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THE SEMIANNUAL MONETARY POLICY REPORT TO THE CONGRESS

HEARING

BEFORE THE

COMMITTEE ON BANKING, HOUSING, AND URBAN AFFAIRS UNITED STATES SENATE

ONE HUNDRED NINETEENTH CONGRESS

FIRST SESSION

ON

OVERSIGHT ON THE MONETARY POLICY REPORT TO CONGRESS PURSUANT TO THE FULL EMPLOYMENT AND BALANCED GROWTH ACT OF 1978

FEBRUARY 11, 2025

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THE SEMIANNUAL MONETARY POLICY REPORT TO THE CONGRESS

TUESDAY, FEBRUARY 11, 2025

U.S. SENATE,
COMMITTEE ON BANKING, HOUSING, AND URBAN AFFAIRS,
Washington, DC.

The Committee met, pursuant to notice, at 10 a.m., via Webex and in room 216, Hart Senate Office Building, Hon. Tim Scott, Chairman of the Committee, presiding.

Present: Senators Scott, Crapo, Rounds, Kennedy, Hagerty, Lummis, Britt, Ricketts, Banks, Cramer, Moreno, McCormick, Warren, Reed, Warner, Van Hollen, Cortez Masto, Smith, Warnock, Kim, Gallego, Blunt Rochester, and Alsobrooks.

OPENING STATEMENT OF CHAIRMAN TIM SCOTT

Chairman SCOTT. Good morning. This Committee will come to order.

And, Chair Powell, thank you for being with us today. I appreciate your willingness to have a chat with us about some of the really important issues facing our country.

Without question, the Federal Reserve serves a critical role in the function of our Government and the global economy.

You have the ability to influence markets and directly impact the financial future of hundreds of millions of Americans. That is why the Federal Reserve is supposed to be an independent institution free from politics. But, in recent reality, the Fed has been susceptible to political pressure.

Take for example, the Fed's involvement in the Network for Greening the Financial System, a group dedicated to green financing and climate change, which the Fed joined in December 2020, as President Biden was about to assume office. Just last month, the Fed announced that it had pulled out of the organization as President Trump was getting ready to be sworn in.

To the American people, this is flip-flopping in the political wind. Too much focus on climate change instead of supervision is consequential.

And, in March, just 2 years ago, we saw the failure of Silicon Valley Bank. SVB marked the third largest bank failure in U.S. history, and the largest since the 2008 financial crisis.

And yet, not a single Federal regulator was held to account. In fact, the FDIC filed a lawsuit against bank executives, which accused the SVB of egregious mismanagement. And, I agree.

How is it that no bank supervisor has faced any consequences with 30 MRAs and MRIAs that never had timely action at SVB?

How can the people who are supposed to be our cops on the beat have not faced any recourse for such egregious failures? I simply don't understand.

We must all address the fact that over the last 4 years, the Biden administration and Bidenomics have devastated, decimated, and destroyed hardworking families' abilities to support themselves.

During Joe Biden's time in office, overall prices rose by over 20 percent. Energy prices, 34 percent. Transportation costs, 31 percent. Groceries, 22 percent. And, that's not all.

Thanks to Bidenomics, two-thirds of Americans have less than $1,000, less than $1,000 in their savings accounts. But, there is good news. Things are going to get better.

During his first term, President Trump kept his promises to the American people. In the first 3 years of his presidency, President Trump built the most inclusive economy ever. Seven million jobs created, and two-thirds went to women, African-Americans, and Hispanics.

It's time to once again, make America's economy work for the folks working paycheck-to-paycheck. Joe Biden broke our economy, and Donald Trump will fix it.

For too long, bank regulators have followed a black box regulatory framework with little to no recourse. The FDIC under President Trump's leadership, recently released, never before seen, supervisory documents, which confirmed that Biden's Operation Choke Point 2.0, was real despite assurances that these unacceptable practices would end following the Democrats' first Operation Choke Point 1.0.

We are seeing an unfair playing field that results in disastrous consequences for legal business and law-abiding citizens. On one hand, if you were in the private sector, and you did your job poorly, you would face consequences, reprimands, suspensions, or even being fired.

But, if you were within the walls of the Federal Government, such as a bank regulator, you will face no consequences for your actions. Even if you pressure a bank to cutoff services to digital asset firms, political figures, and conservative aligned businesses and individuals.

To me, that goes against the principles of fairness and market access. Over the last 2 years, as the Ranking Member of this Committee, I have consistently argued that Basel III Endgame proposals will raise costs and limit credit access for hardworking Americans.

And, while I'm glad this proposal was not finalized, the uncertainty surrounding Basal III forced banks to put capital on the sidelines, limiting access to that capital for local small businesses across our country.

Now, as Chairman, I plan to work to rectify the issues of the Biden administration. Chairman Powell, I look forward to hearing from you on the Federal Reserve's future and the plans that you have for right-sizing the financial regulatory framework specifically around Basel III.

To create jobs here in America, we need to make sure there is capital and liquidity in the market. And, we also want all Ameri-

cans, even those growing up in poverty like I did, to know that they can access the capital necessary to start new business, grow existing business, buy a home, and pursue their American dream.

Chairman, I look forward to your comments and your testimony. I will simply say that I believe that weaponizing an independent agency like the Fed for liberal positions, from debanking crypto, bank stress tests, and the green financing scheme, is not calling balls and strikes as a fair referee.

And, I hope that we are getting ready to clean that slate, start afresh, and focus on a healthy economy.

Ranking Member Warren.

OPENING STATEMENT OF RANKING MEMBER ELIZABETH WARREN

Senator WARREN. Thank you Mr. Chairman. Chair Powell, it is no secret that you and I disagree on the need for strong bank regulation, on monetary policy, and on the Fed's stock trading scandals.

We have sharp differences, but I believe you are a principled public servant who cares about this country.

We are at an unprecedented moment. Our financial systems are facing huge risks from the economic chaos of President Trump and his co-president, Elon Musk.

From on again/off again tariffs, to on again/off again layoffs for tens of thousands of Government workers, to on again/off again cuts in domestic grain purchases, to on again/off again support for medical research.

Now, co-president Musk and his OMB Director have frozen all work at the Consumer Financial Protection Bureau. There are now zero cops overseeing the $18 trillion consumer lending market. Zero cops.

Investigations into illegal foreclosures and auto repossessions, canceled. Exams of giant credit card issuers to weed out unlawful junk fees, canceled. Probes of illegal debt collection practices, canceled. Rules to save people billions of dollars, canceled.

If Musk and his OMB Director succeed in killing the CFPB, it's like putting a sign on every checking account, every credit card, every mortgage application, and every car loan, cops have been fired, let the scams begin.

That is not all. Musk and his DOGE crew are also rooting through the Treasury's most important payment systems. The financial plumbing that ensures that billions of payments go through, from Social Security checks to grants for community health centers.

No one has verified how they got this access or what they are doing with it. No one has checked whether Americans' financial data has been copied or sold for the personal profit of Mr. Musk.

Instead, we've had a series of misleading and conflicting statements by Treasury Secretary Bessent. After receiving public blowback, it appears that Secretary Bessent is now trying to throw the Federal Reserve under the bus.

Secretary Bessent claims that DOGE can't meddle with the Treasury's payment systems, because ultimately the Fed is in control. Now, I'm not sure whether Secretary Bessent doesn't under-

stand how the system works, or if he's just trying to shift the blame to you.

But, I know he is wrong. The Fed simply executes the transactions that Treasury instructs. If Elon and his hackers, for example, initiate instructions to choke off payments to their enemies, or if they issue instructions to shut down payment for teachers' aides for kids with special needs, the Fed may have no way of knowing that the instructions were manipulated, and the Fed may have no legal method to override them.

Chair Powell, the next 18 months may define your legacy and the country's trust in the Fed as an institution. I expect that you will work with Democrats and Republicans in Congress if DOGE's next move is to try to commandeer the Fed's payment system.

I'll also expect that you will not join the conspiracy to shutter the CFPB. Unlike the Treasury payment instructions, you can see if the CFPB's funding requests have been manipulated.

I understand that some extremists have a different view about what the law ought to be. But, under the law right now, impoundment is clearly illegal.

Do not make the Federal Reserve an accomplice to this illegal act, and forever sully the reputation of the Fed. Keep the CFPB funded exactly as the law requires.

We are in the middle of a crisis as Elon Musk tries to take over our Government. But, let's also talk for just a minute about your day-to-day job, meeting the Fed's dual mandate of promoting maximum employment and stable prices.

It's now clear that the Fed acted too late and let inflation get too high, and then responded by keeping rates too high for too long.

These policies made the big drivers of inflation, like housing costs, even worse. And they put Americans' jobs at risk, making it more difficult for them to afford a home, and for small businesses to be able to finance their operations.

I urge you to move more rapidly to bring down interest rates, beginning with a meaningful rate cut next month. You have proven you can move quickly when it is politically expedient.

After President Trump was elected, and within the space of just a few weeks, you scrubbed seemingly all mention of diversity and inclusion from the Fed's website. You withdrew from an international central bank group that shares information on climate-related risks to the financial system.

You instituted a hiring freeze that will limit the number of cops on the Wall Street beat. And, you announced plans to gut big bank stress tests.

I can see the immediate political appeal of your strategy, but ultimately, it will fail. You will lose good people. Climate catastrophes will continue to mount. And the increasing vulnerability of big banks will threaten our entire economy.

Sure, Donald Trump may be happier with you right now, but, wading deeper into politics to please him over the long run, will burn the reputation and the independence of the Fed, and put our entire economy at risk. I urge you, don't fall into these traps.

Thank you, Mr. Chairman.

Chairman SCOTT. Yes, ma'am. Today we'll hear from the Chair of the Federal Reserve, Jerome Powell, on the semiannual *Monetary Policy Report* to Congress.

Chair Powell, thank you for your testimony today. And, you are now recognized.

OPENING STATEMENT OF JEROME H. POWELL, CHAIR, BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM

Mr. POWELL. Chairman Scott, Ranking Member Warren, and other Members of the Committee, I appreciate the opportunity to present the Federal Reserve's semiannual Monetary Policy Report.

The Federal Reserve remains squarely focused on achieving our dual mandate goals of maximum employment and stable prices for the benefit of the American people. The economy is strong overall and has made significant progress toward our goals over the past 2 years. Labor market conditions have cooled from their formerly overheated state and remain solid. Inflation has moved much closer to our 2 percent longer-run goal, though it remains somewhat elevated. We are attentive to the risks on both sides of our mandate.

I will review the current economic situation before turning to monetary policy.

Recent indicators suggest that economic activity has continued to expand at a solid pace. GDP rose 2½ percent in 2024, bolstered by resilient consumer spending. Investment in equipment and intangibles appears to have declined in the fourth quarter, but was solid for the year overall. Following weakness in the middle of last year, activity in the housing sector seems to have stabilized.

In the labor market, conditions remain solid and appear to have stabilized. Payroll job gains averaged 189,000 per month over the past 4 months. Following earlier increases, the unemployment rate has been steady now since the middle of last year, and at 4 percent in January, remains low. Nominal wage growth has eased over the past year, and the jobs-to-workers gap has narrowed. Overall, a wide set of indicators suggest that conditions in the labor market are broadly in balance. The labor market is not a source of significant inflationary pressures. The strong labor market conditions in recent years have helped narrow longstanding disparities in employment and earnings across demographic groups.

Inflation has eased significantly over the past 2 years, but remains somewhat elevated, relative to our 2 percent longer-term goal. PCE inflation prices, PCE prices rose 2.6 percent over the 12 months ending in December, and excluding the volatile food and energy categories, core PCE prices rose 2.8 percent.

Longer-term inflation expectations appear to remain well anchored, as reflected in a broad range of surveys of households, businesses, and forecasters, as well as measures from financial markets.

Our monetary policy actions are guided by our dual mandate to promote maximum employment and stable prices for the American people.

Since last September, the FOMC lowered the policy rate by a full percentage point from its peak, after having maintained the target range for the Federal funds rate at 5.25 to 5.5 percent for 14 months. That recalibration of our policy stance was appropriate in

light of the progress on inflation and the cooling in the labor market. Meanwhile, we've continued to reduce our securities holdings.

With our policy stance now significantly less restricted than it had been, and the economy remaining strong, we do not need to be in a hurry to adjust our policy stance. We know that reducing policy restraint too fast, or too much, could hinder progress on inflation. At the same time, reducing policy restraint too slowly or too little could unduly weaken economic activity and employment. In considering the extent and timing of additional adjustments to the target range for the Federal funds rate, the FOMC will assess incoming date, evolving outlook, and the balance of risks.

As the economy evolves, we will adjust our policy stance in a manner that best promotes our maximum employment and price stability goals. If the economy remains strong and inflation does not continue to move sustainably toward 2 percent, we can maintain policy restraint for longer. If the labor market were to weaken unexpectedly, or inflation were to fall more quickly than anticipated, we can ease policy accordingly. We are attentive to the risks on both sides of our dual mandate and policy is well positioned to deal with the risks and uncertainties that we face.

This year, we are conducting the second periodic review of our monetary policy strategy, tools, and communications, the framework used to pursue our congressionally assigned goals of maximum employment and stable prices. The focus of this review is on the FOMC's Statement on Longer-Run Goals and Monetary Policy Strategy, which articulates the Committee's approach to monetary policy, and on the Committee's policy communication tools. The Committee's 2 percent longer-run inflation goal will be retained and will not be a focus of the review.

Our review will include outreach and public events involving a wide range of parties, including "Fed Listens" events around the country and a research conference in May. We will take on board lessons of the past 5 years and adapt our approach where appropriate to best serve the American people, to whom we are accountable. We intend to wrap up the review by late summer.

Let me conclude by emphasizing that at the Fed, we'll do everything we can to achieve our dual mandate goals that Congress has set for monetary policy. We remain committed to supporting maximum employment, bringing inflation sustainably to our 2 percent goal, and keeping longer-term inflation expectations well anchored. Our success in delivering on these goals matters to all Americans. We understand that our actions affect communities, families, and businesses across the country. Everything we do is in service to our public mission.

Thank you. I look forward to your questions.

Chairman SCOTT. Thank you, Chairman Powell. Certainly, your words and your actions have a global impact. You have the opportunity and responsibility of leading this country in the right direction economically.

And, I thank you for your commitment to having a conversation with all of us about how you do that well. You and I had a conversation yesterday, some of it was frustrating, some of it was illuminating.

But, in the end, my goal is to make sure that the American people, and specifically those working paycheck-to-paycheck, have more opportunities to succeed, not fewer.

You have said that the Fed is not against innovation, and banks are perfectly able to serve crypto customers, as long as they understand and can manage the risks. Yet, you have admitted that the threshold has been a little higher for banks engaging in crypto activities.

Last week I held a hearing on debanking, and once again, heard the Federal banking agencies, in particular, the Fed, use reputational risk as a tool to encourage that the banking of certain legal industries and law-abiding citizens for political reason is not tied to safety and soundness.

Debanking is a top priority for this Committee, and it certainly is for me, and one that I believe is a bipartisan issue. Will you commit to working with this Committee to end debanking, including working with the new Vice Chair of Supervision, once appointed, to revise the Federal Reserve's supervision manuals to remove reputational risk as a tool to weigh in on political topics?

Mr. POWELL. I'm happy to make that commitment.

Chairman SCOTT. Thank you, sir. Accountability is very important. I would like to think accountability is a priority for everyone, especially the Fed, given that failures in Fed supervision can result in the loss of billions of dollars.

Yet, following the failure of the Silicon Valley Bank, which was in part due to the failures of its regulators to identify egregious mismanagement of interest rate and liquidity risks, we have yet to see any regulators be held accountable.

And, as you recall, that was a point of my frustration. As a guy who spent a lot of time in the private sector, 15 years running a few businesses, I can tell you that accountability is a necessary part of making the entire organization healthier and performing this job as well as possible.

I'm encouraged that the FDIC has begun the process of holding SVB executives accountable. That's good news. But, no Fed employee has been fired, put on probation, put on a performance improvement plan, all of which would be expected in the private sectors that I just mentioned, for employee failure.

Please explain to me why Fed employees are held to a different standard, from my perspective, then everyone else. And, what are you planning to do to take accountability for Fed failures in supervision?

Mr. POWELL. We've actually done quite a lot, you know, in response to the events associated with Silicon Valley Bank. We've done many, many things.

In terms of specific accountability, what we found was, this was not a case of malfeasance or nonfeasance so much, it was a case of people were carrying out a specific playbook that failed to cause us to act in time for these things.

It wasn't actually particularly fair to the employees to say, you didn't—you violated our practices in some way. That wasn't really what happened.

What happened was, I would say, a lot of focus on process and on governance and controls, and not enough focus on basic bread

and butter banking, credit risk, liquidity risk, interest rate risk, things like that.

So, as we discussed yesterday, we took very substantial steps to avoid further spread of those issues. And, that was successful. But, I understand your point on accountability.

Chairman SCOTT. This is one of the areas where you see the approaches of looking at safety and soundness, and with the number of MRAs and MRIAs that weren't really documented, but no action was taken, that leads me to the conclusion that individual employees, supervisors should have been held accountable for that. I'll move on though.

In the past, you have supported tailoring regulations so that we ensure banks of different sizes thrive and to preserve our diverse banking system.

Will you commit to working with me as Chairman to make sure that financial regulations do not impose more burden than is necessary?

I'll say that this comes after a number of conversations with community banks and regional banks that have continued to stress that the cost of the regulatory framework around them isn't just harsh, it's oppressive. Larger banks suggest that the cost per employee for the regulatory framework is $10,000 per employee.

I think we can do better and would love to hear your thoughts on that.

Mr. POWELL. All right. First of all, I will commit to working with you on that. We do try to avoid excessive burden.

Look, I think it's fair to take a fresh look on, frankly on debanking. I think we all see, both in your hearing and in the one on the House side, we hear a lot of people talking about that.

And, you know, it's time to take a fresh look, I think. We don't intentionally do these things. But, sometimes regulation leads things to happen, and we need to be working on that.

Chairman SCOTT. I appreciate that. And, I'll turn it over to the Ranking Member. I'll say this, that after having a number of conversations with CEOs of banks around the country, one of the things that was made clear to me, was a specific statement from these CEOs is that the regulatory, OCC and other regulatory agencies said specifically to debank certain industries.

And, that is the point that I'm making, and one that I think we have to solve. If it's legal in America to do business, we should do our part to make sure that they are banked.

Senator WARREN. Thank you, Mr. Chairman. So, over the weekend, co-president Musk and Acting Director Vought effectively shut down CFPB. No more cop on the beat looking out for a family of four in South Carolina facing an illegal foreclosure.

No more cop on the beat looking out for your grandma, whose bank account has just been taken over by a scammer. No more cop on the beat looking out for people getting ripped off by giant credit card companies that are charging illegal junk fees.

It also means that the CFPB is no longer doing one of its most important jobs, examining big banks to root out illegal conduct before it happens, or at least stop it before more people get hurt.

Chair Powell, if the CFPB isn't on the job right now, then who is administering JPMorgan or Wells Fargo's consumer compliance exams to ensure that they are following the law?

Mr. POWELL. Senator, I believe that, and you would know, that Dodd-Frank moved all authority for examinations in the consumer space to the CFPB. However, we still have some jurisdiction over that.

Senator WARREN. We'll talk about that in a second. But, the answer to my question, please. If the CFPB is not there examining these giant banks to make sure they are following the laws on not cheating consumers, who is doing that job?

Mr. POWELL. I can say no other Federal regulator.

Senator WARREN. No one, in other words. So, thanks to co-president Musk and CFPB Acting Director Vought, Wall Street banks no longer have to show the bank examiners that they're not illegally opening accounts people didn't ask for, like happened with Wells Fargo, or charging illegal junk fees, like the Bank of America did.

But, CFPB has jurisdiction only on banks that have more than $10 billion in assets. So, what's happening in thousands of community banks all around the country, those that have less than $10 billion in assets?

So, Chair Powell, as you know, the Fed oversees consumer compliance for State member banks that have less than $10 billion in assets. Has the Fed suspended consumer compliance exams for those smaller banks, or is the Fed still on the job to make sure that those smaller banks are following consumer financial laws?

Mr. POWELL. We're still on the job, business as usual.

Senator WARREN. All right. By forcing the CFPB not to do its job, President Trump, Elon Musk, and the author of Project 2025, Russ Vought, are giving Wall Street banks an unlimited get out of jail free card so they can cheat working families, even while community banks continue to play by the rules.

You know, for any Americans who have money deposited at JPMorgan, or Wells Fargo, or any other of the giant banks, they should now know that there is no one on the job to make sure that those banks are not scamming you. Only the smaller banks now have a cop on the beat to make sure that they aren't cheating consumers.

You know, if I had my money in one of those giant banks, I might think about going to a smaller bank where the protection, at least right now, is a whole lot better.

Now, at the same time that the CFPB is under attack, the Fed is buckling to pressure from Wall Street to erase other safeguards for the too big to fail banks. During the first Trump administration, under your leadership, the Fed weakened the big bank stress tests, including by giving the big banks some of the answers to the test in advance.

I called you out on it. But, you promised right here in this Committee that you would not give those banks the whole answer key.

I'm going to quote you back. You said, complete knowledge of the models could lead to a model monoculture, in which all firms have similar internal stress testing models, which could increase the cor-

relation of risk in the system, and miss key idiosyncratic risks faced by the firms. I agreed with you.

But, several weeks ago, the Fed announced that it has plans to do exactly that, hand all of the answers over to the giant banks.

Chair Powell, why is the Fed about to propose a rule that directly contradicts your own testimony, and in your own words, would render the stress tests toothless?

Mr. POWELL. Senator, in essence, because the ground has shifted very substantially in administrative law, and we actually want the stress tests to remain resilient to that. And, so, we're making changes to accomplish that.

Senator WARREN. Well, the changes are changes you've identified earlier as making those tests toothless. Look, the big banks are going to juice shareholder payouts and leave this economy more vulnerable to a crash.

The Fed is knuckling under to bank lobbyists. We know how this ends. People will suffer. Wall Street will get bailed out. I urge you, Chair Powell, to serve Main Street instead of Wall Street. Don't weaken these rules.

Chairman SCOTT. Thank you. Senator Rounds.

Senator ROUNDS. Thank you, Mr. Chairman. And Mr. Chairman, thank you for coming before the Committee. I appreciate the opportunity to visit with you.

I have got a series of questions, but I would like to give you an opportunity if you would like. The suggestion that the Ranking Member has made here is that the big banks can now scam individuals right now. Any change in the laws regarding how they are supposed to be treating the individual consumers out there or anything along that line?

Mr. POWELL. Law changes? No, I am not aware of any law changes.

Senator ROUNDS. Any changes in any rules that they would have to follow?

Mr. POWELL. Not that I am aware of.

Senator ROUNDS. Are they still audited and do they still have the regulators in watching all of their businesses just as they did before?

Mr. POWELL. They would have all of the regulators except for the CFPB. If in fact, in the hypothetical the CFPB weren't carrying that out.

Senator ROUNDS. Anything else you would like to add before we move on?

Mr. POWELL. No, I am good. Thank you.

Senator ROUNDS. Thank you, Mr. Chairman. As we continue to prioritize the stability and the resilience of our financial system, the ongoing Basel III rulemaking process has remained front and center in shaping our regulatory framework. I guess I was rather outspoken with my opposition to the original proposal and further work was stalled at the end of the last year.

I guess my question for you today, sir, is could you provide an update on the Federal Reserve's progress in finalizing the Basel III Endgame rulemaking process?

Mr. POWELL. I would be glad to. So we remain committed to completing Basel III Endgame. We think it is good for U.S. banks. It

is good for our economy that there be a global standard beneath which foreign banks can't fall. That was one of the big ideas behind the whole Basel committee approach.

So where it sits now is we await leadership arriving at the OCC and the FDIC and that seems to be happening. And when that happens we are going to sit down with them and work our way through to a Basel III Endgame proposal. And I think we can do this reasonably quickly. One that is compliant, and consistent with the Basel requirements, and also consistent with what other large jurisdictions are doing. I am optimistic that we can do that fairly quickly, and we are committed to doing that.

Senator ROUNDS. We always wanted our banks to be competitive with European banks. And I am just curious, the original proposal that was in front of you, and I would like your thoughts on this, it was estimated to increase our bank's capital by 19 percent, which I think may very well have created a potential disadvantage within the U.S. institutions versus our European counterparts.

With any new proposal, what are your thoughts? Would you make a commitment that this would be a neutral approach with regard to capital?

Mr. POWELL. The main commitment I will make is we will work together with new leadership at the other banking agencies to do something. But that is certainly—you know, I have said many times in this Committee that I think that the level of capital in the largest banks is about right. And so it will shake out somewhere in that area, I would guess.

Senator ROUNDS. The expectation would be—and the markets would expect that it would be neutral with regard to capital.

Mr. POWELL. In that range, but I want to defer to our new colleagues and get their views as well. But that is a good starting place.

Senator ROUNDS. OK. Thank you. The Federal Reserve's partnership with the U.S. Treasury plays a central role in supporting our nation's payment infrastructure, which processes a vast range of daily transactions from Federal benefit disbursements to debt obligations. Could you outline the Federal Reserve's role in supporting and managing the Treasury's payment systems, including how the Fed works to keep these systems secure, efficient, and capable of handling the Government's high volume of daily transactions?

Mr. POWELL. So it is a complicated set of arrangements. And I will try to summarize quickly. Effectively, Congress authorized spending and then the agencies carry out those spending orders. And the way they do that, is they send an order to pay a payee, a recipient, to the Treasury Department.

Upstream before it gets to the Fed, all of these decisions are made about is this an appropriate order, is this payee on the Don't Pay List, and all those things. Once all of that is set, it comes to the Fed, and by that, I mean four or so of the Reserve Banks. And we actually make the payment. We take the money out of the Treasury General Account, and we make the payment.

We make no judgments whatsoever. Those are all made upstream from us. And we are, in fact, the fiscal agent of the Treasury.

Senator ROUNDS. Confirm for me today, is the system safe today?

Mr. POWELL. I believe it is. And I will tell you, we are very strongly committed to the integrity, efficacy, resilience, and all of those things of this system. And, you know, people do depend on this in a big way. And we are committed to that.

Senator ROUNDS. One last question for you, sir. The failure of Silicon Valley Bank, and the chairman brought this up. I am just curious, recognizing a lot of banks out there looked at this. It cost the other banks in the system a lot of money to pick up the costs involved in the losses. Nobody has been fired. But you did indicate that it was a failure in the playbook. Has the playbook been revised or can we expect that it will be revised?

Mr. POWELL. In a lot of ways, it's been revised, yes. I can go into some details. I mean, we are—one thing that didn't happen was—for example, we didn't—the supervisors didn't follow through aggressively enough on things that they had said. If they had done that, that could well have been enough to stop it.

But a lot of it was just not focusing enough directly on what was a very large amount of interest rate risk, a large portfolio of long-term securities matched up with an unstable funding base. And somehow people wrote about that, not the Fed, but others wrote publicly about this. But somehow we don't expect bank runs outside of a crisis in this country. And that is what this was. It was a bank run. And bank runs are incredibly damaging. I think everyone learned a lot from that and is determined to do better.

Senator ROUNDS. Thank you, Mr. Chairman. I think this is one that I think, as you appropriately pointed out, I think this is an area where a lot more questions are out there yet. And I think if it is the playbook that was the problem, I think perhaps a discussion about how that playbook has been revised would be appropriate in the future.

Thank you, Mr. Chairman.

Chairman SCOTT. Thank you. Senator Cortez Masto.

Senator CORTEZ MASTO. Chairman Powell, thank you. And thank you always for the conversations in between these hearings as well.

Let me focus on a couple of things of concern. And you touched on a little bit of this. And I think this is important to clarify. There was a change in the law when the CFPB was created. The CFPB examines the banks and enforces the law whereas the Fed only supervises those banks. Is that correct? Or how would you determine that relationship?

Mr. POWELL. With the CFPB? So Dodd-Frank took a lot of the consumer compliance jurisdiction away from the other banking agencies and gave it to a newly created agency, the CFPB. We retained a residual amount of that as we just discussed, which is banks under $10 billion in assets. But the CFPB essentially took all of that when Dodd-Frank came into being.

Senator CORTEZ MASTO. So as it was created, when you two were working together, the Federal Reserve collaborated with the Consumer Bureau when supervising those large banks, correct?

Mr. POWELL. Yes. We still retain supervision over all of the holding companies and also of Fed member banks.

Senator CORTEZ MASTO. And let me ask you this, then. Does the Federal Reserve enforce consumer protection laws now for things like money transmitters?

Mr. POWELL. Not for money——

Senator CORTEZ MASTO. That would be the Consumer Protection——

Mr. POWELL. The Fed member banks, yes.

Senator CORTEZ MASTO. ——that would be CFPB?

Mr. POWELL. Yes, yes. That is right.

Senator CORTEZ MASTO. So when we are talking about collaborating with the CFPB for financial technology firms, what would the Fed Reserve now do that if the CFPB—if the hypothetical is the CFPB no longer exists, what would be the Fed's role right now with respect to technology firms?

Mr. POWELL. We don't have jurisdiction over—we have jurisdiction over banks and some financial market utilities.

Senator CORTEZ MASTO. That is it. So let me ask you this because I know there are a number of Nevadans who file consumer reports of concerns about fraud and predators with the CFPB. The Fed Reserve doesn't receive those reports, correct?

Mr. POWELL. No, I don't believe so.

Senator CORTEZ MASTO. And you have no role when it comes to consumer protection like the CFPB does, correct?

Mr. POWELL. Unless you are a Fed member bank that has $10 billion or less in assets, then we have jurisdiction——

Senator CORTEZ MASTO. Right

Mr. POWELL. ——on a consumer.

Senator CORTEZ MASTO. So there is a gap. If the hypothetical is true and what we are hearing that the CFPB is being shut down, there is a gap what we are hearing in enforcement out there, and particularly when it comes to consumer protection. Would you say that is true?

Mr. POWELL. Yes. For all banks that we don't——

Senator CORTEZ MASTO. Yeah.

Mr. POWELL. ——supervise.

Senator CORTEZ MASTO. And I think that is the concern we are all having right now is this concern of when we are looking to streamline Government, and listen I will be the first to tell you there is a lot of bloat. We need to streamline it. We need to address regulations and overreach. But there is a strategic way to do it and not this burn down the house that is going to harm people across the country, including in my State, those Nevadans that are looking for some sort of enforcement around consumer protection laws. So that is what you are hearing from many of us on our side of the aisle here.

Mr. POWELL. Can I just very briefly add that we do have some residual enforcement authorities, but what we don't have is examination authority for the banks that the CFPB supervises.

Senator CORTEZ MASTO. Thank you. And let me ask you this. You know, we talked about this over the phone, and I understand it may be difficult to answer this. But the Federal Reserve board members have been clear that future interest rate cuts are unlikely to happen despite the strong economy.

But there are folks in my State that are waiting to buy a home. And we know that is still an issue. The high prices right now for home affordability, you add the interest rates to it, it is a problem.

So do you think it is most likely that interest rates will remain above 6 percent for this year or can you even address that?

Mr. POWELL. You know, overall the economy is strong, growing 2½ percent last year. The labor market is also very solid, unemployment at 4 percent, quite a low level. Inflation in the last year was 2.6 percent for the year. So we are in a pretty good place with this economy.

We want to make more progress on inflation. And we think our policy rate is in a good place, and we don't see any reason to be in a hurry to reduce it further.

As it relates to housing, so there is a—it is true that mortgage rates remain high. But that's not so directly related to the Fed's rate. It is really related more to long-term bond rates, particularly the Treasury, the 10-year Treasury or 3-year Treasury for example. And those are high for reasons not particularly closely related to Fed policy. They may remain high.

I think, you know, once we lower rates and kind of rates return to a lower level, mortgage rates will come down. I don't know when that will happen. And even when it does happen, we are still going to have a housing shortage in many places.

Senator CORTEZ MASTO. Thank you. Chairman Powell, thank you again for being here.

Chairman SCOTT. Thank you, ma'am. Next will be Senator Kennedy.

Senator KENNEDY. Thank you, Mr. Chairman. Thank you, Mr. Chairman, for being here. My friend, our Ranking Member, said that you were knuckling under to the big bank lobbyists. Is that true?

Mr. POWELL. No.

Senator KENNEDY. It seems to me that the big picture should not go unnoticed. Do you recall a year or two ago when inflation was raging? I guess the peak was 9 percent. Many economists and other experts based in part on history said that you were going to have to provoke high unemployment and put our country into a recession in order to get inflation down. Do you recall that?

Mr. POWELL. Very, very well.

Senator KENNEDY. Are we in a recession?

Mr. POWELL. We are not.

Senator KENNEDY. Would you, as an American, trade places right now with Germany in terms of the economy?

Mr. POWELL. No, I sure wouldn't.

Senator KENNEDY. How about China?

Mr. POWELL. No, I wouldn't trade places.

Senator KENNEDY. How about France?

Mr. POWELL. No thanks.

Senator KENNEDY. Things aren't perfect. Inflation is obviously still sticky, and loan rates are too high, which I want to talk about in a second. But the fact is, knock on wood, we have experienced a soft landing, haven't we?

Mr. POWELL. Not for me to say, really. I let others take that——

Senator KENNEDY. Have we experienced a hard landing?

Mr. POWELL. No, we sure haven't.

Senator KENNEDY. Are we in a recession?

Mr. POWELL. No, we're not.

Senator KENNEDY. I call that a soft landing. And it seems to me that you and some of the ladies and gentlemen who are your colleagues at the Federal Reserve behind you deserve some credit for that.

Mr. POWELL. Thank you.

Senator KENNEDY. I don't know why you don't take the credit. Everybody else from Washington, DC, does. Again, I am not saying things are perfect, but I never imagined that our landing could be this soft, albeit, not perfect. And I wanted to thank you and your colleagues for that effort. You sure didn't get any help from Congress and our President on the fiscal side. I don't expect you to comment on that. You and the Federal Reserve can, to a large extent, control short rates, can't you——

Mr. POWELL. Yes.

Senator KENNEDY. ——through the Open Market Committee? You can't control long rates though, can you?

Mr. POWELL. No, we can't.

Senator KENNEDY. Why is that?

Mr. POWELL. So a lot of things go into long rates. And one of them is the expected future short rate of Fed policy, but many, many other things go in. Expectations of inflation in the longer run, the sort of risks around the economy and around the budget deficit go into something called the term premium, which is the part we can't explain when we do these decompositions. And so, you know, it is set by supply and demand in the bond market at the long end. And we are not particularly—we have some influence but mostly not.

Senator KENNEDY. Many Americans are looking at short rates and looking at the Fed's behavior and how you reduced inflation, but they don't see the long rates going down. And obviously, that affects mortgage rates. And I would encourage you and your colleagues to spend some time explaining to the American people why that is.

Final question, if you went home tonight and Mayor Powell, your spouse, said I got a call today from our bank, and they are debanking us. They are worried about their reputational risk because they don't like our politics. Would you think that fair?

Mr. POWELL. No, I sure wouldn't. And as I mentioned earlier, I too am troubled by the quantity of these reports and really want to understand better why this is happening.

You know, one theory is that banks are just very risk averse around BSA and money laundering and that is because we are so tough on them and that they just—any red flag is enough. But, you know, it may be that this whole thing with reputational risk needs to be thought about.

It is actually coming out of our one manual that we use. We are taking that concept out, the manual that we have been using for account access, for master accounts, we are just going to take that out.

But I think this needs a fresh look, and I think it is time for that. And we are going to do that.

Senator KENNEDY. I have asked our chairman, and he has agreed to invite some of the CEOs of some of the banks that have been

debanking people. The CEOs, not their lawyers, not their PR consultants.

Chairman SCOTT. Not their lobbyists.

Senator KENNEDY. Not their priests, them, the CEOs to come in and let's talk about this and find out what the hell has been going on.

Chairman SCOTT. Thank you, Senator Kennedy.

Senator KENNEDY. Thank you, Mr. Chairman.

Chairman SCOTT. Senator Reed is next.

Senator REED. Thank you, Chairman Scott. Chairman Powell, welcome. Thank you very much.

I think your monetary policy combined with the Biden fiscal policy over the last 4 years has made a tremendous difference. We have avoided a recession.

I would like to remind people how far we have come. In 2020, the gross domestic product decreased 2.2 percent. The unemployment rate finished the year at 6.7 percent. By 2024, gross domestic product grew 2.5 percent. The unemployment rate was 4.1 percent. Labor force participation rate went up from 61 percent to 62.5 percent. And that is a combination of your work together with the fiscal policy of the Biden administration. So I thank you for that.

One of the issues before us today is the issue of tariffs. In July 2018 testimony you stated, Mr. Chairman, countries that have remained open to trade, that have not erected barriers, including tariffs, have grown faster and higher incomes. Do you still believe that?

