

A Revolution of Falling Expectations: The Macroeconomic Roots of Popular Discontent

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ABSTRACT

This paper analyzes the macroeconomic roots of the collapse of the political center in the United States. The argument is straightforward: Of course, all sorts of demagogic political appeals – racism, sexism, anti-immigrant stereotyping – have played integral roles, but a fundamental underlying driver is popular disillusionment with an economy that has for decades failed millions of people and has now eroded the social underpinnings of America’s economy to a breaking point.

A detailed analysis of the Biden administration’s record shows that, contrary to widely heralded claims, there was no major, transformative break in trends of the wages of American workers. Consumer sentiment turned negative under Biden, not because of mysterious “bad vibes,” but due

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to deeply disappointing real income growth. What did surge, however, was the percentage of wealth in the hands of America's most affluent citizens, thanks especially to the Federal Reserve's quantitative easing policies at the onset of COVID and, later, the AI boom. That had a powerful K-shaped wealth effect on personal consumption expenditures, albeit not as large as sometimes claimed.

The paper then extends the analysis backward, showing that during the Neoliberal era key macroeconomic trends spiraled steadily downward for most American households and workers regardless of which party occupied the White House. The paper scrutinizes the long fall of total employee compensation as a percent of GDP and shows that this is not an artifact of a "China shock" or another sudden shift after 2000. It resulted from the Neoliberal policy turn of the 1970s, which prioritized inflation control over (full) employment, favored shareholders while discriminating against workers, promoted deregulated insecure jobs over steady stable employment, and brought permanent austerity for those dependent on social security and healthcare.

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Introduction

In May 2024, as the race for the White House entered the final stretch, two of us analyzed how average Americans were faring under the Biden Presidency ([Ferguson and Storm 2024a](#)). At the time, White House and Democratic policy circles were all in on claims that the new administration was the most labor-friendly since Franklin D. Roosevelt's ([Press 2024](#)). They backed their case by citing a long litany of the President's achievements: Emergency programs that helped millions of Americans cope with COVID; sweeping reindustrialization initiatives that took serious account of climate change, major reforms at the National Labor Relations Board and Department of Labor, renewed efforts to clean up the environment, and for the first time in decades, vigorous antitrust efforts, among others ([Bernstein 2025](#); [Cassidy 2025](#)). Prominent economists¹ and think tanks² added their own voices in support of these claims.³ In particular, analysts hailed strong gains in real hourly wages by the lowest paid workers after decades of wage stagnation.

In fact, however, the newly expanded welfare state's half-life was breathtakingly short, almost brooking comparison with atomic particles. Well before the 2022 election, key programs, including at least three for workers usually left out of most unemployment relief programs, began vanishing like the grin of Cheshire Cat. Though you would never know it from the clamor about the alleged role of the administration's spending in stoking inflation, the net contribution to GDP of fiscal policy at all levels of government turned negative after the second quarter of 2021.⁴ Meanwhile supply shocks from COVID, climate change, and the Russian invasion of Ukraine sent prices for food, fuel, and many other goods soaring. Overall, the price increases ran far ahead of both hourly wages and weekly earnings for most workers, forcing many families to borrow to make ends meet.

The policy shifts at the National Labor Relations Board were real, but the percentage of workers organized in unions did not grow at all (French 2024). Meanwhile the wealth of America's most

¹ Notably, Paul Krugman (2026), [Robert Reich](#) (2023) and [Heather Boushey](#) (2024). With remarkable aplomb, [Branko Milanovic \(2021\)](#) declared on X (formerly Twitter) that "Biden goes full Kalecki."

² Examples include the Roosevelt Institute which published "[The Bidenomics Brief](#)" newsletter to assess the achievements of the 'new economic paradigm', the Economic Policy Institute and the Center for American Progress.

³ Cf. Turner *et al.* (2025) who conducted 15 semi-structured interviews with senior U.S. policymakers in the aftermath of the 2024 U.S. election to assess Bidenomics. See Elrod (2024) for a more serious critique of Bidenomics.

⁴ See the [Hutchins Center Fiscal Impact Measure](#), published by the Brookings Institution (Asdourian, Salwati & Sheiner 2022). The fiscal impact measure became strongly negative in the second quarter of 2021 and stayed negative until the fourth quarter of 2023. The fiscal impact of government policy was positive during 2024 but very small. For the 3 programs, cf. [Pandemic Oversight \(2022\)](#).

affluent citizens swelled massively as another round of quantitative easing by the Federal Reserve sent prices of financial assets and housing soaring (Ferguson and Storm 2024a, 2024b). With median family incomes under Biden trailing far behind trend growth in Trump 1.0, the regime's vulnerability should have been obvious. Most American workers were not better off than they had been in Trump's first term. The paper's subtitle, accordingly, did not hedge: "Trump vs. Biden: The Macroeconomics of the Second Coming" (Ferguson and Storm 2024a).

Down to election day, however, the practical living symbol of the Democratic Party remained the ostrich, not a donkey. The 11th hour realization that sticking with Biden would be fatal and the clumsy switch to Kamala Harris as party standard bearer did not provoke broader soul searching: popular skepticism about the new ticket was ascribed to problems of personality, age, negative vibes, and campaign messaging failures.

The morning after the election, though, scales finally started falling from some eyes. Less than perfect [exit polls](#) showed that two-thirds of the voters rated the U.S. economy negatively (Stein 2024). Only a quarter of respondents said their financial situation was better in 2024 than four years before; three-quarters said inflation had caused them severe or moderate hardship over the previous year; and voters said they trusted Trump more on the economy. Of the voters who rated the economy negatively, 69 percent voted for Trump.

Adding insult to injury, Trump won with a broader and more diverse coalition of ordinary voters than Democrats had managed to assemble in years, with more non-voters preferring him to Harris. While many Democrats professed to find that mysterious, reality began to sink in. Prominent Democratic economists such as [Jason Furman \(2026\)](#) frankly admitted that during the Biden presidency, real wages did in fact fall for most Americans.

Gradually the flurry of arguments about mysteriously negative electoral "vibe shifts" (Krugman 2024) that allegedly made voters resistant to the blandishments of Bidenomics ebbed away. In their stead came waves of subsidized think tank wars over affordability, AI, "abundance," and foreign policy.

Until late April 2026, when things suddenly changed. As polling numbers for Trump 2.0 plunged amid rising inflation and renewed war in the Middle East, Paul Krugman reposed the question of the "vindication of Bidenomics," asking if it was "time to acknowledge its successes" ([Krugman, 2026a](#)). Circling straight back to earlier times, he doubled down on claims that "wages at the bottom rose more rapidly than wages at the top" during Biden's presidency. "David Autor, Arindrajit Dube, and Annie McGrew documented that there had in fact been an 'unexpected compression' in which the wage gap between the highly paid and the less well paid suddenly narrowed." He bolstered the claim by citing several tables in a new study by Dube (2026) that restated the earlier contentions.

As Horace, the celebrated Roman poet of another era when sorting out republics from authoritarian empires was not always easy, famously observed, “even Homer nods.” Our distinguished colleagues should not persist in ignoring the mountain of evidence against their case.

The claims are not merely mistaken, they stand in the way of recognizing the true source of the public’s dark, monochrome mood and why so many voters in both parties express dismay with the whole political system.⁵ Strikingly, as with Biden, so now with Trump, a cottage industry is springing up to explain why consumer sentiment is plummeting to historic lows in the face of a booming stock market accompanied by rates of economic growth and unemployment that on the surface look appealing, even if prices have stayed stubbornly high and look poised to go higher.

We are far from suggesting that the snowballing opposition to Trump 2.0 is solely rooted in macroeconomic discontent. It is obvious that concerns about ICE, civil liberties, racial justice, blatant corruption and self-enrichment, AI, and fears of another cycle of endless wars agitate many voters, but indignation at Trump’s broken promise to bring down prices from Day 1 of his Presidency is plainly top of mind for many as the share of employee compensation in GDP falls to a record low. But careful studies of voter attitudes show that many of those dismayed by Trump 2.0 are also indignantly critical of establishment Democrats, to the point that the out-of-power-party’s brand itself now deeply repels many.⁶

For all the publicity about the parade of Red Tech billionaires through the White House and Mar-A-Lago and the Trump family’s Spider Man-like leap back to the top rungs of the Forbes 400, many Americans consider the [Democrats even more corrupt](#). News cascades about “[Epstein Democrats](#)”, outspoken defenses by Nancy Pelosi and other party influentials of their right to invest even as they write legislation, and tidal waves of money from AI, crypto, health care companies and other interests streaming into Democratic groups nourish the popular revulsion (Ferguson *et al.* 2026), which is unlikely to fade away as charges of fraud in some Biden era relief programs fill fall congressional campaigns.

In the face of these headwinds, many Democratic leaders are certainly calculating that their best strategy is to stand back and watch while Trump and the Republicans disintegrate. As James

⁵ Results of a nationwide [New York Times/Siena poll](#) of 1,507 registered voters conducted from May 11 to 15, 2026, finds that 43% of voters are dissatisfied with both major political parties. Only 26 % of respondents felt satisfied with the Democratic Party and 33% felt satisfied with the Republican Party. Nearly two-thirds of respondents under the age of 30 expressed dissatisfaction with both parties. The *New York Times* article concludes that it has been nearly a quarter-century since a majority of voters thought the country was headed in the right direction.

⁶ See, among many sources: [Morris \(2026a\)](#); Morris (2026b); French (2025).

Carville, a former top Clinton adviser with close ties to groups backed by major Democratic contributors memorably advised: “[don’t just stand there, do nothing.](#)”⁷

But much of the Democratic base is simmering at their leaders’ inaction. Many rank and file party adherents perceive establishment Democrats as time serving fat cats [who will not, in a crunch, stand up for ordinary voters](#) and who regard volleys of resonant fundraising appeals as steps of almost Napoleonic boldness. Insurgent candidates are challenging Democratic incumbents in many races, often with success.

This impasse is deepening as AI, the stock market bubble, a worldwide rise in interest rates, and prospects of further military interventions heighten anxieties that events may be spiraling out of anyone’s control.

No one should underestimate the gravity of what is happening. Coming so swiftly on the heels of Biden’s disintegration, Trump 2.0’s downward lurch is recreating conditions strikingly reminiscent of 2014, when the [historic collapse of voter turnout](#) in that off-year election presaged the challenges of Trump and Senator Bernie Sanders two years later.

But this is the second time around. Jokes about history not repeating itself, but rhyming, we suspect, may soon not sound funny, especially as some political groups show continuing interest in drastically reengineering election procedures.

It is high time for a more fundamental assessment of the roots of this disquiet. As this essay explains, the public’s apprehensions are not rooted in sudden wrong turns by either Democrats or Republicans. Decades of failed macroeconomic policies are now generating a system crisis of historic proportions. The success of Democratic socialists who shocked the political system by injecting “affordability” into political debate should not be surprising, when leaders of Silicon Valley invoke the specter of a job apocalypse as their demands for more “compute” send utility rates soaring for everyone else (Storm 2026), amid the downward spiral of the U.S. health care system and purposeful attacks on Social Security, Medicare, and Medicaid.

We start our reconsideration by reviewing the evidence about the economic effects of the Biden presidency. This is simply a means to an end: to highlight macroeconomic policy’s wrenching impact on the population as a whole over a long period of time. This is the royal road to understanding why the center has collapsed in American politics.

We begin with the Biden record on wages and incomes. No surprises here. The earlier conclusion does not change: there was no major break in trends of the wages of American workers, union

⁷ For the advice, cf. Luciano (2025); for the ties to Democratic billionaire funded groups, cf. Moore (2026a).

strength did not increase, and the bottom rungs of the American income ladder did not leap upward.

What did soar, however, was the percentage of wealth in the hands of America's most affluent citizens. As several earlier papers by Ferguson and Storm spotlighted well before the new reality became too obtrusive to ignore, the wealth surge among America's richest resulted directly from renewal of the Federal Reserve's quantitative easing policies at the onset of COVID. Conflated with the notion of a "K-shaped economy" that originally referred to income rather than wealth, this explosion has now become widely discussed, since it drives so much of total consumption. Interpreted in terms of wealth, the "K-shaped economy" is a reality. It is possible, however, to run a good idea into the ground: We consider some estimates of how much consumption stems from America's super-rich to be improbably high, so we restate what we think is a cautious minimum estimate.

Unfortunately, as the current Trump 2.0 tailspin illustrates, this increasingly lopsided wealth distribution does not result from policy mistakes by any single administration. Both political parties share responsibility. The next two sections of our paper analyze the long sweep of macroeconomic policy since the New Deal to make this case. Contrary to some widely heralded claims that macroeconomic outcomes were more favorable for most Americans when Democrats held the presidency (Bartels 2018; Blinder and Watson 2016; Bivens 2024), we show that key trends spiraled steadily downward regardless of which party occupied the White House during the Neoliberal era.

That part of our discussion begins by examining the long fall of total employee compensation as a percent of GDP. Starting from the waning days of the New Deal, its trajectory arced downward under both Democratic and Republican presidencies. It is not an artifact of a late developing "China shock" or other sudden shift after 2000. The same holds for the rise in the share of income garnered by the superrich and the fall in shares of the middle class and the poor over seventy years. Over the period as a whole, no important difference in these (macroeconomic) outcomes is traceable to one political party.

These results make it easy to understand growing suspicions that the American party system is really dominated by a "uni-party" — one big party with two wings controlled by the very rich that is always in power. We think, though, that this impression is just close enough to the truth to be seriously misleading. We show how data on life expectancy and other issues show that that conclusion is too simple.

The final section of the paper draws out the lessons for the future, focusing on how the evident tensions within the Democratic party may affect its response to the spiraling collapse of Trump 2.0. We emphasize, though, that this paper is not about elections; its subject is macroeconomics.

1. Why Were Americans Angry With Biden?

The harsh rebuke to the Biden administration in the 2024 ballot completely baffled liberal economists and centrist Democrats who had convinced themselves that Biden’s economy was “[the envy of the world](#)” (The Economist 2024). In their eyes, Bidenomics had managed to not just run the economy ‘hot’, by spending big on public investments in infrastructure and the domestic economy, but, even more importantly, the ‘most pro-union President since FDR’ had been transformative for workers by laying the foundations for a ‘post-neoliberal’ full-employment era of inclusive and green growth ([Press 2024](#)).

At first sight, the empirical evidence marshalled in support of Bidenomics appears to speak for itself. On Biden’s watch, the U.S. economy recovered quickly from the unprecedented 2020 COVID recession and successfully navigated the 2021-2023 surge in inflation. Not only did the Biden administration avoid a widely feared protracted period of substantial unemployment, but its policies led to what seemed to be a super-tight labor market — one in which workers found it easy to get jobs and employers found it hard to get workers (Dube 2026).

The following two pieces of evidence — each one concerning real *hourly* earnings of U.S. workers — have been put on the table to corroborate the transformative power of Bidenomics:

1. *Exhibit 1*: Average real hourly earnings for the median American workers were higher in 2024 than what would be expected based on their pre-pandemic trend. Bidenomics enabled a structural break in median wage growth, in other words. This “positive wage trajectory is not a fluke, but rather a testament to the effectiveness of the proactive fiscal policies implemented during the pandemic, particularly U.S. President Joe Biden’s American Rescue Plan,” writes [Arindrajit Dube \(2024\)](#).
2. *Exhibit 2*: Higher-than-average real hourly earnings growth at the bottom of the hourly earnings distribution led to a major, even historic, reversal of the trend of rising earnings inequality that had run for more than a generation. In fact, rapid relative wage growth of the bottom 10% workers under Biden “counteracted nearly 40% of the four-decade increase in aggregate 90-10 log wage inequality”, according to [David Autor, Arindrajit Dube and Annie McGrew \(2024\)](#), who attribute the ‘unexpected wage compression’ to the transformative effects of running the economy ‘hot’ under Biden’s pro-worker presidency. “America at the end of the Biden years was still a hugely unequal society, but less so than it had been for a generation,” concludes [Paul Krugman \(2026a\)](#).

While the two pieces of *prima facie* evidence look clear and not controversial, a closer look reveals that there is a lot more to the ‘rosy’ picture drawn above than these exhibits indicate.

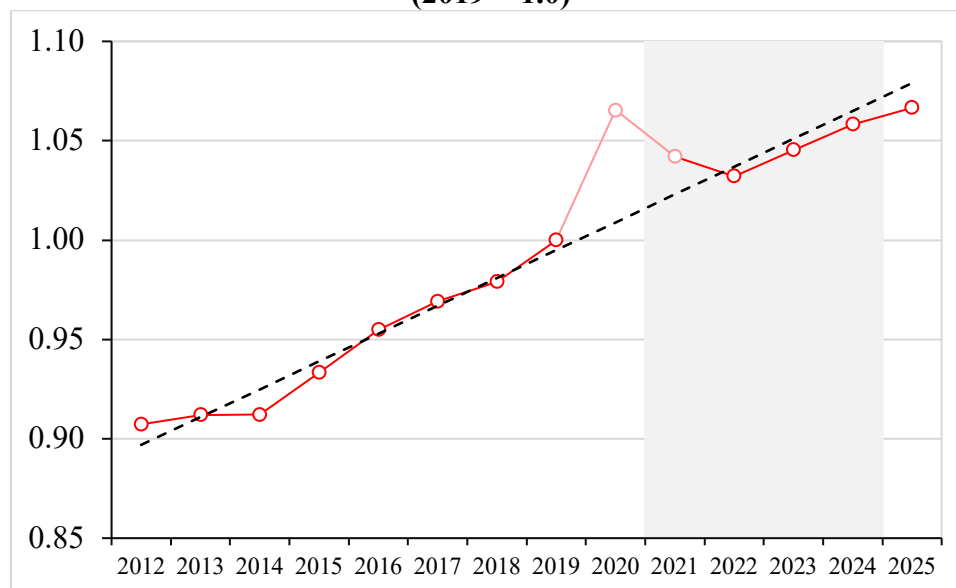
1.1. *Exhibit 1: The Positive Wage Trajectory*

Figure 1 plots the annual real median *hourly* earnings (with base-year 2019 = 1) for the period 2012-2025 and compares these actual earnings to the pre-pandemic trend (during 2012-2019). It is evident that, contrary to the claim under Exhibit 1, median *hourly* earnings continued to increase along their pre-pandemic trend under Biden's watch — we are unable to identify anything resembling a break.

This is remarkable, because by many conventional indicators the U.S. labor market was arguably 'extremely tight' during 2021-2024.

However, *hourly* earnings represent a one-sided picture of the overall earnings and incomes of U.S. workers (see Ferguson and Storm 2023, 2024a). The figure takes no account of (a) hours worked, which is a crucial determinant of income from work over time; and (b) government social benefits, which include social security benefits, Medicare and Medicaid and unemployment benefits.

Figure 1
Real Median Hourly Earnings of Wage & Salary Workers
(2019 = 1.0)

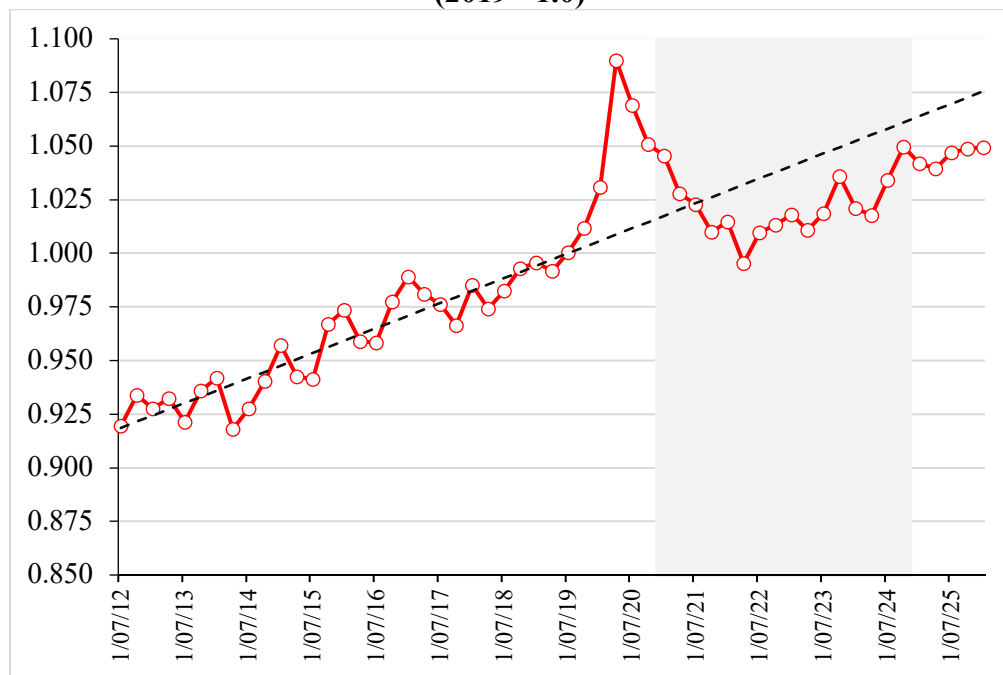


Source: Calculated based on data from Economic Policy Institute (2026), *State of Working America Data Library*. *Notes:* The data represent earnings before taxes and other deductions and do not include any overtime pay, commissions, or tips usually received. The nominal earnings have been deflated using the CPI (2025 = 100). The dashed line is

the linear trend line estimated using OLS for the (pre-pandemic) period 2012 – 2019. The shaded area indicates the Biden era. The freak increase in real earnings in 2020 is a spurious anomaly caused by the fact that the lowest-paid workers disproportionately lost jobs in 2020 and gained them back in 2021.

Let us first consider ‘usual *weekly* earnings’, which directly capture changes in hourly earnings as well as in hours worked per week. In **Figure 2** we plot the quarterly real median *weekly* earnings (with base-year 2019 = 1.0) for the period 2012q1-2026q1 and compare these actual weekly earnings to their pre-pandemic trend. Real median weekly earnings drop below trend in 2021 and remain below trend during 2022-2024.

Figure 2
Real Weekly Earnings At the Middle:
Real Median Usual Weekly Earnings of Wage and Salary Workers
(2019 =1.0)



Source: Authors’ calculations based on usual weekly nominal earnings (median) of wage and salary workers (aged 16-65 years) of *Bureau of Labor Statistics*. *Notes:* The data

represent earnings before taxes and other deductions and include any overtime pay, commissions, or tips usually received. The nominal earnings have been deflated using the CPI (2024 = 100). The dashed line is the linear trend line estimated using OLS for the (pre-pandemic) period 2012q1 – 2019q4. The shaded area indicates the Biden era. The freak increase in median real earnings in the second quarter of 2020 is a spurious anomaly caused by the fact that the lowest-paid workers disproportionately lost jobs in 2020 and gained them back in 2021.

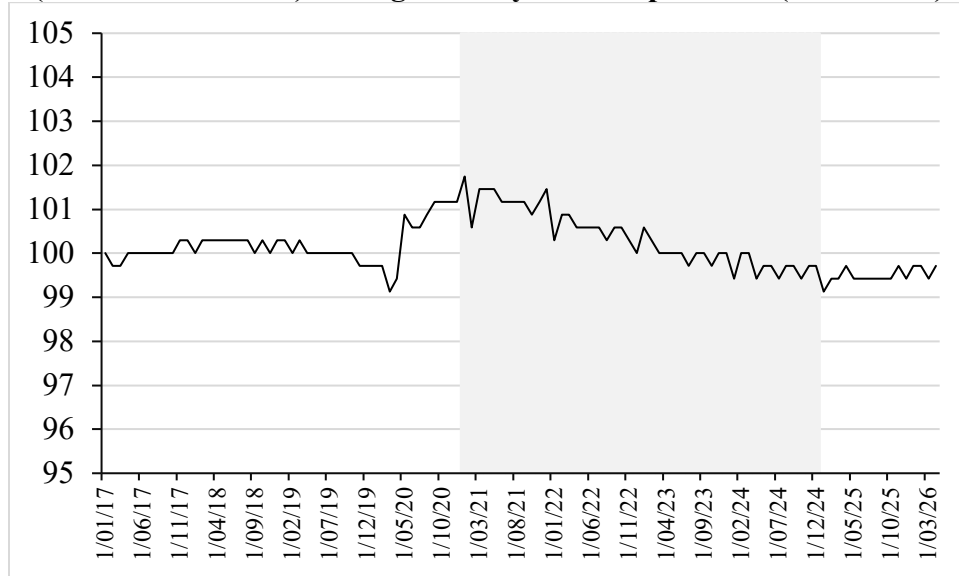
During Biden’s term, the typical American worker’s *weekly* earnings grew considerably slower than she could have expected based on her experience during 2012-2019. Of course, the inflationary fallout of the pandemic and geopolitical conflicts was a major factor in the stagnation of real median *weekly* earnings, and Biden’s proactive fiscal policies did help to ameliorate the damage. But there is no evidence of transformative change toward some ‘post-neoliberal’ utopia.

The stagnation of real median weekly earnings is due to the steady decline in average weekly working hours for private-sector employees (by 2%) during January 2021 and December 2024 (**Figure 3**). This decline in average weekly hours worked, which contributed to stagnating real weekly earnings, is at odds with claims that the U.S. labor market in the Biden years was ‘extremely tight’. If anything, declining, or stagnating, weekly working hours signal sluggish labor demand.⁸

⁸ The diagnosis that the U.S. labor market was ‘extremely tight’ was based on the fact that the number of job vacancies was much higher than the number of unemployed workers. However, as argued by Ferguson and Storm (2024c), post-COVID, the data on job openings appear to have become unreliable because many firms now advertise positions with no intention of any imminent hiring. Such information allows them to track the replacement cost of their current workforce in real-time and remind current employees that they could be dispensed with. Evidence suggests that the percentage of faux job ads increased slowly in the years before the pandemic, then shot up dramatically once COVID hit.

Figure 3

**Average Weekly Hours Worked for All Employees, Private Sector
(16 Years and Over) during January 2017 - April 2026 (2017 = 100)**



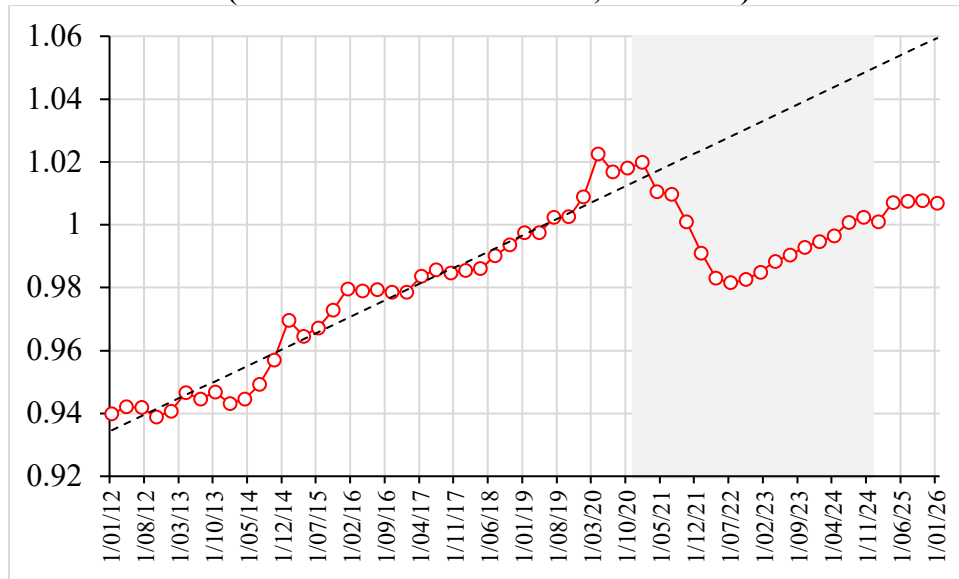
Source: FRED database. *Notes:* Average weekly hours worked are an index (2019 = 100). The shaded area indicates the Biden era.

