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Inflation: Progress and the Path Ahead

Remarks by

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at

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Good morning. At last year's Jackson Hole symposium, I delivered a brief, direct message. My remarks this year will be a bit longer, but the message is the same: It is the Fed's job to bring inflation down to our 2 percent goal, and we will do so. We have tightened policy significantly over the past year. Although inflation has moved down from its peak—a welcome development—it remains too high. We are prepared to raise rates further if appropriate, and intend to hold policy at a restrictive level until we are confident that inflation is moving sustainably down toward our objective.

Today I will review our progress so far and discuss the outlook and the uncertainties we face as we pursue our dual mandate goals. I will conclude with a summary of what this means for policy. Given how far we have come, at upcoming meetings we are in a position to proceed carefully as we assess the incoming data and the evolving outlook and risks.

The Decline in Inflation So Far

The ongoing episode of high inflation initially emerged from a collision between very strong demand and pandemic-constrained supply. By the time the Federal Open Market Committee raised the policy rate in March 2022, it was clear that bringing down inflation would depend on both the unwinding of the unprecedented pandemic-related demand and supply distortions and on our tightening of monetary policy, which would slow the growth of aggregate demand, allowing supply time to catch up. While these two forces are now working together to bring down inflation, the process still has a long way to go, even with the more favorable recent readings.

On a 12-month basis, U.S. total, or “headline,” PCE (personal consumption expenditures) inflation peaked at 7 percent in June 2022 and declined to 3.3 percent as of

July, following a trajectory roughly in line with global trends (figure 1, panel A).¹ The effects of Russia’s war against Ukraine have been a primary driver of the changes in headline inflation around the world since early 2022. Headline inflation is what households and businesses experience most directly, so this decline is very good news. But food and energy prices are influenced by global factors that remain volatile, and can provide a misleading signal of where inflation is headed. In my remaining comments, I will focus on core PCE inflation, which omits the food and energy components.

On a 12-month basis, core PCE inflation peaked at 5.4 percent in February 2022 and declined gradually to 4.3 percent in July (figure 1, panel B). The lower monthly readings for core inflation in June and July were welcome, but two months of good data are only the beginning of what it will take to build confidence that inflation is moving down sustainably toward our goal. We can’t yet know the extent to which these lower readings will continue or where underlying inflation will settle over coming quarters. Twelve-month core inflation is still elevated, and there is substantial further ground to cover to get back to price stability.

To understand the factors that will likely drive further progress, it is useful to separately examine the three broad components of core PCE inflation—inflation for goods, for housing services, and for all other services, sometimes referred to as nonhousing services (figure 2).

Core goods inflation has fallen sharply, particularly for durable goods, as both tighter monetary policy and the slow unwinding of supply and demand dislocations are

¹ Descriptions of PCE inflation include Board staff estimates of the July 2023 values based on available information, including the July 2023 consumer price index and producer price index data. The July 2023 PCE inflation data will be published by the Bureau of Economic Analysis on August 31, 2023.

bringing it down. The motor vehicle sector provides a good illustration. Earlier in the pandemic, demand for vehicles rose sharply, supported by low interest rates, fiscal transfers, curtailed spending on in-person services, and shifts in preference away from using public transportation and from living in cities. But because of a shortage of semiconductors, vehicle supply actually fell. Vehicle prices spiked, and a large pool of pent-up demand emerged. As the pandemic and its effects have waned, production and inventories have grown, and supply has improved. At the same time, higher interest rates have weighed on demand. Interest rates on auto loans have nearly doubled since early last year, and customers report feeling the effect of higher rates on affordability.² On net, motor vehicle inflation has declined sharply because of the combined effects of these supply and demand factors.

Similar dynamics are playing out for core goods inflation overall. As they do, the effects of monetary restraint should show through more fully over time. Core goods prices fell the past two months, but on a 12-month basis, core goods inflation remains well above its pre-pandemic level. Sustained progress is needed, and restrictive monetary policy is called for to achieve that progress.

In the highly interest-sensitive housing sector, the effects of monetary policy became apparent soon after liftoff. Mortgage rates doubled over the course of 2022, causing housing starts and sales to fall and house price growth to plummet. Growth in market rents soon peaked and then steadily declined (figure 3).³

² For example, 25 percent of respondents to the most recent University of Michigan Surveys of Consumers reported that it is currently a bad time to buy a new vehicle because of higher interest rates and tighter credit conditions, up from only 4 percent of respondents in 2021. For more information, see the preliminary results of the August 2023 survey, available on the University of Michigan's website at <http://www.sca.isr.umich.edu>.

³ This slowing in rent growth has likely occurred for a combination of reasons. Some of it likely reflects higher interest rates and the softening in real household income growth over the past couple of years. But

Measured housing services inflation lagged these changes, as is typical, but has recently begun to fall. This inflation metric reflects rents paid by all tenants, as well as estimates of the equivalent rents that could be earned from homes that are owner occupied.⁴ Because leases turn over slowly, it takes time for a decline in market rent growth to work its way into the overall inflation measure. The market rent slowdown has only recently begun to show through to that measure. The slowing growth in rents for new leases over roughly the past year can be thought of as “in the pipeline” and will affect measured housing services inflation over the coming year. Going forward, if market rent growth settles near pre-pandemic levels, housing services inflation should decline toward its pre-pandemic level as well. We will continue to watch the market rent data closely for a signal of the upside and downside risks to housing services inflation.

The final category, nonhousing services, accounts for over half of the core PCE index and includes a broad range of services, such as health care, food services, transportation, and accommodations. Twelve-month inflation in this sector has moved sideways since liftoff. Inflation measured over the past three and six months has declined, however, which is encouraging. Part of the reason for the modest decline of nonhousing services inflation so far is that many of these services were less affected by

the normalization of dislocations due to the pandemic is likely playing a role here as well. For example, the shifts in housing preferences related to working from home likely contributed to the increase in housing demand reflected in the sizable earlier increases in rents. As the price effects of that demand shift played out, the growth rate of rents would naturally decline toward its earlier trend. Finally, multifamily construction is quite high by historical standards, and that supply coming on line has likely also taken some pressure off market rents.