Mr. POWELL. Yes, I do. I would stand by that.

Senator REED. So President Trump's tariffs on China, Canada, and Mexico will obviously raise costs on families. In fact some economists, many economists, project about $1,200 per year households will be the average, an increase of inflation by nearly 1 percent, economic growth depression, for example, the increase to the average car price by $2,700. Is that a wise policy?

Mr. POWELL. So I guess I ought to say this. I think the standard case for free trade and all of that logically still makes sense. It didn't work that well when we had one very large country that doesn't really play by the rules.

And in any case, it is not the Fed's job to make or comment on tariff policy. We, you know, really—that is for elected people, and it is not for us to comment. Ours is to try to react to it in a thoughtful, sensible way, and make monetary policies so that we can achieve our mandate.

Senator REED. Just this weekend, the President removed the board of the Kennedy Center and made himself chairman. What would you do if the President tried to remove a member of the Federal Reserve Board?

Mr. POWELL. It is pretty clearly not allowed under the law.

Senator REED. Thank you. We have communicated back and forth about synthetic risk transfer as a potential danger to the banking system. And could you give us some insights on how we can improve financial stability by regulating these transactions more appropriately?

Mr. POWELL. What we have been doing for some time now is looking at them on a case-by-case basis. And if they really do trans-

fer risk successfully, then that is OK. I mean, you know, it is a good thing if a bank wants to transfer risk off its balance sheet in a way that itgets compensated for and all of that.

But what you want to make sure is that the risk is really transferred. And that was the problem during the global financial crisis was sort of things that appeared to but did not accomplish a transfer of risk. So we see this coming, and we have been looking at these transactions on an ongoing basis.

Senator REED. Well, I commend you for that. In fact, what happens typically is the transaction becomes complicated by synthetic risk transfers as it was the case with synthetic derivatives. So thank you for your attention to that.

We have talked about housing. That is as critical as ever across the country. We are in a housing shortage. First of all, housing is difficult. Two of the mainstays of our housing market, Fannie Mae and Freddie Mac, helping to support home ownership. Does the Federal guarantee backing Fannie and Freddie help make mortgage rates more affordable and home ownership more accessible, Mr. Chairman?

Mr. POWELL. I imagine it does hold down mortgage rates, the fact that they are a sovereign risk.

Senator REED. And how important is the 30-year mortgage to ensure that families can afford a home?

Mr. POWELL. In our housing market, the 30-year mortgage is very important.

Senator REED. And I have heard some discussions about eliminating Fannie Mae and Freddie Mac, which would be detrimental, I presume, to the housing market.

Mr. POWELL. That is really a question for you. You know, putting housing finance back in the private sector has some appeal over the longer run. But I leave that with you.

Senator REED. Thank you, Mr. Chairman, very much. I appreciate it.

Chairman SCOTT. Thank you. Senator Ricketts.

Senator RICKETTS. Well, thank you, Mr. Chairman and Ranking Member, for holding this important hearing. And thank you, Chairman Powell, for being here today to talk about our economy and all the things that are going on.

I want to address again something that the Ranking Member started talking off about, which was characterizing the CFPB being the cop on the beat here. But I can tell you as having been a Governor and having a Department of Banking that reported to me, that if any consumer would contact us and make a complaint about a bank, even a big bank like JPMorgan, we would investigate, as could the OCC, the FDIC, the FTC.

So to characterize that nobody is out there looking for consumers, I think, is inaccurate, and we ought not to try and scare consumers right now that somehow this is the case because if you do have an issue if you are a consumer, please reach out to your State Department of Banking because those folks are going to look out for you. I can tell you that because I used to have one of those Departments of Banking. And they did a fantastic job of looking out for the consumers.

One of the things that has also impacted consumers is inflation. Prices under the Biden inflation were up 20 percent. An average household is paying $13,000 more today than they were for the same standard of living they had before Joe Biden got elected.

We see that grocery prices, for example, are up 22 percent. Rent is up 23 percent. Simply put, Nebraskans are economically worse off today than they were 4 years ago, and I expect that is part of the reason why we saw this change in the Administration. They thought that that was not something that they wanted to continue to pursue. They didn't want the same policies being followed.

We have to end the reckless Federal spending, rein in inflation, and, you know, be responsible about how we make decisions to be able to grow the economy.

One of those areas that I am concerned about is the expansion of the Fed's balance sheet. The Fed's balance sheet before—at the end of 2019, so before the pandemic, was about $4.1 trillion. By May of 2020, the Fed expanded that to $7 trillion. And by 2022, the Fed's balance sheet hit an all-time record of $8.9 trillion. Inflation peaked at 9.1 percent that year, a high we had not seen since 1981.

Now I am encouraged by the actions the Fed has taken with quantitative tightening to shrink the balance sheet down to $6.85 trillion. But $6.85 trillion is still too high.

And one of my concerns, Mr. Chairman, is that is kind of one of your tools to be able to guard against a downturn in the economy or some sort of shock. You obviously used it during the pandemic.

Looking ahead long term, will the Fed Reserve continue this course of unwinding the balance sheet?

Mr. POWELL. Yes. So what we said is that we intend to slow and then stop the decline when reserve balances are somewhat above the level that we judge consistent with so-called ample reserves. The most recent data and the feel of the markets is definitely that reserves are still abundant. They are about the level they were at when the runoff started because that runoff has really happened out of the overnight repo facility, reverse repo.

So, yes, it is an ongoing thing, and we are not yet where we are headed.

Senator RICKETTS. So what kind of pace can we expect? And I know that obviously there is going to be a lot of factors, like what happens to the economy over the course of next year. But if things were to go along the way they are today—you have already said the economy is doing well. Inflation is a little higher than we want it to be at 2.6 percent, but unemployment is at 4 percent. If these commissions—and I think you used the word stable quite a bit—if these conditions were to remain stable throughout the course of the year, would you have a range that you could give us where the balance sheet might be if we were talking against here in January 2026?

Mr. POWELL. Basically, we are going to be looking at reserve conditions, conditions in reserve markets, and trying to stop a little bit above what we consider ample. And we think we are, you know, meaningful above that now. We can't put a number on it because you can't directly know the demand for reserves other than by ob-

serving behavior in the market and then putting a little bit of a buffer on it.

So I can't give you an exact number, but for now it is ongoing. And we have a ways to go.

Senator RICKETTS. What kind of conditions would have to happen for you to start going back to quantitative easing?

Mr. POWELL. To quantitative easing? So, you know, that is a tool we tend to use when we are at the effective lower bound, and we can't cut interest rates anymore. So nothing like what you are seeing in the current day. It is a different test for stopping quantitative tightening. But we would use QE going forward only in a situation when rates are at zero. And, you know, we are a long way from zero now.

Senator RICKETTS. So you think that if, again, just generally speaking then if things were to remain stable, you will continue to unwind the balance sheet. You will continue the quantitative tightening. You can't give me a range on this. Is that what I hear you say?

Mr. POWELL. That is right.

Senator RICKETTS. OK. Great. Well, I encourage you to keep doing that because, you know, I think that is important to be able to make sure that you have got powder for the next issue that we may face. So thank you very much, and I appreciate you being here.

Mr. POWELL. Sure.

Chairman SCOTT. Senator Warner.

Senator WARNER. Thank you, Mr. Chairman. Chairman Powell, good to see you. One of the things we have talked about in the past, and I have got two or three issues I am going to get through fairly quickly, is that while our regulatory framework should always promote financial innovation, that innovation can't come at the expense of things like anti-money laundering, consumer protection, financial stability.

I continue to worry in many of these hearings where we keep seeing this regulatory creep outside the boundaries of traditional financial regulation.

I think if we were starting a system from scratch, few of us would design it this way. But it is one of the reasons why I am looking forward to working with Chair Scott and Senator Lummis on a framework at looking at stablecoins in particular within the regulatory perimeter. I know my friend Bill Hagerty just introduced a bill in this area. I am looking at trying to make sure we get those guardrails put in place and how it touches the Fed is something that is terribly important to me.

I know you and I have talked in the past about the notional idea of same activity, same regulation in the non-banked sector. If you would like to wax briefly on this question around stablecoins on how we think about them in the sense of a single point of if they are similar to other activities, should they not have the same regulatory structure?

Mr. POWELL. So we definitely support these efforts to create a regulatory framework around stablecoins. Stablecoins may have a big future with consumers and businesses. We can't know that now, but it is important for the development of stablecoins, you

know, in a safe and sound manner and a manner that protects consumers and savers and all that there be a regulatory framework.

So, you know, we see these bills, and we are in contact, as we were in the last Congress, in trying to add our technical thoughts in how to do this. And we think it is a very constructive exercise.

Senator WARNER. Well, we do think, you know, you have a lot of expertise in this session. And there are people that are—people come with lots of opinions on everything in crypto from over the top to the other end of the spectrum. And I am going to need to rely on your expertise as well as we try to work through some framework for stablecoins.

I know there were a lot of earlier questions on CFPB. You know, I think the record is pretty darn good. It has returned $20 billion to consumers. As a matter of fact, the last time we had the previous chair here, Mr. Chopra, we were talking about $55 million to Virginians.

I do have to mention, this is more for my colleagues, we did a—Tim Kaine and I did a tele-town hall last night. Lots of things happening in Virginia. Normally we would get maybe 3,000, 5,000, 6,000 folks on a tele-town hall. We had 60,000 last night. I had not seen anything like that in my time up here on the Hill. And a huge amount of concern about what the DOGE boys are doing, whether our information is safe, whether privacy is protected.

I had one lady say, in light of what was happening at CFPB and while there is not a direct connection, she is saying is our deposits at our banks safe? We tried to give her assurance, but I said, you know what, ma'am? I am going to be talking to the chairman of the Federal Reserve tomorrow. And with this diminution or shuttering at least for the time being of the CFPB, can I tell—I believe her name was Mary—can I tell Mary from Virginia that her bank account is safe?

Mr. POWELL. I think bank accounts overall across the economy are safe, yes. We have still got deposit insurance at the FDIC. And the banking system is well capitalized and safe.

Senator WARNER. Well, again, I think the concern that was being raised was the diminution of consumer protections lent her concerns about whether that dollar being safe.

The last thing I want to recognize is that there have been reports in the media about the thinness in the treasury markets, the number of additional bonding that we are going to have to do, particularly with so many of these unpaid tax cuts.

As a matter of fact, one of the things that was really striking to me was that yesterday the President mentioned how he was "examining treasury debt payments for possible fraud" and suggested that our debt might not be as high as possible.

We all understand the full faith and credit of the United States is based upon our reputation. If this President were to suddenly say, I am wiping off X amount of debt because I don't believe we owe it, what kind of effect would that have on both stability of the dollar and the overstability of our economy?

Mr. POWELL. It will probably not surprise you that I will defer to you on that question.

Senator WARNER. Do you think it would—from a Fed standpoint, if the President of the United States starts to say we are not going to pay our treasury debt, you are going to have no view at all?

Mr. POWELL. I am not going to comment on things that the President says.

Senator WARNER. I would like to see us at some point see us get a stronger answer on that because I think that in light of the President's willingness to shut down agencies willy nilly, his ability to potentially curtail payment of debt, I think, would have devastating consequences on our economy. Thank you, Mr. Chairman.

Chairman SCOTT. Senator Britt.

Senator BRITT. Thank you, Mr. Chairman. Obviously, there has been a lot of conversation both in and out of this hearing room today, conversations about a co-president, referencing Elon Musk, referencing the work that DOGE is doing. I think it is important to remember that President Trump ran on this. I mean, he said we are going to look for wasteful spending across our Government. We are $36 trillion in debt. That is not only fiscally irresponsible. It is actually morally irresponsible.

And the difference in this Administration than the last Administration is that President Trump is actually the final arbiter. And it is interesting that none of you had anything to say over the last 4 years when it is clear that our commander in chief was not in command.

And if we are going to use the term co-president, then let us go back and say co-president Jake Sullivan, co-president Ron Klain, co-president Jill Biden. I mean, it seems that some of the biggest decisions were made during the President's afternoon naptime. And so I just think we need to be a little more honest about what has been laid out and what is actually occurring.

Chair Powell, I do—I want to discuss some monetary policy issues, but I first want to highlight a few supervisory items.

We unfortunately started 2023 with several bank failures in which the Fed itself admits its supervisors were "too slow to ask." The question has been asked earlier about who was fired, who was not. I think that there is some real merit to having accountability that we have not seen there.

In the aftermath of those failures, the Fed was certainly not slow to act when it came to new regulations. Like the new capital requirements that would have had, it would have put the U.S. banks at a global disadvantage and actually hurt consumers in my State.

The way I look at this, is the world came up with a gold standard. And then Vice Chair Barr said hold my beer. And unfortunately that hurts Alabamians. In addition to that, we had Community Reinvestment Act and stress testing frameworks that were basically adopted in secret or, as we discussed last week, the reputational risk and just the arbitrary nature of that and those standards that were used to push political agendas. None of this is acceptable. And we have got to take a look at how to promote greater accountability and transparency into the Fed's supervisory function.

Shifting gears, as of January 30, the Federal Reserve had a mark to market loss on its balance sheet of roughly $221 billion. In fact, I looked back, and the Fed has posted losses since September of

2022. Meanwhile, we have seen transfers to the CFPB totaling $2 billion since September of 2022.

So just to clarify, Chair Powell, these money transfers are requested by the CFP director, CFPB director, each quarter and then directly deposited by the Fed. Is that how that works?

Mr. POWELL. So the director of the CFPB requests money. And we, under the law, we send that money, yes.

Senator BRITT. So, yeah, in fact—but Dodd-Frank actually prohibits the Fed from actually reviewing or amending those requests?

Mr. POWELL. That is correct.

Senator BRITT. And so it gives full discretion to the CFPB then?

Mr. POWELL. Up to, I think, 12 percent of our—there is a ceiling on that, but that is correct.

Senator BRITT. So just to level set, how many times, you know, has the CFPB funding request been denied by the Fed?

Mr. POWELL. We don't have the authority to deny it under the law.

Senator BRITT. Zero, right?

Mr. POWELL. Zero, yeah.

Senator BRITT. Yeah, that is what I thought. And by the way, I would like to applaud the current Administration Acting Director Vought for inserting some accountability back into the agency by pausing these quarterly blank checks.

On that, I know there has been a lot of conversation around the Bureau over the last few days. But I do want to focus on those last couple of years, particularly the $2 billion the CFPB received from September 2022 up to the last receipt on January 2, 2025.

Congress specified in statute that the Fed shall fund the CFPB through the combined earnings of the Federal Reserve system. However, as I mentioned, the Fed has no current earnings. It has a balance sheet of negative $200 billion.

So instead of the recent audit statement saying the Fed is funding the CFPB through assessments on its reserve banks—Mr. Chair, there are only two statutes that authorize the Fed to make reserve bank assessments and neither permit the CFPB to fund transfers.

So what authority exactly did the Federal Reserve have to assess the reserve banks in this manner over the last 2 years? I just wanted kind of a fact finding.

Mr. POWELL. Yeah. You know, we looked at that question very carefully. And it is very clear on the law in the legislative history that we are still required to make those payments, and we will continue to do so.

Senator BRITT. I appreciate it. Thank you.

Chairman SCOTT. Senator Van Hollen.

Senator VAN HOLLEN. Thank you, Mr. Chairman. I would point out that Candidate Trump did not run on implementing Project 2025. In fact, when he was asked on the campaign trail about Project 2025, he said I don't know anything about that. Who are those people? And yet he early on and quickly installed a key architect of Project 2025, Russ Vought, as the head of Office of Management and Budget, which we know is the command and control center for the budget overseeing all Federal agencies.

And that is what Elon Musk is doing now. He is implementing Project 2025, the same Project 2025 that Candidate Trump said he knew nothing about. And he said that because he knew it was unpopular. He knew it would be unpopular to take the financial cop off the beat.

And I want to start by talking about what is happening over at CFPB, the Consumer Financial Protection Bureau, because that is the cop on the beat to go after fraudsters and scammers who cheat Americans out of their hard earned money.

And they have returned billions of dollars to our constituents, to the consumers who have been victims of these scams. And in doing so, they have earned some powerful enemies who want to shut them down.

And Elon Musk is doing that dirty work on behalf of those fraudsters. And there is something especially twisted about the richest man in the world shutting down an agency that helps victims of scammers and fraudsters recover just a little bit of their hard earned money.

And I find it especially interesting that the new self-declared head of the CFPB, Russell Vought, told employees not to come into the office and essentially to stop work.

Here is what he wrote, and I'm quoting, "Employees should not come in to the office" and "stand down from performing any work tasks."

So this is an interesting situation. Federal employees continue to get paid, but the Trump administration tells them to stop doing their work. That apparently is what the Trump administration thinks is a good deal for the American taxpayer, to pay employees to not to do their job.

So, Mr. Chairman, I have a simple question for you. Is that a practice that you pursue at the Fed to pay your employees but tell them not to come to work. Have you done that?

Mr. POWELL. No.

Senator VAN HOLLEN. That wouldn't be very efficient, would it?

Mr. POWELL. No.

Senator VAN HOLLEN. No, it wouldn't. And yet that is what the so-called DOGE boys, efficiency boys, are doing. In addition to that, they are rummaging through the private, very personal sensitive information of Americans at the Department of Treasury.

So it seems to me that the Trump administration and Elon Musk are focused on everything except what Donald Trump said he was going to focus on during the campaign, which was to bring prices down.

And when you look at the price of eggs these days, I notice that Waffle House just instituted a new 50 cent per egg surcharge due to the nationwide rise in the cost of eggs. They said that is going to be a new surcharge. And other restaurants are following suit. You have seen that, right, Mr. Chairman?

Mr. POWELL. Yes.

Senator VAN HOLLEN. And at the same time, the Trump administration has restricted Federal agencies from providing the public with information about the bird flu, avian flu, which is part of the cost of egg increases.

So what we are really facing here is an Administration that campaigned on bringing down prices and is not doing that, did not campaign on Project 2025, and that is what they are doing.

But when it comes to prices, Mr. Chairman, the President is also talking about significant increases in tariffs. Our Republican colleagues are also talking about passing a tax bill that gives weight disproportionately to the super wealthy and which will add trillions to the deficit by their own account. They are talking about playing around with the baseline.

So my question to you is simple. All things being equal, do big increases in tariffs and increasing the deficit in debt put upward pressure on inflation? Isn't that simple math?

Mr. POWELL. You know, it really does remain to be seen what tariff policies will be implemented. And I just think it would be unwise to speculate when we really don't know. We see proposals, but it is so hard to say what is going to happen.

Senator VAN HOLLEN. Well, last time the Trump administration was in office, the Fed took actions because they were concerned about the impact of an increase in tariffs. Isn't that the case?

Mr. POWELL. We wound up cutting rates in 2000 and—I guess it was '19. But it really was because growth slowed and confidence was weak, and the global economy was weakening. So the net effect of all of—that is what we look at. You know, it is really not just tariffs. It is tariffs, immigration, fiscal policy, and regulatory policy. And those will all go into a mix. And we will try to make sense of it and do what is right for monetary policy.

Senator VAN HOLLEN. Well, if you could just get back to me on the question of increasing the deficit by trillions of dollars and what impact you believe that has on inflation and prices. Thank you, Mr. Chairman.

Mr. POWELL. Yes, sir.

Chairman SCOTT. Senator Lummis.

Senator LUMMIS. Thank you, Mr. Chairman, and thanks, Chairman Powell, for being with us today.

I think you are aware of what direction my questions will take. They will be focused on the bank's supervision function of the Fed.

I might point out that when you and I were toddlers, 1956, the chairman of the Fed at the time, William McChesney Martin said that the Federal Reserve Board is an agency of the Congress. Ben Bernanke said something similar in 2013 when he told Janet Yellen that, "Congress is our boss." Do you agree with that statement?

Mr. POWELL. Yes. The way I always say it is that our supervision, our accountability runs through the legislative branch not through the executive branch, as it does in many other forms of Government.

Senator LUMMIS. Thank you for that because I wouldn't have guessed that that was going to be your response. The way that the Fed has behaved for the last 4 years in its relationship with the U.S. Congress is to thumb its nose at Congress. Your staff has repeatedly stymied information requests from this Committee, notably made by myself, the Chairman, the Ranking Member, Senator Tillis, former Senator Pat Toomey and others.

In my experience, the Fed is a black hole. It consumes information, but it never releases it.

Your fellow Governors have personally misled me on at least two occasions with respect to Wyoming and digital assets. And in recent Federal court filings, former Senator Pat Toomey has accused your staff of lying to him while providing technical assistance on legislation that passed in the National Defense Authorization Act in 2022.

Now I have behind me a statement by the Fed's general counsel, one of the staff that is sitting behind you today, who said, "The Fed generally resists legislative prescriptions." Now to me that is thumbing his nose at Congress, the very people that you and I just agreed you are responsible to, and the people depend on.

So this is why the American people think there is a deep State. This is why they think there are faceless bureaucrats making policy to hurt the very people of this country. Just look at the mess the Fed made of Silicon Valley Bank. And I contend that there is a lack of understanding that is deliberate on the part of the Fed with respect to digital asset policy.

So the Constitution says Congress is your boss, but somehow your staff have not gotten that message. So Chairman Powell, do you commit on behalf of yourself and the Federal Reserve staff to comply fully with all document demands issued by this Committee in a timely manner?

Mr. POWELL. Sure.

Senator LUMMIS. Will you instruct your staff to be complete in their responses and not to obstruct the oversight functions of this Committee?

Mr. POWELL. We always work with the Committee to be responsive to your requests. Sometimes they are beyond our capacity to respond to, and we work with Committee and Committee staff to do that. But we are always responsive to Committee requests.

Senator LUMMIS. And I will look forward to engaging with you when you feel that our requests are outside of the scope of the oversight that we have over the Fed.

Do you commit to disciplining or removing any staff that are found to have engaged in debanking activity, furthering Operation Choke Point 2.0 or other misconduct?

Mr. POWELL. I can't make an open-ended commitment to remove anybody. But I will tell you that I am struck, and my colleagues and I are struck, by the growing number of cases of what appears to be debanking. And we are determined to take a fresh look at that.

In fact, I took—the thing that you showed during the debanking hearing, when I saw that, we are now taking that out of the manual. So I thank you for that.

Senator LUMMIS. Thank you, Mr. Chairman. My time is up.

Chairman SCOTT. Senator Smith.

Senator SMITH. Thank you, Mr. Chair and Ranking Member. And thank you, Chair Powell, for being with us today. I appreciate your presence here.

I would like to start with the issue of the rising cost of home ownership, something that I know is of great interest to many of my colleagues on this Committee. I know, Mr. Chair, that you care

a lot about home ownership and making home ownership accessible and available to folks, my colleague, Senator Lummis, as well, many of the folks on my side of the aisle as well.

And so I think this is something that we can agree on, that the rising cost of home ownership is a big challenge for our constituents, for Americans. And one of the big pressures—there are many—but one of the big pressures is the rising cost of home insurance.

In Minnesota, families, seniors, are struggling to manage a nearly 40 percent increase in home insurance rates. We have seen this over the last 7 years or so. And I know, Chair Powell, that you have told this Committee in the past that that rising cost of buying insurance for your home has been a source of inflation as we have been trying to manage inflation.

Now I don't know anyone who doesn't see this crisis of rising insurance rates as being caused by extreme weather events. We are seeing massive flooding in southeastern United States. We have seen flooding in Minnesota. We have seen fires in the Mountain West and California. These are climate-related events. That is not a political position. That is just a fact.

So, you know, we have got banks that, of course, require understandably that a homeowner provide insurance as a predicate for getting a mortgage. So there is a big question about what is going to happen when insurance becomes unaffordable or in some parts of the country just literally not available and what impact that would have on the mortgage markets and on the value of American homes.

Just last week, a new analysis from First Street showed that overall the value of U.S. real estate could be reduced by $1.4 trillion, colleagues, over the next 30 years due to unaccounted for climate risk. That is the cost, the risk, of not being able to afford home insurance because of these extreme weather events.

And the prospect of trillions of dollars of property becoming uninsurable is clearly a recipe, it seems to me, for market instability, both in the rental as well as the mortgage market.

So my question, Chair Powell, is given these trends, how do you think the Fed, and how do you think we should be thinking about the challenges that these events are going to pose to insurance markets and to the overall financial stability of the economy?

I am asking you to comment specifically on climate change because I understand my colleagues on the other side of the aisle see that as a political question. It is more like what you see as the risk to the financial stability here.

Mr. POWELL. So, let me quickly note that we don't regulate or supervise insurance companies for the most part. But we are seeing the same thing, which is both banks and insurance companies are pulling out of areas, coastal areas and things like that, or areas where there are lot of fires.

So what that is going to mean is that, you know, if you fast forward 10 or 15 years, there are going to be regions of the country where you can't get a mortgage. There won't be ATMs. You know, the banks won't have branches and things like that. That is a possibility coming up down the road.

It is not that the banks will stay there and keep making loans in the face of evidence of disaster or that insurance companies will write policies. They can cancel those policies every year.

Senator SMITH. Right.

Mr. POWELL. So I think the risk is that they just won't be there. And that people won't be able to get them. That is really the issue.

Senator SMITH. So it seems to me that that would be a massive source of instability in our economy overall if you were to see that kind of dramatic decline in home ownership, you know, home values not to mention the disruption that would occur if people literally couldn't be in their homes anymore.

Mr. POWELL. I think it is going to fall—if that happens, it will fall on homeowners and residents.

Senator SMITH. Right.

Mr. POWELL. But it will also fall on State and local governments, you know, which is what you see happening where they are stepping in in States where insurance is going away, private insurance. You are seeing States step in because they want those areas to remain prosperous. So I don't know that it is a financial stability issue, but it certainly will have significant economic consequences.

Senator SMITH. Well, certainly to try to figure out how to provide reinsurance, as an example, in the places where commercial insurance isn't available, would be a massive impact on State budgets, if to follow your chain of thinking.

And I know in this Committee, I have heard some of my colleagues on both sides of the aisle talk about the challenges overall with flood insurance, just as an example, and the massive expense that that would have for us as well.

I raise this, colleagues, because I think this is an important issue that we need to be paying attention to. I do think that it has a fundamental impact on the overall health of our economy as we look, not even down the road, but where we are right now.

So I am out of time. I thank you, Chair Powell. I have a question. You and I have talked quite frequently about my deep and keen interest in the Community Reinvestment Act. And I will follow up with a question on that for the record.

Mr. POWELL. Thank you.

Chairman SCOTT. Thank you, Senator Smith. Senator Hagerty.

Senator HAGERTY. Thank you, Chairman Scott. Chairman Powell, it is good to see you here today. Welcome.

I want to start by talking to you a bit about markets and inflation. Less than 6 months ago you expressed some serious concerns about labor market weakness and the risk of persistent inflation. But since then, the FOMC has begun its easing cycle and cut its target rate by 100 basis points as you mentioned in your opening remarks.

Now at the January meeting, the FOMC has telegraphed that it felt both the labor market and inflation have reached a point where you are comfortable maintaining its target range. And my question is this.

The recent market data, including last week's strong jobs report, indicate that the economy is on firm ground. Indeed swaths of markets have begun to price in fewer and fewer cuts this year. And I just wanted to talk broadly about these market conditions that you

see. Do you see evidence of a higher neutral rate emerging at this point?

Mr. POWELL. Yes. I mean, let me say there was a lot of reason to be concerned about downside risk in the labor market toward the middle of last year. But really that concern has diminished significantly. The labor market is very strong.

I think the evidence is—my own view, and there are many different views on this, but is that the neutral rate will have risen meaningfully, very hard to be precise about it, from what it was. It was clearly very, very low before the pandemic, extraordinarily—historically so. But, yes, I think it has moved up. And many of my colleagues on the FOMC feel that way too.

Senator HAGERTY. It seems that way. I would like to turn now what seems to be a very popular topic right at this point, and that is the CFPB.

In your response to Senator Britt's question earlier, you confirmed that when the CFPB submits quarterly funding requests, the Fed is not in a position to exercise any discretion over what the funds are used for. Is that correct?

Mr. POWELL. As long as it is compliant with the law.

Senator HAGERTY. It just strikes me that the Fed is not in a position to hold the CFPB accountable for what it does or how it spends its money? Congress hasn't been allowed to hold the CFPB accountable for what it does or how it spends its money. It looks like no one has been able to hold the CFPB accountable at all.

And now I hear, you know, complaints coming from every corner, particularly from the other side, complaints about the excessive delegation of authority to a Republican CFPB director when this entity was intentionally created to be wholly unresponsive to elected officials. So I just find that quite rich.

Before we close, I would like to come to a point on climate and particularly the Fed's forays into climate activism that have taken place over these past 4 years and the reason for entrenchment that we have seen.

It is one thing for the Fed to disassociate from its past climate activism in a press release. But to credibly claim that it has divorced itself from partisan climate policies, the Fed needs to do more than just issue statements, it needs to actually end its climate policies.

The Fed's independence from politics is a headline topic at the moment, of course. And while much attention has been given to potential external pressures on the Fed, I think it is also critical that we scrutinize how the Fed's own regulation and supervision might be utilized to in some way politicize the institution.

So when the Central Bank strays from its mandate by embracing partisan climate policies, the Fed embroils itself in controversial political debates and invites legitimate political scrutiny.

So I just want to urge the Fed to refocus entirely on its core statutory mandates. I know it is a commitment that you and I share, Mr. Chairman.

Thank you for being here with us today.

Mr. POWELL. Thank you.

Chairman SCOTT. Thank you. Senator Warnock.

Senator WARNOCK. Thank you very much, Chairman Scott.

And welcome again, Chairman Powell.

I want to echo the words of Ranking Member Warren and so many of my colleagues today on DOGE and Project 2025's illegal attack on the Consumer Financial Protection Bureau. Certainly, the Bureau was not created to be dismantled. And since its inception the CFPB has been the only Federal agency solely dedicated to protecting Americans' wallets and pocketbooks from scammers and predatory companies in financial services.

The CFPB reduced costs for Americans, returning more than $21 billion to Americans who have been cheated since its inception. I want us to focus on that, as folks are talking about chasing after waste and fraud and abuse. The CFPB has returned more than $21 billion to Americans. Make no mistake, this attack on the CFPB will increase costs for Americans and it will give the green light to fraudsters and predatory actors seeking to cheat hardworking Americans.

And so, Chairman Powell, thousands of Georgians of all political stripes have written into my office, and they are alarmed by an unelected billionaire and his hacksters' dangerous attempts to access Americans' private data and the Treasury Department's systems that control $6 trillion in annual payments to millions of American citizens, including Social Security, Medicare, and tax refunds.

Quickly, yes or no, has Elon Musk or members of his team, to your knowledge, attempted to access the Fed's protected data and systems? Yes or no, to your knowledge?

Mr. POWELL. I don't believe so.

Senator WARNOCK. To your knowledge?

Mr. POWELL. I don't believe so.

Senator WARNOCK. OK. So, will you commit to report to this Committee, majority and minority, immediately, should you become aware of any such attempt by Elon Musk or DOGE to pierce the Fed's independence or to access its protected systems?

Mr. POWELL. Yes.

Senator WARNOCK. Thank you for that commitment.

The Fed's latest *Monetary Policy Report* states that the tight labor market has allowed employment and earnings gaps between Black and Hispanic Americans and White Americans to narrow. I was glad to see that many of the longstanding disparities in employment and wages by sex, race, ethnicity, and education have narrowed under the Biden administration. Some gaps have reached historic lows. Specifically, the employment gap for Black workers and White workers is near its lowest point in almost 50 years. That is the economy that the Trump administration is inheriting, a historic low in almost 50 years.

Chair Powell, as you work to promote maximum employment, what steps will the Fed take to ensure that these equity gains are permanent?

Mr. POWELL. So, the best thing we can do is to—it's both of our mandates, really. Because, as you well know, high inflation hits people at the low end of the income spectrum first and most. And, in addition to that, we know that the benefits of a strong labor market, over time, can be really visible and important in those communities as well.

So, we pursue our mandate. We keep our heads down. And it works out that that is the single best thing we can do to foster, you know, closing those gaps.

Senator WARNOCK. You pursue your mandate. You want to make sure that it's working. Would you agree that we still need good equity data to continue to narrow and close those gaps by race and gender?

Mr. POWELL. I do think, you know, we're always going to be in favor of good data at the Fed. And, actually, we do have quite a bit of that data on our website.

Senator WARNOCK. But if we don't have equity data, it would be difficult to know, right?

Mr. POWELL. Yes.

Senator WARNOCK. I'm glad to hear you still believe in the value of good equity data for economic policymaking. It's better to fly with the data than to fly blind. I'm not sure what's so controversial about the data.

And while I was disappointed to hear that the Federal Reserve, which is independent from the White House, had scrubbed a diversity and inclusion section from its website after President Trump's executive order, while also scrubbing data on the racial, ethnic, and gender makeup of its economists and researchers, I hope you will continue to ensure that the public has good data on how our economy is working, or not working, for historically marginalized Americans. I also hope you will reconsider your decisions around the whitewashing of the Fed's website.

Chair Powell, as we think about the value of protecting data on the Black/White wealth gap or employment gap, I think it's important to understand what policymakers can learn from this data. Historically, from what you've seen in the data, historically, what types of economic events have caused the Black/White wealth gap or employment gap to widen?

Mr. POWELL. Well, high inflation, downturns. You see, generally—just take the Black unemployment rate. It generally moves at twice the speed of the White unemployment rate. So, when it goes up, it goes up faster, and when it comes down, it comes down faster. But, at the end of the day, there's always been a gap, and we want to run a strong labor market and, you know, we target overall labor market conditions for maximum employment. But one of the benefits of that is that that gap comes down.

Senator WARNOCK. Thank you so much. We all know that fully deregulating our financial regulators like the CFPB, firing bank examiners at the FDIC, or weakening the Fed's supervisory capacity makes an economic shock or recession more likely. We know that this disproportionately impacts Black and Hispanic workers, and there are real consequences to weakening and eliminating financial regulations that keep us safe. Working people are the ones, especially, who suffer.

So, thank you so much, and I look forward to continuing to work with you to close these gaps.

Chairman SCOTT. Senator Banks is next.

Senator BANKS. Thank you, Mr. Chairman.

Chair Powell, thank you for presenting your report to the Committee today and for coming to meet with me last week in my office, as well.

The Federal Reserve has enormous power over Americans' ability to work and earn a living, and the Fed's interest rate decisions have an especially big impact on industries, like manufacturing, which depend on big investments.

Chair Powell, the Fed's data on manufacturing is still holding up nationally, but it doesn't look very good in the Chicago region, which includes most of my State in Indiana. The "Beige Book" says manufacturing jobs are declining and fewer people are buying manufactured products. It also says that steel demand is at a low level, auto production has slowed, and machinery orders are down.

What does that say about the rest of the country? When manufacturing in the heartland slows, does that signal trouble for industries in other parts of the country as well?

Mr. POWELL. It can. It doesn't always, but it certainly can. We watch the manufacturing sector. It's very important. Manufacturing jobs tend to be high-productivity jobs. They're very important in our economy. But I would say, over the last couple of years, manufacturing was pretty weak during years in which we had high GDP overall. Manufacturing is a smaller proportion of the economy than it used to be, but it's still extremely important.

Senator BANKS. Senator Reed asked you why free trade doesn't work when one of the giant players doesn't abide by the rules. The China shock is proof of that. The Fed has a mandate to maximize employment. How do you account for the whole industry that is repeatedly suffocated by unfair competition?

Mr. POWELL. We don't do trade policy. We're not responsible for it. We don't comment on those who do do trade policy. So, we don't really have a role in focusing specifically on that. That really is left to those who have responsibility over trade.

Senator BANKS. Do you agree that a healthy manufacturing economy is important to a healthy overall U.S. economy, though?

Mr. POWELL. I do.

Senator BANKS. I hope you had an opportunity to read Robert Lighthizer's February 6th essay in *The New York Times*. He explains why a big trade imbalance between any two countries is harmful to citizens in both of those countries. How does the Fed take the trade deficit into account in your decision making at all?

Mr. POWELL. Again, we really don't. You know, we're aware of it, but it's not something that directly affects our mandate goals.

Senator BANKS. So, not at all?

Mr. POWELL. No. I did read his book, by the way. I didn't read that editorial.

Senator BANKS. Fair enough. It is a good book, as well.

I want to get into tariffs. It's no secret that most conventional economists hate tariffs. But I want to note that Indiana gained manufacturing jobs during President Trump's first term with the 2018–2019 tariffs. Even though the economists' conventional wisdom is that tariffs will reduce jobs, do you commit to following the data and not prejudge any outcome?

Mr. POWELL. Very much so, as we did in 2018–19.

