Report to Congress

The Impact of Inflation on Retirement Savings

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U.S. Department of Labor

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Introduction

The Consolidated Appropriation Act of 2023, Division T - SECURE 2.0 Act of 2022 (Secure 2.0) (H.R. 2617, Sec. 347) requires the Secretary of Labor, in consultation with the Secretary of the Treasury, to conduct a study on the impact of inflation on retirement savings and submit to Congress a report on the findings of the study. To fulfill this requirement, the Department of Labor's Employee Benefits Security Administration (EBSA), whose mission includes protecting the security of employment-sponsored retirement benefits of America's workers and their families, has authored the following report.

Inflation is a general increase in the overall price level of goods and services in an economy. Low or moderate inflation does not pose a large threat to the economy generally or retirement savings in particular. Low levels of inflation can encourage consumption and reduce the burden of debt, which drives economic growth. In addition, moderate inflation may reduce disruptions in labor and other markets by making it easier to adjust "sticky" wages and prices, permitting real values to fall while nominal wages and prices remain constant. Moreover, in the longer term wages typically track inflation, limiting its impact on workers' consumption.

However, high inflation can reduce savings and investments, as consumers need additional income to maintain consumption. High interest rates, which generally accompany periods of high inflation, discourage borrowing and investments. As a result, periods of high inflation can have a significant impact both on the country's growth and individual consumer savings.

Retirement savings may be particularly impacted by inflation. People may not be able to make the same level of contributions towards their retirement if wage growth does not keep pace with inflation and their present expenses grow (the income effect) though over the most recent business cycle, real wages are up, and up by more for low-and middle-income earners.[1] Additionally, future consumption is expected to be more expensive than current consumption, making saving for retirement more costly (the substitution effect).[2] Existing savings are impacted as well, as higher inflation erodes the real value of assets and lowers the real value of liabilities, resulting in a wealth transfer from savers to borrowers (the wealth effect).[3]

The returns on savings can also be affected, as investment vehicles are impacted differently by inflation and the rising interest rates that are intended to combat it. Stocks are claims on cash flows and generally keep pace with inflation. Real estate and commodity investment also typically track inflation, insulating borrowers from cashflows. However, inflation can cause a sharp decline in the

[1] Elise Gould and Katherine DeCourcy, *Fastest Wage Growth over the Last Four Years Among Historically Disadvantaged Groups*, EPI (March 21, 2024), https://www.epi.org/publication/swa-wages-2023/#epi-toc-1.
[2] Organisation for Economic Co-operation and Development (OECD), *Factors Contributing to Hardship in Retirement*, OECD Working Party on Private Pensions (November 2023).
[3] YiLi Chen & Jason Dunn, *The Impact of Inflation's Wealth Transfer Effect*, The Federal Reserve Bank of St. Louis (August 2022), https://www.stlouisfed.org/publications/regional-economist/2022/aug/impact-inflation-wealth-transfer-effect#.

value of nominal bonds, which are not indexed to inflation, but can comprise more of an investor's portfolio when nearing retirement.[4]

While inflation generally reduces the incentive to save because it lowers the future value of money, it also directly erodes a person's purchasing power, meaning that more money is required during inflationary periods to purchase the same bundle of goods one did in prior periods. This can be especially problematic for those on a fixed income, such as existing retirees. The impact of this can be mitigated if income and savings are linked to cost of living adjustments.[5] However, if the index used does not reflect individuals' consumption preferences, such as retirees' increased share of disposable income devoted to medical care and housing, then the offset the adjustment provides is less effective.[6] While Social Security benefits and some public pensions have cost of living adjustments, private pensions typically do not, meaning retirees who rely on those sources of income are particularly vulnerable to the impact of inflation.

Recent data from the Federal Reserve Survey on Consumer Finances shows that the median retirement account balance and participation in retirement accounts rose between 2019 and 2022. Participation in any accounts rose by around 4 percentage points, with gains across the income distribution. Conditional median account balances rose by around $11,000, even after accounting for inflation. Solid equity market returns since inflation began in 2022 as well as real income gains over this economic cycle supported balances, while the value of nominal bonds and declines in consumption detracted from the gains.[7]

In its examination of the relationship between inflation and retirement savings, this report discusses historical causes of inflation, how inflation can impact the share of income dedicated to savings, how inflation can influence savings strategies, inflation's impact on the value of accumulated savings and debts, and what the long-term impacts of inflation may be on retirement savings, particularly for different groups.

[4] OECD, *OECD Pensions Outlook 2022*, OECD Publishing (December 1, 2022), https://doi.org/10.1787/20c7f443-en.

[5] Approximately 72.5 million Americans will see a 2.5% increase in their Social Security benefits and Supplemental Security Income (SSI) payments in 2025. Over the last decade, the cost-of-living adjustment increase has averaged about 2.6%. Nate Osburn, *Social Security Announces 2.5 Percent Benefit Increase for 2025*, SSA (October 10, 2024),https://blog.ssa.gov/category/cola/.

