Debt and Low Interest Rates."

[139] The primary deficit excludes net outlays for interest. See CBO, *The Budget and Economic Outlook: 2023 to 2033*, 6, Table 1-1, footnote c.

[140] Proof: Apply the quotient rule, use the laws of motion $\frac{dDebt_t}{dt} = rDebt_t + p_t$ and $\frac{dGDP_t}{dt} = gGDP_t$, and simplify the expression.

[141] The value $g = 1.7\%$ is CBO's projected real GDP growth rate for 2033. The value $r = 1.2\%$ subtracts the Federal Reserve's annual inflation target (2%) from CBO's projected long-run average interest rate on U.S. debt (3.2%). See CBO, *The Budget and Economic Outlook*, 85, Table B-1; CBO, *The Budget and Economic Outlook*, 20.

[142] The doubling (or halving) time is given by log(0.5)/log(1-x) where x is the annual rate of growth (or decay). In particular, log(0.5)/log(1-0.005) is about 138.283 years. Alternatively, the doubling (or halving) time can be approximated as 70/x years. See (e.g.) Thornton, "The Rule of 69 in Perspective."

[143] See (e.g.) Friedman, *A Theory of the Consumption Function*.; Hall, "Stochastic Implications of the Life Cycle-Permanent Income Hypothesis."; Hall and Mishkin, "The Sensitivity of Consumption to Transitory Income."; Bernanke, "Permanent Income, Liquidity, and Expenditure on Automobiles."

[144] These proposals (among others) are included in Kelton, *The Deficit Myth.* For reviews, see (e.g.) Mankiw, "A Skeptics Guide to Modern Monetary Theory."; Bisin, review of *The Deficit Myth*, by Kelton.; Cochrane, "Years of Magical Thinking," review of *The Deficit Myth*, by Kelton. For an academic analysis, see Françoise and Christian, "The Meaning of MMT."

[145] Piketty, *Capital in the Twenty-First Century*.

[146] Blahous, "Why Federal Deficits are Skyrocketing and How to Fix Them," 1–2.

[147] Blahous, "Why Federal Deficits are Skyrocketing and How to Fix Them," 1–2.

[148] CBO, *CBO's 2023 Long-Term Projections for Social Security*, 9.

[149] CBO, *The Budget and Economic Outlook*, 18, footnote 17.

[150] E.g., see CBO, *Options for Reducing the Deficit, 2023 to 2032*.

[151] ADA, "The Economic Costs of Diabetes in the U.S. in 2017."

[152] Helland and Tabarrok, *Why Are the Prices So Damn High?*

[153] March, "The FDA and COVID-19: A Political Economy Perspective."

[154] Griswold and Salmon, "Lower Barriers to Immigrant Healthcare Workers to Help Combat the COVID-19 Pandemic."

[155] Mulligan, "How Chicago Economics Helped End a Pandemic."

[156] Philipson and Durie, "The Impact of HR 5376 on Biopharmaceutical Innovation."

[157] President Biden has repeatedly pledged not to raise taxes on households earning less than $400k of annual income. See (e.g.) CEA, *Report*, 4. Using IRS data, Adam Michel estimates that even confiscating every dollar over $500k earned by households and businesses would be insufficient to close the projected budget deficit. ($500k is the closest threshold available in the publicly available IRS data.) See Michel, "Biden's Math of Just Taxing the Rich Doesn't Add Up." Moreover, even if the confiscation were perfectly unanticipated, such a tax would only generate a one-time revenue windfall while depressing long-run growth.

[158] de Rugy and Salmon, "Flattening the Debt Curve: Empirical Lessons for Fiscal Consolidation."

[159] Lynch and Gravelle, "Dynamic Scoring in the Congressional Budget Process."

[160] For an explanation of regulatory cost-benefit analysis, see Broughel, "A Primer on Regulatory Impact Analysis."

[161] JEC, "Inactive, Disconnected, and Ailing."

[162] For background, see Boccia and Bogie, "Reform the Budget Control Act Spending Caps," 1–11; Boccia, "How a Better Budget Control Act Would Limit Spending and Control Debt."