Senator BANKS. Finally, my staff reviewed the research paper on tariffs in preparation for this hearing. And I want to point out one of them, called "The Employment Consequences of U.S. Trade Wars". Mr. Chairman, I would like to enter this paper for the record.

Chairman SCOTT. Without objection.

Senator BANKS. It found that the timing of tariffs are very important. It found that China's retaliation to President Trump's tariffs did hurt U.S. jobs, but if the U.S. had imposed tariffs on China much earlier, in the '90s and early 2000s, it would have almost completely eliminated job losses due to the China shock.

And I know what you said before, but will you and your staff please take a look at this paper?

Mr. POWELL. We certainly will. I imagine we already have. But I'd love to see it.

Senator BANKS. Appreciate that. Home ownership is an essential part of the American dream, but families are struggling to afford homes. In just 5 years, the price of a typical home in Indiana has gone up more than 60 percent. More than three-quarters of American families can't afford an average home in their neighborhood.

How do the Fed decisions about monetary policy affect the ability of regular families to buy a home?

Mr. POWELL. So, most of what will have driven that increase will be about—some of it is about local regulation, as you I'm sure know. It's also about just wages going up and cost of materials and things like that going up. And land costs and all that are going up a lot.

The channel through which we affect housing is, of course, interest rates. And, right now, interest rates are still pretty high, but, actually, mortgage rates are really not set at the Fed. Those really key off of longer-run things.

Nonetheless, we're clearly having an effect on the housing market, and that will unwind as we normalize policy. But we're still going to be faced with high insurance costs and high material costs and labor shortages, and all the things that keep driving housing prices up across the country.

Senator BANKS. Thank you. My time has expired.

Chairman SCOTT. Next will be Senator Gallego.

Senator GALLEGO. Thank you, Mr. Chair.

Mr. Powell, just kind of running along that vein of thought, the housing costs are one of the top concerns of my constituents in Arizona. From 2010 to 2022, rents in Arizona increased by 72 percent. And I wish wages had increased to match, but they did not. And the average 30-year fixed mortgage rate has been above 6 percent for nearly 30 months.

With very few rate cuts anticipated in the near future, potential cost increases from tariffs or imported construction materials, as well as the demand that we're going to see in terms of rebuilding from California, and labor shortages, what do you think needs to happen to make housing more affordable in Arizona and the United States in general?

Mr. POWELL. You know, housing policy and things to help housing supply are really in your wheelhouse, not ours. I do think, you know, the housing markets around the country are still suffering

from the effects, the after-effects of the pandemic. Once that's all the way through and short-term rates are down to normal, whatever the new normal level is, I think housing costs are still going to be high. I think it's still going to be expensive to build housing in many parts of the country, where, lots of the urban areas, the obvious places to build housing has happened.

So, I think it's a long-term—there's a short-term problem which will go away in coming years, but there's a longer-term problem with housing availability. And that's going to be something that is not—that's not within our authorities or power to affect.

Senator GALLEGO. You know, one of the things that I've seen in Arizona, it's because we have people that are locked into mortgages at 2.9, 2.8 percent, and in order for them to move to the new house, they're going to have to, essentially, go and try to get, quote-unquote, a bigger house, but the mortgage payments are going to be through the roof.

And while I know the Fed doesn't set the mortgage rate, at the same time, one of the biggest drivers, obviously, of inflation, especially in places like Arizona, is housing cost. And then one of the biggest decisions, essentially, you make on whether or not to move rates is inflation, which is driven by housing cost. So, we're in this kind of perpetual vicious circle in Arizona when it comes to interest rates.

So, I don't know what the answer to that is, but I just at least want for there to be some understanding on that. Because the reason we're not breaking out of this cycle is because the problem kinds of feeds itself over and over and over again.

Mr. POWELL. Yes, that's exactly what's going on. But it's not obvious, though, that lower rates would lead to lower housing inflation, because, of course, that would increase housing demand. It would unlock people's low mortgages, but that creates both a buyer and a seller. So it's not clear that that would be something that would drive down housing inflation.

Senator GALLEGO. Well, my supposition, especially in places like Arizona, which is really growing fast, is that by increasing supply with lower rates, you end up, essentially, having more of a competitive market. So, people will start moving, and, essentially, bring down the overall cost.

But, moving on, I've also heard from businesses in Arizona that are concerned about the threat of economic stability in tariffs that are imposed on our key U.S. trade partners. How should we expect prices to move for basic items like tomatoes, peppers, cars, and the like, if we place a 25 percent tariff on Mexico next month, as the President has threatened?

Mr. POWELL. So, as you know, we don't do tariff policy and we don't do commentary on tariff policy. I mean, just generally, somebody's got to pay the tariff and it could be the exporter, it can be the importer, it can be a middleman, and it can be a consumer.

Senator GALLEGO. Somebody pays for it, though.

Mr. POWELL. Somebody does, but in some cases it doesn't reach the consumer much; in some cases it does. And it really does depend on facts that we haven't seen yet.

Senator GALLEGO. But that also contributes to some of the calculations on inflation overall?

Mr. POWELL. It can, but, you know——

Senator GALLEGO. It's hard to predict——

Mr. POWELL. But, also, there's a question of how persistent that would be and how large it would be.

Senator GALLEGO. And, of course, I understand you're not here to specifically comment on trade policy, but, overall, is it your opinion—let's just say a base opinion—that high tariffs can lead to higher costs, which would then end up being seen in terms of your inflation calculation that helps you set the rates?

Mr. POWELL. That's a possible outcome, which will depend very much on specific facts about what's being tariffed, for how long, et cetera.

Senator GALLEGO. OK. Thank you. I yield back.

Chairman SCOTT. Senator McCormick.

Senator MCCORMICK. Thank you, Chairman Scott.

And, Chairman Powell, good to see you again.

In the past 5 years alone, the national debt has exploded. Federal spending and the debt have increased by more than 50 percent. Debt held by the public, our true debt obligation, has more than tripled during the past 15 years, reaching more than $28 trillion. All told, U.S. national debt is now over 120 percent of our GDP. And runaway spending contributed to a regressive tax on all Americans, a tax known as inflation.

In the past 5 years, the cost of living has skyrocketed for working-class Pennsylvanians, especially, as you and I discussed when we visited, those relying on fixed incomes. And, unfortunately, that compounding effect of inflation has not been offset by a commensurate rise in wages for many Pennsylvanians. I've heard from countless Pennsylvanians who had to count their dollars at the gas pump, cancel family trips, even tighten their belts at the dinner table because of inflation.

So, while we discuss these heady issues, let's not lose sight of the very real human cost of the decisions made by people sitting in this room. And, given that cost, I would like to ask you about the national debt and the cost of financing it. We now spend more to service the debt annually than we do on national defense.

So, how concerned are you about the accelerating pace of Government borrowing and the borrowing cost, which will affect families in the form of higher mortgage rates?

Mr. POWELL. You know, we don't comment on fiscal policy, other than to say that, as my predecessors have said, the U.S. Federal budget is on an unsustainable path. It's not that the level of spending or the level of the debt itself is unsustainable. It's that the path is unsustainable, and, ultimately, the level of the debt will be.

So, there's no time like the present to start working on this. The longer we wait, the more painful it will be. It's something we need to do and will have to do in the long run, and the short run is better than the long run for that.

Senator MCCORMICK. And just as a practical matter, how do you factor that into your policy thinking and decisions?

Mr. POWELL. We don't. You know, we're here to achieve maximum employment and price stability and it's really up to Congress to deal with fiscal issues, and we leave that to you.

Senator MCCORMICK. This is a more practical question, I think, which falls clearly in your bailiwick. Because of that national debt, it's caused the supply of U.S. Treasuries needed to finance the debt to skyrocket, and that's at the same time the Fed is shrinking its holdings of Treasury through quantitative tightening.

So, the question is—or could you at least give us some insight into the impact that this is having on the Treasury market, as investors must absorb that supply? And, in particular, I'm interested in how the biggest holders of U.S. Treasuries, how their behavior is changing as debt increases.

Mr. POWELL. So, this is a real Treasury question, but I think, from our standpoint, I can say that there are lots of buyers for Treasuries, but Treasury buyers are going to be factoring in their assessments of the supply that's coming. And that may be part of the reason why the term premium has increased, as you know, over the course of this year. Although, you know, the rates have been going up and down lately. They're kind of almost back to where they were before the election.

Senator MCCORMICK. I know the Fed has been moving forward with comprehensive changes to the stress testing—the stress test process. Could you discuss how you're thinking about reducing the volatility of the results and increasing transparency on the stress test?

Mr. POWELL. So, on transparency, we're going to release the models, you know, clean them up and publish the models, put them out for comment. And in terms of volatility—and, by the way, we're also going to release the stress test scenarios before we implement them.

In terms of volatility, what we said we would do is average the changes—you know, the problem is the stress capital buffer can be moving up and down just because of volatility in the results, and it seemed like a good idea to smooth that out by averaging over a couple of years.

We're putting all this out for comment, though, and, you know, ultimately, we'll reflect those comments in the final decisions we make.

Senator MCCORMICK. Thank you. I'll yield back my time.

Senator CRAMER [presiding]. Thank you, Senator McCormick.

Senator Blunt Rochester.

Senator BLUNT ROCHESTER. Thank you, Chair and Ranking Member.

And thank you, Chairman Powell. It's good to see you. And thank you for meeting with me last week. We discussed everything from jobs and housing supply to the real impact on Fed policies on all of our lives. And I also got a chance to share with you just the concerns and consternation of Delawareans who, for the past few weeks, have been frightened by firings and funding freezes, and just the real impact on people's financial and personal data and information when, you know, DOGE has access to this information.

I'm hearing from my constituents, as well, about the potential shuttering of the Consumer Financial Protection Bureau. As Senator Warnock mentioned, CFPB has returned over $21 billion to millions of consumers, and that's a real impact.

But I want to also highlight that it was your leadership in the Fed, working with Congress and the Biden administration, to really help answer that question that you were asked about: if you had the choice to switch countries with France and Germany and others, that you said, no, you would rather be here.

And that success is a testament to all of us. We came together during a really tough economic time at the end of this—during a pandemic, and it limited the recession and job losses. And, since COVID, we've seen a robust job growth, but we also have grappled with inflation that drove prices up for so many goods.

And I've worked to address one part of this phenomenon: our supply chain disruptions. In fact, I recently joined Senators Cantwell and Blackburn to reintroduce the bipartisan Promoting Resilient Supply Chains Act to address supply chain vulnerabilities.

And while we see indications that inflation may be slowing, too many of our constituents are still facing high prices and economic uncertainty. We need to do everything that we can to address this anxiety and the realities that Americans are facing. And there seems to be a disconnect. While the economy is doing well here, on the ground people aren't really feeling that.

So, Mr. Powell, can you talk about, from your perspective, just what is driving this disconnect between traditional economic indicators, such as GDP growth and the stock market performance, and the tangible benefits for families?

Mr. POWELL. I'd be glad to. So, it is clear that the overall aggregate numbers are just very, very good for the economy: you know, 4 percent unemployment, inflation down to 2.6 percent last year, and the economy growing well in excess of 2 percent. These are good numbers.

But what people are feeling is the results of several years of inflation, and, particularly, for people in the low- and moderate-income category, they're really feeling it. And if you look at the earnings releases and press conferences that they do, that companies like the Dollar Stores and things like that do, who deal a lot with low- and moderate-income people, they're all telling you that those consumers are feeling really strapped.

So, we do understand that and we try to keep that in mind. Even though we acknowledge that the overall data are good, we see what people are feeling, and, you know, that's inflation. So, it's just another reminder how much people hate inflation and how bad inflation is for people, high inflation. And, you know, it just furthers our resolve to get inflation back to 2 percent and keep it there.

Senator BLUNT ROCHESTER. Thank you. One of the big areas that I focus on, you've heard many of us across the aisle talk about the housing crisis that we have in this country. And I know a few others have asked questions previous to me about this, but I would love to follow up afterwards with, specifically, what you think are the short-term and long-term things that we can do to really address the housing supply and affordability crisis.

I have legislation that looks at things like reducing regulatory barriers, zoning reform, these things that we know we can, in partnership with local governments, make a significant difference. And so, if I could, I would love again to follow up with you—even cut-

ting red tape, those kinds of things that we can do long-term and short-term.

But I did want to mention one last thing in the 20 seconds that I have. The "Fed Listens" things that you do, activities that you do, could you talk a little bit about that as well? Because working people, a lot of times, people don't feel that they have a place in these kind of conversations. But can you talk about what the Fed does with "Fed Listens"?

Mr. POWELL. So, briefly, we did this as part of our review 5 years ago, and we do it on an ongoing basis now. And the idea is that we break out from the usual people that we talk to, which is a pretty diverse group, and try to deal directly with people who are experiencing the economy and our policies.

And it's been—it's quite eye-opening to listen to people talk about it. We had one person at the Chicago conference 5 years ago who said, "The expansion," which was then 9 years old, "is just reaching my community." And he talked for some minutes about how companies were going into prisons and finding people who weren't going to get out for a year or two and training them, stuff like that. You could hear a pin drop. It was very telling stuff. So, I think we learn from all that. And so we'll keep doing it.

Senator BLUNT ROCHESTER. Well, I will end by saying there is a famous quote—I think it's Martin Luther King—"We may have come over on different ships, but we're all in the same boat now." We need to get it together.

Thank you. I yield back.

Senator CRAMER. Thank you, Senator Blunt Rochester.

Senator Moreno.

Senator MORENO. Chairman, thank you for being here. Thank you for taking the time on the phone the other day. I appreciate that very much.

I'll just ask you a broad, general question. When you increase M2, the money supply, by 40 percent over a short period of time, is that going to drive inflation?

Mr. POWELL. It could. Well, as I think we discussed, monetary aggregates have not been a great predictor of, really, any other thing. But I think when there's a sharp increase like that in M2, then that could—you know, that's something that might cause some inflation.

Senator MORENO. Now, just to be clear for the people watching, that happened because of public policy in this institution here, correct? In other words, there wasn't a civilian-led effort to increase Government spending, outside of the elected leaders that chose to make those decisions?

Mr. POWELL. Well, I think that was part of it. I think there were just a lot of causes in the inflation that we saw, but, you know, it's fiscal policy, it was monetary policy. It was closing and reopening the economy just generated a bunch of confusing signals. And then a lot of inflation everywhere in the world, really, whether people did a lot of fiscal policy or not. But there were many factors, and that's, I would say, one of them.

Senator MORENO. But just to be clear, it wasn't the citizens of the country making those decisions. Those were elected leaders choosing to close the economy. Businesses didn't decide 1 day to

close, didn't decide to not be able to go to work. Those were decisions made by policymakers, correct?

Mr. POWELL. Yes.

Senator MORENO. So, it's a little disingenuous to hear my colleagues talk about how they care so much about inflation, when, in reality, they caused it. But I don't want to continue that.

I would ask you a question, just out of curiosity, because you worked at the Department of Treasury. At what point did you think they were going to run out of ink? Did that concern you that maybe it was possible that they were printing so much money that the Treasury would have to find alternate ink suppliers?

Mr. POWELL. That didn't occur to me, but, good question.

Senator MORENO. So, along those lines, something that concerns me a lot is the idea that we would even look like China in any way. So, can I have your commitment that, as long as you're the Chairman of the Federal Reserve System, that we will never have a central bank digital currency?

Mr. POWELL. Yes.

Senator MORENO. Thank you for that. I think that's extremely important. That makes me very happy to hear you say that.

Shifting gears to a little bit something that matters to me and entrepreneurs all over the country is, why can't I wire somebody money at 6 p.m. Eastern Time? Can we get to a 24/7 scenario where wires are cleared every day, all day? I think that would be very, very helpful to businesses all over the country.

Mr. POWELL. So, that's coming. It's just coming slowly here. We have that at FedNow. We'll get in touch with you about FedNow. We provide that service between two banks. And others want to provide it, too, but, yes, we do kind of lag a lot of other countries in that, and it is time for that to happen.

Senator MORENO. So, I know I don't want to put you on the spot, but to put you on the spot, FedNow, I was very familiar with it, but it was a little bit late in coming. Can we get a commitment to do that this year? So that, by the end of this calendar year, businesses can transact 24/7 and settle payments?

Mr. POWELL. I think they can do that now. I believe they can do it now on FedNow. And they can also do it on the RTP system, as well. So, I think it's available. Let me check in and I'll follow up with you.

Senator MORENO. That would be great. Now, one other piece of the puzzle here is, what do you think the Fed can do to fight international terror groups—for example, Hamas, Hezbollah, Iran, the proxies—that are funded by places like Qatar? Do you think that we're doing enough to keep them outside of the banking system? Because, at the end of the day, terrorism is ultimately funded by these bad actors.

I met with the hostage families this morning. It was heartwrenching to hear stories about kids that are my kids' age being held for almost 500 days. The Qataris are, obviously, completely complicit in all this. What can we do? What advice would you have that we can do to make certain that we bring these terror groups to their knees?

Mr. POWELL. You know, we do enforce the money laundering laws very, very strictly, and—but it's a tough question. You know,

it's a huge focus in international meetings and things like that. But, you're right, it's really hard to nail it down, particularly if it's all happening overseas.

But we can do what we can do with our banks. We don't want to make it so costly, though, that they debank people because they're so worried about violating the anti-money laundering laws. I mean, that's some of what's happening, according to the banks, is that they're so afraid that there might be money laundering that they just cut people off at the first flag, as opposed to—perfectly legal businesses are being thrown out because of their fear of being caught doing money laundering. So, I think there's a balance there. But, no, it's a really hard project and one we spend a lot of time on.

Senator MORENO. Thank you, Chairman.

Senator CRAMER. Thank you, Senator Moreno.

The patient and persistent Senator Kim.

Senator KIM. Thank you. I wanted to make sure some of my colleagues had a chance to be able to run off to some of their meeting. And I've enjoyed being able to listen to the Chairman, to be able to hear some of your articulation here.

I just want to share with you, you know, I did a telephone town hall last night, and I'm glad to hear some of my other colleagues as well, and there is a lot of anxiety right now by the American people in trying to understand what's happening and seeing and interpreting what's happening on the news.

So, I guess I just wanted to ask you for your words or how you would explain to the American people the importance of independence when it comes to the Federal Reserve.

Mr. POWELL. So, I think the point is that we'll make better policy, we'll keep inflation lower, if we just focus on doing our job and stay out of politics, stay out of elections, don't try to favor or to hurt any political party, any political figure. Just focus on the data.

If we start putting up political filters, we'll be no good—we'll be less effective at our already quite difficult job. And, you know, I do think that's broadly understood. I think there's broad support up here. In both political parties and on both sides of the Hill, I think there is a decent degree of support for continued independence.

That's not to say we shouldn't be accountable. We should be very accountable and transparent about what we do. We should be up here explaining what we do and why to our oversight body, which is this Committee, and then the same committee on the House side.

So, that's what I would say.

Senator KIM. Making decisions about your core mission, about stability, and about growth, but not thinking about it in terms of the context of an election cycle, for instance. Is that right?

Mr. POWELL. Yes, exactly.

Senator KIM. I wanted to shift gears a little bit, but a similar type topic. You know, there's been a lot of attention to the role of public servants within our Government and our understanding of what roles they play, how many to have. And I guess I just wanted to ask if you could speak to the role of the Federal Reserve employees, their qualifications, and, more importantly, their importance to the mission and being able to engage. How important are they to the work that you are trying to do toward stability and growth?

Mr. POWELL. So, I am very proud to be associated with the people of the Federal Reserve, and I'll give you an example why. When the pandemic hit, kind of out of the blue, and economies all over the world are shutting down, the U.S. Treasury market is stopping to function, companies can't roll over their commercial paper, economists are writing about a depression, the people at the Fed who went through the global financial crisis 10 years before step forward and say, "We've got this. We know what to do. Here's what we do with the Treasury market. Here's what we do with money market funds. Here's what we do with the companies that can't get any financing."

The markets were closed and companies were having maturing debt that they had to roll over. The people who knew what to do in that pretty dire emergency were working at the Federal Reserve, and other places. But I will tell you, it was impressive. And I think if you could have seen the way people react and how hard they work, and how much they know, and how well it worked, really; our work during the acute phase of the crisis was very successful, and it's entirely due to the knowledge base that resides with the career people at the Fed.

Senator KIM. Would you say that the Fed is overstaffed?

Mr. POWELL. No. I would say that, you know—overworked, maybe, but not overstaffed. Everybody at the Fed works really hard. It's a place where people work very hard.

Senator KIM. A lot of this conversation right now about staffing numbers at different departments, the agencies, going back to this sense of the taxpayer dollar, you know, in terms of accountability there. But I guess I just wanted to ask you, is the Fed paid for by the taxpayer dollars? Can you explain to us what the burden is on the taxpayer?

Mr. POWELL. So, we're self-funding through our large balance sheet.

Senator KIM. So, when it comes to the staffing at the Federal Reserve, it's not coming from the taxpayers. Is that right?

Mr. POWELL. You know, indirectly, we—so, all of our profits we give back to Treasury, and those profits would be higher if we didn't pay for the Fed. So, in fairness, it does ultimately come—it's ultimately paid for by the taxpayer, but we are—but, in that sense, we're self-funded.

Senator KIM. Self-funded?

Mr. POWELL. Yes.

Senator KIM. Just one last question here. You talked about the different actors that are involved when it comes to levying tariffs, in terms of paying the exporter, the importer, a middleman could be part of that. I guess I just wanted to ask you: do you know of any way in which to 100 percent guarantee that the consumers will not have to pay higher costs when it comes to tariffs?

Mr. POWELL. Not really. It's not going to be easy to identify with any accuracy exactly where costs do fall, but I think it would be hard to guarantee any particular outcome. I think we're just going to have to see.

Senator KIM. OK. Thank you. I yield back.

Senator CRAMER. Thank you, Senator.

Senator Warren, do you——

Senator WARREN. I do. Thank you, Mr. Chairman. I just want to make a point before we quit here, and that is about law enforcement. If you keep the laws the same on the books, but you fire the cops, you're going to have a lot more crime. That's kind of Law Enforcement 101. And the problem we've got right now is the law on the books about consumer protection hasn't changed, but the cops, at least right at this moment, have been told at the CFPB to stand down.

And I appreciate that we have State AGs who step in, and often they partner up with the CFPB, but there is no one else, for the giant banks, who actually does what's called the bank examination, the supervision. And that is so important.

Remember the Wells Fargo scandal where Wells Fargo was illegally opening fake accounts in people's names? You find that through bank examination, not because the person who got cheated could figure it out.

Bank of America gets hauled in because bank examiners discovered they were charging people illegally on junk fees. Nobody finds that but the people who are down in the banks doing the bank examination on behalf of the consumers.

Look, we tried a patchwork of law enforcement for consumers before 2008. We had all those laws scattered among seven different agencies and we saw how it ended. It ended with millions of people losing their homes, millions of people losing their jobs, millions of people losing their savings.

The CFPB is our law enforcement agency to make sure that the giant banks follow the rules on consumer protection. And, for me, right now, I would be really worried about doing business with a giant bank when there's no cop on the beat.

Senator CRAMER. Thank you, Senator.

I will recognize myself for just one question, and it will even be relevant to your job, I promise, Mr. Chairman. So, thank you for your patience and for being here.

I wanted to follow up on—there were some questions—or at least I know Senator Rounds asked a Basel III question and your response was, basically, let's get the people in place from the Administration, and then we'll proceed again.

Treasury Secretary Bessent recently said that the banking system is, I believe he said, quote, well capitalized, perhaps overcapitalized, unquote. And given that assessment, and if you agree with it, could you discuss the necessity of advancing a new Basel III proposal? Specifically, how an updated regulation would impact the ability of the regional banks to compete with the big Wall Street banks, and what considerations should be taken into account to ensure that we have a competitive banking system.

Because I know there's—this concern comes and goes. And for those of us who have largely regional banks or, God love them, the best of all, community banks and credit unions, a competitive system is really important. So, if you could just answer that, and then I'll wrap up.

Mr. POWELL. Sure. So, we are eager to get together with new colleagues from the FDIC, new leadership at the FDIC and the OCC, to try to finish Basel III. My own view has been that our banks are well-capitalized. And, you know, Basel III was not supposed to

be an exercise in raising capital on U.S. banks. Mario Draghi said that. So, I think that's about right. We have some work to do, but we'll get there, I believe, fairly quickly.

In terms of your regionals, they don't face the G–SIB surcharges. They don't face quite the burden that the large banks face on resolution planning and that sort of thing. So, certainly, we need those banks to be healthy and profitable because we need them to compete with the G–SIBs. We don't want a world where the G–SIBs just keep getting a bigger and bigger share of the economy. That's not what we're looking for.

And that's where a lot of pressure—you know, we've seen the number of community banks, especially, declining for 30 years, and this is not something we want to—we don't want to be the cause of that. If it's happening by natural causes or because of evolving technology, that's one thing, but we don't want to be inadvertently causing that to happen.

Senator CRAMER. So, as you look at a Basel III exercise, can you think of anything specifically that ensures that competitive, diverse banking system is maintained, rather than a consolidation, whether it's fewer community banks into more regional banks or fewer regional banks into more Wall Street banks?

Mr. POWELL. Well, I just think it's, you know, you think twice before you impose the—the kinds of things that we impose on the largest banks and the next-to-largest banks, you want to be careful not to just think we should do exactly the same thing. You know, what tends to happen is, for smaller banks, it raises the fixed costs, is what it does, of banking, and it makes it harder to start new banks, and it makes it harder for any but the largest to be successful. So, that's not what we want. You know, we want a lot of competition. And these regionals, it's important that they thrive.

Senator CRAMER. I agree, and I agree with your assessment. So, thank you for that. Thank you for staying with us for the day and I'm glad we could get you first.

So, as we wrap up, for Senators who wish to submit questions for the hearing record, those questions are due 1 week from today: Tuesday, February 18th.

Chair Powell, you have 45 days from that day to submit your response to questions for the record.

Thank you. The Committee stands adjourned.

[Whereupon, at 12:15 p.m., the hearing was adjourned.]

[Prepared statements, responses to written questions, and additional material submitted for the record follow:]

PREPARED STATEMENT OF CHAIRMAN TIM SCOTT

Chair Powell, thank you for being here today, appreciate your willingness to have a chat with us about some of the really important issues facing our country.

Without question, the Federal Reserve serves a critical role in the function of our Government and the global economy.

You have the ability to influence markets and directly impact the financial future of hundreds of millions of Americans.

That is why the Federal Reserve is supposed to be an independent institution free from politics.

But, in recent reality, the Fed has been susceptible to political pressure.

Take for example the Fed's involvement in the Network for Greening the Financial System, a group dedicated to green financing and climate change, which the Fed joined in December 2020 as President Biden was about to assume office.

Just last month, the Fed announced that it had pulled out of the organization as President Trump was getting ready to be sworn in.

To the American people, this is flip flopping in the political wind. Too much focus on climate change instead of supervision is consequential.

And in March, just 2 years ago, we saw the failure of Silicon Valley Bank.

SVB marked the third largest bank failure in U.S. history and the largest since the 2008 financial crisis. And yet, not a single Federal regulator was held to account.

In fact, the FDIC filed a lawsuit against bank executives which accused the SVB of "egregious mismanagement." And I agree. How is it that no bank supervisor has faced any consequences? With 30 MRAs and MRIAs that never had timely action at SVB.

How can the people who are supposed to be our cops on the beat have not faced any recourse for such "egregious" failures. I simply don't understand.

We must all address the fact that over the last 4 years, the Biden administration and Bidenomics have devastated, decimated, and destroyed hardworking families ability to support themselves.

During Joe Biden's time in office, overall prices rose by over 20 percent, energy prices 34 percent, transportation costs 31 percent, groceries 22 percent.

But that's not all.

Thanks to Bidenomics, two-thirds of Americans have less than $1,000—less than $1,000—in their savings accounts.

Here's there is good news: things are going to get better.

During his first term, President Trump kept his promises to the American people.

In the first 3 years of his presidency, President Trump built the most inclusive economy ever.

Seven million jobs created, and two-thirds went to women, African Americans, and Hispanics.

It's time to once again make America's economy work for the folks working paycheck to paycheck.

Joe Biden and Kamala Harris broke our economy and Donald Trump will fix it.

For too long, bank regulators have followed black box regulatory frameworks with little to no recourse.

The FDIC, under President Trump's leadership, recently released never-before-seen supervisory documents, which confirmed that Biden's Operation Chokepoint 2.0 was real despite assurances that these unacceptable practices would end following the Democrats' first Operation Chokepoint 1.0.

We are seeing an unfair playing field that results in disastrous consequences for legal businesses and law-abiding citizens.

On one hand, if you are in the private sector and you do your job poorly, you would face consequences—reprimands, suspensions, or even being fired.

But if you are within the walls of the Federal Government, such as a bank regulator, you will face no consequences for your actions, even if you pressure a bank to cut off services to digital asset firms, political figures, and conservative-aligned businesses and individuals.

To me, that goes against the principles of fairness and market access.

Over the last 2 years, as the Ranking Member of this Committee, I have consistently argued that the Basel III Endgame proposal will raise costs and limit credit access for hardworking Americans.

And while I'm glad this proposal was not finalized, the uncertainty surrounding Basel III forced banks to put capital on the sidelines—limiting access to that capital for local and small businesses across the country.

Now, as Chairman, I plan to work to rectify the issues of the Biden administration.

Chairman Powell, I look forward to hearing from you on the Federal Reserve's future and the plans you have for rightsizing the financial regulatory frameworks, specifically around Basel III.

To create jobs here in America, we need to make sure there is capital and liquidity in the market.

And we also want all Americans, even those growing up in poverty like I did, to know they can access the capital necessary to start new businesses, grow existing businesses, buy a home, and pursue their American Dream.

Chairman, I look forward to your comments and your testimony and I will simply say, that I believe that weaponizing an independent agency like the Fed for liberal positions—from debanking crypto, bank stress tests, and the green financing scheme—is not calling balls and strikes as a fair referee. And I hope that we are getting ready to clean that slate, start fresh, and focus on a healthy economy.

PREPARED STATEMENT OF RANKING MEMBER ELIZABETH WARREN

Thank you, Mr. Chairman. Chair Powell, it's no secret that you and I disagree on the need for strong bank regulation, on monetary policy, and on the Fed's stock trading scandals.

We have sharp differences, but I believe you are a principled public servant who cares about this country.

We are at an unprecedented moment. Our financial systems are facing huge risks from the economic chaos of President Trump and his co-president, Elon Musk. From on-again, off-again tariffs, to on-again, off-again layoffs for tens of thousands of Government workers, to on-again, off-again cuts in domestic grain purchases, to on-again, off-again support for medical research.

Now, co-president Musk and his OMB director have frozen all work at the CFPB. There are now zero cops overseeing the $18 trillion consumer lending market. Zero cops. Investigations into illegal foreclosures and auto repossessions—canceled. Exams of giant credit card issuers to weed out unlawful junk fees—canceled. Probes of illegal debt collection practices—canceled. Rules to save people billions of dollars—canceled. If Musk and his OMB Director succeed in killing the CFPB, it's like putting a sign on every checking account, credit card, mortgage application, and car loan "Cops have been fired—Let the scams begin!"

That's not all. Musk and his DOGE crew are also rooting through the Treasury's most important payment systems—the financial plumbing that ensures that billions of payments go through—from Social Security checks to grants for community health centers. No one has verified how they got this access or what they are doing with it.

No one has checked whether Americans' financial data has been copied or sold for the personal profit of Mr. Musk.

Instead, we've had a series of misleading and conflicting statements by Secretary Bessent.

After receiving public blowback, it appears that Secretary Bessent is now trying to throw the Federal Reserve under the bus. Secretary Bessent claims that DOGE can't meddle with the Treasury's payments system because ultimately "The Fed is in control."

I'm not sure whether Secretary Bessent doesn't understand how the system works or if he's just trying to shift blame to you, Chair Powell, but I know he is wrong. The Fed simply executes the transactions Treasury instructs. If Elon and his hackers, for example, initiate instructions to choke off payments to their enemies or if they issue instructions to shut down payments for teachers' aides for kids with special needs, the Fed may have no way of knowing the instructions were manipulated and no legal method to override it.

Chair Powell, the next 18 months may define your legacy and the country's trust in the Fed as an institution. I expect you'll work with Democrats and Republicans in Congress if DOGE's next move is to try to commandeer the Fed's payment system. I also expect that you will not join the conspiracy to shutter the CFPB. Unlike the Treasury payment instructions, you can see if the CFPB's funding requests have been manipulated. I understand that some extremists have a different view about what the law ought to be, but under the law right now, impoundment is clearly illegal. Do not make the Federal Reserve an accomplice to this illegal act and forever sully the reputation of the Fed. Keep the CFPB funded, exactly as the law requires.

We're in the middle of a crisis as Elon Musk tries to take over our Government, but let's also talk about your day-to-day job—meeting the Fed's dual mandate of promoting maximum employment and stable prices. It's now clear that the Fed acted too late and let inflation get too high and then responded by keeping rates

too high for too long. These policies made the big drivers of inflation—like housing costs—even worse. And they put Americans' jobs at risk, making it more difficult for them to afford a home and for small businesses to finance their operations. I urge you to move more rapidly to bring down interest rates, beginning with a meaningful rate cut next month.

You have proven you can move quickly—when it is politically expedient. After President Trump was elected, within the space of a few weeks:

You scrubbed seemingly all mention of diversity and inclusion from the Fed's website.

You withdrew from an international central bank group that shares information on climate-related risks to the financial system.

You instituted a hiring freeze that will limit the number of cops on the Wall Street beat.

You announced plans to gut big bank stress tests.

I can see the immediate political appeal of your strategy, but ultimately it will fail. You will lose good people. Climate catastrophes will continue to mount. And the increasing vulnerability of the big banks will threaten our entire economy.

Sure, Donald Trump may be happier with you right now, but wading deeper into politics to please him, over the long run, will burn the reputation and the independence of the Fed and put the economy at risk.

I urge you: Don't fall into these traps.

PREPARED STATEMENT OF JEROME H. POWELL

CHAIR, BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM

FEBRUARY 11, 2025

Chairman Scott, Ranking Member Warren, and other Members of the Committee, I appreciate the opportunity to present the Federal Reserve's semiannual *Monetary Policy Report*.

The Federal Reserve remains squarely focused on achieving its dual-mandate goals of maximum employment and stable prices for the benefit of the American people. The economy is strong overall and has made significant progress toward our goals over the past 2 years. Labor market conditions have cooled from their formerly overheated state and remain solid. Inflation has moved much closer to our 2 percent longer-run goal, though it remains somewhat elevated. We are attentive to the risks on both sides of our mandate.

I will review the current economic situation before turning to monetary policy.

Current Economic Situation and Outlook

Recent indicators suggest that economic activity has continued to expand at a solid pace. Gross domestic product rose 2.5 percent in 2024, bolstered by resilient consumer spending. Investment in equipment and intangibles appears to have declined in the fourth quarter but was solid for the year overall. Following weakness in the middle of last year, activity in the housing sector seems to have stabilized.

In the labor market, conditions remain solid and appear to have stabilized. Payroll job gains averaged 189,000 per month over the past four months. Following earlier increases, the unemployment rate has been steady since the middle of last year and, at 4 percent in January, remains low. Nominal wage growth has eased over the past year, and the jobs-to-workers gap has narrowed. Overall, a wide set of indicators suggests that conditions in the labor market are broadly in balance. The labor market is not a source of significant inflationary pressures. The strong labor market conditions in recent years have helped narrow long-standing disparities in employment and earnings across demographic groups. [1]

Inflation has eased significantly over the past 2 years but remains somewhat elevated relative to our 2 percent longer-run goal. Total personal consumption expenditures (PCE) prices rose 2.6 percent over the 12 months ending in December, and, excluding the volatile food and energy categories, core PCE prices rose 2.8 percent. Longer-term inflation expectations appear to remain well anchored, as reflected in a broad range of surveys of households, businesses, and forecasters, as well as measures from financial markets.

Monetary Policy

Our monetary policy actions are guided by our dual mandate to promote maximum employment and stable prices for the American people. Since last September,

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[1] The February *Monetary Policy Report* includes as a special topic an update on employment and earnings across demographic groups.

the Federal Open Market Committee (FOMC) lowered the policy rate by a full percentage point from its peak after having maintained the target range for the Federal funds rate at 5¼ to 5½ percent for 14 months. That recalibration of our policy stance was appropriate in light of the progress on inflation and the cooling in the labor market. Meanwhile, we have continued to reduce our securities holdings.

With our policy stance now significantly less restrictive than it had been and the economy remaining strong, we do not need to be in a hurry to adjust our policy stance. We know that reducing policy restraint too fast or too much could hinder progress on inflation. At the same time, reducing policy restraint too slowly or too little could unduly weaken economic activity and employment. In considering the extent and timing of additional adjustments to the target range for the Federal funds rate, the FOMC will assess incoming data, the evolving outlook, and the balance of risks.