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[6] U.S. Government Accountability Office (GAO), *Retirement Security: Alternative Price Indexes for Cost-of-Living Adjustments Presents Tradeoffs*, GAO (19-218R) (January 28, 2019), https://www.gao.gov/products/gao-19-218r.

[7] Board of Governors of the Federal Reserve Board, *Changes in U.S. Family Finances from 2019 to 2022,* https://www.federalreserve.gov/publications/october-2023-changes-in-us-family-finances-from-2019-to-2022.htm

Section I. Historical Drivers of Inflation

Since its founding, the United States has had periods of high inflation. Because U.S. currency prior to 1946 was metallic backed, inflation during the early history of the country often coincided with periods when convertibility of a dollar to either silver or gold were temporarily suspended, such as during the Civil War and World War I. Once convertibility was reinstated, prices fell to their previous levels. This resulted in volatile episodes of inflation followed by deflationary periods, meaning the economy was subject to unpredictable short-term prices, but an overall stable average price level.[8]

Following World War II and the Bretton Woods Agreement, other countries' currencies were defined in terms of dollars with gold reserves to settle any accounts, and then beginning in 1971, the U.S. ended convertibility to gold and rendered the dollar a fiat currency.[9] Without the metal-backed system, price level increases became permanent rather than transitory, meaning that prices have trended upward over time. However, the change has also made inflation less volatile, "resulting in more-efficient economic decisions, lower cost of long-term (nominal) contracts and increased stability of the financial system."[10]

The outcome has been that until recently, the United States only experienced six periods of inflation in excess of 5 percent since World War II. While there is not always consensus regarding the underlying reasons for these inflationary spells, the first three of these episodes are largely attributed to demand shocks and the lifting of price controls.

The first of these periods (July 1946 – October 1948) was an immediate response to the post-war recovery. During World War II, production of many consumer goods had been banned to devote resources to war efforts. Once the war ended, goods such as refrigerators and automobiles became available again and faced a pent-up demand. Moreover, price controls and rationing imposed during the war were estimated to have reduced price levels by as much as 30 percent. Once they were removed, prices increased at an annualized rate of nearly 13 percent until demand stabilized and a tighter monetary policy was imposed.[11]

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[8] Fernando M. Martin, *A Short History of Prices, Inflation since the Founding of the U.S*, Federal Reserve Bank of St. Louis (July 25, 2017), https://www.stlouisfed.org/publications/regional-economist/second-quarter-2017/a-short-history-of-prices-inflation-since-founding-of-us.

[9] Craig K. Elwell, *Brief History of the Gold Standard in the United States*, Congressional Research Service (June 23, 2011), https://sgp.fas.org/crs/misc/R41887.pdf.

[10] Fernando M. Martin, *A Short History of Prices, Inflations since the Founding of the U.S*, Federal Reserve Bank of St. Louis (July 25, 2017), https://www.stlouisfed.org/publications/regional-economist/second-quarter-2017/a-short-history-of-prices-inflation-since-founding-of-us.

[11] Stephen B. Reed, *One Hundred Years of Price Change: The Consumer Price Index and the American Inflation Experience*, 137 Monthly Labor Review, U.S. Bureau of Labor Statistics (April 2014), https://www.bls.gov/opub/mlr/2014/article/one-hundred-years-of-price-change-the-consumer-price-index-and-the-american-inflation-experience.htm.

Similarly, prices rose at the start of the Korean War (December 1950 – December 1951) as households anticipated wartime restrictions and rushed to purchase goods. This was exacerbated by the return of price controls and the shift from domestic to military production.

The third period (March 1969 – January 1971) was driven by federal spending to support the war in Vietnam and the Great Society programs, as well as the booming economy.[12] It was not until President Nixon instituted a freeze on wages and prices (as well as a removal of the U.S. dollar from the gold standard) that inflation temporarily abated.[13]

While there is some debate surrounding all the contributors to inflation in the later periods, they were generally driven by energy shocks. The first (April 1973 – October 1982) included the Organization of Petroleum Exporting Countries oil embargo in 1973, the Iranian Revolution in 1979, and the Iran-Iraq War in 1980. Despite imposing price controls, energy prices alone rose 19 percent between December 1972 and December 1974. Moreover, the expectation of higher prices became reality as companies raised prices due to anticipated higher costs. In an attempt to control the cycle, President Carter sought to reduce inflation through deficit reduction and deregulation, while the Federal Reserve adopted a tighter monetary policy. Overall, inflation peaked at 14.7 percent in the spring of 1980 and fell sharply in 1982, but was replaced by high unemployment rates and a recession.[14]

A short bout of inflation (April 1989 – May 1991) occurred after Iraq's invasion of Kuwait and the Gulf War. Crude oil prices soared. Following that brief spike, inflation seemed to stabilize at 2 to 3 percent per year, which was largely attributed to the Federal Reserve's focus on using monetary policy to promote price stability, which coincided with structural changes in the economy that improved its ability to absorb shocks coupled with a reduction in size and frequency of shocks during that time period.[15]

