FEDERAL RESERVE BANK OF RICHMOND

THIRD QUARTER 2024

ECON FOCUS

Retirement Savings

Stormy weather ahead?

Fed Lending After the 2023 Bank Crisis

Inside Food Banks

Interview with Raghuram Rajan

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Flexible Work and Women's Participation

When COVID-19 hit in 2020, one of the many shocks families faced was the closing of schools and child care centers. In many families, the burden of dealing with such shocks was disproportionately borne by the mom — so this sudden change hit women's labor force participation hard. Commentators labeled it a "she-cession."

But in the time since, women's participation in the workforce has bounced back. Among women aged 25 to 54, the labor force participation rate — as economists call it — actually reached an all-time record in May and remains high at 77.9 percent (versus 77 percent in February 2020). Moreover, as Brookings Institution researchers have noted, women with young children, ages 4 and under, have led the charge, with their labor force participation growing at the fastest rate. With the upcoming start of the new school year, it's a good time to ask: What happened?

Part of the story is the reopening of schools and a rebound in the supply of child care workers — which fell dramatically during the pandemic but has since climbed back to its former level of staffing. From what I've been seeing and hearing, though, that's only one piece of what's been going on.

Of course, hybrid work and work from home has been a significant change from four years ago. For a large part of the population, balancing work and home is or seems more manageable than before. In principle, that opens up labor force participation to men and women alike — but in practice, as I noted, it's most often women who are juggling these multiple tasks.

Perhaps the growth of hybrid work and work from home explains why the

recovery in labor force participation among mothers of young children has been most pronounced among women with a college degree: As my Research Department colleagues have observed, those jobs are the ones most likely to have flexible work options.

The other piece of the puzzle I find interesting is the place where participation has strongly dropped and stayed lower: people 65 and up. This runs counter to the long-term trend. Before the pandemic, employment among older adults had been rising gradually for several decades. The reversal may have been driven in part by pandemic health concerns and by pandemic-related workplace changes that made retirement look more attractive. Another important factor may have been the run-up in asset prices, including housing prices, making retirement appear financially safer than it had before.

One hypothesis that's been shared with me, which resonates with stories I hear from my contemporaries, is there are a lot of older people taking care of their grandchildren, supplementing their children two or three days a week. That, too, helps women return to work or keep working while maintaining some balance. These grandparents have left the formal economy but are supplementing the costly and often hard-to-access child care industry by working informally.

In a tight labor market, employers invested in flexibility and the resulting increase in participation has in turn helped bring labor supply and demand into better balance. But the demographic outlook for the workforce looks to be a continuing challenge, as fertility has dropped, leaving the classes currently in K-12 ever-smaller over time. To move the needle further, I increasingly hear employers considering investments in reducing barriers to work, like housing subsidies, on-site child care, or tailored roles attractive to older workers.

We should also acknowledge that no one canceled the business cycle, so these employer initiatives haven't yet been tested by a downturn. What will we see when that happens? Will we see a pullback in flexibility as firms face less pressure on hiring and retention? If so, will women's participation absorb an outsized brunt of the contraction? Or will business leaders keep their eye on the long term and continue to invest in initiatives to bring people into the workforce?

Tom Barkin
President and Chief Executive Officer

UPFRONT

BY KATRINA MULLEN

New from the Richmond Fed's Regional Matters blog

Joseph Mengedoth. "Have Some Rural Areas Turned the Tide on Population Decline?"
Between 2010 to 2020, more than half of Fifth District counties in rural areas or small towns experienced population declines. Yet nearly half of these counties went on to experience population growth from 2020 to 2023. The reversal in population growth is largely attributed to domestic in-migration, which accounted for about 88 percent of total net migration in these counties. The largest absolute gains were in North Carolina: Rutherford County attracted the greatest number of people (2,392), followed by Nash County (1,968). Possible reasons for the population growth could be proximity to metro areas, flexible work arrangements, and affordability — but there are also the natural amenities in some counties, which could attract more retirees.

Laura Dawson Ullrich and Stephanie Norris. "Following the Money: State and Local Funding for Community Colleges in the Fifth District."
Community colleges mostly rely on funding from state and local appropriations as well as tuition revenue and federal financial aid. The annual state budget process determines funding amounts, and each state uses a different approach to distribute the funds. Most Fifth District states divide their higher education budget based on both institution type and full-time equivalent, or FTE, enrollment, but it can still vary: South Carolina does not use a formula, whereas Maryland uses a very specific formula that gives community colleges nearly 30 percent of the state funding amount. For local funding, community colleges in just 29 states receive money, but this also varies from small amounts in Virginia to large amounts in Maryland.

Sonya Ravindranath Waddell. "Employment Change: Are Workers Coming or Going?"
In May, the Richmond Fed monthly business surveys asked firms about how their employment, hiring, and separations have changed in the last month. The share of firms reporting an increase in hiring (25 percent) was higher than the share reporting an increase in voluntary separations (14 percent) or involuntary separations (19 percent). Moreover, in a tight labor market, many firms are not only backfilling open positions, they are also turning to automation and outsourcing. Some 37.9 percent of respondents reported implementing technology to automate tasks previously completed by employees, and 20.7 percent outsourced work that was not previously outsourced.

Emily Wavering Corcoran and Sonya Ravindranath Waddell. "Automation and AI: What Does Adoption Look Like for Fifth District Businesses?"
Before automation or artificial intelligence (AI) can provide labor or total factor productivity improvements, they must be adopted. The Richmond Fed monthly business surveys recently asked Fifth District firms about their adoption of automation, including generative AI. Of the respondents, 46 percent had automated tasks in the past two years, and the majority indicated that they plan to within the next two years. While manufacturing firms were more likely than service sector firms to have implemented automation, the reason seems generally to be to complement workers, not to replace them. On the other hand, while service sector firms were less likely overall to adopt automation, they were more likely to use AI in their automation than manufacturing firms. Overall, the responses indicate that it is the early days of AI adoption, but the responses are helpful to measure and understand this technology.

Surekha Carpenter and Adam Scavette. "Understanding Immigration in the Fifth District: Where Did International Migrants Settle?"
According to the Census Bureau, in 2022, international migration to the United States returned to pre-COVID-19 levels, and recent estimates indicated that immigration has surged to unprecedented levels. The Fifth District's population change and migration, however, differed from those of the nation as a whole between 2020 and 2023. Compared to the United States overall, the Carolinas experienced a higher rate of population growth, while the District of Columbia and West Virginia had negative growth. Virginia was close to the national average, while Maryland remained flat. In the Carolinas, most of this growth is attributed to domestic migration, as they have especially attracted residents who have moved from across the United States. Between 2020 to 2023, however, 90 percent of Fifth District counties had net positive international migration, particularly in urban counties and counties in and near metro areas. Some rural and small-town areas in the Fifth District — especially homes to universities — also experienced higher net international migration. **EF**

BY CHARLES GERENA

Connecting Women Economists

Within competitive fields like economics, informal connections are important for career advancement. To help create these valuable connections, the Richmond Fed's Center for Advancing Women in Economics launched a fellowship program this year as part of its multifaceted approach to raising the visibility of women economists.

"There is a leaky pipeline in the research track in economics, and this fellowship seeks to address it," explains Marina Azzimonti, a senior economist and research advisor at the Richmond Fed who leads the center. Women received only one-third of new Ph.D.s in economics in 2022 and comprise just one-quarter of tenure-track economists at Ph.D.-granting institutions. The picture is similar at the Fed's regional Reserve Banks, where only 21 percent of senior-level economists are women. "Our hope is that women stay in the profession and are successful so they become leaders."

The annual fellowship is open to early-career researchers with a Ph.D. in economics or a related field. An internal committee at the Richmond Fed selected the two inaugural fellows for 2024: Stephanie Johnson of Rice University and Oliko Vardishvili of the University of California, Irvine. Applications for the 2025 fellowship will be considered from junior researchers working on topics of interest to the Bank, including, but not limited to, macroeconomics and central banking.

Oliko Vardishvili, one of the inaugural fellows of the Center for Advancing Women in Economics, participated in the Richmond Fed's CORE Week in May 2024.

IMAGE: FEDERAL RESERVE BANK OF RICHMOND

Johnson and Vardishvili will attend two of the Richmond Fed's CORE Weeks, where they can connect with the academic researchers who are invited to collaborate with the Bank's research economists throughout the year. So far, the networking opportunities offered during CORE Week conferences "have been invaluable for my professional growth," says Vardishvili, as has the hands-on assistance she has received from the Bank's economists.

Fellows attend other events and present at one of the Richmond Fed's online brown bag seminars, which provide additional opportunities to network as well as gather feedback on their ongoing research. "I have received very tailored feedback about packaging my presentations and tailoring my research papers to meet the specific requirements of target journals," says Vardishvili. "The key is not only to have great research ideas and methodologies, but also to learn how to effectively communicate your research."

Such events are another avenue for connection, which is why the center will host its own conference in Richmond this November. "We are aiming to organize this conference in a way that is inclusive and appealing to all, especially women," says Arantxa Jarque, a senior policy economist at the Richmond Fed and the center's associate director. "We also hope to bridge the gap between academia and policy, especially around the areas that the Fed is interested in." This fall, the center will also co-organize the annual Women in System Economic Research Conference with the Atlanta Fed and Kansas City Fed.

Another way that the center will help women economists forge new connections is by compiling the Directory of Women in Economics. "There are people within the profession who are aware of the lack of diversity and try to proactively include underrepresented groups," said Azzimonti when recalling her career on the Speaking of the Economy podcast. "But these groups may not be within their existing networks, since they are less likely to have met them in grad school or to have crossed paths with them at conferences. It's like a vicious cycle."

The directory currently includes women economists with a Ph.D. who work in the Federal Reserve System. It is expanding to include women economists at universities within the Fifth District this year and eventually will cover the entire United States.

The directory will help put women economists on the radar in various ways, according to Jarque. For example, a reporter can search the directory for subject matter experts. An economist can use it to recruit keynote speakers for a conference or referees for a journal article. Or a Ph.D. student who is thinking about working at the Fed can use it to contact women economists with similar research interests.

Along with the Women in Macroeconomics Conference at the University of Chicago and similar events for other areas of economics, plus mentoring and networking groups, is this too much of a good thing for women economists? "In academia, there is no such thing as too many opportunities to discuss your research or to learn from the people doing frontier work," notes Jarque.

The Richmond Fed also stands to benefit, adds Jarque. "Learning about the work of women ensures we can inform policymaking with diverse perspectives that are more likely to represent the communities we strive to serve." **EF**

BY TIM SABLIK

Central Bank Lending Lessons from the 2023 Bank Crisis

The Fed moved quickly to support the financial system during a banking panic last spring. Now, policymakers are evaluating what they learned.

In the spring of 2023, a pair of fast-moving bank runs threatened to spark a widespread financial panic. On March 9, the 16th largest bank in the country, Silicon Valley Bank (SVB) in Santa Clara, Calif., lost a quarter of its deposits in a single day. It was set to lose another 62 percent of deposits the following day before it was closed by regulators. On March 10, New York-based Signature Bank experienced a similarly rapid flight of 20 percent of its deposits. It was closed by regulators on March 12.

At the time of their collapses, SVB ($209 billion in assets) and Signature Bank ($110 billion in assets) were the second- and third-largest bank failures in U.S. history. Their failures were also exceptionally quick by modern standards. By comparison, Washington Mutual, the largest bank failure in American history, lost 10 percent of its deposits over the course of 16 days in September 2008.

The business models of SVB and Signature Bank differed, but both were hit by rapidly rising interest rates following the post-pandemic surge in inflation. Both also had a large share of institutional depositors with accounts that exceeded the Federal Deposit Insurance Corporation (FDIC) insurance limit of $250,000, making the depositors more likely to withdraw funds at signs of trouble. The rapid failures of SVB and Signature Bank raised concerns that other banks with similar risks might soon follow.

THE CRISIS AND RESPONSE

In the days surrounding the failures of SVB and Signature Bank, depositors fled banks with assets between $50 billion and $250 billion, moving their money primarily to larger institutions. According to a May 2024 paper by Marco Cipriani and Thomas Eisenbach of the New York Fed and Anna Kovner, research director of the Richmond Fed, a total of 22 banks experienced runs last March.

The turmoil would ultimately claim one more victim, First Republic Bank in San Francisco, which began experiencing a run on March 10 and failed on May 1. With $213 billion in assets, it took the number two slot on the list of largest bank failures, surpassing SVB. According to a report from the Group of Thirty, an independent global body of economic leaders and experts who advise on issues facing policymakers and market participants, the three failed banks collectively held more assets than all bank assets lost in the 2008 financial crisis.

As in that previous crisis, the Fed acted swiftly to prevent financial turmoil from sweeping up other institutions. Borrowing at the Fed's discount window, a standing facility that makes short-term loans to qualified banks, spiked from $4.6 billion on March 9 to $152.9 billion on March 15. The Fed also created an additional lending facility on March 12 to support the financial system: the Bank Term Funding Program (BTFP). Through the BTFP, the Fed made loans to banks in exchange for government bonds and agency securities as collateral. (See chart.)

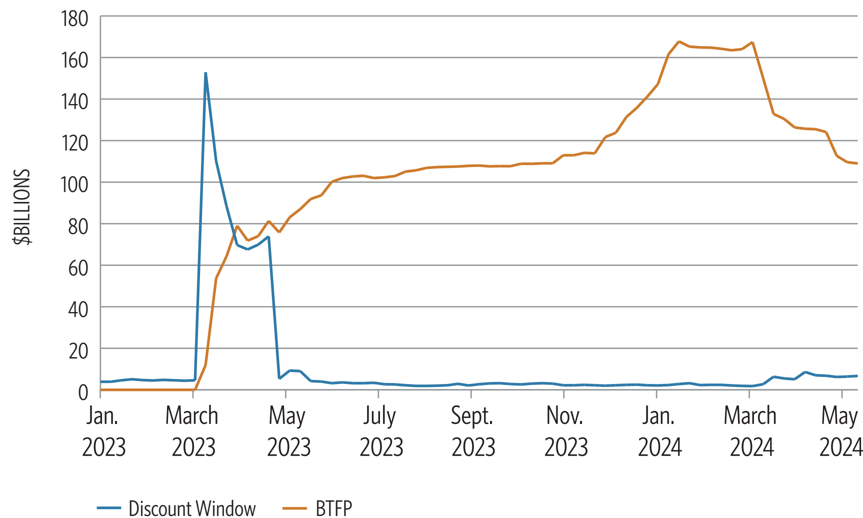
These actions fulfilled one of the Fed's oldest functions: to serve as a "lender of last resort" to the financial system. Partly thanks to this intervention, widespread failures were averted despite many banks experiencing significant stress. In the year since, Fed policymakers and academic researchers have been examining the events of last March for lessons on how to improve the central bank's lender-of-last-resort facilities before the next crisis.

ROLE OF THE LENDER OF LAST RESORT

By the nature of their business, banks are susceptible to panics. They take customer deposits, which can be withdrawn on demand, and invest in longer-duration assets like loans. Such assets are often held to maturity and may not be easy to sell quickly. If too many depositors seek to withdraw their money at once, a bank may not have enough cash to meet the sudden surge in demand. This can lead to a run, as depositors rush to get their money out while the bank still has funds to pay them.

Financial regulators have sought to ensure that banks are resilient against runs by requiring them to hold enough capital to absorb losses as well as enough liquid assets to meet a sudden surge in depositor demand. These precautions must be balanced against the fact that requiring banks to raise more capital and hold more cash could limit their capacity to make loans and channel credit to productive uses in the economy.

