

# IMPLICATIONS OF HIGH INFLATION FOR BANKING OUTCOMES AND DEPOSIT FLOWS: OBSERVATIONS FROM 2021 TO 2022 AND THE 1970s

## INTRODUCTION

This article examines how persistently high inflation affects banks by comparing the inflationary cycle that began in 2021 with that of the 1970s. The 1970s included two periods of stagflation—high inflation and sluggish or negative economic growth and high unemployment. The 1970s may shed light on the current period of high inflation and offer insights into conditions banks may face over the coming years if inflation persists. Inflation can affect banks in various ways as central banks generally respond with monetary policy tightening and higher interest rates and the economy generally slows in response to these changes. This article compares lending and bank performance during two inflationary periods with a focus on the effects on deposits. Robust deposit growth in the 1970s suggests that banks were actively seeking deposits, competing both against each other and against other short-term investments. In 2021 to 2022, banks generally were flush with deposits as a result of varying pandemic support programs, and generally were slow to raise rates to compete to keep deposits. The differences between the two periods illustrate the importance of considering broader macroeconomic conditions when analyzing the effects of inflation on banks.

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## THE CURRENT HIGH INFLATION PERIOD

In 2022, inflation reached its highest level since the early 1980s (Chart 1). The United States had not experienced sustained high inflation since the stagflation period of the 1970s and early 1980s. This recent period of high inflation to some degree reflected a period of adjustment associated with the COVID-19 pandemic and its aftermath. Inflation fell close to zero in second quarter 2020 as pandemic-related restrictions and job losses led to lower demand for most goods and services. As the economy reopened in 2020, inflation rose back toward the Federal Reserve's long-run 2 percent target. Inflation rose above the 2 percent target in 2021 and 2022 and peaked at 9.1 percent in June 2022, the highest level since 1981.

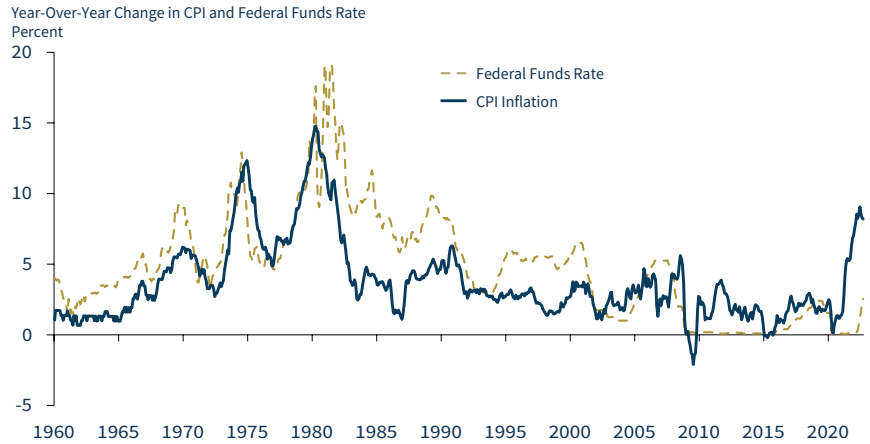
Several factors contributed to rising inflation in 2021 and 2022. Manufacturing disruptions and transportation delays limited supply and raised the costs of producing and shipping goods, and labor shortages raised costs for many businesses. Russia's invasion of Ukraine disrupted food and energy markets, pushing up prices. An increased preference for goods rather than services pushed up goods demand at the same time that supply fell.<sup>1</sup> Pandemic support programs bolstered household incomes through 2021 and allowed households to continue to spend through disruptions, which bolstered consumer demand and pushed up prices.

In 2021, the Federal Open Market Committee (FOMC) stated that inflation was transitory and the FOMC did not tighten monetary policy to reduce it.<sup>2</sup> But in 2022, as inflation continued to increase, the FOMC raised interest rates by 425 basis points in less than a year, the fastest monetary policy tightening since 1981. In response, inflation fell from June 2022 through December 2022 but remained above the Federal Reserve's 2 percent target.

<sup>1</sup>See Francesco Ferrante, Sebastian Graves, and Matteo Iacoviello, "The Inflationary Effects of Sectoral Reallocation," International Finance Discussion Papers 1369, Board of Governors of the Federal Reserve System, (2023), <https://www.federalreserve.gov/econres/ifdp/files/ifdp1369.pdf>.