Along with the data for hourly and weekly earnings, there is evidence from the Employment Cost Index (ECI), published by the Bureau of Labor Statistics (BLS) that also argues against there having been any major change. The ECI data present quarterly data on wages and salaries, provided by establishments, which include some measures of non-cash benefits (*e.g.*, insurance or retirement benefits), whereas hourly and weekly earnings only include cash payments. The ECI controls for changes in composition across occupations and industries. Specifically, it reflects changes in pay through time, assuming a fixed share of workers in occupations and industries.

Figure 4 presents average real wage growth during 2012q1-2026q1, calculated based on the ECI, for private industry. The pattern is the same as before: during 2022 and 2023, real wages were circa 2% lower than during 2019 and about 5% lower than what could have been expected based on pre-pandemic trend. Only by mid-2024 did real wages return to their level in 2019, though they were still 5% below trend. Four years of real wage stagnation are unlikely to win the hearts and minds of America's workers. Real wages have continued to stagnate during 2025 and the first quarter of 2026 — which is already turning voters away from Trump.

Figure 4

**Employment Cost Index: Private Industry
(constant 2019 U.S. dollars; 2019 =1.0)**



Source: Authors' calculations based on U.S. *Bureau of Labor Statistics*, Employment Cost Index (ECI): Wages and Salaries: Private Industry Workers. *Notes:* The nominal ECI has been deflated using the CPI (with base year 2019 = 100). The dashed line is the linear trend line estimated using OLS for the (pre-pandemic) period 2012q1 – 2019q4. The shaded area indicates the Biden era.

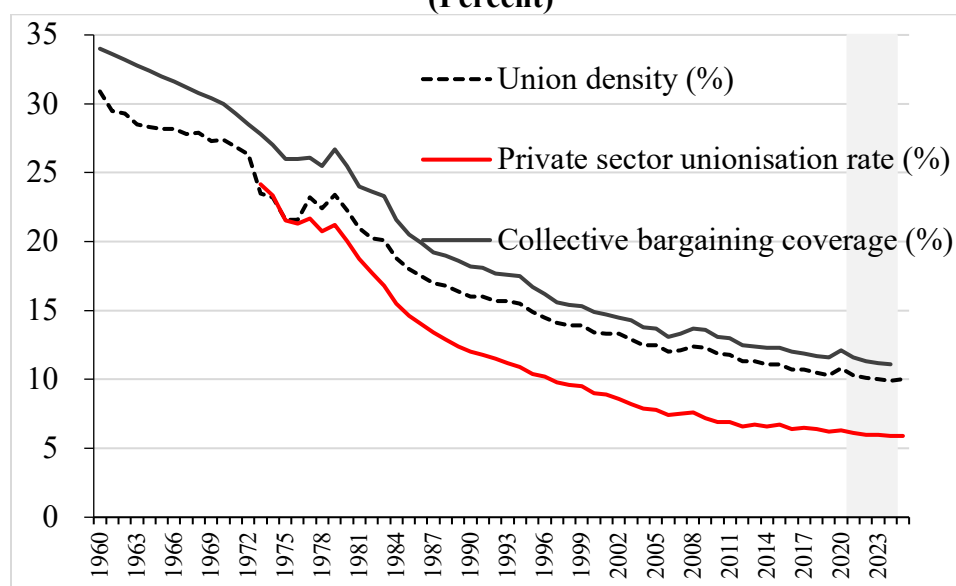
The sub-par growth of real median weekly earnings and the ECI during 2021-2024 is not surprising given that Biden's economic policies [failed to move the needle in the interests of working people](#) (French 2024). To be fair, Biden faced an uphill battle: all the forces that traditionally counterbalanced firms' monopsony power and boosted workers' bargaining power have become weaker in recent decades: Employment protection laws have become looser, the minimum wage has decreased in real terms, the number of workers in the gig economy rose, shareholders have become far more demanding and powerful, and globalization has made workers more vulnerable to threats of job loss due to delocalization (see Ferguson and Storm 2024a).

As a result, job insecurity has become an endemic part of American working life, even though the official unemployment rate is low. Faced with strong employers' opposition and hamstrung by a broken National Labor Relations Act (NLRA), unable to deal with the growing gig economy and unyielding resistance from most employers, the Biden administration's efforts over four years were nowhere near enough to increase union membership as a share of the economy.

The U.S. labor movement is now the weakest it has been in a century (**Figures 5A, 5B and 5C**). As we discuss in **Section 3**, the downward trend in the labor income share, defined as compensation of employees as a percentage of GDP (see **Figure 26**, below), continued unabated during 2021-2024, unbothered by Biden’s pro-union proclivity and the supposedly ‘red hot’ labor market. Aggregate union density has collapsed from about 31% of the workforce in 1960 to just 10% in 2025. Importantly, the decline in (private sector) union density continued, on trend, during Biden’s term (**Figure 5A**).

Figure 5A

**America’s Unions Are in a Death Spiral:
Union Density and Collective Bargaining Coverage
(Percent)**



Source: Data on (aggregate) union density (1960-1982) from Mayer (2004); data on (aggregate) union density (1983-2025) from *Bureau of Labor Statistics* (BLS). Data on private sector union density are from Hirsch, Macpherson and Even (2026). Data on collective bargaining coverage are from OECD ICTWSS Database; collective bargaining coverage is the percentage of employees with the right to bargain.

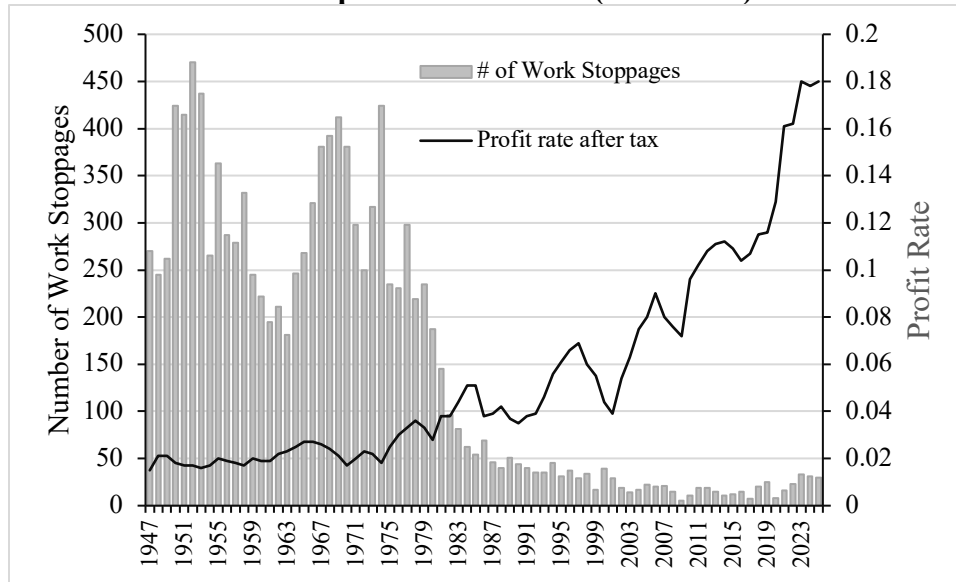
The same is true for the percentage of workers covered by collective bargaining agreements which declined from 33.6% in 1960 to 12.1% in 2020 and then sank to 11.1% in 2024.

There was no meaningful increase in the number of major work stoppages⁹ while the non-financial corporate profit rate rose very sharply in 2021 and 2022 (**Figure 5B**).

⁹ Note, however, that the BLS only tracks major work stoppages involving 1,000 or more workers that last at least one full shift. In 2025, there were 30 major work stoppages, affecting 306,800 workers across

Figure 5B

**Number of Major Work Stoppages
and Corporate Profit Rate (1947-2025)**

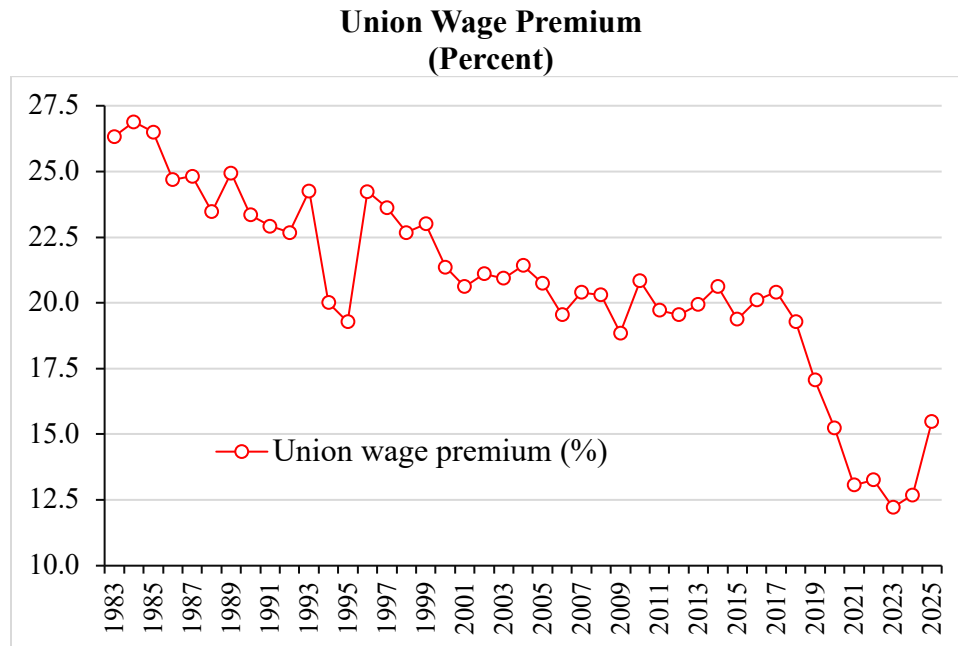


Sources: Data on work stoppages from *Bureau of Labor Statistics* (BLS). Data on the profit rate from BEA, Table 1.15. Price, Costs, and Profit Per Unit of Real Gross Value Added of Nonfinancial Domestic Corporate Business. *Notes:* Profit rate is defined as profits after tax with IVA and CCAdj as a share of real gross value added of nonfinancial domestic corporate business. ‘Major’ here denotes work stoppages involving 1,000 or more workers that last at least one full shift, as registered by the BLS.

The (adjusted) union wage premium (the additional wages that union members earn compared to similar non-unionized workers) declined from 26% in the mid-1980s to around 20% in 2017 but then fell off a cliff to 15.2% in 2020 (**Figure 5C**). The union wage premium did not rise under Biden’s watch but declined to just 12.7%. The Biden administration’s much touted friendliness to organized labor (which we fully credit) did not alter any of these negative trends (French 2024).

various industries. Smaller work stoppages are registered by the *Payday Report* (see [Leon and Elk 2021](#)). The number of smaller strikes has increased significantly since 2020, to a cumulative total of 3000 strikes during March 2020 - June 2026, as is shown by data of the *Payday Report Interactive Strike Tracker*.

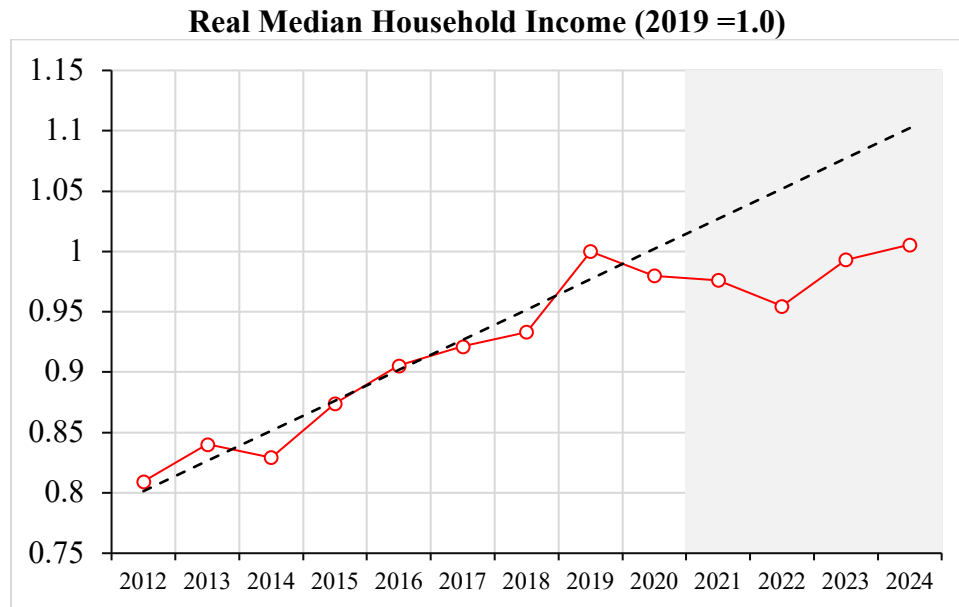
Figure 5C



Source: Data on (adjusted) union wage premium for private sector workers are from Hirsch, Macpherson and Even (2026).

Finally, we consider median real *incomes* rather than (hourly or weekly) earnings, because, in addition to wage earnings, most households and families also receive (net) government social benefits. **Figure 6** presents the evolution of real median household income during 2012-2024, relative to pre-pandemic trend; and **Figure 7** plots real median family income during the same period, relative to its pre-pandemic trend. Real median household income in 2022 was 5% lower than in 2019 — and although the real income of the median U.S. household in 2024 was 0.6% higher than in 2019, it remained considerably below its pre-COVID trend.

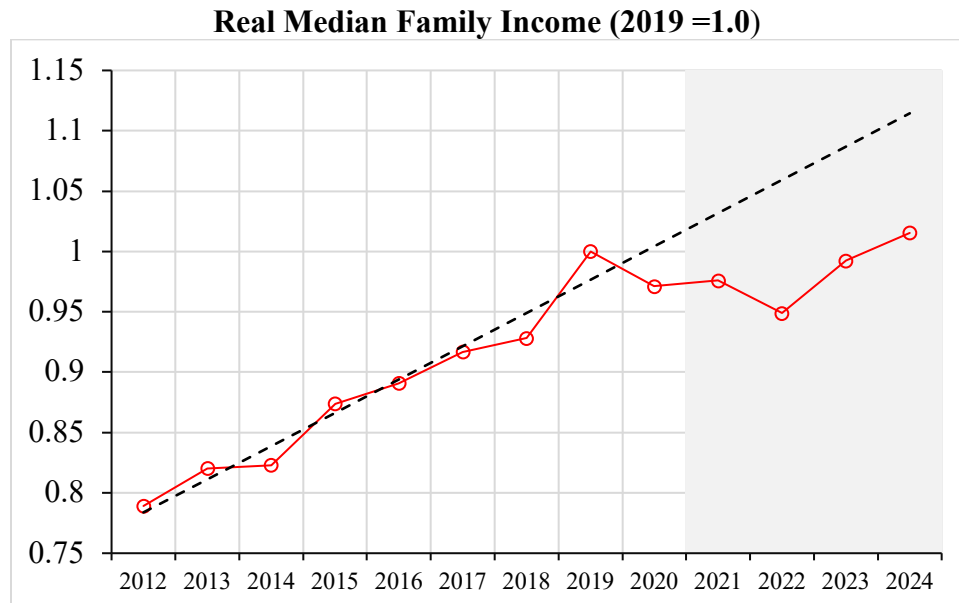
Figure 6



Source: Authors' calculations based on data from *Current Population Reports*, U.S. Census. Income is in 2024 dollars, adjusted using the C-CPI-U (2000-2024) and R-CPI-U-RS (pre-2000). The dashed line is the estimated linear trend line for 2012 – 2019. The shaded area indicates the Biden era.

Real median family income declined by 5% during 2019-2022. In 2024, at the end of Biden's term, median family income was just 1.5% higher than in 2019. It is easy to understand the disappointment of average workers, since median family income would have been 11% higher if it had continued to grow at its pre-pandemic trend. Little wonder that two-thirds of voters rated the U.S. economy negatively in November 2024.

Figure 7

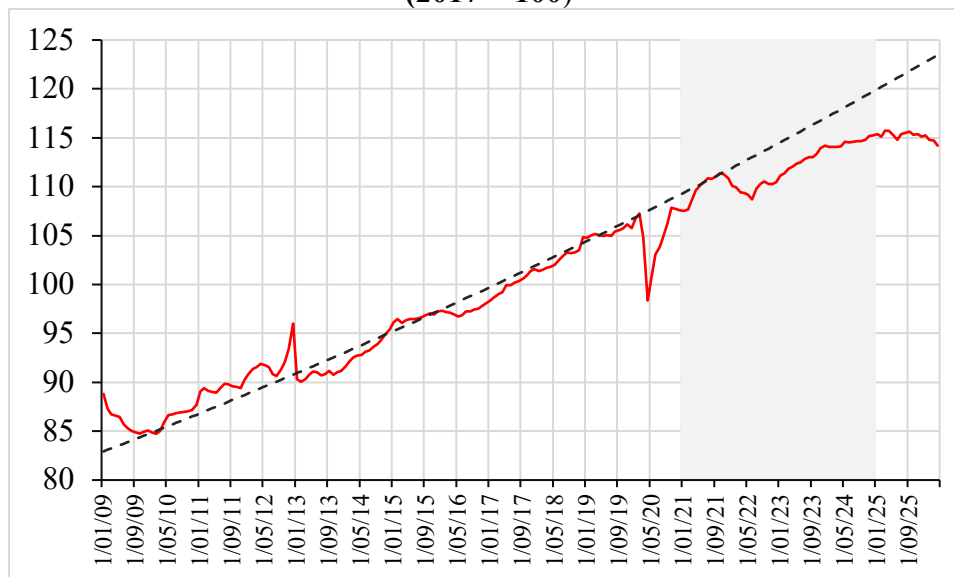


Source: Authors' calculations based on data from *Current Population Reports*, U.S. Census. Income is in 2024 dollars, adjusted using the C-CPI-U (2000-2024) and R-CPI-U-RS (pre-2000). The dashed line is the estimated linear trend line for 2012 – 2019. The shaded area indicates the Biden era.

Finally, **Figure 8** plots monthly per capita real personal income (excluding current transfer receipts) during January 2009 – April 2026, relative to its pre-pandemic trend. It is evident that per capita real personal income started to diverge from trend at the end of 2021 and never converged back. In fact, per capita real personal income has been stagnant in the period running from December 2023 and April 2026. At the end of Biden's term, per capita real personal income was 3.9% lower than could have been expected based on pre-pandemic trends. As of April 2026, it was 7.7% below pre-pandemic trend. Trump's second term has done nothing to reverse the standstill in real income that started under Biden's watch.

Figure 8

**Per Capita Real Personal Income
Excluding Current Transfer Receipts
(2017 = 100)**



Source: Authors’ calculations based on data from BEA. Income is in 2017 dollars. The dashed line is the estimated linear trend line for 2010 – 2019. The shaded area indicates the Biden era.

The conclusion of our evaluation of *Exhibit 1* is plain and simple: running the economy ‘hot’ under Biden’s watch did not structurally improve real median hourly and weekly earnings growth relative to pre-pandemic trends. Union density continued to decline, the union wage premium fell off a cliff and the labor income share continued trending down. Average weekly hours worked declined — and median real weekly earnings stagnated. Real median household and family incomes fell during the high-inflation years 2020-2023 (relative to 2019) and barely recovered to 2019 levels in 2024. Household and family real income growth during the Biden era was evidently far worse than could have been expected based on pre-pandemic trends. Real personal income per person stagnated. American voters had every reason to remain unpersuaded by pundits telling them how great the U.S. economy was doing thanks to Bidenomics (French 2025).

1.2. *Exhibit 2: The Unexpected Wage Compression*

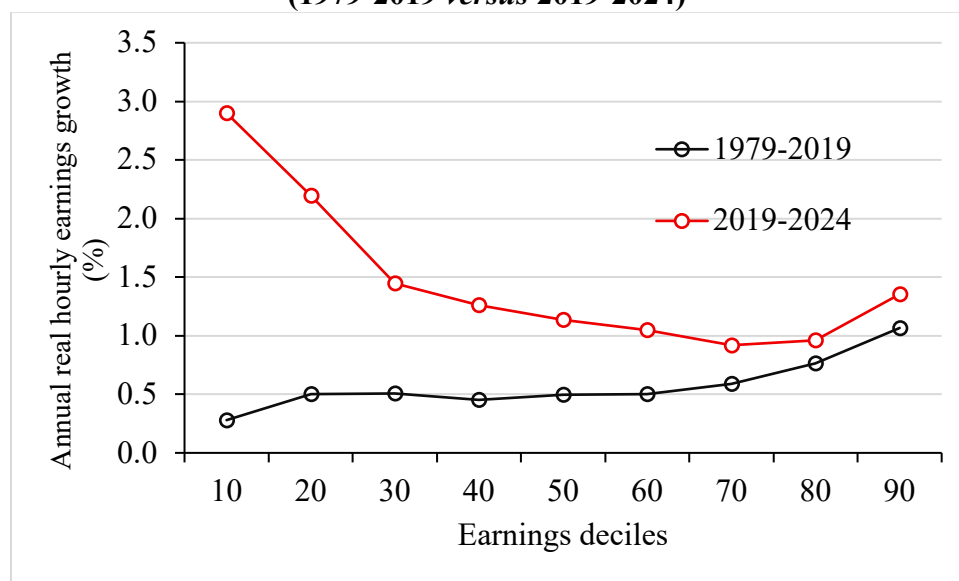
Post-pandemic real *hourly* earnings growth was strongest at the bottom of the earnings distribution and weaker at the top, as shown in **Figure 9**. This chart is due to Autor, Dube and

McGrew (2024) and Dube (2026, p. 73) who plot annual real hourly earnings growth across the earnings distribution for 1979-2019 and 2019-2024. We have recreated this chart below. On the horizontal axis is the earnings distribution; real *hourly* earnings growth is plotted on the vertical axis. The black line shows average annual real wage growth across the wage distribution for the years 1979-2019. The red line shows for the years 2019 to 2024.

Despite high inflation during 2019-2024, real annual hourly earnings growth was robust for lower-paid workers — nearly 3% for workers in the bottom decile and 1.4% for workers in the third decile. These gains far exceeded the long-term annual gains for the lowest-paid workers during the four decades spanning 1979-2019. In contrast, real annual hourly earnings growth in the top half of the distribution was more modest — around 1% to 1.5%, and not significantly different from the long-term gains during 1979-2019.

Figure 9

**The “Unexpected Wage Compression”:
Annual Hourly Real Earnings Growth by Earnings Percentiles
(1979-2019 versus 2019-2024)**



Source: Authors’ calculations based on hourly real earnings of wage and salary workers (aged 16-65 years) by wage percentiles of EPI Data Library. *Notes:* The nominal earnings have been deflated using the CPI (2025 = 100).

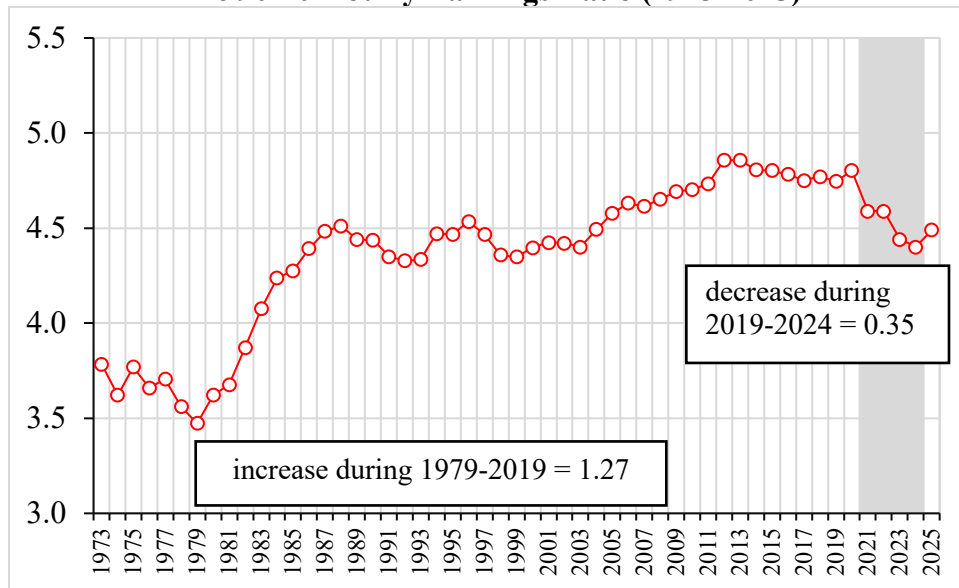
The result was

“an “unexpected compression in the wage distribution: Wages at the bottom grew faster than those at the top. This pattern marked a sharp reversal from the prior four decades, when inequality had widened. [...] about one-third of the rise in wage inequality since 1980 — as measured by the 90-10 gap — has now been undone, with most of the progress happening after the pandemic” (Dube 2026, pp. 74-75).

Figure 10 plots the 90-10 *hourly* earnings ratio during 1973-2025. We use annual hourly earnings data, provided by the *Economic Policy Institute* based on CPS numbers, instead of the monthly data, from the exact same source, used by Autor *et al.* (2024). The 90-10 earnings ratio declined by 0.35 during 2019-2024, undoing almost 30% of the rise in earning inequality during 1979-2019.

Figure 10

**Hourly Earnings Inequality Over Time:
The 90-10 Hourly Earnings Ratio (1973-2025)**



Source: Calculated based on hourly earnings data from Economic Policy Institute (2026), *State of Working America Data Library*.

To Arindrajit Dube (2026) and Paul Krugman (2026a), the *hourly* earnings compression during 2019-2024 does look like transformative change — a radical break with the past 45 years, driven largely by Biden’s ambitious fiscal policy which, by running the economy close to full employment, strengthened workers’ leverage, compressed earnings inequality, and made the job market work better for everyone. Dube (2026, p. 75) sums it up as follows:

“While many factors may have played a role, the dominant force was surprisingly straightforward: It was one of the tightest labor markets in American history. [...] ... the tight labor market gave low-wage workers more chances to leave bad jobs for better ones, boosting their bargaining position.”