When a crisis eventually comes, solvent but temporarily illiquid banks can borrow from the Fed to weather the storm. Even if central bank lending doesn't ultimately prevent a bank's



NOTE: Discount Window refers to loans from the Fed's Primary Credit facility.
SOURCE: Board of Governors of the Federal Reserve System

failure, it can avert the need for the bank to sell assets at fire-sale prices to meet depositor demand. Such sales can fan the flames of the financial panic by devaluing the assets held by other institutions, potentially bringing the run to their doors as well. Having an entity to play this role in the U.S. economy was a major motivation for the creation of the Fed in 1913. In the mid-19th and early 20th century, when America had no central bank, banking crises were frequent occurrences.

The discount window has been the Fed's primary lender-of-last-resort tool since its founding. Banks pledge collateral — which can include loans, bonds, and other asset-backed securities — and the Fed determines the amount of money the bank can borrow. (This is typically the value of the collateral minus a haircut.) While this facility was created to help the banking system in an emergency, historically banks have been reluctant to use it even in a crisis.

That's because borrowing from the lender of last resort is often interpreted as a sign that a bank has exhausted all other options. Many bankers worry that sending such a signal could further intensify pressures for a run by revealing the bank is in a weaker condition than its depositors may have realized. At a March event hosted by the Brookings Institution's Hutchins Center on Fiscal and Monetary Policy, William Demchak, the CEO of PNC Financial Services Group, remarked, "The day you hit it [the discount window] for anything other than a test you effectively have told the world you failed."

THE STIGMA CHALLENGE

Banks that borrow from the discount window, then, would prefer to keep that fact a secret. The Dodd-Frank Act of 2010 requires the Fed to disclose the identities of discount window borrowers after a two-year lag. In theory, the revelation should come long after the crisis has passed. But in practice, market participants can often infer the identities of discount window borrowers much sooner.

The Fed publishes weekly data disclosing the assets and liabilities of each Reserve Bank — including discount window loans. Banks borrowing from the discount window do so at their regional Reserve Bank. A spike in lending at one of the 12 Federal Reserve districts can therefore provide a clue about which banks might have borrowed based on where they are headquartered. In 2020, the Fed made some modifications to how it reports this data to further mask individual banks' discount window activity. But in an April article, Steven Kelly, the associate director of research at the Yale Program on Financial Stability, argued that it is often still possible to detect a spike in certain borrowers' discount window use from the weekly reports.

"The Fed's data does offer some degree of obfuscation, but not enough," says Kelly. "The way that data is set up, it's the mid-sized and larger banks that are most vulnerable to being revealed. So when you have a crisis primarily among mid-sized banks, like we did in March 2023, there was a very real fear of tapping the discount window and being discovered by the market."

In part because of this stigma, banks have often turned to alternative sources of emergency credit, including other Fed facilities. During the financial crisis of 2007-2008, the Fed created the Term Auction Facility (TAF) as an alternative program for making loans to banks. Unlike discount window loans, the rates on TAF loans were determined by auction. This auction design may have made it more difficult for the market to deduce the identity of borrowers, reducing the stigma banks faced when borrowing from the Fed.

In 2023, borrowers from the Fed's BTFP may have also sought to avoid discount window stigma. But in addition, says Huberto Ennis, group vice president for macro and financial economics at the Richmond Fed, "the BTFP was designed to address a very specific problem that some banks were experiencing" — namely, the problems associated with rapidly rising interest rates.

The runs at SVB, Signature Bank, and First Republic Bank were exacerbated by the fact that all three held assets in the form of long-dated securities that lost value when interest rates rose abruptly in 2022. The

BTFP accepted high-quality long-dated assets (such as Treasuries and U.S. agency mortgage-backed securities) as collateral at their face, or par, value.

"This allowed banks to receive cash from the Fed for the amount of government-guaranteed securities," explains Ennis. "If banks used those securities as collateral to borrow from the discount window, they would have been discounted based on their market value."

Even so, Cipriani, Eisenbach, and Kovner found that banks were reluctant to borrow from either Fed channel in March 2023. All 22 banks that experienced runs relied on borrowing to meet depositor demand, but only some chose to borrow from the discount window or the BTFP. In contrast, all 22 borrowed from their Federal Home Loan Bank (FHLB).

In March 2023, Silicon Valley Bank lost a quarter of its deposits in a single day; it was quickly shuttered by regulators and later acquired by First Citizens Bank. At the time of its collapse, it was the second-largest bank failure in U.S. history.

A LENDER OF NEXT-TO-LAST RESORT

Created by Congress in 1932, the FHLB system was set up to provide funding for mortgage lenders to support the housing market during the Great Depression. There are 11 FHLBs that each serve a particular region. Depository institutions can become a member of their regional FHLB and receive loans (called advances) in exchange for eligible collateral. While FHLB advances were originally intended to support housing, banks have used them as a source of general liquidity in times of financial crisis. This practice has led some to call the FHLB system a "lender of next-to-last resort."

In the lead-up to the 2023 banking crisis, SVB, First Republic, and Signature Bank all borrowed heavily from their FHLBs. According to a March report from the U.S. Government Accountability Office, SVB and First Republic were the largest borrowers from the San Francisco FHLB at the start of the year, and Signature Bank was the fourth-largest borrower from the New York FHLB.

All three banks sharply increased their borrowing and requests for FHLB advances in early March as they experienced distress. For example, the balance of FHLB advances to SVB increased by 50 percent — from $20 billion to $30 billion — between March 1 and March 8.

While having an additional lender of last resort during a crisis may seem like a good thing, researchers have identified some issues with the FHLBs playing this role. In principle, FHLBs make advances only to sound institutions in exchange for good collateral. But in practice, they may not always have the strongest incentives to assess borrower soundness because their collateral requirements make it unlikely that they would lose money if the institution fails, according to Columbia University law professor Kathryn Judge.

In a May 2014 article in the *Cornell Law Review*, Judge wrote that "no FHLBank has ever lost money on an advance despite the failure of many banks with significant outstanding advances." If financial firms can obtain funding from the FHLBs that the market would otherwise not provide them, they can delay their reckoning until their ultimate failure is much larger and costlier to the financial system. This could contribute to excessive risk-taking by failing firms, which have a greater incentive to take on more risk to avoid failure.

Another problem identified by researchers is that, unlike the Fed, FHLBs need to raise funding from the market to issue advances. Since marketplace funding takes time to execute, the ability of FHLBs to lend could become constrained precisely when they are needed to act as a lender of last resort.

"The Federal Home Loan Banks simply aren't as capable emergency lenders as the Fed, particularly when it comes to large sums, because they have to raise the money," says Kelly. "FHLBs can also be procyclical in a way that the Fed is not. During crises, FHLBs have raised the haircuts they apply to collateral, or, as we saw in the case of First Republic, they may suddenly stop lending to a bank to figure out what is going on. Those are things that the Fed doesn't do."

A third challenge is that borrowing from FHLBs can complicate a bank's ability to also borrow from the Fed. When a bank borrows from the discount window, it needs to put up collateral without competing claims, allowing the Fed to seize it if the bank fails to repay the loan. When FHLBs issue advances, they impose a lien on the collateral that supersedes all other claims, making it ineligible for use at the discount window. This can be cleared up with discussions between the Fed and FHLBs, but in a fast-moving crisis there may not be enough time. In the case of Signature Bank, FDIC Chair Martin Gruenberg said in congressional testimony that these issues were only resolved with "minutes to spare before the Federal Reserve's wire room closed."

IMAGE: GETTY/ISTOCK, SUNDRY PHOTOGRAPHY

SPEED AND READINESS

The speed of the March 2023 crisis also revealed important lessons for policymakers. In the aftermath of the financial crisis of 2007-2008, regulators introduced a new requirement known as a Liquidity Coverage Ratio (LCR), which requires banks of a certain size to hold highly liquid assets proportionate to their total assets. (See "Liquidity Requirements and the Lender of Last Resort," *Econ Focus*, Fourth Quarter 2015.) The LCR presumes that during a run, between 25 percent and 40 percent of a bank's large uninsured deposits could flee over the course of a month.

"With SVB, we saw the attempted withdrawal of over 60 percent of deposits in one day," says Darrell Duffie, a professor of management and finance at Stanford University. "It is clear now, if it wasn't before, that large uninsured depositors will move their funds out of a bank that's in trouble very quickly, particularly financially savvy large depositors who are going to be attuned to these risks."

Short of having enough liquidity on hand to meet such a rapid and large deposit flight, the 2023 crisis suggests the importance of banks being prepared to borrow from the lender of last resort at a moment's notice. All three banks that failed experienced difficulties borrowing from the discount window, in part due to a lack of practice with the requirements involved. SVB had not tested its ability to borrow from the discount window at all in 2022, and Signature Bank had not conducted such tests in the five years before its failure.

In a 2021 Richmond Fed *Economic Brief*, Ennis found that in the noncrisis period of 2010-2017, very few institutions with less than $1 billion in assets borrowed from the Fed's discount window: only 7 percent of domestic banks and 2 percent of credit unions. Starting this year, the Fed has begun releasing annual statistics on banks' and credit unions' readiness to borrow from the discount window. Between 2022 and 2023, the number of institutions signed up to use the discount window increased by 9.4 percent, from 4,952 to 5,418. Ennis says that to the extent that the events of March 2023 revealed that banks were not fully informed about the steps they needed to take to be ready to borrow quickly from the discount window, it is helpful for the Fed to share information and create greater awareness.

"At the same time, I would say that there should be no presumption that a bank needs to be able to borrow from the discount window," he says. "Banks need to make that determination themselves after considering all the relevant information."

Last year's crisis also cast a spotlight on the Fed's readiness to handle requests that could come at any time in the fast-paced era of modern finance. In a 2023 article, Yale Program of Financial Stability Executive Fellow Susan McLaughlin noted that there are different cutoff times for pledging collateral at the discount window to borrow that same day. These cutoff times can be as early as 9:15 a.m. Pacific Time depending on the type of securities being pledged, and two of the failed banks were located on the West Coast. This is why the Fed recommends that banks pre-position their collateral at the discount window to be ready to borrow right away in an emergency. In the wake of last year's crisis, some have called for this pre-positioning to be taken a step further.

POTENTIAL REFORMS

A January report from the Group of Thirty's Working Group on the 2023 Banking Crisis, chaired by former New York Fed President William Dudley, recommended that the Fed require banks to pre-position enough collateral at the discount window to cover all their runnable liabilities, which would notably include all uninsured deposits.

"It would mitigate the risk of runs triggered merely because one depositor thinks other depositors are going to move," says Duffie, who was an adviser on the report.

Fed officials have indicated they are looking at such a change. In a May speech, Michael Barr, the vice chair for supervision on the Fed's Board of Governors, said the Fed was considering requiring banks to pre-position collateral at the discount window based on a fraction of their uninsured deposits.

Barr also acknowledged criticisms about the technology and procedures surrounding discount window borrowing and the need to reduce stigma. "Given the important role of the discount window, we're also actively working to improve its functionality," he said. In March, the Fed launched Discount Window Direct, an online portal qualified banks can use to access the facility.

All eyes will be on these and other reforms as the Fed (alongside other regulators) continues to explore ways to improve its oldest function before the next crisis. **EF**

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Rethinking Retirement Savings

Many Americans have surprisingly little set aside for retirement. Why, and what can be done to boost their nest eggs?

BY MATTHEW WELLS

How much is enough to live comfortably in retirement? Would $30,000 a year be enough? Maybe if you live in a low-cost area, and the house is paid off. How about $15,000? It would be a stretch, at best. Yet recent census numbers indicate millions of Americans over the age of 65 must figure out how to make ends meet on these incomes. A quarter of seniors, almost 14 million retirees, live on only $15,000, while a little over half, 29 million retirees, live on only $30,000 a year. For these Americans, the prospects of a comfortable retirement appear uncertain.

According to the Fed's 2022 Survey of Consumer Finances (SCF), just over 54 percent of families have retirement accounts such as IRAs, 401(k)s, 403(b)s, or thrift savings accounts. Among families that do have them, the median value of those accounts in 2022 was just $86,900 — hardly enough to last the 20 years of an average retirement. This is especially true given that the median retiree spends over 10 percent of his or her income on out-of-pocket medical expenses that aren't covered by Medicare or Social Security. Moreover, for those approaching retirement in the ages 55 to 64, SCF data indicate that those in the 50th percentile, or the middle of the pack, have only $10,000 saved in those accounts.

To be sure, there are some bright spots in the picture. Andrew Biggs, an economist with the American Enterprise Institute, suggests that Americans are doing well when it comes to retirement. Among other data points, he notes that the elderly poverty rate declined from 9.7 percent in 1990 to 6.4 percent in 2018, and that for those contributing to retirement plans, contributions have increased from about 6 percent in 1975 to over 9 percent in 2021.

But even some of the positives carry some negatives. For example, the average IRA/401(k) portfolio balance for those nearing retirement, among seniors who have such accounts, increased from $144,000 in 2019 to $204,000 in 2022. That is certainly good news, but the same SCF survey indicates these gains were concentrated among higher-income households, while those in the lower 40 percent were worse off. Further, account balances for households ages 45 to 54 did not keep pace with inflation, and 35-to-44-year-olds' household balances declined in nominal terms.

How did it come to be that so many have so little saved for retirement? And what can be done to help more Americans save and retire with financial security?

SOCIAL (IN)SECURITY?

Even after including other potential sources of income like investment accounts, real estate, and businesses, the 2022 SCF results suggest that half of households will have to rely almost entirely on Social Security when they enter retirement. But the average yearly benefit is only about $23,000 — most likely well below the 75 percent of pre-retirement income financial planners say is necessary to maintain a consistent standard of living in the post-working years.

The program's ability even to provide that modest income is not guaranteed. The 2023 Social Security Trustees Report identifies a shortfall of $22.4 trillion through 2097, and estimates that it will only be able to pay out 80 percent of scheduled benefits beginning in 2034 unless changes are made to the program. Potential fixes include adjusting the payroll tax structure to generate more funding and increasing the age to qualify for full retirement (currently 67 for those born in

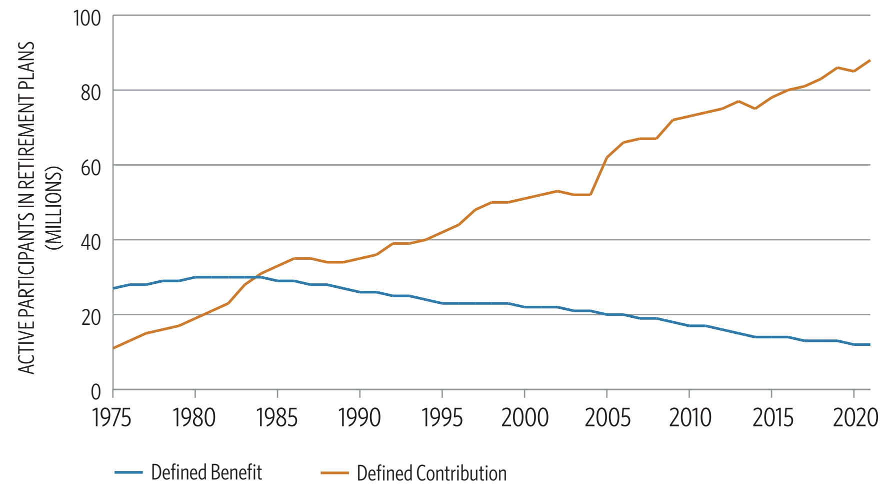
1960 or later) or the maximum benefit (currently 70).

The shortfall can be traced primarily to demographic shifts. In 1935, U.S. life expectancy was just under 62 years, and the fertility rate was 2.1 children per woman. Life expectancy increased steadily over time and was 69.5 by 1957. This was the peak year of the baby boom, and the fertility rate was 3.5 children per woman. Today, Americans live to about 79.3 years, and the fertility rate has dropped to 1.8.