[163] Brito, "Running for Cover."

[164] Gesley, "Switzerland: Implementation of Article 126 of the Swiss Constitution>"

[165] Board of Governors, *Financial Stability Report*, 9–10.

[166] See (e.g.) Longstaff, "The Flight-to-Liquidity Premium in U.S. Treasury Bond Prices."

[167] Cochrane, "A New Structure for U.S. Federal Debt."

[168] Garbade, "The Emergence of 'Regular and Predictable' as a Treasury Debt Management Strategy."

[169] Selgin, *The Menace of Fiscal QE*, 56–59.

[170] Russo, "Safeguarding the Federal Reserve's Independence."

[171] The Federal Reserve "intends […] to undertake roughly every five years a thorough public review of its monetary policy strategy, tools, and communication practices." Board of Governors, "Statement on Longer-Run Goals and Monetary Policy Strategy." The Federal Reserve's initial review was in 2019–2020, suggesting that its next review will begin in 2024.

[172] U.S. Treasury, "How Much Has the U.S. Government Spent This Year?"

[173] CBO, 10-Year Budget Projections, May 2023. Note that this is without excluding the effect of offsetting receipts.

[174] CBO, 10-Year Budget Projections, May 2023.

[175] John Hopkins Medicine, "Overview of Obesity."

[176] Whitlock et al., "Body-mass Index and Cause-specific Mortality."

[177] Sarwer and Polonsky, "The Psychosocial Burdens of Obesity."; Purnell, "Definitions, Classification, and Epidemiology of Obesity."

[178] Whitlock et al., "Body-mass Index and Cause-specific Mortality."; Kitahara et al. "Association Between Class II Obesity."

[179] CDC, "Prevalence of Obesity and Severe Obesity Among Adults."

[180] van den Broek-Altenberg and Holladay, "Changes in Healthcare Spending."

[181] Cawley et al., "Savings in Medical Expenditures."

[182] Cawley et al., "Savings in Medical Expenditures."

[183] Cawley et al., "Direct Medical Costs of Obesity in the United States and the Most Populous States."; JEC economists updated Cawley et al.'s 2011–2016 estimate of the excess medical costs attributable to obesity (separating estimates for Class I and Class II from Class II and incorporating the projected population shares of persons suffering from each condition) for inflation and the annual trend of obesity-healthcare cost increases.

[184] Cawley et al., "Savings in Medical Expenditures."

[185] Stierman et al., "National Health and Nutrition Examination Survey."

[186] NIH, "Severe Obesity May Shorten Life Expectancy Up to 14 Years."

[187] Cawley et al., "Savings in Medical Expenditures."; Kitahara et al. "Association Between Class III Obesity."

[188] Quetelet, "A Treatise on Man and the Development of His Faculties."

[189] WHO, "Physical Status."

[190] CDC, "Body Mass Index."

[191] McKee et al., "Obesity in the Elderly."

[192] McKee et al., "Obesity in the Elderly."

[193] CDC, *Promoting Health for Older Adults*.

[194] Whitlock et al., "Body-mass Index and Cause-specific Mortality."; Kitahara et. al. "Association Between Class III Obesity."

[195] Preston et al., "The Role of Obesity."

[196] Preston et al., "The Role of Obesity."

[197] CDC, "Prevalence of Obesity and Severe Obesity Among Adults."; Calculations by JEC economists.

[198] Finkelstein et al., "Individual and Aggregate Years-of-life-lost Associated with Overweight and Obesity."

[199] Kitahara et al., "Association between Class III Obesity (BMI of 40–59 kg/m2) and Mortality."

[200] Ward et al., "Projected U.S. State-Level Prevalence of Adult Obesity."

[201] American Lung Association, "Overall Tobacco Trends."

[202] Livingood Jr., Allegrante, and Green, "Culture Change from Tobacco Accommodation to Intolerance."

[203] Darden, Gilleskie, and Strumpf, "Smoking and Mortality."

[204] United States Census Bureau, "Annual Estimates of the Resident Population."

[205] Prospective Studies Collaboration, "Body-Mass Index and Cause-Specific Mortality in 900,000 Adults."

