SPECIAL REPORT
FEDERAL RESERVE BANK OF PHILADELPHIA

Monetary Policy Report: Using Rules for Benchmarking

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Introduction

Normally, this special report highlights ongoing work to benchmark the stance of monetary policy using a range of policy rules that are widely employed in studies of monetary economics.[1] We perform this exercise with a structural forecasting model based on the New Keynesian dynamic stochastic general equilibrium methodology. We then employ this model to explore the expected behavior of economic variables, including the policy rate, under alternative policy rules. The policy rules help to benchmark not only the current stance of the federal funds rate but also guidance on how the path of policy is likely to evolve in the context of the model. Such an exercise as part of a more comprehensive quarterly monetary policy report would enhance communication and promote a more systematic approach to monetary policy. However, for this forecasting round we are not presenting results from our econometric model. Instead, we discuss the latest forecasts from the Survey of Professional Forecasters (SPF) and the most recent Summary of Economic Projections (SEP) from the Federal Open Market Committee (FOMC).

We begin with an overview of the economy. The remainder of the report highlights the results of the SPF and the SEP.

[1] The views expressed in this report are those of the authors and do not necessarily reflect those of the Federal Reserve Bank of Philadelphia or the Federal Reserve System. We thank Gillian Courtney for her assistance.

Economic Overview

Economic activity in the first quarter declined by 5.1 percent at an annual rate, and many real-time forecasts indicate that the second quarter's decline will be many times larger. The Philadelphia Fed's Arias-Shin tracker of real gross domestic product (GDP) growth indicates (as of June 26) a decline of approximately 18.1 percent at an annual rate in the second quarter of 2020. The economic decline has been induced by a health crisis, and worries concerning the coronavirus have led to a large retrenchment in consumer activity. Indeed, the decline in consumption makes up the lion's share of the decline in GDP. The declines in consumption have largely occurred in goods and services associated with activities that involve person-to-person contact. When analyzing credit/debit card usage, there is approximately a 30 percent drop in consumption in April relative to January. Consumption now appears to be bouncing back, but it remains well below levels seen prior to the advent of the coronavirus. Sectors especially hard hit are associated with social contact. For example, travel, dining out, hotel reservations, and entertainment were severely impacted. As of the end of the first week of June, seated activity at restaurants was down 41 percent, air travel was down roughly 80 percent, and hotel revenue was down 60 percent relative to a year ago.

Not all sectors were hard hit. Card purchases at grocery stores and on home improvement goods are up from levels of a year ago. And roughly 60 percent of consumers indicate that they intend to spend at a rate that is greater or about the same over the next 90 days. Hard data reflect the return of consumption as the May retail sales report showed a gain of 17.7 percent, with some categories growing at outstanding paces. Expenditure on sporting goods was up 88.2 percent and expenditure on clothing increased 188 percent. As well, personal consumption expenditures (PCE) rose by an extremely healthy 8.1 percent in May, and consumption of durable goods rose by an extraordinary 28.4 percent. So, from the perspective of the consumer, activity appears to have bottomed out in April.

The performance of the labor market has, if anything, been even more dismal. There are now more than 40 million Americans unemployed. The effects have been unevenly felt. Based on survey work done at the Philadephia Fed, as of early May, 27.8 percent of those earning less than $40,000 a year were laid off, while only 8.5 percent of those earning more than $125,000 suffered a similar fate. The rapid responsiveness and generosity of unemployment benefits has helped those affected, with many low-income workers actually experiencing an increase in income. In fact, the consumption of those in the lowest income quartile has not fallen by very much relative to a year ago. The dramatic decline is largely due to a decline in spending by those in the upper income quartile. But here too, the nadir for the labor market appears to have been in April. May's employment report indicates that 2.5 million net new jobs were created last month.

With respect to manufacturing, the worst seems to be behind us as well. Philadelphia's regional manufacturing index returned to positive territory in June, with a rebound of over 70 points in its general activity index. As well, manufacturers in the district remain quite optimistic. Hard data on industrial production confirm the information in the survey: In May, manufacturing activity increased 3.8 percent and manufacturers' orders for durable goods increased 15.8 percent. However, retailers are doing much less well, with a number of well-known chains filing for bankruptcy.

On the inflation front, the survey data from the SPF indicate that long-run inflation expectations remain well anchored and consistent with the FOMC's inflation objective. However, the near-term outlook for inflation remains below the Committee's target. The FOMC has signaled that as long as data come in as expected, monetary policy will likely remain on hold for the foreseeable future. Additionally, the Federal Reserve has provided additional support by stabilizing financial markets and providing liquidity to an extremely stressed economy. Notably, the Office of Financial Research Financial Stress Index shows a normal amount of financial stress in markets despite the historically sharp drop in income.

To conclude, the health risks posed by the virus led to a dramatic shutdown of the economy. For now, it looks like the economy is starting to recover, but recovery could be gradual and uneven. It appears that there will be a significant need for economic reallocation, and that process generally takes time. The virus still poses substantial risks, but things have markedly improved since March and April.

The Benchmark Model

For this forecasting round we are not presenting results from our econometric model using alternative Taylor Rules. In the presence of the zero lower bound on interest rates, there is essentially no difference in the paths for monetary policy under the alternative policy rules—and hence the forecasts are nearly identical. As well, structural econometric models estimated using historical data are not well suited to analyzing the impacts of the pandemic on economic activity since no event like this has occurred in the models' history. Structural models can help give a baseline forecast, but then the forecasts are likely to be judgmentally adjusted to account for views on how quickly social distancing might recede or whether a second wave of the pandemic might occur in the fall.