Inflation was largely stable from the mid-1990s until the mid-2000s, when gas prices in certain parts of the country doubled from the previous year at the same time the housing and stock markets fell (July – August 2008). While previous periods of energy-driven inflation were caused by supply shocks, the 2008 period was attributed to stagnant world production between 2005 and 2007; increased oil demand by India as well as in China, whose net oil imports swelled from 800,000

[12] Stephen B. Reed, *One Hundred Years of Price Change: The Consumer Price Index and the American Inflation Experience*, 137 Monthly Labor Review, U.S. Bureau of Labor Statistics (April 2014), https://www.bls.gov/opub/mlr/2014/article/one-hundred-years-of-price-change-the-consumer-price-index-and-the-american-inflation-experience.htm.
[13] Cecilia Rouse, Jeffrey Zhang & Ernie Tedeshi, *Historical Parallels to Today's Inflationary Episode*, The White House Council of Economic Advisors Blog (July 6, 2021), https://www.whitehouse.gov/cea/written-materials/2021/07/06/historical-parallels-to-todays-inflationary-episode/.
[14] Stephen B. Reed, *One Hundred Years of Price Change: The Consumer Price Index and the American Inflation Experience*, 137 Montly Labor Review, U.S. Bureau of Labor Statistics (April 2014), https://www.bls.gov/opub/mlr/2014/article/one-hundred-years-of-price-change-the-consumer-price-index-and-the-american-inflation-experience.htm.
[15] Ben Bernanke, *The Great Moderation*, Eastern Economic Association Meeting, Washington D.C. (February 20, 2004), https://www.federalreserve.gov/boarddocs/speeches/2004/20040220/default.htm.

barrels a day in 1998 to 3.7 million barrels a day in 2007;[16] and the expansion of energy derivative trading, which, coupled with low interest rates, resulted in substantial increases in oil prices.[17] The price of crude oil rose from $71.41 per barrel in July 2007 to a peak of $145.31 per barrel just one year later[18] while inflation itself rose from 2.4 percent to 5.6 percent over the same time period.[19] Prices quickly fell, however, following the beginning of the Global Financial Crisis, which reduced America's energy demand by 5.4 percent.[20] By December 2008, oil prices had fallen to a low of $30.28 per barrel[21] and inflation fallen to 0.01 percent as prices continued to fall into 2009.[22]

Following the Great Recession, the U.S. economy faced an expansion period with average annual growth rates of 2.24 percent[23] and inflation rates averaging 1.8 percent between 2010 and 2019.[24] During the pandemic, inflation rose alongside a supply shock exacerbated by Russia's invasion of Ukraine, which increased global food and energy prices., Inflation reached an annual rate of 7.0 percent by the end of 2021 and a high of 9.1 percent in June 2022. As of October 2024, headline inflation had fallen to 2.6%, roughly near its level right before the pandemic, and without the significant job loss that many forecasters predicted.

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[16] James D. Hamilton, *Causes and Consequences of the Oil Shock of 2007-08*, Brookings Papers on Economic Activity (Spring 2009), https://www.brookings.edu/wp-content/uploads/2009/03/2009a_bpea_hamilton.pdf.
[17] Louis H. Ederington, Chitru S. Fernano, Thomas K. Lee, Scott C. Linn & Anthony D. May, *Factors Influencing Oil Prices: A Survey of the Current State of Knowledge in the Context of the 2007-08 Oil Price Volatility*, (August 30, 2011), https://www.eia.gov/finance/markets/reports_presentations/factors_influencing_oil_prices.pdf.
[18] U.S. Energy Information Administration, *Spot Prices for Crude Oil and Petroleum Products*, http://www.eia.gov/dnav/pet/pet_pri_spt_s1_d.htm.
[19] U.S. Bureau of Labor Statistics, *Consumer Price Index for All Urban Consumers: All Items in U.S. City Average [CUUR0000SA0]*, https://data.bls.gov/timeseries/CUUR0000SA0.
[20] Tom Dogget, *U.S. 2008 Oil Demand to Drop Most since 1980: EIA*, Reuters (November 12, 2008), https://www.reuters.com/article/us-eia-oil-economy/u-s-2008-oil-demand-to-drop-most-since-1980-eia-idUSTRE4AB76220081112.
[21] U.S. Energy Information Administration, *Spot Prices for Crude Oil and Petroleum Products*, http://www.eia.gov/dnav/pet/pet_pri_spt_s1_d.htm.
[22] U.S. Bureau of Labor Statistics, *Consumer Price Index for All Urban Consumers: All Items in U.S. City Average [CUUR0000SA0]*, https://data.bls.gov/timeseries/CUUR0000SA0.
[23] U.S. Bureau of Economic Analysis, *Gross Domestic Product [A191RP1A027NBEA]*, Federal Reserve Bank of St. Louis (April 2023), https://fred.stlouisfed.org/series/A191RP1A027NBEA.
[24] U.S. Bureau of Labor Statistics, *Consumer Price Index Historical Table, for All Urban Consumers: All Items in U.S. City Average, 1990-2020*, https://www.bls.gov/regions/midwest/data/consumerpriceindexhistorical_us_table.pdf.

