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Is the Last Mile More Arduous?

David Rapach, Federal Reserve Bank of Atlanta

Summary:

US inflation surged starting in spring 2021, with Consumer Price Index (CPI) inflation reaching a 40-year high of 9 percent in mid-2022. Together with improving supply-chain conditions, policy tightening by the Fed decreased inflation to within 1 to 2 percentage points of its 2 percent target by late 2023 without a significant increase in unemployment. However, concerns have been raised that the last mile of disinflation to reduce inflation consistently to its 2 percent target will be more arduous than the previous miles. Close examination of such concerns indicates that they do not receive compelling support. Because the last mile is likely not significantly more arduous than the rest, it is unlikely that the Fed needs to exert extraordinary effort in terms of additional policy tightening as inflation nears its target. Such tightening unnecessarily increases the risk of a "hard landing."

Key findings:

1. The notion that the last mile of disinflation is more arduous than the previous miles does not receive compelling support.

2. It is unlikely that the Fed needs to exert extraordinary effort in terms of additional policy tightening to bring inflation down the final 1 to 2 percentage points to consistently reach its 2 percent target; such tightening unnecessarily increases the risk of a "hard landing."

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Key words: monetary policy, disinflation, Phillips curve, price stickiness, inflation expectations, soft landing

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About the Author:

David Rapach is a research economist and policy adviser in the Research Department at the Federal Reserve Bank of Atlanta. His research interests include asset pricing, forecasting, machine learning, international finance, and macroeconomics. Before joining the Atlanta Fed in 2022, among other academic positions, Dr. Rapach was a professor of economics at Saint Louis University and a visiting professor of finance at Washington University in St. Louis. He has published widely in leading peer-reviewed journals, including the *Journal of Finance, Review of Financial Studies*, *Journal of Financial Economics*, and *Management Science*.

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Comments to the author are welcome at david.rapach@atl.frb.org.

1 The Inflation Surge

Starting in early 2021, US inflation surged. According to the consumer price index (CPI), the year-over-year inflation rate increased from 1.7 percent in February 2021 to 8.9 percent in June 2022. Inflation based on the personal consumption expenditures (PCE) price index—the focus of the Fed's 2 percent inflation target—painted a similar picture, increasing from 1.9 percent in February 2021 to 7.1 percent in June 2022. The June inflation rates were the highest in 40 years.

The surge in inflation necessitated a sharp policy turn by the Fed in an effort to return inflation to its 2 percent target. In the wake of the COVID-19 crisis and its economic fallout, the central bank lowered the federal funds rate target to a range of 0 to 0.25 percent, where it stood in February 2021. After recognizing the persistent upswing in inflation, the Fed embarked on an aggressive tightening cycle starting in March 2022, increasing the federal funds rate target from 0 to 0.25 percent to 5.25 to 5.50 percent by July 2023, including three 75 basis point hikes along the way.

The sharp increase in inflation starting in 2021 is attributed to supply-chain disruptions associated with the COVID-19 crisis, fiscal stimulus packages designed to help households and businesses weather the pandemic, as well as households having excess savings and pent-up demand in the wake of the crisis. In the jargon of macroeconomics, the economy experienced a combination of adverse supply and expansionary aggregate demand shocks, both of which are inflationary.

2 The Turning of the Inflation Tide

Together with improving supply-chain conditions, the Fed's policy tightening contributed to a turning of the inflation tide. Year-over-year CPI inflation steadily declined from a peak of 8.9 percent in June 2022 to 3.1 percent in November 2023, while inflation based on the PCE price index fell from 7.1 percent in June 2022 to 2.6 percent in November 2023.[1]

A striking feature of the substantial decline in inflation (i.e., disinflation) since mid-2022 is that it has not been accompanied by a marked slowdown in economic activity. Indeed, the labor market has remained quite resilient throughout the disinflation. For example, as inflation was falling, employment growth ranged from 105,000 (June 2023) to 568,000 (July 2022), and it was 199,000 in November 2023, all of which are relatively high by recent historical standards. The unemployment rate increased modestly from 3.6 percent in June 2022 to 3.7 percent in November 2023. Real GDP growth has also been reasonably robust, with growth rates above 2 percent over each of the last five quarters. The latest estimate of GDP growth for the fourth quarter of 2023 from the Federal Reserve Bank of Atlanta's GDPNow stands at 2 percent. The resilience of the real economy during the disinflation is surprising, as the conventional view

[1] All figures are the latest available at the time of writing.

based on a relatively flat Phillips curve implies that a significant increase in unemployment is needed to substantively lower inflation.[2]

In sum, inflation has declined from levels not seen in 40 years in mid-2022 to within 1 to 2 percentage points of the Fed's 2 percent target, and the disinflation has occurred without a recession. This stands in sharp contrast to the "Volcker disinflation" of the early 1980s, which was accompanied by a severe recession that witnessed the unemployment rate reach a peak of 10.8 percent at the end of 1982. A further decline in the inflation rate to its 2 percent target without a significant increase in unemployment—the coveted "soft landing"—would be a welcome outcome in light of the Fed's dual mandate of price stability and full employment.