For this Monetary Policy Report, we instead discuss the latest forecasts from the SPF and the most recent SEP from the FOMC. These forecasts present a range of views that is often summarized by the median forecast. It is well established in the forecasting literature that forecast averaging outperforms individual point forecasts over time. Forecast averaging accounts for differing views among forecasters on how the economy is likely to evolve and so brings to bear a wider range of

perspectives, which are more or less accurate depending on the expertise of the forecasters and the shocks that are hitting the economy. Especially with respect to an event like the pandemic and the high degree of uncertainty about its future course, we believe it is useful to consider a range of views on how the economy might perform over the next few years.

The SPF is the oldest quarterly survey of macroeconomic forecasts in the United States. The survey is administered by the Federal Reserve Bank of Philadelphia and can be found at https://www.philadelphiafed.org/research-and-data/real-time-center/survey-of-professional-forecasters. Some 42 forecasters responded in the 2020Q2 survey. The survey questionnaire was sent on April 29, 2020, and submissions were accepted through May 12, 2020. The forecasters present quarterly projections out through 2021Q2 and annual projections through 2023.

The median SPF forecast for real GDP growth for 2020Q2 is -32.2 percent, with growth then rising to 10.6 percent in the third quarter and 6.5 percent in the fourth quarter. For 2020 as a whole, real growth of -5.6 percent is expected, rebounding to 3.1 percent in 2021 and 4.1 percent in 2022. For 2023, average growth edges down to 2.2 percent. Thus, the forecast anticipates a drawn-out recovery from the virus shock and not a V-shaped rebound that has us back to normal in the next few quarters.

Reflecting the sharp contraction in output, the SPF expects the unemployment rate to be 16.1 percent in the second quarter and then to fall gradually to 8.8 percent by the middle of 2021. For 2022, the unemployment rate is expected to average 6.2 percent, falling to 5.1 percent in 2023. These rates are above most estimates of the natural rate of unemployment—so the labor market rebound from the virus and lockdowns is expected to be largely ongoing for the next three years.

Inflation is expected to run below the FOMC target of 2 percent over the next three years. For 2020, the median forecast from the SPF respondents has headline PCE inflation running at a pace of 0.8 percent (Q4/Q4), rising to 1.7 percent in 2021 and 1.8 percent in 2022. Core PCE inflation is expected at 1.3 percent in 2020, rising to 1.6 percent in 2021 and 1.8 percent in 2022.

The SEP is released by the FOMC in March, June, September, and December. FOMC participants give their forecasts for output growth, unemployment, and PCE inflation under an assumption of appropriate monetary policy—which in principal may differ among the Committee members. The June SEP was released with the FOMC statement on June 10, 2020.

The median Committee member expects real GDP growth (Q4/Q4) at -6.5 percent in 2020, rebounding to 5 percent in 2021 and then edging down to 3.5 percent in 2022. Thus, the Committee sees somewhat weaker growth in 2020 compared to the SPF, followed by a stronger rebound in 2021. As with the SPF, the forecast path for growth calls for an extended recovery period rather than a V-shaped rebound in the next few quarters.

The SEP asks participants to forecast the average unemployment rate in Q4. For 2020, the median forecast is for an unemployment rate of 9.3 percent, falling to 6.5 percent in 2021 and 5.5 percent in 2022. Similarly to the SPF, the unemployment rate is projected to be above the natural rate of unemployment over the forecast horizon. There is a considerable range of views on how rapidly the labor market will recover, though. The range of unemployment rate forecasts for 2020Q4 runs from 7 percent to 14 percent. By the end of 2022, the range is 4 percent to 8 percent.

As is the case for the SPF, the median SEP participant expects that the inflation rate will be below the FOMC target over the next couple of years. For 2020, the median forecast for headline PCE inflation is at 0.8 percent, rising to 1.6 percent in 2021 and 1.7 percent in 2022. The median forecast for core PCE inflation is similar at 1 percent in 2020, rising to 1.5 percent in 2021 and 1.7 percent in 2022. The Committee members all see the federal funds rate at 0.1 percent through the end of 2021. By the end of 2022, though, interest rate outcomes rise to a range of 0.1 percent to 1.1 percent.

Summary

Forecasting is especially difficult in the situation currently faced by the economy since we have virtually no historical experience on pandemics of this magnitude and responses from which to draw. Structural econometric model parameter estimates do not incorporate episodes like the one we currently face. We have presented forecasts from two surveys: the SPF and the SEP. The forecasts are broadly similar in that they expect a dramatic decline in real output growth in 2020 followed by an extended recovery period so that the economy does not experience a V-shaped recovery. The unemployment rate is expected to remain above most estimates of the natural rate of unemployment over the next two and a half years. Inflation is expected to run at a pace below the FOMC's 2 percent target over the forecast horizon.

It is somewhat difficult to say what the full range of policy assumptions are that underlie these projections. SEP participants expect the federal funds rate to be near the effective lower bound through the end of 2021 and, according to most participants, through the end of 2022. The SPF expects only modest upward movement in the three-year Treasury bill over the next three years. Beliefs about extraordinary monetary policy assumptions are not elaborated. As well, we don't have details on the fiscal policy assumptions that underlie the forecasts. On balance, the message from the surveys is that it will likely take years for the economy to fully recover from the shock of COVID.