⁴ PCE prices for housing services include both the rents paid by tenants and an imputed rental value for owner-occupied dwellings (measured as the income the homeowner could have received if the house had been rented to a tenant). For additional details, see Bureau of Economic Analysis (2022), “Rental Income of Persons,” in *NIPA Handbook: Concepts and Methods of the U.S. National Income and Product Accounts* (Washington: BEA, December), pp. 12-1–12-15, <https://www.bea.gov/resources/methodologies/nipa-handbook/pdf/chapter-12.pdf>.

global supply chain bottlenecks and are generally thought to be less interest sensitive than other sectors such as housing or durable goods. Production of these services is also relatively labor intensive, and the labor market remains tight. Given the size of this sector, some further progress here will be essential to restoring price stability. Over time, restrictive monetary policy will help bring aggregate supply and demand back into better balance, reducing inflationary pressures in this key sector.

The Outlook

Turning to the outlook, although further unwinding of pandemic-related distortions should continue to put some downward pressure on inflation, restrictive monetary policy will likely play an increasingly important role. Getting inflation sustainably back down to 2 percent is expected to require a period of below-trend economic growth as well as some softening in labor market conditions.

Economic growth

Restrictive monetary policy has tightened financial conditions, supporting the expectation of below-trend growth.⁵ Since last year's symposium, the two-year real yield is up about 250 basis points, and longer-term real yields are higher as well—by nearly 150 basis points.⁶ Beyond changes in interest rates, bank lending standards have tightened, and loan growth has slowed sharply.⁷ Such a tightening of broad financial

⁵ For an example of how tighter financial conditions affect economic activity, see the Federal Reserve Board staff's new index measuring U.S. financial conditions through their effect on the outlook for growth; the index is discussed in Andrea Ajello, Michele Cavallo, Giovanni Favara, William B. Peterman, John W. Schindler IV, and Nitish R. Sinha (2023), "A New Index to Measure U.S. Financial Conditions," FEDS Notes (Washington: Board of Governors of the Federal Reserve System, June 30), <https://doi.org/10.17016/2380-7172.3281>.

⁶ Changes in real yields cited in this sentence refer to changes in yields on 2- and 10-year Treasury Inflation-Protected Securities.

⁷ In addition, as the policy rate increased, nonbanking lending conditions changed as well. For example, beginning in 2022 and continuing into the first half of this year, net issuance of riskier debt—such as leveraged loans and speculative-grade and unrated corporate bonds—in public credit markets declined.

conditions typically contributes to a slowing in the growth of economic activity, and there is evidence of that in this cycle as well. For example, growth in industrial production has slowed, and the amount spent on residential investment has declined in each of the past five quarters (figure 4).

But we are attentive to signs that the economy may not be cooling as expected. So far this year, GDP (gross domestic product) growth has come in above expectations and above its longer-run trend, and recent readings on consumer spending have been especially robust. In addition, after decelerating sharply over the past 18 months, the housing sector is showing signs of picking back up. Additional evidence of persistently above-trend growth could put further progress on inflation at risk and could warrant further tightening of monetary policy.

The labor market

The rebalancing of the labor market has continued over the past year but remains incomplete. Labor supply has improved, driven by stronger participation among workers aged 25 to 54 and by an increase in immigration back toward pre-pandemic levels. Indeed, the labor force participation rate of women in their prime working years reached an all-time high in June. Demand for labor has moderated as well. Job openings remain high but are trending lower. Payroll job growth has slowed significantly. Total hours worked has been flat over the past six months, and the average workweek has declined to the lower end of its pre-pandemic range, reflecting a gradual normalization in labor market conditions (figure 5).

This rebalancing has eased wage pressures. Wage growth across a range of measures continues to slow, albeit gradually (figure 6). While nominal wage growth

must ultimately slow to a rate that is consistent with 2 percent inflation, what matters for households is real wage growth. Even as nominal wage growth has slowed, real wage growth has been increasing as inflation has fallen.

We expect this labor market rebalancing to continue. Evidence that the tightness in the labor market is no longer easing could also call for a monetary policy response.

Uncertainty and Risk Management along the Path Forward

Two percent is and will remain our inflation target. We are committed to achieving and sustaining a stance of monetary policy that is sufficiently restrictive to bring inflation down to that level over time. It is challenging, of course, to know in real time when such a stance has been achieved. There are some challenges that are common to all tightening cycles. For example, real interest rates are now positive and well above mainstream estimates of the neutral policy rate. We see the current stance of policy as restrictive, putting downward pressure on economic activity, hiring, and inflation. But we cannot identify with certainty the neutral rate of interest, and thus there is always uncertainty about the precise level of monetary policy restraint.

That assessment is further complicated by uncertainty about the duration of the lags with which monetary tightening affects economic activity and especially inflation. Since the symposium a year ago, the Committee has raised the policy rate by 300 basis points, including 100 basis points over the past seven months. And we have substantially reduced the size of our securities holdings. The wide range of estimates of these lags suggests that there may be significant further drag in the pipeline.

Beyond these traditional sources of policy uncertainty, the supply and demand dislocations unique to this cycle raise further complications through their effects on

inflation and labor market dynamics. For example, so far, job openings have declined substantially without increasing unemployment—a highly welcome but historically unusual result that appears to reflect large excess demand for labor. In addition, there is evidence that inflation has become more responsive to labor market tightness than was the case in recent decades.⁸ These changing dynamics may or may not persist, and this uncertainty underscores the need for agile policymaking.

These uncertainties, both old and new, complicate our task of balancing the risk of tightening monetary policy too much against the risk of tightening too little. Doing too little could allow above-target inflation to become entrenched and ultimately require monetary policy to wring more persistent inflation from the economy at a high cost to employment. Doing too much could also do unnecessary harm to the economy.

Conclusion

As is often the case, we are navigating by the stars under cloudy skies. In such circumstances, risk-management considerations are critical. At upcoming meetings, we will assess our progress based on the totality of the data and the evolving outlook and risks. Based on this assessment, we will proceed carefully as we decide whether to tighten further or, instead, to hold the policy rate constant and await further data.