Accepting similar evidence as presented in **Figures 9** and **10**, Krugman (2026a) is impatient with the ingratitude and obtuseness of ordinary American voters who, in his view, failed to appreciate how well Biden’s economy was performing. Baffled, Krugman blames the popular dissatisfaction with Bidenomics on ‘bad vibes’ — a concept as elusive as the famous ‘confidence fairy’ that Krugman has mocked many times — and discounts the views of the millions of Americans working in insecure and low-pay gig jobs and living paycheck to paycheck. He writes:

“[T]hroughout the past 5 years, many millions of Americans have had a hard time making ends meet. But this is always true, in good times and bad. It was actually less true than usual during the Biden years, a period in which wages at the bottom rose more rapidly than wages at the top.” (Krugman 2026a)

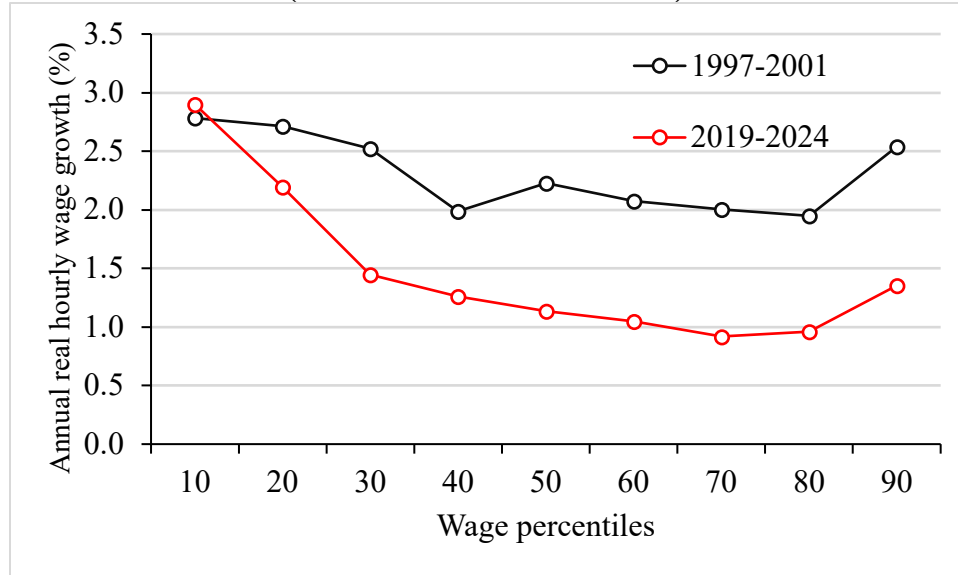
Curiously, Krugman refuses to entertain the possibility that the evident dissatisfaction of many Americans with the (Biden) economy is real and that the indicators, such as real hourly earnings and the official unemployment rate, on which he, Autor, Dube and McGrew (2024) and others have built their argument are misleading. But this is the case. For starters, let us look more closely at the evidence for unexpected wage compression in **Figure 9**.

A first point is that real hourly earnings growth for the 80% highest-paid U.S. workers was only around 1% to 1.5% per year during 2019-2024 — which is incredibly low if the U.S. labor market were really ‘super-hot’ in Biden’s ‘high-pressure economy’. The glaring incongruity between broadly mediocre earnings growth and “one of the tightest labor markets in American history” is brought out starkly in **Figure 11**, which compares annual real hourly earnings growth during 1997-2001 (when U.S. unemployment was also very low; see Dube 2026, p. 58) and 2019-2024.

The comparison is revealing: (i) real hourly wage growth rates were far higher during 1997-2001 than during 2019-2024 for all earnings deciles, except for the bottom one; and (ii) during 1997-2001, earnings at the bottom grew faster than those at the top and, hence, earnings inequality declined although to a smaller extent than during 2019-2024. U.S. workers would undoubtedly prefer the faster, broad-based real wage growth of the late 1990s to the relative wage stagnation for the large majority of workers during 2019-2024.

Figure 11

**Another Wage Compression:
Annual Hourly Real Earnings Growth by Earnings Percentiles
(1997-2001 versus 2019-2024)**



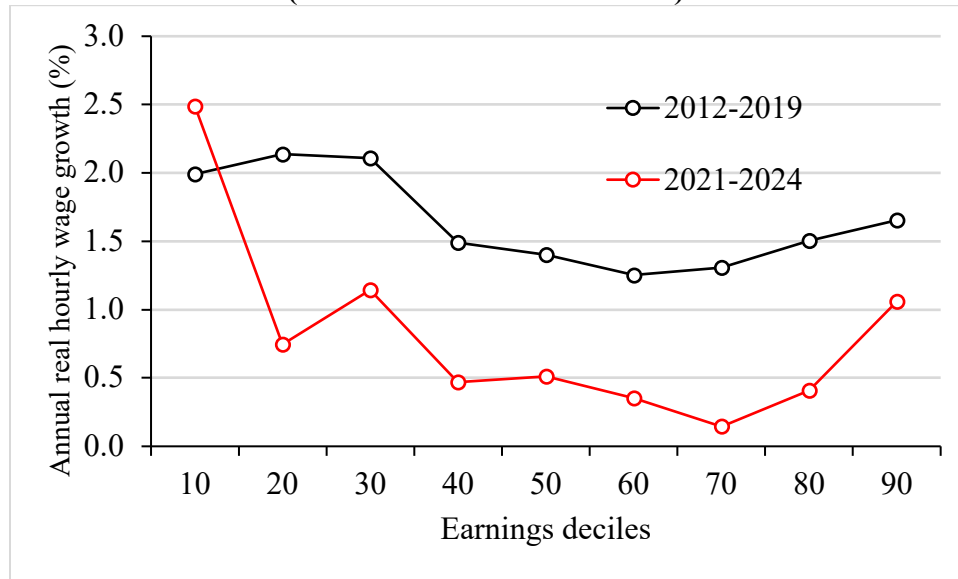
Source: Authors' calculations based on hourly real earnings of wage and salary workers (aged 16-65 years) by wage percentiles of EPI Data Library. *Notes:* The nominal earnings have been deflated using the CPI (2025 = 100).

A second noteworthy point concerns the choice to calculate average annual real hourly earnings growth during the five-year period 2019-2024, which includes two years of Trump's first presidency; Biden's presidency started only in January 2021. There is a good reason to choose 2019, and not 2020, as the terminal year of the first period and the first year of the second period, because real hourly earnings spiked artificially at all percentiles during 2020: The lockdowns and resulting layoffs hit low-wage workers disproportionately. This "compositional effect" shows as a brief, sharp rise in wages but is entirely an artefact of the exclusion of the low-wage earners.

A more balanced approach is to just exclude Trump's last year in office completely and compare annual hourly earnings growth during the pre-pandemic years (say, the immediate pre-pandemic years 2012-2019) and during Biden's term (2021-2024). This is what we do in **Figure 12**.

Figure 12

**Annual Hourly Real Wage Growth by Wage Percentiles
(2012-2019 versus 2021-2024)**



Source: Authors' calculations based on hourly real earnings of wage and salary workers (aged 16-65 years) by wage percentiles of EPI Data Library. *Notes:* The nominal earnings have been deflated using the CPI (2025 = 100).

The picture changes markedly. Real hourly earnings growth was higher for *all* earnings deciles except the bottom 10% during the pre-pandemic period 2012-2019 than during Biden's years 2021-2024. Earnings inequality also declined during 2012-2019, but only marginally so. **Figure 12** thus shows that the 'unexpected wage compression' under Biden's watch was, in fact, caused by the near stagnation of real hourly earnings of at least 50% of all American workers. It cannot be stated frequently enough: this earnings stagnation happened in a supposedly 'red hot' labor market in a 'high-pressure economy'.

Hourly earnings, as we argued above, are not the best measure of workers' wages or incomes, since total earnings also reflect the impact of total hours worked. It makes sense, therefore, to externally validate the claim of an 'unexpected earnings compression' by considering *weekly* earnings inequality and household income inequality during 2019-2024.

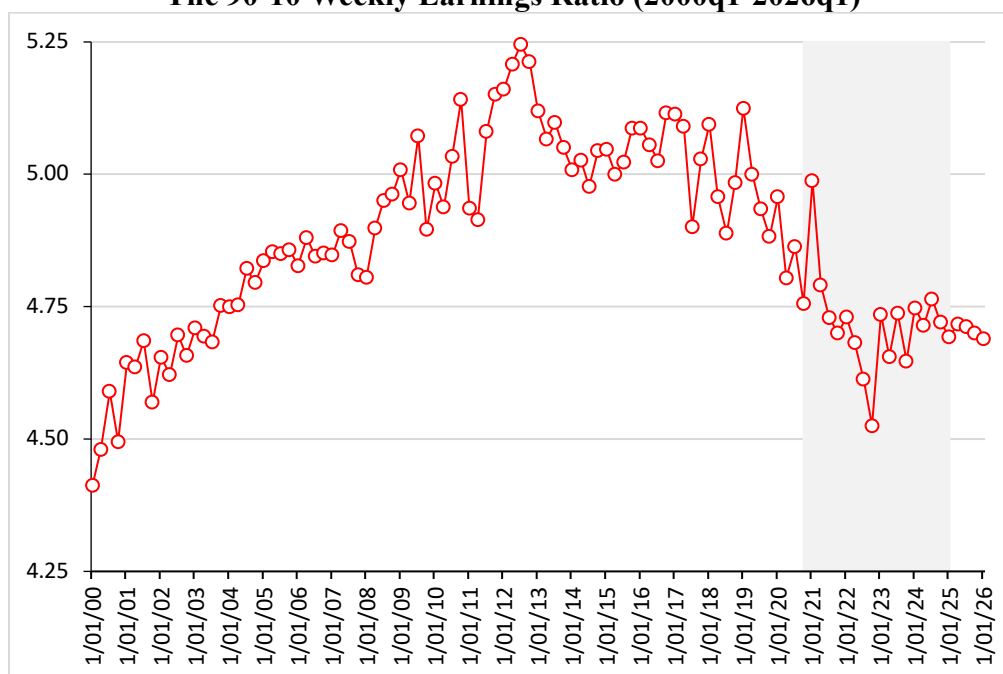
Let us first consider weekly earnings. Unfortunately, the (quarterly) data are only available for the (shorter) period 2000q1-2026q1, and not for the longer period starting in 1979.

Figure 13 maps the evolution of 90-10 *weekly* earnings inequality from the first quarter of 2000 to the first quarter of 2026. Inequality in 90-10 weekly earnings peaked (at 5.25) in the fourth quarter of 2012, after which it declined to a value of 4.88 in the fourth quarter of 2019. Weekly

earnings inequality continued to decline during the period 2020q1 – 2022q4, reaching 4.53. However, weekly earnings inequality started to rise — to 4.76 — in the third quarter of 2024. During 2024q4-2026q1, inequality remained more or less stable.

Figure 13

**Weekly Earnings Inequality Over Time:
The 90-10 Weekly Earnings Ratio (2000q1-2026q1)**



Source: Calculated based on quarterly data from FRED Database.

Taking account of hours worked changes everything. The evolution of *hourly* earnings inequality differs significantly from that of *weekly* earnings inequality. Weekly earnings inequality has been on a declining trend since 2012q4 — which means that the further decline during Biden’s first two years was not ‘unexpected’. However, under Biden’s watch, weekly earnings inequality actually increased during 2023 and 2024 — an ‘unexpected wage decompression’, as it were.

In terms of weekly earnings inequality, Biden’s term was not superior for low-wage workers to Trump’s first term. The observed decline in hourly earnings inequality can, therefore, not be generalized to weekly earnings inequality. Rather, the evidence presented in **Figure 13** should warn against hasty generalizations, based on just one — very imperfect — indicator (‘hourly earnings inequality’).

The not-so-transformative nature of Bidenomics is also clearly visible in **Figure 14**, in which we plot 90-10 household income inequality during 1967-2024 and 80-20 family income inequality during 1947-2024. Family income inequality declined steadily and significantly between 1947 and the late 1970s, but then exhibited a steady upward trend, uninterrupted by Bidenomics.¹⁰

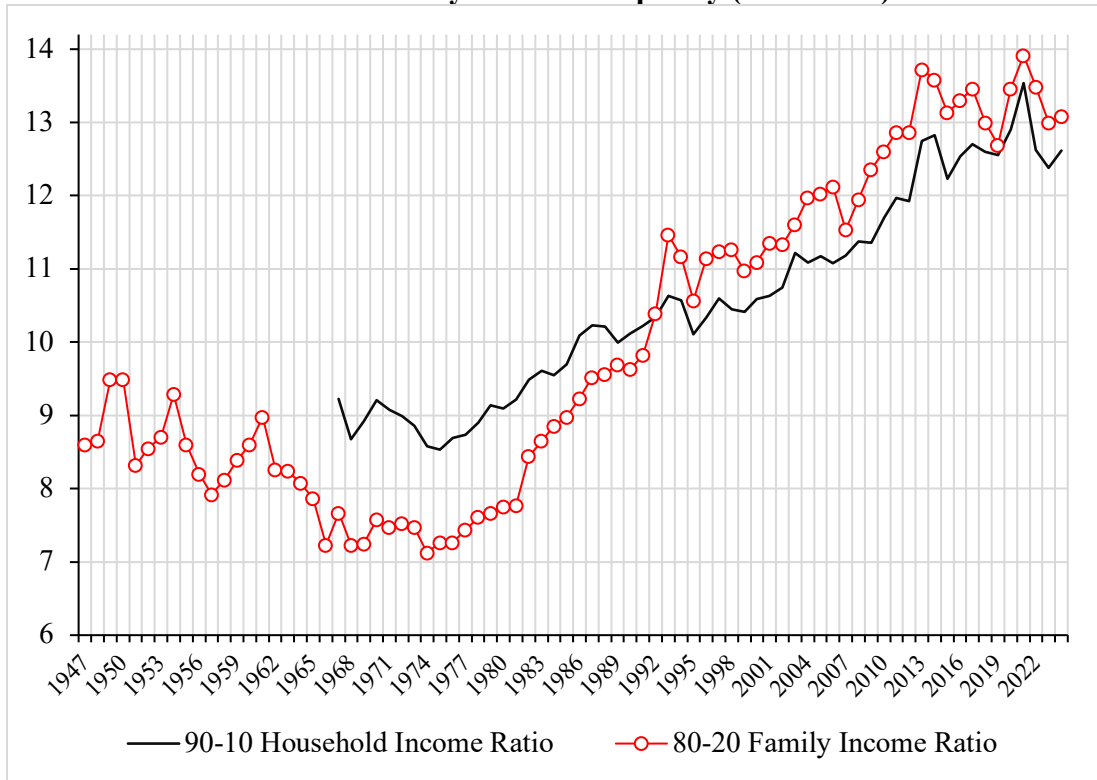
Similarly, 90-10 household income has been rising rather steadily ever since circa 1980, moving unabated along trend during Biden's Presidency. The observed decline in hourly earnings inequality did not translate, therefore, into a compression of income inequality at the level of households and families.

Our assessment of *Exhibit 2* is thus straightforward. The observed decline in *hourly* earnings inequality during 2019-2024 resulted from relatively high earnings growth for the bottom 20% of U.S. workers and stagnating earnings for the rest. Nearly all workers experienced much higher real hourly earnings growth during 2012-2019 than during 2021-2024.

¹⁰ Recent estimates for the U.S. by Blanchet *et al.* (2026) are also not consistent with claims that wage or income inequality became compressed following the pandemic. During 2020Q1-2023Q1, average real factor income of the bottom 50% declined by 1.9%, of the middle 40% declined by 0.8% and of the top 10% increased by 6.8%. Because the bottom 50% was hit the hardest and recovered last, the pandemic significantly exacerbated factor income inequality. See <https://www.realtimeinequality.org/>, the inequality database constructed by Thomas Blanchet, Emmanuel Saez and Gabriel Zucman.

Figure 14

**Income Inequality Over Time:
90-10 Household Income Inequality (1967-2024)
and 80-20 Family Income Inequality (1947-2024)**



Source: Authors’ calculations based on data on household incomes by deciles and family income by quintiles from *Current Population Reports*, U.S. Census. Income is in 2024 dollars, adjusted using the C-CPI-U (2000-2024) and R-CPI-U-RS (pre-2000).

1.3. The Irrelevance of Vibecession

Given the stagnating real incomes of American households, it is not surprising that two-thirds of American voters rated the U.S. economy negatively in November 2024. The harsh rebuke at the polls in 2024 did not come as a surprise to those who understood how disappointingly bad the growth of real earnings and real incomes had been for most Americans during 2021-2024, not just compared to pre-pandemic trends, but also in absolute terms.

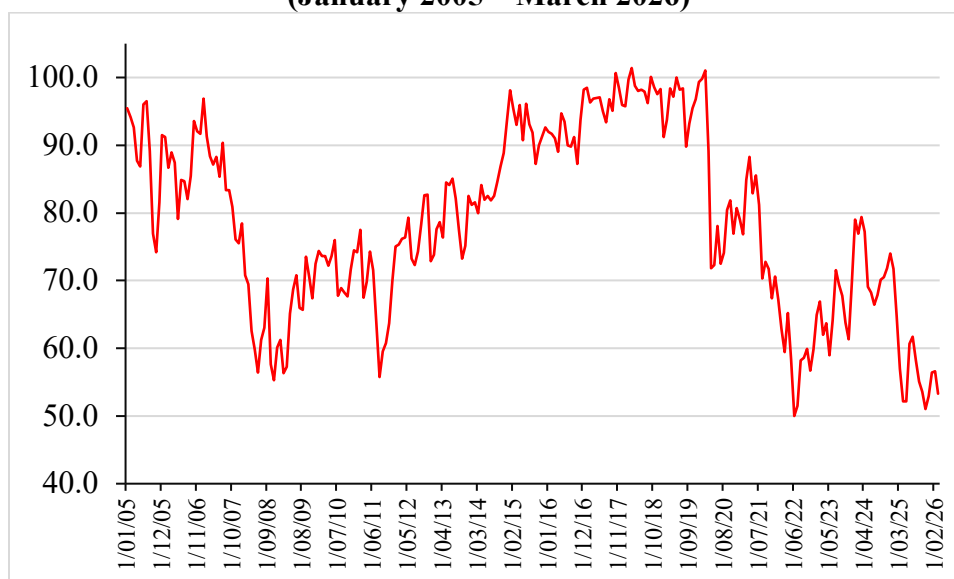
Because it does not recognize these economic realities, however, the campaign to rehabilitate Bidenomics has spilled considerable ink exploring imaginary non-problems. The outstanding case — others show in various election analyses — is the “vibecession” discussion of how consumer sentiment supposedly “decoupled” from more traditional macroeconomic indicators during the Biden presidency (Krugman 2024).

Figure 15 plots the *University of Michigan's Consumer Sentiment Index*; any score above 100 indicates net positive feelings about the economy, while a score below 100 indicates net negative feelings. Unsurprisingly, net consumer sentiment turned (very) negative following the financial crisis of 2008-2009, reaching a low of 55.8 in August 2011. Consumer sentiment then improved for more than eight years, peaking at 99.8 in January 2020, during Trump's first term. The COVID recession and chaos hurt consumer sentiment which dropped to 71.8 in April 2020, before climbing back to a level of 85.5 in June 2021.

These changes are understandable. What happened next is only a mystery for those who are blind to how disappointingly the growth of real earnings and real incomes was for most Americans during 2021-2024. After June 2021, net consumer sentiment fell off a cliff to a value of 50 in June 2022. The shift back to Trump made no difference: after a brief, feeble creep upward, consumer feelings about the economy slid again and have remained in intensive care ever since.

Figure 15

**Consumer Sentiment Over Time:
The University of Michigan Consumer Sentiment Index
(January 2005 – March 2026)**



Source: FRED Database. *Notes:* Taken every month since 1978, the University of Michigan's *Index of Consumer Sentiment* measures the share of survey respondents who feel good about the economy less the share of survey respondents who feel poorly about the economy, plus 100. Thus, any score above 100 indicates net positive feelings about the economy, while a score below 100 indicates net negative feelings. The panel survey is roughly 900 to 1,000 individuals each month, composed of both 'fresh' respondents and 'recontacted' respondents who participated six or twelve months ago.

The sharp and structural decline in consumer sentiment is not surprising. Higher prices and stagnating earnings in a context of deteriorating public services at many levels have created an acute crisis of affordability. In April 2024, the high cost of living was cited by 41% of Americans in [Gallup](#)'s annual *Economy and Personal Finance* survey as the most important financial problem facing their families; in April 2026, 31% listed the high cost of living as their chief concern. More than a third of respondents call their financial situation “only fair” and another one-fifth say their situation is “poor”.

Some critics have argued that a switch in survey interviewing and sampling methods could account for the plunge.¹¹ The University of Michigan survey researchers themselves suggested that the changes in interview mode depressed reported results by about 6.6 points – a suggestion that is reasonably close to another estimate by Cummings and Tedeschi (2024). They suggested that the shift lowered reported sentiment by about 8.9 points.

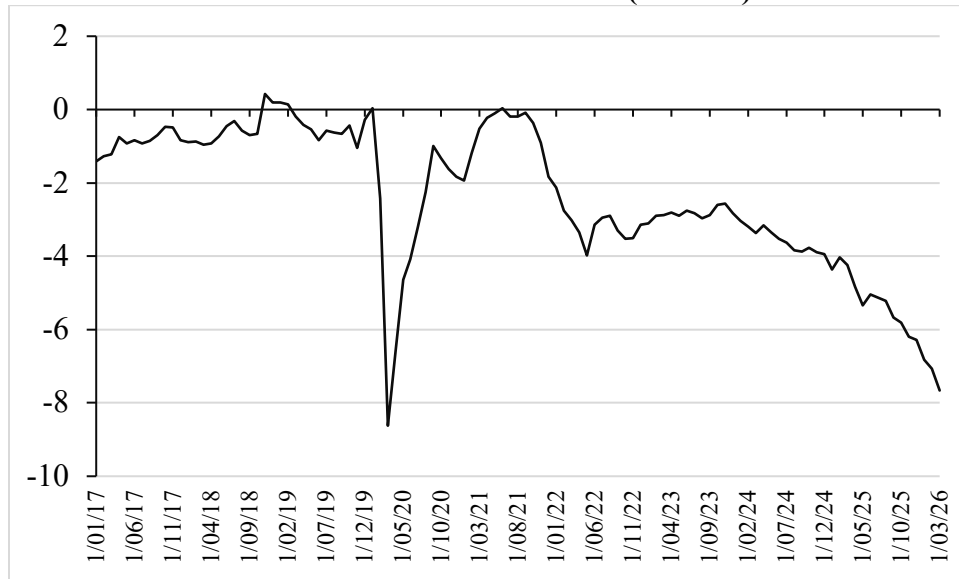
An exhaustive analysis of the dramatic swing in consumer sentiment would require a separate paper as long as the current one. But as proof of principle we undertook an econometric analysis of how popular disappointment with the meager fruits of recent macroeconomic policy may have altered the impacts of other variables that are either recognized determinants of the mood of consumers or could plausibly be considered important. We employed two different approaches, explained in detail in our **Appendix 1**. Both explicitly model the shift in the survey's technique.

Our measure of disappointment is a variable we termed “IncomeGap.” This we measured by taking the monthly difference (in percentages) between per capita real personal income (excluding current transfer receipts) and its pre-pandemic (2010-2019) trend. **Figure 16** shows how this variable behaved between January 2017 and March 2026. All through 2022, 2023 and 2024, per capita real income ran approximately 3% or more below what could have been expected based on the income growth during 2010-2019. On Trump's watch the income shortfall increased significantly, reaching 7.7% in March 2026.

¹¹ See Hsu (2024) for details.

Figure 16

Gap Between Per Capita Real Personal Income
And Its Pre-Pandemic Trend (Percent)



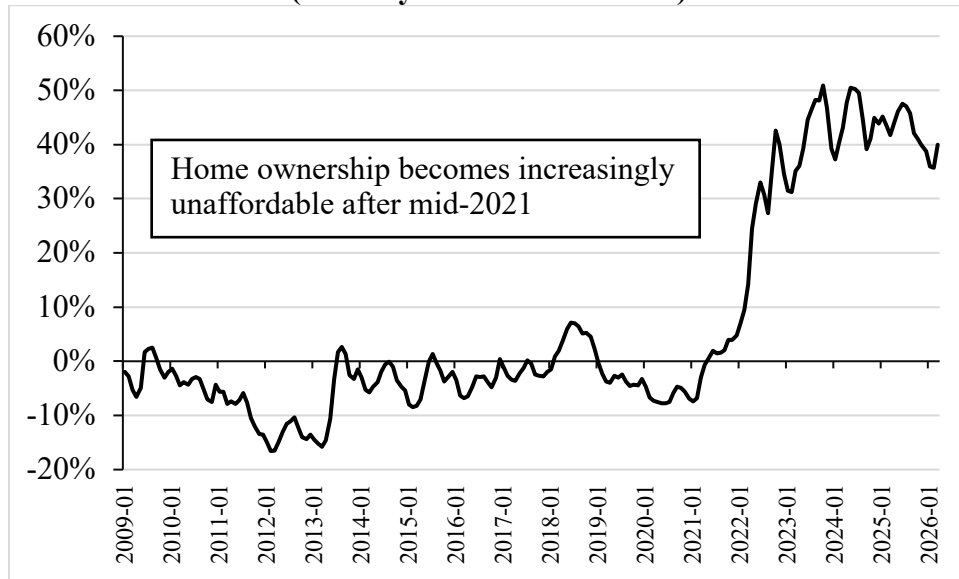
Source: Authors' calculations based on data from BEA. Income is in 2017 dollars. The pre-pandemic trend growth rate is for January 2010-December 2019. The percentage gap is defined as the difference between actual per capita real personal income (excluding current transfer receipts) and monthly trend values, during January 2017-March 2026.

We then considered more conventional variables. The first was the Standard & Poor's Index. Never mind that 87% of all American stock market wealth is owned by the top 10%; its prominence in both popular discussion and academic research made including it mandatory.

We thought the case for including an index of housing affordability was overwhelming. **Figure 17** shows how stagnating real incomes, in combination with (eventually) higher mortgage interest rates made ownership of a median-priced house *unaffordable* to more than 50% of U.S. families after mid-2021.

Figure 17

**Federal Reserve of Atlanta Home Affordability Index
(January 2009 - March 2026)**



Source: Federal Reserve of Atlanta’s Home Ownership Affordability Monitor ([HOAM](#)).

Notes: The Affordability Gap provides a comparison between the actual median income over time to the qualifying income; that is, the income needed for annual homeownership cost to equal no more than 30 percent of annual income. If the Affordability Gap is zero or below zero, a median-income family would be able to afford a median-priced home given the current interest rate. A positive Affordability Gap indicates that the annual cost of homeownership exceeds 30% of the annual median household income, and homeownership is considered unaffordable.

In early 2021, to buy a median-priced house, a family would have needed around \$65,000 — less than the median family income at that point in time. By December 2024, at the end of Biden’s term, a family would have needed \$120,000 in income, according to the Federal Reserve of Atlanta — 44% more than the prevailing median income. Stagnating earnings make it impossible to service the mortgage costs — forcing up the ages of the [median first-time homebuyer](#) in the United States from around 30 in 2010, to 33 years old in 2021 and 38 years in 2024 (Wealthview 2026). Since mid- 2021, the dream of home ownership has been quickly slipping away, as buying a house has become a privilege for the very rich — as is shown by a recent survey by [The Harris Poll](#) on homeownership. “Among Americans earning over \$200,000 a year, nearly half say you need a \$300k income to afford a home. Not to afford a nice home. Just a home. This is the

American Dream, frozen,” states [Libby Rodney](#) (on April 6, 2026), chief strategy officer at The Harris Poll (Riquier 2026).