Section II. Inflation's Impact on the Decision to Save

While anticipated inflation is generally believed not to have any impact on economic behavior in the long run, unanticipated inflation causes consumers to be less certain about prospective changes in their real income. When consumers decide whether to spend or save, economists have argued that uncertainty causes consumers to err on the side of caution and increase savings because "if people act on the assumption that real income will rise and, in fact, it does not because prices outstrip money incomes, the financial consequences can be unpleasant."[25]

However, the idea that individuals save more during times of inflation may be illusory. Income includes interest payments on financial assets, which during times of high inflation, contain an inflation premium. If individuals are trying to maintain their real wealth, then that premium cannot be used to finance additional consumption. As a result, measured savings -- the difference between measured income and consumption -- increases during times of inflation, overstating real savings.[26]

Moreover, some data suggests that the relationship between inflation and savings has decreased over time. While core inflation, the change in prices excluding food and energy prices, and personal savings rates are positively related between 1977 and 2023, with a correlation coefficient of 0.34, the nature of the relationship varies significantly over the time period. From 1977 to 1989, core inflation and personal savings rates have a positive correlation coefficient of 0.39, but between 2000 and 2019, the relationship is negative with a correlation coefficient of -0.41.[27] Presumably, this is because inflation during the latter period eroded discretionary income, requiring consumers to reduce savings to smooth consumption. A recent survey appears to support this argument, reporting that 25 percent of employed adults decreased their retirement savings in 2022 due to cost-of-living increases. The impact was even more pronounced for Hispanic workers, with 40 percent reducing retirement savings.[28]

This change in the relationship between core inflation and savings rates may also have been due to the decline in interest rates -- the return on savings -- over the same period. The Federal Funds Effective Rate -- the nominal interest rate at which depository institutions trade federal funds overnight -- averaged 4.9 percent from 1977 to 2019, but only averaged 1.78 percent from 2000 to

[25] F. Thomas Juster & Paul Wachtel, *A Note on Savings and Inflation*, 3 Brookings Papers on Economic Activity 765-778 (1972), https://www.brookings.edu/wp-content/uploads/1972/12/1972c_bpea_juster_wachtel.pdf.
[26] Russel Davidson & James G. MacKinnon, *Inflation and the Savings Rate*, 15(6) *Applied Economics* 731-743 (February 1983), https://www.researchgate.net/publication/24072129_Inflation_and_the_Savings_Rate.
[27] Calculation made by U.S. Department of Labor, Employee Benefits Security Administration staff based on February 1977 through March 2023 using personal savings rate data from U.S. Bureau of Economic Analysis, *Personal Saving Rate [PSAVERT]* (May 3, 2023), https://fred.stlouisfed.org/series/PSAVERT and Federal Reserve Bank of Dallas, *Trimmed Mean PCE Inflation Rate [PCETRIM1M158SFRBDAL]* (May 3, 2023), https://fred.stlouisfed.org/series/PCETRIM1M158SFRBDAL.
[28] Paul J. Yakaboski, Annamaria Lusardi, & Andrea Hasler, *Financial Well-Being and Literacy in a High-Inflation Environment*, The 2023 TIAA Institute-GFLEC Personal Finance Index (2023), https://gflec.org/wp-content/uploads/2023/04/2023-P-Fin-Index-report-TIAA-Inst-and-GFLEC-Apr-2023.pdf.

2019.[29] High interest rates can incentivize consumers to save instead of spend because the cost of consumption (lost interest) is higher, such that they substitute saving in lieu of consumption. However, high interest rates can also convince consumers to save less because they will require less of an investment to produce the same level of savings or income. Low interest rates have the reverse effects. Macroeconomic evidence generally supports the notion that the former (substitution effect) dominates the latter (income effect). Thus, inflation, which lowers the effective or real interest rate, further reduces the incentive to save, though this may be mitigated by wealth effects.[30]

While inflation changes the incentives for savings, it also changes the value of existing savings and debt. Higher inflation erodes the real value of nominal assets (such as demand deposits) and nominal liabilities (such as fixed mortgages). As a result, unexpected high inflation can result in a redistribution of wealth from creditor households (comprised of older, wealthier individuals) to younger households with fixed mortgage debt.[31] For those nearing retirement whose lifetime savings is largely held in fixed investments, this can be particularly impactful.