<sup>2</sup>See, for example, Federal Reserve, press release, April 28, 2021, <https://www.federalreserve.gov/monetarypolicy/files/monetary20210428a1.pdf>; Federal Reserve, press release, June 16, 2021, <https://www.federalreserve.gov/monetarypolicy/files/monetary20210616a1.pdf>; and Federal Reserve, press release, November 3, 2021, <https://www.federalreserve.gov/monetarypolicy/files/monetary20211103a1.pdf>.

**Chart 1**  
**Inflation Rose to the Highest Level Since the 1980s in 2022**



Source: Bureau of Labor Statistics (Haver Analytics).  
 Note: Data are monthly through December 2022.

**INFLATION IN THE 1970s AND 1980s**

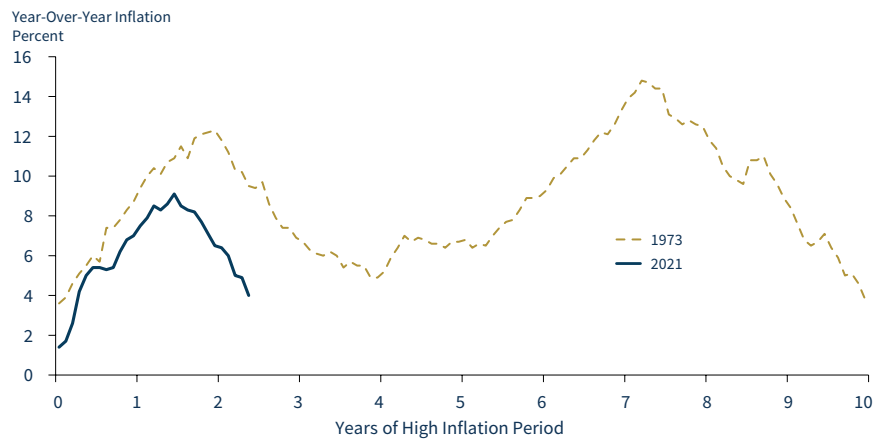
In the 1970s, the United States experienced two periods of stagflation: high inflation and sluggish or negative economic growth and high unemployment. Compared with the 2021 inflation period, inflation in the 1970s was longer lasting and was defined by two large spikes. Chart 2 compares consumer price index (CPI) inflation in the 1970s and in the 2020s, starting from the first month of each rising inflation period. The 1970s period began in January 1973 and the 2020s period began in January 2021.

In response to high inflation and low job growth in the 1970s, economist Arthur Okun proposed a new measure called the misery index—the sum of the inflation rate and the unemployment rate. There were two periods of stagflation in the 1970s when the misery index was above 16 percent: from 1974 to 1975 and from 1979 to 1982. Inflation spiked in both of these periods and remained elevated between them. In contrast, the misery index was only 12.7 percent when it peaked in June 2022 during the most recent high-inflation period.<sup>3</sup>

<sup>3</sup>The misery index spiked to 15.0 percent in April 2020 at the height of pandemic-related unemployment, but declined with unemployment and was 8.1 percent by October 2020.

Several factors contributed to high inflation during the 1970s. The Arab oil embargo of 1973 more than tripled oil prices, and crop failures and depleted inventories pushed up food prices. Social spending programs enacted in the late 1960s as part of the “Great Society” also continued to boost civilian demand, while the Vietnam War increased military spending. Inflation remained elevated for much of the 1970s and was expected to continue to rise. In 1979, the Iranian Revolution led to the second oil crisis, again raising oil prices and pushing other prices higher.<sup>4</sup>