3 The Last Mile

Although inflation has steadily declined since mid-2022 to within 1 to 2 percentage points of its target without a significant slowdown in economic activity, there is concern that the last mile—getting inflation consistently down to its 2 percent target—will be substantially more difficult.[3] The analogy is to a long race, where the last mile is more arduous than the rest, as fatigue sets in and the runner needs to exert extra effort to cross the finish line. However, it is not obvious that the analogy is apt. For the last 1 to 2 percentage points of disinflation to be fundamentally more difficult than the preceding decline in inflation, there must be some sort of structural mechanism that makes the last mile different from the rest. Such mechanisms are not readily apparent in conventional macroeconomic models. Thus, the contention that the last mile of disinflation is more arduous deserves scrutiny.

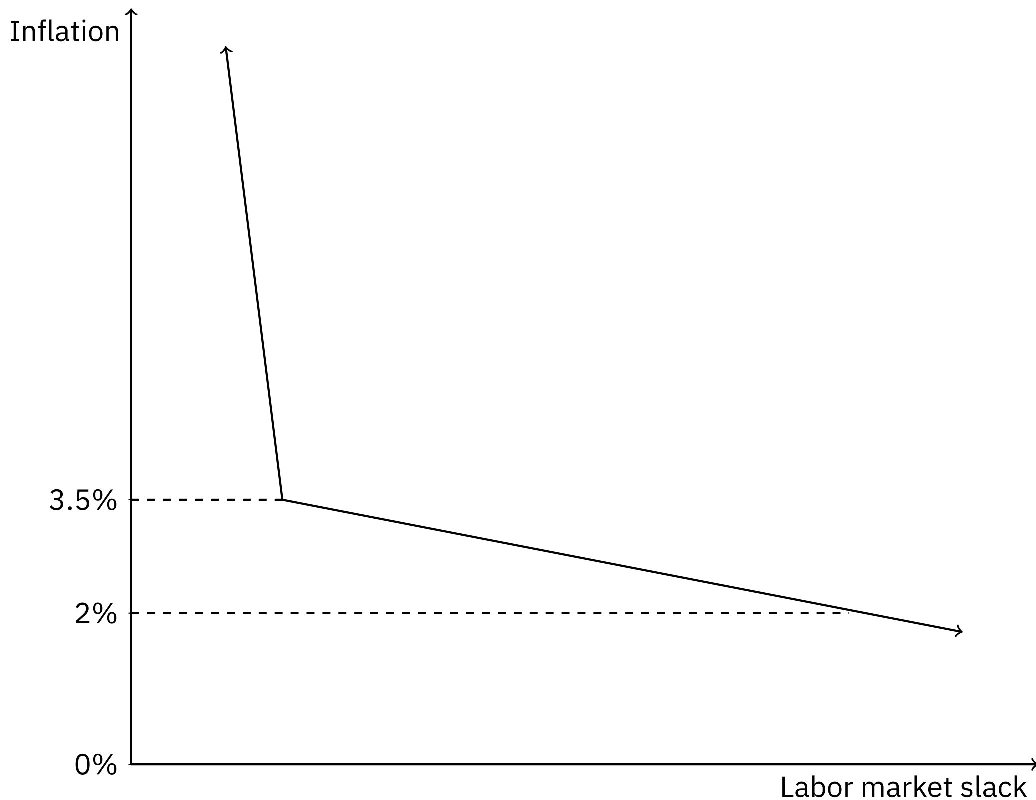
Nonlinear Phillips Curve

A conventional Phillips curve is linear, implying that all miles of the disinflationary process are the same in terms of the additional slack needed to reduce inflation by a percentage point. A potential mechanism for the last mile to be significantly more difficult is a highly nonlinear Phillips curve. Specifically, consider the "kinked" Phillips curve in the diagram with inflation on the vertical axis and a measure of labor market slack on the horizontal axis. The curve is steeply negatively sloped for inflation rates above 3.5 percent, but it has a sharp kink at 3.5 percent and becomes much flatter at lower inflation rates. Under this structure, inflation can fall from a relatively high level to within 1.5 percentage points of its 2 percent target with only a limited increase in labor market slack. However, the sharp kink in the curve makes covering the last mile of disinflation much more costly in terms of the required increase in slack. To get inflation down to its 2 percent target, the Fed would need to exert considerable extra effort in terms of

[2] For example, see the interview with Larry Summers in Goodkind (2022). A Phillips curve depicts a negative relation between inflation and a measure of economic slack, with inflation (economic slack) on the vertical (horizontal) axis.

[3] As observed by Krugman (2023), "Earlier this year, many economists, while acknowledging that inflation was falling without any visible cost in higher unemployment, insisted that the last mile—getting inflation from, say, 3 percent to 2 percent—would be much harder."

tightening (i.e., increasing its policy rate) to create sufficient labor market slack by substantially slowing economic activity.