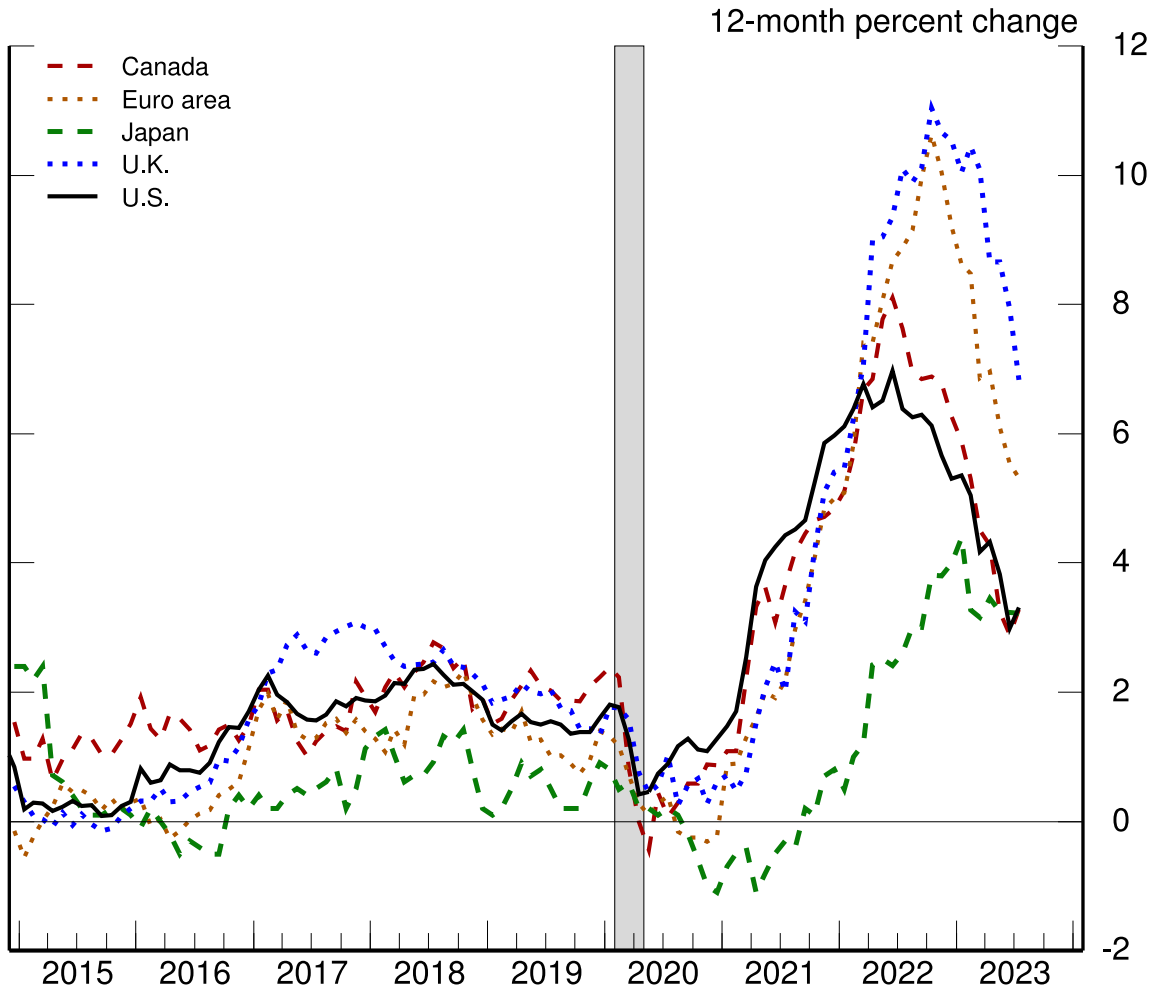
⁸ The relationship between labor market slack and inflation, often called the Phillips curve relationship, is likely nonlinear, steepening in a tight labor market. If the Phillips curve has steepened in this way, a small change in labor market tightness could result in a more substantial change in inflation. It is difficult to know with precision how steep that relationship is in real time or how it might evolve as labor market tightness changes. For more information on nonlinearities in this relationship, see Christoph E. Boehm and Nitya Pandalai-Nayar (2022), “Convex Supply Curves,” *American Economic Review*, vol. 112 (December), pp. 3941–69; Pierpaolo Benigno and Gauti B. Eggertsson (2023), “It’s Baaack: The Surge in Inflation in the 2020s and the Return of the Non-Linear Phillips Curve,” NBER Working Paper Series 31197 (Cambridge, Mass.: National Bureau of Economic Research, April), https://www.nber.org/system/files/working_papers/w31197/w31197.pdf; and Nicolas Petrosky-Nadeau, Lu Zhang, and Lars-Alexander Kuehn (2018), “Endogenous Disasters,” *American Economic Review*, vol. 108 (August), pp. 2212–45.

Restoring price stability is essential to achieving both sides of our dual mandate. We will need price stability to achieve a sustained period of strong labor market conditions that benefit all.

We will keep at it until the job is done.