Another way to consider this demographic shift is to look at changes in the old-age dependency ratio, which is defined by the Organisation for Economic and Co-operation and Development as the number of individuals age 65 and over per 100 people of working age, generally 20 to 64. In 2000, the ratio was 20.9; today, it is 32.2. Along with increased life expectancy, the Social Security Administration cites several factors contributing to the changing ratio, including increased female labor force participation and the widespread postponement of family formation, both of which contribute to fewer births.

A Dramatic Transition in Private Sector Retirement Savings

Active participants in defined benefit and defined contribution plans, 1975-2021



SOURCE: Employee Benefits Security Administration (EBSA 2023). Private Pension Plan Bulletin Historical Tables and Graphs 1975-2021, Table E7 via Economic Policy Institute

FLAVORS AND TRENDS OF RETIREMENT SAVINGS

Thus, Social Security benefits are unlikely to fully rescue retirees who don't have enough money salted away. What, then, explains Americans' apparent lack of retirement savings?

For decades, both public and private sector employers contributed to their workers' retirement through pensions, known broadly as defined benefit, or DB, programs. Under this system, employers pay out a monthly benefit to each retired worker, the value of which is determined by the worker's age, length of service, and final salary. Workers typically must remain with a firm for a certain number of years to qualify for a pension, but if they do, they then receive that benefit for the duration of their retirement.

Defined contribution (DC) plans, on the other hand, are individual accounts funded by the worker's own contributions, employer contributions, or both. Examples of DC plans include profit-sharing plans, 401(k)s, 403(b)s, and employee stock ownership plans. Under these programs, there is no guaranteed income; what is available in retirement is whatever has resulted from those contributions, investment gains and losses, or company earnings. These programs can be sponsored by the employer, or individuals can open their own individual retirement account (IRA). Either way, the workers typically act as their own financial advisors, deciding how much money to put in, and allocating and distributing those funds to maximize returns and hedge against the risks that come with investing.

For the last nearly 50 years, there has been a massive shift away from defined benefit plans toward defined contribution options. In 1975, private sector DB plans had 27 million active participants, whereas private sector DC plans had only 11 million active participants. In 2021, that number had dropped to 12 million participants for DB plans and grew to 88 million participants for DC plans. (See chart.)

Why the shift? Employers typically cover the entirety of a defined benefit plan, making them more costly. Defined contribution plans are also more predictable and easier to administer, as employer contributions follow a set formula (for example, contributing 3 percent of an employee's salary), and they do not rely on actuaries to develop cost projections of benefits to be paid each year. DB plans, on the other hand, can require employers to make additional contributions in the event of investment losses to meet the benefit amount they had previously agreed on with their employees. The inability for some firms to meet those commitments led to the Employee Retirement Income Security Act (ERISA) of 1974 and the Pension Protection Act of 2006, both of which, among other things, mandated stricter funding requirements to ensure employees receive the benefits they were promised. ERISA also carries additional costs for employers, which may have prompted them to discontinue offering them to new employees.

From the employees' perspective, defined contribution plans also might be preferable because of their portability. Participants can "roll over" their account balances from a previous employer's plan into a new one, allowing them to continue accumulating benefits wherever they work. DB plans lack this portability in large part because the benefit formulas they use only account for a worker's tenure and salary with respect to a specific employer.

While these changes initially might make putting money away for retirement appear easier, there is evidence this transition from DB to DC plans has led to less retirement savings for a significant portion of American workers. The Bureau of Labor Statistics reports that of the 66 percent of private sector workers with access to a DC plan, only about half actively make contributions.

Also, as noted above, anyone can open an IRA regardless of whether their employer sponsors a retirement plan. But data from the Census Bureau indicate that as of 2014, only 22 percent of workers at businesses without pension plans had opened one, and under 8 percent were actively contributing. Managing such plans, and defined contribution plans generally, can be intimidating for employees, which may explain the poor participation rates. Additionally, the census data suggested that with slow earnings growth over time, many workers have found it challenging to set aside funds for retirement, instead opting to use the money for current expenses.

WHY SAVINGS HAVE STALLED FOR SO MANY

A 2023 Congressional Budget Office report estimates that this shift away from DB plans to DC plans accounts for about 20 percent of the increase in wealth inequality from 1989 to 2019. Data from the SCF indicate that in 1989, the median household of those approaching retirement had no money in retirement accounts or DC plans, while those in the 90th percentile had $161,000. Over time, that difference has increased dramatically. In 2022, the top 10 percent held balances over $1 million, while as noted earlier, the median household in that age group had balances of about $10,000.

The disparities in uptake and active contributions to retirement accounts also extend beyond income levels to ethnic groups. While nearly 62 percent of White households have such accounts, a little more than a third of Black households and just over a quarter of Hispanic households contribute to retirement accounts, according to the 2022 SCF.

Monique Morrissey is an economist at the Economic Policy Institute, a progressive think tank. She argues that with the bulk of retirement account activity occurring in the upper income brackets, 401(k)s and other similar retirement accounts have failed to provide most working Americans with adequate savings for retirement and have instead been used by more wealthy Americans primarily as tax-advantaged investment opportunities. She notes that the Treasury Department has estimated contributions to those accounts cost $138.5 billion in lost revenues in 2021 alone. (Account holders of pretax accounts pay taxes when they withdraw funds in the future, but those will likely be different than what would have been paid in current income taxes.) "If we had taken all the money we had spent on subsidizing 401(k)s, and we just divvied it up among households and invested in Treasury bonds with no employer or employee contributions, most households would be better off," she argues.

In addition to the changes in the vehicles available for saving, the rising costs of health care have also eaten away at Americans' savings. Medical expenses rise rapidly with age, as middle-income individuals can expect to pay an average of $6,000 annually at age 76, and the cost only goes up from there — as much as $26,000 if they're fortunate enough to reach 100, according to a 2023 working paper by economists at the University of Minnesota, the University of Cambridge, the Richmond Fed, and the University of Western Ontario. Most of those costs come from needing to pay more for out-of-pocket expenses not covered by Medicare, which provides insurance to Americans ages 65 and older. Those out-of-pocket costs can go toward prescriptions, hospital stays, home health care, doctor and dental visits, and premiums for any supplemental private insurance and Medicare itself. Medicare also only fully covers the first 20 days of a nursing home stay, a reasonably common medical need for the elderly. Some of these costs are covered by Medicaid, but that program is only available to those with very limited financial resources.

These costs have forced many Americans to make difficult decisions about how they will allocate already scarce financial resources. According to a 2023 Kaiser Family Foundation survey, 36 percent of Medicare beneficiaries indicated that they delayed or went without medical care because of the costs. Households with Medicare also spend a larger share of their budgets, unsurprisingly, on health care than households that do not use Medicare.

The Kaiser Family Foundation also reported that increases in health insurance premiums for working families outpaced increases in workers earnings — and the pace of inflation — between 2003 and 2018, which means less money to put away for retirement. Rising health care costs also impact savings through another, more indirect path: Employers frequently provide health insurance for their employees, and increasing costs likely means less money available to spend on wages and pension or retirement plan investment.

POLICY OPTIONS

Morrissey from the Economic Policy Institute sees Social Security as the best hope for providing retirement security to working Americans. Because those benefits are a function of both what a worker pays in and increases to the cost of living, "the return on Social Security contributions is much more stable and predictable than what you get with a 401(k)," she argues. But even if Congress addresses the shortfall and restores long-term solvency, a 2023 report from Boston College's Center for Retirement Research suggests that absent major increases in funding, Social Security will replace even less of the 75 percent of pre-retirement income commonly believed to be necessary for maintaining one's standard of living into retirement. Passing those increases is politically controversial, and would come with their own economic costs, leading policymakers and researchers to look for alternatives that might increase Americans' ability to save for retirement.

Perhaps the most widely considered options involve expanding access to defined contribution plans, which, as noted, have tended to produce benefits that disproportionately benefit the wealthy. Much of that expanded access is taking place at the state level. Nineteen states and two cities have enacted some form of retirement savings programs for their private sector workers, the most common of which is an auto-enrolled Roth IRA. When an employee begins work, employers deduct between 3 and 5 percent of each paycheck and place it into an IRA, although the contribution can increase incrementally over time. For example, California's plan starts at 5 percent and an additional 1 percent is added every year until it reaches 8 percent. Like all other IRAs, they aren't tied to an employer, and individuals can elect to opt out at any time.

In a 2021 working paper, economists at the University of Oregon, the University of Pennsylvania, Boston College, and the Urban Institute evaluated the efficacy of OregonSaves, the state's auto-IRA plan passed into law in 2015. They found that between 2018 and 2020, more than 67,700 workers had accumulated more than $51 million in investment savings, suggesting auto-enrollment mitigates the barrier of establishing an account. At the same time, the upper bound of the participation rate among eligible workers was only 62.4 percent — well below the rate in firm-sponsored plans. Of those opting out of the program, over 30 percent said that they couldn't afford to save.

Alicia Munnell, the director of the Center for Retirement Research at Boston College, argues for requiring employers to offer plans. "Nothing is going to get better until there's a national mandate that says employers have to either provide a plan or send their employees' contribution to a public version of, say, the Thrift Savings Plan [the defined contribution plan for federal government workers]." She also argues that having access to a plan is more important than the type of plan. Defined contribution plans may even have some advantages over defined benefit plans for workers once they retire. Having stocks and bonds in defined contribution accounts "may be better than having a fixed nominal benefit that just gets eroded by inflation," which might happen under a defined benefit plan.

While legislation at the federal level has yet to be put forward containing such a mandate, the Retirement Savings for Americans Act, introduced originally in 2022, would create a nationwide auto-enrollment program for workers who do not have access to employer-provided plans modeled after Uncle Sam's Thrift Savings Plan. Like other retirement accounts, it would be portable, and offer a variety of investment options tied to workers' estimated retirement dates. To encourage savings, it would also provide certain savers with a 4 percent match by the government through an income tax credit.

A similar matching provision was included in the Secure 2.0 Act, which was signed into law in late 2022. Beginning in 2027, the federal government will match up to 50 percent of a worker's contribution to his or her retirement plan up to $2,000, a benefit known as the Saver's Match. For example, a worker contributing $2,000 would see the government also contribute $1,000. The program is meant to encourage saving among lower- and middle-income Americans; it is available to single tax filers making a maximum annual income of $20,500 or joint filers making between $41,000 and $71,000 and will adjust annually for inflation.

Some academic research has suggested that Americans have historically saved for retirement in an optimal way, meaning they usually accumulated sufficient wealth to maintain their standard of living. A 2006 paper from the *Journal of Political Economy* using data from 1992 to 2004 showed that over 80 percent of households were saving optimally for retirement during that period, and those who were not were only minimally below their target. Additionally, in a 2015 working paper, RAND economists Michael Hurd and Susann Rohwedder looked at consumption capability, or the extent of one's ability to consume whatever goods and services one wants, as a measure of financial wellbeing rather than income, and found 59 percent of single retirees and 81 percent of couples are prepared for retirement.

While these measures should not be dismissed, many who are still working feel increasingly uncertain about how they will get by in their sunset years. According to the Fed's 2023 Survey of Household Economics and Decisionmaking, 80 percent of retirees said they were doing at least OK financially, but only 34 percent of nonretirees thought their retirement savings plan was on track, down from 40 percent in 2021.

Three long-running trends have been the source of uncertainty in recent decades. First, people are living longer, meaning it is more expensive for society to support lengthy retirements. Second, historically increasing income inequality, whether from lower wages or replacing DB programs with DC plans, means many workers have fewer resources set aside. Third, ongoing increases in the cost of medical care have eaten up larger portions of savings. The government in recent years has paid many of these costs through programs like Medicare, but there are limits to how much of the burden it will carry.

The solutions that have been offered are also controversial. Some object to the prospect of asking people, especially lower-wage earners, or manual laborers, to work even longer while wealthy people at the same age can retire. Voluntary retirement plans can provide opportunities for savings accumulation, but it is hard for people to save for the future when living in an increasingly costly present. On the other hand, public solutions like increasing Social Security and government-funded programs require either higher taxes, more debt, or cuts to other government programs, all of which carry their own costs and organized opposition.

In a recent article, Munnell of Boston College took note of the 2023 SCF finding that 80 percent of retirees reported doing okay when it comes to their finances. While this may be good news, she pointed to another recent finding regarding retirees that might cast a shadow: Their largest regret (52 percent) when it came to their finances was that they didn't save more when they were working. With only 39 percent of today's workers being able to maintain their standard of living into retirement, this cohort of retirees is unlikely to be the last to hold that sentiment. **EF**

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BY BROOKE HANSBROUGH

Skill Mismatch, Layoffs, and Bouncing Back

Claudia Macaluso. "Skill Remoteness and Post-Layoff Labor Market Outcomes." CESifo Working Paper No. 10845, December 2023.

Being laid off from one's job often leads to worse future employment outcomes. The underlying reasons for this are unclear, however. Recent research by Richmond Fed Economist Claudia Macaluso has found that mismatch between a laid-off worker's skills and the skills involved in other local jobs plays a significant role. She created a novel measurement of "local skill remoteness" and used it to compare the effects of layoffs from jobs with varying levels of this skill remoteness on a worker's wages, future employment, and migration.

Macaluso defined skill remoteness as "the degree of dissimilarity between the skill profiles of a worker's job and all other jobs in a local labor market." This calculation has two crucial components: the differences in the skill content of *jobs* (not of workers), and the differences in job availability across geographic locations. For example, an economist would likely have higher skill remoteness than an office manager, since more jobs involve social and administrative skills than advanced economics. Two economists in different locations would also have different levels of skill remoteness: An economist on Wall Street would have more skills in common with the other jobs in the area than an economist in rural Iowa.

To account for all of this, Macaluso created measurements of the "distance" between a particular occupation's skills and that of every other occupation, and then weighted the distances by the prevalence of that occupation in a certain city each year. This data-heavy task hinged on a survey called the Occupational Information Network, or O*NET, which asks workers and occupation experts to quantify the skills they use in their occupations, among other characteristics.

Armed with this empirical measurement of skill dissimilarity across geography and time, Macaluso set about investigating its effects.

Skill mismatch matters, Macaluso suggested, and can play a significant negative role in labor market outcomes, especially for displaced workers.

Skill remoteness is not inherently a bad thing; niche skills could be valuable and well-rewarded in the labor market. But they could also make it more difficult for skill-remote workers to find wages on par with their skills in their local areas. Macaluso found more evidence of the latter in her investigation of post-displacement behavior for those who lost their jobs through no fault of their own (plant closure or layoff). Using the National Longitudinal Survey of Youth 1979, she tracked workers over their careers and confirmed the literature's finding of a large and persistent earnings drop after displacement; on average, displaced workers earned only about 60 percent of pre-displacement earnings *four years* later. This is true even when accounting for other factors that could affect displacement and earnings, such as location, occupation, date, and local unemployment rate.

The main results of Macaluso's investigation lie in comparing skill-remote (above median skill remoteness) to skill-central (below median) displacements. She discovered that there was no association between pre-layoff earnings and skill remoteness, but there was a strong negative correlation post-layoff. Earnings in the month of layoff were almost $500 per month lower for skill-remote workers than skill-central, and this persisted at around $200 per month less even four years after the displacement. Over the course of these four years, this difference added up to over $10,000, a substantial loss. She also found that workers displaced from skill-remote jobs had a lower probability of working jobs with similar skill profiles in the future. Additionally, workers in locally skill-remote jobs were more likely to migrate to cities with a lower local skill remoteness (our displaced Iowa economists tended to move to places like New York City). Not only did they change cities, but workers who lost a skill-remote job were also 11 percent more likely to change occupation than those who lost a skill-central job, and they went through more substantial skill portfolio changes.

Macaluso found the business cycle was important to this, as well; earnings losses following displacement are more severe in recessions, and the fraction of destroyed jobs that are skill-remote is higher in recessions (60.3 percent) than in booms (46.6 percent). This suggests that labor policies that target individuals displaced from skill-remote jobs could ameliorate some post-layoff hardships, especially in recessions.

