INTELLIGENCE THAT WORKS

Why US Long-Term Inflation May Be Higher Than 2 Percent

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JUNE 2023

BRG | Review

Subscription. For subscription questions, problems, or address changes:

The BRG Review

2029 Century Park E.

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Los Angeles, CA 90067

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ISSN 2326-0653 (print)
ISSN 2168-9814 (online)

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Abstract

Capital markets are currently struggling to account for the magnitude and duration of the Federal Reserve's battle with the unexpected surge in inflation. Less has been written about the prospects for the long-term inflation rate if and when the current battle is successful. For the US economy, long-term inflation has not been a hot issue over the last two decades or more because of the low level and low variance of inflation. Assuming future inflation to be 2% was defensible from the 1990s to 2019. Beginning in 2021, however, there has been a major departure from this long-term stable rate. By the summer of 2022, year-over-year inflation measured by the CPI exceeded 8%, and the initial belief that the price increases were merely temporary effects of the pandemic gave way to the realization that US monetary policy would need to be brought to bear in a major way to bring inflation back down to the Fed's 2% target. There is a major problem with achieving this 2% target. The Fed has far less control over the money supply and inflation than it did before 2008. The main drivers of inflation today are the liquidity in the banking system and the federal budget deficit.

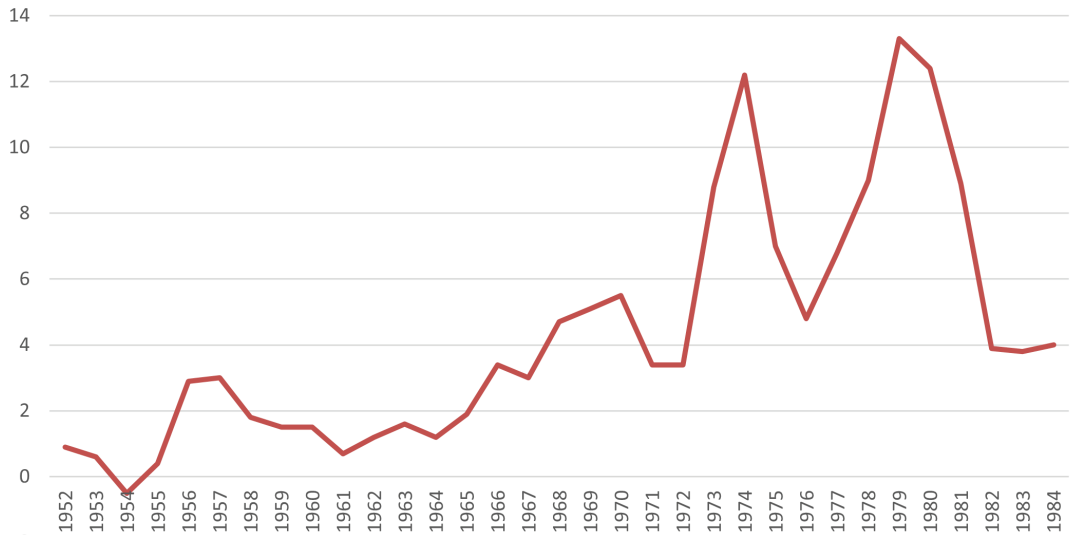
Long-term US inflation may be closer to the ratio of the budget deficit to GDP—5% or more—than to the Fed's 2% target, even if monetary policy is not expansionary.

Section I of the paper reviews the inflation experience of the 1970s and subsequent changes in monetary policy beginning in the 1980s. Section II describes the changes to bank balance sheets since 2008 and the Fed's consequent loss of control over monetary policy. Section III analyzes the current situation in light of the changes to monetary policy that came out of the 2008 crisis. Section IV offers concluding remarks.

The 1970s Inflation Experience and the Changes It Produced

After several decades of low inflation, the US began to see steadily rising prices in the late 1960s and throughout the 1970s.