[206] Prospective Studies Collaboration, "Body-Mass Index and Cause-Specific Mortality in 900,000 Adults."

[207] Kitahara et al., "Association between Class III Obesity (BMI of 40–59 kg/m2) and Mortality."

[208] Finkelstein et al., "Individual and Aggregate Years-of-Life-Lost."

[209] Xu et al., "Mortality in the United States, 2021."

[210] CBO, *Update to the Budget Outlook*.

[211] Wolf and Colditz, "Current Estimates of the Economic Cost of Obesity in the United States."; Finkelstein et al., "National Medical Spending Attributable To Overweight And Obesity: How Much, And Who's Paying?"

[212] Finkelstein et al., "Annual Medical Spending Attributable to Obesity: Payer-And Service-Specific Estimates."

[213] Biener, Cawley, and Meyerhoefer, "The Impact of Obesity."

[214] Biener, Cawley, and Meyerhoefer, "The Impact of Obesity."

[215] Biener, Cawley, and Meyerhoefer "The High and Rising Costs of Obesity to the U.S. Health Care System"; Tsai, Williamson, and Glick, "Direct Medical Cost of Overweight and Obesity in the USA."

[216] Biener, Cawley, and Meyerhoefer, "The Impact of Obesity."

[217] Finkelstein et al., "Annual Medical Spending."

[218] The future rates of obesity (BMI>30) and severe obesity (BMI>40) is forecast for adults over the age of 19 from 2019–2034 using a linear trend based on 1999–2018 data from the National Health and Nutrition Examination Survey (NHANES). We combined this with a projection of the U.S. population ages 20 (and over) using 2014–2022 data from Series ID LNU00000024 from the Bureau of Labor Statistics. The population in 2022 is projected forward to 2034 by using the average annual growth rate from 2014–2022; The beginning of this time span matches the midpoint of the 2011–2016 data on obesity marginal costs reported by Cawley (2021). Cawley et al., "Direct Medical Costs of Obesity in the United States," 360.

[219] Stierman et al., "National Health and Nutrition Examination Survey."

[220] Stierman et al., "National Health and Nutrition Examination Survey."

[221] Stierman et al., "National Health and Nutrition Examination Survey."

[222] Stierman et al., "National Health and Nutrition Examination Survey"; Fryar, Carroll, and Afful, "Prevalence of Overweight, Obesity, and Severe Obesity."

[223] Ward et al., "Simulation of Growth Trajectories of Childhood Obesity into Adulthood."

[224] Ward et al., "Simulation of Growth Trajectories of Childhood Obesity into Adulthood"; Ward et al., "Projected U.S. State-Level Prevalence of Adult Obesity."

[225] Note: We derived the per-patient excess annual expenditure from Lopez et al.'s research ($370 billion in excess healthcare costs in 2018 compared against 95.4 million people qualifying as obese in 2018). Ward et al., "Association of Body Mass Index."; Lopez, Bendix, and Sagynbekov, "Weighing Down America."

[226] Cawley et al., "Direct Medical Costs of Obesity in the United States and the Most Populous States."

[227] John Cawley et al., "Direct Medical Costs of Obesity in the United States," 357.

[228] We average the excess annual medical costs per obese person due to Class 1 obesity ($1,882) with those for Class 2 ($3,277) because our data does not provide separate estimates of the proportion of the population suffering from Class 1 and Class 2 obesity. Cawley et al., 360.

[229] Cawley et al., "Direct Medical Costs of Obesity in the United States," 360.

[230] Finkelstein et al., "Annual Medical Spending."

[231] See Finkelstein, Fiebelkorn, and Wang, "National Medical Spending Attributable to Overweight and Obesity."

[232] CBO, 10-Year Budget Projections, May 2023.

[233] Five minutes over 260 working days totals 1,300 minutes, or almost 22 hours. 22 hours is equivalent to 1.06 percent of the 2,080 standard working hours in a year.

[234] Biener, Cawley, and Meyerhoefer, "The Impact of Obesity."

[235] Wolf and Colditz, "Economic Cost of Obesity."