Figure 1

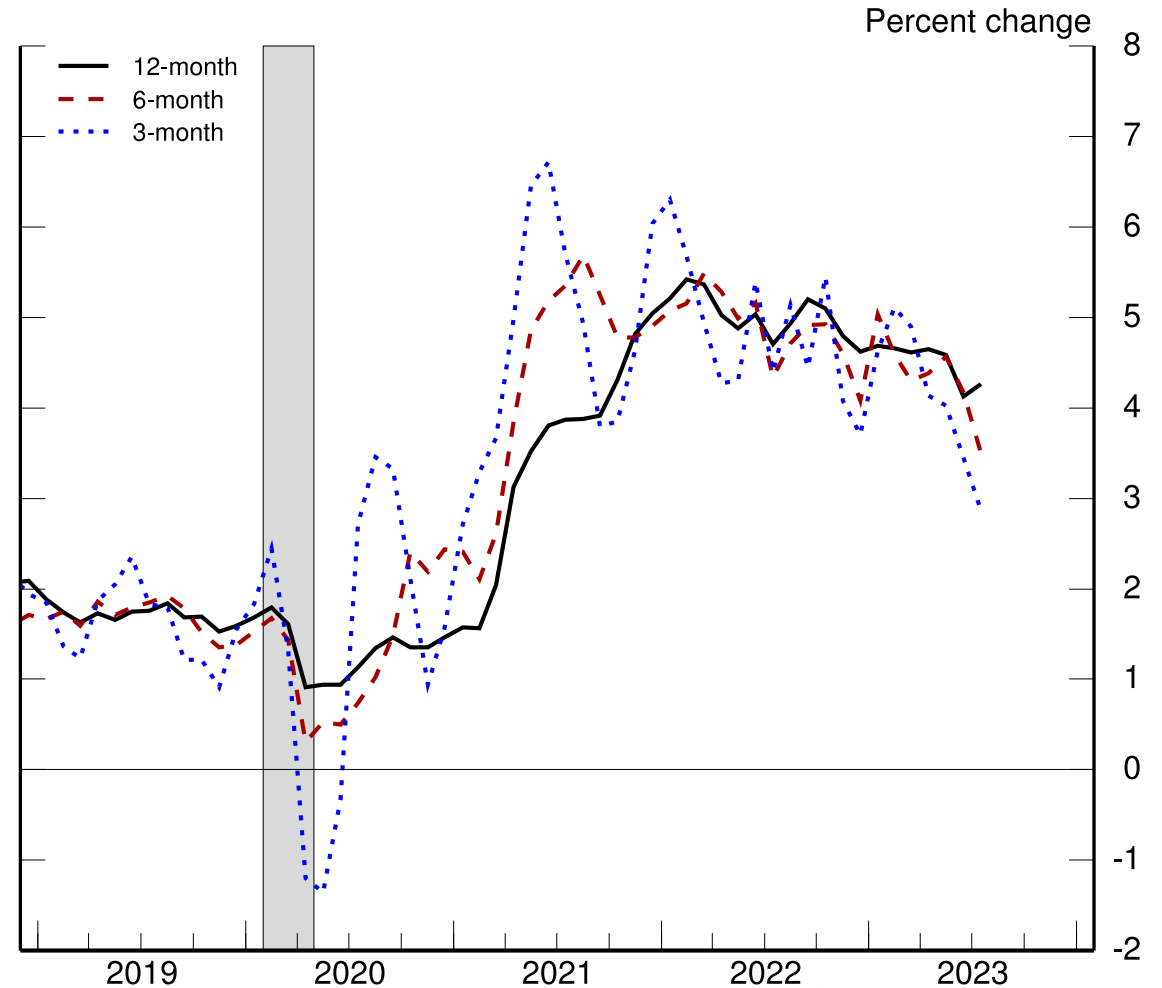
A. Headline Inflation



Note: The data are monthly and extend through July 2023. U.S. data are total PCE inflation and the data point for July 2023 is an estimate based on consumer price index and producer price index data. The shaded bar indicates a period of business recession as defined by the National Bureau of Economic Research: February 2020-April 2020. PCE is personal consumption expenditures.

Source: Haver Analytics; Bureau of Economic Analysis, PCE, via Haver Analytics.

B. Core PCE Inflation



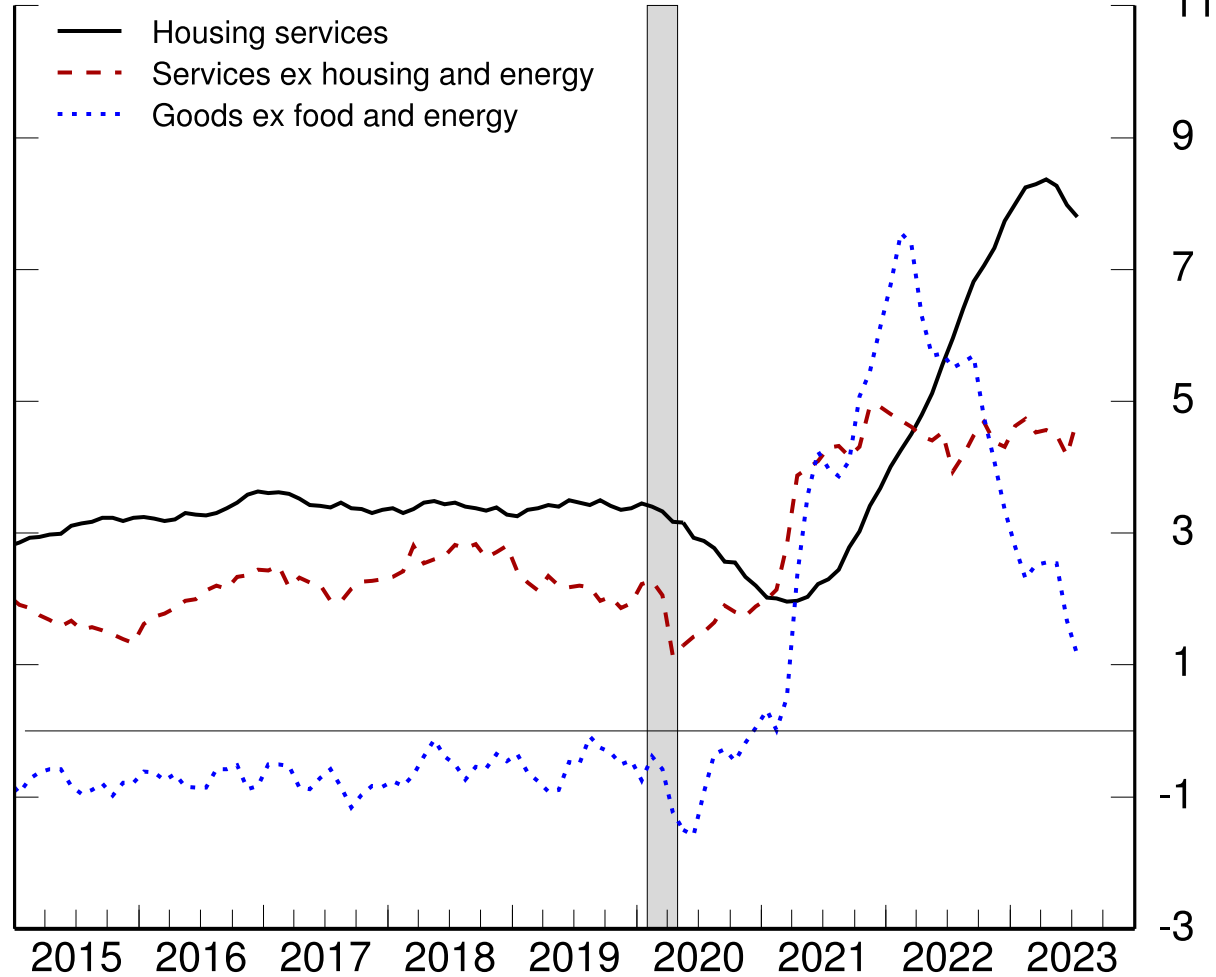
Note: The data are monthly and extend through July 2023. The data for July 2023 are estimates based on consumer price index and producer price index data. PCE is personal consumption expenditures. The shaded bar indicates a period of business recession as defined by the National Bureau of Economic Research: February 2020-April 2020.