**Chart 2**  
**Inflation Peaked Lower and Came Down Faster in 2021**



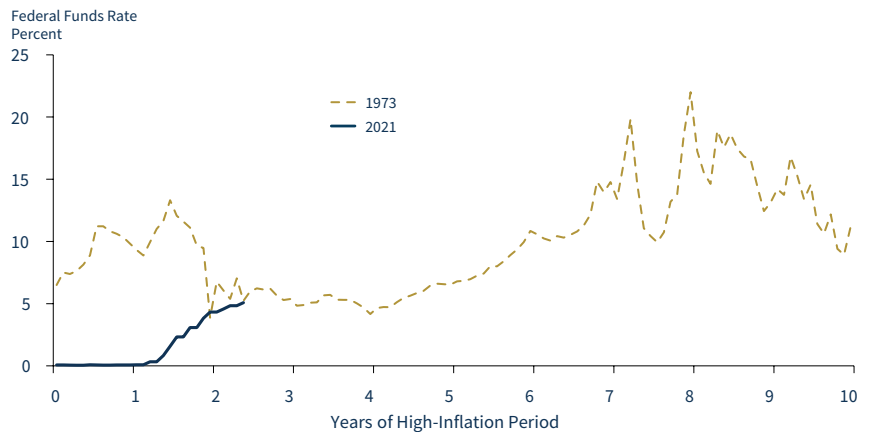
Source: Bureau of Labor Statistics (Haver Analytics).  
 Note: The chart shows year-over-year CPI inflation starting from the first month of a high-inflation period. The 1973 line starts in January 1973, and the 2021 line starts in January 2021.

<sup>4</sup>For a contemporaneous discussion of inflation in the 1970s, see Robert E. Hall, *Inflation: Causes and Effects*, (University of Chicago Press, 1982), <https://www.nber.org/books-and-chapters/inflation-causes-and-effects>. For a more recent discussion, see Alan S. Blinder and Jeremy B. Rudd, “The Supply-Shock Explanation of the Great Stagflation Revisited,” National Bureau of Economic Research, February 2010, <https://www.nber.org/system/files/chapters/c9160/revisions/c9160.rev2.pdf>.

In response to high inflation, the Federal Reserve quickly raised interest rates in 1973 and then quickly lowered them. Chart 3 shows the federal funds rate in the two high-inflation periods. While inflation rose equally fast during both periods, interest rates rose earlier in the 1970s. The federal funds rate peaked in June 1974 and started to decline even before inflation did, and returned to its 1972 level by mid-1975. Rates then slowly rose from 1975 through 1979 as inflation rose. In 1979, Paul Volcker became Chairman of the Federal Reserve and the FOMC raised the federal funds rate significantly in an effort to bring down inflation and reduce inflation expectations. The Federal Reserve kept the federal funds rate higher for longer than expected, signaling its commitment to reducing inflation.

In contrast, in the 2021 inflation period, the FOMC did not begin to raise rates until about a year after inflation began to rise, but raised rates more sharply than the initial rate increases of the 1970s. If current inflation were to remain persistently high or to increase again, interest rates may rise and become more volatile, similar to the experience of the 1970s. Bank management of interest rate risk would become more challenging in such an environment. The recent bout of inflation, however, has been modest compared to that of the 1970s, as shown in Chart 2.

**Chart 3**  
**The Federal Funds Rate Started to Increase Later in the 2021 High-Inflation Period Than in the 1970s**



Source: Federal Reserve Board (Haver Analytics).  
 Note: The chart shows the federal funds rate starting from the first month of a high inflation period. The 1973 line starts in January 1973, and the 2021 line starts in January 2021.

## EFFECTS OF HIGH INFLATION ON LOAN GROWTH, LOAN PERFORMANCE, AND BANK PROFITABILITY

Inflation and the monetary policy response to inflation can affect banks through several channels, some of which support favorable banking outcomes while others weaken them. One effect of inflation is higher nominal growth of aggregate values like GDP and loans, even if real growth slows. At some point, monetary policy tightens to contain inflation and interest rates rise, slowing the economy. The table on page 51 summarizes, at a conceptual level, some of the possible effects of inflation or higher interest rates on loan demand, loan performance, and bank profitability.

Banks generally increase loan interest rates as market interest rates rise. Higher interest rates may reduce loan demand by increasing the cost of a loan. Loan demand may fall to the extent that higher interest rates slow economic growth. On the other hand, rising prices may increase the size of loans needed, at least partially offsetting some of the downward pressure on loan demand from rising interest rates and slowing economic growth.