The magnitude of these earnings losses and the other disruptions associated with skill remoteness are significant. Macaluso stressed that skill remoteness is a quality of jobs, not workers: Skills can be taught, and workers can potentially improve their post-layoff prospects by investing in skills valued in their local area. Skill mismatch matters, Macaluso suggested, and can play a significant negative role in labor market outcomes, especially for displaced workers. **EF**

BY SAM LOUIS TAYLOR

Independence, If You Can Keep It

Historically, Congress has tended to take an acute interest in examining the structure of the Federal Reserve whenever there is economic turmoil. The economic swing during the COVID-19 pandemic and the current period of elevated inflation are no different. In response, lawmakers and policy influencers have voiced concerns about the Fed's ability to promote an equitable economic recovery as well as its ability to manage inflation. These proposals have spanned the political spectrum, including expanding the Fed's monetary policy mandate into new areas, bringing monetary policy decision-making under additional oversight, and replacing the current structure of the Fed entirely.

At the same time, other lawmakers have supported monetary policy independence. "Given [the FOMC's] charge, their independence is critical to doing it in an unbiased, nonpolitical way," Sen. Kevin Cramer, R-N.D., told the *Wall Street Journal* in April.

In the modern era, the Fed has largely been granted independence to conduct monetary policy without direct interference from elected leaders. What exactly does it mean for a central bank, created by Congress, to be "independent," and how is the Fed in its current form accountable to elected leaders and the public at large?

Congress has mandated that the Fed pursue two objectives in conducting monetary policy: promote the goals of maximum employment and stable prices. Congress has given the Federal Open Market Committee (FOMC) wide latitude in how it pursues those goals. This is what economists call "instrument independence." Political interference in these instruments, many fear, would lead central bankers to be more responsive to short-term demands of politics and could harm the country's long-term economic stability. Economists and historians have argued that insulating monetary policy from political direction results in better long-term outcomes in the form of lower rates of inflation, among other benefits.

This independence has evolved over time. From the Fed's inception in 1913 until 1951, the Fed was much more closely tied to the executive branch. During both world wars, the Fed set explicit expectations that it would help to finance federal spending and support government bond prices. During the Great Depression, monetary policy was largely dictated by Congress and the Roosevelt administration, giving the Fed little leeway to deviate from those instructions. This arrangement continued in the immediate postwar era until concerns over rising inflation led to confrontation in 1951.

Congress has given the Federal Open Market Committee wide latitude in how it pursues its dual mandate. This is what economists call "instrument independence." Economists and historians have argued that insulating monetary policy from political direction results in better long-term outcomes in the form of lower rates of inflation, among other benefits.

In what is commonly referred to as the Treasury-Fed Accord of 1951, the Fed and then assistant secretary of the Treasury William Martin, himself a future Fed chair, agreed that the Fed could conduct monetary policy without approval from the executive branch. Though political interference in the Fed would continue to fluctuate in future years, this accord marked the modern era of operational independence for monetary policy.

Together with this independence, the Fed is regularly subject to oversight by Congress for its activities and decision-making. The Board of Governors prepares a report on the FOMC's monetary policy actions twice a year, which is accompanied by testimony from the chair of the Board of Governors to both houses of Congress. Additionally, since 2010, the vice chair for supervision has testified to Congress twice a year on banking conditions and the Fed's regulatory actions. The Fed is regularly audited by the Government Accountability Office (GAO) and the Office of the Inspector General, as well as independent outside auditors. Those reports are publicly available. (Congress did create a limited exemption from GAO audits for monetary policy deliberations and actions to avert political interference.)

To provide additional transparency into its decision-making, the FOMC issues public statements on its rate decisions and releases its meeting minutes and transcripts. FOMC members also regularly make public comments and take questions from the media. Most notable is the chair's press conference immediately after each rate-setting meeting.

Proponents of central bank independence concede that this authority must be used responsibly to pursue the goals set out by Congress. "As we move along the path of reform … it is crucial that we maintain the ability of central banks to make monetary policy independently of short-term political influence," argued then-Fed Chair Ben Bernanke in a 2010 speech. "In exchange for this independence, central banks must meet their responsibilities for transparency and accountability." **EF**

BY MATTHEW WELLS

IMAGE: COURTESY OF CHESTERFIELD FOOD BANK

Food Banks: Lifelines to Those in Need

For millions, food banks fill a crucial gap. How do they do it and just how big is the need they address?

It's a Friday night and food distribution at the Chesterfield Food Bank Outreach Center, pictured above, is in full swing. Inside the cavernous warehouse in suburban Richmond, across the street from a veterinary clinic and an auto shop, staff members keep everyone on task while the latest pop hits keep the beat. Scores of volunteers — retirees, religious and scout groups, and families — work the different sections of fresh fruits and vegetables, frozen meats, canned and dry goods, and more. Many sing along as they fill the shopping carts of other volunteers cycling through a canyon of pallets and boxes of food, making their way outside. There, another volunteer will direct them to one of the lanes with a waiting car, where they'll unload a week's worth of groceries, then return inside to load up and do it again.

This scene repeats the first and third Friday of each month at the food bank's main facility, as well as every second and fourth Monday at a local church, and every Saturday at a nearby school or similar venue. Nick Jenkins, the food bank's community outreach director, says that about 20,000 to 25,000 visitors use their services each month, representing almost 5,000 families in the surrounding area. "I think most people don't associate Chesterfield County or America with hunger, but I think it's important to understand what food insecurity here is," he says. "It's people that are maybe not going seven days without food, but they don't have the security to know that when they go home, they have food in their pantry or the means to purchase food."

The need is striking: Food distribution starts at 4:30 p.m., and by the end of the night around 9 p.m., somewhere between 400 and 600 shopping carts of food, usually one per car, will make their way to the homes of some of the community's most vulnerable residents.

Food banks and other charitable food organizations like this one exist to meet the nutritional needs of community members throughout the Fifth District and across the country. Doing so requires an

array of partnerships to acquire food, staff and operational funds, an understanding of communities' needs and challenges, and logistical creativity to ensure food gets to those who need it.

WHAT DO FOOD BANKS DO?

The core mission of food banks is to provide food to those in need. General distribution efforts like the one in Chesterfield are common, but theirs is just one of the many approaches. Other programs directly support food access for children. For example, the Capital Area Food Bank in Washington, D.C., participates in the U.S. Department of Agriculture's (USDA) Summer Food Service Program, hosting 22 sites where children under the age of 18 in and around the capital can receive a free nutritious lunch. Seniors and homebound residents also benefit from specialized programs, including the well-known Meals on Wheels, which is run out of food banks such as Feed More in central Virginia.

What is a food bank? There is flexibility in the term, but, generally, food banks are large, regional organizations that store and distribute food to more local programs like food pantries. Food pantries then distribute the food to those in need. Some food banks serve vast geographic areas, such as Feed More, which has a coverage area of 29 counties and five cities from Virginia's southern border to the Northern Neck. Others, like the Capital Area Food Bank, serve more densely populated urban areas. Chesterfield Food Bank operates as both a food bank and a food pantry, and it is a part of the Feed More distribution network. Both food banks and pantries supply prepackaged food, as well as fresh produce and frozen meat, which are taken home and prepared. They differ from soup kitchens, which cook and serve food at a set time.

According to Feeding America, a nationwide network of 200 food banks and 60,000 partner food pantries, food banks acquire their food through donations, purchasing, and federal programs. First, community partners like local grocery stores, restaurants and bakeries, and small businesses donate their overages, the surplus food beyond what is needed to stock their shelves or serve the day's customers. Food drives also allow those within the local community to help out, as individuals, community organizations, and businesses can all collect, then donate, food that they have gathered. Local farmers also play a key role in supplying healthy and fresh produce, as they will oftentimes donate "perfectly imperfect" food — produce that is fine but might not meet the aesthetic expectations for retail sale. For example, Feeding the Carolinas, a network of the 10 regional food banks across North and South Carolina, established Farm to Food Bank, a program pairing the food banks with over 50 Carolina farmers who make available over 35 different varieties of produce for families in need.

Second, food banks and pantries purchase food — which, when sufficiently scaled, can be done at much lower prices than when individual consumers visit the grocery store. Doing so allows a food bank to tailor its offerings to meet the specific cultural or medical needs of its clients. Third, food banks also receive food through government programs like the Commodity Supplemental Food Program, which provides necessary items to senior citizens, such as milk, fruits and vegetables, cereal, and cheese.

Food banks and pantries could not operate without volunteers. Community members might volunteer for a range of reasons: Many belong to scouting or religious groups, some are looking to fulfill service hours for school, and others are families or retirees wanting to give back to their communities. Jenkins says volunteers contribute about 60,000 hours per year at the Chesterfield Food Bank, with between 30 and 50 people working shifts daily at the main facility doing data collection and reporting or working in the warehouse and pantry. An additional 75 to 150 usually work at distribution events, and others help with outreach, staffing programs to make sure community members in need know how to access their services.

These outreach efforts — which include visiting local motels and homeless encampments, purchasing advertising space on local television, and ensuring Chesterfield Food Bank comes up whenever anyone in the area searches "food insecurity" online — are crucial. "We constantly assume that no one knows us," says Jenkins. "So we share our name in a hope that it gets in front of people who need help." Some organizations maintain eligibility requirements (for example, that recipients must be under 200 percent of the poverty line to receive food or must be referred by another social service organization), while others encourage anyone in need, regardless of the circumstances, to use their services.

Like many charitable organizations, food banks and pantries rely heavily on philanthropy to fund their operations. For example, the Summer Food Service Program administered by the Capital Area Food Bank is sponsored by several partners, including grocery store chain Harris Teeter, as well as DC United, the city's professional men's soccer team. Many charitable food websites, from Feeding America at the national level to state-level networks like Feeding the Carolinas and local facilities like the Chesterfield Food Bank, make it as easy as possible for individuals to donate money, and they frequently tell donors exactly what their money will do. In Chesterfield, more than half of the food bank's funding comes from donors in the community who give a recurring donation of $25 to $50 a month. The remainder comes from grants from local governments, businesses and civic organizations, as well as national charitable foundations such as the Walmart Foundation.

THE PROBLEM OF FOOD INSECURITY

People turn to food banks in varying circumstances. In some cases, a job loss or other disruption can lead households to seek food assistance to cover short-term needs, perhaps just for a month or two. In other situations, such as for households on fixed incomes, reliance on charitable food may be built into their standard approach for meeting basic food needs.

Feeding America reported that in 2022 alone, 49 million people relied on free food assistance, and that its partners distributed over 5.3 billion meals. The Urban Institute's Well-being and Basic Needs survey found that the following year, in 2023, one in six, or 16.6 percent of adults in the United

States, reported receiving charitable food; in 2019, prior to the COVID-19 pandemic, that number was closer to one in eight.

These numbers indicate how many people rely on charitable food organizations like food banks, but do they accurately reflect the real level of need? Maybe not: A deeper look into the data from the 2023 Urban Institute survey reveals that those who stated they used food bank services were only about 40 percent of the overall number of those who reported experiencing food insecurity.

The USDA defines food insecurity as "the limited or uncertain availability of nutritionally adequate and safe foods, or limited or uncertain ability to acquire acceptable foods in socially acceptable ways." Households are classified as food insecure if "they had difficulty providing enough food for all members at some time in the past year because there wasn't enough money for food." The National Institute for Minority Health and Health Disparities notes that this insecurity puts people at risk of other dangerous health conditions such as diabetes, obesity, heart disease, and mental health disorders. It's also important to note that food insecurity is distinct from hunger, which the USDA defines as a physiological condition that "results in discomfort, illness, weakness or pain that goes beyond the usual uneasy sensation."

At the national level, a 2023 USDA report found that 44.2 million people experienced food insecurity in 2022, which was 10.4 million more than in 2021. More than 13 million children experienced food insecurity in 2022, as well — a nearly 45 percent increase over the prior year. Food insecurity also tends to be concentrated in poorer and minority households; the Urban Institute survey found that for adults with family incomes at 200 percent of the poverty line and below, 52.2 percent reported experiencing food insecurity in 2023, compared to 46.6 in 2022. Also, nearly 39 percent of Hispanic adults and about 35 percent of Black adults reported experiencing food insecurity, both of which were increases over previous years. (Other racial and ethnic groups did not experience any increases over the prior year.) Finally, adults who lived with children, identified as LGBT, or were low-income renters (as opposed to homeowners) were more likely to report experiencing food insecurity at some point in 2023.

Food insecurity exists in every county in every state. According to the Food Research and Action Center, a hunger research and policy center, West Virginia has one of the highest food insecurity rates in the country at 15 percent, or almost 270,000 residents. Approximately 74,000 children in the state face food insecurity. North Carolina isn't far behind, according to their estimates: Nearly 1.5 million North Carolinians (14 percent of the population) experience food insecurity, and 448,000 of them are children. Almost 750,000 (12.5 percent) Marylanders — 221,000 of whom are children — are food insecure, as are 679,000 South Carolinians, or 12.8 percent of the population. 197,000 of those residents are children. In Virginia, just under 964,000 residents (11.1 percent) have experienced food insecurity, and of those, over 252,000 were children. Finally, in Washington, D.C., 11 percent of the population, about 74,000 people, experience food insecurity, and 18,000 of them are children.

FEEDING PEOPLE ISN'T EASY

An eye-catching data point from the Urban Institute survey: Only 37 percent of food insecure respondents felt comfortable using charitable food. Kassandra Martinchek, who studies food insecurity at the Urban Institute, suggests that the stigma attached to needing free food may keep many away. Turning to free groceries and meals oftentimes brings up questions of whether people feel they are deserving or should access these resources that are available to them.

A separate Urban Institute study of Arlington County, Va., asked individuals reporting food insecurity who did not take charitable food to explain why. "I think I'm like everybody else," said one respondent. "We tend to be proud. In fact, that would be probably my last resort because I just believe in, I guess, pulling yourself up by your bootstraps. I wouldn't want to do that [accept charity], but I do know where the resources are if I had to."

While some may know how to access charitable food, if necessary, others acknowledge they lack that information; under half, about 42 percent of those identifying themselves as food insecure, were aware of local charitable food resources such as food banks or pantries. Beyond the sense of pride keeping some from exploring the options available to them, this lack of awareness may also stem from a number of other factors, including not knowing where to look, unreliable or limited internet capability, and, for those who do not speak English, information not being available in their language.

Not knowing about the charitable food resources that are available is just one dimension of the larger problem of access. Finding transportation can be difficult for many such as the elderly and disabled, and even if a charitable food site is within a reasonable distance and can be reached via public transportation, operating times may not match up with the schedules of those in need, particularly if they are working. Arlington County, for example, had 56 total charitable food sites as of 2022. Forty-eight of those were open year-round, but only 21 had no eligibility requirements. Of those, only 10 made food available to residents at least once a week. Finally, of those 10, only six were open during weekends or evenings.

For food insecure households with adults working during regular business hours, these limitations pose a serious risk to their ability to get enough food. To combat this, charitable food organizations have developed several approaches intended to make it easier to get food to the people who need it. The Food Bank of Central and Eastern North Carolina, for example, has experimented with a grab-and-go model, where clients who aren't able to pick up food during working hours can do so at a time that works for them. "If someone's working eight to six, we need to make sure that we get food resources to them at a time and place that they can access them or else we're not doing our job," says Marlowe Foster, the food bank's former senior vice president for development and business strategy.

Others have leveraged emerging technologies to ensure people get the food they need. In San Francisco, DoorDash, the online food delivery platform, partnered with local food

organizations in 2018 to develop Project DASH, a home delivery service that, according to its clients, helped them save money, cut down on trips to the grocery store, save money on transportation, and extend the duration of their other public benefits. The program partnered with more than 300 nonprofits by the end of 2022, and food banks and United Way affiliates around the country have now adopted the approach. Still others, such as Feed More in Virginia, partner with local schools to send home weekend backpacks full of food and host farmer's market-style distributions, which oftentimes will have music, games, and other community resources.