We also looked at inflation as measured by the Fed’s preferred personal consumption expenditure (PCE) index, and the percent of the civilian labor force with a disability. The Biden administration’s record on dealing with COVID was much worse than commonly acknowledged, as a variety of recent leaks has revealed.¹² We wanted to rule out effects from that quarter.

We started our analysis with straightforward time series regressions, but our tests revealed multiple layers of complexity that complicated estimation. Multicollinearity between several variables, not surprisingly, was high, while others turned out to be cointegrated. This allowed us to use vector error correction models, running both single equation and full error correction versions as additional tests. The single equation proved to be sufficient. **Appendix 1** sets out our results in detail. Here we simply state the conclusion: even taking account of the switch in interviewing techniques, our IncomeGap variable always appears to be most important variable in the system. Or in plain English, the steep drop off in personal income growth indeed appears to be an important factor in the precipitous decline of consumer sentiment under both Biden and Trump 2.0.

Some telling signs of stress among consumers appear in **Figure 18**: delinquency rates on credit cards and auto loans have increased considerably above their pre-pandemic averages since early 2023, *i.e.*, right when Biden’s economy was supposedly running at full steam.

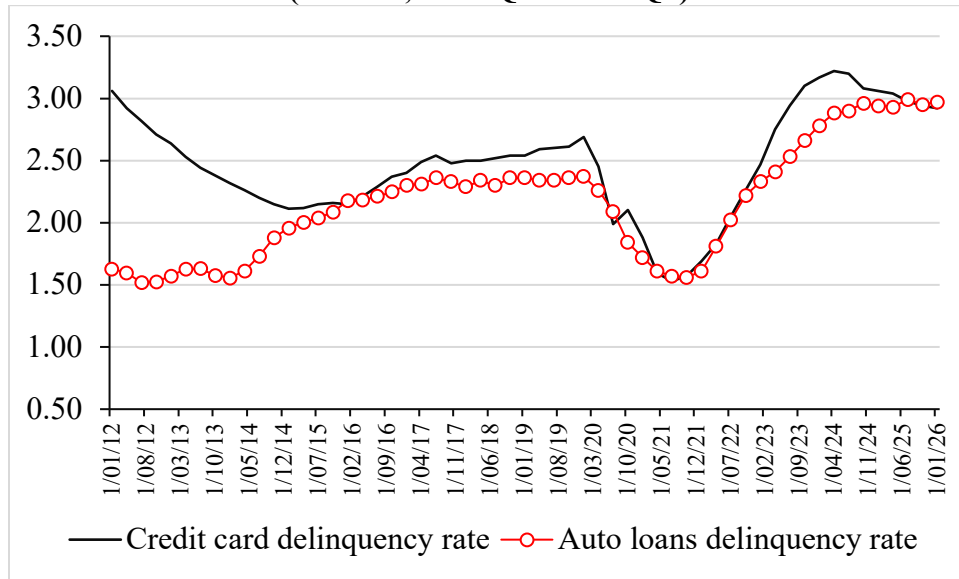
Rising delinquency rates signal that more consumers are struggling to meet their credit obligations, which is a clear warning that the economy is not working for many.

This part of our discussion requires one final note. Our measure of consumer disappointment registered drop offs in real personal income in recent years from past trends. But we would caution strongly against seeing the growing crisis as reflecting only stagnant *individual* incomes.

¹² The Biden administration did not accept suggestions to create a national commission to assess what went wrong during the pandemic. Instead it accepted advice from political consultants to just declare victory and move on. See the references and discussion with Philip Alvelda in Parramore (2024); cf. also Feldman (2022).

Figure 18

**Delinquency Rate on Credit Card Loans and Auto Loans
(Percent; 2012 Q1 – 2026 Q1)**

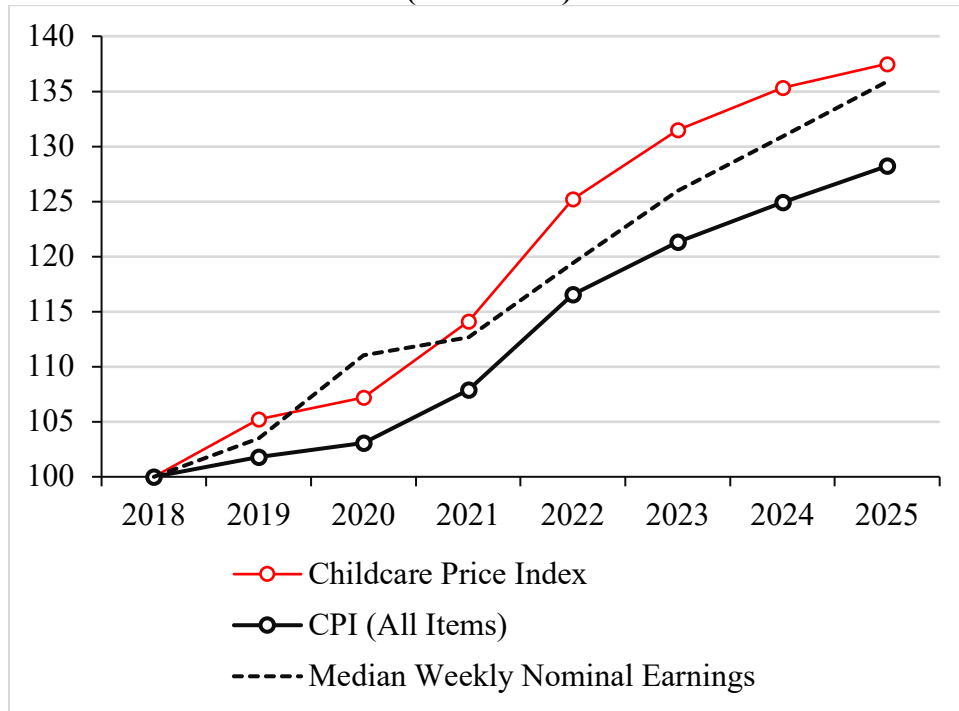


Sources: Credit card delinquency rate: FRED Database, Delinquency Rate on Credit Card Loans, All Commercial Banks, Quarterly. Auto loans delinquency rate: Federal Reserve Bank of New York Consumer Credit Panel/Equifax. *Notes:* The credit card delinquency rate is the percentage of credit card accounts that are 30 days or more past due. The pre-pandemic average credit card delinquency rate during 2012-2019 is 2.45%. The auto loan delinquency rate measures the fraction of balances that are at least 90 or more days past due. The average auto loan delinquency rate during 2012-2019 is 2.01%.

Due to the financial strains caused by higher grocery store prices, education, rising housing costs, and stagnating real incomes, few families can manage with only one income — and more two-working-parent families means that there is a greater need for childcare. But between 2018 and 2025, childcare costs rose faster (by 37.5%) than median weekly nominal earnings which increased by 35.9% (**Figure 19**). Childcare prices rose faster than the CPI Index.

Figure 19

Childcare vs. CPI vs. Wages
(2018 = 100)



Sources: data on the childcare price index are from Daycare Cost Guide (2026). Annual data on the CPI and median usual nominal earnings are from FRED Database.

[Nearly 10 million children](#) between birth and age five are enrolled in childcare (Buller 2025). Not surprisingly, for many Americans, childcare is one of the largest recurring expenses they face. According to [Childcare Aware of America](#) (CCAoA 2026), the national average annual price of child care in 2025 was \$13,184, or 10% of the median income of a married couple with children. For the median worker, it takes 11 weeks of full-time work just to cover the annual costs of childcare; for the quartile lowest-paid workers, it requires between 15 and 20 weeks of full-time work to cover the childcare expenses.

Without policies that support working families and unable to find affordable childcare options that work with the demands of their jobs, many parents have no other option left than to put their financial wellbeing and mental health on the line. To make it work, they are taking out lines of credit, working second jobs or commuting additional hours out of the way to bring their kids to daycare. Many mothers are forgoing careers entirely — the U.S. labor force participation rate of women aged 25-54 years remains comparatively low in the group of 38 OECD countries.

With various qualifications, the same holds for other domains where collective consumption possibilities have been narrowed, typically from the effects of austerity on publicly supplied alternatives. For reasons of space, we will not trace the specifics of how education at many levels, health care, retirement security, and long-term care for the elderly now squeeze many families. But they plainly contribute in major ways to the affordability crisis. The increasingly dire status of so many forms of collective consumption is a warning about proposals to solve the income squeeze by Universal Basic Income schemes. Because these do nothing directly to ease the dearth of public goods, UBI would provide average Americans with the means to buy more and more of less and less. UBI schemes would force people to reinvent the wheel all by themselves; they imply a massive loss in welfare, even if some reinventions, especially among the affluent, might work (Behringer *et al.*, 2022).

2. Wealth, Consumption, and the Federal Reserve

Analyses of quantitative easing (QE) by central banks are uncomfortably like discussions of the music and influence of Richard Wagner. Passions run strong; not one, but several cults are influential, and even bare facts are often highly contested.¹³ For this paper, most of these debates do not matter. Only three basic points are crucial to grasping how the Fed, working with the Treasury in two different administrations, brought about an historical leap from quantity to quality in the macroeconomics of growth and consumption.

The first concerns the sheer, stunning dimensions of what happened. While most Americans struggled with the deepening crisis of affordability, a much smaller slice of the population was thriving. In what likely ranks as the greatest peacetime wealth transfer in world history, the Federal Reserve's renewal of its quantitative easing policy as COVID hit was sending prices of stock, bonds, and houses to record highs. The gains went overwhelmingly to America's most affluent citizens who already owned financial assets and houses.

As COVID swept over the world in early 2020, world markets shuddered briefly, then collapsed. A classic “dash for cash” ensued, as wealth holders stampeded out of any asset that looked at all risky. Proposals to provide assistance to ordinary Americans stalled amid bitter political debates between Congress and the White House, but the Federal Reserve moved virtually at light speed to rescue financial markets. Hitting pause on its efforts to trim its swollen balance sheet from earlier bouts of QE, the Fed pivoted into its “Medicare for All” mode — for all in the financial

¹³ Fabo *et al.* (2022) conclude that “central bank papers find QE to be more effective than academic papers do. Central bank papers report larger effects of QE on output and inflation. They also report QE effects on output that are more significant, both statistically and economically, and they use more positive language in the abstract. Central bank researchers who report larger QE effects on output experience more favorable career outcomes.” This is interesting in light of recent Federal Reserve appointments, to say the least.

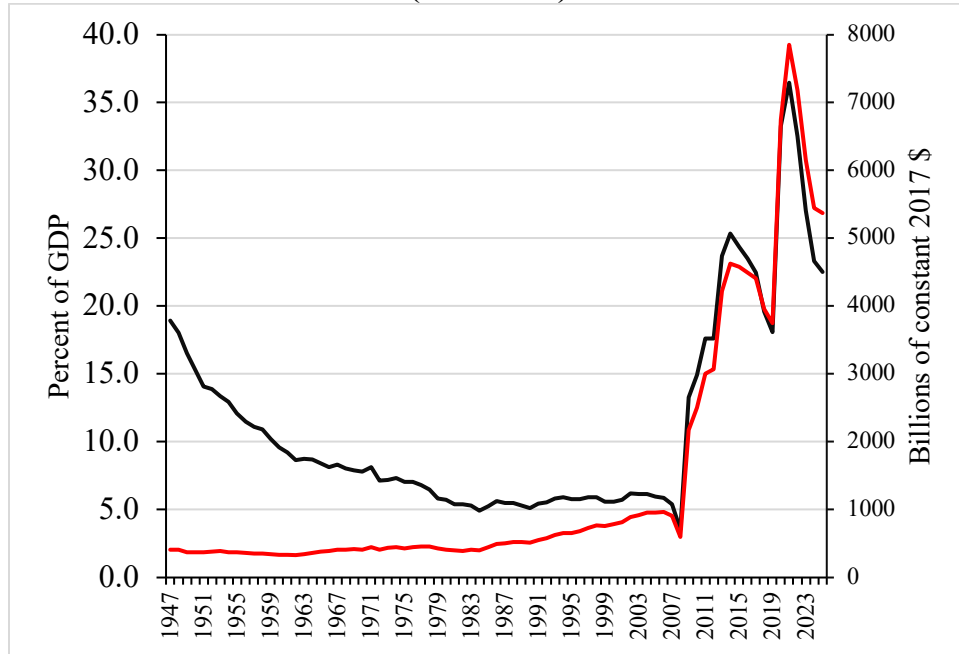
sector, that is. In March it slashed the federal funds rate virtually to zero and launched a dizzying series of new special “facilities” — five on its balance sheet, six off it (with Treasury support) — to force feed the swooning economy with bargain basement money and credit.¹⁴ It also activated swap lines with other central banks so they could head off fire sales of dollar assets held outside the United States.

The unprecedented scale of the safety net the Fed provided to banks and non-bank financial firms is illustrated in **Figure 20**, which shows Federal Reserve Bank assets as a percentage of GDP and in constant 2017 U.S. dollars during 1947-2025. During the first two decades following WWII, the Fed shrank its balance sheet relative to GDP. Between 1979 and 2008, the assets of the Fed hovered around 5% to 6% of GDP. ‘Unconventional’ QE in response to the financial crash of 2008-09 ballooned Fed assets to more than 24% of GDP in 2015. The Fed’s COVID response in 2020 and 2021 raised its holdings to 36.5% of GDP, up from 18.1% in 2019. Between 2020 and 2025, the assets held by the Fed rose by \$3.6 trillion (in constant 2017 dollars) — all intended to backstop financial markets and rescue wealthy corporations, while ordinary workers faced a harsh, risky marketplace with a weak social safety net full of holes.

¹⁴ See Hoops and Kurtzman (2021).

Figure 20

**Medicare for All in Finance:
Federal Reserve Bank Assets
(Percent of GDP and Billions of 2017 Dollars)
(1947-2025)**



Sources: GDP data are from BEA National Accounts; data on Federal Reserve Bank Assets are from Board of Governors of the Federal Reserve System, [‘A Brief Illustrated History of the Federal Reserve's Balance Sheet’](#).

It is no exaggeration to claim that the idea of a “Fed put” stemming from the Greenspan era, that the central bank will intervene to support markets and economies in times of turmoil, was a first public expression of what soon became a distinctive commitment to “socialism for the rich” by central banks and regulators.¹⁵ In the face of even truly absurd stock-market-price-to-earnings ratios, regulators and central banks resolved not to intervene, pleading that no one could exactly identify a bubble. When the bubbles finally burst, all hands jumped to the pumps to prevent securities prices from falling too far, usually on the flimsy pretext of bringing improvements in labor markets that could have been achieved much faster by fiscal policy.

The second vital point to understand is the historically specific way this vast expansion of the Fed’s balance sheet played into developments within the real economy that magnified QE’s

¹⁵ Studies of the Fed reaction to stock markets pose acute statistical difficulties, especially when interest rates are near zero. Most published studies also pre-date COVID and the rise in global interest rates. The subject is too complex to analyze here. See, in the meantime, (Kurov *et al.*, 2022).

original effects. As emphasized very early by Ferguson and Storm (2023), the surges in prices for stocks, securities, and housing from QE were so colossal that they were creating a “wealth effect” on spending of historic dimensions.

But pushing interest rates to the floor also helped supercharge parts of the real economy already in the throes of dramatic transformations. Well before COVID, a handful of giant Silicon Valley firms were competing to develop advanced forms of artificial intelligence more closely mimicking human thinking. Much of the competition centered on developing so-called LLMs — large language models.

As the new technology powered forward and rivalry between the U.S. and China heated up after 2017, relations between the US defense establishment and many of these firms intensified. QE’s ultra-low interest rates certainly helped firms to keep leaping ahead as they leveraged growing government subsidies, contracts, and friendly regulatory policies. At near zero interest rates, all kinds of moves look profitable that firms would not normally contemplate, including hoarding vast amounts of highly skilled labor just to keep them from competitors.

Sharp rises in stock prices of many leading firms stimulated increasing investor buzz. Blazes of hype surrounding roll outs of striking new products like ChatGPT and Anthropic’s Claude convinced millions of people that they were living through a tech shift comparable to the advent of railroads, electricity, or automobiles.

In a parody of the celebrated Gospel injunction that “For whoever has will be given more, and they will have an abundance” (Matthew 25:29), the budding AI super-boom made QE’s wealth-enhancing effects bullet proof to normal cyclical correction mechanisms.

In March, 2022, with inflation surging, the Fed raised interest rates for the first time. The increase was for but 25 basis points. Soon that 25 basis points turned into 50; then sometimes 75. By July, 2023, the new target rate had reached 5.00 to 5.25 percent — [the biggest increase](#) in rates since the Volcker era.

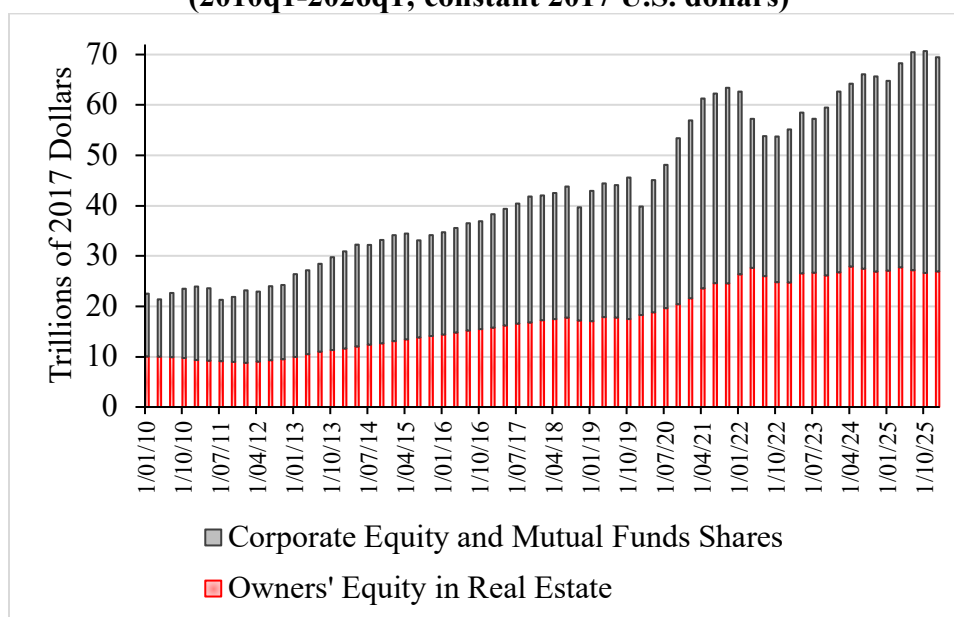
Rates rises of this scale normally chill market rallies. This time, however, really was different. The technical marvels kept coming and the hype only intensified. Stock markets briefly hiccupped but then resumed ascending amid excited discussions of “AGI” (Artificial General Intelligence), the “Singularity,” and related marvels. The wave of tech investments quickly spilled over to related industries. As the stock market rocketed up and up, demand for electricity, “compute,” and data centers exploded, while capital spending for AI and related sectors, including electric power, soared to new heights.

The combination of QE and the AI boom blew past all records for wealth creation. From the first quarter of 2021 to the first quarter of 2026, as shown in **Figure 21**, household wealth soared by

\$29.4 trillion (in current prices), or \$12.5 trillion (in constant 2017 dollars). Owners' equity in real estate rose by almost 25%, while the stock market wealth of American households increased by more than 20%.

Figure 21

**Household Wealth:
Owners' Equity in Real Estate and Corporate Equity
(2010q1-2026q1; constant 2017 U.S. dollars)**



Source: FRED Database; series BOGZ1LM193064005 and OEHRENWBSHNO.

The wealthiest households gained the most by far, because they own a disproportionately large share of household (net) wealth. According to Fed data, the wealthiest 10% own around 87% of all corporate stocks and mutual fund shares owned by U.S. households. The wealthiest 1% (0.1%) owns 50% (22.7%) of this stock market wealth. The same top 10% of the household wealth distribution also owns around 50% of housing net worth — and the top 1% (0.1 %) has a share of 21% (6%). This means that the wealthiest 10% of U.S. households alone gained more than \$21 trillion (in current prices) in that five-year period.

As our **Appendix 2** explains, estimates vary of how much additions to wealth translate into spending and over how long a time period that takes. But differences among the estimates are much less dramatic than the scale of the wealth increases the United States was experiencing.

From the beginning, as Ferguson and Storm (2023, 2024a) observed, a consensus estimate of the marginal propensity to consume out of wealth implied an initial boost to spending on consumption about the same size as the pandemic relief programs but concentrated at the top of the income distribution. That was a principal reason for rejecting the common claim that short lived relief spending was to blame for the inflation.

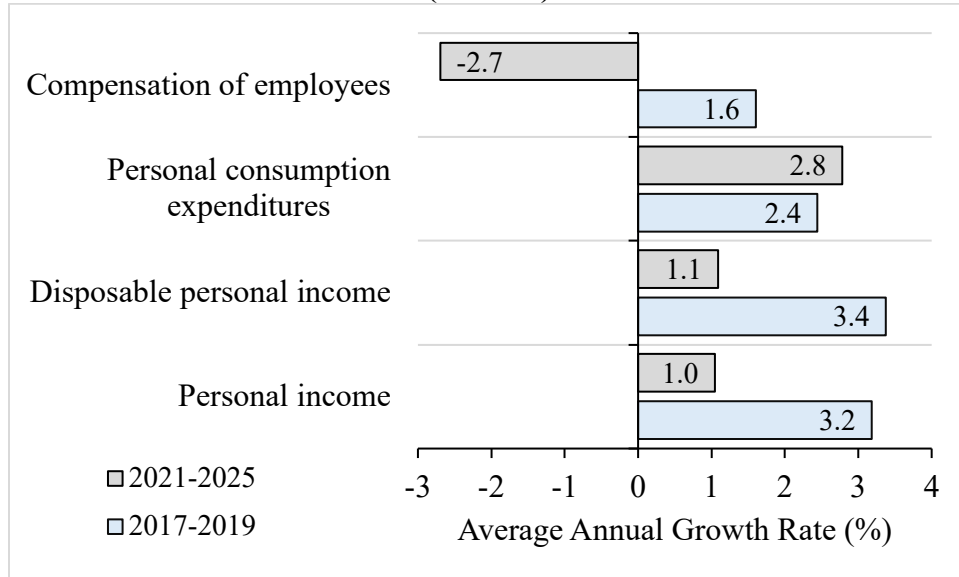
The relief programs themselves added roughly \$1.4 trillion to aggregate disposable personal income, with almost 90% of that disbursed before inflation accelerated. Initially, however, consumer spending did not respond proportionally. With COVID raging households — especially the wealthiest — saved most of the transfers, accumulating [an estimated \\$2.1 trillion in aggregate excess savings](#) through August 2021. It is important to note, based on BEA/BLS data on the distribution of personal savings during 2020-2021, that the bottom 50% of the income distribution never accumulated any excess savings, but rather continued to dissave — that is spend out of past savings or borrow to make ends meet. The top 10% accumulated around half of the aggregate excess savings, while the next richest decile accumulated circa 16% of aggregate excess savings during 2020-2021 (Ferguson and Storm, 2023; 2024).

When consumption finally surged after vaccines became more available, it was late in the game (late 2021 and after) and well after most pandemic transfers had wound down. Hence, after August 2021, aggregate personal savings dipped below the pre-pandemic trend, signaling an overall drawdown of pandemic-related excess savings. With real wages eroding, the savings of ordinary Americans were rapidly melting away. Many were going into debt.

The puzzle, as emphasized by Ferguson and Storm, is that from the second quarter of 2021 onwards, real personal consumption expenditure (PCE) began to grow considerably faster than could have been expected based on its pre-pandemic trend. As is shown in **Figure 22**, the average annual growth rate of real PCE during 2021-2025 was 2.8%, compared to a growth rate of 2.4% per year during 2017-2019. The acceleration during 2021-2025 is all the more remarkable, because the growth rates of real personal income, real disposable personal income and compensation of employees all declined relative to their growth rates during the pre-pandemic years 2017-2019.

Figure 22

**Growth of Real Personal Income
and Real Personal Consumption Expenditure
during 2014-2019 *versus* 2021-2025
(Percent)**

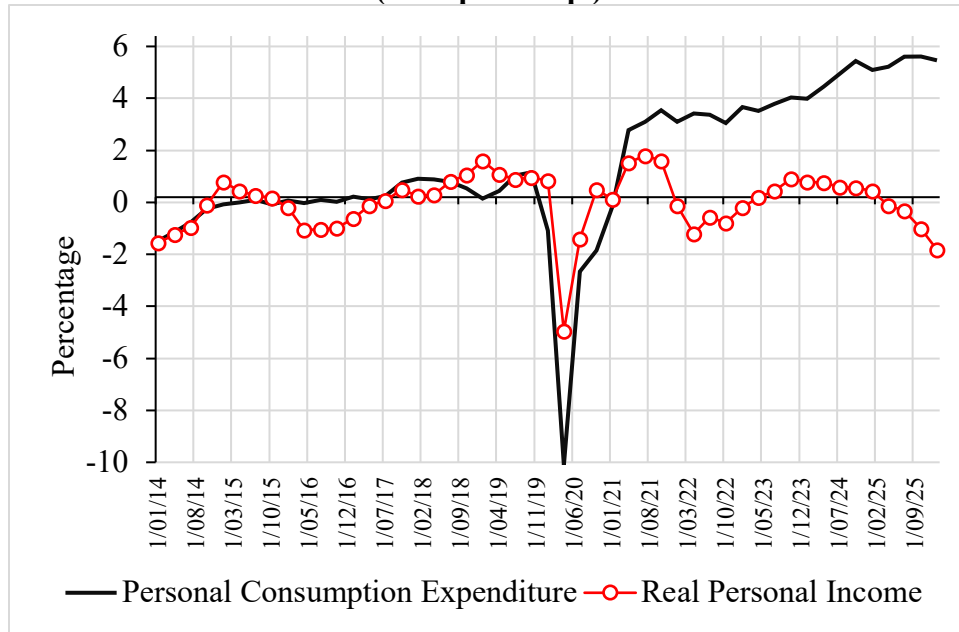


Sources: Authors' calculations based on BEA data.

By the end of 2023, real PCE was running \$0.6 trillion (in constant 2017 dollars) above its long-run trend, even though real aggregate personal income (excluding current transfer receipts) actually *stagnated* during 2021–2023 (**Figure 23**).

Figure 23

**Personal Consumption Expenditures and Personal Income:
Percentage Deviations From Pre-Pandemic Trend
(2014q1-2026q1)**



Sources: Authors' estimation based on BEA data. *Notes:* The deviation in black is the percentage gap between actual real Personal Consumption Expenditures (PCE) and its pre-pandemic (linear) time trend, estimated using quarterly data for the period 2010q1-2019q4. The deviation in red is the percentage gap between actual real Personal Income Excluding Current Transfer Receipts and its pre-pandemic (linear) time trend, estimated using quarterly data for the period 2010q1-2019q4.