[29] Board of Governors of the Federal Reserve System (US), *Federal Funds Effective Rate [DFF]*, Federal Reserve Bank of St. Louis (May 3, 2023), https://fred.stlouisfed.org/series/DFF.
[30] Mary A. Burkeand Ali Ozdagli, *Household Inflation Expectations and Consumer Spending: Evidence from Panel Data*, Working Paper #2110, Federal Reserve Bank of Dallas (August 2021), https://www.dallasfed.org/-/media/documents/research/papers/2021/wp2110.pdf.
[31] YiLi Chien & Jason Dunn, *The Impact of Inflation's Wealth Transfer Effect*, Federal Reserve Bank of St. Louis (August 25, 2022), https://www.stlouisfed.org/publications/regional-economist/2022/aug/impact-inflation-wealth-transfer-effect.

Section III. Inflation's Impact on Retirement Savings

Inflation affects retirement savings on multiple dimensions. As discussed earlier, the reduction in real income can reduce one's ability to contribute to savings as individuals attempt to smooth consumption between the present and future. Even those individuals that saved during an inflationary period can be hurt if their pre-retirement investment strategies do not account for inflation. However, increases in real incomes and investments in asset classes that account for inflation can lead to retirement account gains.

Retirement accounts are the second most commonly held type of financial asset after transaction accounts such as checking, savings and money market accounts. The Federal Reserve's Survey of Consumer Finances (SCF), which tracks retirement participation and account balances, defines participation in a retirement plan as participating in an IRA, defined contribution (DC), or defined benefit (DB) pension plan. According to the SCF, participation in retirement account overall rose 4 percentage points from 50.5 percent in 2019 to 54.3 percent in 2022, reaching its highest level since 2010. Balances also rose from 2019 to 2022 even after accounting for inflation. According to the most recent survey, the median retirement account balance rose around $11,000 (15 percent) from $75,300 to $86,900 in 2022 dollars. The average retirement account value rose by even more, increasing from $295,00 in 2019 to $334,000 in 2022, even after accounting for inflation.[32]

Inflation affects investment asset classes differently, resulting in different impacts on investor returns. Stocks are claims to cash flows and therefore typically keep pace with inflation. Indeed, equity markets have risen substantially since inflation started to pick up in the fourth quarter of 2022. The S&P 500 increased more than 50 percent since Q4 2020, substantially more than cumulative CPI inflation over the same period, contributing to real retirement account gains.[33] Roughly 58 percent of household hold stocks either in retirement accounts or through other means, up from 53 percent in 2019. These gains occurred across the income distribution, though households in the bottom half of the income distribution are less likely to hold stocks (34 percent) than the top decile of households (95 percent).[34]

Meanwhile, real estate and commodity prices are believed to track inflation to some degree with their returns, providing some protection to the loss in purchasing power. Large holdings in these assets, however, can expose investors to directional risk as they tend to not do as well in periods of low inflation.[35] Some asset classes, such as nominal fixed-rate securities (including corporate or municipal bonds, treasuries and CDs), do not protect against inflation. This is due to the value of fixed payouts eroding under inflationary pressure, as well as, in the case of most bonds, prices being inversely related to interest rates, which tend to rise in inflationary periods.

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[32] Board of Governors of the Federal Reserve Board, *Changes in U.S. Family Finances from 2019 to 2022,* https://www.federalreserve.gov/publications/october-2023-changes-in-us-family-finances-from-2019-to-2022.htm
[33] https://www.officialdata.org/us/stocks/s-p-500/2020
[34] Federal Reserve Bank of St. Louis, FRED Economic Data, https://fred.stlouisfed.org/series/SP500
[35] Xiang Fang, Yang Liu, & Nikolai Roussanov, *Getting to the Core: Inflation Risk Within and Across Asset Classes*, NBER Working Paper 30169 (June 2022), https://www.nber.org/papers/w30169.

As a result, the composition of an individual's portfolio can determine how much inflation impacted their savings. People in their retirement spend-down phase will see erosion in any fixed payment that is not indexed to inflation.

Workers generally are more likely to have a retirement savings account than non-workers. Those accounts can encourage retirement savings, as contributions can be made through payroll deduction, are tax-advantaged, and often include an employer match.[36] A 2022 survey found that current employees were over 2.5 times more likely to have a retirement account than non-workers (excluding retirees) and that the median retirement account balance for current workers was 2.4 times that of non-workers.[37]

Inflation's impact by age

A common approach to retirement savings is to maintain a different level of risk exposure over different parts of one's life cycle. This results in a portfolio containing relatively more stocks when young and more bonds as one ages.[38] Because the mix of investments varies by age, the impact of inflation's shock to retirement savings will depend on the particular mix of assets held during the inflationary period and how sensitive those assets are to that shock.

The Great Recession (2007 to 2009) and long recovery that followed had a huge impact on retirement savings. Housing prices fell by 12.8 percent during the recession,[39] while equity prices fell 50 percent between March 2007 and March 2009 and did not fully recover until four years later.[40] Research projected that retirement incomes of workers aged 25-34 in 2008 would be most affected by the recession due to greater exposure to equities, high levels of unemployment, and lower wages compounded over time.[41]

Older workers, by contrast, were less affected by the Great Recession due to their reduced exposure to equities. Still, retirement wealth held by those aged 53-58 in 2006 declined by 2.8 percentage

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[36] Internal Revenue Service, *Benefits of Setting Up a Retirement Plan,* https://www.irs.gov/retirement-plans/plan-sponsor/benefits-of-setting-up-a-retirement-plan.