While Project DASH has delivered about 15 million meals to rural areas since its creation in 2018, putting food into the hands of people experiencing food insecurity in those regions has been a persistent challenge, as they may be hours away from a food bank or grocery store. Feeding America notes while 63 percent of all counties in the United States are rural, 87 percent of counties with the highest rates of food insecurity are rural. A 2017 paper by researchers at Feeding America and the University of Illinois showed that charitable food providers are heeding this reality, as there is twice as much coverage in terms of the number of food providers in rural areas compared to urban ones. There are also more distribution days per person in rural areas and more food given out per person. This is due in large part to the significant presence of permanent food pantries, as well as mobile pantries, where food can go straight from a delivery truck to families in need.

PANDEMIC-ERA BENEFITS AND INFLATION

The COVID-19 pandemic had a dramatic effect on food insecurity and the work of food banks. Prior to the pandemic in 2019, 4.4 percent of American households reported they used a food pantry that year, but that number jumped to 6.7 percent in 2020, the year the pandemic began. With job losses mounting, the federal government increased the monthly payment (known as emergency allocations) to recipients under the Supplemental Nutrition Assistance Program (SNAP), the largest federal anti-hunger program. It also relaxed eligibility requirements, which, until then, included a work requirement. The number of individuals participating in the program went from about 37 million in February 2020 to 43 million later in the year.

But in the first half of 2023, the work requirement was reestablished, and states eliminated the emergency allocations. While the number of recipients remained above 40 million, the average SNAP recipient lost between $91.50 and $112.18 per month. This reduction was hard for low-income families, who, like everyone else, were also experiencing the reduced value of their dollars at the grocery store because of the worst inflationary episode in 40 years. Sixty-five percent of Feeding America's food bank partners reported an increase in the number of people seeking assistance between February and March of that year, suggesting the lower SNAP amount coupled with crippling increases in food prices was leading to more widespread need.

Wages in the aggregate are now outpacing inflation, but many lower-income households who qualify for SNAP are still struggling to get by, as the benefit doesn't last them through the month. As these households turn to charitable food to fill those gaps, food banks are also experiencing the effects. Martinchek of the Urban Institute notes while food banks and pantries received increased funding and donations in the immediate wake of the pandemic, these funds have expired, even though demand exceeds pre-pandemic levels. She suggests "it could become increasingly challenging for these food banks to be able to fully meet the needs their communities have, especially when are also facing inflationary pressures when they're purchasing food for their communities."

In addition to providing food, many charitable food organizations also make available wraparound services that foster self-sustainability, including job training programs and mental health or substance abuse treatment. Foster, the former head of development for the Food Bank of Central and Eastern North Carolina, says that the process of connecting people to these services is a "slow build" requiring trust and communication.

But the children experiencing food insecurity don't understand any of that, which is why in Chesterfield, cars with a child in them will receive a cake or pack of cupcakes. "A kid sitting in a line for an hour and a half at the food bank waiting for groceries is not really understanding everything that's going on," says Jenkins. "But at the end of it, if they get a cake, it makes them happy." **EF**

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BY JULIAN KIKUCHI

Milton Friedman, Dissenter

The architect of modern monetarism was also an energetic public intellectual

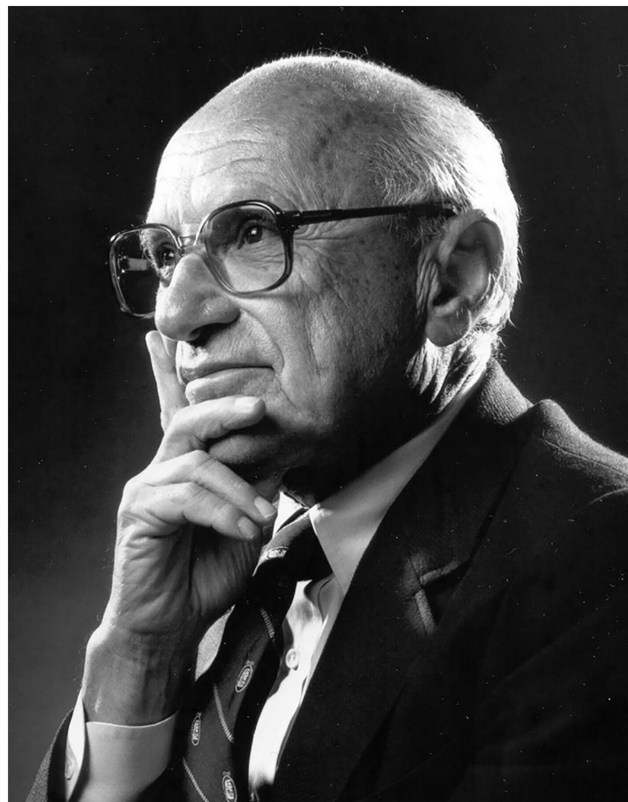
At an event in 2002 in honor of Milton Friedman's 90th birthday, then-Fed Chair Ben Bernanke offered him an olive branch of sorts on behalf of the Fed. "Regarding the Great Depression. You're right, we did it," Bernanke conceded. "We're very sorry. But thanks to you, we won't do it again."

Bernanke's comment was an allusion to the 1963 book *A Monetary History of the United States 1867-1960* by Friedman and economist Anna Schwartz, in which they argued that monetary policy led by the Fed had an enormous influence on the recessionary periods of the U.S. economy, including the Great Depression. That view, although contradictory to the general belief of the time that money had little role in economic fluctuations, became increasingly important and influenced policy responses of the Fed during the 2008 financial crisis.

Throughout his career, Friedman was an advocate for monetarism and free markets. He believed that a stable monetary framework, characterized by steady growth in the money supply, was essential for fostering economic stability and prosperity. Moreover, he considered free markets to be the best way to allocate resources and deliver economic prosperity, and he thought they went hand in hand with individual freedom. These ideas were long out of favor in academic circles but turned out to be another area in which, over time, Friedman would see much of mainstream thought move toward his views.

STARTING A CAREER IN A TIME OF CRISIS

A talented student, Friedman graduated from high school before turning 16 and pursued his college education at Rutgers University. As he was mathematically inclined, he planned at first to major in that subject. Fate intervened in the form of Arthur Burns, a Ph.D. student at Rutgers, who introduced him to the field of economics through his course titled "Business Cycle." (As it would turn out, Burns later became chair of the Federal Reserve Board of Governors and presided over the high inflation of the 1970s.)



Economist Milton Friedman

Burns introduced Friedman to important ideas in economics. First, he introduced him to the theory of the business cycle. Second, he introduced him to Alfred Marshall's ideas, known as marginalism, which describe how the marginal utility individuals obtain from consuming an additional unit of service or goods influences their economic decisions. Burns, impressed with the young student, asked him to proofread his dissertation. Through his interactions with Burns, not only did Friedman learn the practice of scholarship, the bond between the two became increasingly strong, to the point where Friedman regarded him as a "surrogate father" — possibly influenced by the fact that Friedman had lost his father just before entering Rutgers.

While at Rutgers, Friedman was introduced to another important idea in economics through a book by Frank Knight, a professor at the University of Chicago. Friedman was introduced to Knight's work by an instructor at Rutgers who had Knight as his doctoral advisor. In a course on insurance, the instructor used Knight's book *Risk, Uncertainty and Profit*, in which Knight defined risk and uncertainty as separate concepts that can be measured (risk) or cannot be measured (uncertainty) and used them to discuss more fundamental questions in economics, such as, "Why do profits exist?"

Upon graduating in 1932, Friedman decided to pursue graduate education at the University of Chicago in economics instead of his alternative option of studying mathematics at Brown University. The University of Chicago economics faculty at the time was not

IMAGE: THE FRIEDMAN FOUNDATION FOR EDUCATIONAL CHOICE

known for its laissez-faire perspective, as it would be in later years. He was also exposed to political questions of the time. The Great Depression, which was then underway, was blamed by many on capitalism itself; there were protests advocating for different social forms such as communism and social democracy while fascism was spreading in Europe, and militaristic Japan was flexing its muscles.

Of that period, economist Allan Meltzer later wrote, "The dominant view then was that capitalism had failed; the future was some form of socialism, and the only issue was how extensive it should be. Keynes wanted free markets for consumer goods but state planning and direction of investment." Many economists associated market competition with waste, as in the case of multiple milk companies delivering milk to the same block; there was less attention to the benefits competitions can offer to consumers.

After learning that his advisor at Chicago would be away, Friedman decided to spend his second year at Columbia University. Columbia was known for a still more interventionist approach to economics. Economists at Columbia generally thought that the economy would not naturally reach an equilibrium, and that having well-planned active policies by the government was important for addressing economic issues. Attending seminars at Columbia, Friedman was exposed to different ideas on how to address the depression the country was facing at the time. He also added another dimension to his training by taking mathematical economics classes from Harold Hotelling. This was an important step for Friedman since economics research was becoming increasingly mathematical.

As a result of his mixed education at Rutgers, Chicago, and Columbia, by the end of his second year of graduate school, Friedman was exposed to a broad range of approaches to economics, including neoclassical price theory, the quantity theory of money, institutional economics, and mathematical economics. His exposure to different strands of economics as well as his mathematical maturity helped form his foundation. As historian Jennifer Burns put it in her 2023 biography, *Milton Friedman: The Last Conservative*, "The choices before Friedman were clear; he was in an ideal position to chart his own path as a scholar."

Friedman's early career was in statistics. In 1935, Friedman, now in his early 20s, got a job as a statistician at the National Resources Committee, a New Deal agency in Washington, D.C. Foreshadowing his later work related to inflation, he was assigned to develop methods to calculate weights for the consumer price index. He then worked for the Treasury in its Division of Tax Research from 1941 until 1943. At that point, Friedman moved to Columbia's Statistical Research Group, which was directed by Hotelling; there, Friedman assisted in the use of statistics in war-related projects.

THE RISE OF MONETARISM

After his work as a statistician, Friedman took a position at the University of Chicago in 1946 to teach a course in price theory. In the decades that followed, Friedman made major contributions in macroeconomics, while a group of Chicago microeconomists, such as George Stigler and Ronald Coase, challenged then-dominant views favoring government intervention. What emerged from their combined work was a "Chicago School" of thought that highlighted what its members viewed as the importance of individual freedom and limited government interventions for economic prosperity.

While Friedman's most famous contribution, monetarism, was set out in his 1963 book *A Monetary History of the United States 1867-1960* with Schwartz, it came into its own in the 1970s when it gained influence with policymakers. The book analyzed major economic fluctuations the United States experienced from 1867 to 1960 and described the role monetary policy played in these events. Robert Hetzel, a doctoral student of Friedman's and a former Richmond Fed economist, observed, "*A Monetary History* was one of the most influential books of the 20th century because of the way it radically altered views of the cause of the Depression." Both Fed Chair Paul Volcker and British Prime Minister Margaret Thatcher used elements of Friedman's work to tame the inflation each of their countries was facing in the 1970s to early 1980s.

Monetarism asserts that in the long run, the money supply determines the price level — or, as Friedman put it in 1970, "Inflation is always and everywhere a monetary phenomenon." (He later clarified that he was referring to persistent inflation.) Thus, in his view, central banks' objective of price stability would be best achieved by targeting the long-run growth rate of money supply.

Underlying monetarism is a concept called the quantity theory of money, which comes from a simple accounting identity: $MV = PQ$, where M represents money supply, V represents velocity (how often a dollar changes hands), P represents price level, and Q represents quantity of goods and services bought and sold. According to monetarists, V stays relatively constant over time. Thus, changing the money supply would inevitably — mathematically — change the price level. Friedman had been exposed to these ideas at Chicago by Knight and by economist Henry Simons.

The Keynesians, so named for the British economist John Maynard Keynes, had a different view of economic fluctuations and inflation. They did not believe that the kind of monetary policy advocated by Friedman would naturally lead to desirable economic outcomes. Rather, they argued that achieving full employment required the government to use fiscal policy to influence aggregate demand.

These differences in views regarding how macroeconomic equilibrium is achieved and the role of monetary policy had implications for how

monetarists and Keynesians looked at the Great Depression. The Keynesians interpreted the depression as an aggregate demand shortfall that was best remedied by fiscal policy. Their influence stimulated the "fiscal revolution" in America, which changed the view of the government budget from a means to support small but necessary government functions to a tool for stabilizing the economy. Friedman and Schwartz, on the other hand, viewed the Great Depression as a monetary policy failure in which the Fed failed to provide banks with necessary cash to avoid bank failures from bank runs.

Another area where Friedman made a notable contribution is the permanent income hypothesis. Drawing upon initial work by economist Dorothy Brady and by his wife, Rose Friedman, he developed a theory and provided supporting empirical evidence that individuals' consumption depends on their long-term income prospects — that is, their "permanent income" — rather than simply their current incomes.

Keynes had earlier argued that as people earned money, they increased consumption, though not by as much as the increase in income. Economists framed the problem mathematically and called the relationship "the consumption function." Keynes asserted that the division between consumption and savings is determined by the disposable income of the person and coined the term "absolute income hypothesis."

Rose Friedman and Brady challenged Keynes' absolute income hypothesis. In a paper titled "Savings and the Income Distribution," they argued that household saving and consumption rates depended on their relative income but not the absolute income within their neighborhood, and this was known as the "relative income hypothesis." Margaret Reid, another economist, also contributed to their research in this area.

Building on this work, Friedman modeled consumption as a function of permanent income and transitory income and through his analysis, he argued that consumption depends on permanent income. He later recalled, "The catalyst in combining my earlier consumption work with the income analysis in professional incomes into the permanent income hypothesis was a series of fireside conversations at our summer cottage in New Hampshire with my wife and two of our friends, Dorothy S. Brady and Margaret Reid, all of whom were at the time working on consumption."

Milton Friedman (right) and producer Robert Chitester during the production of the 1980 television series "Free to Choose."

IMAGE: COURTESY OF FREETO CHOOSE NETWORK/WIKIMEDIA COMMONS

The permanent income hypothesis had fiscal policy implications and clashed with the ideas presented by Keynes. As in the controversy over government interventions to maintain macroeconomic equilibrium, Keynes' theory lent support to government interventions to help economies escape from economic downturns. His absolute income hypothesis suggested that to avoid recessions, governments should transfer money to citizens or increase government spending to boost the income of the recipients to encourage them to spend or invest the money received. The absolute income hypothesis implied that people will increase spending and investment as their income rises, whether temporarily or not. In contrast, Friedman's permanent income hypothesis posits that an individual's consumption is driven by his or her anticipated permanent income; under that view, if governments transfer money or increase government spending to raise the income level of their citizens, and if the citizens regard the increase in income as temporary, then the effect on their spending — and thus on the economy — will be modest. Today, state-of-the-art macroeconomic models incorporate the permanent income hypothesis for some consumers, while allowing for the possibility that borrowing constraints force some households to consume based on their current income.

FRIEDMAN'S OUTREACH TO THE PUBLIC

Beyond his research, Friedman was a highly active and visible public intellectual. He engaged extensively with the public through books and articles and participated in debates and forums. His most notable engagements included his 1962 book *Capitalism and Freedom* and his 1980 TV series "Free to Choose" and its accompanying book.

Through *Capitalism and Freedom*, Friedman advocated the idea that a rising standard of living is a result of the free market. He made recommendations in the book on a wide range of policy issues in areas such as taxation, education, licensing, and exchange rates.

