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Hope for the Best, Prepare for the Worst: The Federal Reserve's Monetary Toolbox for Mitigating Severe Adverse Shocks

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In teaching undergraduate courses at Dartmouth College, I often refer to the Federal Reserve's monetary policy committee as being analogous to a team of medical doctors, where the patient is the U.S. economy. And that analogy seems particularly apt at the current juncture. Indeed, the Federal Open Market Committee (FOMC) has a crucial task of monitoring the health of the economy, gauging risks to the economic outlook, and making judgments about the appropriate path of monetary policy for fostering the FOMC's mandated goals of maximum employment and price stability.

Of course, the family doctor is happy when the patient is healthy and just needs routine checkups or perhaps an occasional minor procedure. In more complex medical situations, however, the patient needs a team of expert physicians to interpret a battery of test results and prepare a course of treatment. That process involves extensive consultations with the patient -- and often the patient's family, too -- to discuss the medical diagnosis, treatment options, risks, and contingency plans. Such consultations need to be managed carefully to facilitate clear communications without unnecessarily alarming the patient.

The FOMC should start engaging in similar consultations with the public. In particular, the Fed's communications should stop overemphasizing its benchmark forecast, i.e., the median projections that are depicted in the "dot plot". Instead, the FOMC should engage in scenario analysis aimed at identifying material risks to the economic outlook, and it should formulate and communicate its contingency plans for addressing those risks. In effect, the FOMC should engage in *stress tests for monetary policy*, similar to the scenario analysis and contingency planning that major banks are required to conduct.¹ Indeed, the FOMC should specifically explain its monetary policy plans for exactly the same "severe adverse" scenario that is included in each annual stress test for systemically important banks. We might even say, "*Walk the walk, don't just talk the talk.*"

Some officials might worry about whether greater transparency about risks and contingency plans could be counterproductive. But the health care analogy is helpful here: In a complex medical situation, it's absolutely imperative for the team of physicians to consult carefully with the patient and the patient's family, and those consultations are conducive to much better health outcomes than when the patient is scared or confused by sudden unanticipated changes in the course of treatment. Similar considerations are relevant in meteorology: Weather forecasters give early warnings and regular updates about the potential range of trajectories of an incipient hurricane, and that information facilitates public preparedness and prevent panic. The Federal Reserve needs to do likewise with regard to the macroeconomic outlook

In the remainder of my remarks today, I will highlight the inadequacies of the FOMC's current toolbox for mitigating severe downside risks, and then I'll briefly explain how those deficiencies could be remedied by the introduction of a digital dollar. In particular, as Michael Bordo and I have described in our recent work, a digital dollar could be provided thru a public-private partnership between the Federal Reserve and supervised financial institutions, eliminating the zero lower bound (ZLB) while ensuring that ordinary households and small businesses are insulated from negative interest rates and not burdened with any implicit taxes or fees.²

¹ See Levin (2014, 2015).

² See Bordo and Levin (2018, 2019).

Table 1: Synopsis of the Federal Reserve’s 2020 Stress Test Scenarios

<u>Date</u>	<u>Unemployment Rate</u>		<u>3-month T-Bill Rate</u>		<u>10-Year Treasury Yield</u>	
	<u>Baseline Scenario</u>	<u>Severe Adverse Scenario</u>	<u>Baseline Scenario</u>	<u>Severe Adverse Scenario</u>	<u>Baseline Scenario</u>	<u>Severe Adverse Scenario</u>
2020Q4	3.7	8.4	1.4	0.1	2.0	1.1
2021Q4	3.8	9.9	1.5	0.1	2.2	1.5
2022Q4	3.9	8.8	1.7	0.1	2.6	2.1