As the economy evolves, we will adjust our policy stance in a manner that best promotes our maximum-employment and price-stability goals. If the economy remains strong and inflation does not continue to move sustainably toward 2 percent, we can maintain policy restraint for longer. If the labor market were to weaken unexpectedly or inflation were to fall more quickly than anticipated, we can ease policy accordingly. We are attentive to the risks to both sides of our dual mandate, and policy is well positioned to deal with the risks and uncertainties that we face.

This year, we are conducting the second periodic review of our monetary policy strategy, tools, and communications—the framework used to pursue our congressionally assigned goals of maximum employment and stable prices. The focus of this review is on the FOMC's Statement on Longer-Run Goals and Monetary Policy Strategy, which articulates the committee's approach to monetary policy, and on the committee's policy communications tools. The committee's 2 percent longer-run inflation goal will be retained and will not be a focus of the review.

Our review will include outreach and public events involving a wide range of parties, including "Fed Listens" events around the country and a research conference in May. We will take on board lessons of the past 5 years and adapt our approach where appropriate to best serve the American people, to whom we are accountable. We intend to wrap up the review by late summer.

Let me conclude by emphasizing that at the Fed, we will do everything we can to achieve the two goals Congress set for monetary policy—maximum employment and stable prices. We remain committed to supporting maximum employment, bringing inflation sustainably to our 2 percent goal, and keeping longer-term inflation expectations well anchored. Our success in delivering on these goals matters to all Americans. We understand that our actions affect communities, families, and businesses across the country. Everything we do is in service to our public mission.

Thank you. I look forward to your questions.

Responses to Written Questions Submitted for the Record

Questions for The Honorable Jerome H. Powell, Chair, Board of Governors of the Federal Reserve System, from Chairman Tim Scott:

1. **In response to my question on accountability for Fed bank supervisors who inadequately supervised Silicon Valley Bank (SVB), you noted that examiners were not held accountable because they were just carrying out a "specific playbook" and it was "not fair to employees to say you violated our practices." However, the Fed employees who wrote the playbook and established the supervisory practices and priorities can be held accountable. So, even if there was not "malfeasance," there was incompetence in setting the "playbook" by which examiners supervise Fed-regulated entities.**

    a. **Can you elaborate on how the Fed is revising "the playbook"? Will these revisions ensure that the playbook prioritizes credit risk, liquidity risk, and interest rate risk not process and governance controls?**

    b. **Is anyone who wrote "the playbook" for supervision prioritizing process and governance over "bread and butter banking" being held accountable?**

In the wake of the Silicon Valley Bank (SVB) failure, as an immediate step, we increased our engagement with banks to make sure they had sufficient liquidity and manageable interest rate risk profiles. These steps helped to avoid further spread of bank failures.

More broadly, we are looking at how we can refocus supervision on core financial risks—management of credit, liquidity, market, and interest rate risk—that are the bread and butter of banking. We have also been looking at more timely escalation of supervisory findings and monitoring of risk-based metrics to help target supervisory attention.

2. **According to the Federal Reserve's review of the supervision and regulation of SVB, "Internal surveillance reports issued during 2022 and early 2023 highlighted several fundamental risks that were central to SVBFG's failure, including rising interest rate risk and liquidity risk…".[1]**

    [1] https://www.federalreserve.gov/publications/files/svb-review-20230428.pdf.

    a. **Were these internal surveillance reports shared with FRBSF examination staff?**

    b. **The report also notes that interest rate risk was upgraded to "top risks" by the end of 2022. Were any changes made to examination procedures to incorporate "top risks".**

    c. **What communications were sent to regional exam staff and supervisors regarding the inclusion of interest rate risk as a "top risk"?**

    d. **Were any changes made to the "playbook", referenced in question one of this document, made as a result of the internal surveillance reports?**

The Federal Reserve System (System) produces a wide range of surveillance, analysis, and reports related to supervised institutions and the broader financial system that are available to examiners and staff around the Federal Reserve. These reports provide context for bank-specific supervision by identifying industry trends and emerging risks.

Informed by the various internal surveillance reports as well as System-level discussions, supervisory teams are expected to develop and maintain supervisory plans that are current and tailored to a firm's changing risks and issues. In general, all fundamental financial risks, including interest rate and liquidity risk, are incorporated into annual supervisory plans through various examination activities. As I noted in question 1, in the wake of the SVB failure, as an immediate step, we increased our engagement with banks to make sure they had sufficient liquidity and manageable interest rate risk profiles.

Question for The Honorable Jerome H. Powell, Chair, Board of Governors of the Federal Reserve System, from Chairman Tim Scott:

3. **In response to my request that you commit to working with the Committee to end debanking, including revising the Fed's supervision manuals to remove reputational risk as a tool for supervision, you agreed and said you were "happy to make that commitment." What steps will the Fed take to end debanking and revise its supervision manuals?**

I appreciated your question at that hearing, and we recognize it is important that customers engaged in lawful activities have access to financial services. As you know, I recently named Governor Bowman to chair the Committee on Supervision and Regulation and work is underway to review our manuals to remove reputational risk.

Questions for The Honorable Jerome H. Powell, Chair, Board of Governors of the Federal Reserve System, from Chairman Tim Scott:

4. **In the response to questions regarding the Fed's supervision of compliance with federal consumer compliance laws, you noted that the Fed has residual enforcement authorities, but it does not have examination authority. The Fed's website[2] and supervision manuals (e.g. the Large Institution Supervision Coordinating Committee Program Manual[3]), however, paint a different picture. Both note that the Fed "promotes consumer protection and community development through consumer-focused supervision and examination, research and analysis of emerging consumer issues and trends, community economic development activities, and administration of consumer laws and regulations," and the Fed identifies and investigates "possible violations of consumer protection laws through the Federal Reserve System's consumer complaint and consumer inquiry programs." Can you please provide more information on the Fed's supervision and examination of compliance with consumer protection laws for Fed supervised institutions (both institutions with assets above $10 billion and those with assets below $10 billion)?**

   [2] https://www.federalreserve.gov/supervisionreg/consumer-compliance.htm.
   [3] https://www.federalreserve.gov/publications/files/liscc-program-manual-202302.pdf.

The Dodd-Frank Wall Street Reform and Consumer Protection Act transferred from the federal banking agencies to the Consumer Financial Protection Bureau exclusive (i) rule-making authority for most federal consumer financial protection laws, including the Truth in Lending Act, Equal Credit Opportunity Act, and Electronic Fund Transfer Act;[1] and (ii) examination authority with respect to these laws for insured depository institutions and credit unions with over $10 billion in assets.[2] The Federal Reserve Board (Board) retained examination authority with respect to these laws only for state member banks with assets of $10 billion or less.

In addition, the Board retained examination authority with respect to a narrow set of consumer financial protection laws for all state member banks, regardless of asset size. These laws include the Fair Housing Act and the Federal Trade Commission Act's prohibition on unfair or deceptive acts or practices.

Finally, the Board has authority to examine the compliance management systems of Federal Reserve-supervised holding companies and certain subsidiaries, regardless of asset size.

5. **On January 17, 2025, the Fed announced that it had withdrawn from the Network of Central Banks and Supervisors for Greening the Financial System (NGFS), a decision that I agree with. The Fed's press release notes that "the work of the NGFS has increasingly broadened in scope, covering a wider range of issues that are outside of the Board's statutory mandate."[4] Why is the NGFS's scope now outside the Board's statutory mandate?**

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[1] 12 U.S.C. 5512(b)(4)(A).
[2] 12 U.S.C. 5515.

[4] https://www.federalreserve.gov/newsevents/pressreleases/bcreg20250117a.htm.

When the Board originally joined the Network for Greening the Financial System (NGFS) in 2020, it sought to enhance the Federal Reserve's understanding of climate-related financial risks, as well as how other central banks are approaching such risks. While the Board appreciated its engagement with the NGFS and its members, the work of the NGFS had increasingly broadened in scope, covering a wider range of issues that are outside of the Board's statutory mandate, such as nature-related risks and biodiversity.

7. **A senior Fed employee, John Rogers was recently arrested and indicted on charges of economic espionage on behalf of the People's Republic of China.[6]**

   [6] https://www.justice.gov/opa/pr/former-senior-adviser-federal-reserve-indicted-charges-economic-espionage.

   a. **When did you first learn of Mr. Rogers espionage on behalf of the People's Republic of China?**

   b. **What information did he leak to China, and what damage did he cause to U.S. economic security due to his sharing confidential Federal Reserve information with his Chinese handlers?**

   c. **Will you commit to providing a full briefing to my staff on the incident?**

This indictment resulted from an investigation by the Federal Reserve's Office of Inspector General and the Federal Bureau of Investigation. Mr. Rogers has not been employed by the Federal Reserve since 2021. Further questions regarding the indictment are best addressed by the law enforcement agencies that sought the indictment.

8. **The Fed put out for comment last year a proposal to expand hours for Fedwire Funds Service and National Settlement Service. However, the Fed once again delayed the implementation of ISO 20022 last week[7] and has previously indicated that it would not expand Fedwire operational hours until two years after the migration to the new ISO standards.[8] Can you please explain why the ISO 20022 implementation was delayed and whether you expect it to have any impact on Fedwire modernization?**

   [7] https://www.frbservices.org/news/communications/021325-fedwire-iso20022-implementation-rescheduled-July-14.
   [8] https://www.federalreserve.gov/newsevents/pressreleases/files/bcreg20240503a1.pdf.

The ISO 20022 messaging format implementation was rescheduled after careful consideration of industry requests and an assessment of customer readiness. The Federal Reserve continues to evaluate the Fedwire® Funds Service and the National Settlement Service expanded hours proposal. The rescheduled implementation of the ISO 20022 messaging format will not materially affect the considerations and timeline for expanding operating hours.

Question for The Honorable Jerome H. Powell, Chair, Board of Governors of the Federal Reserve System, from Chairman Tim Scott:

6. **On December 23, 2024, the Fed announced that it will soon seek public comment on significant changes to improve transparency of bank stress tests and reduce volatility of resulting capital requirements.[5] The Fed noted that recent changes to administrative law motivate these actions.**

   [5] https://www.federalreserve.gov/newsevents/pressreleases/bcreg20241223a.htm.

   a. **Please detail what changes in administrative law influenced the Fed's decision?**

   b. **The release also notes, "[t]he Board analyzed the current stress test in view of the evolving legal landscape and determined to modify the test in important respects to improve its resiliency." Please provide a copy of this analysis.**

Recent Supreme Court decisions have made clear that courts will be less deferential to federal agencies going forward and will have increased expectations with respect to Administrative Procedure Act requirements. The Federal Reserve Board (Board) remains committed to following the law.

On April 17, 2025, the Board requested comment on a proposal to reduce the volatility of the capital requirements stemming from the Board's annual stress test results.[1] The proposal would average stress test results over two consecutive years to reduce the year-over-year changes in the capital requirements that result from the stress test, delay the annual effective date of the stress capital buffer requirement from October 1 to January 1 of the following year to give banks additional time to adjust to their new capital requirements, and make targeted changes to streamline the Board's stress test-related data collection. Later this year, the Board intends to propose additional changes to improve the transparency of the stress test. All proposed changes will follow the standard rulemaking process.

[1] *See* https://www.federalreserve.gov/newsevents/pressreleases/bcreg20250417a.htm.

Question for The Honorable Jerome H. Powell, Chair, Board of Governors of the Federal Reserve System, from Ranking Member Elizabeth Warren:

1. **On January 16, the FDIC sued 17 former directors and officers of Silicon Valley Bank. The lawsuit was filed by the FDIC in its role as receiver. The Federal Reserve Board was the primary federal regulator of SVB. It has the authority under 12 U.S.C. 1818(b) to take enforcement actions, including levying civil money penalties, against institution affiliated parties, such as directors or officers, for unsafe and unsound banking practices. The Fed also has authority under 12 U.S.C. 1818(e) to ban directors and officers from the banking industry.**

    a. **Has the Fed completed its investigation into the failure of SVB?**

    b. **If not, what is the timeline for completing the investigation?**

    c. **Has the Fed found evidence that certain SVB directors and officers engaged in unsafe and unsound banking practices?**

The Federal Reserve Board (Board) has authority from Congress to pursue enforcement actions against any executive or director of Silicon Valley Bank (SVB) and SVB Financial Group (SVBFG) who violated the law, breached their fiduciary duties, or engaged in unsafe or unsound practices. We take this responsibility seriously, and Board staff has been investigating bank leadership's involvement in the circumstances leading up to the collapse. Should we determine that an executive or director formerly affiliated with SVB or SVBFG engaged in actionable wrongdoing, we will act to fully hold that person (or persons) accountable. It would not be appropriate for me to comment on whether any particular act or omission constitutes actionable misconduct. However, I can assure you that we are carefully assessing the evidence.

Questions for The Honorable Jerome H. Powell, Chair, Board of Governors of the Federal Reserve System, from Ranking Member Elizabeth Warren:

2. **On January 20, 2025, President Trump issued an Executive Order on Diversity, Equity, and Inclusion.**

    a. **Is the Fed legally required to implement Executive Orders?**

    b. **Please list all actions the Fed has taken to comply, or to "align," with the Executive Order on DEI.**

    c. **Please include archived copies of all webpages that the Fed deleted from its website.**

    d. **Do you believe your actions to comply or align with the Executive Order will inhibit the Fed's efforts to improve the diversity of its workforce?**

    e. **Has the Fed ceased all efforts to recruit Black economists, including those efforts initiated following 2022 reporting that only 1.5% of the Fed's economists were Black?**

As with our practice across many administrations, we are aligning with executive orders, where appropriate and consistent with law.

This is a process we are still working through. With regard to recruiting, we will continue to seek the most talented and motivated people to help us fulfill our mission. That includes outreach to a wide variety of organizations, including historically Black colleges and universities.

4. **On January 17, 2025, the Federal Reserve Board withdrew from the Network for Greening the Financial System. Does the Fed plan to withdraw from the Basel Committee on Banking Supervision, given its focus on climate-related financial risk?**

The Federal Reserve does not intend to withdraw from the Basel Committee on Banking Supervision. The Federal Reserve remains committed to promoting the resilience of supervised institutions.

5. **Does the Federal Reserve Board permit Governors to hire front office advisors from outside of the Federal Reserve System?**

    a. **If not, why not?**

The Federal Reserve does not have "political" staff, such as Schedule C staff in cabinet agencies. Governors' offices have generally been staffed with existing professional Federal Reserve employees whom the governors select through an interview process to serve on rotational assignments in their office. In a small number of situations, a governor has instead

recruited and hired a new staff person with specific skills and experiences from outside the Federal Reserve. In those few occasions, the Federal Reserve has followed a competitive professional recruiting and hiring process, consistent with our policies. Our approach to staffing depends on both the governor's needs as well as the knowledge and skill sets of staff within the Federal Reserve.

8. On October 10, 2024, the OCC took an enforcement action against TD Bank for severe anti-money laundering deficiencies. The enforcement action included both civil money penalties and a growth restriction. On the same day, the Fed also took an enforcement action against the U.S. parent companies of the bank. The Fed's enforcement action was solely a civil money penalty. Why didn't the Fed place any growth restrictions or other structural remedies on the parent companies it oversees?

On October 10, 2024, the Federal Reserve Board (Board) announced an enforcement action against Toronto-Dominion Bank, Toronto, Canada, (TD) and two subsidiary bank holding companies, TD Group U.S. Holdings, LLC, and TD Bank U.S. Holding Company, both of Cherry Hill, New Jersey, for risk management and oversight deficiencies related to TD's compliance with the Bank Secrecy Act (BSA) and other anti-money laundering requirements. The Board also issued a cease-and-desist order that requires the institution to implement enhanced measures to comply with the BSA and otherwise correct the risk management deficiencies identified in the order. The Board's action was coordinated with criminal and regulatory actions taken by the Department of Justice, the Financial Crimes Enforcement Network, and the Office of the Comptroller of the Currency (OCC), which together with the Board announced penalties totaling about $3.09 billion.

The Board's investigation found that the parent holding company and the U.S. holding companies failed to conduct adequate risk management and oversight of TD's retail banking operations in the United States, which allowed their subsidiary U.S. national bank to be used to launder hundreds of millions of dollars in illicit funds. The U.S. holding companies supervised by the Federal Reserve did not engage directly in banking operations, which were conducted by the national bank subsidiary. Accordingly, it is appropriate that any regulatory asset growth restriction be imposed on the entity that directly transmitted substantial amounts of illicit funds by its federal regulator, in this case, the OCC.

In addition to the civil money penalty, the Board's action is designed to address the oversight deficiencies at the holding companies by ensuring the institution operates in compliance with all U.S. laws and regulations. Specifically, the Board's action requires TD to: (1) restructure its compliance function by (a) establishing a new office in the United States dedicated to remediating the deficiencies identified in the order and (b) relocating to the United States the parts of its anti-money laundering compliance program that are responsible for complying with U.S. law; (2) certify that sufficient resources and attention are allocated to correcting the firm's anti-money laundering deficiencies prior to issuing any dividends or capital distributions; and (3) undertake a thorough and independent review of the firm's board of directors and management to ensure adequate oversight of the U.S. operations. TD Bank's home country supervisor, Canada's Office of the Superintendent of Financial Institutions (OSFI), plays an important role

in the supervising the firm's compliance with anti-money laundering laws and we are coordinating with OSFI to make sure the institution undertakes the necessary remediation.

11. On January 31, a former Senior Adviser for the Federal Reserve Board was arrested on charges that he conspired to steal Federal Reserve trade secrets for the benefit of the Chinese Government. What human capital and data controls does the Fed have in place to prevent staff from aiding and abetting foreign adversaries?

We have a variety of controls in place to protect confidential information and systems and to monitor for compliance with those rules. For example, we conduct background investigations on all of our employees and employ physical and logical access controls to prevent and detect unauthorized access to the Board's premises and information systems. In addition, the Board monitors its information systems to detect and prevent the unauthorized sharing of non-public Board information.

14. Under the Federal Reserve Act, the Federal Reserve Board has the authority to set and fund its own budget. Congress conferred a range of responsibilities to the Federal Reserve Board in the Federal Reserve Act and other statutes.

a. How many FTEs are employed at the Federal Reserve Board?

b. Could the Federal Reserve Board meet its obligations with a staff of 100 FTEs?

The Board has approximately 3,000 full time employees. The Board's staff works incredibly hard, and I do not believe we could meet our statutory obligations with only 100 full time employees.

15. On January 17, Elon Musk tweeted that an update to a Treasury payment ID code was a "combined effort of @DOGE, @USTreasury, and @FederalReserve." Have you, any Governors, or any members of the Federal Reserve staff had any contact with representatives from the Department of Government Efficiency?

a. If so, please describe the nature of the contact.

b. Does DOGE have access to the Federal Reserve's payments, supervisory, or personnel data?

The Federal Reserve has only interacted with the Department of Treasury (Treasury) employees and only at the request of the office of the Treasury Secretary. In their capacity as fiscal agent, Federal Reserve Bank staff are in regular contact with staff from Treasury and its Bureau of the Fiscal Service.

16. Please describe how the Federal Reserve Board defines "earnings" for purposes of its financial statements.

a. Does the Federal Reserve transmit "earnings" to the Treasury or does it transmit "excess earnings" to the Treasury?

b. Since the CFPB is funded from the Fed's "combined earnings" and not from the Fed's "net income" or "excess earnings," does the Federal Reserve still have a legal obligation to execute the CFPB's funding request in years that the Federal Reserve does not have "excess earnings" or positive "net income"?

c. Has the Federal Reserve executed the CFPB's funding request in any years for which the Federal Reserve did not have "excess earnings" or positive "net income"? If so, please list the years.

When Congress created the Consumer Financial Protection Bureau (CFPB) under the Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act), Congress established that the Federal Reserve System (System) would be a source of funds for CFPB operations.[1] Specifically, the Dodd-Frank Act states that "[e]ach year (or quarter of such year), beginning on the designated transfer date, and each quarter thereafter, the Board of Governors shall transfer to the Bureau from the combined earnings of the Federal Reserve System, the amount determined by the Director to be reasonably necessary to carry out the authorities of the Bureau under federal consumer financial law, taking into account such other sums made available to the Bureau from the preceding year (or quarter of such year)."[2]

This obligation to fund CFPB operations is subject to an annual cap equal to 12 percent of the operating expenses of the System in 2013, adjusted each year using the percent increase (if any) for the employment cost index for total compensation for state and local government workers for the 12-month period ending on September 30 of the year preceding the transfer.[3] The Board has funded the CFPB in accordance with its statutory obligation since 2010 and will continue to do so.

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[1] 12 U.S.C. § 5497.
[2] *Id.* at § 5497(a)(1).
[3] *Id.* at § 5497(a)(2).

Questions for The Honorable Jerome H. Powell, Chair, Board of Governors of the Federal Reserve System, from Ranking Member Elizabeth Warren:

3. **Has the Federal Reserve Board received a competitive factors report, or other written competitive effects analysis, from the Department of Justice related to the proposed merger between Capital One and Discover?**

    a. **In such analysis, or orally, has the Department of Justice raised any competitive concerns with the transaction?**

    b. **Please provide a copy of any such written materials.**

As part of the standard review process for proposed mergers, the Federal Reserve Board (Board) generally seeks information from other agencies with relevant information, including the Department of Justice with respect to competitive considerations. Consistent with standard process, Board staff consulted with antitrust staff of the Department of Justice regarding the proposed merger of Capital One Financial Corporation (Capital One) and Discover Financial Services (Discover), including discussion of preliminary Department of Justice staff-level views. On April 2, 2025, the Department of Justice provided its competitive factors report concerning this proposal, which concluded that Capital One's proposed acquisition of Discover does not warrant an adverse comment. On April 18, 2025, the Board announced its approval of the application by Capital One to merge with Discover.

6. **Please provide a list of mandatory rulemakings, including joint rulemakings, that the Federal Reserve Board has not yet completed as of February 18, 2025.**

    a. **Please include the date the mandated rulemaking was enacted into law and any associated statutory deadline for completion of the rulemaking, if applicable.**

The Board has not yet issued a final rule in the following rulemakings required by the Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act), which was enacted into law on July 21, 2010.

Dodd-Frank Act Section	Topic	Statutory Deadline
Section 166	Early Remediation Requirements	Section 168 of the Dodd-Frank Act required the Board to issue final regulations to implement subtitles A and C of Title I of the Dodd-Frank Act—which includes sections 166, 167, and 170—not later than 18 months after the effective date of the Dodd-Frank Act.
Section 167	Intermediate Holding Companies for Systemically Designated Nonbank Financial Companies Engaged in Commercial Activities	
Section 170	Safe Harbor Regulations for Nonbank Financial Companies from FSOC Designation as Systemically Important	

Section 213	Industry-wide Prohibition of Bad Actors	The rulemaking required under this section does not have a statutory deadline.
Section 616	Source of Strength	Section 616 required the appropriate Federal banking agencies, which includes the Board, to jointly issue final rules to carry out this section not later than 1 year after the transfer date. One year after the transfer date was July 21, 2012.
Section 626	Grandfathered Unitary Savings and Loan Holding Companies	The rulemaking required under this section does not have a statutory deadline.
Section 956	Incentive Compensation	Section 956 required the appropriate Federal regulators, which includes the Board, to jointly prescribe regulations or guidelines not later than 9 months after July 21, 2010.

The Board also has not yet issued a final rule in the following rulemakings required by the Financial Data Transparency Act of 2022 (FDTA), which was enacted into law on December 23, 2022.

FDTA Section	Topic	Statutory Deadline
Section 5811	Joint Data Standards for Use by Covered Agencies	The FDTA required the covered agencies, which includes the Board, to jointly promulgate final rules to establish joint data standards not later than 2 years after December 23, 2022.
Section 5863	Data Standards for Certain Board Collections of Information	The FDTA required the Board to issue rules to adopt data standards as prescribed, which shall take effect not later than 2 years after the date on which the joint final rules are promulgated.

7. On September 24, 2024, the OCC took an enforcement action against Wells Fargo for anti-money laundering deficiencies. On December 20, 2024, the CFPB sued Wells Fargo

for allowing fraud to fester on Zelle. The bank cannot go a year, or in this case three months, without breaking the law. It has clearly not corrected its structural deficiencies. In November 2024, it was reported that the Fed was considering lifting the asset cap. In light of the bank's recent lawbreaking, has the Fed scrapped plans to lift its asset cap?

The Federal Reserve is closely monitoring the efforts by Wells Fargo to implement the corrective measures required by the 2018 Order. We take very seriously the firm's need to remediate fully and effectively the identified weaknesses. The decision about terminating the asset growth restriction will be made by a vote of the Board of Governors.

9. **The Basel III Endgame proposal would materially improve the resilience of the banking system. After significant industry blowback due to concerns about executive compensation and shareholder payouts, you claimed you would only move forward with a proposal that had "broad support" on the Fed Board. For deregulatory rulemakings of a similar magnitude, will you make a similar commitment and only move rulemakings that have broad support on the Fed Board?**

Our objective with the Basel III package has been to implement it in a way that is consistent with the Basel agreement and broadly comparable to what other large jurisdictions are doing. The Basel III package is a joint effort among the Federal Reserve, Federal Deposit Insurance Corporation (FDIC), and the Office of the Comptroller of the Currency (OCC), and we look forward to working with our FDIC and OCC colleagues on it.

I am a strong supporter of the Board's long-standing tradition of seeking a broad consensus on significant regulatory policies. We are a consensus- and data-driven organization and will continue our efforts to find agreement and arrive at good outcomes.

10. **On April 22, 2024, Synapse Financial, a middleware company that placed deposits at banks on behalf of fintech companies, filed for bankruptcy. Many consumers faced long delays in receiving their funds after the bankruptcy and some people still have not received their money back. Its primary bank partner was Evolve Bank and Trust, a state member bank supervised by the Federal Reserve. On May 17, 2024, CFPB sued SoLo Funds for a range of unlawful conduct. Its bank partner was Evolve. On December 23, 2024, CFPB sued Walmart and Branch for a range of unlawful conduct. The bank partner was Evolve. Does the Fed intend to conduct an internal review as to how its supervision of Evolve failed?**

The Federal Reserve is closely monitoring developments following the bankruptcy of Synapse Financial Technologies, Inc. (Synapse), Woodland Hills, California, in April 2024. As the primary federal regulator for Evolve Bancorp, Inc. and Evolve Bank & Trust (together, Evolve), we are concerned by customer harm that has followed the Synapse bankruptcy. We continue to monitor Evolve's efforts to reconcile Synapse's account records and distribute any amounts owed to Synapse end users as promptly and accurately as possible. If violations of law or regulation at Evolve are identified, the Federal Reserve will take appropriate actions and hold responsible parties accountable to the extent permitted by law.

More broadly, the Federal Reserve is attentive to complex bank-fintech partnerships and continues to assess the best way to help banks effectively manage risks associated with complex bank-fintech partnerships while also promoting responsible innovation.

13. You recently stated that the Vice Chair for Supervision position injects "volatility" in bank regulation and that is "not great for the institutions that we want to regulate." Do you think the American public was well-served by the lack of volatility in banking regulation before the 2008 financial crisis?

The Board's regulatory and supervisory framework is designed to help ensure that our supervised firms operate in a safe and sound manner and remain resilient throughout business cycles. In the Dodd-Frank Act, Congress mandated that the Vice Chair for Supervision develop policy recommendations for the Board regarding supervision and regulation of depository institution holding companies and other financial firms supervised by the Board, and oversee the supervision and regulation of such firms.

As you are aware, Governor Michael Barr stepped down from the position of Vice Chair for Supervision effective February 28, 2025. However, the Board will continue to carry out its important supervisory and regulatory duties. In the absence of a Vice Chair for Supervision, the Chair may designate a Board member to lead the Committee on Supervision and Regulation. As Governor Michelle Bowman has been a member of the Committee on Supervision and Regulation since 2019, and in light of her recent nomination to the position of Vice Chair for Supervision, I named her to serve as the Chair of the Committee. I look forward to continuing to work productively with Governor Bowman as she takes the lead on supervisory and regulatory matters at the Board.

Question for The Honorable Jerome H. Powell, Chair, Board of Governors of the Federal Reserve System, from Ranking Member Elizabeth Warren:

12. You recently suggested that you would support revising the Supplementary Leverage Ratio.

a. What percentage of GSIB market-making activity in the Treasury market occurs in the insured depository subsidiary compared to an affiliated broker-dealer?

b. Is it possible for banks to finance additional Treasury market-making activity with additional retained earnings?

c. Do Treasuries carry interest rate risk?

d. Would you agree that some banks during COVID liquidated Treasuries at a loss due to supply and demand mismatches given the "dash for cash"?

e. Did the 2008 financial crisis reveal any weaknesses in the calibration of risk-weights?

The Federal Reserve Board aims to ensure that risk-based capital and leverage requirements function as intended, with leverage requirements acting as a backstop to the risk-based capital requirements. When a leverage requirement is a firm's binding capital requirement, it can create incentives for the firm to replace low-risk, low-return assets with high-risk assets.

We are looking at potential adjustments to the supplementary leverage ratio requirements that would remove a disincentive for large banking organizations to intermediate in the Treasury market, without undermining their safety and soundness. Any revisions to the supplementary leverage ratio requirements would be subject to notice and public comment.

Questions for The Honorable Jerome H. Powell, Chair, Board of Governors of the Federal Reserve System, from Ranking Member Elizabeth Warren:

17. Do you believe the Federal Reserve's dual mandate, to focus on both inflation and full employment, has served the country well?

I believe that the dual mandate has served the country very well. The goals to effectively promote maximum employment and price stability are complementary in the longer run, so a maximum-employment mandate does not conflict with the long-run achievement of price stability.

18. You've previously stated that one of the main reasons why inflation is high is because of nonmarket services, which "don't provide much signal." Are there other economic metrics, such as labor income, that could be useful in gauging how hot or cold the economy is?

Indicators of labor market conditions, including labor income, are generally considered to be among the best signals for gauging the state of the economy in real time. These metrics broadly point to a labor market that remains solid. For example, labor income, measured by the product of average hours worked and average hourly wages, grew 3.8 percent over the 12 months ending in January. This was well below the 5.6 percent growth rate seen in the very tight labor market of early 2022, but still somewhat above the 3 percent growth rate that was averaged over the two years just prior to the pandemic.

Labor market indicators also point to better balance over the past year and conditions that are currently somewhat less tight than just before the pandemic. For example, the gap between the number of total available jobs (measured by employed workers plus job openings) and the number of available workers (measured by the size of the labor force) was 0.8 million in January—well below its 2022 peak of 6 million and somewhat below its 2019 average. Additionally, the share of respondents to the Conference Board Consumer Confidence Survey who say that jobs are plentiful, and the monthly percentage of the workforce that has quit their job as measured in JOLTS (an indicator of the availability of attractive job prospects), are also somewhat below 2019 levels (but above their ranges that prevailed over much of the previous expansion). Similarly, the unemployment rate in January was 4.0 percent, low relative to its range over the past 50 years, but still higher than the 3.7 percent it averaged in 2019.

As labor market tightness eased somewhat further last year, nominal wage growth has also continued to slow, although to a still-solid pace. Total hourly compensation, as measured by the Employment Cost Index increased 3.6 percent over the 12 months ending in December and has gradually slowed from its peak increase of 5.5 percent in mid-2022.

Outside of the non-market category noted in your question, the general easing of labor market conditions appears to have played a role in slowing the rate of price increases for core non-housing services. For the "market-based" category of core services, which account for roughly three-fourths of core non-housing services, prices increased 2.9 percent last year—similar to its pre-pandemic pace and slower than its 3.5 percent increase in 2023. Market-based core services

include components such as food service and lodging that are more directly influenced by supply–demand conditions, so easing in the labor market has likely contributed to the ongoing deceleration in this category of prices.

Overall, a wide set of indicators suggests that conditions in the labor market are broadly in balance. The labor market is not currently a source of significant inflationary pressures.

Questions for The Honorable Jerome H. Powell, Chair, Board of Governors of the Federal Reserve System, from Senator Katie Britt:

During the hearing, we discussed the Federal Reserve's (FRB) fund transfers to the Consumer Financial Protection Bureau (CFPB) since September 2022, despite the Federal Reserve's net-operating loss during this time. In particular, given that the FRB has no earnings, recent audit statements state that instead the FRB is paying for the CFPB fund transfers "through assessments on its Reserve Banks".

Only two statutes (12 U.S.C. § 243 and 12 U.S.C. § 467) expressly authorize these assessments – neither of which permit the payment for CFPB fund transfers. Additionally, Dodd Frank Section 1017(a)(4)(F) states that the financial statements of the FRB and CFPB cannot be combined, thus meaning amounts transferred to the CFPB should not be treated as FRB operating expenses

1. **Given this, what authority did the Federal Reserve have to assess the Reserve Banks in this manner over the last 2 years?**

When Congress created the Consumer Financial Protection Bureau (CFPB) under the Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act), Congress established that the Federal Reserve System (System) would be a source of funds for CFPB operations.[1] Specifically, the Dodd-Frank Act states that "[e]ach year (or quarter of such year), beginning on the designated transfer date, and each quarter thereafter, the Board of Governors shall transfer to the Bureau from the combined earnings of the Federal Reserve System, the amount determined by the Director to be reasonably necessary to carry out the authorities of the Bureau under federal consumer financial law, taking into account such other sums made available to the Bureau from the preceding year (or quarter of such year)."[2]

This obligation to fund CFPB operations is subject to an annual cap equal to 12 percent of the operating expenses of the System in 2013, adjusted each year using the percent increase (if any) for the employment cost index for total compensation for state and local government workers for the 12-month period ending on September 30 of the year preceding the transfer.[3]

2. **You noted that this question has been reviewed and was concluded that the FRB is still required to make these quarterly payments to fund the CFPB's operations. Can you please provide the legal analysis that aided in this review and final determination?**

Please see my response to question 1.

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[1] 12 U.S.C. § 5497.
[2] *Id.* at § 5497(a)(1).
[3] *Id.* at § 5497(a)(2).

Question for The Honorable Jerome H. Powell, Chair, Board of Governors of the Federal Reserve System, from Senator Mark Warner:

Chair Powell, we have previously discussed the trade-offs of how increased capital requirements under the original Basel III proposal could potentially push even more activity outside the regulatory perimeter to less regulated entities.

As you know, I raised much of these concerns in a letter last year where I also encouraged you and your colleagues to prioritize modernizing existing tools like the Federal Reserve's discount window and also to take into account how new requirements would impact access to capital in our underserved communities.

1. **In relation to this, can you please provide more information on how you and your colleagues are taking into account how risk-based indicator levels and requirements (i.e, Stress Capital Buffer, GSIB Surcharge, leverage requirements, etc.) intersect with one another to ensure our financial system remains safe and sound while also ensuring that business and households have access to reliable and available sources of capital?**

Our rules should support an effective and efficient regulatory framework that promotes the safety and soundness of the financial system and supports a strong American economy, while imposing no more burden than is necessary.

Proposals of this nature put forward by the Federal Reserve Board are accompanied by economic impact analyses. Where appropriate, those analyses acknowledge the potential interactions of the proposals with other regulations. We request, and carefully consider public input on all aspects of our proposed rulemakings, including the economic analysis and potential interactions within the regulatory framework.

Question for The Honorable Jerome H. Powell, Chair, Board of Governors of the Federal Reserve System, from Senator Tina Smith:

1. **The Community Reinvestment Act (CRA) rule finalized in October 2023 was the first meaningful update to the regulations implementing the CRA since 1995. It took a thoughtful, tailored approach that reflects the realities of banking today and ensures credit needs of low- and moderate-income communities continue to be served as the law intended. The litigants challenging the final rule won an injunction after engaging in obvious judge shopping. I'm concerned that failing to challenge such cynical tactics will undermine future efforts to modernize the CRA regulations and set a dangerous precedent overall. Do the Federal Reserve, FDIC, and OCC intend to continue defending the final rule?**

The 2023 Community Reinvestment Act (CRA) final rule was a joint rulemaking among the Federal Reserve, Federal Deposit Insurance Corporation (FDIC), and the Office of the Comptroller of the Currency (OCC) (together, the agencies), and our approach in the litigation has also been the product of a joint effort. When the district court issued a preliminary injunction against the rule, the agencies jointly appealed to the U.S. Court of Appeals for the Fifth Circuit (the Fifth Circuit) in April 2024. The appeal had gone through full briefing, and the oral argument had been scheduled for February 4, 2025. Subsequently, the Fifth Circuit granted the agencies' request for a postponement of the oral argument in the case so that the agencies, including the new leadership at FDIC and OCC, would have sufficient opportunity to determine the best way to proceed in coordination.