Friedman expanded his reach further when he started writing a regular column for *Newsweek* magazine in 1966. In 1970, in a *New York Times* article, he argued against broad interpretations of corporate responsibility, holding that the main responsibility of businesses is to generate as much profit as possible for their shareholders. He contended that the government is responsible for serving the social interests by taxing the population and providing public infrastructure. Corporations, in contrast, are responsible for doing things that serve the best interest of the company, not of society as a whole.

The "Free to Choose" series came about in the late 1970s, soon after Friedman was awarded the 1976 Nobel Prize in economics. Friedman was approached by a former public television manager, Bob Chitester, with the idea of a program about his economic and social perspectives. The result was 10 unscripted, one-hour episodes in which he discussed topics such as education, protection of workers, and inflation. For example, on the topic of education, Friedman argued that parents having responsibility for their children's education aligns with the tradition of a free society. He argued that elementary and secondary education in the United States should be largely privatized and allow for the development of a for-profit education industry to promote competition in public schools. He maintained that providing a universal education voucher would help bring about the transfer of education from the government to private entities.

"Milton Friedman spent 65 years preparing for that TV series," Chitester recalled. "Every step of his life he had been preparing for that and thinking through ideas, researching them, developing his view of the world."

The television-book approach proved effective: The series drew millions of viewers and the book, co-authored with Rose, was No. 1 on the *New York Times* list of bestselling nonfiction for six weeks.

AN ECONOMIST'S LEGACY

Friedman's research and outreach was consequential for the economics profession and for the country as a whole. Some of the major policies that he advocated were adopted more or less in their entirety, including floating exchange rates, the all-volunteer military, and, in some states and localities, school vouchers.

In macroeconomic policy, the importance of monetary policy to economic stability is widely recognized. This understanding enabled the Fed to bring about the Great Moderation — 40 years of price stability in the United States starting in the early 1980s. (The Fed does not follow Friedman's proposed rule of targeting a rate of growth in the money supply; rather, the Fed — like many central banks — instead targets a rate of inflation.)

Despite Friedman's enormous influence in economics, there are areas in which, even 18 years after his death in 2006, the extent of his legacy is still unclear. Among these is the nature of corporate responsibility: The ideas in his 1970 *New York Times* essay remain controversial, and in recent years, activist investors and others have pushed companies to act on environmental and social issues. The Business Roundtable, a group of large company CEOs, released a statement in 2019 reversing the group's longtime support for principles of shareholder primacy.

On the occasion of Friedman's death, Fed Chair Bernanke returned to the subject of his impact. "Among economic scholars, Milton Friedman had no peer," Bernanke wrote. "The direct and indirect influences of his thinking on contemporary monetary economics would be difficult to overstate. Just as important, in his humane and engaging way, Milton conveyed to millions an understanding of the economic benefits of free, competitive markets, as well as the close connection that economic freedoms bear to other types of liberty." **EF**

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Raghuram Rajan

On leading a central bank, creating a digital payment system, and India's future in professional services

In August 2005, at the annual conference of central bankers in Jackson Hole, Raghuram Rajan created a stir. Rajan, then chief economist of the International Monetary Fund, argued in a presentation that a hidden danger of massive failures was lurking in the global financial system. Risks had been building up, he said, a result of the incentives facing private institutions in the environment of that era.

Attendees were generally unmoved, if not derisive. "The press thought I was a little bit of a crackpot," Rajan remembers. "There wasn't much attention paid. It was, 'Oh, yeah, somebody claiming the end of the world is near.'"

Two years later, Rajan's warning was borne out as the global financial crisis hit and economies cratered. His prescience garnered him, among other things, an appearance in the Oscar-winning 2010 documentary *Inside Job*.

Rajan later served from 2013 to 2016 as head of India's central bank, the Reserve Bank of India. Today, he's a finance professor at the University of Chicago's Booth School of Business. Some of his recent research has considered the implications of central banks maintaining large asset holdings — as in the case of the Fed's quantitative easing program — and the effects of shrinking those holdings; other recent work of his has looked at the Indian banking system and at unintended consequences of political pressure on monetary policymakers. He is a former president of the American Finance Association and is a member of the American Academy of Arts and Sciences and the international group of economics and finance experts known as the Group of Thirty.

He is the author or co-author of seven books. His most recent, *Breaking the Mold: India's Untraveled Path to Prosperity*, was published in May by the Princeton University Press.

David A. Price interviewed Rajan by phone in May.

EF: When you were governor of the Reserve Bank of India, inflation fell from a little under 10 percent in September 2013, when you arrived, to under 4 percent in July 2015. How did you accomplish this, and what worries did you have along the way?

Rajan: Well, the truth is that you put in place a bunch of measures and you hope it works. Exactly which measure worked is hard to say. The first thing we did was that we said we would have a glide path toward an inflation range, after which we would think seriously about implementing inflation targeting. We didn't want to announce inflation targeting up front, but we wanted to make sure we could bring inflation down to within the range we wanted to be in. And then we could say, OK, now we will implement the targeting.

That announcement, I think, carried some weight. I think the fact that we were serious about inflation was further enhanced by moving from targeting the producer price index, which reflected a lot of imported inflation and commodity inflation. Consumer price inflation is what people experience. So we said we were going to target consumer prices rather than producer prices, which sounds innocuous, but it made a huge difference because that was what really affected people and was much higher than the producer price, typically.

Then we did the usual central banking move of raising interest rates — all the while saying we are determined about inflation, and as we see inflation coming down, we will have room to cut rates. On the external side, the rupee had been very weak; India was considered one of the fragile five after the taper tantrum in the United States following Chair Bernanke's remarks in 2013.

IMAGE: COURTESY ANNE RYAN

And so, we also said we are a stable country. We announced a scheme by which investors could bring money into the country in bank deposits. That was a popular program; it raised something like $30 billion, but also assured the markets that we had plenty of foreign exchange and could call on more when we needed it. That helped stabilize the rupee.

All in all, the package worked. Which part specifically worked best, I don't know.

CENTRAL BANKS AND PAYMENT SYSTEMS

EF: Outside of dealing with inflation and monetary policy, you involved the Reserve Bank of India heavily in extending access to banking services to individuals who lack them. Why did you believe this was important? And why did you believe this was part of the role of the central bank?

Rajan: In India, the central bank has always played a developmental role in addition to a monetary role. So financial sector reform has often been driven by the central bank. The RBI, for instance, identifies priority sectors where more lending would be useful to reach excluded sectors of the economy. And it mandates a certain amount of lending to those excluded sectors.

Now, this is the historical role. And while it is important to create the environment for easier lending, I think you have to try and see how we can particularly reach some of these people and sectors that have been out of the mainstream.

One initiative, which was driven by the prime minister, was to get everyone bank accounts. And given that a large part of the Indian banking sector is state-owned banks, it amounted to just fiat. The prime minister said, we want every bank to open accounts for everybody in their catchment area. And that was a huge success in increasing the number of bank accounts. But the next step was to make sure that people used their bank accounts; it's all very easy opening the account, but then if they leave it dormant, you haven't improved banking services.

So over time, we worked on improving digital payments so that people could use their bank accounts at a distance. That was the beginning of what is called the UPI, the Unified Payments Interface, which allowed any financial institution that was in the network to allow their members to make payments from any bank account they held to any target bank account. And that bank account to bank account transfer was easily accomplished — so much so that in February this year, there were 12 billion transactions.

Digital payments also helped with credit. Once people used their bank accounts, once businesspeople had records of transactions going in and out, even the street vendor could basically show a financial institution, "Here are the flows into my accounts from the payments that are coming in, so you can see how much in revenues I make. So I am more creditworthy than you think." I think low-cost digital payments coupled with near-universal bank accounts helped propagate inclusion quite a bit.

EF: Were privacy concerns a stumbling block at the time?

Rajan: No. There were all the usual concerns with any digital transaction — data protection, privacy, security, protection against cybercrime, all that stuff. Fortunately, we had an organization, which was set up by the RBI way back and now was owned by the banks, called the National Payments Corporation of India, which was tasked with bringing new technology to payments and implementing that. They were very efficient.

The role of the RBI was really to ensure that we were satisfied with the checks and balances in their process. Perhaps the most important thing we did was to allow nonbanks into the process. The banks were very reluctant to allow the nonbanks in. We felt that the banks, which controlled this payment interface, would protect their own franchise and not let the service expand. So when we allowed the nonbanks in, that made a huge difference.

When I last checked, three nonbanks — Google Pay, Walmart's Indian sub called PhonePe, and an Indian entity called Paytm — accounted for 95 percent of the market in UPI transactions. Almost surely, the banks would not have been as competitive or innovative and UPI may not have taken off if we had left it to them. There are now worries that these new guys dominate too much. But that's another story.

EF: Over the course of your three years as governor of the RBI, what did you learn that you wish you'd known before?

Rajan: It wasn't so much learning big things as trying to figure out why there was a certain way of thinking in the Reserve Bank. I was an outsider, and I obviously brought a lot of academic thinking, but I also brought impatience with bureaucracy into the organization. And given that it's a hierarchical organization, like most central banks, it would have been easy to say "jump" and people would have done that — maybe grumbling, but they would have jumped.

The more important task was to find out on every issue what was the thinking, what was the experience, why were they reluctant to do A but happy to do B. For every issue we needed to deal with, I set up a group that was tasked with figuring it out. The group typically had a lot of insiders. The agenda was typically something that required change. They all knew I wanted change and reform. But they also knew that I would listen to sound arguments explaining why it was hard or it was not advisable to move in that direction.

And they could craft the way they wanted to change. I think that created a lot of ownership, and it moved the reform in interesting ways that I could never have thought of on my own. If

my original thoughts had prevailed, it would possibly have been a disaster. So the whole issue was to learn but learn in a way that they knew the ultimate goal was change, because we needed to keep reforming to improve the system.

They also knew that we would, where possible, experiment. And if it didn't work, we would keep changing until it worked. Give it some time, understand why it's not working, make the changes necessary to make it work better. So we did accomplish a lot. But most important is that there was local ownership. And that continued when I left.

Raghuram Rajan

PRESENT POSITION

Katherine Dusak Miller Distinguished Service Professor of Finance, University of Chicago Booth School of Business

SELECTED PAST POSITIONS

Governor, Reserve Bank of India (2013–2016); Vice Chairman of the Board, Bank for International Settlements (2015–2016); Economic Counselor and Director of Research, International Monetary Fund (2003–2006)

EDUCATION

Ph.D. (1991), Massachusetts Institute of Technology; MBA (1987), Indian Institute of Management (Ahmedabad); B. Tech. (1985), Indian Institute of Technology (Delhi)

GROWTH PATHS FOR INDIA

EF: In your new book, *Breaking the Mold: India's Untraveled Path to Prosperity*, you argue that the conventional wisdom about developing countries — to start at the low end with exports of commodities and low-skilled manufacturing and work their way up — isn't the best path for India. Instead, you argue that India should seek to leapfrog over that process as much as possible by increasing its targeting of high-skilled services such as financial analysis, consulting, and software. What are the benefits and risks to such a strategy?

Rajan: The underlying idea is that India's biggest asset is its human capital. And regardless of how India grows, it needs stronger, more capable, better human capital, especially in a world where AI and so on are coming in in a big way. Then the question is, where can this human capital be used? The old tradition was export-led manufacturing growth: Start with low-skilled manufacturing and move up that ladder.

The problem with that, however, is that the rents from manufacturing, especially the low-skilled assembly work, have been competed away. Today, when you enter that area, you're not competing with well-paid Western workers. You're competing with Chinese workers who are bolstered by a superb infrastructure as well as good machinery. Or you're competing against Bangladeshi or Vietnamese workers who are not very different from you.

So competition is fierce at that level. The virtuous circle by which you once made profits from your cheap labor, reinvested it in improving human capital, with the profitable firms paying taxes and the government using revenues to improve infrastructure, that part is much harder now. Now if you want to leapfrog, you can leapfrog to high-skilled manufacturing or you can leapfrog to high-skilled services as the leading sector of the economy. The problem with high-skilled manufacturing — chip manufacturing, for example — is that it's hugely capital intensive.

On the other hand, high-skilled services is not that capital-intensive. It's human capital intensive. And India has a lot of that human capital. India exports about 5 percent of global services, less than 2 percent of global manufacturing. The graduates of India's top universities today can walk into a McKinsey or a Bain and do consulting not just in India but across the world. And you can see a whole horde of multinational firms starting what are called global capability centers. JPMorgan Chase hires lawyers in India to support its operations globally.

What this is saying is services have become much more exportable. Now, that doesn't mean that's only what you do. To the extent that lower-skilled manufacturing is possible, you do that. But what I'm saying is that the manufacturing-led exports path is no longer the only path to development. You can have a high-skilled-services led export path; you can have a mix. The important thing to do is to improve your human capital, make it easier to do business, encourage entrepreneurship and innovation, improve your universities, improve your colleges. All this will get you on a path for growth, which may not be the ones that China or Vietnam choose.

EF: Should Indian policymakers in such a case be concerned that AI might limit the growth of the country's exports of high-skilled services?

Rajan: It will limit the exports of anything, right? Good AI in manufacturing could create much better robots. That's going to displace manufacturing workers also. So I don't think AI is a reason to be worried about services in particular. I think what's important is how we use AI. We may enhance the quality of services. Today, AI can help increase the productivity of software developers significantly. And so we absolutely must do that.

It certainly will create some job displacement. Maybe five, 10 years from now, you will have AI displacing the consumer services person you get at the end of the line. We're not there yet, but we will get there. But it will also create new jobs. AI needs prompting, for example, and people are learning how to prompt it to get the right answers rather than hallucinations.

There's a lot of work to do. I think that almost surely the more skilled, educated, creative your workforce is, the more it can ride on AI rather than be swamped by it.

THE ROLE OF THE INDIAN INSTITUTES OF TECHNOLOGY

EF: The Indian diaspora has been important to America and the American economy. Of note, Indian immigrants have assumed the chief executive role at a number of major U.S. companies, including Google, Microsoft, and Starbucks. In an interview in April, the U.S. ambassador to India, Eric Garcetti, highlighted this change in corporate America. What's your assessment?

Rajan: I don't think, if you look at the census numbers, that you would find a disproportionate number of Indians in top jobs relative to, for example, the number of highly educated Indians there are in the United States. Additionally, you are getting a selected sample of Indians into the United States; it's a long way to migrate. Many of them come as students in high-quality universities. Sundar Pichai [Google and Alphabet CEO] is a graduate of Stanford; Satya Nadella [Microsoft CEO] is a graduate of Chicago Booth. They come from excellent universities. My sense is if you correct for all that, it's reasonable. I think that you are getting the cream of the crop from India.

That said, if you pushed me into a corner and insisted that Indians are disproportionately represented as CEOs, the only thing I can think of is that India's culture is a little more oriented toward trying to reduce conflict. Typically, Indians are less in your face and maybe this is a better disposition to deal with highly talented individuals who we see in many of these high-tech companies.

But that's a hypothesis. I don't have evidence for it, and it may be totally wrong. I would first want to be convinced that it is true that they're overrepresented. Clearly, one in six CEOs is not Indian, which is what would have to be true if you had Indian CEOs based on their share of global population. Maybe relative to the population in the United States, we have more CEOs coming from Indian origin than from other origins. But we also need to correct for how many are in the tech industry, how many are highly educated, all that. So it's a very tentative answer.

EF: Speaking of education, you received your undergraduate degree in electrical engineering from one of the Indian Institutes of Technology, IIT Delhi. Do you think the IIT system has played a significant role in India's economic story?

Rajan: I think so. It certainly has been world class in both the students it admits, the competition it generates amongst them to learn, as well as the quality of the faculty that you get there. Of course, as India has tried to expand the IIT system to create many more IITs, it's run into shortages of faculty. But by and large, I think it was an idea that came well before its time, when India didn't have the ability to employ all the fine graduates that came out from the IITs, and so many of them ended up abroad.