Figure 1. US Consumer Price Inflation 1952–1984



Sources: Changes in Consumer Price Indexes, Economic Report of the President, 1985, Table B-56. The data start in 1952, after the Korean War inflation of 1950–1951, and end in 1984, after the 1970s inflation cycle was broken.

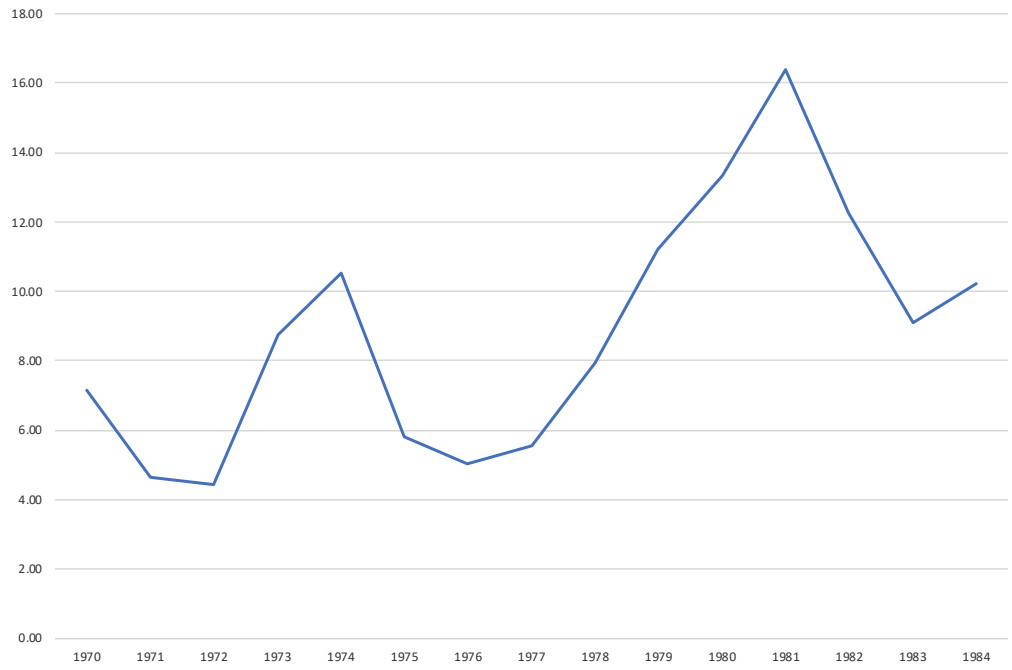
Initially, the problem was seen as an overheated economy due to spending on the Vietnam War. Higher prices from this spending reduced the real income of workers. Workers' demand for higher wages increased employers' costs, which led to further increases in prices. The interaction of these forces was seen as producing a wage-price spiral in which demands for higher wages resulted in higher costs for employers, who then raised retail prices to restore profit levels. The higher retail prices then reduced workers' purchasing power, and a new round of wage demands was created.

The belief that inflation was a problem of controlling cost increases resulted in the passage of the Economic Stabilization Act of 1970.[1] By this measure, Congress gave the President the power to "stabilize" prices, wages, interest rates, and similar measures. From 1971 to 1974, the Nixon price controls used several phases of this act to reduce inflation. Price controls resulted in shortages of many goods. Crude oil and gasoline were singled out for price regulation, and shortages began to cause problems in 1973, even before the Arab Oil Embargo of October 1973 that is often remembered as the cause of the oil crisis.[2] Price controls were abandoned in 1974 following intense public unhappiness. The overall conclusion of the price-control approach to reducing inflation is that controls caused shortages and huge complications in the economy and merely postponed the price increases that were in the system.

As inflation continued to be a rising problem in the 1970s, market interest rates rose to compensate for rising prices. The Federal Reserve maintained a policy that attempted to control market interest rates within a range. When rates rose above this range, the Fed attempted to reduce rates by buying Treasury securities. The Fed purchased increasing amounts of Treasury securities to raise their prices and thus reduce yields (interest rates). The purchases increased reserves and liquidity in the financial system, resulting in increased spending and more inflation. This became a self-sustaining cycle.