Source: Bureau of Economic Analysis, PCE, via Haver Analytics.

Figure 2

Price Indexes for Core PCE Goods and Services

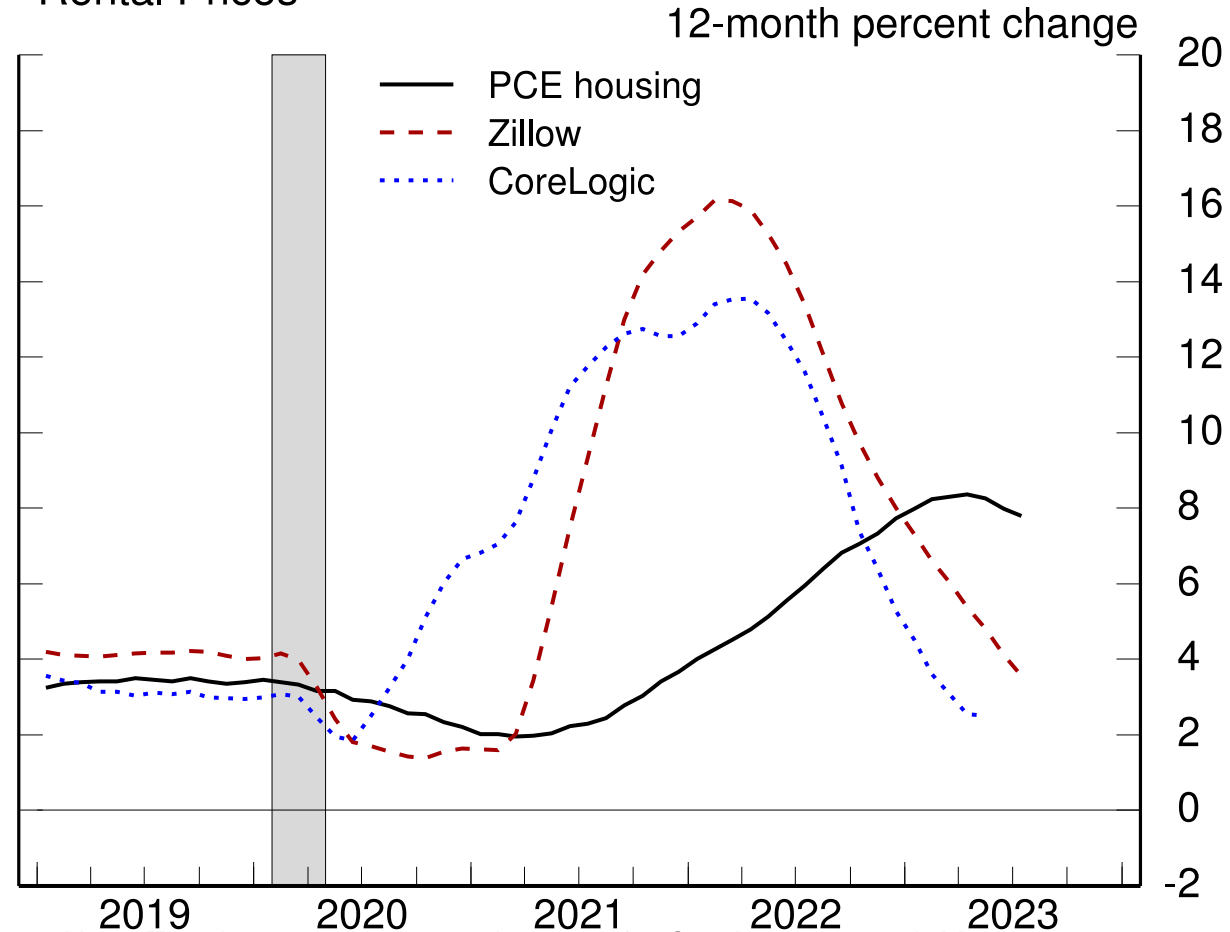
12-month percent change



Note: The data are monthly and extend through July 2023. The data for July 2023 are estimates based on consumer price index and producer price index data. PCE is personal consumption expenditures. The shaded bar indicates a period of business recession as defined by the National Bureau of Economic Research: February 2020-April 2020.

Source: Bureau of Economic Analysis, PCE, via Haver Analytics.