I think they played an enormous role outside the country. And then you have the fact that a lot of faculty in the United States came from the IITs. Sergey Brin and Larry Page's mentor at Stanford, Rajeev Motwani, was an Indian from the IITs.

This is a diaspora that has done well and also spread the image that Indians are capable, which is very important as India expands in services, for example.

EF: Are IITs doing something different from, let's say, American universities or universities someplace else?

Rajan: No, I would say what they do get is the cream of a very select crop. We've got the selectivity in IITs higher than, for example, the selectivity at Harvard and Yale because so many Indians apply to them and many go through years of coaching classes to write the entrance exam. You get a very qualified and capable intake of students. And then putting them together and getting them to learn from each other, getting them to compete against each other, does some of the magic; of course, the faculty does the rest. But I don't think it's unique. And I would say some of the IITs would kill for the resources that many U.S. universities have.

EF: Do you think the single exam system is part of what's helped the IITs?

Rajan: It has in ensuring the ensuring a clean admission process. One could debate whether these single exams tend to focus students for too long a time and overly narrowly on the issue of learning for the exam. And some of them are so drained out, I understand, after taking the exam, that once they get in, they are unable to fully participate in the learning that takes place in the institution. The exam was tough when I took it; it's an order of magnitude tougher today when so many kids want desperately to get in because the IITs are still affordable. I think the process may have gone past the optimum level of learning and intensity for the exam.

SHRINKING THE FED'S BALANCE SHEET

EF: Earlier, you noted the effects of the so-called taper tantrum in the United States in 2013, when financial market participants believed that the Fed was about to curtail quantitative easing. What lessons have you drawn from India's experience in that episode?

Rajan: I think the important point was that stuff can happen at any time, and it is best to be prepared for it. I remember, for example, that before the big taper tantrum in February of that year, we were trying to persuade the G20 that when monetary policy turned, it could be potentially dangerous for the emerging markets in developing countries. The pushback we got was, oh, it's not going to turn, we're

low for a long while, don't worry. Then the Fed's announcement of tapering led to a sharp outflow of foreign capital from India and other markets, as well as economic volatility in those markets. But more important was India was running a large fiscal deficit. The current account deficit was also large and inflation was high. That was a bad set of macro indicators to have when the market suddenly turned on you. I think the lesson from that was be careful about departing too much from reasonable macro indicators.

EF: What are you working on now?

Rajan: Viral Acharya, Sascha Steffen, and Rahul Chauhan, a student here, and I have been working on central bank balance sheets, and what expanding and contracting them does. Is it a fully benign process? Or when you expand, do you get the system overly dependent on central bank liquidity because you've created many more reserves and then you find it hard to withdraw? That creates possibly illiquidity, even though the central bank's balance sheet is much bigger than when it initially started. So the inadvertent consequences of central bank balance sheet expansion and contraction is what we've been looking at.

I've also been working on, of all things, the 1950s drought in Texas and how access to finance allowed communities to adapt to it by doing more irrigation and so on. It seems obvious that access to finance should help, but finance is also very local. Finance available in place A tended to help place A and petered out over a distance. And so it's very important to have good local financial institutions when you're hit by that type of event. At least historically that seems to be true. It probably applies to many emerging markets today. But the bottom line is that finance can help adaptation.

EF: With regard to your work on the central bank balance sheets, the Fed right now is in the process of gradually reducing the size of its balance sheet. What do you think is important for the Fed to have in mind as this process is underway?

Rajan: I think the last statement of the FOMC to some extent mirrored our concerns. What we're saying is, look, it's not going to be easy to shrink your balance sheet, even though it is much bigger than when you started. And that's because the system has come to depend on it.

What we've seen with the Fed shrinking its balance sheet is that initially what shrank were the reverse repos that the Fed did with money market funds. Those, we think, are relatively benign. But once you start shrinking the reserves held by the banks themselves, it becomes a tougher process. And so you want to proceed slowly. Yes, you want to do it. I absolutely am for shrinking the central bank balance sheet. But you want to do it carefully, giving the system enough time to react because too abrupt a shift in the reserves outstanding can create significant liquidity problems. At least, that's what the past tells us.

So I am happy that they've decided to slow down the pace of shrinkage. That means they will have more time to observe what is going on and react accordingly. Are the usual measures of illiquidity starting to move up? Do you see potential concerns about liquidity not reaching the right places, some spreads moving up, some interest rates moving up when they normally shouldn't? All those are signs that things aren't going well. So I think close monitoring is warranted, and I'm glad that the Fed is doing that.

EF: It's been reported that you're a fan of J.R.R. Tolkien. Is that true, and if it is, where did your affinity for him come from?

Rajan: It is true. I've always enjoyed deep fantasy of the kind that Tolkien writes. I chanced upon his books in my late teens. I just saw them somewhere and started reading them and was fascinated. And then when my daughter was growing up, I read the books again to her, and she enjoyed it. And then the movies came along, and she's watched them a zillion times. So the whole package is fascinating. And of course, I also read Harry Potter to her. It was a nice excuse to be able to read to your children because then you can relish the books without somehow feeling that you're not doing the adult thing. **EF**

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BY STEPHANIE NORRIS, LAURA DAWSON ULLRICH, AND SONYA RAVINDRANATH WADDELL

Preparing to Work: Changing Demand for Postsecondary Education?

Starting around a decade before the COVID-19 pandemic, and more acutely during the pandemic itself, postsecondary enrollment declined — most notably among community colleges, both in the Fifth District and in the United States as a whole. Yet the 2023-2024 academic year saw a shift in that trend as enrollment grew once again. What's going on?

The unsatisfying answer is that there are conflicting forces at work, and it's hard to tell which will prevail. But one thing is clear: Combined with the anticipated decline in the college-age population, high costs of four-year degrees, and changing demands among employers, parents, and students, higher education seems to be at a crossroads. Now might be the time to rethink the human capital needs of America's future workforce and the programming required to meet them.

ENROLLMENT TRENDS

It is a long-held truth among those who study education and the workforce that completing a postsecondary degree will improve an individual's labor market outcomes. On average, in the labor market, a person is better off finishing high school than not finishing high school, is better off with an associate degree than a high school diploma, is better off with a bachelor's degree than without, and is better off still with an advanced degree. This pattern shows up not only in earnings, but also in everything from likelihood of employment to resilience in an economic downturn. In June, for example, the unemployment rate among those who only finished high school was 4.2 percent — almost twice as high as the rate for those who held at least a bachelor's degree. At the height of the Great Recession (December 2009), high school graduates had an unemployment rate of 10.6 percent compared to 4.9 percent for those with a bachelor's degree.

Of course, the "wage premium" for higher education represents an average; it does not tell us the return an *individual* will receive from attending school, which depends not only on the individual's interests and abilities, but also on the type of degree, the major, and the institution. Nonetheless, given the overall relationship between education and income, it is not surprising that for decades we saw enrollment at four-year institutions increase. We mainly focus on public four-year, private nonprofit four-year, and public two-year institutions, which consistently account for most postsecondary enrollment. In the spring of 2024, for example, those three types of institutions accounted for almost 90 percent of total enrollment in higher education. (There are technical differences between the categories of public two-year institutions and community colleges, but the vast majority of public two-year institutions are community colleges, and we use the terms interchangeably here.)

Starting in about 2010, total enrollment in postsecondary pursuits started to fall. Part of the reason was demographic: For 18-to-21-year-olds, the estimated population fell by an average of 0.6 percent per year from 2010 to 2019. But the share of high school graduates who chose postsecondary education also fell. In 2022, 62 percent of high school graduates enrolled the following fall in a two- or a four-year college — this was 8.1 percentage points lower than in 2010 and 4.2 percentage points lower than in 2019. Part of this might be due to the flattening in the college wage premium even as rising costs for higher education have driven more students into debt. In other words, the enrollment decline, in addition to being demographic, could be related to decreased affordability, a decline in the perceived value of education, or a perception of increased volatility in its value. Importantly, much of the decline in enrollment came from a decrease in community college enrollment.

The emergence of the COVID-19 pandemic in 2020 introduced new challenges for enrollment, exacerbating the already complicated enrollment environment. For example, the pandemic necessitated a move to online classes, created skepticism about the value of an online degree or any postsecondary degree, and enhanced challenges finding family care for parents seeking to go to school. COVID-19-era shifts were especially disruptive for disciplines that cannot be taught online, such as welding or dental hygiene. In many cases, these classes continued in person, but enrollment was severely limited to ensure social distancing. In fall 2020 and again in fall 2021, total enrollment fell by more than 2 percent. The cumulative decline between fall 2019 and fall 2021 was 4.7 percent.

Again, community college enrollment struggled the most: Two-year public institution enrollment declined a staggering 14.4 percent, while four-year public enrollment declined only 0.4 percent.

Recently, we have started to see total enrollment come back (though it remains below pre-COVID-19 levels). However, we might be witnessing a shift in demand for postsecondary education.

A SHIFT IN ENROLLMENT

The 2023-2024 academic year brought with it much-anticipated and hoped-for

increases in enrollment across all sectors of higher education: Following trends from the fall of 2023, the National Student Clearinghouse (NSC) data on enrollment in the spring of 2024 indicates that enrollment across institutions was up. Nationally, undergraduate enrollment grew 2.5 percent in the spring of 2024 for the second consecutive semester following the pandemic declines.

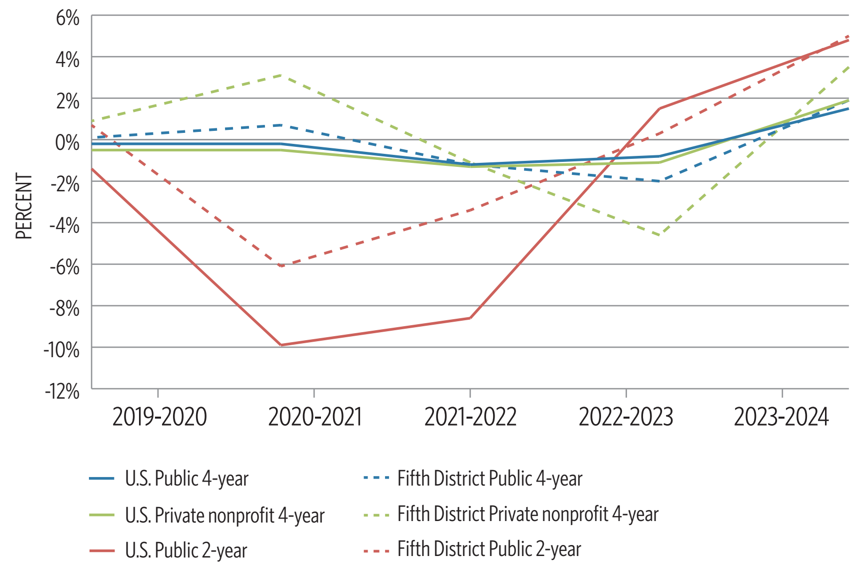
Enrollment growth was strongest at community colleges, both in the United States and in the Fifth District. (See top chart.) In fact, bucking the pre-pandemic and pandemic trends, community college enrollment was the only type of enrollment that was up in every Fifth District state from spring 2023 to spring 2024. (See bottom chart.)

In spite of this growth, community colleges are still further behind their 2019 enrollment levels than four-year institutions. In the Fifth District, for example, enrollment at community colleges was still about 20,000 students (3.7 percent) below its 2019 levels in spring 2024, while four-year public institutions were less than 1 percent below and four-year private nonprofits were slightly above their 2019 levels. Growth trends have shifted, however, and as technology and the demands of employers continue to develop, these shifts will matter not only for employers and workers, but also for the institutions that may be at risk and the students, staff, and communities that rely on those institutions.

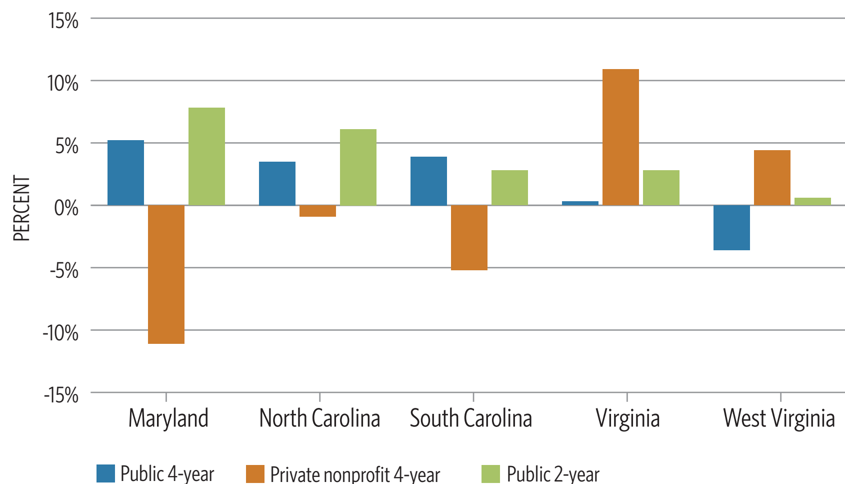
Looking ahead, the demographic shifts that began over a decade ago are about to become more severe. One study estimates that the number of high school graduates will peak at 3.9 million in 2025 and after that, we will see about a 10 percent decline, such that the class of 2037 will be about the same size as the class of 2014. This "2025 cliff" is a result of declining fertility rates, which became more severe at the beginning of the Great Recession in 2007. Colleges and universities will be competing for an ever-smaller number of freshman students.

Change in Enrollment by Institution Type: U.S. and Fifth District

Year-over-year % change



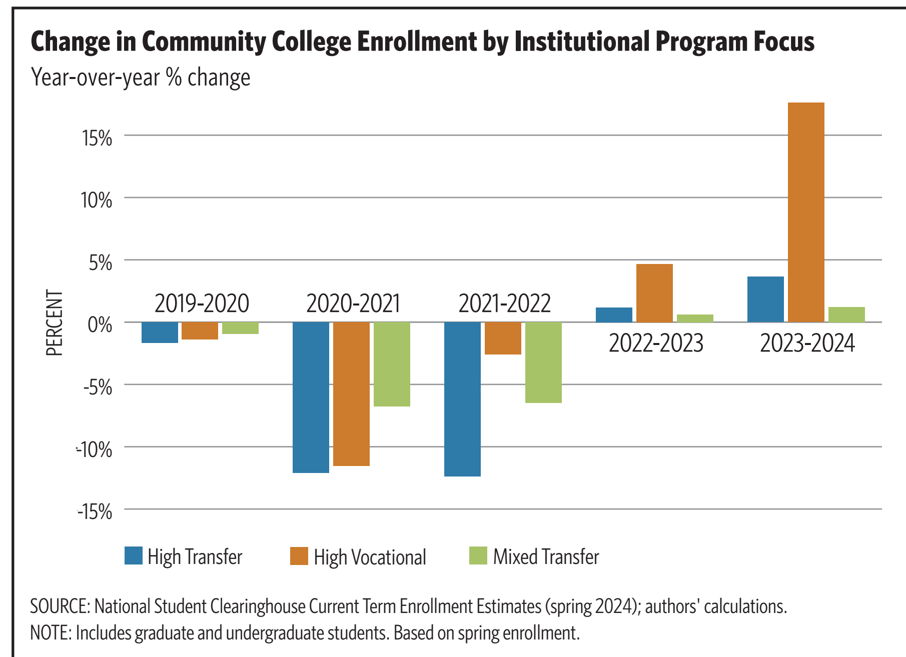
Enrollment Change Spring 2023 — Spring 2024



SOURCE: National Student Clearinghouse Current Term Enrollment Estimates (spring 2024); authors' calculations.
NOTE: Includes graduate and undergraduate students. Based on spring enrollment.