The cycle of interest rates chasing inflation and vice versa ended in 1980 when the Fed, under chairman Paul Volcker, ended the policy of targeting interest rates. Interest rates were allowed to find their own free-market level. A period of instability followed, with interest rates soaring. The Fed funds rate reached as high as 22% in 1981.

Figure 2: Federal Funds Rate (percentage, 1970–1984)



Sources: Fed Funds rate 1970-1984: Federal Funds Effective Rate, Annual, Not Seasonally Adjusted, Federal Reserve Bank of St. Louis.

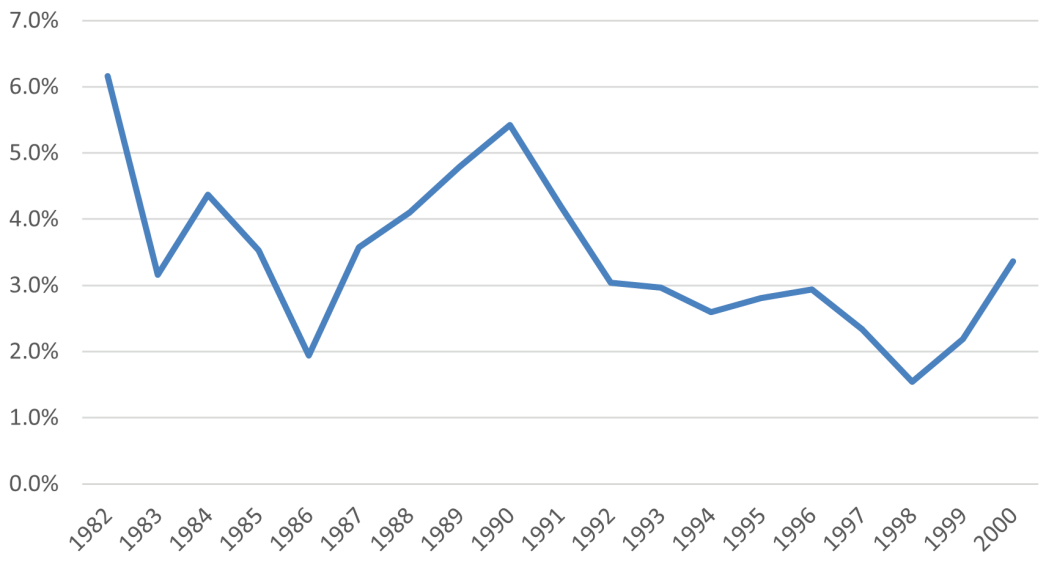
1 Economic Stabilization Act of 1970; Title II of Public Law 91-379.

2 Robert L. Bradley Jr., "Energy Infamy: Nixon's 1971 Price Controls Turn 50," American Institute for Economic Research (August 14, 2021).

The result of the Fed's abandonment of its attempt to reduce interest rates and the sky-high rates that followed was a severe recession that sent the unemployment rate to 10% and broke the inflationary spiral. Interest rates and inflation plunged (figure 2). After the recession, the economy experienced strong growth with low inflation. In the 1980s and 1990s, the Fed followed a fundamentally different monetary policy. Instead of trying to lower interest rates when rates rose with inflation, the policy was to raise rates even further to make borrowing more expensive and rein in an overheated economy. Higher rates are achieved by selling Treasury securities in the market, reducing their prices. These sales remove purchasing power from the economy when the buyer of the securities pays the Fed. The payment results in the removal of that amount from the money supply. The Fed's actions to raise interest rates and reduce the money supply thus work in the same direction, as sales of securities both raise rates and reduce the supply of money.

Although it was never explicitly stated by the Fed during the 1980s and 1990s, monetary policy was focused on, first, using interest rates to stabilize the economy by raising rates when inflation began to increase and lowering rates when the economy weakened. Secondarily, the Fed monitored the growth of the money supply to guard against a new inflationary spiral.[3] This policy contributed to a period of low inflation (figure 3), healthy economic growth, and relatively full employment, helped by the absence of wars or energy crises and the remarkable movement in the late 1990s to a fiscal budget surplus.