The effects of inflation on loan volumes were different in the 1970s than in the 2020s, in line with broader macroeconomic conditions. In the early 1970s, loan growth rose after the end of the 1969–1970 recession along with nominal GDP growth, with year-over-year loan growth peaking at 19 percent in second quarter 1973. As inflation continued to rise, the FOMC raised interest rates and the economy entered a recession. Year-over-year loan growth fell through the first stagflation period to a low of 2 percent in third quarter 1975. Similarly, loan growth accelerated after the 1973–1975 recession but slowed significantly in 1980 as the FOMC quickly raised interest rates and the economy entered another recession. Loan growth increased during the 2020 pandemic-related recession as businesses drew down lines of credit to have cash on hand and the Paycheck Protection Program boosted commercial and industrial loans.<sup>5</sup> Because of this boost, loans fell in 2021 from a year earlier as inflation started to increase, but recovered strongly in 2022 even as interest rates increased quickly.

<sup>5</sup>U.S. Department of the Treasury, Paycheck Protection Program, <https://home.treasury.gov/policy-issues/coronavirus/assistance-for-small-businesses/paycheck-protection-program>, and Margaret Hanrahan and Angela Hinton, “The Importance of Community Banks in Paycheck Protection Program Lending,” FDIC Quarterly 14 no. 4 (2020), <https://www.fdic.gov/analysis/quarterly-banking-profile/fdic-quarterly/2020-vol14-4/article1.pdf>.

Table 1

High Inflation and High Interest Rates Affect Banks in Multiple Ways

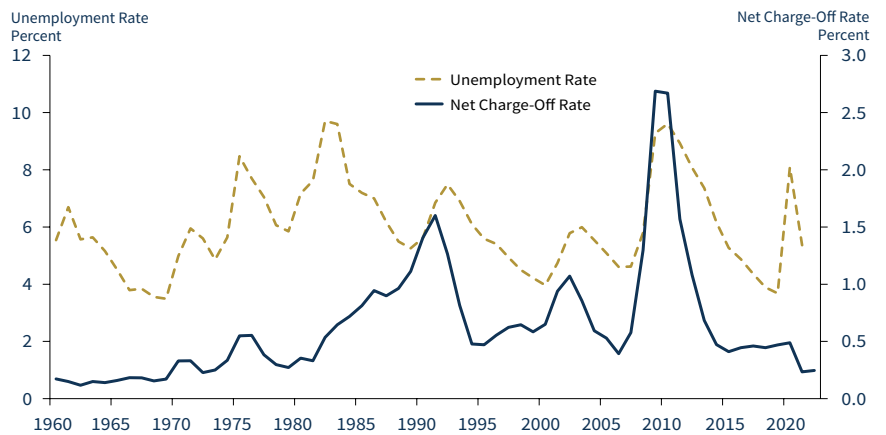
	Channels of Effect		Experience	
	Increase	Decrease	1970s	2020s
<b>Loan Demand</b>	Higher prices cause households and businesses to require larger loans for the same purchase or project  If inflation comes from economic growth, loan demand will be high	Higher interest rates lower loan demand	Loan growth was strong throughout the 1970s but slowed in 1974 through 1975 and in 1979 through 1981	Loan growth slowed in 2021 but increased in 2022
<b>Loan Repayments</b>	Inflation lowers the real amount people owe on an existing loan, making repayment easier	Higher prices can strap budgets, leaving less money to repay loans  Higher interest rates make repayment harder	Net charge-off rates trended up in the 1970s and worsened in the 1980s	Pandemic support programs lowered net charge-off rates
<b>Bank Profitability</b>	Higher interest rates generate higher interest income from new or floating-rate loans	Funding costs increase with interest rates  If loan demand falls, interest income may fall	Return on assets (ROA) declined and worsened in the Federal Reserve Chairman Paul Volcker period	ROA rose from 2020 lows in 2021

Source: FDIC.

High inflation and interest rates may have conflicting effects on loan performance. Inflation causes the real value of existing loans to fall. If high inflation is accompanied by rising wages or rising profits, then making payments on existing loans may become easier. On the other hand, high inflation—if it outpaces wage growth—can mean lower household disposable income to meet loan obligations, causing higher rates of loan delinquency. In addition, floating interest rates can worsen loan performance as monthly payments increase with interest rates.

