

A Discussion on Inflation and the Fed's New Monetary Policy Framework

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- ▶ The benchmark 10-year Treasury note traded as high as 1.78 per cent in March 2021, up from 0.9 per cent at the start of the year. Last week's positive US economic data led to an increase in government bond prices!

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- ▶ I will first highlight the impact of the \$2.8 trillion fiscal stimulus on the output gap. Next, I will discuss the implications of the Phillips curve for inflation. The new MP framework comes into play in part as it can impact inflation expectations. At the end, potential implications for asset allocation will be discussed.

- ▶ Drawing on [Blanchard \(2021\)](#), it is not difficult to arrive at an upper bound for the size of the output gap:
- ▶ The real GDP in 2020 Q4 was 2.5 percent below its level in 2019 Q4. Prior to the pandemic, the potential real growth had been estimated at around 1.7 percent by the Congressional Budget Office (CBO). This implies an **output gap in 2020 Q4 of 4.2%** or about **\$900 billion in nominal terms**.

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- ▶ It seems plausible to think of an overall multiplier of .7 leading to a positive output gap of roughly 5 percent.

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- ▶ There has been a strong consensus view among policymakers, practitioners, and academics that the robust relationship between output and inflation in the 1960s and 70s has become much weaker over time. See Powell (2018) and the references therein for the view on the flattening of the Phillips curve.
- ▶ The perceived flattening of the Phillips curve can be due to:
 - (i) too little variability in macroeconomic data in the past few decades as economic up-cycles have become muted over time;
 - and (ii) the impact of monetary policy and the subsequent anchoring of inflation expectations.

- ▶ Consider a well-known formulation of the Phillips curve (Hazell, Herreno, Nakamura, and Steinsson (2020)):

$$\pi_t = \beta E_t[\pi_{t+1}] - \kappa(u_t - u_t^n) + \nu_t,$$

that is, inflation is determined by expected inflation, output gap, and cost-push shocks.

- ▶ Unlike the Volcker disinflation in the early 1980s, the “missing disinflation” during and after the Great Recession and the “missing reflation” in the late 2010s have led to the view that the Phillips curve has disappeared.
- ▶ An alternative interpretation emphasizes the anchoring of inflation expectations in the United States (Bernanke (2007) and Hazell et al. (2020)).

LONG-RUN INFLATION EXPECTATIONS

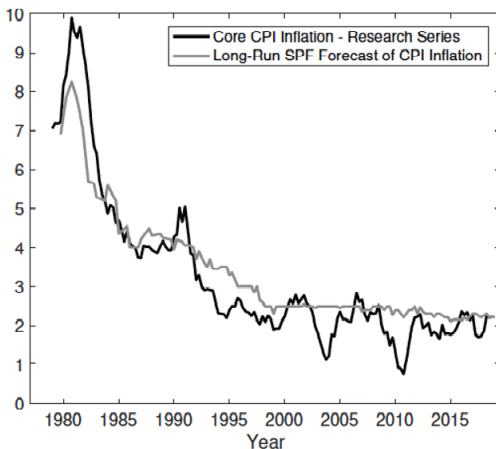


FIGURE: The grey line plots 10 year ahead inflation expectation for the CPI. The black line plots 12 month core CPI inflation using the Bureau of Labor Statistics research series. Source: Hazell et al. (2020).

- ▶ *Beliefs about monetary policy can feed strongly into current inflation.* Following Hazell et al., the Phillips curve model can also be written as:

$$\pi_t = -\psi\tilde{u}_t + E_t[\pi_{t+\infty}] + \omega_t,$$

\tilde{u}_t denotes the deviation of unemployment from its long-run expected value, $E_t[\pi_{t+\infty}]$ represents long-term inflation expectations, ψ is proportional to κ , and ω_t is a function of the long-run natural rate of unemployment and the cost-push shocks. Note that the coefficient on $E_t[\pi_{t+\infty}]$ is one.

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- ▶ In the presence of substantial variation in inflation expectations, the relationship between actual inflation and unemployment becomes uninformative about the slope of the Phillips curve.
- ▶ *If inflation expectations remain stable and anchored, the estimate of κ is roughly .6 percent, the \$2.8 trillion could lead to a $.6 \times 2.5 = 1.5$ percent increase in inflation.*

- ▶ The main motivation for the revised framework has been low inflation, low real interest rates, and slow economic growth in the past two decades.
- ▶ Low inflation and low nominal interest rates pose a challenge for traditional monetary policy, [Kiley and Roberts \(2017\)](#) estimate that the use of traditional policy rules can lead to short-term rates being constrained by zero as much as one-third of the time with adverse impact on economic performance.

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- ▶ The two main new elements of the revised framework are: (i) MP decision will be informed by the Fed's "assessments of the *shortfalls of employment from its maximum level*" rather than by "*deviation from its maximum level*"; and (ii) the Fed will seek to achieve inflation that average 2 percent over time (Powell 2020). This approach can be viewed as a flexible form of average inflation targeting (AIT).