Kinked Phillips Curve

Crust, Lansing and Petrosky-Nadeau (2023) recently find evidence of a nonlinear Phillips curve.[4] The fitted Phillips curve is indeed steeply negative sloped for relatively high inflation rates, consistent with the labor market remaining reasonably strong during the recent disinflation. Although the fitted Phillips curve is nonlinear, there is not such a sharp turn near an inflation rate of 3.5 percent that covering the last mile of disinflation becomes substantially more costly. Instead, inflation can move to 2 percent with a relatively mild increase in the unemployment rate, especially if the job vacancy rate declines significantly.[5] The fitted Phillips curve becomes quite flat as inflation falls below 2 percent, helping to explain the challenges faced by the Fed in raising inflation to its 2 percent target in the wake of the Global Financial

[4] Motivated by the Beveridge curve, Crust, Lansing and Petrosky-Nadeau (2023) measure labor market slack using the ratio of the unemployment rate to the job vacancy rate.

[5] As summarized by Crust, Lansing and Petrosky-Nadeau (2023), "[T]he FOMC's desired goal of a soft landing for the economy is achievable if a decline in inflation to near 2% is accompanied by a reduction in labor market tightness arising mostly from a sizable drop in job vacancies with only a modest increase in unemployment."

Crisis and concomitant Great Recession. Overall, the evidence of a nonlinear Phillips curve in Crust, Lansing and Petrosky-Nadeau (2023) does not readily indicate that the last mile of disinflation will be substantively more arduous.

Services Inflation

Another potential reason for the last mile to be more difficult centers on services inflation, which tends to be more sticky. The idea is that we have already done the "easy" part of lowering goods inflation. However, the persistence of services inflation will require extra tightening to bring the overall inflation rate down to its target. The problem with this view is that "sticky" does not mean "difficult"—it simply means more time. Inflation can be persistent due to prices that are relatively sticky, so it takes times for inflation to fall to its target. This by itself does not imply that the last mile is more arduous. Instead, it suggests that policymakers need to be patient as inflation moves down to its target over time.

The year-over-year inflation rate for the services component of the CPI declined from a peak of 7.6 percent in February 2023 to 5.2 percent in November 2023, so disinflation is evident in services prices. In addition, the year-over-year inflation rate for the Federal Reserve Bank of Atlanta's Sticky Price CPI fell from a peak of 6.7 percent in December 2022 to 4.7 percent in November 2023, so sticky prices more generally have evinced disinflation. The decline in inflation for sticky sectors has not been as large as that for "nonsticky" sectors, so the overall disinflation process takes more time. The full decline in services inflation is naturally part of the later stages of the overall disinflation process. Again, although reducing inflation from a relatively high level to its target takes time due to the persistence in inflation, this does not mean that the last mile is more difficult.

Inflation Expectations

Inflation expectations could also make the last mile of disinflation more arduous. The notion is that expected inflation could get "stuck" at a level above the 2 percent target—perhaps around 3 percent—since the recent disinflation has lasted for a fairly extended period, while inflation is still above 2 percent. Under this scenario, expected inflation can be viewed as a long-memory process. As expected inflation stubbornly exceeds 2 percent, actual inflation does likewise, since expected inflation is also a key determinant of actual inflation in a modern Phillips curve. Thus, the Fed might need to tighten even more to induce sufficient slack in the economy to overcome the expected-inflation effect and eventually bring inflation down to its target.

How plausible is this scenario? First, it sounds like a wage-price spiral along the lines that was experienced in the 1970s. However, a wage-price spiral like that of the 1970s did not emerge recently, and real wages generally fell during the escalation in inflation (e.g., Brainard (2023)). Second, inflation expectations remained quite well anchored during the inflation surge and are moving toward the 2 percent target. For example, the Federal Reserve Bank of Atlanta's Business Inflation Expectations measure for one-year-ahead expected inflation peaked at 3.8 percent in March 2022 and progressively decreased to 2.4 percent in December 2023. Such a steady decline does not imply that expected inflation will get stuck above the 2 percent target. Furthermore, the latest Survey of Professional Forecasters mean forecast of average annual PCE

price index inflation over the current and next nine years is 2.22 percent, which is well in line with inflation returning to its 2 percent target in the near future and remaining at that level. In sum, measures of expected inflation do not provide support for the view that expected inflation will get stuck above its target, making the last mile of disinflation more strenuous.

4 Policy Implications

After examining a number of potential mechanisms, it is difficult to conclude that the last mile of disinflation is more arduous than the rest. In terms of policy, this implies that the Fed need not view the final phase of the disinflation process as fundamentally different from the other phases. Specifically, the Fed need not exert some sort of extraordinary effort to consistently bring inflation down the last few percentage points to reach its 2 percent target.

From a risk management perspective, believing that the last mile is more strenuous could cause the Fed to tighten policy more than is necessary, which increases the likelihood of a recession and a sharp increase in unemployment. The inflation surge that began in the spring of 2021 has been reversed, due in part to the Fed's restrictive policy response, and inflation appears on its way to its 2 percent target. The disinflation has occurred without a substantial increase in the unemployment rate. With inflation approaching its target—albeit in a bumpy fashion—and with relatively strong growth in employment and real GDP, it does not seem prudent to tighten policy due to concerns about the last mile being more arduous. Such tightening would needlessly increase the risk of a hard landing for the economy.

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