General economic conditions matter in determining which effect dominated in the two periods. As shown in Chart 4, the 1970s were characterized by high unemployment rates, which may have impeded households' ability to stay current on loans. With the increase in the unemployment rate that occurred during the first stagflation period of 1974 to 1975, the net charge-off rate on loans rose from 1974 to 1976. The net charge-off rate rose again in 1979 and 1980 as inflation rose during the second stagflation period, but it rose more quickly through the 1980s from high interest rates to fight inflation, a recession, and the Savings and Loan Crisis (Chart 4). The more recent period of inflation, in contrast, has been characterized by historically low unemployment rates and very low net charge-off rates. Wages accelerated in both periods, but at the peak of inflation, real wage growth was negative in both periods. Loan performance improved in 2021 compared to pre-2020 levels as pandemic fiscal support and the quick recovery from the pandemic bolstered income and loan repayments. The net charge-off rate rose slightly in 2022 but remained relatively low.

**Chart 4**  
**Net Charge-Offs Tend to Rise With the Unemployment Rate**



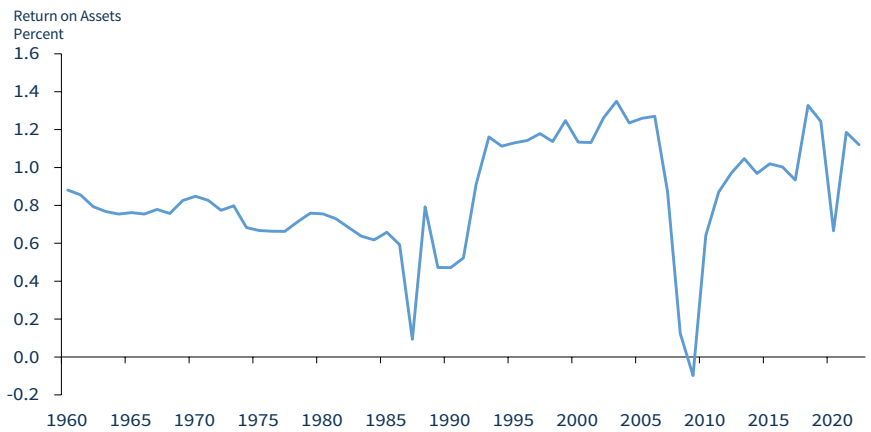
Sources: FDIC and Bureau of Labor Statistics (Haver Analytics).  
 Note: Data are annual through 2022.



The net results of the effects on bank profitability described above are a priori ambiguous. As noted in the table on page 51, downward pressure on loan demand and upward pressure on funding costs from monetary tightening in response to inflation tend to reduce bank income and profitability. On the other hand, higher interest rates earned on new loans may offset any decreases in loan growth and loan performance.

Bank profitability measured by return on assets trended downward in the 1970s (Chart 5). This includes the two stagflation periods, as slow economic growth and high unemployment weighed on loan performance: industry return on assets declined 14 percent in 1974 and fell consistently from 1980 through 1984. The declines in return on assets during the two stagflation periods, however, were relatively small, potentially reflecting that the positive effect of higher interest rates on net income helped mitigate the total decline. In contrast, in 2021 and 2022 the unemployment rate remained at historic lows, loan growth was strong through much of 2022, and the return on assets increased.

**Chart 5**  
**Bank Performance Fell in 2020 but Recovered in 2021**



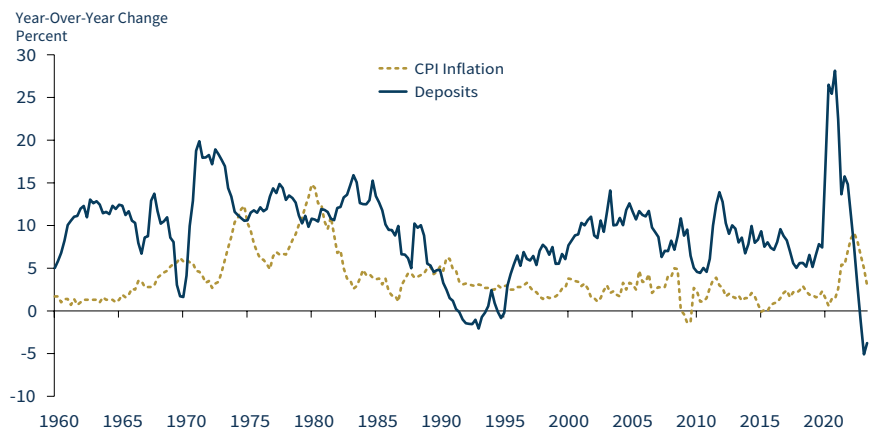
Source: FDIC.  
 Note: Data are annual through 2022.