TEMPORARY PRICE-LEVEL TARGETING: TRANSITION TO A NEW REGIME

- ▶ Clarida (2020): flexible AIT can be viewed as TPLT with one-year memory (Bernanke, Kiley, and Roberts (2019)):

$$i_t^{TPLT} = \rho i_{t-1} + (1 - \rho)[r^* + \pi_t + .5(\pi_t - \pi^*) + \hat{y}_t + TP_t],$$

where $TP_t = \sum_{j=t_1}^m (\pi_j - \pi^*)$; i_{t-1} is the realized nominal interest rate; \hat{y} is output gap; $\pi^* = .02$; and $\rho = .85$. The price-level gap starts to accumulate in the first quarter of the effective lower bound (ELB) period and stops accumulating and remains zero when the inflation shortfall is made up at m .

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- ▶ *The fiscal stimulus has coincided with the transition to the new MP regime. Imperfect credibility may become problematic for the new framework: (i) public inflation expectations may not respond to the Fed's announcements over a period of time; and (ii) the potential inflation overshoot may deanchor long-term inflation expectations.*

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ASSET ALLOCATION IMPLICATIONS: BOND-STOCK CORRELATION

- ▶ An important input to asset allocation decisions is the correlation between bond and stock returns. It is well-known that the bond-stock return correlation switched from positive to negative in 2001.
- ▶ It will be insightful to view the correlation between inflation and the output gap as a macro driver of the bond-stock return correlation, (Campbell, Pflueger, and Viceira (2020)):

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- ▶ Consider two time periods: 1979Q3-2001Q1 and 2001Q2-2011Q4. The correlation between inflation and the output gap switched from negative in the first period to positive in the second period. The Fed's strong focus in period 1 was on stabilizing inflation while its interest was more in stabilizing output in the second period. Higher inflation lowers real bond returns, and higher output raises stock returns.

INFLATION-OUTPUT GAP CORRELATION & BOND-STOCK CORRELATION

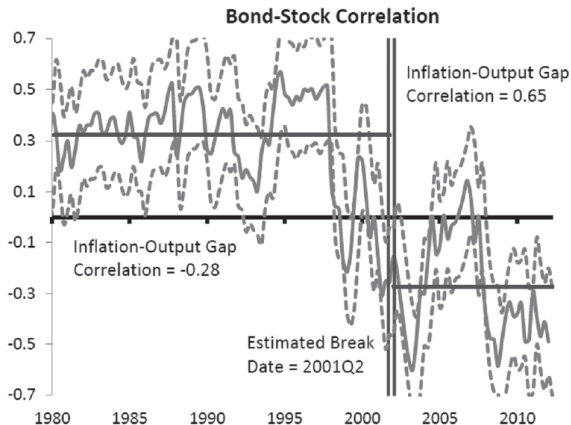


FIGURE: Rolling nominal bond-stock correlations use daily log returns on 5-year nominal Treasury bonds and daily log CRSP value-weighted stock market returns. Source: Campbell et al. (2020).

BOND-STOCK CORRELATION UNDER THE NEW MONETARY REGIME

- ▶ If the potential inflation overshoot due to the combined effect of the new MP framework and the fiscal stimulus increases inflation volatility and inflation expectations, we may move to a period (12-18 months) where the bond-stock return correlation can switch from negative to positive. This would be in part due to the correlation between inflation and output gap switching from positive to negative – as the Fed would aim to stabilize inflation.

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- ▶ In the long run, under the Fed's new monetary policy framework, the strongly negative bond-stock correlation experienced since 2001 may disappear. The emphasis on *shortfall from maximum employment* and the TPLT strategy may increase the persistently low inflation (experienced in the past two decades) toward the 2 percent target.

ON INFLATION EXPECTATION INDICATORS

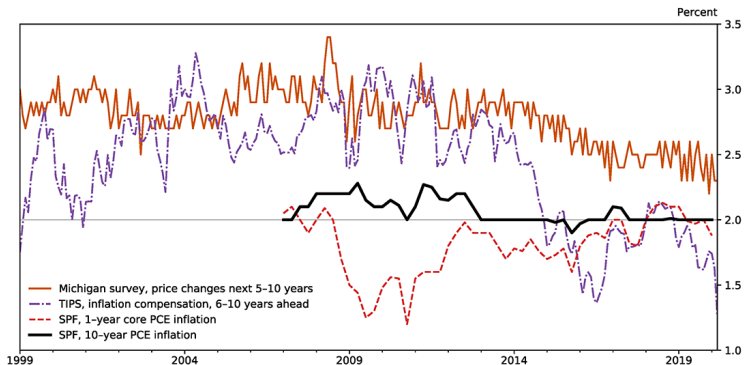


FIGURE: The short-horizon (1-year) SPF measure of core PCE has a much different path than any of the three long-horizon measures. It is also highly volatile compared to the 10-year SPF measure. Source: [Hie Joo and Fulton \(2020\)](#).

- ▶ Similar to the previous framework, the Fed's new monetary policy regime aims to achieve $\pi^* = .02$ in the long-run. If long-term inflation expectations remain stable and anchored, the \$2.8 trillion fiscal stimulus could lead to a manageable and transitory increase in inflation, (perhaps around 1.5 percent).
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- ▶ Under imperfect credibility, however, the new monetary regime combined with the fiscal stimulus may deanchor long-term inflation expectations and lead to substantial inflation overshoots.
- ▶ In the short-run, beliefs about monetary regime changes and fiscal policy can rapidly feed into short-run inflation expectations and subsequently current inflation. The dynamics of the US Treasury securities market in 2021Q1-Q2 can be viewed as a function of highly volatile investor beliefs about monetary and fiscal policy.