[236] Peterson, Hoffer, and Millner, "Are Drivers of Air-Bag-Equipped Cars More Aggressive?"

[237] Mass, "Moral Hazard and Adverse Selection in Health Insurance."

[238] Ogden et al., "Prevalence of Obesity Among Adults, by Household Income and Education-United States, 2011–2014."

[239] Andreyeva, Tripp, and Schwartz, "Dietary Quality of Americans."

[240] Edwards, "Farm Bill 2023 and Obesity."

[241] Mancino, "Nutritional Quality of Foods Acquired by Americans."

[242] Singleton et al., "Examining Disparities in Diet Quality."

[243] United States Department of Agriculture, "Food Security and Nutrition Assistance."

[244] Trantidis, "Government Externalities."; Coase, "The Problem of Social Cost."

[245] Peter G. Peterson Foundation, "Healthcare Spending in the United States Remains High."

[246] Negowetti, "The SNAP Sugar-Sweetened Beverage Debate."

[247] Garvey et al. "Two-year Effects of Semaglutide in Adults with Overweight or Obesity."

[248] United States Food & Drug Administration, "FDA Approves New Drug Treatment for Chronic Weight Management."

[249] Jensterle, Rizzo, Haluzi, and Janes, "Efficacy of GLP-1 RA Approved for Weight Management in Patients With or Without Diabetes."

[250] Jastreboff et al., "Triple-Hormone-Receptor Agonist Retatrutide."

[251] Wilson, "How Much Does Ozempic Cost Without Insurance?"

[252] Neuman and Cubanski, "What Could New Anti-Obesity Drugs Mean for Medicare?"

[253] Ward et al., "Benefits of Medicare Coverage."

[254] OPM, "Prevention and Treatment of Obesity."

[255] CEA, "Reforming Biopharmaceutical Pricing at Home and Abroad."

[256] Atlas, "How to Reduce Prescription-Drug Prices."

[257] CEA "Reforming Biopharmaceutical Pricing at Home and Abroad," 9.

[258] Biden, "President Biden Delivers Remarks on Bidenomics." "Bidenomics. We're turning this around. We're supporting targeted investments. We're strengthening America's economic security, our national security, our energy security, and our climate security."

[259] Biden, "President Biden Delivers Remarks on Bidenomics."; CEA, "*Report*."

[260] OMB, "Budget of the U.S. Government Fiscal Year 2024."

[261] York et al., "Biden's FY 2024 Budget Would Result in."

[262] We limit our analysis to taxes, but other policies, especially those affecting the regulatory framework, would cause additional reductions in economic growth.

[263] OMB, "Budget of the U.S. Government Fiscal Year 2024," 44.

[264] CBO, "Taxing Capital Income."; Debt-Financed profits are not double taxed because the interests paid over bonds/debt are deduced at corporate level.

[265] While it is uncommon that an investor would end up paying the maximum rate on both, the example is also omitting additional factors that would also reduce the post-tax income, like State levels of CIT and Capital Gains taxes.

[266] Johansson et al., "Taxation and Economic Growth."

[267] Arnold et al., "Do Corporate Taxes Reduce Productivity and Investment?"

[268] CEA, "The Growth Effects of Corporate Tax Reform and Implications for Wages."

[269] Part of this disagreement among economists is evaluating the statutory or the effective rate, the FY2024 budget proposal, by trying to close every tax avoidance mechanism to investment, would significantly increase both rates.

[270] Lee et al., "Tax Structure and Economic Growth."

[271] Mertens and Ravn., "The Dynamic Effects of Personal and Corporate Income Tax Changes in the United States."

[272] That is, OMB estimates that raising CIT by 7 percent would increase tax revenue by $1.3 Trillion over 10 years. If long term tax revenue from this tax remains unchanged, almost half of the benefits from the expected deficit reduction would vanish.

[273] Barro and Redlick, "Macroeconomic Effects From Government Purchases and Taxes."; It is also prudent to take these results with caution, especially since they use data of decades when most economies grew at a faster pace, most countries had higher tax rates, capital was less mobile, and the system of transfer pricing and other tools of tax avoidance were less complex as they became decades later.