[37] Board of Governors of the Federal Reserve Board, *Survey of Consumer Finances*: *Retirement Accounts by Current Work Status of Reference Person, 1989-2022*, https://www.federalreserve.gov/econres/scf/dataviz/scf/table/#series:Retirement_Accounts;demographic:occat1;population:1,2,4;units:have;range:1989,2022.

[38] Dale Kintzel, *Portfolio Theory, Life-Cycle Investing, and Retirement Income,* Social Security Administration, Policy Brief No. 2007-02 (October 2007), https://www.ssa.gov/policy/docs/policybriefs/pb2007-02.html.

[39] Alexander Hermann, *Past Recessions Might Offer Lessons on the Impact of COVID-19 on Housing Market,* Joint Center for Housing Studies of Harvard University (April 27, 2020), https://www.jchs.harvard.edu/blog/past-recessions-might-offer-lessons-on-the-impact-of-covid-19-on-housing-markets.

[40] Alicia H. Munnel & Matthew S. Rutledge, *The Effects of the Great Recession on the Retirement Security of Older Workers,* 650 The Annals of the American Academy 124-142, (November 2013), https://crr.bc.edu/wp-content/uploads/2020/04/The-Effects-of-the-Great-Recession-on-the-Retirement-Security-of-Older-Workers.pdf.

[41] Barbara A. Butrica, Richard W. Johnson, & Karen E. Smith, *Potential Impacts of the Great Recession on Future Retirement Incomes*, Working Paper No. 172, Wharton Research Council (September 2011), https://pensionresearchcouncil.wharton.upenn.edu/wp-content/uploads/2015/09/PRC-WP2011-08-Butrica-Johnson-Smith.pdf.

points by 2010.[42] To compensate for those losses, older workers delayed retirement and increased their labor-force participation rates, which allowed them to recover some of their lost income.[43]

However, under an inflationary shock, older workers who hold bonds and similar assets are the most affected and have the least time to mitigate the effect of inflationary losses before retirement. Because inflation transfers wealth from lenders to borrowers, individuals that hold bonds find the real value of these assets reduced, with their wealth redistributed to younger borrowers. Research has found that retirees suffer the most from inflation due to their shorter time horizon to modify their spending in response to losses and adjust their labor supply.[44]

Inflation's impact on defined benefit plans

Inflation generally improves the funding status of private DB pension plans, as private-sector plans tend not to index benefits and rising interest rates reduce the present value of plan liabilities. One study found the increase in interest rates and higher-than-expected investment returns resulted in an 8.2 percentage point increase in surveyed private pension plans' funding ratios, from 88.1 percent in 2020 to 96.3 percent in 2021.[45] Additionally, 15 percent of the private-sector workers that participated in DB plans in 2022 were in plans where benefit accruals were frozen, so that individual participant's accrued benefits and the aggregate liabilities for benefits would not be impacted by inflation-driven wage growth.[46] On balance, recent inflation has actually increased the relative health of private DB plans.

In the public sector, defined benefit plans use fixed rates to measure liabilities, so the rise in interest rates has no impact on funding ratios. Moreover, public plans are more likely to index benefits with 98 percent having some cost-of-living adjustment, which increases plan liabilities. However, the nature of these indexes and their relationship with inflation varies, with nearly a quarter being adjusted *ad hoc* by the retirement system board or state legislatures and 8 percent being tied to a financial metric.[47] In addition, state and local workers are less likely to participate in a hard, frozen plan, so that as wages rise with inflation, plan liabilities continue to increase as well.[48]

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[42] Alan L. Gustman, Thomas L. Steinmeier, & Nahid Tabatabai, *How Did the Recession of 2007– 2009 Affect the Wealth and Retirement of the Near Retirement Age Population in the Health and Retirement Study*, NBER Working Paper No. 17547 (October 2011), https://www.nber.org/system/files/working_papers/w17547/w17547.pdf.

[43] Drew Desilver, *More Older Americans are Working, and Working More Than They Used To*, Pew Research Center Fact Tank (June 20, 2016), https://www.pewresearch.org/fact-tank/2016/06/20/more-older-americans-are-working-and-working-more-than-they-used-to/.

[44] Mattias Doepke & Martin Schneider, *Inflation as a Redistributive Shock: Effects on Aggregates and Welfare*, NBER Working Paper 12319 (June 2006), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=912429.

[45] Zorast Wadia, Alan Perry, & Charles Clark, *2022 Corporate Pension Funding Study*, Milliman (April 2022), https://advice.milliman.com/-/media/milliman/pdfs/2022-articles/4-28-22-2022-corporate-pension-funding-study.ashx.