On March 28, 2025, the agencies filed a joint motion to stay the proceedings in the CRA litigation and concurrently announced our intent to issue a proposal to both rescind the CRA final rule issued in October 2023 and reinstate the CRA framework that existed prior to the October 2023 final rule.[1] Following this announcement, the Fifth Circuit granted the agencies' joint motion to stay proceedings in the CRA litigation. Going forward, the agencies will continue to work together to promote a consistent regulatory approach in our implementation of the CRA.

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[1] *See* "Agencies announce intent to rescind 2023 Community Reinvestment Act final rule" (March 28, 2025), at https://www.federalreserve.gov/newsevents/pressreleases/bcreg20250328a.htm.

Questions for The Honorable Jerome H. Powell, Chair, Board of Governors of the Federal Reserve System, from Senator Angela Alsobrooks:

Effects of Inflation

The decisions the Fed makes to raise, cut, or maintain interest rates, for example, have tremendous ramifications on whether a family can afford a mortgage, or a small business can afford a loan. Mr. Chairman, I want to give you some time to better help the public understand what monetary policy means to their day-to-day lives. As you have explained previously, the largest burdens of inflation fall on those least able to afford the higher costs of essentials. According to the Fed's latest monetary policy report, Americans continue to spend more of their income on essentials than was typical before the pandemic. I hear this from family, neighbors, and friends and notice it myself every time I go to the grocery store.

1. **Would you speak to the burden of inflation on everyday Americans who live paycheck-to-paycheck?**

The prices for basic necessities—food, energy, and rent—surged in 2021 and 2022. Although the rates of change for these prices have slowed markedly since then, their levels remain well above where they were prior to the pandemic. Higher prices have affected all Americans, but households who spend a relatively larger share of their income on necessities have been hardest hit.

Prices for food and energy largely reflect developments in world commodity markets and other factors that the Federal Reserve has limited to no influence over. For example, egg prices have risen sharply in recent months, reflecting the effects of avian flu. Likewise, geopolitical events can have large effects on commodity prices like gasoline.

Prices for individual goods can fluctuate in ways beyond the control of a central bank. The best thing that the Federal Reserve can do is to remain focused on returning the overall rate of inflation to 2 percent, while maintaining the strength of the labor market. In pursuing our maximum employment and price stability objectives, we can help to foster economic conditions that will support further improvements in purchasing power for all American families.

Productivity and Wage Growth

You have said that wage growth has recently exceeded inflation. This is a positive sign, but one not yet felt by many consumers still suffering from high prices. The Fed's monetary policy report says this trend is the result of increased productivity and new business formation.

4. **What contributing factors have boosted wage growth and productivity? What policy decisions could ensure these trends are felt by consumers across the economic spectrum?**

The data on productivity growth over the last few years has been encouraging. Since the end of 2019, annual productivity growth has averaged 1.8 percent, noticeably higher than average growth of 1.5 percent prior to the pandemic. Higher productivity growth implies a higher potential level of wage growth that would still be consistent with 2 percent inflation.

The productivity boost over the past five years has come from several sources, and it is difficult to say whether this higher growth rate will continue in the future. As you noted, a contributing factor has been the increase in the rate of business formation over the past several years. New businesses tend to be more productive by adopting and creating new technologies and processes more readily than existing businesses. Should this higher rate of business formation persist, it could contribute to a higher ongoing level of productivity growth. It is also possible that advances in artificial intelligence technologies and their diffusion across firms could boost productivity in the years ahead, though the timing and extent of any boost remain quite uncertain.

By contrast, some of the higher growth in productivity over the past few years may have been due to one-off changes. For example, some firms may have reacted to the worker shortages during the pandemic by implementing labor-saving technologies and processes that led to one-time increases in the level of productivity but are unlikely to continue to boost productivity growth. Also, the pandemic saw a burst in the reallocation of workers across jobs, with some workers likely moving to jobs in which they are more productive and, thus, increasing overall productivity. Reallocation has dropped off to more normal levels recently and, thus, is unlikely to provide a continuing boost to productivity growth.

Monetary policy plays a role in the economy's productivity growth by fostering economic conditions that encourage investment and innovation. In particular, the Federal Reserve can best support all U.S. consumers by fostering the conditions for solid real income growth through pursuit of our congressionally mandated goals of maximum employment and price stability.

Questions for The Honorable Jerome H. Powell, Chair, Board of Governors of the Federal Reserve System, from Senator Angela Alsobrooks:

Housing Supply and Economic Growth

In our meeting, you spoke of the long-term challenge of housing supply not meeting demand. I look at this issue the same way I did as County Executive, where I fought hard to leverage private and public sector dollars to bring more housing to communities that needed it. Maryland has a shortfall of nearly 100,000 homes, and the pathway to build wealth is narrowing. Studies have estimated that of the over $200 billion invested annually in housing in recent years, only a fraction supports projects affordable for working-class families.

2. **Would you speak to the need to better allocate private capital in to projects that promote home construction and homeownership?**

We understand that the high costs of housing are a strain for many families; however, the allocation of private capital is not within the purview of the Federal Reserve. Pursuing our dual mandate of maximum employment and price stability is the best way for the Federal Reserve to promote an environment for households across the country to make the best economic choices for themselves, including about buying or renting a home. Policies that more directly affect housing availability and affordability, while important, are the responsibility of elected officials.

Federal Employees

As you may know, approximately 150,000 federal employees call Maryland home, including some who work for the Federal Reserve.

3. **Would you speak to the importance of the dedicated staff at the Fed and other financial regulators to the safety and soundness of the U.S. financial system?**

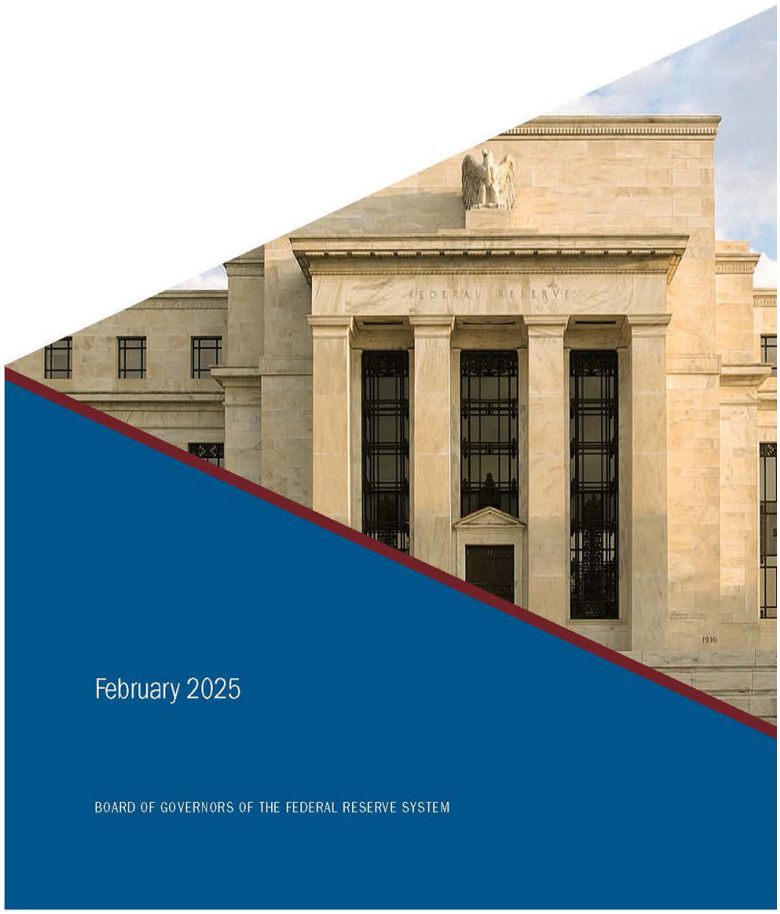
The Federal Reserve has an incredibly talented and hardworking staff who are deeply committed to our important mission to promote the health of the U.S. economy and the stability of the U.S. financial system. In everything we do, my colleagues and I are dedicated to fulfilling our mandates on behalf of the American people by bringing forward our best thinking and analysis. We understand that our actions affect communities, families, and businesses across the country. Everything we do is in service to our public mission.

ADDITIONAL MATERIAL SUBMITTED FOR THE RECORD

For use at 11:00 a.m. EST
February 7, 2025

REPORT TO CONGRESS

Monetary Policy Report



February 2025

BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM

Letter of Transmittal

Board of Governors of the
Federal Reserve System

Washington, D.C., February 7, 2025

The President of the Senate
The Speaker of the House of Representatives

The Board of Governors is pleased to submit its *Monetary Policy Report* pursuant to section 2B of the Federal Reserve Act.

Sincerely,

Jerome H. Powell

Jerome H. Powell, Chair

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Data Notes

This report reflects information that was publicly available as of 9 a.m. EST on February 6, 2025. Unless otherwise stated, the time series in the figures extend through, for daily data, February 4, 2025; for monthly data, December 2024; and, for quarterly data, 2024:Q4. In bar charts, except as noted, the change for a given period is measured to its final quarter from the final quarter of the preceding period.[1]

[1] For figures 27 and 38, note that the S&P/Case-Shiller U.S. National Home Price Index, the S&P 500 Index, and the Dow Jones Bank Index are products of S&P Dow Jones Indices LLC and/or its affiliates and have been licensed for use by the Board. Copyright © 2025 S&P Dow Jones Indices LLC, a division of S&P Global, and/or its affiliates. All rights reserved. Redistribution, reproduction, and/or photocopying in whole or in part are prohibited without written permission of S&P Dow Jones Indices LLC. For more information on any of S&P Dow Jones Indices LLC's indices, please visit www.spdji.com. S&P® is a registered trademark of Standard & Poor's Financial Services LLC, and Dow Jones® is a registered trademark of Dow Jones Trademark Holdings LLC. Neither S&P Dow Jones Indices LLC, Dow Jones Trademark Holdings LLC, their affiliates, nor their third-party licensors make any representation or warranty, express or implied, as to the ability of any index to accurately represent the asset class or market sector that it purports to represent, and neither S&P Dow Jones Indices LLC, Dow Jones Trademark Holdings LLC, their affiliates, nor their third-party licensors shall have any liability for any errors, omissions, or interruptions of any index or the data included therein.

Statement on Longer-Run Goals and Monetary Policy Strategy

Adopted effective January 24, 2012; as reaffirmed effective January 30, 2024

The Federal Open Market Committee (FOMC) is firmly committed to fulfilling its statutory mandate from the Congress of promoting maximum employment, stable prices, and moderate long-term interest rates. The Committee seeks to explain its monetary policy decisions to the public as clearly as possible. Such clarity facilitates well-informed decisionmaking by households and businesses, reduces economic and financial uncertainty, increases the effectiveness of monetary policy, and enhances transparency and accountability, which are essential in a democratic society.

Employment, inflation, and long-term interest rates fluctuate over time in response to economic and financial disturbances. Monetary policy plays an important role in stabilizing the economy in response to these disturbances. The Committee's primary means of adjusting the stance of monetary policy is through changes in the target range for the federal funds rate. The Committee judges that the level of the federal funds rate consistent with maximum employment and price stability over the longer run has declined relative to its historical average. Therefore, the federal funds rate is likely to be constrained by its effective lower bound more frequently than in the past. Owing in part to the proximity of interest rates to the effective lower bound, the Committee judges that downward risks to employment and inflation have increased. The Committee is prepared to use its full range of tools to achieve its maximum employment and price stability goals.

The maximum level of employment is a broad-based and inclusive goal that is not directly measurable and changes over time owing largely to nonmonetary factors that affect the structure and dynamics of the labor market. Consequently, it would not be appropriate to specify a fixed goal for employment; rather, the Committee's policy decisions must be informed by assessments of the shortfalls of employment from its maximum level, recognizing that such assessments are necessarily uncertain and subject to revision. The Committee considers a wide range of indicators in making these assessments.

The inflation rate over the longer run is primarily determined by monetary policy, and hence the Committee has the ability to specify a longer-run goal for inflation. The Committee reaffirms its judgment that inflation at the rate of 2 percent, as measured by the annual change in the price index for personal consumption expenditures, is most consistent over the longer run with the Federal Reserve's statutory mandate. The Committee judges that longer-term inflation expectations that are well anchored at 2 percent foster price stability and moderate long-term interest rates and enhance the Committee's ability to promote maximum employment in the face of

significant economic disturbances. In order to anchor longer-term inflation expectations at this level, the Committee seeks to achieve inflation that averages 2 percent over time, and therefore judges that, following periods when inflation has been running persistently below 2 percent, appropriate monetary policy will likely aim to achieve inflation moderately above 2 percent for some time.

Monetary policy actions tend to influence economic activity, employment, and prices with a lag. In setting monetary policy, the Committee seeks over time to mitigate shortfalls of employment from the Committee's assessment of its maximum level and deviations of inflation from its longer-run goal. Moreover, sustainably achieving maximum employment and price stability depends on a stable financial system. Therefore, the Committee's policy decisions reflect its longer-run goals, its medium-term outlook, and its assessments of the balance of risks, including risks to the financial system that could impede the attainment of the Committee's goals.

The Committee's employment and inflation objectives are generally complementary. However, under circumstances in which the Committee judges that the objectives are not complementary, it takes into account the employment shortfalls and inflation deviations and the potentially different time horizons over which employment and inflation are projected to return to levels judged consistent with its mandate.

The Committee intends to review these principles and to make adjustments as appropriate at its annual organizational meeting each January, and to undertake roughly every 5 years a thorough public review of its monetary policy strategy, tools, and communication practices.

Abbreviations

AFE	advanced foreign economy
AI	artificial intelligence
BLS	Bureau of Labor Statistics
BTFP	Bank Term Funding Program
CES	Current Employment Statistics
COVID-19	coronavirus disease 2019
CPI	consumer price index
CRE	commercial real estate
DI	depository institution
ECI	employment cost index
EFFR	effective federal funds rate
ELB	effective lower bound
EME	emerging market economy
EPOP ratio	employment-to-population ratio
FOMC	Federal Open Market Committee; also, the Committee
GDP	gross domestic product
JOLTS	Job Openings and Labor Turnover Survey
LFPR	labor force participation rate
MBS	mortgage-backed securities
MMF	money market fund
MSA	metropolitan statistical area
ON RRP	overnight reverse repurchase agreement
OPEC	Organization of the Petroleum Exporting Countries
PCE	personal consumption expenditures
QCEW	Quarterly Census of Employment and Wages
SEC	Securities and Exchange Commission
SLOOS	Senior Loan Officer Opinion Survey on Bank Lending Practices

SOMA	System Open Market Account
S&P	Standard & Poor's
VIX	implied volatility for the S&P 500 index

Summary

Inflation moderated a little further last year after having slowed notably in 2023, but it remains somewhat above the Federal Open Market Committee's (FOMC) objective of 2 percent. The labor market appears to have stabilized following a period of easing, with the unemployment rate flattening out at a relatively low level over the second half of last year. Real gross domestic product (GDP) increased solidly last year, supported by strength in consumer spending.

As labor market tightness continued to ease and inflation moderated a bit further, the FOMC lowered the target range for the policy rate by a cumulative 100 basis points over its September, November, and December meetings, bringing it to the current range of 4¼ to 4½ percent. The Federal Reserve has also continued to reduce its holdings of Treasury and agency mortgage-backed securities. The FOMC is strongly committed to supporting maximum employment and returning inflation to its 2 percent objective, and it remains attentive to the risks to both sides of its dual mandate. In considering the extent and timing of additional adjustments to the target range for the federal funds rate, the Committee will carefully assess incoming data, the evolving outlook, and the balance of risks.

Recent Economic and Financial Developments

Inflation. After stepping down notably in 2023, consumer price inflation eased a bit more last year, although recent progress has been bumpy and inflation remains somewhat above 2 percent. The price index for personal consumption expenditures (PCE) rose 2.6 percent over the 12 months ending in December, down from a peak of 7.2 percent in 2022. The core PCE price index—which excludes often-volatile food and energy prices and is generally considered a better guide to the future of inflation—rose 2.8 percent last year, only a little less than its increase in 2023, as core services price inflation remained elevated. However, some other approaches to removing the influence of volatile components of inflation, such as the trimmed mean PCE measure produced by the Federal Reserve Bank of Dallas, showed more marked deceleration in prices last year. Measures of longer-term inflation expectations are within the range of values seen in the decade before the pandemic and continue to be broadly consistent with the FOMC's longer-run objective of 2 percent inflation.

The labor market. The labor market remains solid and appears to have stabilized after a period of easing. The unemployment rate moved up over the first half of last year but was mostly flat thereafter, ending the year at 4.1 percent—still low by historical standards—while job vacancies, which had been trending down, also flattened out over the second half at a solid level. As labor demand cooled somewhat further last year, monthly job gains slowed to a moderate pace on average.

Labor supply likely increased less robustly than in previous years, with immigration appearing to have slowed over the second half of last year. Given the further rebalancing of labor demand and supply last year, the labor market no longer appears especially tight. Reflecting this further balancing, nominal wage gains continued to slow in 2024 and are now closer to the pace consistent with 2 percent inflation over the longer term.

Economic activity. Real GDP is reported to have increased last year by 2.5 percent, a little slower than in 2023. Consumer spending continued to grow robustly, supported by a solid labor market and rising real wages, while real business fixed investment increased moderately. In the housing market, new home construction was solid but existing home sales remained depressed, with mortgage rates still elevated. In contrast to GDP, manufacturing output was little changed, in part reflecting weak production in interest-sensitive sectors.

Financial conditions. Financial conditions continue to appear to be somewhat restrictive on balance. Short-term Treasury yields declined, in line with the easing of monetary policy since September; however, the market-implied path for the federal funds rate over the next year shifted up notably, and long-term Treasury yields increased markedly in the fourth quarter. Broad equity prices continued to increase despite the rise in longer-term Treasury yields, and yields on corporate bonds were little changed, as spreads narrowed. Credit continued to be broadly available to large-to-midsize businesses, most households, and municipalities but remained relatively tight for small businesses and households with lower credit scores. Bank lending to households and businesses continued to decelerate in the second half of 2024, likely reflecting still-elevated interest rates and tight lending standards.

Financial stability. The financial system remains sound and resilient. Valuations remained high relative to fundamentals in a range of markets, including those for equity, corporate debt, and residential real estate. Total debt of households and nonfinancial businesses as a fraction of GDP continued to trend down to a level that is very low relative to that in the past two decades. Most banks continued to report capital levels well above regulatory requirements and have reduced their reliance on uninsured deposits, but fair value losses on fixed-rate assets were still sizable for some banks. In terms of funding risks, while the 2023–24 Securities and Exchange Commission reforms on money market funds (MMFs) have partially mitigated vulnerabilities of prime MMFs, other less regulated short-term investment vehicles remain vulnerable and somewhat opaque, and their assets have been growing. Meanwhile, hedge fund leverage appears to be high and concentrated. (See the box "Developments Related to Financial Stability.")

International developments. Foreign growth remained modest in the second half of 2024. Foreign manufacturing in general was weak, as the cumulative effects of restrictive monetary policy weighed on the sector and, in Europe, energy-intensive industries continued to grapple with elevated energy costs. That said, high-tech manufacturing and exports remained strong in Asia on robust U.S. artificial intelligence (AI) and data center demand. In China, while exports were strong,

domestic demand remained sluggish despite stimulus measures to shore up the ailing property sector. Meanwhile, foreign headline inflation continued to decline, but progress on inflation reduction was uneven across economies.

Many foreign central banks cut policy rates further since mid-2024, citing declining inflationary pressures, easing labor markets, and concerns about economic growth. Policymakers generally stressed the importance of maintaining vigilance amid persistent geopolitical risks and, in some economies, still-somewhat-elevated services inflation and wage pressures. Since mid-2024, the trade-weighted exchange value of the U.S. dollar has increased significantly, on net, reflecting widening gaps of U.S. interest rates over those of major advanced foreign economies, the relative strength of the U.S. economy, and political and fiscal developments in some foreign economies.

Monetary Policy

Interest rate policy. After having held the target range for the policy rate at 5¼ to 5½ percent between late July 2023 and mid-September 2024, the FOMC lowered the target range for the policy rate by a cumulative 100 basis points over its September, November, and December meetings, bringing it to the current range of 4¼ to 4½ percent. The FOMC's decision to begin reducing the degree of policy restraint reflected the FOMC's greater confidence in inflation moving sustainably toward 2 percent and the judgment that it was appropriate to recalibrate the policy stance. The FOMC remains attentive to the risks to both sides of its dual mandate. In considering the extent and timing of additional adjustments to the target range for the federal funds rate, the Committee will carefully assess incoming data, the evolving outlook, and the balance of risks.

Balance sheet policy. The Federal Reserve has continued the process of significantly reducing its holdings of Treasury and agency securities in a predictable manner. Beginning in June 2022, principal payments from securities held in the System Open Market Account have been reinvested only to the extent that they exceeded monthly caps. Under this policy, the Federal Reserve has reduced its securities holdings by $297 billion since June 2024, bringing the total reduction in securities holdings since the start of balance sheet reduction to about $2 trillion. The FOMC has stated that it intends to maintain securities holdings at amounts consistent with implementing monetary policy efficiently and effectively in its ample-reserves regime. To ensure a smooth transition, the FOMC slowed the pace of decline of its securities holdings in June 2024 and intends to stop reductions in its securities holdings when reserve balances are somewhat above the level that the FOMC judges to be consistent with ample reserves.

Special Topics

Employment and earnings across groups. The tight labor market in recent years has been especially beneficial for historically disadvantaged groups of workers, and many of the disparities in employment and wages by sex, race, ethnicity, education, and geography have narrowed. Over the

past year, even as labor market conditions have eased, employment disparities continue to be near their recent lows, while wage growth has remained solid across many groups despite slowing a bit from post-pandemic highs. Even so, in absolute levels, significant disparities in groups remain. (See the box "Employment and Earnings across Demographic Groups.")

Strong productivity growth. Labor productivity in the business sector increased 1.8 percent per year, on average, since the fourth quarter of 2019, stronger than its 1.5 percent average annual pace over the previous expansion. Should this faster pace of productivity growth persist, it can support stronger GDP growth without adding inflationary pressure. Some factors that have boosted productivity growth recently may continue providing support, such as new business formation, which surged early into the pandemic and has remained strong. Other factors may have had more short-lived influences on productivity growth, including a temporary burst in worker reallocation across jobs earlier in the pandemic. Any measured productivity gains from integration of AI technologies into production processes have likely been small so far, but productivity gains may grow as AI use becomes more widespread. (See the box "Labor Productivity since the Start of the Pandemic.")

Federal Reserve's balance sheet and money markets. The size of the Federal Reserve's balance sheet has declined since June as the FOMC has continued to reduce its securities holdings. Usage of the overnight reverse repurchase agreement facility decreased further, while reserve balances were little changed. Conditions in money markets remained stable. (See the box "Developments in the Federal Reserve's Balance Sheet and Money Markets.")

Framework review. The Federal Reserve has begun its periodic public review of the monetary policy framework it uses to pursue its dual-mandate goals of maximum employment and price stability. The review is focused on the FOMC's Statement on Longer-Run Goals and Monetary Policy Strategy, which articulates the Committee's approach to monetary policy, and the Committee's policy communications tools. Like the Federal Reserve's 2019–20 review of its monetary policy framework, the current review will include outreach and public events attended by policymakers, community leaders, experts from outside the Federal Reserve System, and other members of the public. (See the box "Periodic Review of Monetary Policy Strategy, Tools, and Communications.")

Monetary policy rules. Simple monetary policy rules, which prescribe a setting for the policy interest rate in response to the behavior of a small number of economic variables, can provide useful guidance to policymakers. With inflation easing and the unemployment rate having increased somewhat, the policy rate prescriptions of most simple monetary policy rules have generally declined since 2023. Currently, most of the rules call for levels of the federal funds rate that are within the current target range. (See the box "Monetary Policy Rules in the Current Environment.")

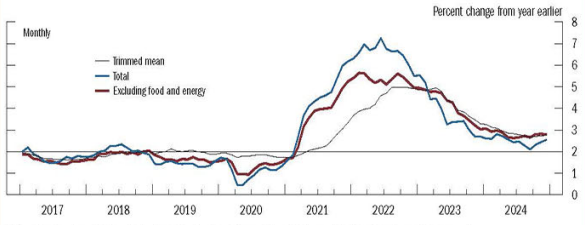
Recent Economic and Financial Developments

Domestic Developments

Inflation eased a little further last year

After stepping down notably in 2023, inflation moderated a little further last year, although it remains somewhat elevated. The price index for personal consumption expenditures (PCE) rose 2.6 percent over the 12 months ending in December, down slightly from its 2.7 percent pace the previous year and well below its peak of 7.2 percent in mid-2022. Thus, inflation has moved closer to—although still somewhat above—the Federal Open Market Committee's (FOMC) longer-run objective of 2 percent (figure 1). Progress on disinflation last year was bumpy, with both total PCE prices and core PCE prices—which exclude often-volatile food and energy prices and are generally considered a better guide to the future of inflation—showing firmer monthly price increases over the first quarter of last year and more moderate price gains thereafter. For 2024 as a whole, core PCE prices rose 2.8 percent—a little less than the 3.0 percent gain over the previous year. However, some alternative measures that attempt to reduce the influence of idiosyncratic price movements showed more marked disinflation. For example, the trimmed mean measure of PCE prices constructed by the Federal Reserve Bank of Dallas increased 2.8 percent over the 12 months ending in December, a noticeable step-down from its 3.3 percent increase in 2023.

Figure 1. Personal consumption expenditures price indexes

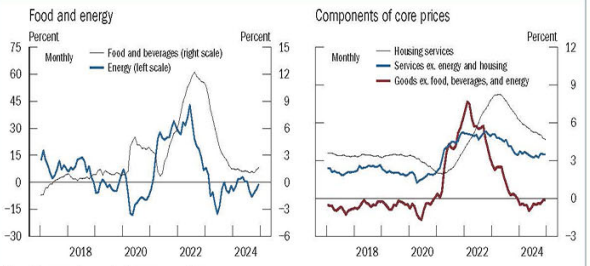


Note: The horizontal line indicates the Federal Open Market Committee's objective of 2 percent.

Consumer energy prices declined last year, while food prices increased modestly

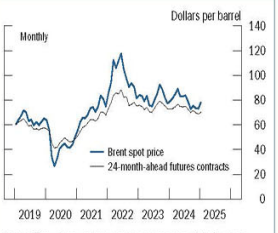
PCE energy prices fell a modest 1.1 percent over the 12 months ending in December, as oil prices moved a little lower over 2024 (figure 2, left panel). The decline in oil prices was partially due to tepid oil demand from China and rising production in the U.S. and other non-OPEC

Figure 2. Price indexes for subcomponents of personal consumption expenditures



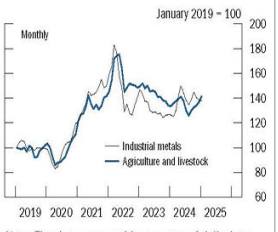
Note: Percent change is from year earlier.

Figure 3. Spot and futures prices for crude oil



Note: The data are monthly averages of daily data and extend through January 31, 2025.

Figure 4. Spot prices for commodities



Note: The data are monthly averages of daily data and extend through January 31, 2025.

(Organization of the Petroleum Exporting Countries) members; the effect of these factors more than offset upward price pressure from sustained geopolitical tension, including conflicts in the Middle East (figure 3). More recently, however, oil prices increased amid colder-than-expected weather and news of stricter sanctions on Russian oil exports. Continuing geopolitical tensions remain an upside risk to energy prices.

PCE food prices increased a modest 1.6 percent last year, a second year of low increases following the much larger increases in 2021 and 2022. Since the middle of 2024, egg prices surged in response to bird flu-related supply disruptions, while price increases across other agricultural commodities have been more modest (figure 4).

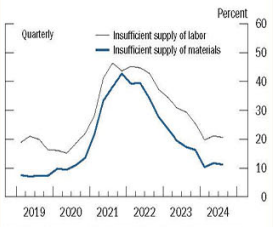
Prices of both energy and food products are of particular importance for lower-income households, for whom such necessities account for a large share of expenditures.

Reflecting the sharp increases seen in 2021 and 2022, these price indexes remain around 25 percent higher than before the pandemic.

Core goods prices have been declining slightly, close to pre-pandemic declines . . .

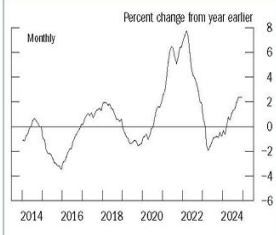
In assessing the outlook for inflation, it remains helpful to consider three separate components of core prices: core goods, housing services, and core nonhousing services (figure 2, right panel). Price changes for core goods appear to have nearly normalized, with core goods prices declining slightly last year at a pace that was just a little slower than the average annual decline that prevailed in the years before the pandemic. The movement toward pre-pandemic conditions for this category of inflation in part reflects the resolution of supply chain issues and other supply constraints that had boosted goods prices earlier, and supply–demand conditions in goods markets now appear to be relatively balanced. As one indication, the shares of respondents to the Quarterly Survey of Plant Capacity Utilization who cite insufficient labor or materials as reasons for operating below capacity have returned close to their pre-pandemic levels (figure 5). Core goods inflation received a small boost last year from price gains in nonfuel import prices, which rose 2.4 percent over the year (figure 6).

Figure 5. Reasons for operating below full capacity



Note: The series are the share of firms selecting each reason for operating below full capacity. The data extend through 2024:Q3.

Figure 6. Nonfuel import price index

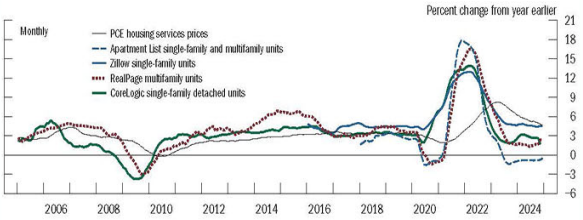


. . . while housing services price inflation moved lower last year but remains elevated . . .

Housing services price inflation continued moderating last year, with prices rising 4.7 percent over the 12 months ending in December, down from 6.3 percent in 2023 and 7.7 percent in 2022. Despite this moderation, housing services inflation remains notably above its pre-pandemic level.

Housing services inflation tends to respond with a lag to movements in rents for new leases to new tenants ("market rents"), and as these market rents have largely returned to pre-pandemic rates of increase, housing services inflation will likely continue to move lower as well (figure 7).[2]

Figure 7. Measures of rental price inflation



Note: Zillow data start in January 2016, and Apartment List data start in January 2018. CoreLogic data extend through November 2024. Apartment List, Zillow, RealPage, and CoreLogic measure market-rate rents—that is, rents for a new lease by a new tenant. PCE is personal consumption expenditures.

. . . and core nonhousing services price inflation has flattened out at a somewhat elevated level

Finally, prices for core nonhousing services—a broad group that includes services such as medical, travel and dining, and financial services—increased 3.5 percent last year, a bit above their increase in 2023 and their pre-pandemic pace. However, the lack of further progress in this category masks important heterogeneity within its components. For the "market-based" category of core services, which account for roughly three-fourths of core nonhousing services, prices increased 2.9 percent last year—similar to its pre-pandemic pace and slower than its 3.5 percent increase in 2023. Market-based core services include components such as food service and lodging that are more directly influenced by supply–demand conditions, so easing in the labor market has likely contributed to the ongoing deceleration in this category of prices. In contrast, price inflation for the "non-market-based" category, where prices are imputed and which includes some volatile categories such as portfolio management that tend to be heavily influenced by idiosyncratic factors, jumped last year.[3]

Measures of longer-term inflation expectations have been stable, while shorter-term expectations generally moved down a bit last year

A generally held view among economists is that inflation expectations influence actual inflation by affecting wage- and price-setting decisions. Measures of inflation expectations over a longer

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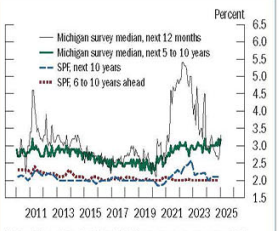
[2] Because prices for housing services measure the rents paid by *all* tenants (and the equivalent rent implicitly paid by all homeowners)—including those whose leases have not recently come up for renewal—they tend to adjust slowly to changes in rental market conditions.

[3] The market-based services prices are derived from specific consumer price indexes or producer price indexes associated with observable market transactions, whereas the non-market-based services prices are imputed to account for the value of the service provided because no observable transactions are available.

horizon from surveys of households (such as the University of Michigan Surveys of Consumers) and professional forecasters have remained broadly consistent with the FOMC's longer-run 2 percent inflation objective (figure 8). Over the past year, these measures have been little changed and within the range seen in the decade before the pandemic. For example, the median forecaster in the Survey of Professional Forecasters, conducted by the Federal Reserve Bank of Philadelphia, continued to expect inflation to average 2 percent over the five years beginning five years from now.

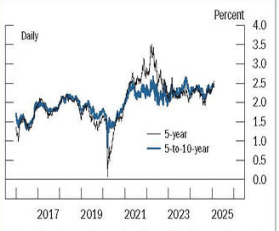
Similarly, market-based measures of longer-term inflation compensation, which are based on financial instruments linked to inflation such as Treasury Inflation-Protected Securities, are also broadly in line with readings seen in the years before the pandemic and consistent with PCE inflation returning to 2 percent (figure 9).

Figure 8. Measures of inflation expectations



Note: The data for the Michigan survey are monthly and extend through January 2025. The data for the Survey of Professional Forecasters (SPF) are quarterly.

Figure 9. Inflation compensation implied by Treasury Inflation-Protected Securities



Note: The data are at a business-day frequency and are estimated from smoothed nominal and inflation-indexed Treasury yield curves.

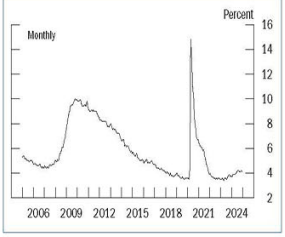
Survey-based inflation expectations over a shorter horizon—which tend to follow observed inflation more closely—rose along with inflation in 2020 and 2021 but then moved back down through the end of 2024. More recently, the median value for expected inflation over the next year from the University of Michigan survey moved up some in December and January. Even so, both this measure and a similar measure from the Federal Reserve Bank of New York's Survey of Consumer Expectations are in line with pre-pandemic levels.

The labor market remains solid . . .

The labor market remains in solid shape. At the end of the year, the unemployment rate was low relative to historical experience, the labor force participation rate (LFPR) among workers aged 25 to 54 remained above its high from the years just before the pandemic, and job vacancies were at a strong level. For the year, employment rose moderately, layoffs remained low, and wage gains were solid.

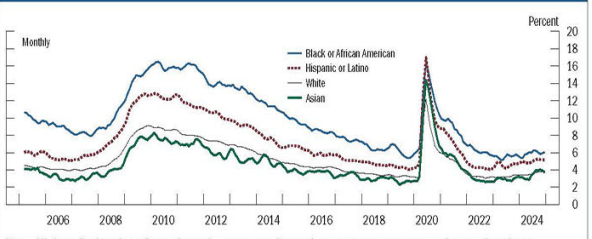
. . . with labor market conditions appearing to stabilize over the second half of last year after a period of easing

Figure 10. Civilian unemployment rate



After gradually increasing over much of 2023, the unemployment rate rose somewhat further in the first half of last year, from 3.8 percent in December 2023 to 4.1 percent in June 2024. However, it was mostly unchanged thereafter, ending the year at 4.1 percent—still low by historical standards (figure 10). Among most age, educational attainment, sex, and racial and ethnic groups, unemployment rates moved up, on net, last year, but to still relatively low levels (figure 11). (The box "Employment and Earnings across Demographic Groups" provides further details.)

Figure 11. Unemployment rate, by race and ethnicity



Note: All data displayed are 3-month moving averages. Unemployment rate measures total unemployed as a percentage of the labor force. Persons whose ethnicity is identified as Hispanic or Latino may be of any race. Small sample sizes preclude reliable estimates for Native Americans and other groups for which monthly data are not reported by the Bureau of Labor Statistics.

Similar to the unemployment rate, measures of job vacancies—which had been gradually moving lower since mid-2022—also appear to have stabilized over the second half of last year. For example, job openings as measured in the Job Openings and Labor Turnover Survey (JOLTS), as well as an alternative measure using job postings data from the large online job board Indeed, edged down, on net, over the first half of last year and flattened out more recently. In December, both measures were a bit above their 2019 average levels.[4]

[4] While job openings might be above pre-pandemic levels because labor demand is stronger than in that period, it might instead, at least in part, reflect changes in firms' job-posting behavior. For example, some firms might be more willing than they were pre-pandemic to post openings that they are unsure they might fill, because they experienced severe labor shortages and hiring difficulties earlier in the pandemic and want to avoid a similar situation.