[274] Public investment has a lower rate of return than private investment. CBO estimates that productive Federal investment has an average annual rate of 5 percent, which is half of private investments. This is because, while there are positive spillovers on private productivity from public investments, such spending reduces the money available for private investment. Moreover, when adding the usual response by state and local governments of lowering their won investments, $1 increase in Federal investment reduces investment by the other sectors by one-third of a dollar. And this still doesn't consider the effects on interest rate and inflation from increasing the ratio of debt over GDP. CBO, "The Macroeconomic and Budgetary Effects of Federal Investment."

[275] Vartia, "How Do Taxes Affect Investment and Productivity?"

[276] Arnold et al., "Do Corporate Taxes Reduce Productivity and Investment?"

[277] Biden, "President Biden Delivers Remarks on Bidenomics."; CEA, "*Report*," 4.; OMB, "Budget of the U.S. Government Fiscal Year 2024," 2, 6, 18, 44, 45, 51.

[278] Entin, "Labor Bears Much of the Cost of the Corporate Tax."; Nunns, "How TPC Distributes the Corporate Income Tax."

[279] Gale and Thorpe, "Rethinking the Corporate Income Tax."

[280] Fuest et al., "Do Higher Corporate Taxes Reduce Wages?"

[281] Hasset et al., "An Analysis of Vice President Biden's Economic Agenda."

[282] However, if it is estimated as the cumulative change since 2021, the increase would be higher, as almost all the tax policies analyzed are either included in FY2024 or were implemented in the first two years of Biden's Administration.

[283] Mulligan, "The Economic Effects of Joe Biden's Tax Plans."

[284] Pomerleau, "The Tax Burden on Business Investment."

[285] Watson, "Details and Analysis of President Biden's Fiscal Year 2024 Budget Proposal."

[286] This includes the 25 percent billionaire minimum tax, the implementation of some of the global minimum tax rules, and drug pricing provisions that are estimated to raise about one trillion dollars over 10 years.

[287] Matheson et al., "The Impact on Foreign Investment."

[288] CEA, "Corporate Tax Reform and Wages."

[289] Garcia-Bernardo et al., "Did the Tax Cuts and Jobs Act Reduce Profit Shifting by U.S. Multinational Companies?"

[290] Note that the authors' calculations only reach to 2020. Revenue from Corporate taxes in 2022 jumped compared to previous years, exceeding the original expectations when TCJA was enacted.

[291] Heckemeyer and Overesch, "Multinationals' Profit Response to Tax Differentials."

[292] Dowd et al., "Profit Shifting of U.S. Multinationals."

[293] OMB, "Budget of the U.S. Government Fiscal Year 2024." Page 45 states that "The Budget would set the corporate tax rate at 28 percent, still well below the 35 percent rate that prevailed prior to the 2017 tax law." Both of those rates would put the United States at the top among developed countries, so the incentive to keep profits and operation abroad would be similar.

[294] Guvenen et al., "Offshore Profit Shifting and Aggregate Measurement."

[295] Suárez Serrato, "Unintended Consequences of Eliminating Tax Havens."

[296] The following model relies heavily in the one used in Jaffe et al. "Chicago Price Theory," Chapter 18.

[297] We are simplifying the changes proposed by Biden's White House imposing the same tax to all sectors of the economy. According to Barro and Furman "Macroeconomic Effects of the 2017 Tax Reform," the share of net business income going to C-corporations fell by 39 percentage points from 1980 to 2000, in part due to the economy becoming more Service intensive, which are industries dominated by Passthrough entities.

[298] Since it's neutral on the willingness of people to delay consumption and the ability of producers to make investment goods rather than consumption goods.

[299] Jaffe et al., "Chicago Price Theory," Chapter 15.

[300] Tax Foundation, "Historical Federal Individual Income Tax Rates."

[301] Tax Foundation, "Historical Federal Individual Income Tax Rates."

[302] McClelland et al., "Effective Income Tax Rates Have Fallen."

[303] OECD, "Revenue Statistics."

[304] York et al., "Biden's FY 2024 Budget Would Result in."