**EFFECTS ON DEPOSITS**

This section examines deposit behavior at banks in more detail because deposits are an important funding source for banks. Deposit growth and inflation interact in multiple ways. In economic theory, growth in the supply of money, including deposits, is an important driver of inflation. Conversely, inflation and the increases in interest rates that result from Federal Reserve tightening in response can have feedback effects on deposit growth. High inflation periods may strain household budgets as the same purchases cost more, resulting in lower savings and a drawdown in deposits. If banks raise deposit rates more slowly than market rates, households and businesses may invest their bank deposits in higher-yielding alternatives, contributing to deposit outflows from their bank.<sup>6</sup>

Before the high inflation period in 2021–2022, banks had unusually high levels of deposits. Banks experienced large inflows of deposits in 2020 and early 2021 due to the pandemic and pandemic-related policy measures and programs, and deposit growth continued through mid-2022 (Chart 6).<sup>7</sup> At the start of the pandemic, many businesses with lines of credit drew down their lines to have cash on hand, also pushing up business deposits. Pandemic fiscal support, like stimulus checks and enhanced unemployment benefits, increased household deposits. With these developments, bank account balances as of December 31, 2020, were 23 percent higher than a year earlier, well above the previous peak increase in 1972.

**Chart 6**  
**Deposits Are Weakly Correlated With CPI Inflation**



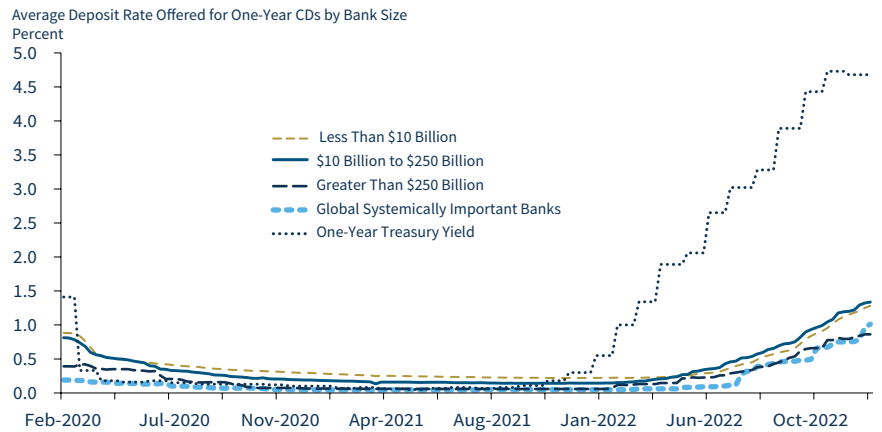
Sources: Federal Reserve Board Z.1 and Bureau of Labor Statistics (Haver Analytics).  
Note: Data are quarterly through first quarter 2023.

<sup>6</sup>Deposits may leave the depositor’s bank but remain in the banking system if the withdrawn funds ultimately give rise to new deposits in other U.S. banks.

<sup>7</sup>The deposit data come from Table L.111 of the Federal Reserve’s Z.1 release: U.S. Chartered Depositories. The variables used are checkable deposits and currency and time and savings deposits.

These deposits have been slow to normalize even as the economy recovered from the pandemic recession and the need for precautionary savings lessened. As inflation and interest rates rose in first half 2022, deposits continued to rise. Strong nominal wage growth and positive economic conditions supported deposit growth. Because of the high level of deposits, banks were slower than usual to raise deposit rates (Chart 7). As market interest rates continued to rise, deposits declined in second half 2022. Many banks reported a decline in deposits as some depositors began to seek higher-yielding alternatives. Despite the decline, total deposits remained about 35 percent above their fourth quarter 2019 level at year-end 2022.

**Chart 7**  
**One-Year Certificate of Deposit Rates Rose in 2022 but Remained Well Below the Comparable Treasury Rate**



Sources: S&P Capital IQ and Federal Reserve Board.  
 Note: Lines show the average deposit rate offered on household accounts, weighted by domestic deposits. Data are weekly through December 2022.