In the first quarter of 2026, real PCE exceeded its longer-run trend by 5.3% (or around \$0.8 trillion dollars in 2017 prices). In cumulative terms, real PCE during 2022q1-2026q1 was some \$2.7 trillion higher than could have been expected based on its pre-pandemic trend. Note that over the same period, cumulative real personal income (excluding current transfer receipts) was \$190 billion *lower* than it would have been if it had grown according to its pre-pandemic trend (**Figure 23**).

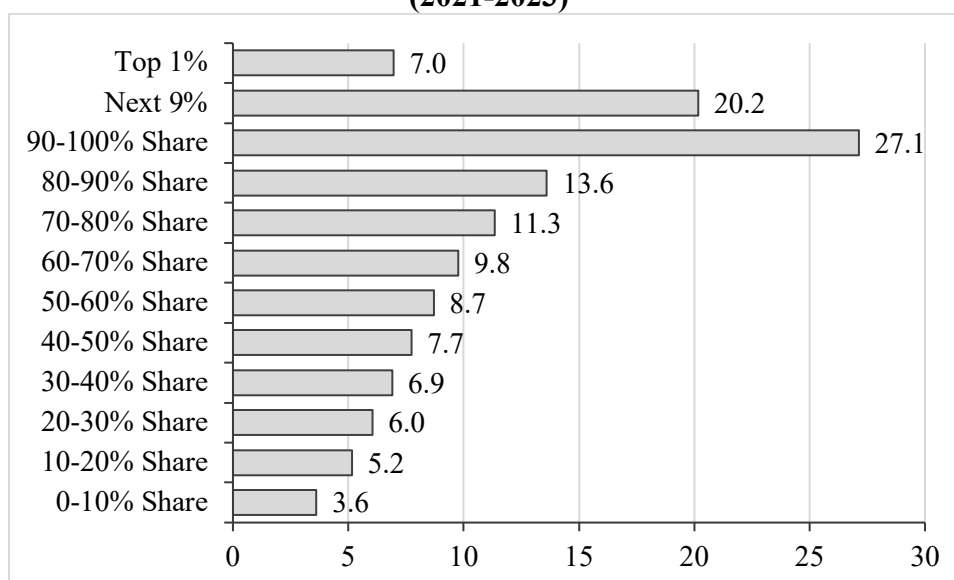
It is clear that this documented surge in real personal consumption spending above trend is overwhelmingly driven by surging spending by America's richest households. This 'wealth effect on consumption' solves the puzzle: the wealthiest American households stepped up consumption, funded out of their exploding wealth, even if their real incomes were falling and even when interest rates began to rise. The Fed was thus a major cause of the inflation it was trying to end.

But ascertaining precisely how much spending came from which rich households is not easy.

The *Bureau of Economic Analysis* and *Bureau of Labor Statistics* issue [data on the distribution of \(real\) personal consumption by income deciles](#) only at intervals. Their most recent data cover the period 2021-23. This suggests that the richest 10% are responsible for about 27% of aggregate personal consumption expenditures, with the spending of the top 1% accounting for 7% of aggregate consumption expenditure during 2021-2023.

The richest 20% of U.S. households account for 40.7% of aggregate PCE. They have been disproportionately responsible for the surge in aggregate consumer spending above pre-pandemic trend (observed in **Figure 24**). But both the Federal Reserve’s estimates of wealth holdings and the BEA/BLS statistics for consumption underestimate top shareholders’ stakes. The economists at all three bureaus are highly skilled, dedicated professionals who try seriously to coordinate their work with best practices worldwide and especially within the OECD. They recognize the problem, which derives essentially from the fact that most of their data comes from surveys that routinely under-sample the super-rich.

Figure 24
Personal Consumption Expenditures: Decile Shares
(2021-2023)



Sources: BLS and BEA, ‘Distribution of Personal Consumption Expenditures’.
<https://www.bls.gov/cex/pce-ce-distributions.htm>

The fix for this is well-known: at the point in the overall distribution where the data become seriously unreliable apply what is known as a “Pareto correction.” Named for the Italian economist Vilfredo Pareto, whose work helped develop the concept, this involves reweighting the data to better reflect the missing observations.

In recent years, the Fed has adjusted the wealth estimates based in part by studying the distribution of reported wealth held by the Forbes 400 richest Americans. This is perfectly sensible, but concentration within the 400 lags far behind the rate at which top wealth has distended, especially since 2020. Some examples make the point clear: In 2006 for the first time, every member of the Forbes 400 was a billionaire (Ahrens, 2006). Regular updates by *Forbes*, *Bloomberg*, and others have, however, identified hundreds of billionaires who now occupy rungs just below the exalted 400. A correction based on the Forbes 400 thus covers a shrinking portion of the super-rich. The Fed assessments also likely underestimate private equity wealth.¹⁶ The conclusion has to be that wealth at the very top is now more concentrated than the Fed's numbers suggest.

A similar problem afflicts estimates of consumption by the very rich. The BEA applies its Pareto correction to the top 5% of spending units, using a yardstick that did not change between 2000 and 2023 ([Garner et al. 2025](#)). Its broad coverage understates the size of the errors at the top, even though the superrich are known to consume less of their income than the rest of society. Just as with wealth, the conclusion has to be that the published statistics do not fully capture the share of consumption by the rich, especially at very high levels.

Ferguson and Storm (2023, 2024b) were clear that the existence of a “dual economy” was not a recent development and that wealth, not income was the defining characteristic of this latest phase. Because the hyper-concentration of wealth and spending by affluent Americans has become impossible to ignore, many popular discussions take the form of arguments over the extent of a “K-shaped” economy – a term originally used with reference to income disparities.

Subsequent discussions of the rising dependence of US growth on spending by the richest Americans have put forward a range of estimates of how top-heavy consumption now is. The Bank of America, researchers at the Dallas Fed (Hoham and Yang, 2025) and others have all debated the issues. Data from big bank payments systems provide valuable [confirmation of the trend's existence](#), but they also raise yellow flags about the extent to which their findings can be generalized beyond the bank.¹⁷ Mark Zandi, chief economist at Moody's Analytics, has estimated that spending by the top 10% earners — Americans making at least \$251,000 in 2024 according to Census data — [drove 45% of consumer spending in 2025](#), up from 36% three decades ago (Horwich 2026).

¹⁶ For the Fed procedures, see Batty, Bricker, *et al.* (2019) and later publications, e.g., Batty, Neilsen *et al.* (2020); for the Forbes 400, see Bricker *et al.* (2019) and subsequent updates [Batty et al. \(2022\)](#). Bloomberg and Forbes each publish lists of billionaires. See also Blanchet *et al.* (2026)

¹⁷ Their data about clients' wealth is often also fragmentary, biasing their discussions toward wages.

Moody’s estimation procedure is opaque.¹⁸ Even making allowance for the problems with the BEA/BLS estimates reported in **Figure 24**, we regard these very high figures as quite unrealistic. Moody’s should detail how they arrived at them.

Our **Appendix 2** sets out our own cautious answers to the questions of how much and by whom. It updates earlier estimates of the wealth effect on US consumption presented in (Ferguson and Storm 2023, 2024a). It reviews alternative assessments of the wealth effect and explains our procedure in more detail. As in the earlier estimates, we distinguish two main categories of wealth: housing wealth (defined as owners’ equity in real estate) and financial wealth (defined as corporate equities and mutual fund shares).

Housing wealth and financial wealth are defined as ratios of aggregate personal consumption expenditure. The housing wealth and financial wealth ratios for the year 2017, when personal consumption had recovered from the Great Financial Crisis, are used to normalize the wealth ratios over the period of analysis 2014q1-2026q1. Rather than settling on one estimate, we estimate empirically plausible lower and upper bounds of the wealth effect on consumption by applying relatively low and relatively high values for the MPCs.

The quarterly results for the twelve-year period 2014q1-2026q1 appear in **Figure 25**. The black line in **Figure 25** represents the quarterly (percentage) consumption deviation from trend, which is the same as in **Figure 23**. The blue band indicates the plausible range of magnitudes for the wealth effect on consumption that fall within the lower and upper-bound values for the MPCs presented in **Appendix 2**. Between 2010 and 2020, the potential bandwidth of the wealth effect was relatively small, but then begins to increase, in line with the unprecedented explosion of household wealth during 2021-2025. For empirically realistic ranges of values for the MPCs we find that the surge in real PCE above pre-pandemic trend during 2021q2-2026q1 falls squarely within the stipulated upper and lower bounds of the wealth effect on consumption.

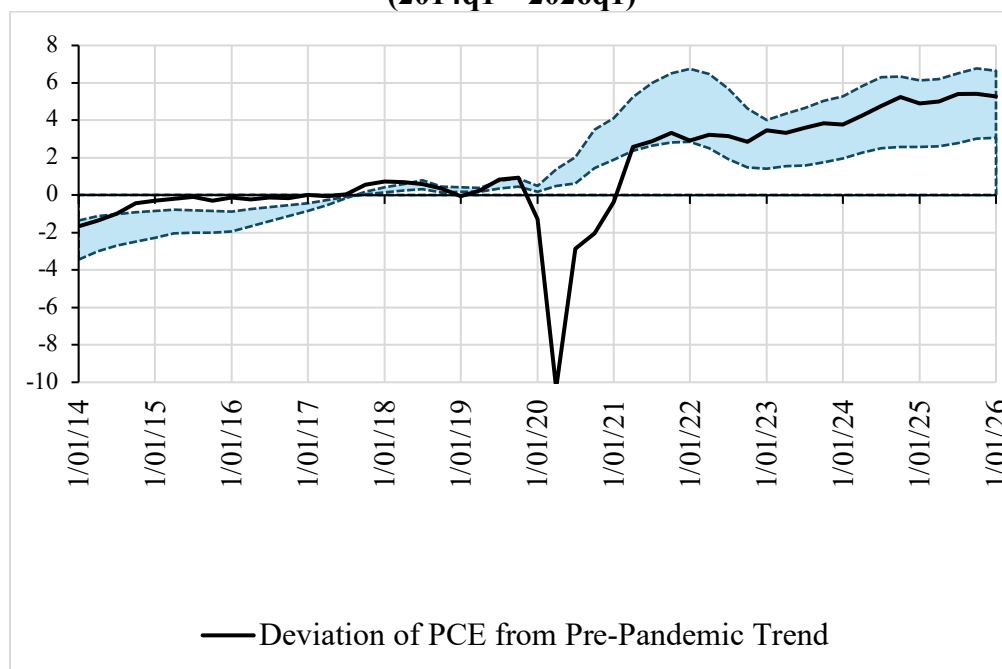
These results suggest that the wealth effect can account for virtually all of the observed deviation of real PCE from its pre-pandemic trend during 2021q2-2026q1. The *mean* cumulative magnitude of the wealth effect on real consumption expenditure during 2021q2-2026Q1 amounts

¹⁸ Moody Analytics determines personal savings (of different demographic groups) as net acquisitions of assets and liabilities, using data from the Federal Reserve’s quarterly Financial Accounts and the triennial Survey of Consumer Finances (SCF). The SCF is also used to allocate personal disposable income available from the BEA across demographic groups. These savings are subtracted from disposable income to yield a residual “personal outlays”, which is then taken to measure consumer spending. See [Horwich \(2026\)](#). The Dallas Fed study follows Moody’s, but also offers few details about its own methods.

to circa \$2.5 trillion (in constant 2017 prices), a magnitude that would account for more than 90% of the deviation of real PCE from its pre-pandemic trend.

Figure 25

**Wealth Effect on Personal Consumption Expenditures
(2014q1 – 2026q1)**



Sources: Authors' estimation. See **Appendix 2**.

The implications of this analysis for the question of how top-heavy consumption spending now is are straightforward: the estimates by Moody's and the Dallas Fed are too high. A cautious best estimate is that the richest 10% of Americans drove around ± 22 -23% of consumer expenditure in 2025, while the richest 20% were responsible for ± 42 -43% of consumer spending. Beyond this quantitative result, though, stands an important qualitative conclusion. Financial fragility once again haunts the whole economy, this time through consumption: U.S. economic growth has become unhealthily reliant on sustained increases in stock markets and house prices and uninterrupted wealth gains for the richest.

3. Affordability and Party Competition in the Long Run: Total Employee Compensation

The dismal wage growth under Biden and now Trump 2.0 is, unfortunately, not an aberration. It reflects an intensification of trends that have persisted for many years through administrations headed by both Democrats and Republicans.

We begin (in this section) with a scrutiny of labor's share of the national income through time here. **Section 4** expands the argument by considering a wider range of data.

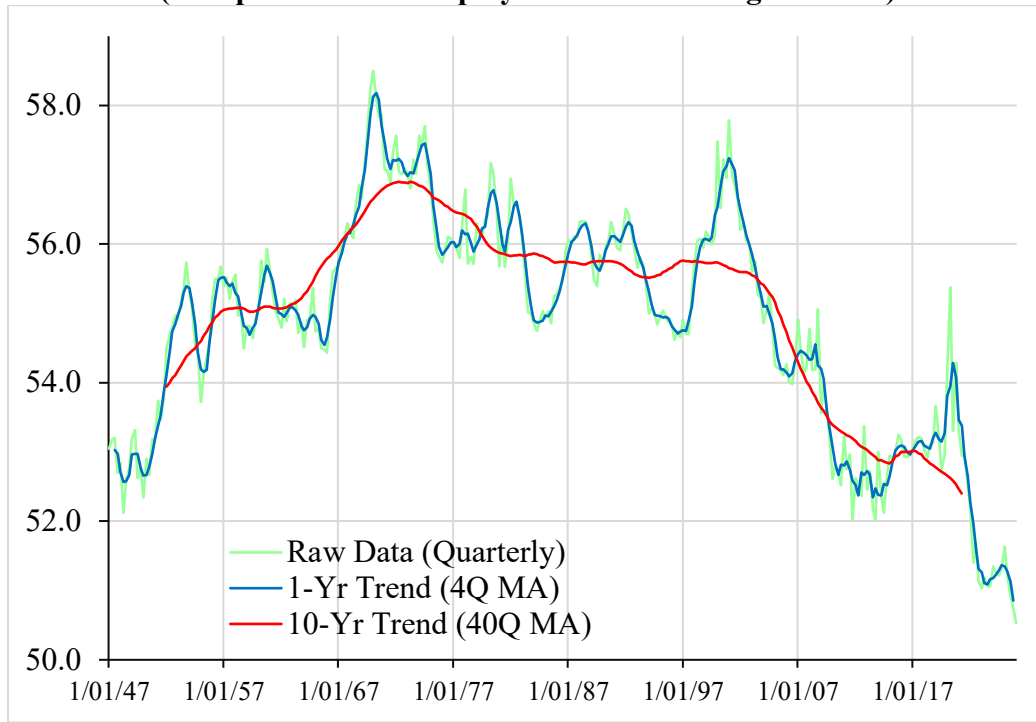
Figure 26 displays quarterly data for the total compensation of all employees as a percent of gross domestic product since 1947. Several features of the data require advance notice. Firstly, "total compensation" refers not only to wages and salaries but also benefits. More importantly, "all employees" means literally that, and, alas, only that. The statistics include the earnings of part-timers and workers who toil only part of the year, but further breakdowns by gender, race, or ethnicity are not available. This is a serious limitation for obvious reasons.

Another weighty issue is that the data do not include the earnings of individual proprietors. Debates over whether those should be included have been endless. We take the same view as the U.S. *National Income and Product Accounts*: we do not include proprietors' incomes, though perhaps for more reasons than the NIPA compilers might cite.

It may sound paradoxical that the earnings of a plumber in business for herself count as a proprietor, while if she does the same work in someone else's enterprise her earnings will show up in this data. But the apparent anomaly shrouds the deeper reality. Proprietors can decide to stop working and they can certainly go bankrupt, but workers are hired and laid off by somebody else.

Figure 26

**The Labor Income Share (1947q1-2026q1)
(Compensation of Employees as a Percentage of GDP)**



Source: Compensation of employees <https://fred.stlouisfed.org/series/COE>; GDP

Similar asymmetries hold for many other decisions that are prerogatives of owners, such as whether to pay benefits or final decisions on work shifts. This institutionally crucial distinction is not a “sociological” curiosity; for understanding the long-term squeeze on the living standards of average Americans combining the incomes of proprietors with workers is mixing apples and oranges.¹⁹

The ramifications of this issue reach deep into economic theory and certainly affects how one views post-war American history. The usual case for including proprietors’ incomes stems from mainstream economic theory’s hope of distinguishing between the returns of various “factors” of production, not social actors: In this instance, separating out what owners earn on their invested

¹⁹ See the insightful discussion in Toporowski (2020); we take his point fully, but we caution for readers unfamiliar with the literature cited there that we are not following Kalecki’s sectoral exclusions of some wage incomes. Those made sense given what he was trying to do in the world of that time. Lazonick (2015) makes the important point that some executive compensation is included in these numbers also.

capital from what they receive for their labor services as they work. In real life, however, many proprietors earn very little, even after near-magical assistance from the tax code.

Reliable data for sorting among their operations is often vanishingly scarce. That recent U.S. tax laws incentivize corporations to shift shapes (typically from so-called C-corporations to S-corporations) adds additional layers of opaque accounting and conceptual headaches. In practice, analysts who persist in trying to winnow the data usually end up recommending some rule of thumb, such as fifty-fifty splits of reported earnings or unique adjustments for particular lines of work. But they do not uniformly recommend the same rules and diverse catalogs of exceptions are not difficult to generate.

We are not surprised that applied economists sometimes dismiss all such efforts as hopelessly noisy and limit analyses to the corporate sector, which is a backhanded way of acknowledging the social reality we are concerned with, if too narrow for our purposes.²⁰

Beyond the methodological calisthenics is the effort's strong affinity to the quest for the historical Jesus. Investigations mean one thing for believers and another for everyone else. Joan Robinson and Luigi Pasinetti were right to point out that to value capital goods you need to know the interest rate already; a measure of capital employed does not spring spontaneously from inventories of different tools. This, along with Piero Sraffa's famous demonstration that the profitability of different production techniques can switch irregularly back and forth as interest rates fluctuate makes the whole effort akin to chasing after rainbows in search of a pot of gold. Better to work from a rule with a clear social reference.²¹

Empirically, mixing owners' and workers income renders invisible major turning points that everyone recognizes, when they are not in the grip of a delusory economic theory. A government series for labor's share in the non-farm business sector does exist that rolls together wages and proprietors' incomes. It appears to show that labor's share downshifted but once since the end of World War II — in the years just after 2000 (Krugman, 2026b) or "Y2K" as Zandi (2026) expressed it. That change point roughly coincides with the famous "China Shock." But that wave of imports was merely the latest in a long line of downward adjustments that also overlapped with major foreign investments by U.S. firms. The post-war economic boom ended in the early seventies, not right after 2000, and it had real consequences for labor's share. When

²⁰ Note that the Bureau of Labor Statistics attempts to make such an adjustment in its tabulations of the labor share for non-farm businesses. Their scheme is ingenious, but also blind to important realities: They treat proprietors as earning the same hourly wages for labor as the rest of the sector; the rest of proprietors' earnings are assigned to capital. This not only misses the crucial point about social relations, but it can lead to some quite unbelievable imputations in capital-intensive sectors and during recessions.

²¹ See the discussion in Harcourt (1972).

Paul Volcker's appointment to head the Fed disappears in a cloud of adjustments for proprietors' incomes, we are one step away from Cloud-cuckoo-land.

One final caution. Everyone has heard the famous adage about "lies, damned lies, and statistics." We would go further: Within statistics, time series is uniquely an instrument of the devil. Especially in the age of machine learning, the multitude of options for averaging, tossing out, or "correcting" data "anomalies" are a source of infinite mischief. And that is before one starts ordering à la carte from proliferating menus of tests for breaks, gradual shifts, statistical stationarity and other pitfalls.

Our **Figure 26** thus displays statistics for labor compensation over time in three different ways: Figures for each quarter are in green; while annual averages show in blue to smooth out very short-run fluctuations in the green data. We also present a ten-year average in red, a technique widely used for displaying longer term trends. This latter graph is instructive for its hints about how the worlds of real people can for a time run almost upside down. A short term burst in wages arising from targeted efforts to engineer a presidential business cycle, as in 1972, for example, can send signals wildly at variance with underlying trends.

For better or worse, however, the most important lesson is impossible to miss no matter how the data are displayed: Labor's share of the gross domestic product has been declining for a long time — since the early seventies. Sometime around the millennium, that decline turned into a headlong plunge. Once the upward trend started to bend, whether Democrats or Republicans held the White House hardly mattered.

The figure makes it obvious why so many ordinary Americans sense that the oxygen is draining out of their world and requires no elaborate statistical tests of any kind. Nor does it reflect any vibecession or mysterious sensitivity to messages from media or political parties. **Figure 26** offers some important hints about the reasons for this decline, including some that only occasionally figure in most accounts, but we caution again about how treacherous working with time-series data can be.

Empirically tractable techniques for identifying breaks and regime shifts in time series usually rely heavily on approximations that can handle only limited degrees of complexity. For pinpointing reasons for the decline of labor's share, this is a problem: Scholars and journalists have proposed many different factors as possible causes. Many begin as small clouds that gradually build up into thunderheads that finally fuse into a mighty storm front. Once tornadoes start raging, the devastation is obvious, but the slowly forming clouds resist identification before the storm's onset.

Commonly cited factors of this sort include import surges arising from trade treaties; the spread of private equity and shareholder value theory across American businesses; overseas investment by companies that would previously have invested more at home; work processes and technologies that lend themselves to automation; and, obviously, snowballing legal and political opposition to organized labor.²² State and local policies, and, especially political money, can also retard or accelerate the progress of each while some clearly link to others in circuitous ways that complicate modeling. Not surprisingly, the vast literature typically tests only one or two factors at a time and almost never takes account of politics and money.²³ Much recent literature devotes great attention to “tasks” performed in anonymized “establishments.” As a result, some critical causal factors recede into the background, such as the fact that industries with large plants were the backbone of the American labor movement. Time periods studied also vary widely, with some accounts claiming not to find much change before the early 2000s.²⁴

The jumble of simultaneous causes makes us very cautious. We have no hope of assessing the separate weight of all these factors in this paper. One time series does not contain nearly enough

²² We are skeptical of the now oft-repeated claims that automation is responsible for a plenary share of the jobs lost in American manufacturing, though for sure many have been automated away, even as others have been preserved precisely because some were automated. Waves of imports from Japan and, later, China, for example, clearly led to the collapse of the steel industry in America’s heartland. The same holds for major shares of consumer electronics, including cameras. None had much to do with automation; they reflected inflows of foreign goods that were either better or cheaper, though in steel new technology embodied in so-called “mini-mills” played a role. But the dinosaurs would have taken longer to die off; imports were assuredly the asteroid. The point also applies to textiles, apparel and some other industries. All would have lingered longer, though in some cases US firms were also happy to move production overseas.

The exodus of American firms, especially in automobiles, to Mexico after 1994 also had little to do with automation, though some jobs likely stayed in the U.S. thanks to it. The shift clearly related to labor costs and how globalization made production shifts easy compared to innovating in the U.S., especially in an age exalting shareholder value. But we repeat that automation, especially within the automobile industry, really happens and, indeed, can be vital for protecting employment that might otherwise vanish completely.

²³ Autor *et al.* (2020) make an interesting effort to integrate campaign finance into trade policy discussion. But the database it relies on is not appropriate for the inquiry, which requires firm level aggregation and analyses of presidential elections, though that discussion will have to await another time. Party differences in regard to U.S.-China trade also involved far more posturing than the paper allows, with congressional committees often dragging their feet for years. National poll questions on trade policy were also very poor, resting far too heavily on closed end questions. See Chang, *et al.* (2021). See also the discussion of the partisan effects of the opioid epidemic below.

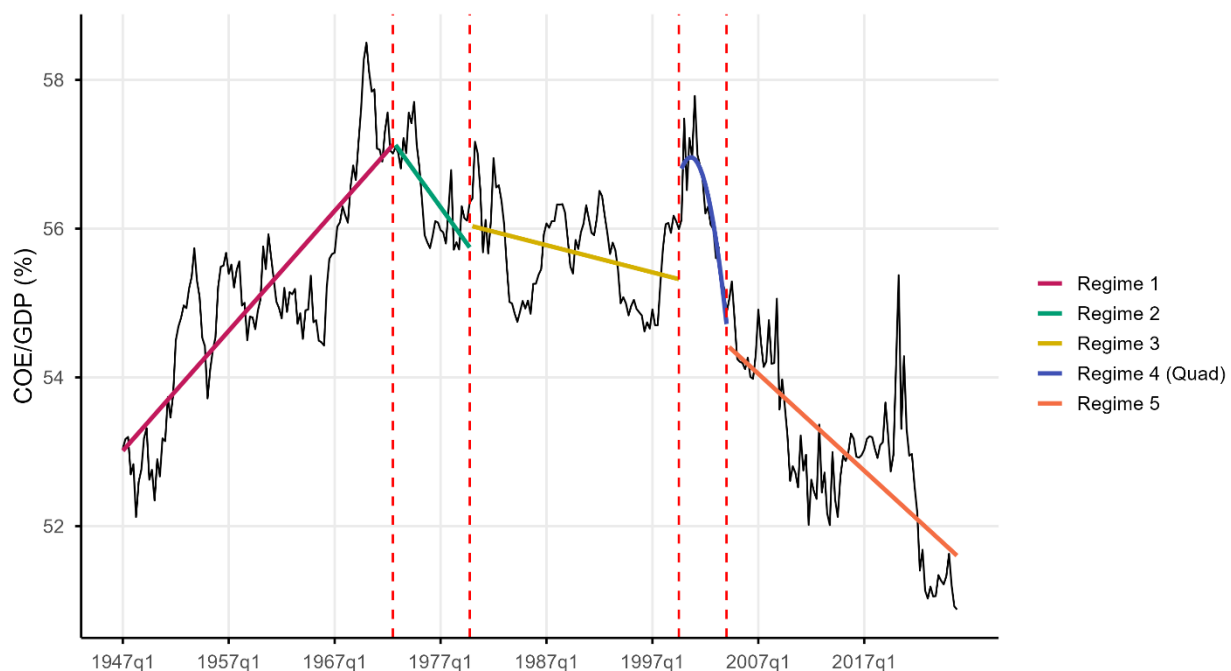
²⁴ E.g., Abdi and Danniger (2017). The collapse of Detroit, Cleveland, and many smaller cities in the Midwest in the 1980s and later as well as the wreck of Southern textiles after NAFTA (Wright, 2020) should have cautioned against such conclusions. Note that, as Lazonick, Moss, Salzman and Tulum (2014) have stressed, older industries dominated by careers in one company were, thanks to the civil rights movement, actually becoming engines for the emergence of a black middle class. Globalization destroyed this. We have benefitted from Lazonick *et al.* (forthcoming).

information for this. The methods are also by their nature often less precise about exact dates than imagined. But we have run a series of tests both for distinct breaks and more slowly changing cumulative shifts. **Appendix 3** spells these out in detail.

Here we lay out our tentative conclusions, acknowledging the need for further research. First of all, two especially clear breaks show in the series. One is the first kink in 1972 that marks the end of the long stretch after 1947 in which labor's share rose steadily, though far from uniformly. That break came with a Republican president in the White House whose supporters made no bones about their desire to ring down the curtain on the New Deal party system. Another, which initially surprised us, comes in the fourth quarter of 1998, well in advance of the celebrated China shock. It marks another moment when the already declining labor share started falling further and it happened under a Democratic President in his second term.