Figure 3
Rental Prices

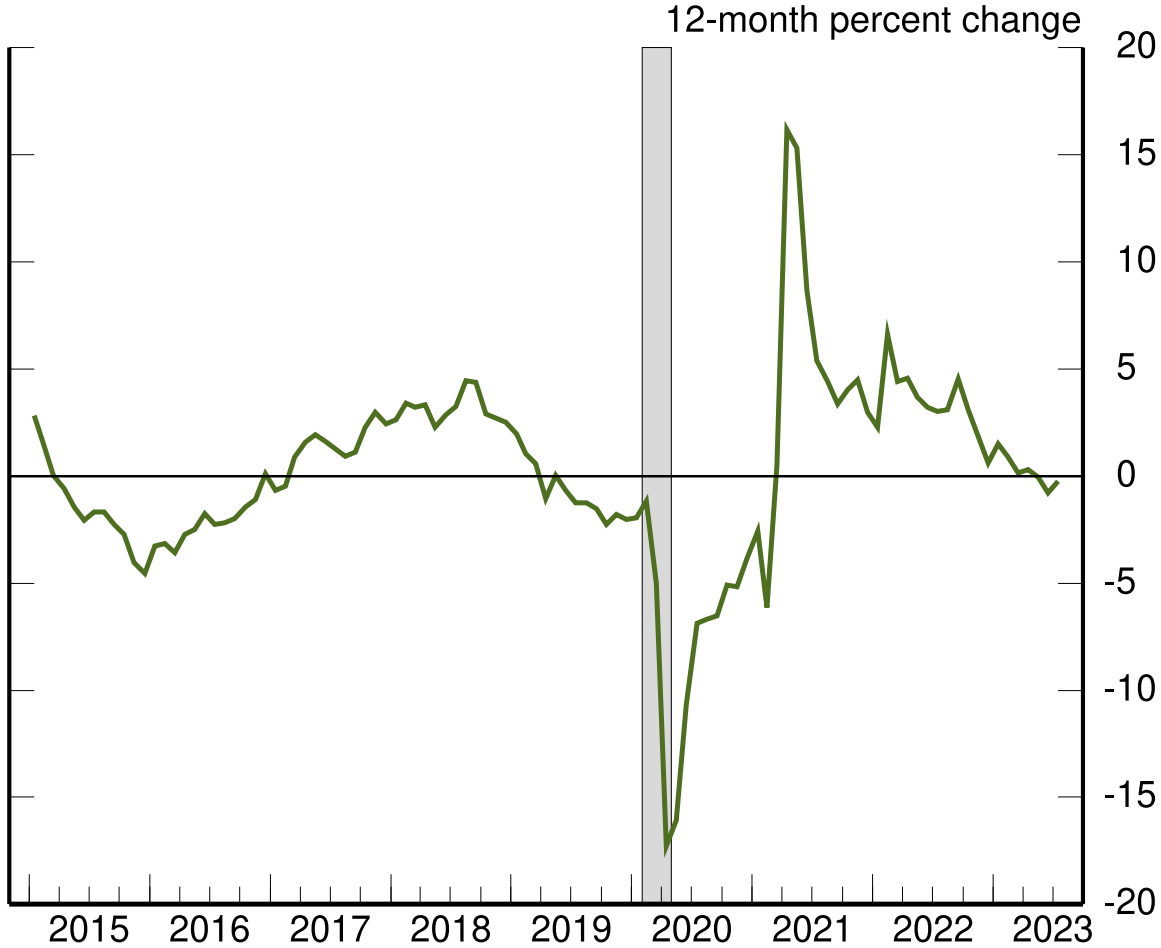


Note: The data are monthly and extend, for CoreLogic, through May 2023 and, for PCE and Zillow, through July 2023. For PCE, the data point for July 2023 is an estimate based on consumer price index and producer price index data. PCE is personal consumption expenditures. The shaded bar indicates a period of business recession as defined by the National Bureau of Economic Research: February 2020-April 2020.

Source: Bureau of Economic Analysis, PCE, via Haver Analytics; CoreLogic, Inc.; Zillow, Inc.

Figure 4

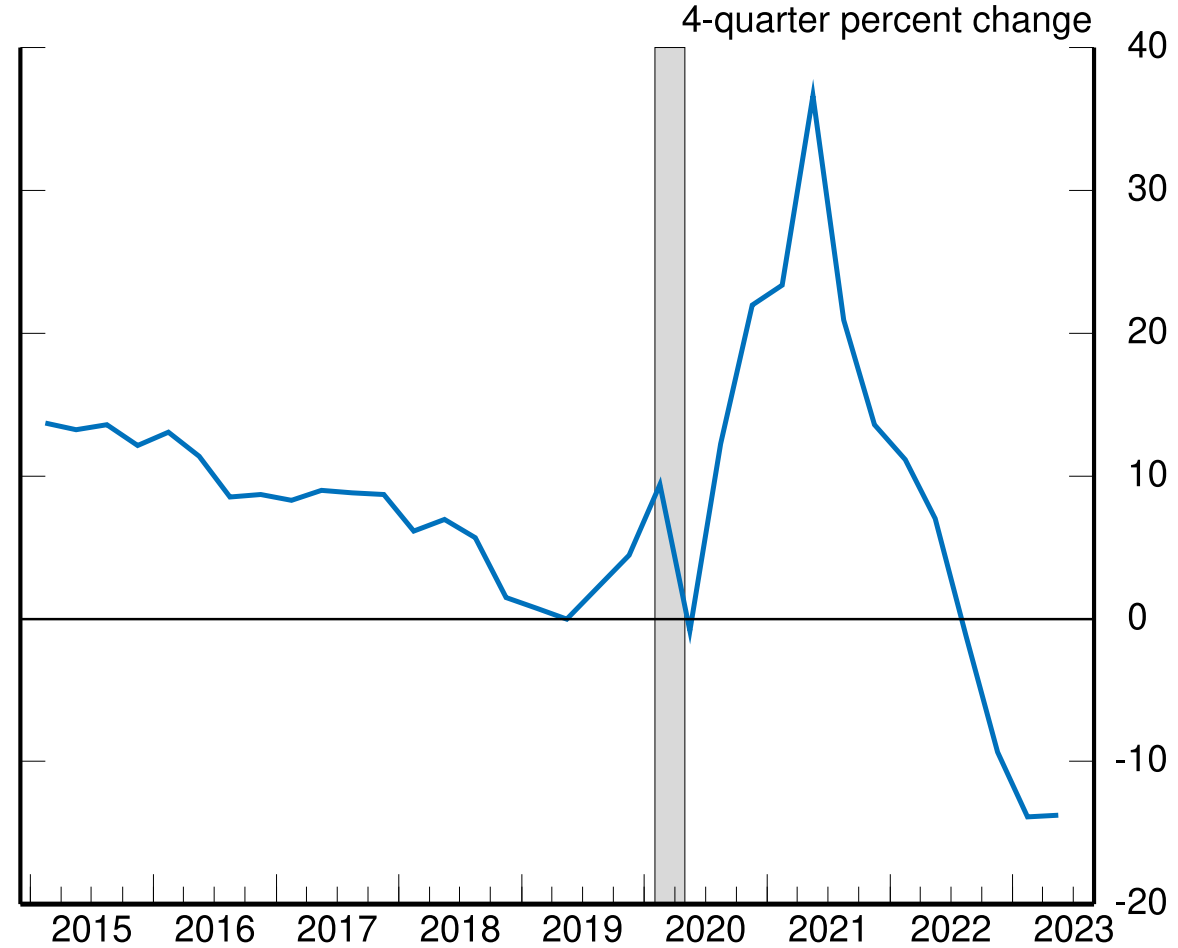
A. Industrial Production



Note: The data are monthly and extend through July 2023. The shaded bar indicates a period of business recession as defined by the National Bureau of Economic Research: February 2020-April 2020.

Source: Federal Reserve Board, Statistical Release G.17, "Industrial Production and Capacity Utilization."