[46] U.S. Bureau of Labor Statistics, *National Compensation Survey: Employee Benefits in the United States, March 2022* (September 2022), https://www.bls.gov/ebs/publications/xlsx/employee-benefits-in-the-united-states-dataset.xlsx.

[47] Jean-Pierre Aubry, *Public Pensions Contend with Falling Markets and Rising Inflation*, Brief No. 22-13, Center for Retirement Research at Boston College (August 2022), https://crr.bc.edu/wp-content/uploads/2022/08/IB_22-13.pdf.

[48] U.S. Bureau of Labor Statistics, *National Compensation Survey: Employee Benefits in the United States, March 2022* (September 2022), https://www.bls.gov/ebs/publications/xlsx/employee-benefits-in-the-united-states-dataset.xlsx.

While public-sector DB plans are more affected by inflation than private-sector DB plans, it is less clear which sector's participants are more impacted. Private-sector retirees are less likely to have indexed payment streams, and the value of fixed annuities will decline with inflation. However, this may be offset by Social Security benefits, which are indexed to inflation. Public-sector retirees are more likely to have payments indexed, but as 25 percent of state and local workers are not covered by Social Security, the impact of inflation on public sector retirees income is unclear.

Inflation's impact on defined contribution plans

Because of the way most DC pension plans are structured, most risk – including inflation risk – is borne by employees. Employees decide how much to contribute (though employers may contribute as well) and often direct how their pension accounts are invested. Unlike DB plans, at retirement, there is no promised, defined benefit to the employee; rather, the employee receives the balance of their retirement account, which reflects "the contributions, investment gains or losses, and any fees charged against the account."[49]

Inflation may result in employees reducing their contributions to DC plans, or taking out loans or withdrawals from their existing retirement accounts to smooth current consumption, though the impact of the most recent inflationary period seems relatively minor. Only 2.5 percent of DC plan participants stopped contributing to their plan in 2022, slightly higher than the pre-Pandemic 2019 rate of 2.3 percent (though it is unclear how many reduced their contributions).[50] Hardship and other withdrawals from DC plans were also only slightly higher in 2022 than 2019, with only 2.0 percent of DC plan participants taking a hardship withdrawal and 4.1 percent taking any withdrawal in 2022 compared to 1.9 and 3.9 percent in 2019.[51]

DC plan participants who direct the investments in their retirement account may also attempt to "beat" inflation by changing asset allocations to increase holdings whose returns exceed inflation. This can be an expensive endeavor, as fees associated with buying and selling holdings can erode any gains one might make, and investors typically do not time these changes well. One study of mutual fund flows between 2000 and 2012 found that "chasing returns caused the average U.S. mutual fund investor to miss around 2 percent return per year" compared to a buy and hold strategy.[52]

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[49] U.S. Department of Labor, Employee Benefits Security Administration, *What You Should Know About Your Retirement Plan*, https://www.dol.gov/agencies/ebsa/about-ebsa/our-activities/resource-center/publications/what-you-should-know-about-your-retirement-plan.

[50] Sarah Hoden, Daniel Schrass, & Elena Barone Chism, *Defined Contribution Plan Participants' Activities, 2022*, ICI Research Report (March 2023), https://www.ici.org/system/files/2023-03/22-rpt-recsurveyq4.pdf.

[51] *Ibid.*

[52] YiLi Chien, *Chasing Returns Has a High Cost for Investors*, Federal Reserve Bank of St. Louis Blog (April 14, 2012), https://www.stlouisfed.org/on-the-economy/2014/april/chasing-returns-has-a-high-cost-for-investors.

Section IV. Inflation's Impact on Different Groups of Retirement Savers

While all retirement savers can be affected by inflation, certain groups will feel its effects more acutely. Those closest to retirement have less time to adjust their savings behavior and may be forced to respond simply by reducing consumption. For those already retired, the share that have had to increase essential spending since the start of the COVID-19 pandemic rose from 23 percent in 2020 to 27 percent in 2022, presumably due to rising prices, while 46 percent of retirees have had to decrease essential and/or discretionary spending. Of those reducing their spending, 87 percent indicated it was due to concerns about inflation.[53] However, many retirees receive cost of living adjustments for social security payments, which mitigate the effects of inflation on income and consumption,

While price increases are experienced by all households, low-income households spend virtually all of their income on affected items, such as goods and services. As a result, they are more exposed to inflation than high-income households. Moreover, high-income households can afford to save for retirement and invest their savings to insure against adverse events while low-income households cannot, though inflation can erode the value of those savings.[54]

Household expenditure shares vary by income with lower income households spending more on rent, food and medical care and, to a lesser degree, utilities and vehicle operations. Prices for those goods and services rose faster than the overall average in recent years.[55] In evaluating the current inflationary period, researchers compared consumption patterns by household income prior to the pandemic to measure discrepancies in inflation's impact by income level. They found that higher income households had smaller percentage increases in their total expenditures because they spent relatively more on services, which saw the smallest price increases. Lower income households spent relatively more on energy, which had large price increases.[56]

Some of the impact of inflation in the current inflationary period on lower income households has been offset by improving wages for some low-paid workers. The food and accommodation industry, typically one of the lowest-paid industries, saw the largest wage growth of any industry

[53] Bridget Bearden, *2022 Spending in Retirement Survey: Understanding the Pandemic's Impact*, EBRI Issue Brief No. 572 (October 6, 2022), https://www.ebri.org/docs/default-source/ebri-issue-brief/ebri_ib_572_spendinginret-6oct22.pdf?sfvrsn=bba5382f_6.