Figure 27

**Structural Breaks in Employee Compensation
(1947q1 – 2026q1)**



Source: Authors' estimations. See **Appendix 3**.

We think that the mutual dependence of politics and economics is still only imperfectly conceptualized by both historians and economists. But we take it as axiomatic that the regime from 1947 to the early seventies reflects the influence of the New Deal and the post-war

“settlement” that emerged contentiously out of conflicts during the Truman and Eisenhower presidencies. We are skeptical of accounts that see the period as rooted in overt political compromise or any “social contract” between business and labor. It rather reflected an uneasy structural balance of power that evolved out of the failure of virtually the whole of business to roll back the New Deal in the late forties.²⁵ The system persisted because of the specific shape of the American industrial structure within the larger world economy: “Pattern bargaining” between labor unions and big business in large, oligopolistic industries, above all automobiles, steel, and the electrical industry, played a critical role in wage formation in the system as did political constraints that grew out of them. Strong internal tensions marked it at every point; it was never stable in a fundamental sense.

The role of the Federal Reserve in actively managing this balance has been widely neglected, though the evidence in both the Fed Minutes and some studies is overwhelming (Dickens, 2016; Epstein, 2024). But these details are not material to this paper. What matters is that labor’s share of the national income rose fairly steadily through the increasingly contentious years of Lyndon Johnson’s Great Society. These advances inspired fierce resistance, especially as parts of organized labor, especially the United Auto Workers, reached out to Martin Luther King and other Black leaders to build political alliances. The Construction Users Anti-Inflation Roundtable and other business groups formed, eventually triggering a broad reorganization of business representation in politics. A new organization, the Business Roundtable, emerged while some older organizations restructured, notably the National Association of Manufacturers.²⁶

The labor share reached a (cyclical) peak in the early seventies as the long boom of the sixties crested. By then both the Fed and the Nixon administration were cooperating to dampen inflation with an eye toward orchestrating a recovery for Nixon’s reelection in 1972. The legendary political business cycle that Fed Chair Arthur Burns engineered muddles exact dating of the transition (Abrams and Butkiewicz 2012), which occurred in a period full of dramatic shifts, including the Nixon shock that led to the collapse of the postwar international monetary system, the rise of OPEC, major swings in food prices, and more Fed tightening than commonly

²⁵ The literature is too large even to inventory. The essential point is that at the end of the war businesses everywhere strongly contested labor efforts to extend its influence. Major labor unions survived in steel, autos, electrical manufacturing and other major industries, but only after intense industrial and political conflicts and many exotic institutional accommodations. Labor’s effort to expand into the South (Operation Dixie) was stopped dead, and throughout the period major business corporations kept promoting all kinds of right-wing ideologies. Taft-Hartley and other legal changes effected drastic changes, as did Congressional investigations involving prominent Democrats. Cf. Ferguson and Rogers (1986, pp. 60ff.). Calling this an “accord” or a “social contract” is a bizarre stretch.

²⁶ For the Construction Users Anti-Inflation Roundtable and other groups, see Ferguson and Rogers (1986), 61ff.

acknowledged.²⁷ Once the election was past, the Fed went full bore for austerity. The ensuing recession of 1973-74 was the deepest since the end of World War II. Amid transnational handwringing about a “crisis of democracy” a dramatically different wage system began taking shape.

Sorting out changing trends thereafter is not always easy. President Jimmy Carter was a Democrat. Our tests confirm the widespread conviction that his appointment of Paul Volcker to head the Fed accelerated the shifts against labor that had been developing since the 1973-74 recession. Pressure on the labor share thereafter never abated, though it varied over time.

By the mid-nineties, the quiescence of the labor movement in the face of a relatively strong economy was so obvious that the Federal Reserve actively debated whether the “increase in job insecurity due to changing technology or other factors could induce a permanent decline in the natural rate of unemployment, along with a reduction in real wages and an increase in the markup of prices over unit labor costs.”²⁸

Testifying before Congress in 1997, Alan Greenspan, then Chair of the Federal Reserve, explained that the gap between productivity gains and wage growth has been a blessing for the economy as, in his view, “employment insecurity” kept inflation down while the economy continued to grow. [According to Greenspan](#) (1997), “heightened job insecurity explains a significant part of the restraint on compensation and the consequent muted price inflation.”

Bob Woodward (2000), in his biography of Greenspan, writes that “Greenspan hypothesized at one point to colleagues within the Fed about the “traumatized worker”— someone who felt job insecurity in the changing economy and so was accepting smaller wage increases. He had talked with business leaders who said their workers were not agitating and were fearful that their skills might not be marketable if they were forced to change jobs.” (Woodward 2000, p. 175). Janet Yellen told Greenspan that she might be able to find a theoretical underpinning for his job insecurity thesis. She sent her 13-page memo to Greenspan on June 10, 1996 (Schwarz 2023), though it is clear that Greenspan had been mulling the question for some years (Rubin 2005).

The argument was couched in theoretical terms, but the practical issue was momentous: Could the emerging balance of power between labor and management allow the Fed to let the economy grow and not raise interest rates to head off inflation, as it normally would have? Greenspan famously decided to hold off, despite strenuous opposition from several members of the board, including at least one appointed by President Bill Clinton. Most studies treat his break with

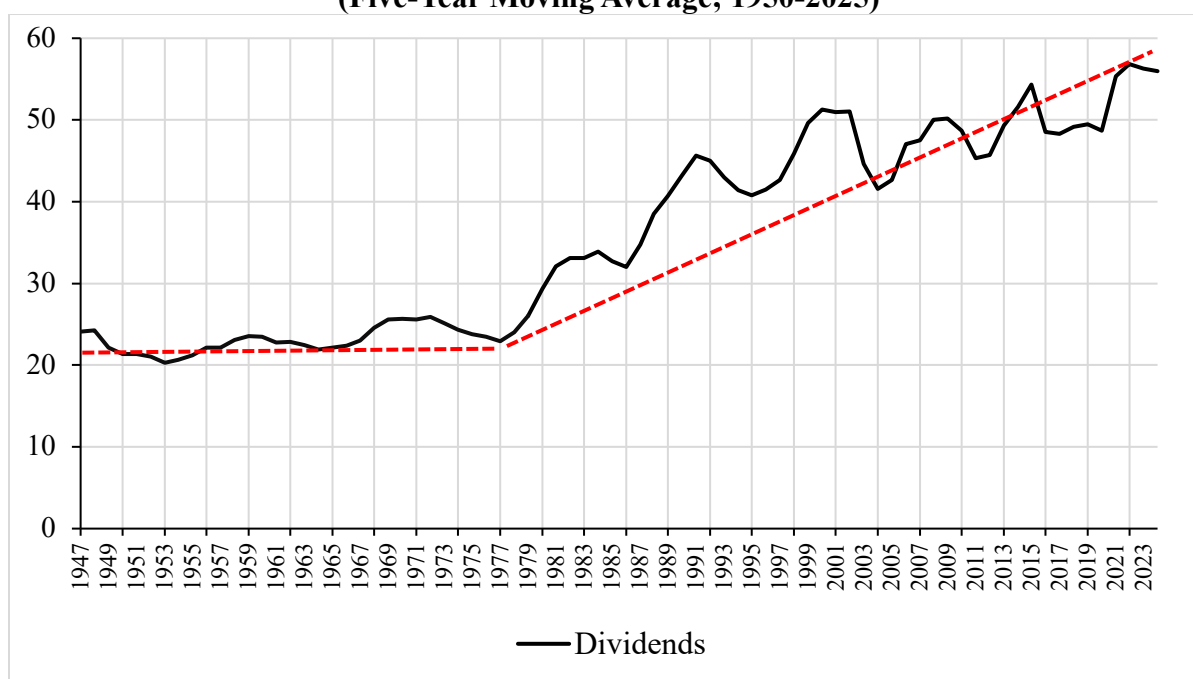
²⁷ A close reading of Dickens (2016) and Blinder (2022) is instructive on the Fed in this period.

²⁸ The memo is from Yellen to Greenspan, June 10, 1996 and was obtained under a Freedom of Information Act request. See the discussion in Schwarz (2023), which links to the document. Blinder (2022) does not mention the episode.

precedent as a bold gamble with benefits that overflowed to the whole economy, including straitened workers. They rarely mention that the decision fanned an epic stock market surge in which higher dividend payouts and buybacks of corporate stock by top executives in the name of maximizing “shareholder value” drastically transformed the shape of America’s income distribution in favor of the rich while hollowing out many American companies.²⁹

As shown in **Figure 28**, around 22% of companies’ net operating surplus went to shareholders as dividends during the 1950s, 1960s and 1970s. By the end of the 1990s, dividends amounted to more than 50% of net profits. Stock buybacks grew even faster. From a trickle in the early eighties, they swelled into a (cyclical) torrent. Nineteen ninety-seven marked the first year they exceeded dividends and in recent stock market upswings their relative advantage has only grown (Lazonick, 2023).

Figure 28
Dividends as Percentage of Net Operating Surplus
(Five-Year Moving Average; 1950-2025)



Source: BEA, National Accounts Statistics, Table 1.11. Percentage Shares of GDP at factor cost.

²⁹ See, e.g., Lazonick (2015; Lazonick and Shin (2020). See also Acemoglu *et al.* (2022). Conventional central bank analysts spend a great deal of time arguing about whether the Fed could have dampened speculation. At the very least, it could have raised margin requirements and eased up on financial deregulation. Those could have worked against the financial bubble without wrecking the rest of the economy.

The 1998 date predates the dot-com bust of 2000-01 as well as China's accession to the World Trading Organization (December 2001). It is reasonable to suppose that NAFTA and the other factors mentioned above were already operating. But the shift in corporate earnings and equity valuations that came with the spread of "shareholder value" doctrines within American business played a critical role in the stock market boom. Further research will be needed to sort out exactly how shareholder value maximization compared with the other forces operating then. But that shareholder value doctrines mattered can hardly be doubted in light of this result.

The much more widely acknowledged China shock that hit abruptly after 2002 reinforced the steepening downward trajectory, but, contrary to some claims, was not responsible for initiating it. The China shock, of course, was a sterling example of a major cause of declining labor share that was sponsored — indeed celebrated — by leaders of both major political parties. After signing NAFTA into law in December 1992, Democratic President Bill Clinton's administration strongly promoted China's accession to the World Trade Organization (WTO) and permanently opening the U.S. market to Chinese goods, while Republican President George W. Bush's team consolidated the policy shift and aggressively defended it.

Senior policymakers in both parties harbored fears about China's exchange rate policies. But resistance to tampering with the exchange rate was massive, not only from the Chinese side, but from American businesses hoping to move more operations there and financiers intent on persuading Chinese authorities to let them manage more Chinese assets.³⁰ While some Democrats criticized the Republican Treasury Secretary Hank Paulson for standing pat, the Democrats themselves did not seriously pursue a different policy when they regained control of the White House. Not until 2017, did senior Democratic policymakers begin to acknowledge that U.S. economic policies toward China had not worked as they expected— and they typically hurried past specifics about exchange rates in favor of broader foreign policy reflections (Campbell and Ratner, 2018). Our results suggest that 2004 marked a moment when the slide steepened and that the worst of the shock eased around 2015. The fall continued, however, at the same pace, just from a one off upward rise in wages.

³⁰ On the exchange rate discussions, we have benefited from off the record discussions with policymakers in both the U.S. and China.

4. Affordability and Party Competition in the Long Run: Other Macroeconomic Indicators

By then, of course, establishment leaders in both parties were reeling from 2016 insurgent challenges from both the left and the right capped by Donald Trump's surprise victory in the presidential elections. Because, as this paper's opening sections attest, so many establishment leaders remain mystified about the roots of discontent, this final section of our discussion builds out the argument of **Section 3** concerning the bipartisan responsibility for the macroeconomic policy failures over the last half century.

Put simply, with the breakdown of the New Deal and the triumph of Neoliberalism in both parties, party competition *in major macroeconomic policy* has withered away. Studies that overlook this structural shift miss the crucial point that now drives popular politics: the macro policies pursued by both parties have delivered round after round of shocks and income reverses for most Americans.³¹

Few now recall the contentious battles over Fed tightening in the early nineteen seventies, the early skirmishes over how the breakdown of Bretton Woods system and oil shocks would transmit to wages and (slumping) profits, or then fashionable rhetoric about a looming "crisis of democracy." But in 1979, when Democratic President Jimmy Carter named Paul Volcker to head the Fed, everyone woke up to the realization that, to paraphrase Dorothy in the *Wizard of Oz*, they weren't in Kansas anymore.

Carter's turn to Volcker came in response to massive pressures from financial markets in panic over a sliding dollar and what looks in retrospect like an almost risible uptick in the government's deficit. The new Fed Chair's mandate was clear: Bring down inflation, whatever the cost. And so he did. All through Carter's campaign for a second term in 1980, the Fed kept money very tight, by raising interest rates and focusing much more sharply on tightening the money supply.³²

In his 1976 campaign, Carter had already signaled to close observers that he was carving a path away from traditional Democratic Party positions. In office, he pushed major deregulation efforts, especially in transportation. These ushered in far-reaching changes in a host of industries,

³¹ The econometric hallmarks of the mistaken approach are obvious: assess data over the whole period since the end of World War II, with no structural breaks. The triumph of Neo-Liberalism was a process, not an event, so the exact year of the break varies for particular datasets. For some, the early seventies are crucial. For others, the post-Volcker shift. See the illustrations below.

³² The literature on all these subjects is immense. But many works gloss over key economic and political facts. Greider (1986) and Greider (1989) remain important sources, based in part on unique access to principals. Ferguson and Rogers (1986); Kliesen and Wheelock (2021) and Gibbs (2024) all add important details.

including airlines, trucking, pipelines, telecommunications, and beverages. After his forlorn pivot to Volcker, the President articulated his new course more boldly, confirming the abandonment of the New Deal's effort to keep Wall Street in harness to Washington. As he explained during his campaign for reelection "we believe that we ought to get the Government's nose out of the private enterprise of this country. We've deregulated . . . to make sure that we have a free enterprise system that's competitive" (Rauchway 2019).

Nevertheless, for most of American business, Carter offered a pale reflection of Reagan's far more aggressive Neoliberalism. Most of the business community enthusiastically supported the former California governor. But opposition to full deregulation in energy and finance, along with the new horizons opening in telecommunications, created a solid base for business Democrats. Oil and gas simply could not be deregulated without massive costs for ordinary Americans (the legacy Democratic mass base, but also major parts of the American chemical industry), while fully deregulating finance would — as it eventually did, in a different world — have implied the absorption of investment banking into much bigger commercial banks. Fears that Reagan's promised military buildup might bust the budget and touch off another deficit crisis were felt especially keenly among the investment houses.³³

The result was that in 1980, leading Wall Street financiers continued to support Carter (Ferguson and Rogers, 1981). Thanks to subtle changes in the regulation of political finance, their clout within the Party was also increasing. In the late seventies, in a move that attracted almost no attention then or later, Democratic congressional representatives had concluded that organized labor was too feeble to provide them with money on the scale they wanted. They, accordingly, supported amendments relaxing election laws just put on the books limiting political contributions. (Then minority Republicans, of course, could be counted on not to oppose this.) As though by an invisible hand, outcomes of congressional elections were becoming linear functions of money, though it was years before analysts recognized the fact.³⁴

Meantime the deadly duo of the Fed's interest rate hikes and the Reagan administration's broad anti-labor agenda was triggering a severe double recession, precipitating a wave of restructurings and lay-offs that crushed trade unions, traumatized workers, and structurally prioritized financial returns over employment, real wage growth, labor standards, and middle-class progress. Broad

³³ Here, again, the literature is immense. For the economics, see Ferguson and Rogers (1982 and 1986); Gibbs (2024); the former two studies drew heavily on campaign documents and press releases that now are difficult to find.

³⁴ For the late seventies Democrats, see the discussion and references in Ferguson (2015); for Congressional elections as linear functions of political money, see Ferguson, Jorgensen, and Chen (2022), which plots all House and Senate elections from 1980 on and uses event analysis to sort out possible confounding variables.

deregulation of securities markets promoted the rise of “shareholder value” at the expense of everyone else with stakes in corporate behavior. The Reagan administration also doubled down on Carter’s campaign promises, reducing taxes on the wealthy, undermining unions, defunding critical public programs, and rolling back regulation in many areas.³⁵

All these pressures, along with others we lack the space to consider, including demands in both parties for increased defense spending, dramatically restructured the top rungs of the Democratic Party. By 1984 a leadership structure was taking shape that would dominate the Party policy agenda into the Biden era. At the apex was a set of investment bankers who, over time, learned to love and profit massively from complete financial deregulation, while firmly championing fiscal austerity, free trade, and globalism. Together with allied business groups that shared these commitments and a willingness to use the state on behalf of (mostly capital intensive) “sunrise industries” and national defense, they defined the national Democratic Party’s center of gravity.³⁶

In 1984, two of the most prominent Wall Street Democrats, Robert Rubin and Roger Altman, flew out to Minnesota to persuade Walter Mondale to make his fatal promise to raise taxes to balance the budget the centerpiece of his convention address (Ferguson and Rogers 1986). In 1988, the same team was back, now working closely with Lawrence Summers, encouraging Massachusetts Governor Michael Dukakis to resist calls for additional government spending that might assist workers whose jobs were disappearing amid the first waves of imports and overseas investments by U.S. firms (Ferguson 1995). In a wildly changing environment, the new bloc’s warnings never varied: The dangers of inflation, the need for fiscal austerity, more deregulation, and the benefits of overseas investment, free trade, and a strong dollar.

Despite some rhetorical flourishes, Bill Clinton’s ‘Third Way’ policies perfectly exemplified this policy package — not surprisingly, since the very same group of financiers and economists provided key support and personnel in both the campaign and his administration. Famously deciding to break his preelection commitment to labor and community groups for “Medicare for All,” Clinton agreed with Rubin, Summers, and the rest of Wall Street on the need to prioritize cutting the deficit and the North American Free Trade Agreement (NAFTA) (Ferguson 1995). The strategy played a major role in the 1994 Congressional disaster that ended the Democrats’ Congressional dominance and deeply wounded the party for decades (Choi *et al.*, 2024). On Wall Street and in the media, Clinton’s success in bringing down the deficit is still recalled as a golden

³⁵ Once again, the literature is too vast even to inventory. But see along with the works cited earlier, e.g., Lazonick and Sup (2023) and Taylor with Ömer (2020); the latter is the best general discussion of Reaganomics.

³⁶ See Ferguson and Rogers (1986); Ferguson (1995). A short summary of the whole arc to 2024 is Ferguson (2026). For the significance of investment banking and the transition to full deregulation, see esp. the opening of Ferguson, Jorgensen and Chen (2020).

moment, but as his term ended, ordinary Americans found themselves under more, not less pressure, as the previous section showed.

Obama's Presidency, promising progressive "hope" and "change," must be regarded as another emanation of the emerging Neoliberal macroeconomic synthesis, exemplified by Obama's decision to staff his administration with key advisors who had earlier served Clinton and shared a deeply Reaganesque worldview.³⁷

The result, as is well known, was a crisis wasted. Not all debt, it turned out, was equally odious. In extremities, austerity could be waived for some: The big Wall Street banks were bailed with taxpayers' money and even allowed to pay bonuses. Concerned about the need to "foam the runway" lest the banks require still more aid, the administration adopted a weak economic recovery program for everyone else that ensured nearly a decade of stagnation of income and job growth and, as in 1994, again destroyed Democratic congressional majorities.³⁸

The Obama administration also famously signed off on a compromise tax bill that ratified most of the Bush tax cuts and continued promoting free trade and foreign investment, while sitting on the sidelines amid attacks on unions in state after state.³⁹

By 2014, the two party *commedia dell'arte* was wearing thin. Though few noticed at the time, a new and sinister warning light started flashing red. In the years after World War II, life expectancy in many countries increased substantially, including the United States. But, as **Figure 29** shows, the U.S. fell further and further behind the advances elsewhere save for brief intervals. In the eighties, the gap between the U.S. and other rich countries grew wider, even as U.S. medical spending raced ahead. In 2012, overall life expectancy in the U.S. stopped growing, and in 2014, it began to decrease. Its comparative performance has since been abysmal, though some analysts could not resist touting the bounce back from the depths of COVID as a success, since after all life expectancy had risen.

³⁷ After campaigning against NAFTA (Choi *et al.*, 2024) in a campaign heavily backed by its sponsors, such as Rubin (Black, 2016).

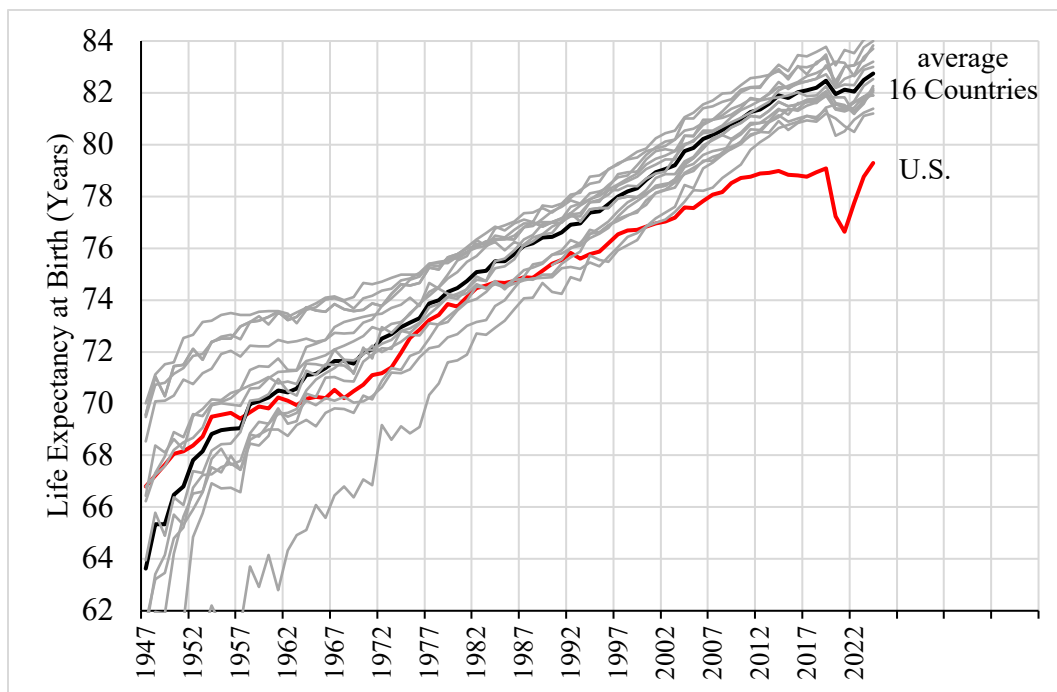
³⁸ The literature is, again, voluminous, though also often poor at identifying key economic moves. Many general accounts simply do not understand the financial issues involved. For "foam the runway" and banks, see Barofsky (2012); Gongloff (2012) and Ferguson and Johnson (2009a), which drew on substantial experience with principals.

³⁹ Cf. Jared Bernstein on the Obama accord: "One of the things when I say Democrats have played a role here: I was in the Obama administration when we essentially made permanent 80 percent of the Bush tax cuts. That's not 100%. So I'm glad that we let at least 20% at the top end revert back to what they were. But that's the exercise we did" (Krugman 2026c). The pattern of lopsided compromise was already old then and never stopped. See Ferguson, Jorgensen and Chen (2013; 2023).

Early analyses focused on “deaths of despair” mostly among white males, linked to drug overdoses promoted by big pharmaceutical firms and, eventually, to declining employment prospects from globalization and related causes. These there certainly were aplenty; but later analysis, by Dr. Steven Woolf and others, makes it clear that the problems are far wider and involve many more racial and ethnic groups (Woolf *et al.*, 2018; Woolf 2023). We return to this subject in our Conclusion.

Figure 29

**Life Expectancy at Birth:
The U.S. versus 16 Rich Countries (1947-2024)**



Sources: (1) [Human Mortality Database](#) (2026), Max Planck Institute for Demographic Research (Germany), University of California, Berkeley (USA), and French Institute for Demographic Studies: data for 1947-2024 for Belgium, Denmark, Finland, Japan, Norway, Portugal, Sweden, Switzerland, and the USA; data for 1947-2023 for Austria, Canada, France, Italy, the Netherlands and Spain; data for 1947-2022 for the UK; and data for 1990-2020 for Germany; (2) [Eurostat data](#) on life expectancy at birth in 2024 for Austria, France, Italy, the Netherlands and Spain; data for 2021-2024 for Germany; (3) Canada: data on life expectancy at birth in 2024 from [Statistics Canada](#); (4): U.K.: data on life expectancy at birth in 2023 and 2024 from World Bank, *World Development Indicators*. *Notes:* Life expectancy at birth is plotted for Austria, Belgium, Canada, Denmark, Finland, France, Germany, Italy, Japan, the Netherlands, Norway, Portugal, Spain,

Sweden, Switzerland, the UK and the USA. The black line indicates the simple (non-weighted) average life expectancy for 16 countries (excluding the U.S.).

Other signs of trouble were abundant, though mainstream analysts ignored them. Even the spreading opioid epidemic barely registered in major Democratic-oriented papers (Arteaga and Barone, 2025). Not surprisingly, the fall-off in voter turnout in the 2014 off-year election from the previous presidential contest was the third greatest in American history. This startling decline rather plainly presaged an earthquake, as Burnham and Ferguson said at the time and that materialized right on schedule in 2016 (Burnham and Ferguson, 2014).