B. Private Residential Investment

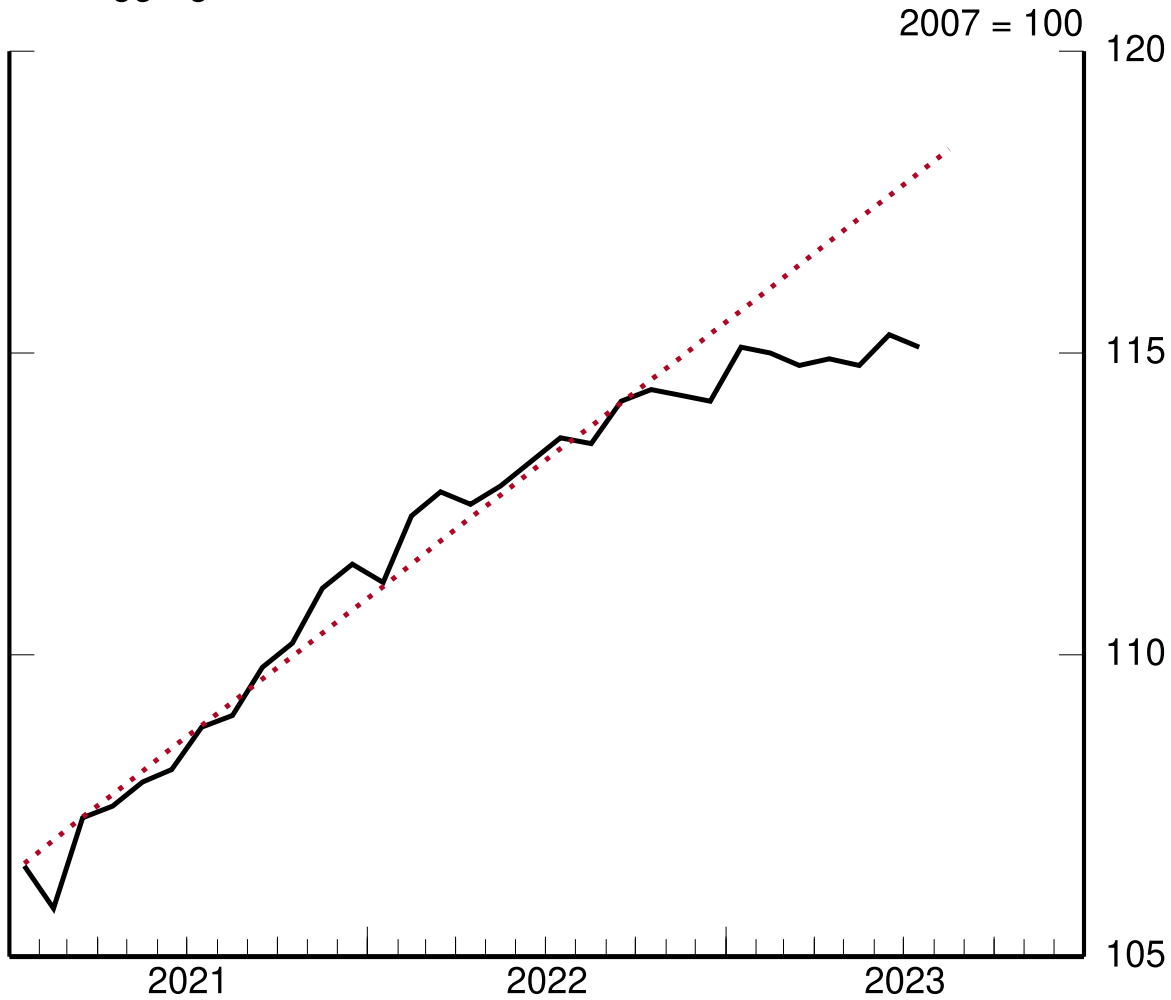


Note: The data are quarterly and extend through 2023:Q2. The shaded bar indicates a period of business recession as defined by the National Bureau of Economic Research: February 2020-April 2020.

Source: Bureau of Economic Analysis via Haver Analytics.