[305] Hodge, "No Country Leans on Upper-Income Households as Much as U.S."

[306] OECD, "Revenue Statistics 2022," Chapter 3.

[307] Giandrea et al., "Estimating the U.S. Labor Share." In this function, $\alpha = S_K$.

[308] Note that while President Biden promised not to raise taxes on those earning less than \$400,000, given that most people of all incomes either have investments in corporations (whether direct or through retirement/pension funds), they will be affected by the proposed changes in the tax code.

[309] IRS, "SOI Tax Stats."

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[310] Percentages are estimated by dividing the respective column of income tax paid by the income subject to tax, using IRS "SOI Tax Stats," Table 3.3. JEC Calculations

[311] IRS "SOI Tax Stats," Table 3.3.; Note that we aren't taking into consideration state level taxation. While including them will increase the impact of the proposed tax change as it lowers the post-tax dividends, we would have to estimate the average effective tax rate at every bracket, weighting for every state. Adding the average state corporate and income tax for top brackets would be an easy solution but it would mix marginal with average rates.

[312] IRS "SOI Tax Stats," Table 1.4.

[313] Note that the IRS tables don't have breakdowns for $400,000, so JEC economists used $500,000 as the first group seeing their taxes on dividends being raised.

[314] BLS, LNS11300061.

[315] Employment Projections Program, "Table 3.3 Civilian Labor Force Participation Rates by Age, Sex, Race, and Ethnicity, 2001, 2011, 2021, and Projected 2031.";
Dubina et al., "Projections Overview and Highlights, 2021–31."

[316] See later discussion of the economic effect of labor supply changes.

[317] JEC, "Inactive, Disconnected, and Ailing."; CEA, "The Long-Term Decline in Prime-age Male Labor Force Participation."

[318] To be officially counted as unemployed (in the Bureau of Labor Statistics primary unemployment metric, U-3), a person must satisfy 3 conditions: (1) They must be jobless, (2) They must have actively sought employment in a fashion that could lead to a job offer within the last four weeks (for example, passively perusing job advertisements does not count as an active job search), and (3) They must be currently available to start a job. This does leave out some people who report that they want a job, even if they haven't been actively searching, but only a small proportion of inactive prime-age men fit into this group.

[319] Importantly, the fact that these statistics are tabulated for the non-institutional population means that changes in the number of prime-age men participating in the military, incarcerated, or receiving long-term healthcare don't directly impact the labor force participation rate of prime-age men.

[320] JEC, "Inactive, Disconnected, and Ailing," 10.; Winship, "What's Behind Declining Male Labor Force Participation."

[321] JEC, "Inactive, Disconnected, and Ailing," 5.

[322] Winship, "What's Behind Declining Male Labor Force Participation," 20, 27.

[323] Winship, "What's Behind Declining Male Labor Force Participation," 27–30.

[324] Winship, "What's Behind Declining Male Labor Force Participation," 27, 30–32.

[325] JEC, "Inactive, Disconnected, and Ailing."; Krueger, "Where Have All the Workers Gone?"; Austin, Glaeser, and Summers, "Jobs for the Heartland."

[326] Evans, "The Nurse Licensure Compact."

[327] Evans, "The Nurse Licensure Compact," 13.

[328] Interestate Commission of Nurse Licensure Compact Administrators, "NLC States."

[329] Zencare, "COVID-19: Teletherapy Across State Lines."

[330] JEC, "Inactive, Disconnected, and Ailing."

[331] The BLS estimates that 7.2 million prime-age men were inactive in 2022 (Data Series LNU05000061). 1.8 million is 25 percent of this number. 1.8 million divided by

the average size of the U.S. workforce in 2022 (164.3 million) equates to 1.0955 percent. Note, this is equivalent to around 3 years of typical annual workforce growth.

[332] JEC, "Inactive, Disconnected, and Ailing," 8.

[333] Coglianese, "The Rise of In-and-Outs."