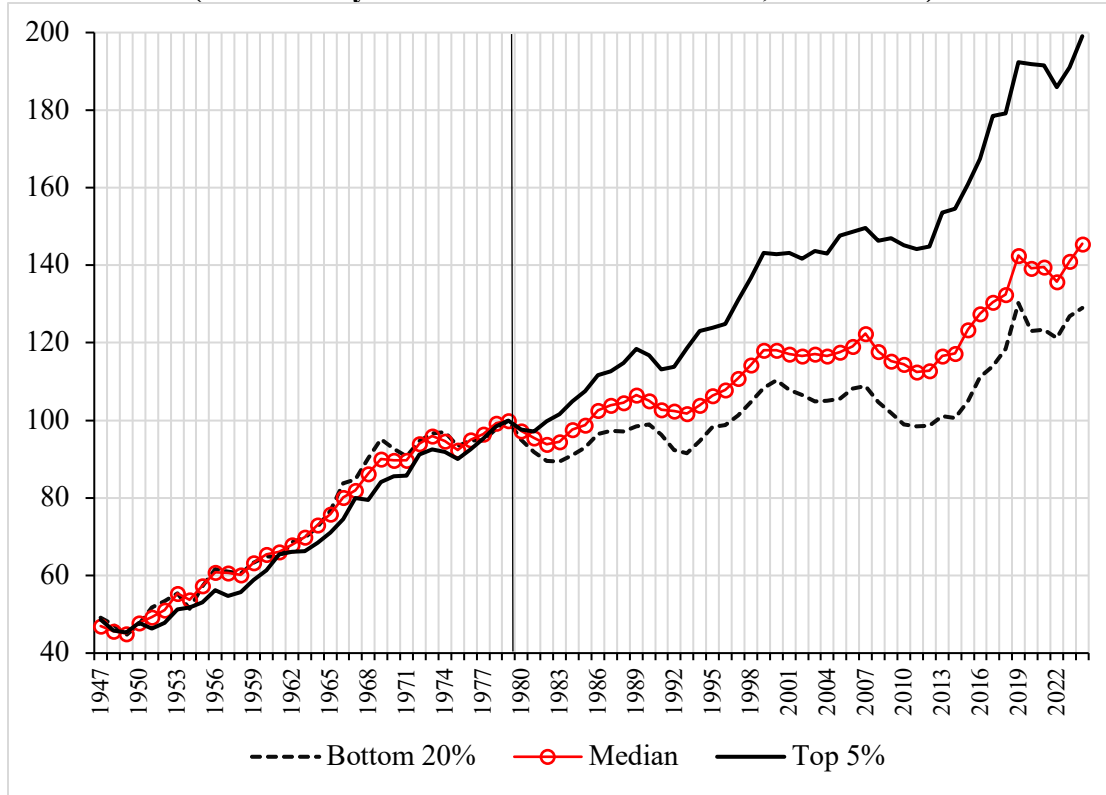
In short, after more than forty years of Neoliberalism, competition over major macroeconomic policies had virtually disappeared. A series of graphs summarize what was becoming obvious to more and more Americans even then and, as noted below, statistical tests confirm.

Consider first **Figure 30**, which plots real family incomes for the bottom 20% of families, the median family, and the richest 5% of families. Real income growth across income classes was roughly similar during the period 1947-1979, but then diverged significantly during 1979-2024. Since 1979, real incomes of the richest 5% of U.S. families almost doubled, while the bottom quintile of families with the lowest incomes experienced a cumulative increase in real income of only one-third during the same 45 years.

Figure 30

**Income Gains Widely Shared in Early Postwar Period
— But Not Since**

(Real Family Income between 1947 - 2024; 1979 = 100)



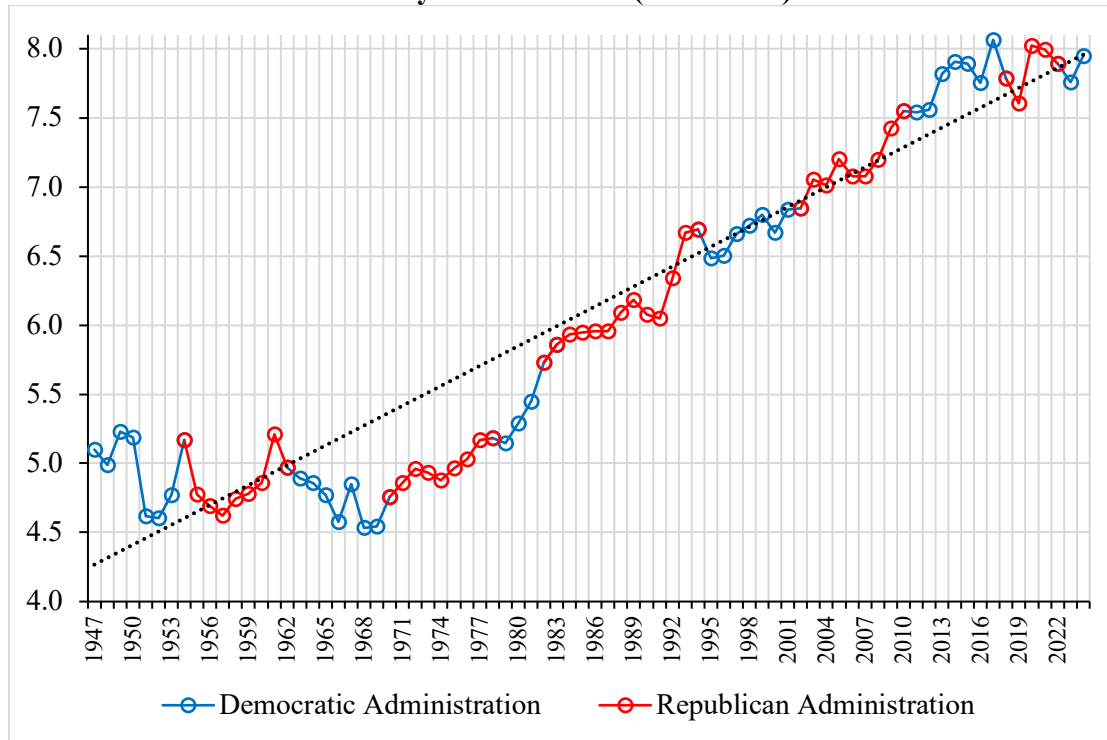
Source: Authors' calculations based on U.S. Census Bureau data.

Figure 31 plots the ratio of family income earned by families in the 95th percentile of income distribution and income earned by families in the bottom fifth of the distribution. During 1947-1973, this D95/D20 ratio of family incomes hovered around a value of 5, but then rose very steadily to plateau at around 8 during 2017-2024. The blue observations indicate a Democratic presidency and the observations in red refer to a Republican administration. A statistical test readily confirms the evidence of the graph: party politics at the presidential level did not matter for the evolution of family income inequality: we can indeed speak of a Carter-Reagan-Clinton-Obama policy regime or synthesis in place.⁴⁰

⁴⁰ The test is a segmented time series regression checking for changes in both levels and trends by party, starting from 1973, using Newey-West (HAC) standard errors. Note that often analysts take the first year of a new president's term as the last year of his or her successor. This notion is not a good one for the time span we are concerned with; Reagan, Clinton, Obama, and Biden all faced urgent policy choices right away and made important choices. (We do not have data for 2025 and Trump, where the same

Figure 31

Income Inequality Rises Regardless of Who Ran the Administration After 1968: 95/20 Family Income Ratio (1947-2024)



Source: Authors' calculations based on U.S. Census Bureau data.

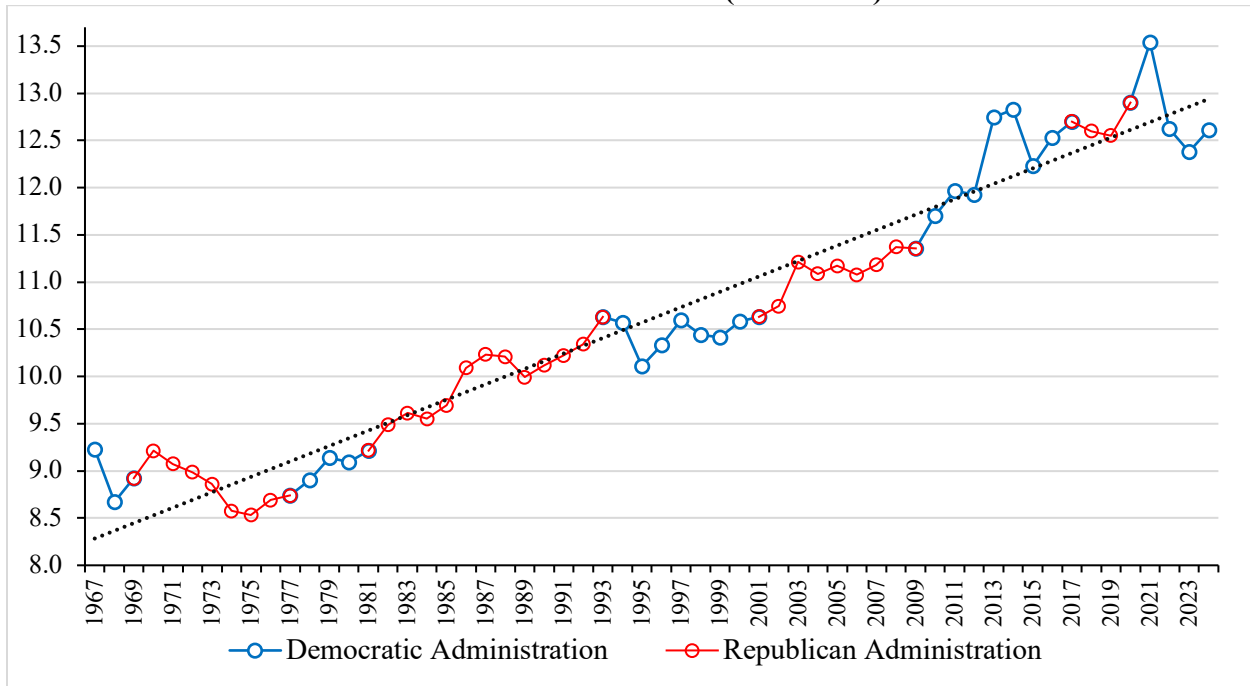
Figure 32 shows the same trend increases in inequality for household incomes: we plot the top 10% of household incomes against the bottom 10% (the D90/D10 ratio) based on Census data, for the shorter period 1967-2024. The D90/D10 ratio fluctuates between 9.5 and 8.5 before bottoming in 1975. Thereafter inequality shoots upward, unbothered by which party is in the White House, peaking at 13.5 in 2021. It is evident that the long run trend upward completely overwhelms any short-term deviation from trend — no administration after 1975 managed to break the inexorable increase in American income inequality the figures register.⁴¹

holds.) Even more to the point, lagging the records one year won't change anything. We also dismiss the obvious point that full partisan control of the White House and both houses of Congress was a rare event: The record is what it is, with all its deficiencies. It is also worth observing that any coefficient for a party effect that some other test might reveal would at best be something for an electron microscope.

⁴¹ The same type of test run for **Figure 31** starting in 1975 indicates no party effects again.

Figure 32

Income Inequality Rises Regardless of Who Is Running the Administration: 90/10 Household Income Ratio (1967-2024)



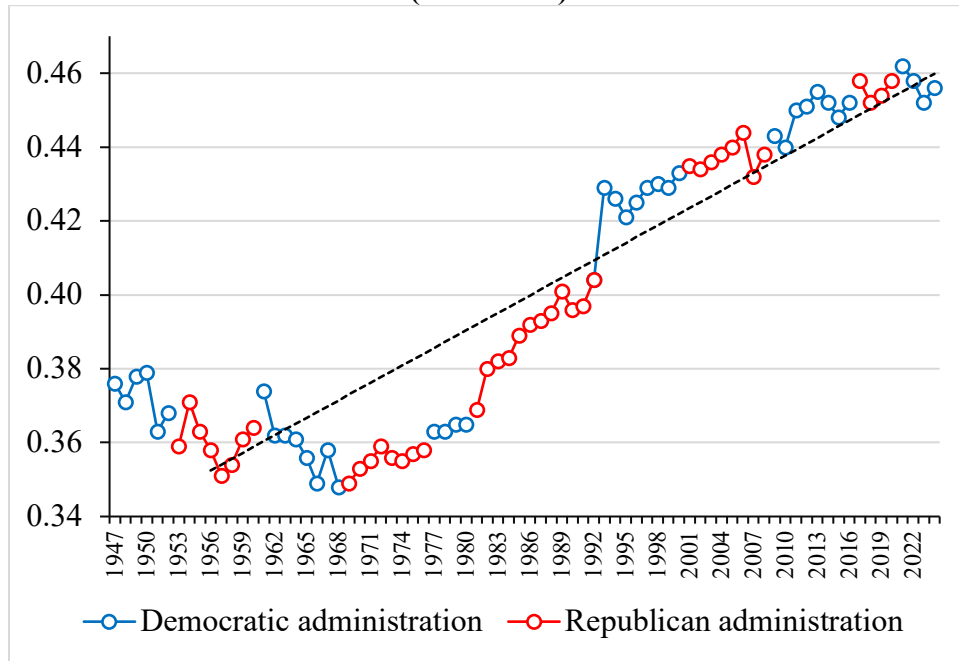
Source: Authors' calculations based on U.S. Census Bureau data.

The same pattern is observable in the evolution of the Gini coefficient of family income during 1947-2024 in **Figure 33**, with the difference that that measure bottoms in 1968. During the fifties and sixties it had been stable, at around 0.36. After 1969, it rises steeply. By the end of Biden's term, it was 0.456.⁴²

⁴² Once again, the same type of segmented time series tests for party effects after 1968 yield negative results.

Figure 33

**Gini Coefficient of Family Incomes
(1947-2024)**



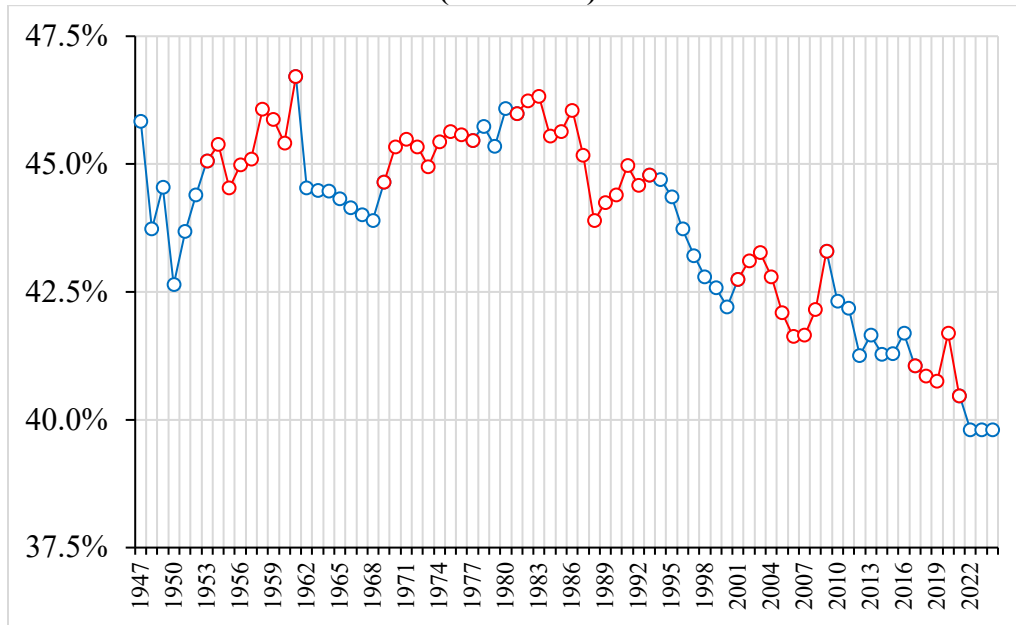
Source: U.S. Census Bureau data.

Figure 34 presents summary evidence on the decline of America's middle class. During 1950-1983, the middle class, defined as the sixth-to-ninth income deciles, received circa 45% of aggregate taxable income. In 1983, however, its income share, though still above 45%, starts to decline – to less than 40% in 2024. The decline rolled on regardless of which party occupied the White House.⁴³

⁴³ Again, a segment time series test starting with the 1983 decline shows no influence of party effects.

Figure 34

**The Income Share of the Middle 40%
(1947-2024)**



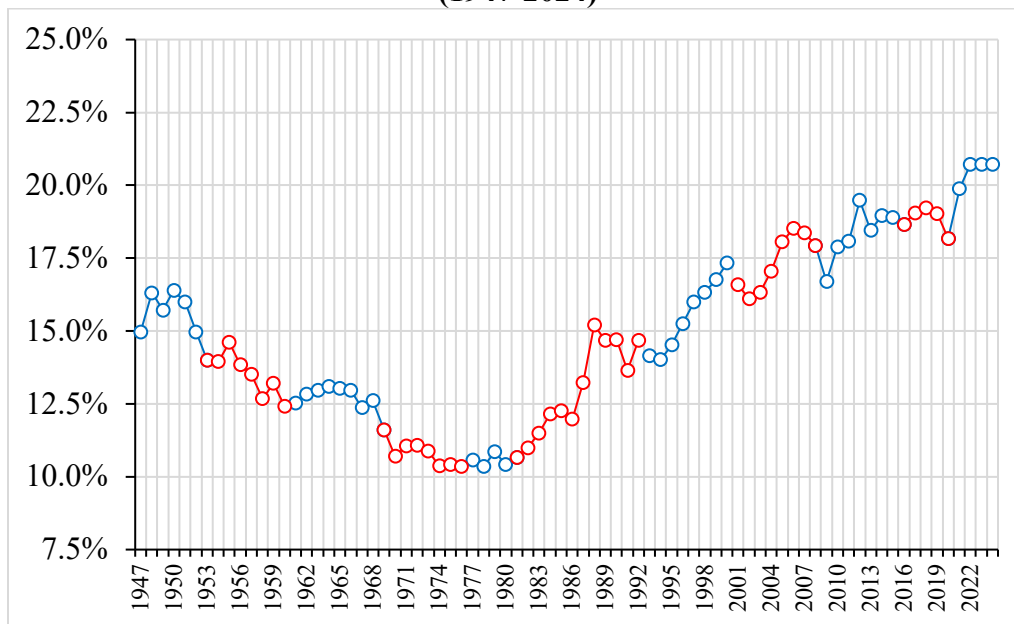
Source: World Inequality Database (downloaded 26 October 2025). *Notes:* Fiscal income shares, tax units, adults, equal split. The middle 40% include the sixth, seventh, eighth and ninth income deciles.

Of course, in a money-driven political system, extreme income inequality in the U.S., as measured by the income share of the top 1%, is also impervious to party politics. **Figure 35** plots the income share of the richest 1% of America's population. The income share of the top 1% was 16.4% in 1950 and then declined — under Eisenhower, Kennedy, Johnson, Nixon, Ford and Carter — to around 10% in 1978. Following the Volcker shock and the internalization of most of Reaganomics by Republicans and Democrats, the share of the top 1% began an unstoppable rise — to almost 21% in 2024. Bidenomics did not break this trend, but, in fairness, neither did Clintonomics or Obamanomics. Or, of course, Reaganomics or the two Bush presidencies.⁴⁴

⁴⁴ Yet again, a segmented time series test for party effects starting in 1979 fails.

Figure 35

**Extreme Inequality: The Income Share of the Richest 1%
(1947-2024)**



Source: World Inequality Database (downloaded 26 October 2025). *Notes:* Fiscal income shares, tax units, adults, equal split.

5. Conclusions

The evidence is unmistakable: since the abandonment of the New Deal framework in the 1970s, macroeconomic outcomes have consistently deteriorated for most Americans regardless of which party held the presidency. With Democrats in thrall to Wall Street, high tech, and other corporate interests including parts of health care, the parties have managed to smother the “American Dream” of middle-class prosperity and upward social mobility. Prioritizing the freedom and financial opportunities of shareholders above all else, American factories closed while jobs moved offshore and imports poured in under Carter, Bush 41, Clinton, Bush 43, and Obama. Neither party made any substantial efforts to reboot broken local economies, with Democratic elites dismissing even mild proposals for slowing down globalization from House Majority leader Richard Gephardt as being hopelessly over the top (Ferguson and Rogers, 1986). Over the post-1979 period as a whole, no important difference in macroeconomic outcomes at the national level is traceable to one political party.

The results have been disastrous for most of the population. The notion of progress for many has become a wistful aspiration; the reality is that “it takes all the running *you* can do, to keep in the same place”, as the Red Queen in *Through the Looking-Glass* put it. Labor productivity continued to rise steadily, much faster than real compensation of employees, and the labor income share declined as a result. Privatization and near permanent austerity for the 90% gutted public services, making housing, healthcare, liveable retirements, and education increasingly unaffordable, while job security vanished as stable employment was replaced by gig work, short-term contracts, and temp jobs without pensions that offered flexibility to employers but material insecurity to workers.

Monopoly power of so-called ‘superstar’ firms was allowed to grow unchecked, as anti-trust enforcement was all but abandoned, notwithstanding the failed attempts by the Biden administration to take on Big Pharma and Big Tech. As tech firms flourished, online scams, deceptive and often downright destructive uses of social media were rarely checked, leaving most victims to their own devices. State attorneys general in both parties openly panhandled vast sums of companies they were supposed to be overseeing and moved only rarely against malefactors. Even the opioid epidemic drew little attention from either party, until late in the Obama administration Republican media began pointing to it as an example of how Democrats had abandoned blue collar America.⁴⁵

⁴⁵ In the mid-1990s, with a Democrat in the White House, a deeply compromised and corrupt set of FDA decisions approving the pain killer Oxycontin set off an epidemic of opioid use that has “claimed over 800,000 lives” (Gov Facts, 2026). Years of lobbying, political contributions, and propaganda by the company that manufactured the drug dampened responses by governments and professionals at all

Together both Democrats and Republicans scaled down social benefits and other social protections, sometimes through formally bipartisan vehicles — as with the Greenspan Commission of 1983 that both parties hid behind to trim Social Security (Ball, 2010); at other times through more tacit arrangements or just stalemates that both sides were content to walk away from and not revisit. Taxes for the rich were cut during every presidential regime and the American state — education, healthcare, prisons, the space program, and national security infrastructure — was privatized to funnel even more money to the wealthy.

The consequences for the U.S. economy of these neoliberal macroeconomic policies have been dire. Potential growth has been in secular decline for decades (Storm 2017), as labor productivity growth in most industries slowed down, and even became negative in manufacturing after 2010 (Gordon and Ryu 2026). The bipartisan regime of low real wage growth and stagnating real incomes for the many weakened domestic demand growth, lowered capacity utilization and hurt profits and investment in most American industries (excluding finance and the AI industry). Business investment has declined, to an average of 2.8 percent of GDP over the past decade (2016-2026) from 5.3 percent during 1960-1974 — notwithstanding the recent boom in AI data-center investment.

Government retreated from funding basic research and education, while business investment in automation and productivity-enhancing capital was crowded out by share buybacks and dividend pay-outs (Gordon and Ryu 2026, p. 28; Lazonick 2023). As a result, American businesses have become less innovative, less competitive and less resilient (Lazonick and Shin 2020; Cass 2026), as is clear as well from the billions of dollars of corporate welfare doled out to corporations such as Intel, MP Materials and Nvidia by America's corporate nanny state. Federal debt is growing much faster than the economy — the repeated (corporate) tax cuts did “never pay for themselves”, but rather made fiscal deficits permanent, dramatically raised income and wealth inequality, and imposed permanent austerity on essential non-discretionary public social programs.

Meantime, Wall Street draws as needed on the New York Fed's [Standing Repo Facility](#), with its very own help number for traders in distress — essentially Medicare for All tailored to one sector (Ferguson and Storm, 2025). High tech companies in many sectors, but especially now defense, feast on government contracts with few checks or serious accounting assessments (Hartung and Freeman, 2025). The result has been a massive upward transfer of wealth to the donor class, and a dual economy that works for the superrich and wealthy, to the exclusion of everyone else (Temin 2018; Storm 2017; Taylor and Ömer, 2020).

levels. Cf. Arteaga and Barone (2025), which also analyzes party and media attention, though not the regulatory history discussed by Gov Facts.

Indeed, this wealth transfer to the Wall-Street and Silicon-Valley super-rich has been so massive that it has been driving U.S. economic growth in recent years, alongside the gigantic capital expenditures on AI data-center infrastructure (Storm 2026). Importantly, the irrational stock-market exuberance that has unduly escalated the share values of American AI firms, the rise in wealth inequality, and the massive wealth effect on spending are, jointly, keeping up the growth of effective demand that would have stalled otherwise (*i.e.*, in the face of stagnating wages and incomes for the majority of Americans). In other words, aided and abetted by the Fed's perpetual backstopping, the U.S. financial sector has been blowing ever more financial bubbles in an increasingly unequal and decaying economy to keep the wealth effect going and achieve near full employment outcomes. This is, indeed, the ultimate and monumentally undesirable macroeconomic consequence of more than four decades of bipartisan Reaganomics: a system of private opulence and public squalor (using John Kenneth Galbraith's (1958) words), or, equally appropriate, socialism for the rich and permanent austerity for everyone else. The widespread discontent and popular disillusionment with a system that is working only for the oligarchs is not surprising.

Simply voting for a Democrat every two or four years does nothing to counter these trends or change this system. Limited, temporary surges in the real hourly earnings of the poorest paid American workers did not break these structural tendencies (as we showed in **Section 1**). Both political parties are now big money parties. Recognition that American general elections have increasingly become almost perfect closed loops is becoming almost mainstream. More and more of the national income flows to top income and wealth holders, as our earlier discussion of wealth and consumption in **Section 2** illustrated. These super-affluent Americans and the corporations they own in turn recycle ever larger sums into the political system. The phenomenon does not date, as many believe, from any recent Supreme Court decision, though that argument would take us too far afield. Like the multiplication of well-funded Washington think tanks, it goes back at least to the 1970s.

The empirical evidence is overwhelming that since at least 1980, Congressional elections have been linear functions of money, meaning that the correlation between the share of total money spent and the partisan vote split is very high: R-Squareds of .8 and higher. A series of careful checks, including event analyses, make it possible to rule out the old dodge that the money is just following polls (Ferguson, Jorgensen, and Chen, 2022). With the notable exception of Senator Bernie Sanders, leaders of both major national parties in Congress and presidential candidates depend on donations of more than six figures.⁴⁶ Congressional party leaders also pile up rewards

⁴⁶ Trump displayed an interesting "bar bell" pattern; with very substantial contributions from super-affluent contributors and some considerable number of small donations. See Ferguson *et al.* (2022). That pattern did not change in 2020 or 2024.

in the stock market, far above what ordinary investors earn. If they were mediocre investors before they became leaders, it does not matter; once they take over, they suddenly become outstanding investors (Wei and Zhou, 2025).

Because both Democratic and Republican administrations have so clearly prioritized corporate shareholders' interests over working people, privatization over public welfare, and wealth accumulation by the 1% over economic progress and security for the working and middle classes, it is easy to understand the widespread perception that the political system is really controlled by one giant money party.

That notion is just close enough to the truth to be seriously misleading. We cannot explore here why money-driven political systems with steadily weakening vehicles for popular input produce outcomes like those this paper has described (Ferguson, 1995; 2026). Here we can only highlight the limits of a "One Big Party" approach.

A particularly provocative warning is emerging from recent studies of how differences in partisan control at state levels interact with (bipartisan) national level policies to produce markedly shorter life spans in specific (Republican dominated) states (Woolf, 2022; Denworth, 2022). The statistical problems involved in such judgements are complex, given historical turnabouts in party affiliations in the American South, and formerly liberal Republican states in the northeast and elsewhere. But the accumulating evidence indicates that residents of precisely the red states that high tech executives now effusively praise for their openness to "innovation" suffer from markedly lower life expectancies. State regulations on the environment, drug treatment, investments in health and education matter a lot, with shortfalls having deadly consequences.

There is more. Wide differences between parties are obvious in regard to abortion, gender, gay rights, and — especially now — race and civil rights (if not "privacy" which neither party is very interested in, given pressures from high tech). The same holds for crucial questions of election administration and ballot counting. While parties plainly weave these issues into appeals precisely to protect one or another set of economic interests, the issues themselves are not essentially macroeconomic at all and they have sweeping implications for individual human welfare.

The question going forward is how the Democrats respond. Right now money is pouring in to think tanks like the Third Way from insurers and health care companies to block Medicare for All (denouncing it as "socialism") (Moore 2026b). Major AI firms, crypto, and other finance and tech firms are also directing firehoses of cash to party vehicles to secure their ends, which

include choking off efforts to raise taxes on billionaires.⁴⁷ Leaders of the Democratic establishment in both the House and the Senate, if not the Democratic National Committee directly, also control vast war chests of money from these same interests.