Box 1. Employment and Earnings across Demographic Groups

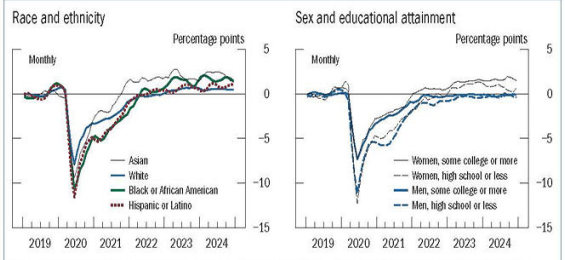
Economic expansions have tended to narrow long-standing disparities in employment and earnings across demographic groups, which can help make up for disproportionate losses experienced during downturns. These benefits have been evident during the expansion in recent years as an exceptionally tight labor market has allowed gaps between groups to narrow significantly. Over the past year, even as labor market conditions have eased, employment disparities continue to be near their recent lows, while wage growth has remained solid across many groups despite slowing a bit from post-pandemic highs. However, despite the progress in recent years, significant disparities in absolute levels across groups remain.

Among prime-age people (aged 25 to 54), employment for Black or African American workers remains relatively high. The employment-to-population (EPOP) ratio for this group increased from mid-2020 until 2023 and has been mostly flat, on net, near its historical peak since then (figure A, left panel). This movement, combined with relatively smaller increases in the EPOP ratio for white workers over the same period, led the gap between the EPOP ratios for Blacks and whites to fall to its lowest point in 50 years. Over the past year, as the labor market has eased, this gap appears to have widened slightly but remains near its historical low.[1] Employment for Hispanic or Latino workers has also remained quite strong, with an EPOP ratio close to its historical high. As a result, the gap between the EPOP ratios between this group and white workers is also near its narrowest point. The EPOP ratio for prime-age Asian workers remains high as well, sitting slightly below its historical peak.[2]

Similarly, the EPOP ratio for prime-age women of all levels of education grew strongly in the post-pandemic recovery, surpassing its pre-pandemic level, and peaked last year. The increase in the EPOP ratio among this group most likely reflects both the continuation of the pre-pandemic trend of rising female labor force participation—some of which is likely attributable to increased educational

(continued)

Figure A. Prime-age employment-to-population ratios compared with the 2019 average ratio, by group



Note: The data are 3-month moving averages. Prime age is 25 to 54. All series are seasonally adjusted by Federal Reserve Board staff.

[1] In figures A and B, EPOP ratios are shown indexed to their 2019 average; therefore, gaps between groups are not readily evident.

[2] As monthly series have greater sampling variability for smaller groups, we do not plot EPOP ratio estimates for American Indians or Alaska Natives.

Box 1—*continued*

attainment—and the continuing availability of remote work.[3] In contrast, the EPOP ratio for prime-age men has remained mostly flat near 2019 levels over the past several years, and, as a result, the male–female EPOP ratio gap narrowed significantly to a record low. That said, the EPOP ratios for women by education level diverged a bit in the latter half of 2024 (figure A, right panel). While the EPOP ratio for college-educated women remained well above 2019 levels through the second half of last year, that for non-college-educated women moved closer to 2019 levels, reflecting both a small decline in labor force participation and a small increase in unemployment.

Like the experiences of women and minority workers, employment for prime-age people living outside of large metropolitan areas also especially benefited from the economic expansion of recent years. While the EPOP ratios for workers in all areas increased over this period, those for rural areas ("nonmetros") and smaller cities have been particularly strong (figure B, top panel).[4] As a result, and given that EPOP ratios are relatively low in rural areas, the gap between EPOP ratios for workers in larger cities and those for workers in rural areas has declined over the past several years and now sits 1 percentage point below its 2019 average. The EPOP ratio gap between smaller and larger cities also dropped below its pre-pandemic level during this period; however, as the labor market has rebalanced over the past year, this gap appears to have widened back to its 2019 level. Interestingly, the employment gains for workers in rural areas and smaller cities differed significantly by education level. In rural areas, employment for non-college-educated workers increased by more than for similarly educated workers in cities (figure B, bottom-left panel). In contrast, employment for college-educated workers increased relatively more in smaller cities than in either of the other areas (figure B, bottom-right panel).

While employment disparities across many demographic groups are within range of historical lows reached during the post-pandemic recovery period, substantial gender, racial, ethnic, and geographic gaps remain, underscoring long-standing structural factors. Currently, prime-age women are employed at a rate 11 percentage points less than men, while prime-age Black and Hispanic workers are employed at a rate 3 to 4 percentage points less than white workers. Further, workers in rural areas are employed at a rate 1 to 3 percentage points below workers in cities.

Similar to employment, a solid but cooling labor market has supported nominal wage growth over the past year—albeit at a slower pace than that during the exceptionally tight labor market in the previous two years. Even so, with headline inflation declining, these wage gains imply continued solid increases in real wages across many groups. In recent years, real wage growth was particularly robust for lower-wage workers and for many historically disadvantaged groups; however, by the end of 2024, wage growth for these groups had moderated. As shown in the top-left panel of figure C, real wage growth—as measured by the Federal Reserve Bank of Atlanta's Wage Growth Tracker and deflated by the personal consumption expenditures price index—was relatively strong for workers in the bottom half of the income distribution during the post-pandemic recovery through the first half of

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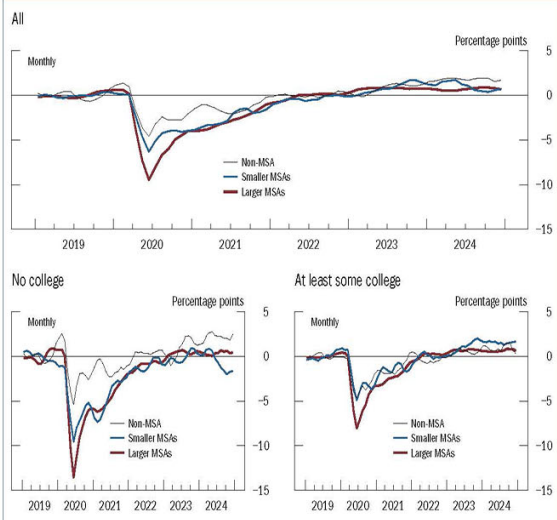
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[3] For a discussion of the contribution of educational attainment to prime-age female labor force participation before the pandemic, see Didem Tüzemen and Thao Tran (2019), "The Uneven Recovery in Prime-Age Labor Force Participation," Federal Reserve Bank of Kansas City, *Economic Review*, vol. 104 (Third Quarter), pp. 21–41, https://www.kansascityfed.org/Economic%20Review/documents/652/2019-The%20Uneven%20Recovery%20in%20Prime-Age%20Labor%20Force%20Participation.pdf. For a discussion on access to remote work and participation rates, see Maria D. Tito (2024), "Does the Ability to Work Remotely Alter Labor Force Attachment? An Analysis of Female Labor Force Participation," FEDS Notes (Washington: Board of Governors of the Federal Reserve System, January 19), https://doi.org/10.17016/2380-7172.3433.

[4] Calculations of the series shown are as described in Alison Weingarden (2017), "Labor Market Outcomes in Metropolitan and Non-metropolitan Areas: Signs of Growing Disparities," FEDS Notes (Washington: Board of Governors of the Federal Reserve System, September 25), https://doi.org/10.17016/2380-7172.2063. Larger metropolitan statistical areas (MSAs) are defined as metropolitan areas with a population greater than 500,000 or more, while smaller MSAs are those with a population between 100,000 and 500,000. Non-MSAs consist of counties without strong commuting ties to an urbanized center.

Box 1—*continued*

Figure B. Prime-age employment-to-population ratios compared with the 2019 average ratio, by metropolitan status and education



Note: The data are 3-month moving averages. Prime age is 25 to 54. Larger metropolitan statistical areas (MSAs) consist of 500,000 people or more, and smaller MSAs consist of 100,000 to 500,000 people. All series are seasonally adjusted by Federal Reserve Board staff.

2024; however, by the end of the year, wage growth had edged down for this group, and growth had become similar across all quartiles.[5]

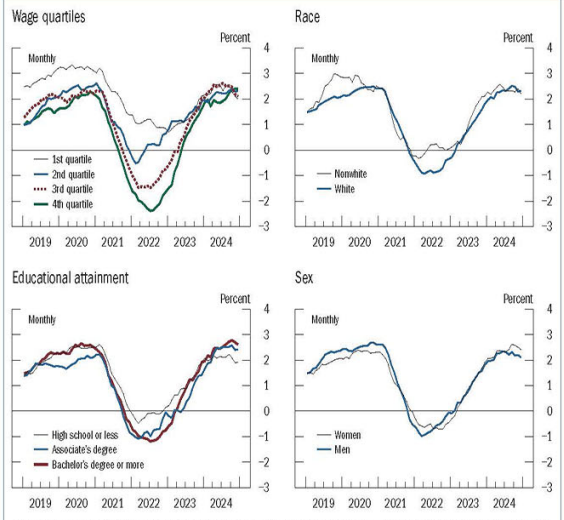
This pattern in wage growth across the income distribution is reflected in the experiences of different demographic groups. Wage growth for nonwhite workers had been a bit stronger than that for white workers since 2022 but, by mid-2024, had fallen to a similar rate of growth (figure C, top-right panel). Similarly, wage growth for workers with a high school diploma or less was strong relative to other groups in the post-pandemic tight labor market; however, as labor market conditions softened in 2024, wage growth for this group tapered and fell below that for college-educated workers (figure C, bottom-left panel). In contrast, wages for men and women largely grew in tandem until the middle of last year, but real wage growth for women outpaced a bit that for men by the end of 2024 (figure C, bottom-right panel).

(continued)

[5] To reduce noise due to sampling variation, which can be pronounced when considering disaggregated groups' wage changes, the series shown in figure C are the 12-month moving averages of the groups' median 12-month real wage change. Thus, by construction, these series lag the actual real wage changes.

Box 1—*continued*

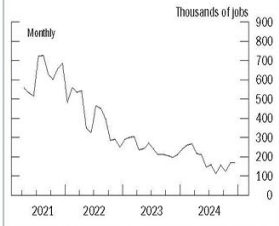
Figure C. Median real wage growth, by group



Note: Series show 12-month moving averages of the median percent change in the hourly wage of individuals observed 12 months apart, deflated by the 12-month moving average of the 12-month percent change in the personal consumption expenditures price index. In the top-left panel, workers are assigned to wage quartiles based on the average of their wage reports in both Current Population Survey outgoing rotation group interviews; workers in the lowest 25 percent of the average wage distribution are assigned to the 1st quartile, and those in the top 25 percent are assigned to the 4th quartile.

Job gains eased some last year, slowing from a strong average monthly pace of 267,000 in the first quarter to a more moderate 159,000 average pace over the rest of the year (figure 12).[5] Job growth remained relatively strong in health care and state and local governments (where employment levels have been normalizing toward pre-pandemic trends after earlier staffing shortages), but employment declined in manufacturing.

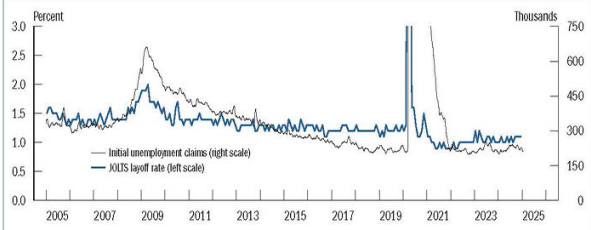
Figure 12. Nonfarm payroll employment



Note: The data shown are a 3-month moving average of the change in nonfarm payroll employment.

Much of the additional easing in labor demand last year manifested as a slowdown in hiring rather than an increase in layoffs. Indeed, many hiring indicators, such as the hiring rate from the JOLTS and the rate at which unemployed individuals became employed each month from the Current Population Survey, moved lower last year. In contrast, layoffs indicators, such as initial claims for unemployment insurance and the layoffs rate from JOLTS, were mostly little changed and have remained low (figure 13).

Figure 13. Indicators of layoffs



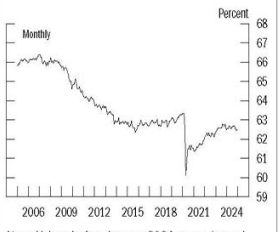
Note: The data for initial claims are reported as a 4-week moving average and extend through January 18, 2025. The data for the Job Openings and Labor Turnover Survey (JOLTS) layoff rate are monthly. Series are truncated at the top of the figure in 2020 and 2021.

[5] Job growth last year has likely been somewhat less strong than currently reported in the Current Employment Statistics (CES), as suggested by the Bureau of Labor Statistics' (BLS) preliminary benchmark revision to the CES and administrative data from the Quarterly Census of Employment and Wages (QCEW). The CES payroll data will be revised with the release of the January employment report on February 7, when the BLS will benchmark payroll estimates to employment counts from the QCEW as part of its annual benchmarking process. Should payroll gains be downwardly revised as suggested by these indicators, payroll employment gains would then be more consistent with the edging up of the unemployment rate last year.

Increases in labor supply appear to have slowed

At the same time, the supply of labor—determined by both the LFPR (the share of the population either working or seeking work) and population growth—appears to have increased more slowly over the second half of last year, after substantial increases over the past several years.

Figure 14. Labor force participation rate



Note: Values before January 2024 are estimated by Federal Reserve Board staff to eliminate discontinuities in the published history.

After having rebounded notably from its pandemic lows, the LFPR has been little changed since mid-2023 and was 62.5 percent in December (figure 14). Although population aging has continued to put downward pressure on the LFPR, this influence has been offset by increasing participation among some age groups. In particular, the LFPR among those aged 25 to 54 has increased substantially over the past few years (especially among women) and, despite declining a bit, on net, over the second half of last year, has remained at a high level.

Regarding population growth, the Census Bureau now estimates that immigration increased strongly from 2022 through June 2024, contributing to strong annual population growth over this period.[6] While official Census Bureau immigration estimates are unavailable after June, more recent indicators point to a sharp slowdown in immigration and population growth since the middle of last year.[7]

The labor market no longer appears especially tight

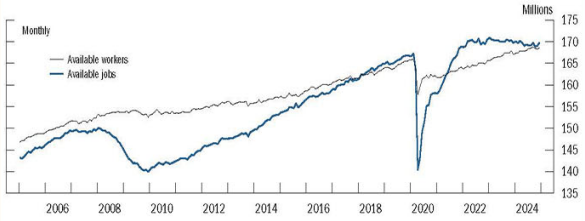
As labor demand has slowed further, labor demand and supply have continued to move into closer alignment. By many measures, the labor market appears somewhat less tight than just before the pandemic; for example, the gap between the number of total available jobs (measured by employed workers plus job openings) and the number of available workers (measured by the size of the labor force) averaged 0.8 million in the fourth quarter of last year—well below its 2022 peak of 6.0 million and somewhat below its 2019 average (figure 15). Additionally, the

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[6] See U.S. Census Bureau (2024), "Net International Migration Drives Highest U.S. Population Growth in Decades," press release, December 19, https://www.census.gov/newsroom/press-releases/2024/population-estimates-international-migration.html.

[7] Some of these more recent indicators include data from the Department of Homeland Security on encounters between migrants and Customs and Border Patrol agents on the southwest border; see U.S. Department of Homeland Security (2025), "Immigration Enforcement and Legal Processes Monthly Tables," webpage, https://ohss.dhs.gov/topics/immigration/immigration-enforcement/immigration-enforcement-and-legal-processes-monthly.

Figure 15. Available jobs versus available workers



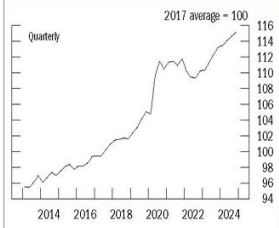
Note: Available jobs are employment plus job openings as of the end of the previous month. Available workers are the labor force. Data for employment and labor force before January 2024 are estimated by Federal Reserve Board staff to eliminate discontinuities in the published history.

share of respondents to the Conference Board Consumer Confidence Survey who say that jobs are plentiful, and the monthly percentage of the workforce that has quit their job as measured in JOLTS (an indicator of the availability of attractive job prospects), are also somewhat below 2019 levels (but above their ranges that prevailed over much of the previous expansion). Similarly, the unemployment rate in December was about ½ percentage point higher than its 2019 average (but still low relative to its range over the past 50 years).

Labor productivity increased solidly in 2024

Labor productivity in the business sector increased 1.97 percent in 2024 (figure 16). Productivity growth has swung wildly since the onset of the pandemic, but looking through this volatility, average labor productivity since the fourth quarter of 2019 is estimated to have increased 1.8 percent, 0.3 percentage point faster than the average pace that prevailed over the previous expansion.[8] (For some potential explanations for this faster productivity growth, see the box "Labor Productivity since the Start of the Pandemic.")

Figure 16. U.S. labor productivity



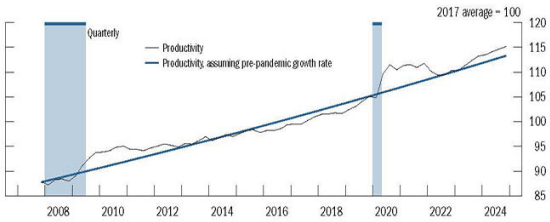
Note: The data are output per hour in the business sector.

[8] Productivity estimates can be subject to large revisions. For example, the anticipated downward revisions to payroll employment discussed in footnote 5 would likely imply a small upward revision to currently published productivity growth. Revisions to gross domestic product estimates, in either direction, could also have a substantial effect on measured productivity.

Box 2. Labor Productivity since the Start of the Pandemic

While labor productivity in the business sector has been volatile since the start of the pandemic, smoothing through these swings, productivity has increased at an average annual rate of 1.8 percent from 2019:Q4 to 2024:Q4—stronger than its 1.5 percent annual average pace over the previous business cycle, 2007:Q4 to 2019:Q4 (figure A). This relatively strong growth rate has put the level of productivity more than 1½ percent above where it would have been had it increased at its pre-pandemic pace. Should stronger productivity growth be maintained, it would have important economic consequences, because stronger productivity growth can support stronger growth in gross domestic product and real wages without additional inflationary pressure.

Figure A. Business-sector productivity



Note: The data are output per hour in the business sector. The blue line plots output per hour, assuming a constant growth rate equal to its average from 2007:Q4 to 2019:Q4. The shaded bars with top caps indicate periods of business recession as defined by the National Bureau of Economic Research: December 2007 to June 2009 and February 2020 to April 2020.

Why has productivity growth been stronger than its pre-pandemic pace? One key contributing factor has likely been new business formation, which surged early in the pandemic and remains strong (figure B). This strength has likely supported productivity growth because newer firms are more likely to adopt new technologies or production processes, use existing processes more efficiently, or create new products themselves.[1] Moreover, the surge in business formation has been disproportionately concentrated in high-tech industries, which historically have been important drivers of productivity gains.[2] As some of the more productive businesses started over the past few years grow further, they

(continued)

[1] Although the latest data on new establishment formation is available only through 2024:Q2, new business applications—many of which lead to new businesses forming—remained high through 2024:Q4, suggesting that new businesses continued to be created at a strong pace throughout the second half of last year. For evidence that newer businesses have historically been an important driver of productivity gains, see Titan Alon, David Berger, Robert Dent, and Benjamin Pugsley (2018), "Older and Slower: The Startup Deficit's Lasting Effects on Aggregate Productivity Growth," *Journal of Monetary Economics*, vol. 93 (January), pp. 68–85. For some evidence that the surge in business formation from the past few years has featured genuine new entrepreneurial activity (rather than only reflecting, for example, a surge in gig work or in new establishments among incumbent firms), see Ryan A. Decker and John Haltiwanger (2023), "Surging Business Formation in the Pandemic: Causes and Consequences?" *Brookings Papers on Economic Activity*, Fall, pp. 249–302, https://www.brookings.edu/wp-content/uploads/2023/09/Decker-Haltiwanger_16820-BPEA-FA23_WEB.pdf; and Ryan A. Decker and John Haltiwanger (2024), "Surging Business Formation in the Pandemic: A Brief Update," working paper, September.

[2] See Ryan Decker and John Haltiwanger (2024), "High Tech Business Entry in the Pandemic Era," FEDS Notes (Washington: Board of Governors of the Federal Reserve System, April 19), https://www.federalreserve.gov/econres/notes/feds-notes/high-tech-business-entry-in-the-pandemic-era-20240419.html.

Box 2—*continued*

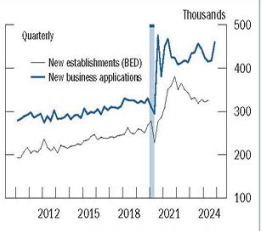
may continue to support strong productivity growth, even if the rate of business formation slows. That said, much is still unknown about the nature and growth prospects of these pandemic-era new businesses, so there is considerable uncertainty around how much these businesses have contributed to recent productivity growth and how consequential they will be to productivity going forward.

Other contributing factors may have provided a more short-lived boost to productivity growth. For example, some firms facing severe labor shortages early in the pandemic likely expanded their use of labor-saving technologies and more efficiently restructured aspects of production, which enhanced their workers' productivity and reduced some firms' need for pre-pandemic levels of labor. However, as labor supply has gradually returned, firms' need for further expansion of labor-saving technologies may have diminished.

Another temporary factor has likely been worker reallocation across jobs (figure C). Measures of worker reallocation, such as the rate of transitions between jobs (black line) and quits (blue line), jumped early in the pandemic and may have resulted in more productive matches between some workers and jobs.[3] However, these measures have returned to pre-pandemic levels (or lower), so worker reallocation is unlikely to still be providing much support to productivity growth.

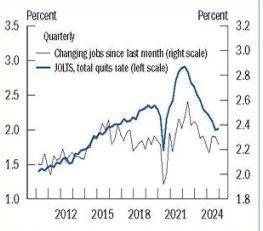
(continued)

Figure B. Establishment births and new business applications



Note: Quarterly new business applications are the sum of high-propensity applications over the month. The Business Employment Dynamics (BED) data extend through 2024:Q2. The shaded bar with a top cap indicates a period of business recession as defined by the National Bureau of Economic Research: February 2020 to April 2020.

Figure C. Measures of worker reallocation



Note: The data are seasonally adjusted quarterly averages. The black line applies only to persons aged 16 or older. JOLTS is the Job Openings and Labor Turnover Survey.

[3] For evidence that job-to-job movements have historically been an important contributor to productivity gains, see John Haltiwanger, Henry Hyatt, Erika McEntarfer, and Matthew Staiger (2025), "Cyclical Worker Flows: Cleansing vs. Sullying," *Review of Economic Dynamics*, vol. 55 (January), 101252. For evidence suggesting that the recent period of elevated worker reallocation may have been productivity enhancing because it in part reflected transitions from lower-wage (lower-productivity) jobs to higher-wage (higher-productivity) jobs, see David Autor, Arindrajit Dube, and Annie McGrew (2023), "The Unexpected Compression: Competition at Work in the Low Wage Labor Market," NBER Working Paper Series 31010 (Cambridge, Mass.: National Bureau of Economic Research, March; revised May 2024), https://www.nber.org/papers/w31010.

Box 2—*continued*

Finally, integration of artificial intelligence (AI) into production processes may already be contributing to productivity gains. However, any effects on measured productivity so far have probably been small, since it will likely take many firms some time to figure out how to effectively integrate AI into the workplace.[4] As AI becomes more widely adopted and more efficiently used, it may contribute more substantially to productivity, although there are conflicting views about any potential economic implications.[5]

It seems possible that all of the aforementioned factors have contributed, at least to some degree, to the strength in productivity since the start of the pandemic, although it is difficult to separate out their relative contributions. Going forward, whether productivity growth can remain above its pre-pandemic pace depends in part on how persistent the influence of some of these factors proves to be and whether these or other factors become even more consequential (for example, how much further AI technologies develop and how widespread their usage becomes).

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[4] Evidence is mixed on how prevalent AI use is in the workplace currently. For example, the Census Bureau's Business Trends and Outlook Survey reports that, as of January, only around 6 percent of firms reported using AI in production, and around 10 percent planned to do so in the next six months. That said, some other surveys indicate higher usage among firms. For example, 25 percent of service firms and 16 percent of manufacturing firms that responded to an August 2024 survey by the Federal Reserve Bank of New York reported using AI in production; see Jaison R. Abel, Richard Deitz, Natalia Emanuel, and Benjamin Hyman (2024), "AI and the Labor Market: Will Firms Hire, Fire, or Retrain?" *Liberty Street Economics* (blog), September 4, https://libertystreeteconomics.newyorkfed.org/2024/09/ai-and-the-labor-market-will-firms-hire-fire-or-retrain). Some worker-based surveys also point to a substantial share of workers using AI-enabled tools in their workflow—for example, one recent survey found that one-fourth of workers used generative AI in their work over the previous week; see Alexander Bick, Adam Blandin, and David J. Deming, "The Rapid Adoption of Generative AI," NBER Working Paper Series 32966 (Cambridge, Mass.: National Bureau of Economic Research, September), https://www.nber.org/papers/w32966; and Conference Board (2023), "Majority of U.S. Workers Are Already Using Generative AI Tools—But Company Policies Trail Behind," press release, September 13, https://www.conference-board.org/press/us-workers-and-generative-ai.

[5] For an estimate that AI could result in significant productivity gains, see Martin Neil Baily, Erik Brynjolfsson, and Anton Korinek (2023), "Machines of Mind: The Case for an AI-Powered Productivity Boom" (Washington: Brookings Institution, May 10), https://www.brookings.edu/articles/machines-of-mind-the-case-for-an-ai-powered-productivity-boom. For an estimate that the productivity effects of AI could be more modest, see Daron Acemoglu (2024), "The Simple Macroeconomics of AI," *Economic Policy*, eiae042 (August).

Wage growth has slowed but remains solid

As labor market tightness eased somewhat further last year, nominal wage growth has also continued to slow, although to a still-solid pace (figure 17). Total hourly compensation, as measured by the employment cost index (ECI), increased 3.6 percent over the 12 months ending in December and has gradually slowed from its peak increase of 5.5 percent in mid-2022. Other measures also slowed some last year, with the Federal Reserve Bank of Atlanta's Wage Growth Tracker (which reports the median 12-month wage growth of individuals responding to the Current Population Survey) slowing in line with the ECI and growth in average hourly earnings (a less comprehensive measure) slowing in the first half but flattening out over the second half.

Figure 17. Measures of change in hourly compensation



Note: For the private-sector employment cost index, change is over the 12 months ending in the last month of each quarter; for private-sector average hourly earnings, the data are 12-month percent changes; for the Atlanta Fed's Wage Growth Tracker, the data are shown as a 3-month moving average of the 12-month percent change.

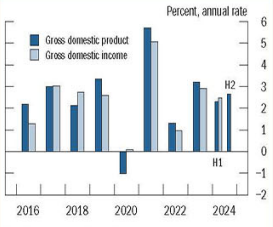
Despite this slowing, wage growth remains somewhat above its 2019 pace. This contrasts with the normalization in other labor market tightness indicators cited earlier and might reflect persistence in the adjustment process of wages to earlier shocks as well as support from strong productivity growth. Nominal wage growth may still remain somewhat too high to be consistent with 2 percent inflation over time, although this depends in part on how persistent the recent strength in productivity proves to be.

With PCE prices having risen 2.6 percent last year, these wage measures suggest that most workers saw increases in the purchasing power of their wages in 2024. That said, the extent of these increases depends in part on workers' individual circumstances—because nominal wage changes vary significantly across industry and occupation and because households consume different baskets of goods than the one represented in the aggregate PCE price index. (For details on how real wage gains have differed across demographic groups, see the box "Employment and Earnings across Demographic Groups.")

Gross domestic product rose solidly last year

Real gross domestic product (GDP) is reported to have increased at a solid annual rate of 2.7 percent over the second half of last year, a little stronger than its pace over the first half

Figure 18. Change in real gross domestic product and gross domestic income



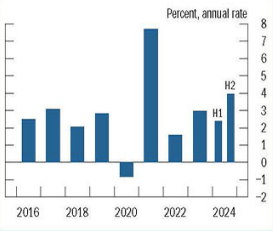
Note: The key identifies bars in order from left to right. The data for gross domestic income extend through 2024:H1.

(figure 18). GDP growth last year was importantly supported by strength in consumer spending. Meanwhile, business investment grew moderately, while activity in the housing market was lackluster. For the year, GDP increased 2.5 percent—somewhat slower than its 3.2 percent pace from 2023, primarily because of moderation in both state and local government spending and nonresidential structures investment (which surged in 2023 from booming construction of manufacturing facilities), and more of a drag from net exports (as imports grew faster than exports).

In contrast to GDP, manufacturing output was little changed last year. In part, weakness in manufacturing production reflects tight financing conditions, as manufacturing output was weaker, on average, in sectors that tend to be more responsive to interest rates. Moreover, recent growth in domestic goods spending has largely been accommodated by increased imports. Special factors also held down production in some key industries like aircraft, where a labor dispute held down output. In all, manufacturing output has been fairly flat in recent years and remains below its recent peak from 2018.

Consumer spending has been resilient despite some headwinds

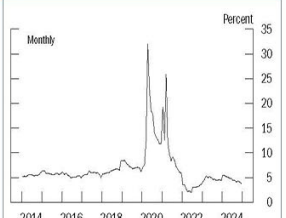
Figure 19. Change in real personal consumption expenditures



Despite headwinds from high interest rates, consumer spending adjusted for inflation grew a strong 3.2 percent last year, a little above its pace in 2023 (figure 19). Consumer spending has been supported by a still-solid labor market, high levels of household wealth relative to income, and rising real wages—indeed, real disposable personal income increased at an average pace of 3.6 percent over the past two years. However, consumers continued to spend more of their income than was typical before the pandemic, and the saving rate—the difference between current income and spending, as a share of income—has remained somewhat below its

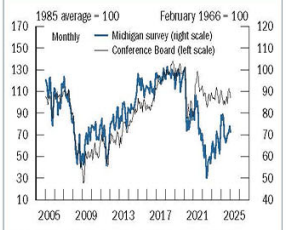
pre-pandemic level for much of the past two years (figure 20). Consumers maintained this pace of spending in part by drawing down their stock of liquid assets (such as checking and savings accounts) that had accumulated to elevated levels during and after the pandemic and by relying more on credit. Even so, households' stock of liquid assets appears to have stabilized at a solid level somewhat above its pre-pandemic trend, suggesting that households, in the aggregate, may have a larger-than-usual buffer to weather economic shocks.

Figure 20. Personal saving rate



Consumer spending has been more robust than measures of consumer sentiment would suggest (figure 21). Although sentiment in the University of Michigan survey has improved notably since 2022, it remains well below its pre-pandemic level. A similar measure from the Conference Board also remains somewhat low—though stronger than the University of Michigan survey measure, as it puts more weight on labor market conditions.

Figure 21. Indexes of consumer sentiment



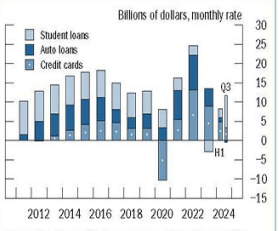
Note: The data extend through January 2025.

Consumer financing conditions remain somewhat restrictive

Despite a tick down in interest rates over the second half of the year in many categories of consumer loans, consumer financing conditions have remained restrictive, reflecting still-high borrowing costs and tight bank lending standards. According to the October 2024 and January 2025 Senior Loan Officer Opinion Surveys on Bank Lending Practices (SLOOS), conducted by the Federal Reserve Board, over the second half of last year banks reported tightening lending standards further for credit cards but loosening them somewhat for auto loans, albeit from tight levels.[9] For credit cards, the relatively tight consumer lending standards likely reflect, in part, delinquency rates that have remained somewhat elevated relative to the pre-pandemic period.

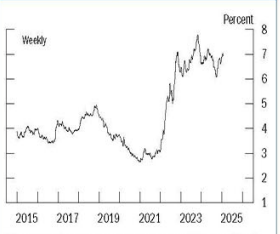
[9] These results reported from the SLOOS are based on banks' responses weighted by each bank's outstanding loans in the respective loan category, and they might therefore differ from the published SLOOS results (which are based on banks' unweighted responses).

Figure 22. Consumer credit flows



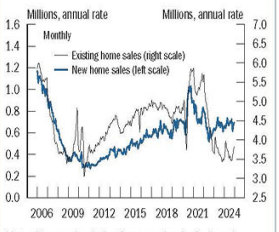
Note: Credit card balances were little changed in 2011 and 2012.

Figure 23. Mortgage interest rates



Note: The data are contract rates on 30-year, fixed-rate conventional home mortgage commitments and extend through January 30, 2025.

Figure 24. New and existing home sales



Note: New and existing home sales include only single-family sales.

Even so, financing has generally remained available to support spending for most households, other than those with low credit scores, and consumer credit expanded moderately through the third quarter of last year (figure 22).

Residential investment increased modestly last year

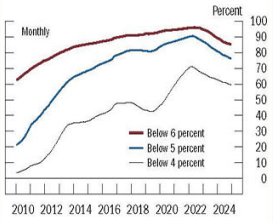
After steep declines in 2022, residential investment turned around in the middle of 2023 and increased modestly, on net, last year, supported by solid income growth and mortgage rates—which moved down a bit through the fall of last year, although to levels still far above pre-pandemic mortgage rates (figure 23). More recently, however, mortgage rates have moved back up again.

The markets for new and existing homes have evolved differently over the past few years (figure 24). Existing home sales remain depressed, as many homeowners who purchased or refinanced homes when fixed mortgage rates were lower appear unwilling to move and take out a new mortgage with a much higher rate. Indeed, the majority of outstanding mortgages still have interest rates below 4 percent, well below the prevailing 30-year fixed interest rate of 7.0 percent at the end of January (figure 25).

In contrast, sales of new homes bounced back to pre-pandemic levels in early 2023 and remained around these levels throughout last year. The new home market has likely been supported by demand from buyers who are unable to find homes in the existing home market. The rebound in demand for new

homes encouraged builders to increase housing construction, and starts for single-family housing generally maintained solid levels last year (figure 26). Reflecting some additional rebalancing in the housing market, in part from supply improvements, house prices increased moderately last year, well below the pace seen in 2021 and 2022 (figure 27).

Figure 25. Distribution of interest rates on outstanding mortgages



Note: The sample only includes outstanding mortgages current on their payments.

Figure 26. Private housing starts

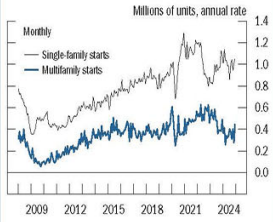
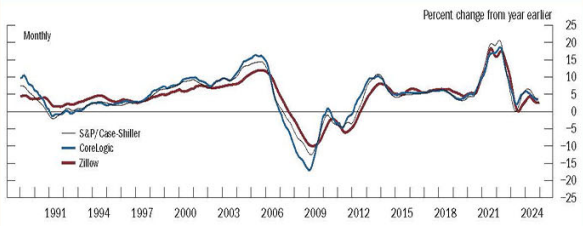


Figure 27. Growth rate in house prices



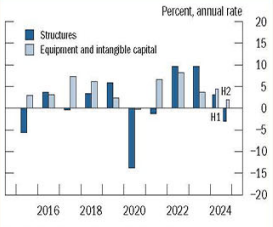
Note: S&P/Case-Shiller and CoreLogic data extend through November 2024.

Meanwhile, starts of multifamily units—which are predominantly rental units—continued to trend lower last year because of weaker rent growth, increasing vacancies, and as a large backlog of new units have entered the market following a wave of multifamily construction from 2021 through mid-2023.

Capital spending grew moderately last year

After increasing solidly in 2023, business investment spending rose moderately last year despite high interest rates, supported by strong sales growth and improving business sentiment

Figure 28. Change in real business fixed investment



Note: Business fixed investment is known as "private nonresidential fixed investment" in the national income and product accounts. The key identifies bars in order from left to right.

(figure 28). The sources of strength in business investment have shifted over the past year. Investment in structures, which surged in 2023 largely from a boom in manufacturing construction (especially for factories that produce semiconductors or electric vehicle batteries), has flattened out, albeit at a high level. Meanwhile, growth in business investment in equipment and intellectual property (which includes software and research and development) has picked up a bit, in part as businesses have been outfitting new manufacturing structures and data centers with high-tech equipment, as well as from continued investment related to artificial intelligence technologies.

Business financing conditions remained somewhat restrictive, but credit remains generally available

While businesses have still faced somewhat restrictive financing conditions as interest rates have stayed elevated, credit has remained generally available to most nonfinancial corporations. Over the second half of last year, banks reported leaving lending standards for business loans basically unchanged, after tightening them since the middle of 2022. Issuance of corporate bonds remained solid across credit categories, although below the levels that prevailed at the start of the tightening cycle.