Figure 3. Consumer Price Inflation 1982–2000

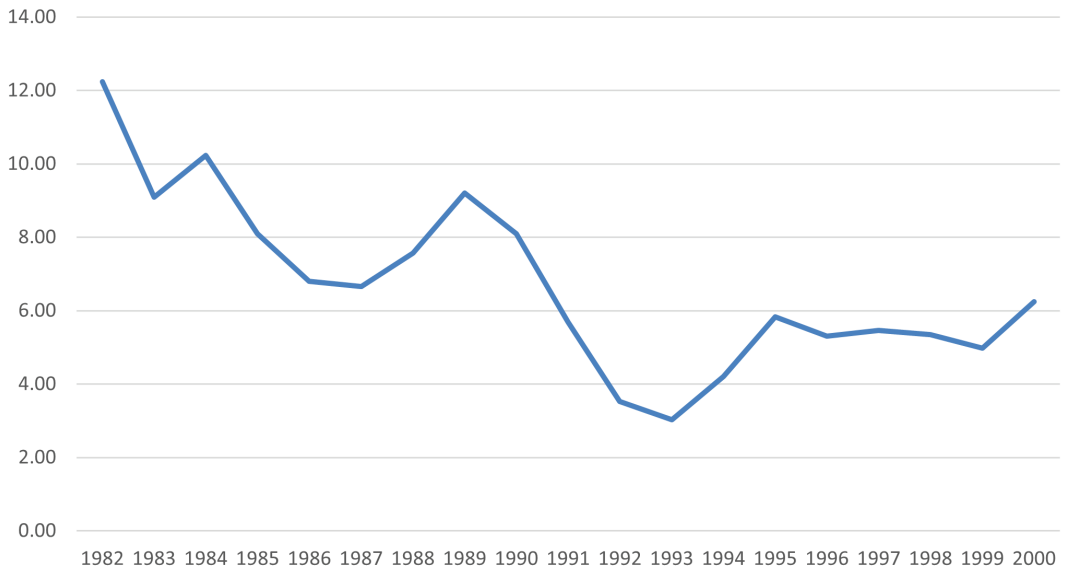


Sources: Consumer Price Index for All Urban Consumers, Federal Reserve Bank of St. Louis.

Along with the low inflation of the 1990s, the Fed funds rate was quite stable, staying in a range of 4 to 6% (figure 4). With inflation under control at 2 to 3%, a Fed funds rate of 4 to 6% implies that the inflation-adjusted or "real" interest rate was about 2%. Note that in 2023 a Fed funds rate of 4 to 6% is expected to be able to put the brakes on inflation and even cause a mild recession, whereas that interest rate level in the 1990s did not slow the economy but rather allowed healthy growth.

3 N. Gregory Mankiw, *US Monetary Policy During the 1990s*, Working Paper 8471, National Bureau of Economic Research (2001).

Figure 4. Federal Funds Rate (percentage 1982–2000)



Sources: Fed Funds Rate 1982-2000. Federal Funds Effective Rate, Annual, Not Seasonally Adjusted, Federal Reserve Bank of St. Louis.

Monetary Policy Since the Advent of Quantitative Easing

Inflation is ultimately a monetary phenomenon, usually caused by monetary policy. Modern governments do not literally "print money," but they can use government-controlled central banks to buy the debt that is used to cover government budget deficits, in the process creating bank credit that expands the money supply. This "monetizing of the deficit" occurs most often in countries like Argentina that have weak capital markets that are unable to absorb government debt. In these cases, the budget deficit results in money and credit creation, which causes inflation. The increase in prices will be proportional to the increase in the money supply, at least over some period of time. A rough estimate of the future inflation rate is the budget deficit as a percentage of gross domestic product (GDP).