The right-wing populism that twice gave Donald Trump the keys to the White House strongly exploited racism and gender stereotypes, scapegoating migrants and minorities, but its breeding ground, deep down, has been the profound disillusionment with an economic and a political system that has failed millions of Americans.

Ever since 2016, most of the Democratic establishment has reassured itself that Trump is an anomaly, a freak outlier, and that Trump's voters are either irredeemable bigots ("deplorables") or gullible manipulated by social media. These Democrats believe that Trump can be removed from office by exposing corruption, by fact-checking misinformation, by electing the 'right' charismatic Democrat and by better 'communicating' their otherwise little changed economic policies, including free trade — and this will then return America to "normalcy."

The problem with this narrative is that it ignores the material and structural factors that led to Trump's rise in the first place and the long-term erosion of the social underpinnings of America's economy. Trump is the symptom, not the disease, as the rise of Red Tech in his second administration should have made plain. The AI boom is multiplying the ranks of affluent Democrats, who oppose the Trump administration's unstable and incoherent AI regulatory policies but who are also outspokenly opposed to unions and any other popular movement that they see as obstacles to their goal of remaking society from the ground up through artificial intelligence (Elrod and Barker, 2024; French, 2025).

The "bad vibes" narrative that pins responsibility for Kamala Harris's 2024 loss on ungrateful voters who do not appreciate Bidenomics' successes fuels this sentiment. Bidenomics was not in any way transformative — in the end it was but a steady continuation of the Reagan-Bush-Clinton-Obama status quo that has hardwired deep structural inequalities into America's economic development. The false nostalgia for the ephemeral boons is not just delaying recognition that right-wing populism emerged from decades of economic malpractice, by both parties, but is short circuiting serious discussion of what is required to fix the broken system in a world economy that is already changed beyond recognition.

We do not have the space here to explore the numerous measures that have been proposed to fix America's broken system, only to note that there is no lack of relevant ideas to bring about a vibrant economy, a more decent society and a more democratic polity. Proposed reforms include

⁴⁷ For the Democrats and crypto see, esp. Ferguson *et al.* (2026); AI financing is widely, if not carefully, discussed in major media commentaries.

higher minimum wages; higher progressive taxation and greater fiscal redistribution; creating more space for fiscal policy, funded by tax revenues; a wealth tax; strong anti-trust policy and public support for unions; green industrial policy; strict regulation of the financial sector to enable funding for productive investments; abolishing the Fed's backstop; higher public investment in education, basic research and public transportation; a single-payer universal healthcare system ([Pandey et al. 2026](#)); compulsory purchases of government bonds by the super-rich along the lines Keynes suggested during World War II (Keynes, 1940) to fund necessary public investment, control inflation, and manage aggregate demand; and reforms to limit the power of money in politics. These proposals can carry any label — 'realist', 'social-democratic', 'progressive', 'green', 'populist', 'liberal', 'social-liberal' or 'democratic socialist' — it hardly matters. Whether the cat is black or white hardly matters; the urgent need is to catch mice. The actual reforms are what counts. Most anything just mentioned would be preferable to simply raising interest rates in the midst of a gigantic AI boom, since that will simply throw most costs on to the rest of the population that cannot protect itself.

The Trump administration's accumulating policy blunders, economic failures, and high handed administrative actions are now so grave that a strong Democratic resurgence in the coming elections seems likely. That would certainly dent, though it may not spike, the hopes a major segment in the Republican party harbors for fundamentally restructuring the American government.

But with the official Democratic Party already deciding to stage the first official Democratic primary in South Carolina, the question of 2028 will then hang over everything else. James Carville has already laid bare the establishment's thinking: "Remember who decides who the Democratic nominee is, and that is Southern Blacks. And I got news for you — they're not that liberal" (Moore, 2026a).

American politics is once again entering another phase when nobody needs a weatherman to tell which way the wind is blowing. With the demise of quantitative easing's ultra-low interest rate regime, spending on defense and foreign interventions soaring, and long term interest rising sharply, talk is reviving in both parties of a need for something like another Greenspan Commission to provide political cover for slashing Social Security to reduce the soaring deficit (Committee, 2026; see also Malaney, 2026). In the face of the national drumbeat for sweeping health care reforms, the Democratic members of the Senate Finance Committee are trumpeting a new proposal for what they suggest will become the party's next major healthcare reform proposal. Issued after lengthy hearings exploring the subject, it is breathtakingly superficial. It concentrates all attention on a single part of the problem: health insurance, leaving out the rest, including hospitals (Alvelda and Ferguson, 2026). Great prescience is not required to see that Democratic elites and their billionaire backers now have their work cut out for them. The world and the Democratic base are moving on, but they are not. Hugo von Hoffmannsthal's old remark

in the waning days of the Habsburg Empire nicely sums up their situation now: “It is hard to grapple with an existing social order, but harder still to have to posit one that does not exist.”⁴⁸

⁴⁸ The quotation comes from Hoffmannsthal, “Buch der Freunde,” *Aufzeichnung, Gesammelte Werke in Einzelausgaben*, ed. Herbert Steiner (Frankfurt am Main, 1959), quoted in Schorske, 1980, p. 219.

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Appendix 1

Statistical Models of the Fall in Consumer Sentiment

Section 1.3 relates how the University of Michigan’s Consumer Sentiment Index mysteriously plummeted during the Biden presidency. Some analysts have argued this happened because consumers somehow became insensitive to their real situations, which were not as bad as they imagined. More recently, other analysts have suggested that shift is an artefact of a switch in how the survey was taken or even altered political sentiments (Lahart, 2026). As already discussed, the University of Michigan survey researchers themselves agree that the shift in the interview procedure depressed reported results, as have others. The suggestion that shifting political sentiments account for the change can be immediately rejected ([Hsu, 2026](#)). Our view is that the prolonged cumulative pace of the growth of living standards since the pandemic began (the variable we call the Income Gap) is likely a major factor.

This Appendix presents the details of the two models we developed to analyze the decline in Consumer Sentiment. Both include the shift in the interview mode as a variable, along with the other variables discussed in our main text. To model the change in interviewing and sampling procedures, we created a variable called Mode. This is a transition variable that takes the value 0 through March 2024, then 0.25, 0.50 and 0.75 in April, May and June 2024 respectively. From July 2024 onward it becomes 1, representing the gradual structural transition.

Our main text variable “Income Gap” also requires a word: It is measured as per capita real personal income minus its pre-pandemic (2010–2019) trend, in percent. It is negative throughout almost the entire sample and becomes increasingly negative as the income shortfall increases (from about -1.5% in January 2017 to -7.7% by March 2026). A positive coefficient on IncomeGap in the tables below therefore means sentiment *rises* as the income shortfall declines and falls as the shortfall deepens — consistent with the paper's argument that disappointing income growth has depressed consumer sentiment. This is the opposite of how the sign on the variable might be read in a colloquial sense, so we discuss our findings below in terms of the shortfall narrowing or widening rather than just the raw coefficient.

Our sample includes 112 monthly observations running from January, 2017 to April, 2026.

First Approach: An Error-Correction Model

The different variables are not stationary, but there is a long-run cointegrating regression relationship between the Michigan Consumer Survey (Michigan CS) and our Income Gap variable, the personal consumption expenditure index (PCE) reflecting one measure of inflation; the S&P500, and the survey mode.

This makes it possible to employ an error-correction model relating the monthly change in the University of Michigan Index of Consumer Sentiment (*Michigan_CS*) to short-run changes in its drivers and to the lagged deviation from a long-run equilibrium relationship:

$$\Delta Michigan_CS_t = \alpha_0 + \alpha_1 \Delta PCE_t + \alpha_2 \Delta IncomeGap_t + \alpha_3 \Delta SP500_t + \alpha_4 \Delta Mode_t + \lambda ECT_{t-1} + \varepsilon_t$$

Here, the error-correction term is the lagged residual from the cointegrating (long-run) regression presented just below.

$$ECT_{t-1} = Michigan_CS_{t-1} - (\hat{\beta}_0 + \hat{\beta}_1 PCE_{t-1} + \hat{\beta}_2 IncomeGap_{t-1} + \hat{\beta}_3 SP500_{t-1} + \hat{\beta}_4 Mode_{t-1})$$

The mode variable operates differently between the long-run relation and the short-run error correction analysis. In the former it operates as a level-shift term while in the short-run equation it enters in differences. On the other hand, PCE is significant in the long-run relation while its short-run change is insignificant. But retaining PCE is important. Without it, but adding Mode by itself the Engle-Granger test fails to reject the null hypothesis of no cointegration among *Michigan_CS*, *IncomeGap*, and *SP500* (Engle–Granger ADF statistic = -3.467 , Mackinnon $p > .10$). When PCE is included the test provides strong evidence of cointegration. The estimated speed of adjustment is also nearly twice as large as that obtained if PCE is excluded (-0.232 versus -0.128).

Estimated long-run equation:

$$Michigan_CS_t = 118.685 + 4.320 IncomeGap_t - 0.005 SP500_t + 6.023 Mode_t - 3.725 PCE_t$$

The Engle–Granger residual-based ADF test rejects the null hypothesis of no cointegration (ADF statistic = -5.44 , MacKinnon $p = 0.002$), providing strong evidence of a long-run cointegrating relationship among the variables. Note that because the long-run coefficients come from a system whose Johansen cointegrating rank is 2, the individual long-run coefficients on *SP500* and *Mode* cannot be structurally interpreted. They are reported here only to define the error-correction term; note also that the positive long-run mode coefficient should not be read as the mode effect — that appears in the short-run equation below.

Short-run movements in the income shortfall and the S&P500 significantly move consumer sentiment: a one-point *narrowing* of the income shortfall (*IncomeGap* rising by one point, toward zero) raises sentiment by 2.36 points ($p < 0.001$) — equivalently, a one-point *widening* of the shortfall lowers sentiment by 2.36 points. A one-point increase in $\Delta SP500$ raises sentiment by 0.006 points ($p = 0.010$). ΔPCE is insignificant in the short run, consistent with the main analysis; it is retained only through the error-correction term.

The error-correction term is negative and highly significant ($\lambda = -0.232$, $p < 0.001$): approximately 23% of any month's deviation from the long-run equilibrium is corrected in the following month, an adjustment half-life of about 2.7 months. This supports the existence of a stable long-run relationship among consumer sentiment, personal consumption expenditures, income inequality, and stock-market performance, once the 2024 survey-mode change is accounted for.

Table A.1

Error-Correction Model for Monthly Changes in Consumer Sentiment. Dependent variable: $\Delta Michigan_CS$ (N = 111, $R^2 = 0.384$)

Variable	Estimate	Std. Error	t-value	p-value
Intercept	-0.519	0.342	-1.516	0.132
ΔPCE	0.674	1.124	0.600	0.550
$\Delta IncomeGap$	2.379	0.246	9.676	<0.001****
$\Delta SP500$	0.006	0.002	2.527	0.013**
$\Delta Mode$	-8.050	2.970	-2.710	0.008***
ECT_{t-1}	-0.232	0.055	-4.200	<0.001***

Notes: ECM results with Newey–West HAC standard errors (lag = 4). The residuals show little evidence of first-order autocorrelation (DW = 1.853). The Breusch–Godfrey test does not reject the null of no residual autocorrelation through lag 4 at the 5% level, although the result is marginal at the 10% level, BG(4) = 8.068, $p = 0.089$. The Ljung–Box test indicates remaining residual autocorrelation over 12 lags, Q(24) = 24.877, $p = 0.015$. We therefore use Newey–West HAC standard errors (lag = 4).

The coefficient on $\Delta Mode$ (-8.05 , $p = 0.008$) implies a cumulative downward level shift of about 8.1 index points across the phone-to-web transition, holding economic conditions constant. It is encouraging that our estimate is consistent with other estimates of the effect of the mode change, including those of the University of Michigan Survey Research team (-6.6 points) and Cummings and Tedeschi (-8.9 points).

Second Model: Dynamic Time-Series Regression

We also analyzed consumer sentiment using a dynamic regression model with ARIMA (4,1,0) errors, with Income Gap, SP500, and Mode included as explanatory variables. The model can be written as

$$Michigan_CS_t = \beta_1 IncomeGap_t + \beta_2 \Delta SP500_t + \beta_3 Mode_t + n_t,$$

where n_t follows an ARIMA (4,1,0) process. Because the model contains one order of differencing, the ARIMA error process can equivalently be expressed as

$$\Delta n_t = 0.0301\Delta n_{t-1} - 0.231\Delta n_{t-2} + 0.100\Delta n_{t-3} - 0.192\Delta n_{t-4} + \varepsilon_t.$$

Because the model uses first-order differencing, the regression coefficients are identified primarily from changes in the explanatory variables and changes in consumer sentiment. Unlike the error correction model, however, the dynamic regression does not explicitly separate short-run effects from adjustment toward a long-run equilibrium. We therefore use this model first of all as a robustness check on the ECM results.

The results (in **Table A.2**) consistently indicate that changes in IncomeGap are strongly associated with changes in consumer sentiment. In the ECM, $\Delta IncomeGap$ is highly statistically significant, and the error-correction coefficient is negative and significant ($ECT_{t-1} = -0.232$, $p < 0.001$), indicating adjustment toward the estimated long-run equilibrium. SP500 is also statistically significant in both the ECM and the dynamic regression with ARIMA (4,1,0) errors. In the ARIMA specification, the Mode coefficient is negative and significant at a slightly more marginal level ($p = .054$); by contrast the ECM more clearly identifies the survey transition effect through $\Delta Mode$ ($p = .008$). The significant negative second- and fourth-order autoregressive coefficients indicate additional short-run dynamics in sentiment at those lags. The Ljung–Box test suggests no additional evidence of remaining residual autocorrelation, which is a sign that the ARIMA(4,1,0) error specification adequately captures the remaining serial dependence.

Table A.2
Dynamic Regression Model with ARIMA (4,1,0) Errors
Dependent variable: Michigan_CS (N = 112)

Variable	Estimate	Std. Error	z-value	p-value
IncomeGap	2.188	0.463	4.726	<0.001****
SP500	0.008	0.003	3.272	0.001****
Mode	-13.537	7.019	-1.929	0.054*
AR(1)	0.030	0.095	0.316	0.752
AR(2)	-0.231	0.094	-2.447	0.014**
AR(3)	0.100	0.109	0.921	0.357
AR(4)	-0.192	0.096	-1.991	0.046**

Model statistics: AIC = 612.38, BIC = 634.06, log-likelihood = -298.19, RMSE = 3.532, MAE = 2.841. Ljung-Box test on standardized residuals: $\chi^2(20) = 19.373$, $p = 0.498$ (residuals approximately white noise). The first-differenced sentiment series is stationary (ADF = -6.34, $p < 0.01$; KPSS = 0.263, $p > 0.10$), so first-order differencing is appropriate. Significance: **** $p < 0.001$, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

Appendix 2

The Wealth Effect on Consumption

The theoretical justification for a wealth effect on consumption spending is uncontroversial (Cooper and Dynan 2016), but there is no agreement on the magnitude of the wealth effect nor is there a shared view on how long it takes for higher housing wealth and stock-market wealth to translate into higher spending (Carroll, Otsuka, and Slacalek 2011; Cooper and Dynan 2016; Chodorow-Reich, Nenov and Simsek 2021).

Estimating the wealth effect on U.S. consumption, we distinguish two main categories of wealth: housing wealth (defined as owners' equity in real estate) and financial wealth (defined as corporate equities and mutual fund shares). Housing wealth and financial wealth are defined as ratios of aggregate personal consumption expenditure. The housing wealth and financial wealth ratios for the year 2017, when personal consumption was roughly on trend, are used to normalize the wealth ratios over the period of analysis 2014q1-2026q1.

To determine the wealth effect on real personal consumption expenditure, we calibrated the following equation:

$$\Delta PCE = MPC_H \Delta H + MPC_F \Delta F$$

where ΔPCE_t = the percentage deviation of real Personal Consumption Expenditure (from pre-pandemic trend); ΔH = the percentage deviation of housing wealth (as a ratio of PCE) from its normal ratio; ΔF = the percentage deviation of stock-market wealth (as a ratio of PCE) from its normal ratio; MPC_H = the marginal propensity to consume (MPC) out of housing wealth; and MPC_F = the MPC out of stock market wealth. Our approach is conservative, in that the MPCs are applied only to that part of household wealth that exceeds 'normal' wealth. Rather than settling on one estimate, we estimate lower and upper bounds for the wealth effect on consumption.

For the lower bound, we assume, conservatively, that a one dollar deviation from the norm in housing wealth and financial wealth translates into a 2.5-cent deviation in consumption. For the upper bound we assume that a one-dollar deviation from the norm in housing wealth should translate into an 8.7-cent deviation in consumption and a one-dollar deviation from trend in financial wealth should lead to a 4-cent deviation in consumption. We finally assume that the wealth effect, defined as a three quarter moving average, occurs with a lag of three quarters (in quarter $t+3$) following the change in household wealth in quarter t .

The quarterly results for 2014q1-2025q4 appear in **Figure 25** (in the main text). Our approach is conservative, as we assume that the MPCs are applied only to that part of household wealth that exceeds 'normal' wealth. **Table A.3** presents recent estimates of the MPCs out of housing wealth and stock market wealth — the disagreement on the empirical evidence is evident.

To avoid the Okfenokee Swamp of MPC estimations, we estimate lower and upper bounds for the wealth effect on consumption. For the lower bound, we assume, conservatively, that a one dollar deviation from the norm in housing wealth and financial wealth translates into a 2.5-cent deviation in consumption.

Table A.3
Estimates of the Marginal Propensity to Consume out of Wealth:
The U.S. Economy

	Housing-wealth effect	Stock-market wealth effect
Kerdrain (2011)	0.050	0.050
Carroll <i>et al.</i> (2011)	0.087	—
Case, Quigley and Shiller (2013)	0.065 – 0.068	0.028 – 0.029
Zandi, Poi and Hoyt (2018)	0.082	0.133
Chodorow-Reich <i>et al.</i> (2021)	—	0.032
Visa (2024)	0.200	0.240
Estimates used in simulation:		
• Lower bound	0.025	0.025
• Upper bound	0.087	0.040

Source: Constructed by the authors.

For the upper bound we assume that a one-dollar deviation from the norm in housing wealth should translate into an 8.7-cent deviation in consumption and a one-dollar deviation from trend in financial wealth should lead to a 4-cent deviation in consumption. We finally assume that the wealth effect, defined as a three quarter moving average, occurs with a lag of three quarters (in quarter $t+3$) following the change in household wealth in quarter t .

Appendix 3

Time Series Analysis of the Labor Income Share 1947-2025 (Compensation of Employees as a Percentage of GDP)

The data for labor's share of the national income since 1947 exhibit substantial short run fluctuations along with longer run trends. To prevent the former from muddying the latter, we begin by filtering the raw data through a Hodrick-Prescott filter. This decomposes the series into a smooth trend component, s_t , and a cyclical component, c_t :

$$y_t = s_t + c_t$$

The trend is obtained by selecting the sequence of values τ_t that minimizes:

$$\sum (y_t - s_t)^2 + \lambda \sum [(s_{t+1} - s_t) - (s_t - s_{t-1})]^2$$

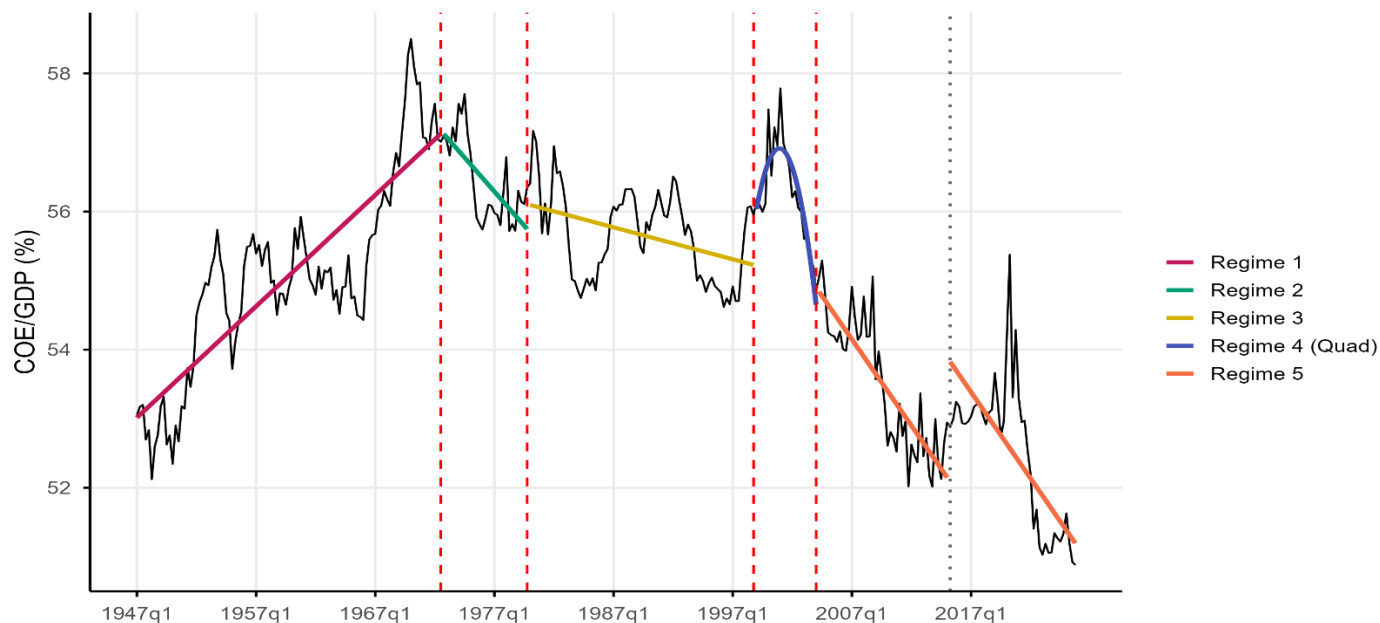
The first term measures the discrepancy between the observed series and the estimated trend, while the second term penalizes changes in the growth rate of the trend. The smoothing parameter, λ , determines the relative importance assigned to smoothness. For quarterly data, we use conventional value $\lambda = 1600$.

To identify multiple structural changes in the deterministic component of the quarterly series, we use two complementary procedures. Two primary breaks — 1972 Q3 and 1998 Q4 — are identified by the Bai-Perron global procedure applied to the full sample and survive HAC-robust testing unconditionally. The dates 1979 Q4 and 2004 Q1 are confirmed as additional breaks by sequential Chow tests conditional on the primary breaks, following Bai (1997); they would not be selected by an unconditional test on the full sample.

The entire series y_t is modeled as a piecewise deterministic trend, after tests indicated a model with time varying coefficients was not needed. Four break dates are identified in total: 1972 Q3, 1979 Q4, 1998 Q4, and 2004 Q1, yielding five regimes. The last defines a period – now much remarked on in the U.S. press — of especially sharp decline. The steep trend downward continues through COVID, though there is a one-off shift in the intercept upward around 2015.

Conditional on the presence of a structural break at 1972 Q3, the additional break at 1979 Q4 is statistically significant based on a Chow-type F test, $F(2,102) = 22.6, p < 0.001$.

Figure A.1
Structural Breaks in the Labor Income Share
(1947 Q1 – 2025 Q4)



The two events are sequential rather than alternative explanations for the same structural change.

Conditional on the structural break at 1998 Q4, the additional break at 2004 Q1 indicates a material deepening of the downward trend, as confirmed by the Bai (1997) sequential test ($F(2,105) = 9.52, p < 0.001$)

Final Model Specification

The final specification consists of five distinct regimes. Regimes 1–3 are modeled using linear time trends. Regime 4 (1998 Q4–2004 Q1), which includes the last stage of the stock market bubble of the late nineties and its collapse, is modeled using a quadratic time trend that begins at the third structural break allowing for nonlinear curvature during this period. Regime 5 returns to a linear time trend but includes an additional dummy variable representing a level shift beginning in 2015 Q1. The level-shift dummy changes the intercept of the Regime 5 relationship while leaving its underlying slope unchanged. The full model is:

$$y_t = \begin{cases} \alpha_1 + \beta_1 t + u_t, & t \leq 1972 \text{ Q3} \\ \alpha_2 + \beta_2 t + u_t, & 1972 \text{ Q3} < t \leq 1979 \text{ Q4} \\ \alpha_3 + \beta_3 t + u_t, & 1979 \text{ Q4} < t \leq 1998 \text{ Q4} \\ \alpha_4 + \beta_4(t - \tau_3) + \beta_5(t - \tau_3)^2 + u_t, & 1998 \text{ Q4} < t \leq 2004 \text{ Q1} \\ \alpha_5 + \beta_6 t + \delta D_t + u_t, & t > 2004 \text{ Q1} \end{cases}$$

where $\tau_3 = 1998 \text{ Q4}$ denotes the third break date, and D_t is a dummy variable where the level shift happened at 2015 Q1.

$$D_t = \begin{cases} 0, & 2004 \text{ Q1} < t \leq 2015 \text{ Q1} \\ 1, & t > 2015 \text{ Q1} \end{cases}$$

Estimation Results

Table A.4 reports the OLS parameter estimates for each regime, save for the fourth, which is modeled as a quadratic. HAC-robust standard errors are used for all hypothesis tests reported in the text.

Table A.4
Estimated Trend Parameters by Regime

Regime	Period	Parameter	Estimate (SE)	P-value	R ²	n
1	$\leq 1972 \text{ Q3}$	Intercept α_1	52.975 (0.272)	< 0.001	0.721	103
		Slope β_1	0.040 (0.005)	< 0.001		
2	1972 Q3 – 1979 Q4	Intercept α_2	62.242 (1.547)	< 0.001	0.463	29
		Slope β_2	-0.049 (0.013)	< 0.001		
3	1979 Q4 – 1998 Q4	Intercept α_3	57.634 (1.046)	<.001	0.157	76
		Slope β_3	-0.012 (0.006)	0.056		
4†	1998 Q4 – 2004 Q1	Intercept α_4	56.038 (0.166)	< 0.001	0.77	21
		Linear trend β_4	0.229 (0.048)	< 0.001		
		Quadratic β_5	-0.015 (0.002)	< 0.001		
5	> 2004 Q1	Intercept before shift, α_5	69.225 (1.773)	< 0.001	0.688	87
			-0.063 (0.007)	< 0.001		
		Common slope β_6	1.738 (0.413)	< 0.001		
		Level shift δ	70.963			

		Post-shift intercept, $\alpha_5 + \delta$				
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Notes: Standard errors are reported in parentheses. All coefficients significant at the 1% level except the Regime 3 slope, which is marginally significant at the 10% level ($p = 0.056$). HAC-robust standard errors (Newey-West, lag = 4) are used for all hypothesis tests cited in the text. The primary break dates (1972 Q3, 1998 Q4) are estimated by global SSR minimization (Bai and Perron 1998, 2003); the conditional tests for 1979 Q4 and 2004 Q1 are sequential Chow F-tests following Bai (1997).