Changing demand might also shift enrollment for different types of postsecondary pursuits within institutions. In the latest data from the NSC, not only did we see increases in community college enrollment that outpaced four-year institutions, we also saw a change in the type of community colleges that students are choosing. In the spring of 2024, community colleges with a larger percentage of students enrolled in vocational programs increased total enrollment by almost 18 percent — with enrollment that now exceeds pre-pandemic enrollment by 4.6 percent. (See chart on next page.) On the other hand, community colleges that have more students enrolled in programs designed to transfer to four-year colleges grew enrollment in 2024, but enrollment levels remain well below 2019 levels. Undergraduate certificate

programs at both community colleges and four-year institutions are experiencing the largest increases in enrollment, and certificate enrollment has now more than recovered from COVID-19-era declines. Associate degree enrollment is growing faster than bachelor's degree enrollment, but enrollment for both types of degrees lag pre-COVID-19 levels. Across higher education, there is evidence that since the pandemic, student demand has shifted toward shorter-term academic programs.



HOW DO STUDENTS DECIDE?

In theory, students and their families must weigh the costs of pursuing a program (such as tuition and fees, forgone earnings, and the cost of child care during class times) against the benefits (such as the wage premium upon graduation, a fulfilling career in their preferred location, and prestige). Quantifying the costs is relatively straightforward, but the benefits are harder to project. To find out which skills will be in high demand in their areas, students may rely on labor market projections for their area or simply look to the largest local employers.

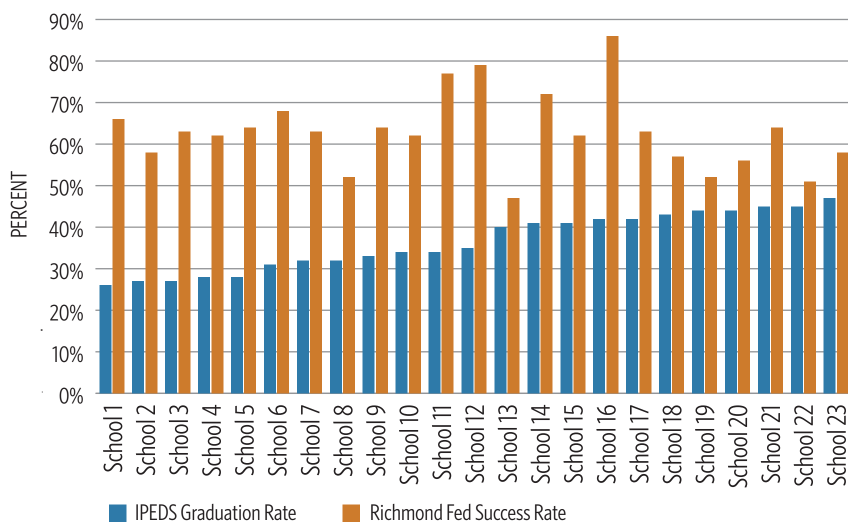
One key piece to this decision should be the likelihood of completing the chosen educational pursuit, be it a degree, a certificate, or acquisition of a certain skill. There is ample evidence that whether you are seeking a bachelor's degree, associate degree, or a certificate, you are better off completing the degree. Thus, in addition to evaluating the cost and benefit of the educational pursuit itself, it is critical to weigh the risk of not completing. There are many factors that affect a student's propensity to complete an academic program, but when evaluating their choices, many students rely on broad metrics such as institution-specific graduation rates.

As we have written about previously, finding appropriate metrics can be challenging for those pursuing a path at or through a community college. For many years, the most used definition of postsecondary success, the traditional Integrated Post-Secondary Educational Data System (IPEDS) graduation rate, has best aligned with the goals of four-year institutions — that is, defining success as degree completion by a first-time, full-time, degree-seeking student. We typically measure success for community colleges and four-year students and institutions with identical metrics. Yet before students can decide on their postsecondary path (and before policymakers can make decisions about what programs to invest in), we need to define success for community colleges in a way that reflects their objectives and the populations that they serve.

COMMUNITY COLLEGES: SORRY, WRONG NUMBERS

Community colleges play a unique role in the U.S. higher education system. By definition, these institutions tend to serve a specific geography, allowing them to tailor their program offerings and support services to the needs of their local community. Through deep relationships with local employers and by building curricula around the skills needed for work in local industries, community colleges often provide a direct pipeline to the local workforce. Community colleges also serve students from a broad array of socioeconomic and demographic backgrounds. They provide students who plan to attain a bachelor's degree with a low-cost alternative for the first two years of college. Nontraditional students who want to reskill or upskill can attend community college for short-term training opportunities. They provide opportunities for part-time students who need to work or care for family members while seeking a degree. They also provide dual enrollment opportunities for high school students. In the most recent NSC data, the number of dual enrolled students increased for the third consecutive year, comprising almost 30 percent of the undergraduate enrollment increases.

As postsecondary demand has shifted toward community colleges, it has become more important than ever to understand how they are serving their students and to define success in a way that accurately represents their programming. In response to these issues, the Richmond Fed has been engaged in an effort to rethink the measurement of community college success and to collect data on a more holistic group of community college students, including those enrolled in non-credit programs. The Richmond Fed's Survey of Community College Outcomes includes a new approach to



SOURCES: Federal Reserve Bank of Richmond; National Center for Education Statistics (NCES) Integrated Postseconday Data System.
NOTE: Institution names are omitted to maintain anonymity.

measuring success, which broadens the definition of community college student success to include not only degree attainment, but also attainment of shorter-term credentials, such as certificates or industry licensures, successful transfer to a four-year institution, or persistence in enrollment beyond four years. For example, in Virginia, although the traditional IPEDS graduation rate does a good job at approximating success for some schools, success can look very different in other schools when we take into account the full array of community college programming and define success accordingly. (See chart.)

We also collect data on students enrolled in non-credit programs so that we can observe the full range of student enrollment at community colleges. All the prior enrollment data presented in this article reflects enrollment only in credit-bearing academic programs across institutional sectors. However, a large and growing percentage of community college students are enrolled in non-credit, workforce programs. These programs range from commercial driver's license, or CDL programs, to phlebotomy to welding. (See "Non-Credit Workforce Programs at Community Colleges," *Regional Matters*, Feb. 22, 2024.) Outreach to community colleges indicates that not only is enrollment shifting from degrees to these shorter-term programs, it is also shifting from credit programs to non-credit programs. We can't observe those students in the data from NSC or other national data providers, though, complicating the enrollment story.

QUANTIFYING THE BENEFITS

Defining success and understanding the likelihood of completion is a first step, but as individuals negotiate labor market changes and seek to maximize their investment in postsecondary training, there is a renewed sense of urgency for quality information on the payoff to different educational pathways. Why is it so hard to link specific higher education choices to labor market outcomes?

These data are inherently difficult to produce because it requires following students' post-degree skills attainment and because it is difficult to control for the range of factors outside of their educational attainment that can affect their earnings. While we know that college graduates have lower unemployment rates than noncompleters, this varies by field of study and degree attained. The New York Fed's labor market data on recent college graduates show that while the unemployment rate in 2022 for those with a bachelor's degree or higher was 2.2 percent, this ranged from 0.2 percent for those with an industrial engineering degree to 8 percent for those with an art history degree. Not surprisingly, wages differ as well. While those with industrial engineering degrees between the ages of 22 and 27 had a median wage of $71,000, those with an art history degree had a median wage of $41,000 at the same age.

To improve data in this area, the Census Bureau has been working on a project known as Post-Secondary Employment Outcomes (PSEO). The PSEO data include earnings and employment outcomes for community college and four-year graduates by degree level, major, and institution attended. Not every state has chosen to participate, but two Fifth District states — South Carolina and Virginia — have participated. The data indicate that there are some industries, such as health professions, where wages increase dramatically with attainment of an associate degree, but further degree attainment doesn't result in notably higher wages one year after award completion. In others, such as engineering and business, attaining a bachelor's or master's degree in the field results in significantly higher wages, on average.

Measuring the value of non-credit certificates, licenses, or third-party credentials is even more challenging. Students who attend short-term training programs are often excluded from enrollment and graduation rates and data on third-party credential attainment is very difficult (or even impossible) to attain. Until there are standardized data on enrollment in non-credit workforce programs and the tangible outcomes that students attain, even the most robust datasets

linking educational outcomes to wages will be limited in their ability to reflect community college outcomes.

There are, of course, benefits to higher education that are not directly reflected in wage data, and low wages don't always indicate low demand (or low value to society). Child care workers, for example, are in demand nearly everywhere, but the wages in the child care industry remain very low. Wages also reflect individual characteristics and preferences that are independent or only tangentially related to their field of study and occupation. Additionally, many people work in occupations that are unrelated to their degree or certificate. Still, knowing the earnings potential of different educational and career paths is important for students seeking to make sound economic decisions around how they spend their postsecondary training.

FOR SOME INSTITUTIONS, A SQUEEZE

As the pool of high school graduates shrinks and a smaller number of new first-time students enroll in college each year, some schools will feel the effects more sharply than others. In about the mid-2010s, market forces were already putting small colleges like Sweet Briar College in Lynchburg, Va., at risk of closing — though Sweet Briar recovered thanks to the rallying of alumnae. (See "Too Small to Succeed?" *Econ Focus*, First Quarter 2017.) More recently, schools as different as the University of Lynchburg and West Virginia University have announced major changes to offerings.

In general, flagship universities have maintained increased enrollment, but many regional public colleges and universities have experienced declines. For example, in South Carolina, undergraduate enrollment at Clemson and the University of South Carolina (USC)-Columbia grew by 32 and 13.8 percent, respectively, between 2013 and 2022, while undergraduate enrollment at some smaller regional public universities, such as USC-Upstate and Winthrop University, saw declines of more than 20 percent.

Similarly, elite private colleges and universities have welcomed record-setting classes, while other private schools have seen persistently declining enrollment. For example, Washington and Lee, in Lexington, Va., an academically elite private university, saw enrollment grow from 1,845 full-time students in fall 2019 to 1,859 full-time students in fall 2022, maintaining their preferred institution size. Over the same period, Marymount University, a similar-sized private nonprofit institution in Arlington, Va., saw full-time undergraduate enrollment fall from 1,951 to 1,644, a 15.7 percent decline. These institutions also depend on tuition and enrollment differently. As of June 30, 2022, Marymount University's endowment had a balance of $49.2 million, approximately $30,000 per full-time enrolled undergraduate. As of the same date, Washington and Lee had an endowment balance of about $2 billion, approximately $1.1 million per full-time enrolled undergraduate. Schools like Marymount are often called "tuition-dependent" because they rely on tuition revenue to meet annual expenses and do not have significant endowment income to help weather periods of enrollment declines or cost increases.

Community colleges face the same enrollment environment as four-year institutions without the same level of state funding or large endowments. However, their unique position within higher education and workforce development that has disadvantaged them in outcome and workforce metrics may serve them well, as labor force demands and student preferences shift. For one, community colleges can be a low-cost option in an environment where students and parents are increasingly questioning the value of a higher degree. In addition, community colleges are more adept at shifting to meet the needs of their local workforces.

Of course, as demand for shorter-term degrees rises, there is room for community colleges to better align their educational services with the needs of the local workforce. Recent research from the Georgetown University's Center on Education and the Workforce suggests misalignment in many communities between associate degrees and certificates earned and the skills needed for occupations that are increasingly in demand. Community colleges with direct lines of communication with employers and partnerships can pivot to train in-demand workers through non-credit short-term credential programs. Of course, if policymakers wish for community colleges to fill this role in the workforce ecosystem, clarity around outcomes, aligned incentives, and funding to provide these services will be critical.

CONCLUSION

There will be changes to demand for higher education that come from long-term trends such as demographic shifts or technology like artificial intelligence that changes labor market demands. There will also be short-term changes that might have long-term implications. For example, the increasing enrollment trends at community colleges relative to four-year institutions may well be boosted by this year's FAFSA debacle in which the Department of Education repeatedly delayed release and processing of the new federal financial aid application. (See "June Update: The 2024 FAFSA Crisis," Community College Insights, June 21, 2024.) But most critically, for students to make the right decisions for themselves, they need good information about how different institutions or types of postsecondary education will enhance their longer-term prospects. To understand which programs to invest in, our policymakers need to understand the current and future labor market outcomes from different postsecondary programs. No one has a crystal ball, but better data and more research could help. **EF**

BY ZHU WANG

Artificial Intelligence: Potentials and Prospects

We are at the dawn of a new technological revolution. The recent development of artificial intelligence (AI), especially the emergence of generative AI, has offered a plausible future in which machines will eventually free humans from a wide range of cognitive tasks, unleashing vast creativity and productivity gains.

Historically, AI technologies have progressed gradually, through cycles of optimism and disappointment. In recent years, however, the use of AI and machine learning technology has started gaining ground in various applications, such as search engines, targeted advertising, self-driving vehicles, language translation, and image recognition.

The most impressive leap is the rise of generative AI, marked most notably by the release in November 2022 of ChatGPT, which can generate text, code, images, and other data, often comparable to or surpassing human quality. The latest models of generative AI have demonstrated the abilities of solving novel and difficult tasks that span mathematics, coding, vision, medicine, law, and other areas, and they continue to improve at a fast pace. The use of generative AI is on the way to transforming a large variety of industries, including finance, software development, customer service, health care, entertainment, sales and marketing, art, writing, fashion, and product design, and the list is growing.

While the future of AI is thrilling, there are important questions about how to best harness the potential of AI and prepare for the challenges and risks along the way. In that regard, economic history and research can provide some useful thinking.

First, it may take a long time to achieve measurable, large-scale productivity gains from AI. History has shown repeatedly that revolutionary technological advancements often come with a "productivity paradox." At the turn of the 20th century, with the early adoption of electrical power, engineers were envisioning profound transformations enabled by electrification, but that vision did not materialize until two decades later, when electrification finally attained a 50 percent adoption level among U.S. households and manufacturing plants. Similarly, the increasing adoption of computers did not result in the widely anticipated productivity surge in the 1970s and 1980s; as Robert Solow remarked in 1987, "You can see the computer age everywhere but in the productivity statistics."

A fundamental reason for this delay is that it takes time and resources to develop complementary inputs associated with a technological breakthrough, including co-invention of new processes, products, business models, and human capital. The more revolutionary the technology advance, the more complex and costly the transition can be. This could show up as a slowdown or stagnation in productivity growth, and the benefits would not be harvested until years or decades later. AI is likely to be at the early stage of such an evolutionary path.

Second, technology changes can have a big impact on jobs and income distribution. Much as automation has replaced manual labor on the factory floor, AI can take over tasks from knowledge workers. In an optimistic scenario, this may enhance the productivity of knowledge workers or even move them up to more creative and better-paid jobs. But in a pessimistic scenario, AI may substitute knowledge workers or relegate them to less productive, lower-paid positions. Also, depending how AI is introduced and deployed, it could widen or shrink the digital divide between those who are privileged and those who are not, and this could have profound consequences on economic and social inequality.

Third, technology is a double-edged sword that can be misused. Nuclear technology is a familiar example that can be used for both beneficial applications, such as nuclear energy and nuclear medicine, and mass destruction. As the potential of AI continues to unfold, there are also growing concerns about harmful uses of AI. For example, AI can be abused to generate fabricated stories and fake images to spread misinformation; AI systems trained on biased or incomplete datasets can perpetuate societal biases and discrimination; and large-scale adoption of defective or malign AI algorithms can elevate systemic risks. For many, there is also an ultimate worry that unsupervised AI advances may create a superintelligence conflicting with human values that could lead to catastrophic outcomes, even possibly human extinction.

These thoughts and concerns highlight the potentials and perils of AI. They also point to the important roles that public policies can play in guiding AI development and implementation. It is essential for researchers, business practitioners, policymakers, and the general public to work together to develop effective policies and robust regulation to coordinate and facilitate the continuing progress and adoption of AI and address potential downside risks. AI has fantastic potential and needs to be developed and used responsibly for the benefit of all. **EF**

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