The Federal Reserve attempts to avoid monetizing the US deficit in "normal" times. The Fed buys government debt—Treasury securities—to expand the money supply only in proportion to real economic growth, not in response to financing the deficit. Economic theory used to teach that when the government borrows more, the competition for funds in the capital markets will "crowd out" private borrowing. But this relies on the assumption that the money supply is under the control of the Fed and cannot expand independently of the Fed to accommodate the increased federal deficit.[4] However, the money supply does not increase only as a result of the Fed's actions. If banks have excess reserves, they can expand the money supply by increased lending to individuals and businesses. This makes the money supply "endogenous" (i.e., it is partly controlled by demand and supply in the economy, not just by the Fed). Private borrowing will not necessarily be "crowded out" by government borrowing if banks have the ability to expand their lending to accommodate both private and public borrowing.

4 M2, the most commonly used definition of the money supply, includes currency, checking accounts at commercial banks, and CDs of less than $100,000.

In the US, the degree to which the money supply is endogenous has increased greatly since the Global Financial Crisis (GFC) of 2008. Before the GFC, banks had required reserves that limited their ability to expand their lending and thus the money supply. The level of excess available to lend out was small enough that it was more or less under the control of the Fed. When the economy became overheated during the 1990s, the Fed could rein it in by selling securities, which soaked up the limited supply of excess reserves in the banking system.

The new era of monetary policy began with the invention of "Quantitative Easing." In the financial collapse of October 2008, the market for asset-backed securities froze, because investors were uncertain of the value of the underlying assets. The Fed introduced QE1 in November 2008. Over $1 trillion of mortgage-backed securities and Treasuries was purchased in a year's time, helping to stabilize the capital markets. These purchases also resulted in an increase in excess reserves in the banking system of over $1 trillion.

After the crisis, the Fed was hesitant to sell securities to drain that $1 trillion of liquidity out of the credit markets for fear of creating a credit crunch. It took several years for the economy and unemployment to recover from the crisis. By 2013 the recovery was complete, yet the banking system still sat on $1 trillion of reserves. This held the potential for an enormous inflationary expansion of lending. Rather than returning to the status quo pre-2008 by selling securities to remove these excess reserves, the Fed's net asset holdings were held steady from 2014 to early 2020. This was the primary difference in the structure of monetary policy in the new post-2008 world.

The second difference in monetary policy in the new era is the Fed's payment of interest on reserve balances that commercial banks hold at the Fed. Until 2008 banks earned nothing on the reserves, whether in their own vaults or held as deposits at the Fed. This provided a strong incentive for them to lend or invest all of the reserves that were not required—that is, to hold zero excess reserves. But beginning in 2008, interest has been paid on reserve deposits at the Fed. Because QE1 created over $1 trillion of new reserves, the payment of interest on these reserves removes at least a part of the incentive to increase lending, which could be inflationary. As long as the interest paid on reserves is attractive to banks, they will not aggressively lend out reserves.

The third difference in monetary policy is that banks no longer have required reserves. From the inception of the Federal Reserve System until 2008, banks were required to hold cash reserves against their deposits. Cash reserves did not generate any income. Because banks were increasingly competing against other lenders that did not have this disadvantage, and because banks can obtain cash instantly in the overnight market, the Fed dropped the last of its reserve requirements in 2020. This frees up more reserves for banks to lend and removes one of the monetary control levers that could be used to constrain bank lending.