Figure 5

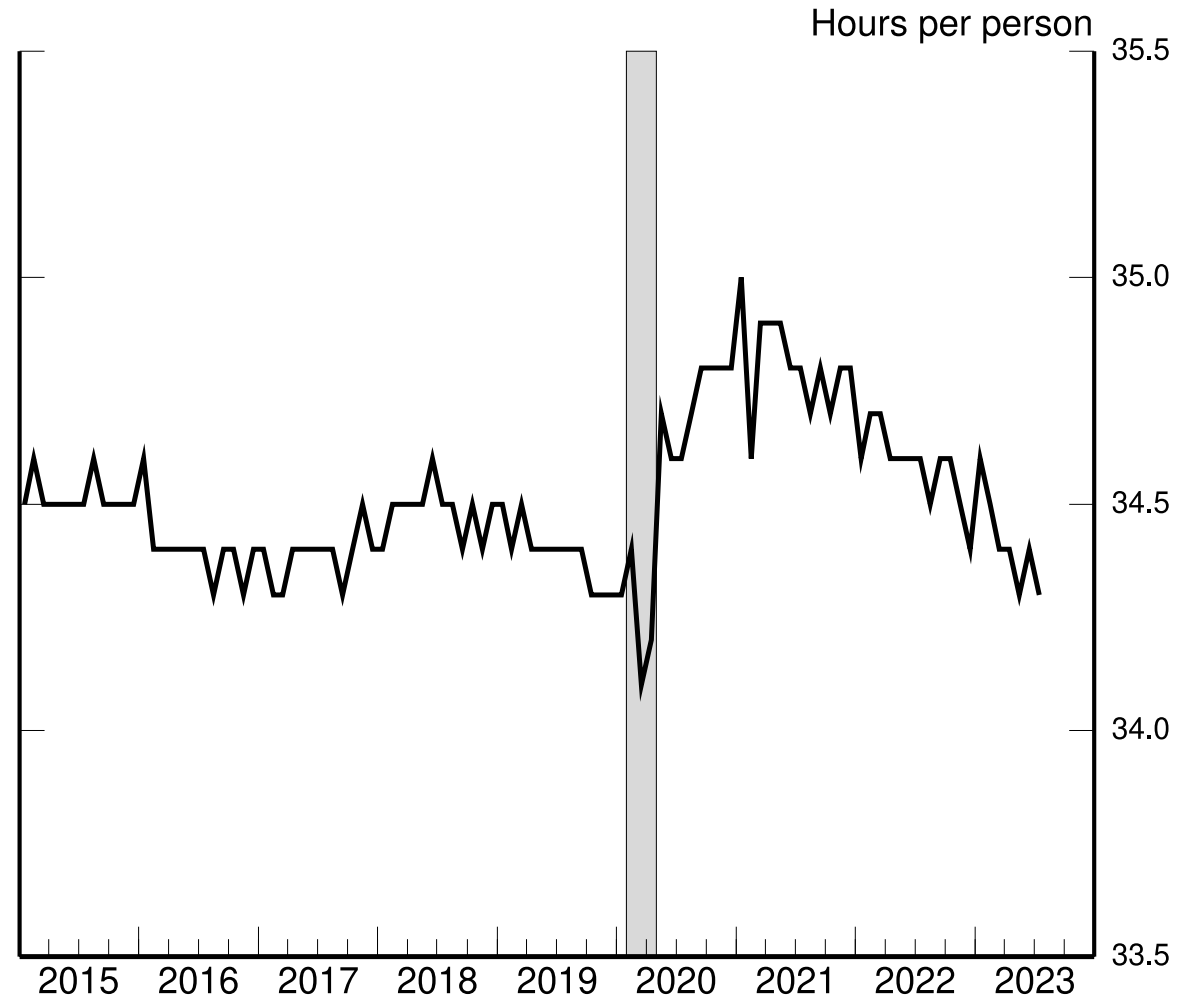
A. Aggregate hours



Note: Data are monthly and end in July 2023. The red dotted line is the 2021-2022 trend.

Source: Bureau of Labor Statistics.

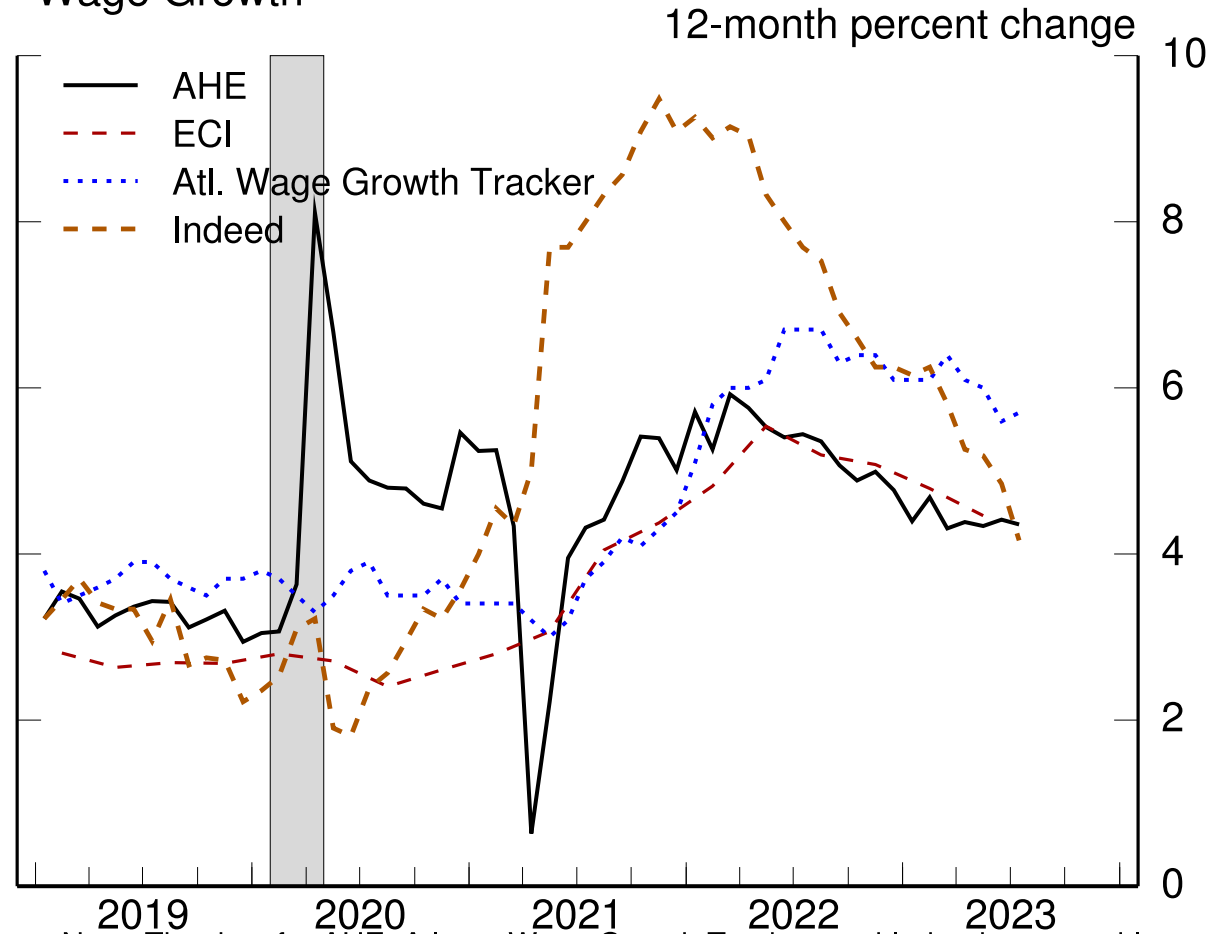
B. Workweek



Note: Data are monthly and end in July 2023. The gray shaded bar indicates a period of business recession as defined by the National Bureau of Economic Research: February 2020-April 2020.

Source: Bureau of Labor Statistics.

Figure 6
Wage Growth



Note: The data for AHE, Atlanta Wage Growth Tracker, and Indeed are monthly and extend through July 2023. Atlanta Wage Growth Tracker data are shown as a 3-month moving average of the 12-month percent change. ECI change is over the 12 months ending in the last month of each quarter and starts in 2019:Q1 and extends through 2023:Q2. The shaded bar indicates a period of business recession as defined by the National Bureau of Economic Research: February 2020-April 2020. AHE is average hourly earnings; ECI is employment cost index. Source: Bureau of Labor Statistics; Federal Reserve Bank of Atlanta, Wage Growth Tracker; Indeed; all via Haver Analytics.