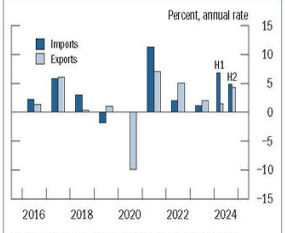
For small businesses, which are more reliant on bank financing than large businesses are, credit conditions were little changed over the second half of last year. Surveys indicate that credit supply for small businesses remained relatively tight, while interest rates on loans to small businesses decreased some late in the year but remained near the top of the range observed since 2008. Loan default rates and delinquency rates, which had risen since mid-2022, moved down somewhat starting in the fall but still stand above their pre-pandemic rates. Finally, loan originations trended down slowly since the summer but are in the range observed before the pandemic, suggesting that credit continues to be available for small businesses with sound financial positions.

Exports and imports grew moderately in the second half of 2024

After lackluster growth in the first half of last year, real exports of goods and services picked up in the second half, led by exports of capital goods (figure 29). Meanwhile, real imports were

robust throughout much of the year, supported by imports of high-tech capital goods. Combined, net exports subtracted 0.2 percentage point from U.S. GDP growth in the second half and subtracted 0.5 percentage point from overall 2024 GDP growth. The current account deficit as a share of GDP widened somewhat in the third quarter to roughly twice as wide as it was before the pandemic.

Figure 29. Change in real imports and exports of goods and services



Note: The key identifies bars in order from left to right.

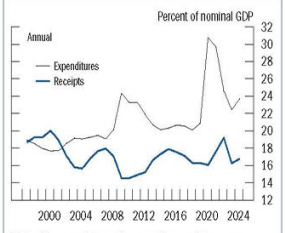
Federal fiscal policy actions provided a modest boost to GDP growth last year

Last year, federal purchases grew moderately, and some policies enacted after the pandemic continued to boost private investment and consumption. This support to economic activity was offset somewhat by the fading effects of earlier pandemic-related fiscal policy support. All told, the contribution of discretionary changes in federal fiscal policy was a modest boost to real GDP growth in 2024.

The budget deficit and federal debt remain elevated

After surging to about 15 percent of GDP in fiscal year 2020, the federal budget deficit—the difference between federal expenditures and receipts—declined through fiscal 2022 as the imprint of the pandemic faded, but it has been fairly flat since then (figure 30). In fiscal 2024, the budget deficit was 6.4 percent of GDP—notably larger than in the years before the pandemic—as noninterest outlays continued to outpace receipts and as the cost of debt service increased as a result of higher interest rates and a higher level of debt.

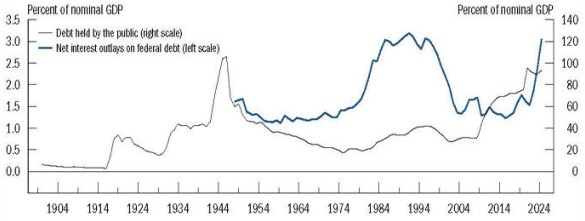
Figure 30. Federal receipts and expenditures



Note: The receipts and expenditures data are on a unified-budget basis and are for fiscal years (October through September); gross domestic product (GDP) data are on a 4-quarter basis ending in Q3.

As a result of the fiscal support enacted early in the pandemic, federal debt held by the public jumped during the pandemic, reaching nearly 100 percent of GDP in early 2021—the highest debt-to-GDP ratio since 1946—and has only edged lower since then (figure 31). The debt-to-GDP ratio has been about flat since then, as the large primary deficits have occurred along with strong nominal GDP growth, but the Congressional Budget Office projects that debt-to-GDP will resume rising in the coming years as deficits remain elevated.

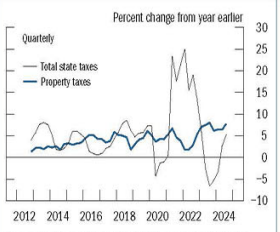
Figure 31. Federal government debt and net interest outlays



Note: The data for net interest outlays are annual, begin in 1948, and extend through 2024. Net interest outlays are the cost of servicing the debt held by the public, offset by certain types of interest income the government receives. Federal debt held by the public equals federal debt excluding most intragovernmental debt, evaluated at the end of the quarter. The data for federal debt are annual from 1900 to 1951 and a 4-quarter moving average thereafter and extend through 2024:Q3. GDP is gross domestic product.

The fiscal position of most state and local governments remains in good shape, as tax revenue growth has normalized . . .

Figure 32. State and local tax receipts



Note: Receipts shown are year-over-year percent changes of 4-quarter moving averages, begin in 2012:Q4, and extend through 2024:Q3. Property taxes are primarily collected by local governments.

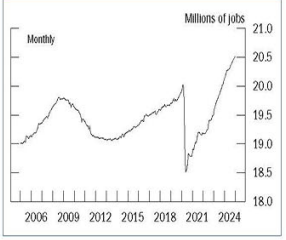
Federal policymakers provided a historically high level of fiscal support to state and local governments during the pandemic, which—together with robust state tax collections in 2021 and 2022—left the sector in a strong budget position overall (figure 32). After falling somewhat in 2023, state tax revenues grew modestly in 2024, and taxes as a percentage of GDP remain somewhat above historical norms. According to the National Association of State Budget Officers, states' total balances—that is, including rainy day fund balances and previous-year surplus funds—declined in 2024 from their all-time high in 2023 but remained well above pre-pandemic levels. At the local level, overall property tax receipts rose at a solid pace in 2024, and the typically long lags between changes in the market value of real estate and changes in taxable assessments suggest that—given past house price appreciation—property tax revenues will continue to rise going forward.

. . . contributing to above-average growth in employment and construction spending last year

Against the backdrop of continued strong budget positions, state and local government employment has moved up sharply over the past two years, after hiring and retention difficulties earlier

in the pandemic faded, in part because wages have become more competitive with those in other sectors (figure 33). As employment has approached its pre-pandemic trend, growth slowed somewhat last year, although to a still-strong pace. Similarly, real construction outlays—which grew at a historically high pace in 2023 owing to support from federal grants and easing bottlenecks—increased last year at a more moderate (though still-strong) pace as support from these factors faded.

Figure 33. State and local government payroll employment

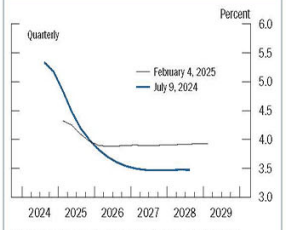


Financial Developments

The expected level of the federal funds rate over the next year shifted up notably . . .

Market-based measures of the expected path of the federal funds rate declined over the summer and early fall as the Federal Reserve eased monetary policy beginning at its September meeting. Subsequently, these measures moved up in the fourth quarter as market participants scaled back their expectations of the extent of further easing. On net, the market-implied path for the federal funds rate in 2025 is little changed since last July, and the path for 2026 is notably higher (figure 34). Financial market prices now imply that the federal funds rate will decline a further 40 basis points from current levels to 3.9 percent by year-end 2025 and remain near that level through the end of 2026. Consistent with current market prices, respondents to the January Blue Chip Financial Forecasts survey expected the federal funds rate to average 3.8 percent in the fourth quarter of 2025.

Figure 34. Market-implied federal funds rate path

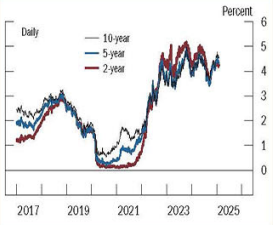


Note: The federal funds rate path is implied by quotes on overnight index swaps—a derivative contract tied to the effective federal funds rate. The implied path as of July 9, 2024, is compared with that as of February 4, 2025. The path is estimated with a spline approach, assuming a term premium of 0 basis points. The July 9, 2024, path extends through 2028:Q3 and the February 4, 2025, path through 2029:Q1.

. . . and yields on long-term U.S. nominal Treasury securities are higher on net

While short-term Treasury yields declined somewhat, on net, since last July, yields on long-term nominal Treasury securities increased markedly on balance. After declining from early summer to

Figure 35. Yields on nominal Treasury securities

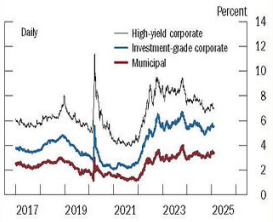


mid-September to a level just above 3.6 percent, the 10-year Treasury yield rose notably, reaching a level of 4.6 percent by early February (figure 35). The rise in long-term nominal yields since mid-September largely reflected an increase in real yields, as measured by yields on Treasury Inflation-Protected Securities.

Yields on other long-term debt were little changed on net

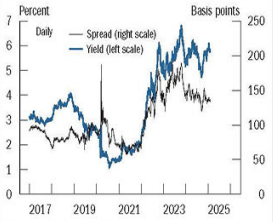
Amid the easing of monetary policy and improved market sentiment since September, spreads on corporate bonds over comparable-maturity Treasury securities narrowed, particularly for speculative-grade bonds, and are now very low relative to their respective historical distributions. As the decline in spreads largely offset the increase in Treasury yields, corporate bond yields were little changed, on net, across credit categories and remained elevated (figure 36). Similarly, municipal bond spreads over comparable-maturity Treasury securities narrowed somewhat, on net, and stand near the bottom of the historical distribution. Meanwhile, municipal bond yields increased slightly since July. Yields on agency mortgage-backed securities (MBS)—an important factor for home mortgage interest rates—were little changed, on net, and currently stand at similar levels to those observed in June (figure 37). The MBS spreads narrowed notably but remained elevated by historical standards, at least partly due to high interest rate volatility, which increases prepayment risk and reduces the value of holding MBS.

Figure 36. Corporate bond yields, by securities rating, and municipal bond yield



Note: High-yield corporate reflects the effective yield of the ICE Bank of America Merrill Lynch (BofAML) High Yield Index (H0A0). Investment-grade corporate reflects the effective yield of the ICE BofAML triple-B U.S. Corporate Index (C0A4). Municipal reflects the yield to worst of the ICE BofAML U.S. Municipal Securities Index (U0A0).

Figure 37. Yield and spread on agency mortgage-backed securities



Note: Yield shown is for the uniform mortgage-backed securities 30-year current coupon, the coupon rate at which new mortgage-backed securities would be priced at par, or face, value for dates after May 31, 2019; for earlier dates, the yield shown is for the Fannie Mae 30-year current coupon. Spread shown is to the average of the 5-year and 10-year nominal Treasury yields.

Broad equity price indexes increased further

Amid elevated expectations of long-term earnings growth and broad-based optimism about the corporate outlook, the S&P 500 index increased further since June (figure 38). Similarly, equity prices for small market capitalization firms rose during this period. Bank equity prices increased during the second half of the year. One-month option-implied volatility on the S&P 500 index—the VIX—increased moderately since July amid higher uncertainty about the strength of the economy and the corresponding monetary policy path (figure 39). Currently, the level of the VIX is below the median of its historical distribution since 1990. (For a discussion of financial stability issues, see the box "Developments Related to Financial Stability.")

Figure 38. Equity prices

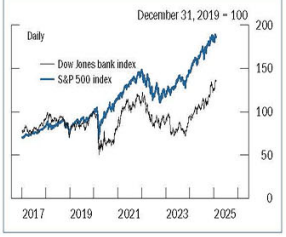
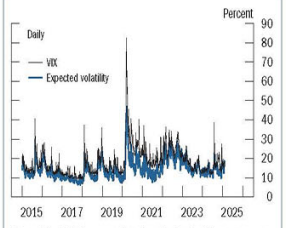


Figure 39. S&P 500 volatility



Note: The VIX is an option-implied volatility measure that represents the expected annualized variability of the S&P 500 index over the following 30 days. The expected volatility series shows a forecast of 1-month realized volatility, using a heterogeneous autoregressive model based on 5-minute S&P 500 returns.

Major asset markets functioned in an orderly manner, but liquidity remained low

Treasury securities market functioning continued to be orderly, but a number of indicators suggest that liquidity remained low by historical standards. The persistence of low liquidity is broadly in line with the continued high level of interest rate volatility. Liquidity in equity markets continued to be low, at levels comparable with those observed last July. Meanwhile, corporate and municipal bond markets continued to function well amid stable liquidity and trading conditions.

Short-term funding market conditions remained stable

Conditions in overnight bank funding and repurchase agreement markets continued to be stable. The reduction in the target range for the federal funds rate in the September, November, and December FOMC meetings fully passed through to overnight money market rates. Since June, the effective federal funds rate has remained 7 basis points below the interest rate on reserve balances. The Secured Overnight Financing Rate has been slightly above the offering rate on the overnight reverse repurchase agreement (ON RRP) facility, except for short-lived periods of upward pressure on quarter-ends. Take-up at the ON RRP facility continued to decline amid an increase in net Treasury bill issuance and more favorable rates on private investments.

Box 3. Developments Related to Financial Stability

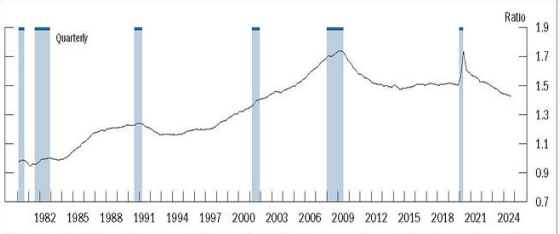
This discussion reviews vulnerabilities in the U.S. financial system. The framework used by the Federal Reserve Board for assessing the resilience of the U.S. financial system focuses on financial vulnerabilities in four broad areas: asset valuations, business and household debt, leverage in the financial sector, and funding risks. All told, the financial system remains sound and resilient. Valuations remained high relative to fundamentals in a range of markets, including those for equity, corporate debt, and residential real estate. Total debt of households and nonfinancial businesses as a fraction of gross domestic product (GDP) continued to trend down to a level that is very low relative to that in the past two decades. Most banks continued to report capital levels well above regulatory requirements, but fair value losses on fixed-rate assets were still sizable for some banks. In addition, the trend of reduced reliance by banks on uninsured deposits continued, and recent Securities and Exchange Commission (SEC) reforms mitigated some vulnerabilities associated with prime money market funds (MMFs). Meanwhile, hedge fund leverage appears to be high and concentrated.

Valuation pressures increased somewhat from already high levels. The ratio of equity prices to 12-month forward earnings is close to the high end of its historical range, driven to a substantial extent by the largest companies. Spreads between yields on corporate bonds and those on comparable-maturity Treasury securities were very low compared with their history. In residential property markets, the ratio of house prices to rents rose to near the highest levels on record, though high house prices do not appear to have been supported by excessive borrower leverage. Meanwhile, conditions in commercial real estate (CRE) markets have recently showed signs of stabilization after a sustained period of deterioration. Nominal long-term Treasury yields increased moderately and Treasury market depth remained low, suggesting market liquidity remained low by historical standards.

Vulnerabilities from nonfinancial business and household debt remained moderate. The combined debt of both sectors as a share of GDP continued to trend down and is at its lowest level in the past 20 years (figure A). Household debt as a share of GDP is especially subdued relative to recent history and is owed primarily by prime-rated borrowers (figure B). However, delinquency rates on credit cards and auto loans among borrowers with nonprime credit ratings remained above pre-pandemic levels. Business debt as a share of GDP has declined significantly from the post-COVID-19 peak and stands

(continued)

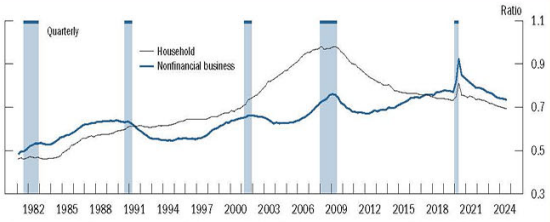
Figure A. Private nonfinancial-sector credit-to-GDP ratio



Note: The shaded bars with top caps indicate periods of business recession as defined by the National Bureau of Economic Research: January 1980 to July 1980, July 1981 to November 1982, July 1990 to March 1991, March 2001 to November 2001, December 2007 to June 2009, and February 2020 to April 2020. GDP is gross domestic product. The date extend through 2024:Q3.

Box 3—*continued*

Figure B. Nonfinancial business and household debt-to-GDP ratios



Note: The shaded bars with top caps indicate periods of business recession as defined by the National Bureau of Economic Research: July 1981 to November 1982, July 1990 to March 1991, March 2001 to November 2001, December 2007 to June 2009, and February 2020 to April 2020. GDP is gross domestic product. The data extend through 2024:Q3.

near the bottom of its range over the past decade (as shown in figure B); however, business debt as a share of business assets was high by historical standards, and private credit arrangements have also been growing rapidly. That said, measures of the ability of businesses to service their debt have been stable within typical ranges, in part reflecting robust corporate earnings.

Vulnerabilities associated with financial leverage remained notable. The banking sector remained sound and resilient overall, and most banks continued to report capital levels well above regulatory requirements. Although fair value losses on fixed-rate assets have moderated, they were still sizable for some banks and remained sensitive to changes in long-term interest rates. The overall credit quality of banks' assets was sound, with the aggregate bank loan delinquency rate remaining at historically low levels. However, some banks, insurers, and securitization vehicles continued to have concentrated exposures to CRE. Indicators suggest that hedge fund leverage was at or near the highest level in the past decade while broker-dealer leverage stayed near historical lows. Hedge funds' Treasury cash–futures basis trade, which is highly leveraged and involves shorting a Treasury futures contract and purchasing a Treasury note deliverable into that contract, remained elevated through the second half of 2024. Separately, some highly leveraged hedge funds may also have contributed to the spike in volatility that hit equity markets in early August, as they had to quickly deleverage positions, largely to meet internal volatility targets.

Liquidity at most domestic banks remained sound. Many banks have significantly reduced the fraction of assets funded with uninsured deposits. This funding was replaced, in part, by increased use of brokered and reciprocal deposits and, at large banks, short-term wholesale funding. Some open-end bond mutual funds remained vulnerable to significant withdrawals, as they are required to permit daily redemptions despite holding assets that can suffer losses and become illiquid under stress. While the 2023–24 SEC reforms on MMFs have mitigated some vulnerabilities associated with prime MMFs, structural vulnerabilities remained in certain other short-term investment vehicles. Moreover, assets in these alternative vehicles, including prime-like offshore MMFs, as well as stablecoins which are also vulnerable to runs, grew notably in the second half of 2024. Bond and loan funds remained susceptible to redemptions during periods of stress, with more severe pressures possible if assets become more illiquid or redemptions become unusually large. In addition, life insurers continued to rely on a higher-than-average share of nontraditional liabilities.

The implementation of new rules for institutional prime money market funds (MMFs) in October by the SEC passed in an orderly manner. In anticipation of the rules, there were multiple conversions from prime to government MMFs and closures of prime MMFs. Assets under management of MMFs reached historical highs in January as MMFs continued to offer favorable yields relative to bank deposits. Meanwhile, MMFs extended the maturity profile of their portfolios somewhat, on net, in the second half of 2024.

Bank credit continued to decelerate

Banks' core loan holdings continued to decelerate in the second half of 2024, growing at a 1.3 percent annualized rate, down from 1.9 percent during the first half of last year (figure 40). The subdued loan growth likely reflects still-elevated interest rates and tight lending standards. Delinquency rates remained relatively stable in the second half of 2024 following several quarters of deterioration. Even so, delinquencies for commercial real estate loans and credit cards remained elevated relative to the pre-pandemic period. In contrast, delinquency rates for commercial and industrial loans remained in line with their pre-pandemic levels. Measures of bank profitability edged down during the second half of last year amid a decline in net interest margins and remain below the levels that prevailed before the pandemic (figure 41).

Figure 40. Ratio of total commercial bank credit to nominal gross domestic product

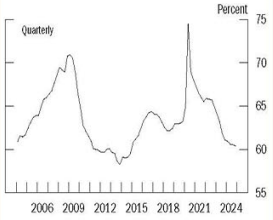
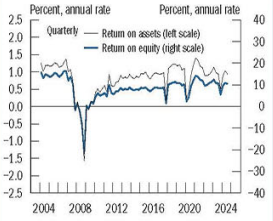


Figure 41. Profitability of bank holding companies



Note: The data extend through 2024:Q3.

International Developments

Foreign economic growth has remained modest in the second half of 2024

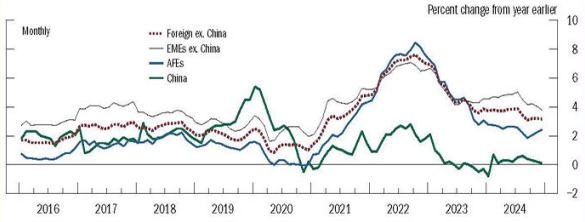
Foreign growth remained modest in the second half of last year, as the cumulative effects of restrictive monetary policy became more pronounced, curbing both private investment and consumer spending. Additionally, in Europe, energy-intensive sectors continued to grapple with elevated energy costs that resulted from Russia's war on Ukraine. By contrast, growth in Asian economies stepped up somewhat in the second half of the year, bolstered by strong export activity in

the high-tech sector associated with robust U.S. artificial intelligence and data center demand. In China, growth was also supported by a slew of government stimulus measures, including monetary easing, support for the property sector and stock market, and a program to boost consumer purchases of automobiles and large appliances. These economic stimulus measures have been enacted both to stabilize the property market, which has experienced large declines in activity and prices in recent years, and to restore confidence in the broader economy.

Inflation abroad slowed but remains uneven across economies

After mostly moving sideways in the first half of last year, foreign headline inflation slowed in the second half, largely driven by declines in core inflation (figures 42 and 43). However, progress on inflation reduction remains uneven across economies and sectors, with services inflation and wage growth still running above levels consistent with central banks' inflation objectives in several economies. China stood out with near-zero inflation, reflecting weak domestic demand and falling housing prices despite government stimulus measures. Global risks to inflation include upside risk from potential disruptions to energy supplies driven by geopolitical events and downside risk from the possibility that deflationary forces in China could become entrenched.

Figure 42. Consumer price inflation in foreign economies

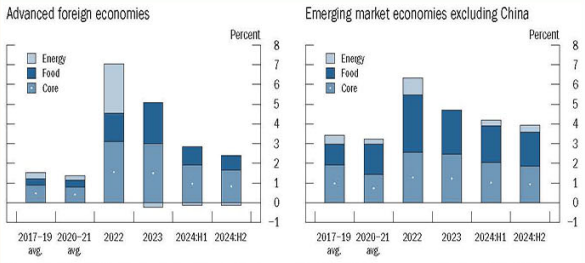


Note: The advanced foreign economy (AFE) aggregate is the average of Canada, the euro area, Japan, and the U.K., weighted by shares of U.S. non-oil goods imports. The emerging market economy (EME) aggregate is the average of Argentina, Brazil, Chile, Colombia, Hong Kong, India, Indonesia, Israel, Malaysia, Mexico, the Philippines, Russia, Saudi Arabia, Singapore, South Korea, Taiwan, Thailand, and Vietnam, weighted by shares of U.S. non-oil goods imports. The foreign aggregate is the import-weighted average of all aforementioned economies. The inflation measure is the Harmonised Index of Consumer Prices for the euro area and the consumer price index for the other economies.

Many foreign central banks continued to ease monetary policy

Many foreign central banks, including the European Central Bank and the Bank of Canada as well as several central banks in Latin America and Southeast Asia, continued to cut policy rates since mid-2024, citing declining inflationary pressures, easing labor markets, and concerns about economic growth. Policymakers generally emphasized that they are following a data-dependent

Figure 43. Components of foreign consumer price inflation



Note: The advanced foreign economy aggregate is the average of Canada, the euro area, Japan, and the U.K., weighted by shares of U.S. non-oil goods imports. The emerging market economy (EME) aggregate is the average of Argentina, Brazil, Chile, Colombia, Hong Kong, India, Indonesia, Israel, Malaysia, Mexico, the Philippines, Russia, Saudi Arabia, Singapore, South Korea, Taiwan, Thailand, and Vietnam, weighted by shares of U.S. non-oil goods imports, and begins in May 2017. The inflation measure is the Harmonised Index of Consumer Prices for the euro area and the consumer price index for other economies. The stacked bars measure the percentage point contribution of each component to 12-month headline inflation in each referenced period. For each of these periods, the values shown are averages over all monthly 12-month changes ending in that period. The energy component of inflation for the EMEs was little changed in 2023.

approach and underscored the importance of maintaining vigilance amid persistent geopolitical risks as well as still-elevated services inflation and wage pressures in some economies.

In contrast, the Bank of Japan raised its policy rates last summer and again this January and has continued to emphasize its commitment to achieving its inflation target after more than two decades of low-inflation outcomes. Brazil was also a notable exception, as a resurgence of inflation amid tight labor markets and large depreciation of the currency has prompted the Central Bank of Brazil to raise its policy rates forcefully since early September and to signal that further hiking is likely.

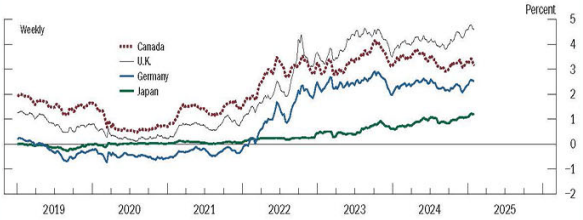
Financial conditions abroad are little changed on balance . . .

Since mid-2024, short-term sovereign yields declined notably in many advanced foreign economies (AFEs) as many AFE central banks cut policy rates. By contrast, short-term yields rose in Japan, where market-based measures of policy expectations suggest further policy rate hikes by the Bank of Japan in 2025. Meanwhile, AFE longer-term sovereign yields rose moderately in some countries, with declines in expected policy rates being more than offset by increases in term premiums on market expectations of large bond issuance due to persistently large government deficits (figure 44). Relatedly, most AFE equity indexes were moderately higher, on net, since mid-2024.

Chinese equity prices increased sharply in late September, and China-focused investment funds recorded large inflows in response to announcements by Chinese authorities of economic

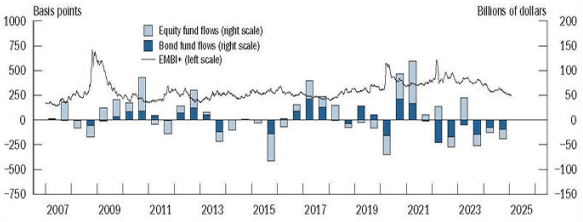
stimulus measures and policies to support equity markets. These movements were later partially reversed, however, as investors expressed disappointment at the size and scope of the stimulus when details of the measures became clearer. More broadly, while aggregate emerging market economy (EME) funds recorded strong inflows last September, these turned to large outflows in the fourth quarter as investors reacted to the deterioration in the economic outlook for China, rising U.S. longer-term interest rates, and the prospect of new U.S. tariffs on EME exports to the U.S. (figure 45). Nevertheless, EME sovereign spreads narrowed significantly amid a broad narrowing in dollar-denominated credit spreads.

Figure 44. Nominal 10-year government bond yields in selected advanced foreign economies



Note: The data are weekly averages of daily benchmark yields and extend through January 31, 2025.

Figure 45. Emerging market mutual fund flows and spreads



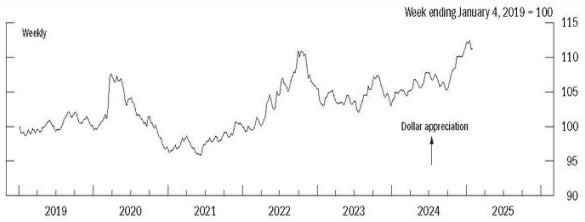
Note: The bond and equity fund flows data are semiannual sums of weekly data from December 28, 2006, to December 25, 2024, and exclude domestically focused funds in emerging market economies. Weekly data span Thursday through Wednesday, and the semiannual values are sums over weekly data for weeks ending in that half year. The J.P. Morgan Emerging Markets Bond Index Plus (EMBI+) data are weekly averages of daily data, extend through January 31, 2025, and exclude Venezuela.

. . . and the exchange value of the dollar has increased significantly

Since mid-2024, the broad dollar index—a measure of the exchange value of the dollar against a trade-weighted basket of foreign currencies—increased significantly, on net, continuing its notable rise seen in the first half of 2024 and reaching its highest level in decades (figure 46). The

dollar index was, however, somewhat volatile since mid-2024; it decreased initially as U.S. yields declined in the third quarter of 2024, before increasing steadily afterward. Market participants attributed the recent increase in the dollar index to widening gaps of U.S. interest rates over those of major AFEs, the relative strength of the U.S. economy, and political and fiscal developments in some foreign economies. Some market participants also pointed to potential increases in U.S. tariffs on imports as a factor pushing the dollar higher in recent months.

Figure 46. U.S. dollar exchange rate index



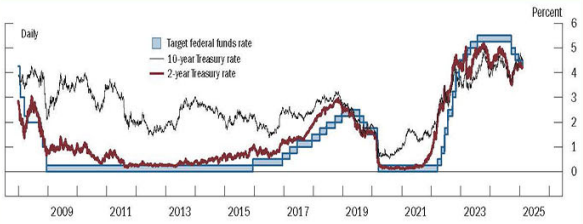
Note: The data, which are in foreign currency units per dollar, are weekly averages of daily values of the broad dollar index and extend through January 31, 2025. As indicated by the arrow, increases in the data reflect U.S. dollar appreciation and decreases reflect U.S. dollar depreciation.

Monetary Policy

The Federal Open Market Committee lowered the target range for the federal funds rate

After having held the target range for the policy rate at 5¼ to 5½ percent between late July 2023 and mid-September 2024, the Federal Open Market Committee (FOMC) lowered the target range for the policy rate by a cumulative 100 basis points over the last three meetings of 2024, bringing the range to 4¼ to 4½ percent (figure 47). The FOMC's decision to begin reducing the degree of policy restraint reflected the FOMC's greater confidence in inflation moving sustainably toward 2 percent and the judgment that it was appropriate to recalibrate the policy stance. In considering the extent and timing of additional adjustments to the target range for the federal funds rate, the FOMC will carefully assess incoming data, the evolving outlook, and the balance of risks.

Figure 47. Selected interest rates



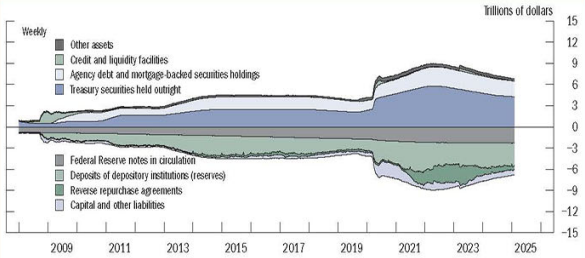
Note: The 2-year and 10-year Treasury rates are the constant-maturity yields based on the most actively traded securities.

The FOMC has continued the process of significantly reducing its holdings of Treasury and agency securities

The FOMC began reducing its securities holdings in June 2022 and, since then, has continued to implement its plan for significantly reducing the size of the Federal Reserve's balance sheet in a predictable manner. Over the second half of last year, the FOMC reduced the size of the Federal Reserve's balance sheet with redemption caps of $25 billion per month on Treasury securities and $35 billion per month on agency debt and agency mortgage-backed securities (MBS). Any principal payments in excess of the agency debt and agency MBS caps are to be reinvested into Treasury securities, consistent with the FOMC's intention to hold primarily Treasury securities in the longer run.

The System Open Market Account holdings of Treasury and agency securities have declined about $2 trillion since the start of the balance sheet reduction and $297 billion since June 2024 to around $6.5 trillion, a level equivalent to 22 percent of U.S. nominal gross domestic product, down from a peak of 35 percent reached at the end of 2021 (figure 48). Reserve balances—the largest liability item on the Federal Reserve's balance sheet—have edged down $68 billion since late June 2024 to a level of around $3.2 trillion. Since the beginning of balance sheet runoff, reserves have been little changed because the reserve-draining effect of balance sheet runoff has been largely offset by a $1.8 trillion decline in balances at the overnight reverse repurchase agreement facility. (See the box "Developments in the Federal Reserve's Balance Sheet and Money Markets.")

Figure 48. Federal Reserve assets and liabilities



Note: "Other assets" includes repurchase agreements, FIMA (Foreign and International Monetary Authorities) repurchase agreements, and unamortized premiums and discounts on securities held outright. "Credit and liquidity facilities" consists of primary, secondary, and seasonal credit; term auction credit; central bank liquidity swaps; support for Maiden Lane, Bear Stearns Companies, Inc., and AIG; and other credit and liquidity facilities, including the Primary Dealer Credit Facility, the Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility, the Commercial Paper Funding Facility, the Term Asset-Backed Securities Loan Facility, the Primary and Secondary Market Corporate Credit Facilities, the Paycheck Protection Program Liquidity Facility, the Municipal Liquidity Facility, and the Main Street Lending Program. "Agency debt and mortgage-backed securities holdings" includes agency residential mortgage-backed securities and agency commercial mortgage-backed securities. "Capital and other liabilities" includes the U.S. Treasury General Account and the U.S. Treasury Supplementary Financing Account. The key identifies shaded areas in order from top to bottom. The data extend through January 29, 2025.

The FOMC has stated that it intends to maintain securities holdings at amounts consistent with implementing monetary policy efficiently and effectively in its ample-reserves regime. To ensure a smooth transition to ample reserve balances, the FOMC slowed the pace of decline of its securities holdings in June 2024 and intends to stop reductions in its securities holdings when reserve balances are somewhat above the level that the FOMC judges to be consistent with ample reserves. Once balance sheet runoff has ceased, reserve balances will likely continue to decline at a slower pace—reflecting growth in other Federal Reserve liabilities—until the FOMC judges that reserve balances are at an ample level. Thereafter, the FOMC will manage securities holdings as needed to maintain ample reserves over time.

The FOMC will continue to monitor the implications of incoming information for the economic outlook

The FOMC is strongly committed to supporting maximum employment and returning inflation to its 2 percent objective. In considering the extent and timing of additional adjustments to the target range for the federal funds rate, the FOMC will carefully assess incoming data, the evolving outlook, and the balance of risks. Its assessments will take into account a wide range of information, including readings on labor market conditions, inflation pressures and inflation expectations, and financial and international developments.

In addition to considering a wide range of economic and financial data, the FOMC gathers information from business contacts and other informed parties around the country, as summarized in the Beige Book. The Federal Reserve has regular arrangements under which it hears from a broad range of participants in the U.S. economy about how monetary policy affects people's daily lives and livelihoods. In particular, the Federal Reserve has continued to gather insights into these matters through the *Fed Listens* initiative and the Federal Reserve System's community development outreach. Additionally, this year the Federal Reserve has begun a public review of its monetary policy framework. (See the box "Periodic Review of Monetary Policy Strategy, Tools, and Communications.")

Policymakers also routinely consult prescriptions for the policy interest rate provided by various monetary policy rules. These rule prescriptions can provide useful benchmarks for the consideration of monetary policy. However, simple rules cannot capture all of the complex considerations that go into the formation of appropriate monetary policy, and many practical considerations make it undesirable for the FOMC to adhere strictly to the prescriptions of any specific rule. Nevertheless, some principles of good monetary policy can be brought out by examining these simple rules. (See the box "Monetary Policy Rules in the Current Environment.")

Box 4. Developments in the Federal Reserve's Balance Sheet and Money Markets

The Federal Open Market Committee (FOMC) continued to reduce the size of the Federal Reserve's System Open Market Account (SOMA) portfolio. Loans extended under the Bank Term Funding Program—which made longer-term funding and liquidity available to eligible depository institutions amid the banking-sector developments of spring 2023 to help ensure the stability of the banking system and the ongoing provision of money and credit to the economy—have also decreased $106 billion to a level of $213 million since late June 2024.[1] Since the previous report, total Federal Reserve assets have decreased $413 billion, leaving the total size of the balance sheet at $6.8 trillion, $2.1 trillion smaller since the reduction in the size of the SOMA portfolio began in June 2022 (table A and figure A).[2]

Reserves, the largest liability item on the Federal Reserve's balance sheet, have edged down $68 billion since late June 2024 to a level of about $3.2 trillion.[3] Since the beginning of balance sheet runoff, reserves have been little changed because the reserve-draining effect of balance sheet runoff was largely offset by a $1.8 trillion decline in balances at the overnight reverse repurchase agreement (ON RRP) facility. Since June 2024, usage of the ON RRP facility has continued to decline to levels below $200 billion (figure B). Reduced usage of the ON RRP facility largely reflects money market mutual funds shifting their portfolios toward higher-yielding investments, including Treasury bills and private-market repurchase agreements.

Conditions in overnight money markets remained stable. The ON RRP facility continued to serve its intended purpose of supporting the control of the effective federal funds rate (EFFR), and the Federal Reserve's administered rates—the interest rate on reserve balances and the ON RRP offering rate—remained highly effective at maintaining the EFFR within the target range. Following the December 2024 FOMC meeting, the Federal Reserve made a technical adjustment to lower the ON RRP offering rate 5 basis points. The technical adjustment aligned the ON RRP offering rate with the bottom of the target range for the federal funds rate.