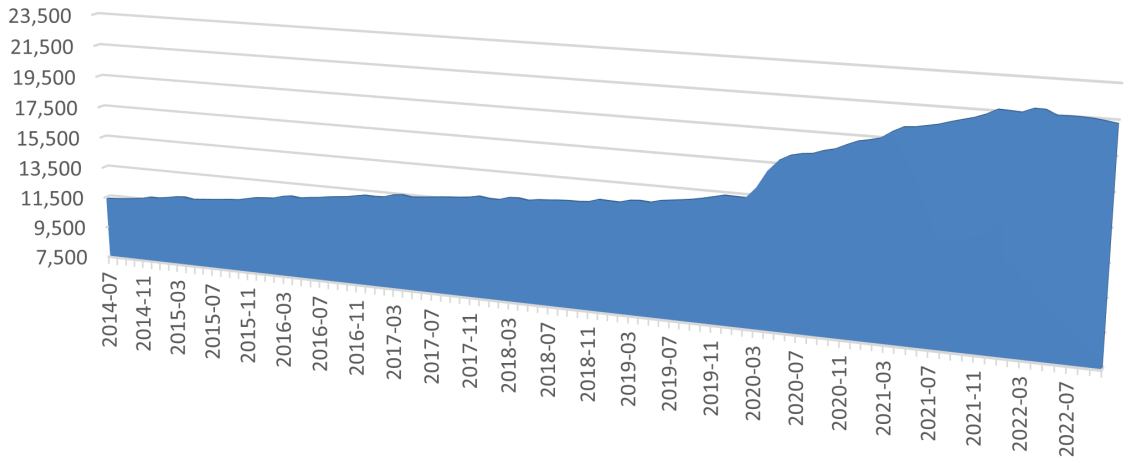
The new structure of monetary policy, including QE, interest on deposits, and zero reserve requirements, has resulted in a new monetary regime in which the Fed's control over the expansion of money and credit is weaker than in the past. As mentioned previously, banks had over $1 trillion of reserves after the economy had recovered from the GFC. From 2014 until the pandemic in early 2020, the Fed used its open market activity to raise interest rates when the economy was perceived to be overheating. But unlike in the past, raising interest rates by selling securities had only a marginal effect on bank reserves and thus credit availability. During this period, the total holdings of securities on the Fed's balance sheet did not increase to accommodate economic growth as in the past. Rather, the growth of the money supply, about 5.2% annually, is explained by banks' ability to use their reserves to increase lending, leading to growth in the money supply. In other words, the money supply was endogenous, rising and falling with the growth of demand for credit in the economy, not because of actions by the Fed.

The Present Inflation Cycle and New Monetary Structure

The Fed began discount rate increases in 2022, when the discount rate was 0%. The increases are expected to continue in 2023 until the rate is 5% or more and are intended to slow the economy and reduce inflation. The hoped-for result of the Fed's actions is that the economy will not go into recession or that any recession will be brief and mild. It is also hoped that this slowdown will cause the inflation rate to settle back down to 2% or less. Thereafter, the economy is expected to return to its normal pattern of 2 to 3% real growth and 2% inflation (i.e., the status quo that existed before the pandemic). When the economy returns to growth and full employment, the Fed expects to control inflation with a discount rate of perhaps 2.5 to 3.5%. This interest rate range is consistent with a growing economy and low inflation in the 1990s, as discussed above.

Figure 5 shows the growth of the money supply (M2) from 2014 to 2022. From 2014 to 2019, M2 grew 5.2% annually without the Fed creating new reserves. Banks used their excess reserves from the GFC to expand M2 as the economy grew. During the pandemic, the Fed facilitated an enormous growth of bank reserves, and M2 grew from $15.4 trillion in February 2020 to $21.8 trillion in April of 2022, an increase of 42%, after which the Fed's course reversal began.

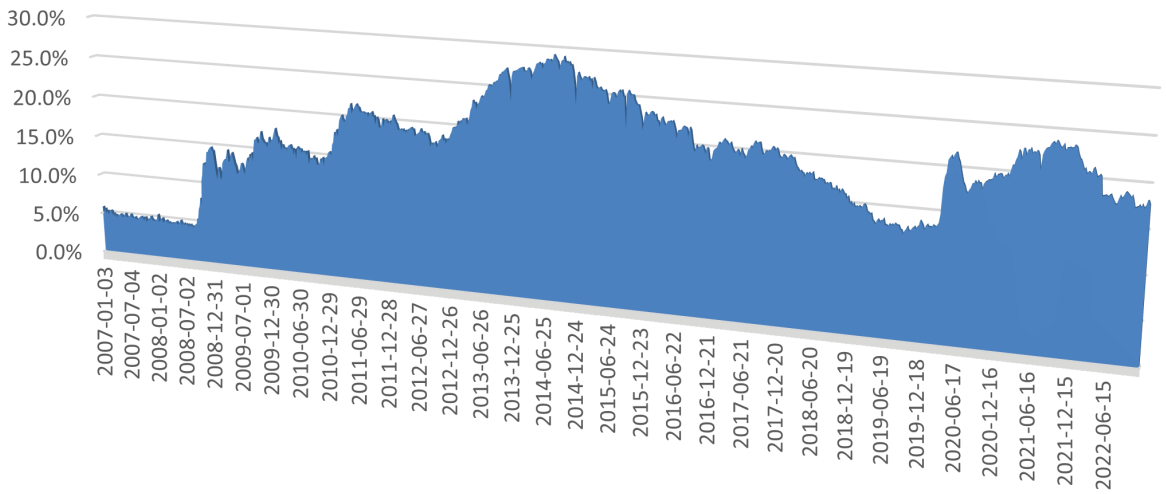
Figure 5. M2 Money Supply July 2014–October 2022 ($billions)