Source: Federal Reserve Board

Assessing the Adequacy of the FOMC Toolbox

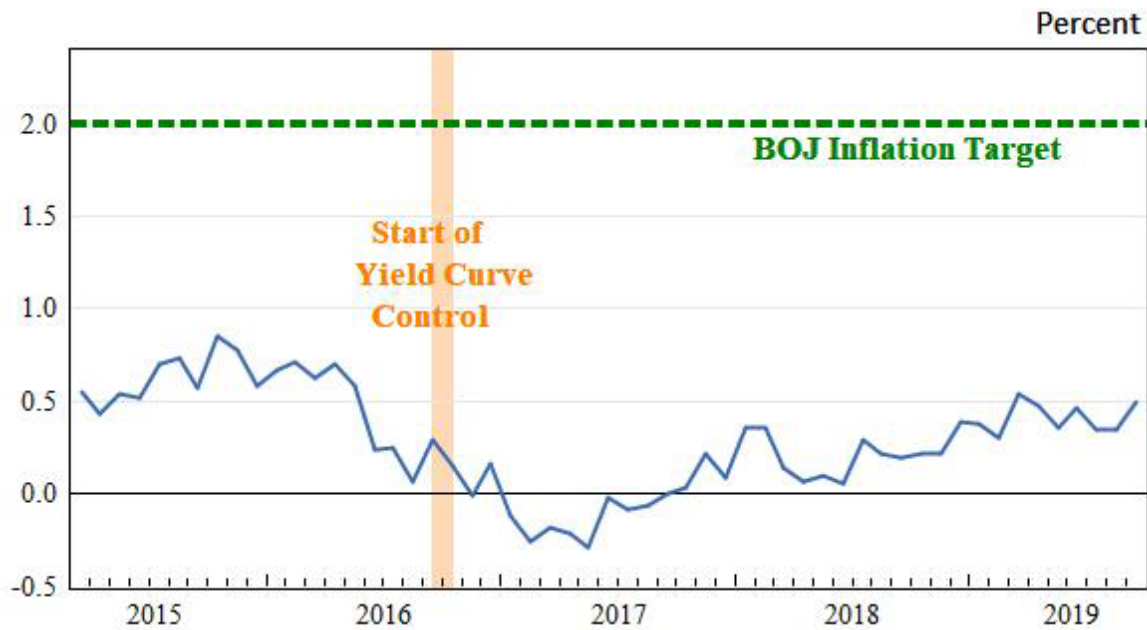
Table 1 provides a synopsis of the Federal Reserve’s latest stress test scenarios, as published in early February 2020. In the baseline scenario, the unemployment rate is assumed to be around 3¾ percent over the next few years. By contrast, the severe adverse scenario is calibrated to be roughly parallel to the magnitude of the 2008-09 recession, with unemployment surging to a peak of around 10 percent by late 2021 and then moving downwards by a percentage point over the subsequent year.

However, the stress test exercise is relatively opaque about the FOMC’s response in the severe adverse scenario and the extent to which its monetary policy actions are assumed to be effective in mitigating the severity of the recession and fostering the onset of recovery. For example, the 3-month Treasury bill rate is assumed to be pinned at 0.1 percent, consistent with the assumption that short-term nominal interest rates are reduced to the ZLB. But that level of interest rates is only 150 basis points lower than in the baseline scenario and represents a much smaller monetary stimulus than the cumulative rate cuts of about 500 basis points that the FOMC implemented in 2007-08. Moreover, these stress test scenarios have a relatively short timeframe, so it remains unclear whether the FOMC is assumed to keep policy at the ZLB for at least seven years (as in the wake of the last recession) and whether/how the FOMC uses forward guidance to convey its intention to follow that policy path. The stress test exercise is also silent about the extent to which the contours of the severe adverse scenario reflect additional quantitative easing or other policy actions.

Unfortunately, recent developments related to the spread of Covid-19 (the “coronavirus”) indicate that the constraints on monetary policy going forward could be even tighter than the assumptions embedded in the Fed’s latest round of stress tests. Earlier this week the FOMC reduced the target federal funds rate by 50 basis points, and financial market participants anticipate that further cuts could be warranted to keep the U.S. economy from slipping into recession.³ Consequently, short-term interest rates are now just a few notches above the ZLB, leaving practically no room at all for the FOMC to respond to a much larger contraction in aggregate demand.

³ See <https://www.cmegroup.com/trading/interest-rates/countdown-to-fomc.html>.

Figure 1: Yield Curve Control and Core CPI Inflation in Japan



Source: Japan Statistics Bureau.

Furthermore, as shown in the penultimate column of Table 1, the stress test’s baseline scenario assumed that the 10-year Treasury yield would remain at around 2 percent this year (close to its level at the start of the year) and then edge up to around 2½ percent in subsequent years. Since January, however, the 10-year Treasury yield has dropped sharply and now stands at around 1 percent. Consequently, a severe adverse scenario would almost surely push this yield down close to zero. At that point, the unconventional tools that the FOMC deployed a decade ago – namely, forward guidance and large-scale asset purchases – might well be completely ineffectual.

Some policymakers have recently suggested that the FOMC could provide additional monetary stimulus by initiating a cap on the level of longer-term U.S. Treasury yields.⁴ Nonetheless, the Japanese experience provides a strong cautionary note about the limitations of such an approach when actual yields are already close to zero. In autumn 2016, the Bank of Japan (BOJ) established its program of *yield curve control*, which includes a specific cap of 0.1 percent on the yields of 10-year Japanese government bonds.⁵ That program has succeeded in preventing upward surges in Japanese bond yields. As shown in Figure 1, however, Japanese core-core inflation (as measured by the 12-month change in consumer prices excluding food and energy) has barely budged and remains far below the BOJ’s 2 percent inflation target.