[334] While prior research has found that inactive prime-age men tend to be less educated than employed prime-age men, we choose to not incorporate this into our calculations of economic and other benefits, in accordance with CBO methodology. We also recognize that the entry of additional lesser-skilled workers will enable labor reshuffling that will tend to move workers from each skill group slightly higher on the income and output ladder. Shackleton, "Estimating and Projecting Potential Output Using CBO's Forecasting Growth Model."

[335] CBO projects that the capital share of income in the nonfarm/business sector will be 0.329 over the next 10 years. This implies labor share of income is approximately 0.671. CBO, "10-Year Economic Projections," February 2023.

[336] Shackleton, "Estimating and Projecting Potential Output Using CBO's Forecasting Growth Model," 5.

[337] Simulation provided by CBO staff using its Policy Growth Model, June 2023.

[338] CBO, "The 2023 Long-Term Budget Outlook."

[339] Note: Per the long-run nature of our calculations, our methodology assume that inactive prime-age men's labor force reconnection will happen uniformly over a five-year period from 2024-2028.

[340] The most recent Census Bureau estimate is that there were 124 million households in the U.S. from 2017–2021.

[341] Brad Hershbein and Bryan Stuart, *Recessions and Local Labor Market Hysteresis,* https://research.upjohn.org/up_workingpapers/325

[342] Note, this assumes that both consumption and leisure are normal goods that experience diminishing marginal returns (a common and relatively safe assumption). It is also important to note that in the real world, a worker's utility function will change according to their current circumstances, including home environment, life stage, external factors that increase the value of leisure (such as availability of friends or family), and external factors that affect the value of work opportunities.

[343] No implication is intended that mental health conditions are not legitimate reasons for disability. Prime-age men (and women) have reported increasing rates of ill mental health. Winship, "Declining Prime-Age Male Labor Force Participation," 21; Krueger, "Where Have All the Workers Gone?"

[344] Winship, "What's Behind Declining Male Labor Force Participation?"" 58.

[345] Eberstadt and Abramsky, "What Do Prime-Age 'NILF' Men Do All Day?"

[346] Lichter, Price, and Swigert, "Mismatches in the Marriage Market."

[347] Blandin, Jones, and Yang, "Marriage and Work among Prime-Age Men."

[348] As of writing, the Job Openings and Labor Turnover Survey estimated that 10.1 million job openings were available, against 6.1 million unemployed workers. BLS, "Job Openings and Labor Turnover Survey," April 2023. BLS, "Current Economic Situation," May 2023.

[349] CEA "Occupational Licensing."

[350] Reeves and Smith, "The Male College Crisis is Not Just in Enrollment."

[351] Suderman, "Young Men Are Playing Video Games Instead of Getting Jobs."

[352] National Center for Education Statistics, "Digest of Education Statistics. Table 318.10."

[353] Giffi et al., "2018 Skills Gap in Manufacturing Study."; Wellener et al., "Creating Pathways for Tomorrow's Workforce Today."

[354] CEA, "The Long-Term Decline in Prime-Age Male Labor Force Participation."

[355] Farren, "Bridging The Skills Gap."

[356] Current tax regulations limit employers' ability to claim the cost of worker training as a business expense. Tax-deductible business expenses are restricted to education or training which maintains or improves a workers' ability to perform their current role. It specifically disallows tax deductibility for training or education that meets the minimum requirements for a given role, as well as that which prepares a worker to perform a new role. The only alternative is for the employer to operate a formal education program, available to all employees, which allows them to pursue education opportunities of their own choice. Current tax regulations allow employers to claim the first $5,250 of such education costs as a business expense, but this amount has not been updated since 1986, when it was sufficient to cover the average cost of tuition, fees, and room and board at the average public university. This allowance would be approximately $13,000 today if adjusted for inflation. 26 CFR 1.162-5; Sauter, "Here's the Average Cost of College Tuition Every Year since 1971."

[357] Farren, "Solving the Skills Gap."

[358] CEA, "Government Employment and Training Programs."; GAO, "Employment and Training Programs."; GAO, "Multiple Employment and Training Programs."; Bishop, "Landscape Study of Federal Employment and Training Programs."

[359] United States Department of Labor, "Employee or Independent Contractor Classification under the Fair Labor Standards Act."