Source: M2 Money Supply, July 2014–October 2022: Federal Reserve Release H.6: Money Stock Measures (February 28, 2023). https://www.federalreserve.gov/releases/h6/

The increased money supply has fueled the increase in inflation since 2021. Beginning in 2023 and most likely for years to come, banks will have the liquidity to increase the money supply far more than what we have seen to date. Banks have more free reserves relative to their deposit balances than before the pandemic, in spite of a slight decline since the Fed's tightening began. The reserve/deposit ratio, which is an indicator of how much capacity banks have to expand the money supply, went from 5% in 2008 before the GFC to a peak of almost 30% in 2013. The ratio never returned to its pre-GFC level; it had declined to 13% in 2019 but soared again with the new quantitative easing during the pandemic. Reserves were still 18% of deposits at the end of November 2022.

Figure 6. Reserve–Deposit Ratio US Commercial Banks 2007–2022



Source: Reserve Deposit Ratio, US Commercial Banks. Federal Reserve Release H.8: Assets and Liabilities of Commercial Banks in the United States, and author's calculations. https://www.federalreserve.gov/releases/h8/

This means that banks have the capacity to expand their lending, which expands the money supply. The trillion-dollar deficits in the coming years constitute a demand for funds of about 5% of GDP on top of the private-sector equilibrium, which may result in at least a 5% inflation rate.

As of the end of 2022, commercial banks had reserve balances in the Federal Reserve System of $3 trillion. In contrast, bank reserves at the Fed in September 2008 were only $10 billion. At that time the Fed did not pay interest on bank reserves, so banks kept their money working elsewhere. But since October 2011, banks have been able to earn interest (currently 4.65%) on their reserves.[5] This reduces the incentive to lend out the reserves and expand the money supply. The rate paid on reserves, which the Fed terms IORB (Interest on Reserve Balances), is adjusted frequently. As of March 7, 2023, the IORB rate was 4.65%. By comparison, the market rate on one-month commercial paper was 4.55%; the rate on one-month Treasury bills was 4.63%; and the bank prime rate was 7.75%.[6] The Fed appears to be paying interest on reserves that is keeping up with other risk-free short-term rates (but not with the riskier prime rate).

5 Federal Reserve, "Interest on Reserve Balances" (last updated March 13, 2023). https://www.federalreserve.gov/monetarypolicy/reserve-balances.htm

6 Federal Reserve, "Selected Interest Rates (Daily) - H.15" (release of March 8, 2023). https://www.federalreserve.gov/releases/h15/

Conclusion

When the expected economic downturn of 2023–2024 is over, economic growth will resume. Banks will have enormous reserve balances to finance that growth and, possibly, inflation. The Fed's monetary policy is commonly viewed as the control of short-term interest rates to control economic activity. This paper has argued that more attention should be paid to the level of bank reserves available to finance expended credit, the level of the federal budget deficit, and the actions of the Fed to "contain" bank reserves by raising the interest paid on those reserves. The current cycle of monetary tightening by raising market interest rates will come to an end. After that, the banking system will share control with the Fed over the future of inflation.

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