It should also be noted that the minutes of recent FOMC meetings indicate a growing consensus among policymakers to adopt a strategy of average inflation targeting. In effect, if the Fed’s preferred inflation measure (the price index for personal consumption expenditures) runs a bit below its 2 percent target for a while, the FOMC would provide additional accommodation aimed at “making up” for that shortfall with a corresponding period of modestly elevated inflation.

⁴ See Brainard (2020).

⁵ See <https://www.boj.or.jp/en/mopo/outline/qqe.htm>.

In a setting where monetary policy is not tightly constrained by the ZLB, such a strategy could be beneficial for keeping inflation expectations firmly anchored. But there should be no illusions about the limitations of this strategy: Average inflation targeting will *not* be adequate for mitigating a severe adverse shock when monetary policy is constrained by the ZLB. In such circumstances, everyone recognizes that nominal interest rates will remain close to zero for many years to come. Consequently, communications about what the central bank intends to do beyond that timeframe are unlikely to be taken seriously by consumers, businesses, or financial market participants. Indeed, policymakers may be unable to formulate a credible commitment to follow a specific strategy over such a protracted timeframe, further undermining its effectiveness in providing near-term monetary stimulus.⁶

In light of such considerations, former Fed Chair Janet Yellen noted at a recent World Bank forum that “*low interest rates [have] put central banks in a position where they don't have a lot of ammunition. If we have a serious recession, we're probably not going to be able to count on central banks to offer up a significant response.*”⁷ Such an assessment might be brushed aside if it were made by an academic economist or a market commentator. But it should surely be taken seriously coming from a seasoned central banker, especially someone as wise and sensible as Chair Yellen.

Returning briefly to our medical analogy, no one ever wants to be told by a doctor that “*there's nothing more that we can do to help.*” Rather, the patient (and their family) will seek out a team of physicians who are innovative and prepared to initiate state-of-the-art procedures to maximize the likelihood of recovery from a severe illness. And the FOMC must do likewise in addressing the risk of a severe shock.

Design Principles for Digital Cash

In my joint work with Michael Bordo, we have emphasized that the establishment of a digital dollar can enhance all aspects of the U.S. monetary system and strengthen the FOMC's ability to mitigate severe adverse shocks.

At a fundamental level, a digital dollar can fulfill the three basic functions of money, serving as a practically costless medium of exchange, a secure store of value, and a stable unit of account.⁸ While private forms of money can fulfill some aspects of these functions, there are intrinsic reasons why households and nonfinancial firms should also have access to a fiduciary form of money issued by the nation's central bank. First, the U.S. dollar serves as a unit of measure -- analogous to the inch or the meter -- that facilitates the economic decisions and financial plans of ordinary consumers and small businesses. Second, in an efficient monetary system, the medium of exchange should be a secure store of value that bears the same rate of return as other risk-free assets such as U.S. Treasury bills.⁹ By contrast, any purely private form of money (i.e., not backed by government authorities) is intrinsically subject to default risk and hence cannot serve as a reliable medium of exchange nor as a stable unit of account.

Our analysis indicates that digital cash should be provided through designated accounts held at supervised depository institutions, which would hold those funds in segregated reserve accounts at the central bank. This approach would foster competition among digital cash providers and protect the privacy of individual transactions while facilitating appropriate law enforcement. In effect, the provision of digital cash would be similar to that of many other public goods such as water, electricity, and transportation. Under this approach, payment transaction could be transmitted instantaneously and securely at practically

⁶ See Levin and Sinha (2019).

⁷ See <https://www.worldbank.org/en/news/speech/2020/02/04/transcript-a-conversation-with-david-malpass-and-janet-yellen-at-the-bipartisan-policy-center>.

⁸ See Bordo and Levin (2017, 2019).

⁹ See Friedman (1960).

zero cost, simply debiting the payer's digital cash account and crediting the payee's digital cash account. The scope and scale of fraudulent transactions could be mitigated by straightforward and convenient methods such as two-step identity verification.

The Federal Reserve should ensure that digital dollars are convenient and secure, especially for elderly and disabled people. Consumers should be completely free to keep using paper cash and coins if desired. But as digital dollars become ubiquitous, the demand for old-fashioned cash is likely to diminish rapidly. After all, paper currency is inefficient and costly: sorting and cleaning it at the bank, supplying it to ATMs, maintaining cash registers and safes at retail stores, using armored cars for transport, and ensuring that no money is lost or stolen. In contrast, digital cash can be used instantly at practically no cost at all. Thus, as digital dollars come into widespread use, it seems reasonable to expect that paper currency will rapidly become obsolescent, just like typewriters and audiotapes.