In contrast, banks in the 1970s were generally seeking deposits, as evidenced by the robust growth of deposits through the 1970s shown in Chart 6. But they were limited in the amount they could raise deposit rates in response to changes in market interest rates. Regulation Q placed caps on the rates that banks could pay on deposits, and by the 1970s, deposit rates rose to the regulatory caps.<sup>8</sup>

As market interest rates rose, banks increased their deposit rates to the cap to compete with each other and other investment alternatives for short-term investments like commercial paper and money market funds.<sup>9</sup> These comparable market rates were generally above the caps on deposit rates. As market interest rates rose well above the rate banks were allowed to pay in the 1970s, interest rate caps were raised several times to allow banks to continue to compete for deposits.

Each time the interest rate cap on deposits was raised, almost all banks raised their rates to the cap.<sup>10</sup> For example, in July 1973, when inflation was rising but in line with then-prevailing trends and the federal funds rate had started to rise, 64 percent of banks reported paying the deposit rate cap on savings deposits. By October 1974, when the CPI inflation rate peaked and the federal funds rate was already declining, 84 percent of banks reported paying the maximum rate allowed on savings deposits. The percentage paying the cap remained above 80 percent through April 1978, when data collection ended. This pattern is true for other deposit rates. In July 1973, 80 percent of banks reported paying the cap on the surveyed category of one-year to two-and-a-half-year certificates of deposit; that share rose to 97 percent of banks in October 1974 and remained above 90 percent through April 1978.

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<sup>8</sup>Regulation Q was a Federal Reserve regulation that prohibited banks from paying interest on demand deposits and limited the interest paid on other deposits. The interest rate ceilings were gradually raised during the 1960s through the 1980s, and the regulation was fully repealed by the Dodd-Frank Act. For history through the mid-1980s, see R. Alton Gilbert, "Requiem for Regulation Q: What It Did and Why It Passed Away," Federal Reserve Bank of Saint Louis, February 1986, [https://files.stlouisfed.org/files/htdocs/publications/review/86/02/Requiem\\_Feb1986.pdf](https://files.stlouisfed.org/files/htdocs/publications/review/86/02/Requiem_Feb1986.pdf).

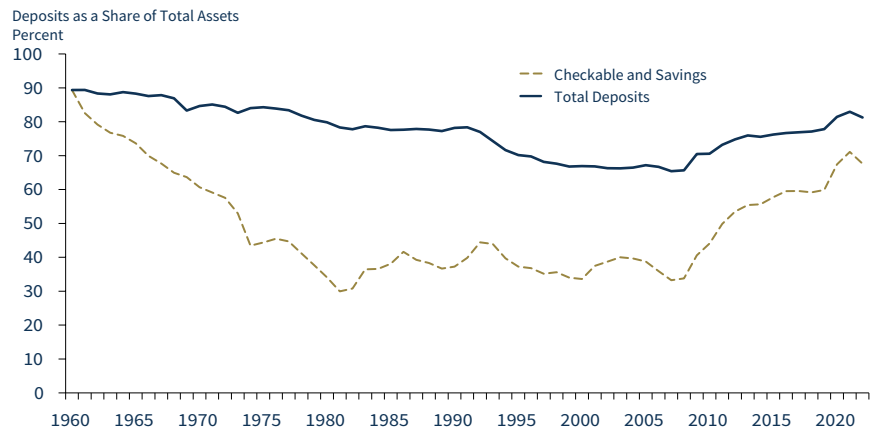
<sup>9</sup>Not all deposit categories had caps in 1970. Some certificates of deposit over \$100,000—about \$800,000 in 2023 dollars—were exempted from the caps in June 1970.

<sup>10</sup>Timothy Q. Cook, "Regulation Q and the Behavior of Savings and Small Time Deposits at Commercial Banks and the Thrift Institutions," Federal Reserve Bank of Richmond Economic Review, November/December 1978, [https://www.richmondfed.org/-/media/RichmondFedOrg/publications/research/economic\\_review/1978/pdf/er64.0602.pdf](https://www.richmondfed.org/-/media/RichmondFedOrg/publications/research/economic_review/1978/pdf/er64.0602.pdf).