[54] Alicia H. Munnel & Diana Horvath, *How Much Does Inflation Vary by Income? Depends How It's Measured*, Issue Brief Number 22-16, Center for Retirement Research at Boston College (September 2022), https://crr.bc.edu/wp-content/uploads/2022/09/IB_22-16.pdf.

[55] Joshua Klick & Anya Stockburger, *Inflation Experiences for Lower and Higher Income Households,* U.S. Bureau of Labor Statistics, Spotlight on Statistics (December 2022), https://www.bls.gov/spotlight/2022/inflation-experiences-for-lower-and-higher-income-households/home.htm.

[56] Zheli He & Xiaoyue Sun, *Impact of Inflation by Household Income*, University of Pennsylvania, Wharton School of Business, Budget Model Blog (December 15, 2021), https://budgetmodel.wharton.upenn.edu/issues/2021/12/15/consumption-under-inflation-costs.

between the second quarter of 2020 and 2021 at 18.4 percent,[57] and its median hourly wage growth continued through 2022 and 2023.[58] Black workers in particular, driven by low unemployment rates and rising minimum wages[59], saw real, median weekly wages for full-time workers rise during 2022 and 2023, outpacing inflation and mitigating its impact.[60] Because lower-paid workers are more likely to derive most of their retirement income through Social Security, which is indexed to inflation, their future retirement security may have somewhat improved.

However, for current retirees with lower annual incomes, inflation has reduced their confidence in their retirement security. Black retirees, people with lower annual household incomes, and people who reported being in poor health were more likely to indicate in 2022 that their spending in retirement is higher than they can afford.[61]

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[57] Drew Desilver, *Many US Workers are Seeing Bigger Paychecks in the Pandemic Era, but Gains Aren't Spread Evenly*, Pew Research Center Fact Tank, https://www.pewresearch.org/fact-tank/2021/12/22/many-u-s-workers-are-seeing-bigger-paychecks-in-pandemic-era-but-gains-arent-spread-evenly/.

[58] Federal Reserve Bank of Atlanta, Center for Human Capital Studies, *Wage Growth Tracker*, https://www.atlantafed.org/chcs/wage-growth-tracker.

[59] Leon Leonhardt, *The Racial Wage Gap is Shrinking,* New York Times Morning Newsletter (June 19, 2023), https://www.nytimes.com/2023/06/19/briefing/juneteenth-racial-wage-gap.html.

[60] U.S. Bureau of Labor Statistics, *Weekly Earning and Hourly Earnings from the Current Population Survey, Constant (1982-84) Dollar Adjusted to CPI-U Median Usual Weekly Earnings Employed Full-Time Wage and Salary Workers, Black or African American [LEU0252884600]*, https://data.bls.gov/timeseries/LEU0252884600.

[61] Bridget Bearden, *2022 Spending in Retirement Survey: Understanding the Pandemic's Impact*, EBRI Issue Brief No. 572 (October 6, 2022), https://www.ebri.org/docs/default-source/ebri-issue-brief/ebri_ib_572_spendinginret-6oct22.pdf?sfvrsn=bba5382f_6.

Section V. Conclusion

Saving for retirement takes place over a long period of time, which makes it possible to either reduce or stop saving during high inflationary periods. Many savers, particularly those who are further from retirement, have years to adjust their savings rate to compensate for disruptions. However, retirement savings compounds over a lifetime, so small reductions in current savings can have a significant impact on an individual's future retirement security.

As of its most recent reading, inflation is at 2.6 percent, the same as its level right before the pandemic. Additionally, the rate of inflation has fallen to historical levels for key indicators, such as food and energy. The rate of inflation for other factors that particularly impact retirees, such as housing and medical expenses, remain high, though they have improved over the last year. As these comprise a larger share of low-income households' expenditures, inflation will continue to reduce the ability of those households to save for retirement. Retirees living on fixed incomes are particularly vulnerable to inflation's impact, as it erodes their purchasing power.

This report highlights the many ways inflation can influence retirement savings, including the incentive to save, the saving methods, and savings plans. It also shows how inflation's impact varies across groups. Overall, this report reiterates that while inflation can impact both the way an individual saves and the value of that savings in retirement, a fundamental tenet of retirement savings still holds true: the earlier that an individual begins saving, the greater the impact on their ultimate retirement security, and if losses occur early in their career, they can be compounded over time.