The Federal Reserve can effectively eliminate the ZLB by curtailing incentives for financial arbitrage between paper cash and digital cash, in effect, introducing "sand in the wheels." In particular, the Fed can establish a graduated system of fees for transfers between paper cash and digital cash. Small transfers – say, up to \$500 per week for an individual or \$100,000 for a small business – would be completely exempt from such fees. Moderately larger transfers would be subject to a nominal charge similar to the ATM fees currently paid by consumers and the cash service fees incurred by small businesses. And very large transfers would be subject to even larger fees, perhaps up to 10% of the amount of transfer. This fee structure would eliminate the ZLB while leaving ordinary consumers and small businesses free to use paper cash if so desired.

Digital cash accounts can bear interest at essentially the same rate as Treasury bills, thereby serving as a secure store of value. This would tighten the link between the interest that banks earn on their reserves and the interest that they pay to ordinary depositors, thereby strengthening the monetary transmission mechanism. Moreover, such an arrangement would be a natural extension of the current monetary system, in which the Federal Reserve pays interest on the reserves of commercial banks, issues interest-bearing liabilities to a wider array of financial counterparties thru its reverse repo facility, and maintains segregated accounts on behalf of the customers of systemically important financial market utilities.¹⁰

The interest rate on digital cash can henceforth serve as the FOMC's primary monetary policy tool. During normal times, this interest rate would be positive. But in the face of a severe adverse shock, the FOMC would be able to cut the digital cash interest rate below zero to foster economic recovery and preserve price stability.

The Federal Reserve should insulate ordinary households and small businesses from incurring negative rates on moderate levels of digital cash balances. For example, an individual might hold funds in a single digital cash account, and moderate balances in that account (e.g., up to \$5,000) could be exempt from negative rates, while balances exceeding that limit would be subject to the negative interest rate.¹¹ Of course, individuals and businesses would also be free to hold multiple digital cash accounts at various financial institution banks; in such instances, one of those accounts would need to be designated as the user's "primary" digital cash account, and the exemption would only apply to the funds held in that particular account.

¹⁰ For example, segregated reserve accounts at the Federal Reserve Bank of Chicago have been created to hold the funds of customers of the Chicago Mercantile Exchange (<http://www.cmegroup.com/notices/clearing/2017/03/Chadv17-107.html>) and the initial margin accounts of customers of ICE Clear Credit (https://www.theice.com/publicdocs/clear_credit/circulars/Circular_2017_015_FINAL.pdf).

¹¹ In effect, the yield on digital cash accounts would be analogous to that of U.S. Treasury Inflation Protected Securities (TIPS), which provide compensation for positive inflation but never shrink in nominal value.

With this design, the Federal Reserve would be able to effectively foster economic recovery and price stability without imposing implicit taxes or fees on the digital cash balances held by ordinary households and small businesses. After all, the crux of the rationale for cutting the digital cash interest rate below zero is to influence the incentives of wealthy investors and large financial firms—not to penalize moderate account balances that facilitate day-to-day payment transactions.

Some analysts have expressed concerns about the possibility that investors might run from other assets into digital cash in the event of a financial crisis. But such concerns neglect the fact that the FOMC would be able to reduce the digital cash interest rate below zero if needed. In effect, a widening of credit risk spreads would be reflected by a corresponding drop in the risk-free interest rate rather than a surge in private lending rates (which would remain close to normal levels). Moreover, this approach would generate a steep yield curve that would in turn facilitate the expansion of bank credit and foster prudent risk-taking -- precisely the opposite of QE and “lower for longer” forward guidance that encourage search-for-yield behavior. Thus, digital cash would foster more rapid V-shaped recoveries instead of the U-shaped recovery of the U.S. economy over the past decade.

Conclusion

As in health care and many other fields, the FOMC should “hope for the best, prepare for the worst.” In particular, the FOMC should start conducting *stress tests for monetary policy* and should specifically explain its contingency plans for the same “severe adverse” scenario that is included in each annual stress test for systemically important banks. Moreover, rather than simply acknowledging the limitations of its current monetary toolbox, the Federal Reserve should move forward promptly with establishing a digital dollar to strengthen the U.S. monetary system, mitigate the ZLB, and ensure that the FOMC can continue carrying out its legal mandate of fostering maximum employment and price stability.

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