With the high interest rates of the 1970s and the constraints imposed by Regulation Q, bank reliance on deposits decreased (Chart 8).<sup>11</sup> In the 1970s, deposits—especially demand deposits, which were not allowed to pay interest—paid far less than other comparable investments as market interest rates rose. In response, some depositors moved their money into higher-yielding financial instruments and decreased their deposit holdings. This search for yield is widely agreed to explain the sharp growth in money market fund assets that began in the late 1970s, as assets in these funds increased from \$10.8 billion at year-end 1978 to \$186.3 billion at year-end 1981.<sup>12</sup>

Deposit changes during the 1970s included a reduction in bank reliance on checking and savings deposits for funding (Chart 8).<sup>13</sup> Checking and savings accounts are generally considered a stable source of funding for banks. Reliance on deposits declined from 1960 through the Great Recession, and the reliance on checking and savings deposits fell more quickly. Checking and savings deposits as a share of bank assets had been trending down since the 1940s and fell almost 10 percentage points in 1974, the fastest decline since data collection began in 1934.<sup>14</sup> The decline in the checking and savings deposit share of assets accelerated in 1981 as the federal funds rate rose.

**Chart 8**  
**Bank Reliance on Checking and Savings Deposits Fell in the 1970s and Rose in 2020 and 2021**



Source: FDIC Annual Historical Bank Data.  
 Note: Data are annual through 2022.

<sup>11</sup> Banks increased their use of Federal Home Loan Bank advances and commercial paper to fund their balance sheets during this period.

<sup>12</sup> The money market funds increased their investments in commercial paper during the 1970s, and companies placed some of the money they raised from selling commercial paper back into banks. Additionally, their investments in time deposits would also flow back into banks as deposits.

<sup>13</sup> For this chart, we use the FDIC’s Annual Historical Bank Data rather than the Federal Reserve’s Z.1 release because we can distinguish savings deposits in the FDIC’s data, while savings deposits and time deposits are combined in the Z.1 release.

<sup>14</sup> These data come from the FDIC’s Annual Historical Bank Data, domestic demand deposits, domestic savings deposits, and total deposits. The longer-term decline in reliance on checking and savings deposits was partially caused by the increased demand for interest on deposits.

In contrast, total deposits and checking and savings deposits spiked in 2020 and 2021 and only began falling slightly in fourth quarter 2022 from a year earlier. Bank reliance on deposits also increased in 2020 and 2021 as deposits remained a cheap funding source, particularly as market interest rates began to rise.

In both the 1970s and the 2020s, bank deposit interest rates tended to lag increases in market interest rates. Deposit rates lower than market interest rates affected deposit flows into banks. Unique features of each historical period likely contributed to the slow adjustment of deposit interest rates: Regulation Q in the 1970s, and more recently the glut of deposits in the aftermath of the pandemic. Recent trends suggest that banks continue to face upward pressure on funding costs.<sup>15</sup>

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## CONCLUSIONS

High inflation affects banking conditions through direct effects on loan performance, interest income, and deposit flows and indirect effects through broader macroeconomic conditions. With relatively few periods of high inflation in recent history, the experience of the 1970s may provide insights into how inflation may affect banking conditions during the high interest rate period that started in 2021. If inflation persists or increases, then a continuation of relatively high market interest rates would be expected to increase competition for deposits as banks raise deposit rates. Interest rate tightening in response to the high inflation of the 1970s also contributed to recessions, which can directly affect borrowers' ability to pay and the demand for loans. Similarly, in the current tightening cycle, the possibility of an economic slowdown or recession exists that could adversely affect bank profitability separately from inflation. Finally, if inflation rates remain high or volatile, the experience of the 1970s suggests that interest rates would also be high and volatile, increasing the challenges of interest rate risk management for banks.

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<sup>15</sup>For a detailed discussion of recent banking trends related to the interest rate environment, including an analysis of deposit betas, see Nafij Ahmed, Dorothy G. Miranda, and Krishna Patel, "Banking Sector Performance During Two Periods of Sharply Higher Interest Rates: 2022 and 2004 Interest Rate Increase Cycles," FDIC Quarterly 17 no. 3 (2023), <https://www.fdic.gov/analysis/quarterly-banking-profile/fdic-quarterly/2023-vol17-3/article1.pdf>.