The Federal Reserve's deferred asset has increased $43 billion since late June to a level of around $221 billion.[4] Negative net income and the associated deferred asset do not affect the Federal Reserve's conduct of monetary policy or its ability to meet its financial obligations.[5]

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[1] The remaining Bank Term Funding Program (BTFP) loans will mature by March 11, 2025. The BTFP was established under section 13(3) of the Federal Reserve Act with the approval of the Secretary of the Treasury. The BTFP offered loans of up to one year to banks, savings associations, credit unions, and other eligible depository institutions (DIs) against collateral such as U.S. Treasury securities, U.S. agency securities, and U.S. agency mortgage-backed securities. For more details, see Board of Governors of the Federal Reserve System (2024), "Bank Term Funding Program," webpage, https://www.federalreserve.gov/financial-stability/bank-term-funding-program.htm.

[2] The last Federal Reserve Board statistical release H.4.1 ("Factors Affecting Reserve Balances") before the publication of the previous *Monetary Policy Report* on July 5, 2024, was dated June 26, 2024. As a result, this discussion refers to changes in the Federal Reserve's balance sheet since late June.

[3] Reserve balances consist of deposits held at the Federal Reserve Banks by DIs, such as commercial banks, savings banks, credit unions, thrift institutions, and U.S. branches and agencies of foreign banks.

[4] The deferred asset is equal to the cumulative shortfall of net income and represents the amount of future net income that will need to be realized before remittances to the Treasury resume. Although remittances are suspended at the time of this report, over the past decade and a half, the Federal Reserve has remitted over $1 trillion to the Treasury.

[5] Net income is expected to turn positive again as interest expenses fall, and remittances will resume once the temporary deferred asset falls to zero. As a result of the ongoing reduction in the size of the Federal Reserve's balance sheet, interest expenses will fall over time in line with the decline in the Federal Reserve's liabilities.

Box 4—*continued*

Table A. Balance sheet comparison
Billions of dollars

	January 29, 2025	June 26, 2024	Change (since June 2024)	Change (since Fed's balance sheet reduction began on June 1, 2022)
Assets				
Total securities				
Treasury securities	4,275	4,454	−179	−1,496
Agency debt and MBS	2,220	2,338	−118	−490
Unamortized premiums	247	264	−17	−90
Repurchase agreements	0	0	0	0
Loans and lending facilities				
PPPLF	2	3	−1	−18
Discount window	3	7	−4	2
BTFP	0	107	−106	0
Other loans and lending facilities	8	11	−4	−27
Central bank liquidity swaps	0	0	0	0
Other assets	63	47	16	21
Total assets	**6,818**	**7,231**	**−413**	**−2,097**
Liabilities				
Federal Reserve notes	2,298	2,302	−4	67
Reserves held by depository institutions	3,201	3,269	-68	-157
Reverse repurchase agreements				
Foreign official and international accounts	375	390	−15	109
Others	122	490	−368	−1,843
U.S. Treasury General Account	812	744	67	31
Other deposits	176	154	22	−71
Other liabilities and capital	−165	−118	−47	−233
Total liabilities and capital	**6,818**	**7,231**	**−413**	**−2,097**

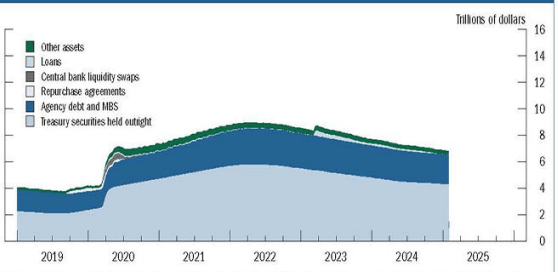
Note: MBS is mortgage-backed securities. PPPLF is Paycheck Protection Program Liquidity Facility. BTFP is Bank Term Funding Program. Components may not sum to totals because of rounding.

Source: Federal Reserve Board, Statistical Release H.4.1, "Factors Affecting Reserve Balances."

(continued)

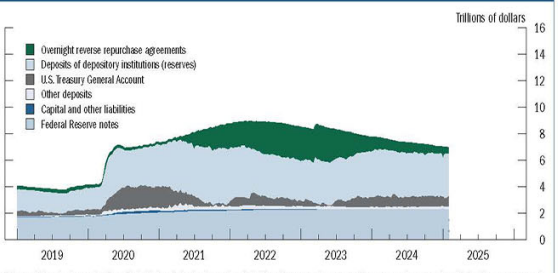
Box 4—*continued*

Figure A. Federal Reserve assets



Note: MBS is mortgage-backed securities. The key identifies shaded areas in order from top to bottom. The data are weekly and extend through January 29, 2025.

Figure B. Federal Reserve liabilities



Note: "Capital and other liabilities" includes the liability for earnings remittances due to the U.S. Treasury and contributions from the U.S. Treasury; the sum is negative from June 2023 onward because of the deferred asset that the Federal Reserve reports. The key identifies shaded areas in order from top to bottom. The data are weekly and extend through January 29, 2025.

Box 5. Periodic Review of Monetary Policy Strategy, Tools, and Communications

The Federal Reserve has begun its periodic public review of its monetary policy strategy, tools, and communication practices—the framework it uses to pursue its dual-mandate goals of maximum employment and price stability. Routine self-evaluation is healthy for any organization, and it is essential that the Federal Open Market Committee's (FOMC) monetary policy framework evolves as needed to best support the dual mandate amid an ever-changing economy. Accordingly, following the review that concluded in 2020, the FOMC indicated that it would carry out a thorough public review roughly every five years.

The review is focused on two specific areas: the FOMC's Statement on Longer-Run Goals and Monetary Policy Strategy, which articulates the Committee's approach to monetary policy, and the Committee's policy communication tools. The Committee's 2 percent longer-run inflation goal is not a focus of the review.[1]

Like the Federal Reserve's 2019–20 review of its monetary policy framework, the ongoing review will include outreach and public events attended by policymakers, community leaders, experts from outside the System, and other members of the public. As part of the public outreach associated with the review, the Federal Reserve Board will host a conference featuring economists and other analysts from outside the Federal Reserve System, who will discuss topics central to the review.[2]

The 2025 review will include a set of events hosted by the Federal Reserve as part of the *Fed Listens* initiative, which began with the FOMC's 2019–20 framework review and has continued since then. At *Fed Listens* events, the Board and Reserve Banks have engaged with a wide range of organizations—employee groups and union members, small business owners, residents of low- and moderate-income communities, workforce development organizations and community colleges, retirees, and others—to hear about how monetary policy affects peoples' daily lives and livelihoods.

FOMC participants discussed topics related to the review at the January 28–29, 2025, FOMC meeting, and these discussions will continue at subsequent meetings. At the end of the process, information and perspectives gathered during the review will inform policymakers' judgments about appropriate changes to the FOMC's monetary policy framework to best serve the American people.

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[1] See the November 22, 2024, press release "Federal Reserve Announces Additional Information about the Periodic Review of Its Monetary Policy Strategy, Tools, and Communications," available on the Board's website at https://www.federalreserve.gov/newsevents/pressreleases/monetary20241122a.htm.

[2] See the September 20, 2024, press release "Federal Reserve Board Announces It Will Host the 2nd Thomas Laubach Research Conference on May 15–16, 2025," available on the Board's website at https://www.federalreserve.gov/newsevents/pressreleases/other20240920a.htm.

Box 6. Monetary Policy Rules in the Current Environment

Simple interest rate rules relate a policy interest rate, such as the federal funds rate, to a small number of other economic variables—typically including the current deviation of inflation from its target value and a measure of resource slack in the economy. As part of their monetary policy deliberations, policymakers regularly consult the prescriptions of a variety of simple interest rate rules without mechanically following the prescriptions of any particular rule.

In 2024, the economy continued to make progress toward the FOMC's dual-mandate goals. Inflation moved a little closer to 2 percent in 2024 and ran well below its peak in 2022. While the labor market remains solid, labor market conditions generally eased. Accordingly, the simple policy rules considered here called for levels of the policy rate in 2024 that were on average lower than in the prior year. In support of its goals of maximum employment and inflation at the rate of 2 percent over the longer run, the FOMC has reduced the target range for the federal funds rate from 5¼ to 5½ percent to 4¼ to 4½ percent, while continuing to reduce its holdings of Treasury securities and agency debt and agency mortgage-backed securities.

Selected Policy Rules: Descriptions

In many economic models, desirable economic outcomes can be achieved over time if monetary policy responds to changes in economic conditions in a manner that is predictable and adheres to some key design principles. In recognition of this idea, economists have analyzed many monetary policy rules, including the well-known Taylor (1993) rule, the "balanced approach" rule, the "adjusted Taylor (1993)" rule, and the "first difference" rule.[1] Table A shows these rules, along with a "balanced approach (shortfalls)" rule, which responds to the unemployment rate only when it is higher than its estimated longer-run level. All of the simple rules shown embody key design principles of good monetary policy, including the requirement that the policy rate should be adjusted by enough over time to ensure a return of inflation to the central bank's longer-run objective and to anchor longer-term inflation expectations at levels consistent with that objective.

All five rules feature the difference between inflation and the FOMC's longer-run objective of 2 percent.[2] The five rules use the unemployment rate gap, measured as the difference between an estimate of the rate of unemployment in the longer run (u_t^{LR}) and the current unemployment rate; the first-difference rule includes the change in the unemployment rate gap rather than its level.[3] All but the first-difference rule include an estimate of the neutral real interest rate in the longer run (r_t^{LR}).[4]

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[1] The Taylor (1993) rule was introduced in John B. Taylor (1993), "Discretion versus Policy Rules in Practice," *Carnegie-Rochester Conference Series on Public Policy*, vol. 39 (December), pp. 195–214. The balanced-approach rule was analyzed in John B. Taylor (1999), "A Historical Analysis of Monetary Policy Rules," in John B. Taylor, ed., *Monetary Policy Rules* (Chicago: University of Chicago Press), pp. 319–41. The adjusted Taylor (1993) rule was studied in David Reifschneider and John C. Williams (2000), "Three Lessons for Monetary Policy in a Low-Inflation Era," *Journal of Money, Credit and Banking*, vol. 32 (November), pp. 936–66. The first-difference rule is based on a rule suggested by Athanasios Orphanides (2003), "Historical Monetary Policy Analysis and the Taylor Rule," *Journal of Monetary Economics*, vol. 50 (July), pp. 983–1022. A review of policy rules is provided in John B. Taylor and John C. Williams (2011), "Simple and Robust Rules for Monetary Policy," in Benjamin M. Friedman and Michael Woodford, eds., *Handbook of Monetary Economics*, vol. 3B (Amsterdam: North-Holland), pp. 829–59. The same volume of the *Handbook of Monetary Economics* also discusses approaches to deriving policy rate prescriptions other than through the use of simple rules.

[2] The rules are implemented as responding to core PCE price inflation rather than to headline PCE price inflation because current and near-term core inflation rates tend to outperform headline inflation rates as predictors of the medium-term behavior of headline inflation.

[3] Implementations of simple rules often use the output gap as a measure of resource slack in the economy. In the rules described in table A, the output gap has been replaced with the unemployment rate gap (using a relationship known as Okun's law) because that gap better captures the FOMC's statutory goal to promote maximum employment. Movements in these alternative measures of resource utilization tend to be highly correlated.

[4] The neutral real interest rate in the longer run (r_t^{LR}) is the level of the real federal funds rate that is expected to be consistent, in the longer run, with maximum employment and stable inflation. Like u_t^{LR}, r_t^{LR} is determined largely by nonmonetary factors. The first-difference rule shown in table A does not require an estimate of r_t^{LR}, a feature that is touted by proponents of such rules as providing an element of robustness. However, this rule has its own shortcomings. For example, research suggests that this sort of rule often results in greater volatility in employment and inflation than what would be obtained under the Taylor (1993) and balanced-approach rules.

Box 6—*continued*

Table A. Monetary policy rules

Taylor (1993) rule	$R_t^{T93} = r_t^{LR} + \pi_t + 0.5(\pi_t - \pi^{LR}) + (u_t^{LR} - u_t)$
Balanced-approach rule	$R_t^{BA} = r_t^{LR} + \pi_t + 0.5(\pi_t - \pi^{LR}) + 2(u_t^{LR} - u_t)$
Balanced-approach (shortfalls) rule	$R_t^{BAS} = r_t^{LR} + \pi_t + 0.5(\pi_t - \pi^{LR}) + 2min\{(u_t^{LR} - u_t), 0\}$
Adjusted Taylor (1993) rule	$R_t^{T93adj} = max\{R_t^{T93} - Z_t, \text{ELB}\}$
First-difference rule	$R_t^{FD} = R_{t-1} + 0.5(\pi_t - \pi^{LR}) + (u_t^{LR} - u_t) - (u_{t-4}^{LR} - u_{t-4})$

Note: R_t^{T93}, R_t^{BA}, R_t^{BAS}, R_t^{T93adj}, and R_t^{FD} represent the values of the nominal federal funds rate prescribed by the Taylor (1993), balanced-approach, balanced-approach (shortfalls), adjusted Taylor (1993), and first-difference rules, respectively.

R_{t-1} denotes the average midpoint of the target range for the federal funds rate in quarter $t-1$, u_t is the average unemployment rate in quarter t, and π_t denotes the 4-quarter core personal consumption expenditures price inflation for quarter t. In addition, u_t^{LR} is the rate of unemployment expected in the longer run, and r_t^{LR} is the level of the neutral real federal funds rate in the longer run that is expected to be consistent with sustaining maximum employment and keeping inflation at the Federal Open Market Committee's 2 percent longer-run objective, represented by π^{LR}. Z_t is the cumulative sum of past deviations of the federal funds rate from the prescriptions of the Taylor (1993) rule when that rule prescribes setting the federal funds rate below an effective lower bound (ELB) of 12.5 basis points. Box note 1 provides references for the policy rules.

Unlike the other simple rules featured here, the adjusted Taylor (1993) rule recognizes that the federal funds rate cannot be reduced materially below the effective lower bound (ELB). By contrast, the standard Taylor (1993) rule prescribed policy rates that, during the pandemic-induced recession, were far below zero. To make up for the cumulative shortfall in policy accommodation following a recession during which the federal funds rate is constrained by its ELB, the adjusted Taylor (1993) rule prescribes delaying the return of the policy rate to the (positive) levels prescribed by the standard Taylor (1993) rule.

Policy Rules: Limitations

As benchmarks for monetary policy, simple policy rules have important limitations. One of these limitations is that the simple policy rules mechanically respond to only a small set of economic variables and thus necessarily abstract from many of the factors that the FOMC considers when it assesses the appropriate setting of the policy rate. In addition, the structure of the economy and current economic conditions differ in important respects from those prevailing when the simple policy rules were originally devised and proposed. Relatedly, the prescriptions of the rules incorporate values of the unemployment rate in the longer run and the neutral real interest rate in the longer run, which are economic concepts that are not only difficult to measure but can also change over time as the economy evolves. Finally, simple policy rules are not forward-looking and do not allow for important risk-management considerations, associated with uncertainty about economic relationships and the evolution of the economy, that factor into FOMC decisions.

Selected Policy Rules: Prescriptions

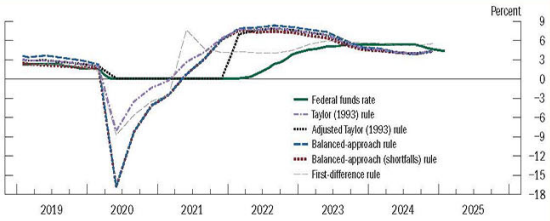
Figure A shows historical prescriptions for the federal funds rate under the five simple rules considered. For each quarterly period, the figure reports the policy rates prescribed by the rules, taking as given the prevailing economic conditions and survey-based estimates of u_t^{LR} and r_t^{LR} at the time. All of the rules considered called for highly accommodative monetary policy in response to the pandemic-driven recession, followed by tighter policy as inflation picked up and labor market conditions

(continued)

Box 6—*continued*

strengthened. The policy rates prescribed by these rules have generally declined since 2023 because inflation moved closer to 2 percent and the unemployment rate increased somewhat. The current prescriptions from these rules are within the current target range for the federal funds rate of 4¼ to 4½ percent except for the first-difference rule, which prescribes a somewhat higher policy rate. All the prescriptions remain higher than survey-based estimates of the longer-run value of the federal funds rate.

Figure A. Historical federal funds rate prescriptions from simple policy rules



Note: The rules use historical values of core personal consumption expenditures inflation, the unemployment rate, and, where applicable, historical values of the midpoint of the target range for the federal funds rate. Quarterly projections of longer-run values for the federal funds rate, the unemployment rate, and inflation used in the computation of the rules' prescriptions are interpolations to quarterly values of projections from the Survey of Primary Dealers. The rules' prescriptions are quarterly, and the federal funds rate data are the monthly average of the daily midpoint of the target range for the federal funds rate and extend through January 2025.

Summary of Economic Projections

The following material was released after the conclusion of the December 17–18, 2024, meeting of the Federal Open Market Committee.

In conjunction with the Federal Open Market Committee (FOMC) meeting held on December 17–18, 2024, meeting participants submitted their projections of the most likely outcomes for real gross domestic product (GDP) growth, the unemployment rate, and inflation for each year from 2024 to 2027 and over the longer run. Each participant's projections were based on information available at the time of the meeting, together with her or his assessment of appropriate monetary policy—including a path for the federal funds rate and its longer-run value—and assumptions about other factors likely to affect economic outcomes. The longer-run projections represent each participant's assessment of the value to which each variable would be expected

Table 1. Economic projections of Federal Reserve Board members and Federal Reserve Bank presidents, under their individual assumptions of projected appropriate monetary policy, December 2024

Percent

Variable	Median[1]					Central Tendency[2]					Range[3]				
	2024	2025	2026	2027	Longer run	2024	2025	2026	2027	Longer run	2024	2025	2026	2027	Longer run
Change in real GDP	2.5	2.1	2.0	1.9	1.8	2.4-2.5	1.8-2.2	1.9-2.1	1.8-2.0	1.7-2.0	2.3-2.7	1.6-2.5	1.4-2.5	1.5-2.5	1.7-2.5
September projection	2.0	2.0	2.0	2.0	1.8	1.9-2.1	1.8-2.2	1.9-2.3	1.8-2.1	1.7-2.0	1.8-2.6	1.3-2.5	1.7-2.5	1.7-2.5	1.7-2.5
Unemployment rate	4.2	4.3	4.3	4.3	4.2	4.2	4.2-4.5	4.1-4.4	4.0-4.4	3.9-4.3	4.2	4.2-4.5	3.9-4.6	3.8-4.5	3.5-4.5
September projection	4.4	4.4	4.3	4.2	4.2	4.3-4.4	4.2-4.5	4.0-4.4	4.0-4.4	3.9-4.3	4.2-4.5	4.2-4.7	3.9-4.5	3.8-4.5	3.5-4.5
PCE inflation	2.4	2.5	2.1	2.0	2.0	2.4-2.5	2.3-2.6	2.0-2.2	2.0	2.0	2.4-2.7	2.1-2.9	2.0-2.6	2.0-2.4	2.0
September projection	2.3	2.1	2.0	2.0	2.0	2.2-2.4	2.1-2.2	2.0	2.0	2.0	2.1-2.7	2.1-2.4	2.0-2.2	2.0-2.1	2.0
Core PCE inflation[4]	2.8	2.5	2.2	2.0		2.8-2.9	2.5-2.7	2.0-2.3	2.0		2.8-2.9	2.1-3.2	2.0-2.7	2.0-2.6	
September projection	2.6	2.2	2.0	2.0		2.6-2.7	2.1-2.3	2.0	2.0		2.4-2.9	2.1-2.5	2.0-2.2	2.0-2.2	
Memo: Projected appropriate policy path															
Federal funds rate	4.4	3.9	3.4	3.1	3.0	4.4-4.6	3.6-4.1	3.1-3.6	2.9-3.6	2.8-3.6	4.4-4.6	3.1-4.4	2.4-3.9	2.4-3.9	2.4-3.9
September projection	4.4	3.4	2.9	2.9	2.9	4.4-4.6	3.1-3.6	2.6-3.6	2.6-3.6	2.5-3.5	4.1-4.9	2.9-4.1	2.4-3.9	2.4-3.9	2.4-3.8

Note: Projections of change in real gross domestic product (GDP) and projections for both measures of inflation are percent changes from the fourth quarter of the previous year to the fourth quarter of the year indicated. PCE inflation and core PCE inflation are the percentage rates of change in, respectively, the price index for personal consumption expenditures (PCE) and the price index for PCE excluding food and energy. Projections for the unemployment rate are for the average civilian unemployment rate in the fourth quarter of the year indicated. Each participant's projections are based on his or her assessment of appropriate monetary policy. Longer-run projections represent each participant's assessment of the rate to which each variable would be expected to converge under appropriate monetary policy and in the absence of further shocks to the economy. The projections for the federal funds rate are the value of the midpoint of the projected appropriate target range for the federal funds rate or the projected appropriate target level for the federal funds rate at the end of the specified calendar year or over the longer run. The September projections were made in conjunction with the meeting of the Federal Open Market Committee on September 17–18, 2024.

[1] For each period, the median is the middle projection when the projections are arranged from lowest to highest. When the number of projections is even, the median is the average of the two middle projections.

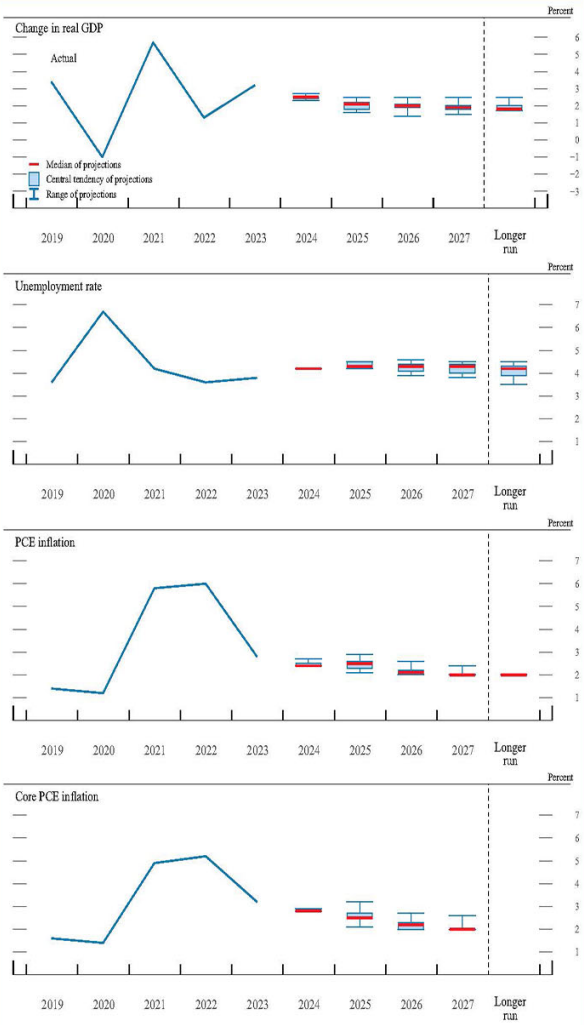
[2] The central tendency excludes the three highest and three lowest projections for each variable in each year.

[3] The range for a variable in a given year includes all participants' projections, from lowest to highest, for that variable in that year.

[4] Longer-run projections for core PCE inflation are not collected.

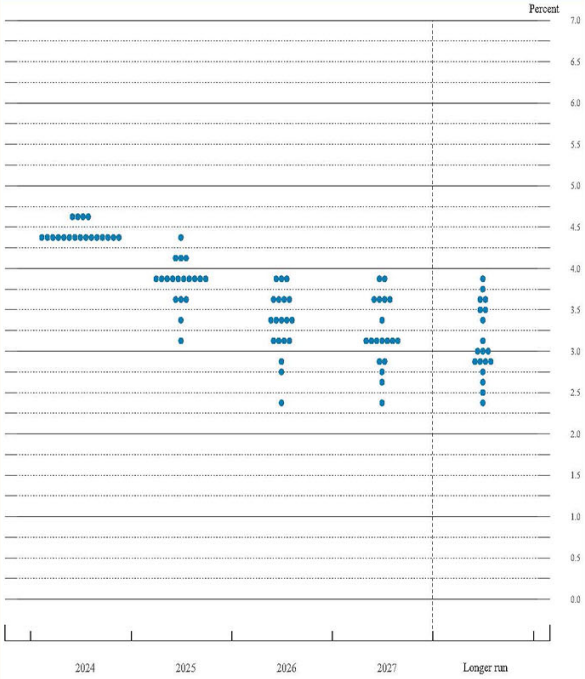
to converge, over time, under appropriate monetary policy and in the absence of further shocks to the economy. "Appropriate monetary policy" is defined as the future path of policy that each participant deems most likely to foster outcomes for economic activity and inflation that best satisfy his or her individual interpretation of the statutory mandate to promote maximum employment and price stability.

Figure 1. Medians, central tendencies, and ranges of economic projections, 2024–27 and over the longer run



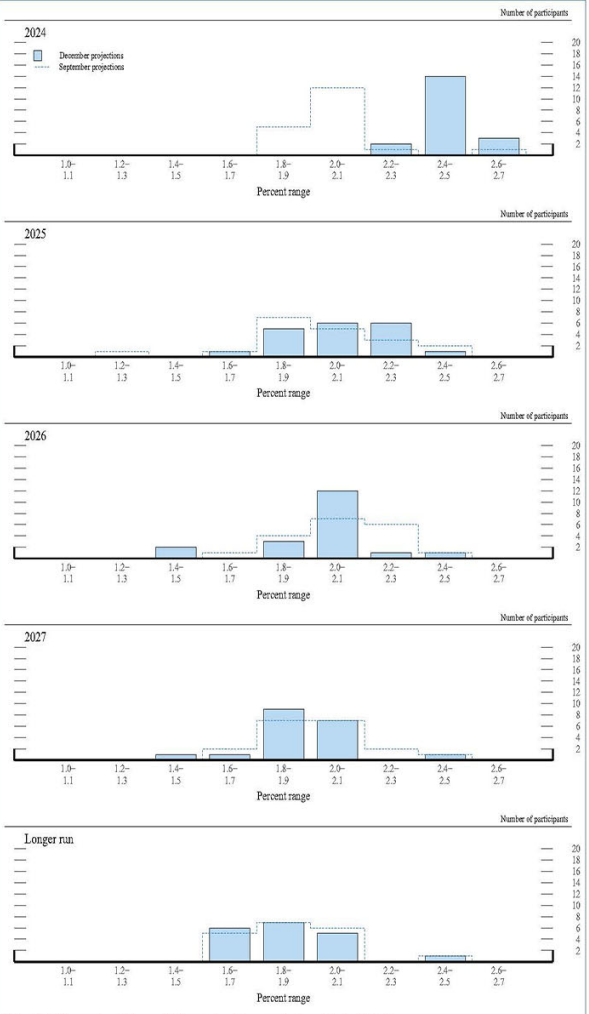
Note: Definitions of variables and other explanations are in the notes to table 1. The data for the actual values of the variables are annual.

Figure 2. FOMC participants' assessments of appropriate monetary policy: Midpoint of target range or target level for the federal funds rate



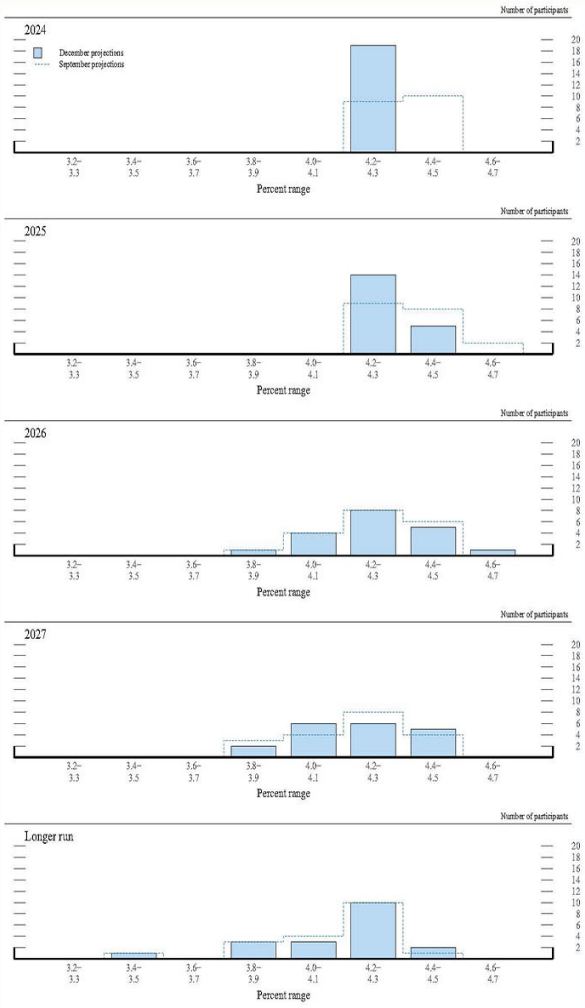
Note: Each shaded circle indicates the value (rounded to the nearest 1/8 percentage point) of an individual participant's judgment of the midpoint of the appropriate target range for the federal funds rate or the appropriate target level for the federal funds rate at the end of the specified calendar year or over the longer run.

Figure 3.A. Distribution of participants' projections for the change in real GDP, 2024–27 and over the longer run



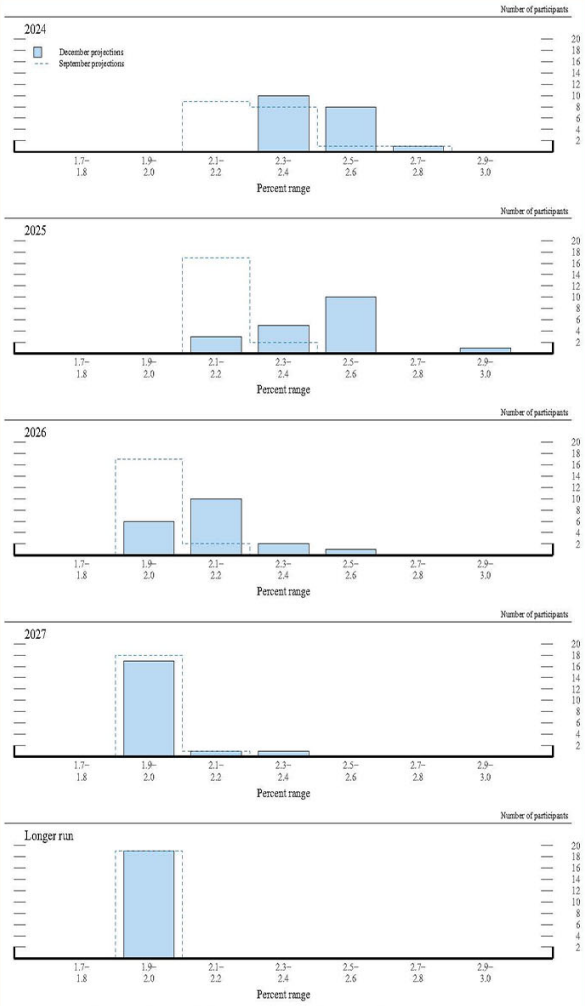
Note: Definitions of variables and other explanations are in the notes to table 1.

Figure 3.B. Distribution of participants' projections for the unemployment rate, 2024–27 and over the longer run



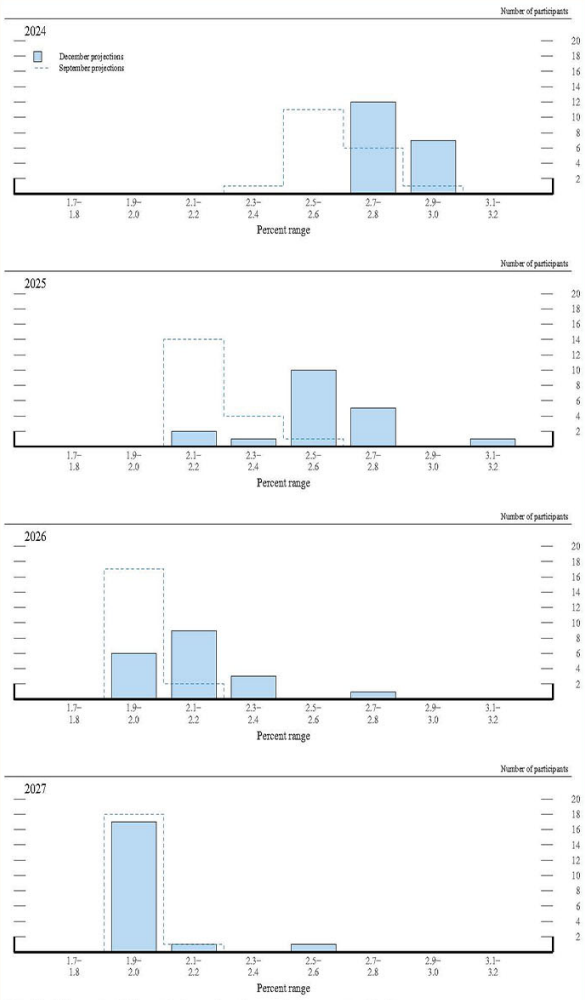
Note: Definitions of variables and other explanations are in the notes to table 1.

Figure 3.C. Distribution of participants' projections for PCE inflation, 2024–27 and over the longer run



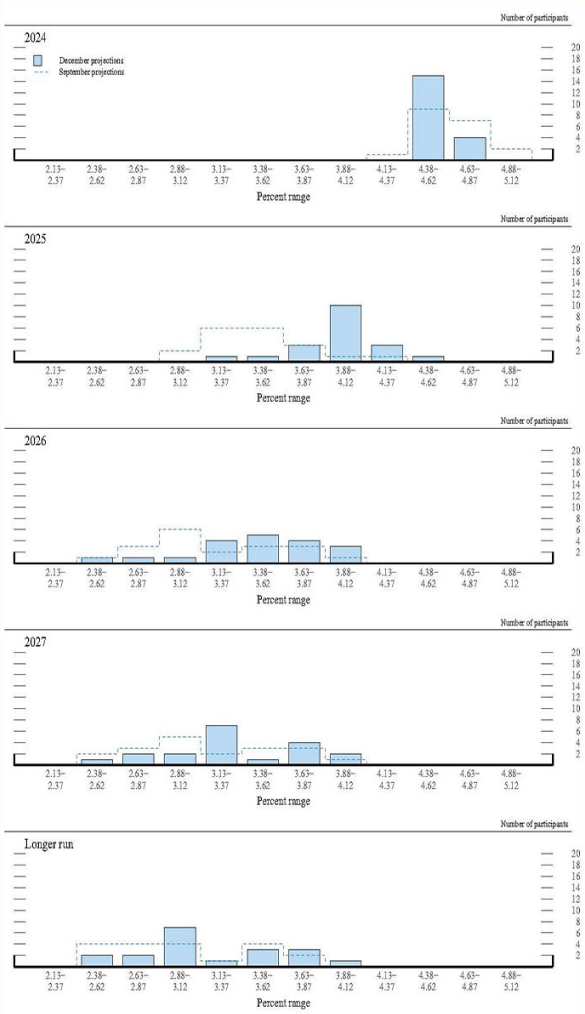
Note: Definitions of variables and other explanations are in the notes to table 1.

Figure 3.D. Distribution of participants' projections for core PCE inflation, 2024–27



Note: Definitions of variables and other explanations are in the notes to table 1.

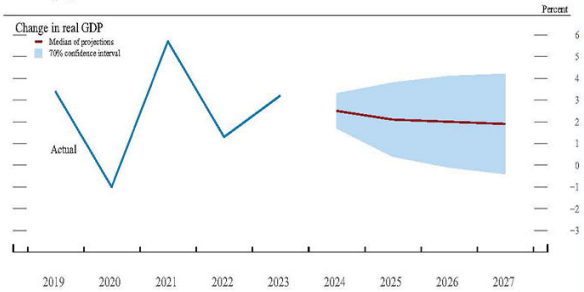
Figure 3.E. Distribution of participants' judgments of the midpoint of the appropriate target range for the federal funds rate or the appropriate target level for the federal funds rate, 2024–27 and over the longer run



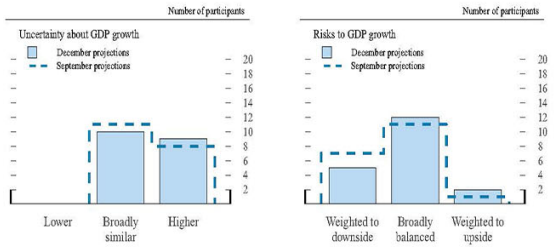
Note: Definitions of variables and other explanations are in the notes to table 1.

Figure 4.A. Uncertainty and risks in projections of GDP growth

Median projection and confidence interval based on historical forecast errors

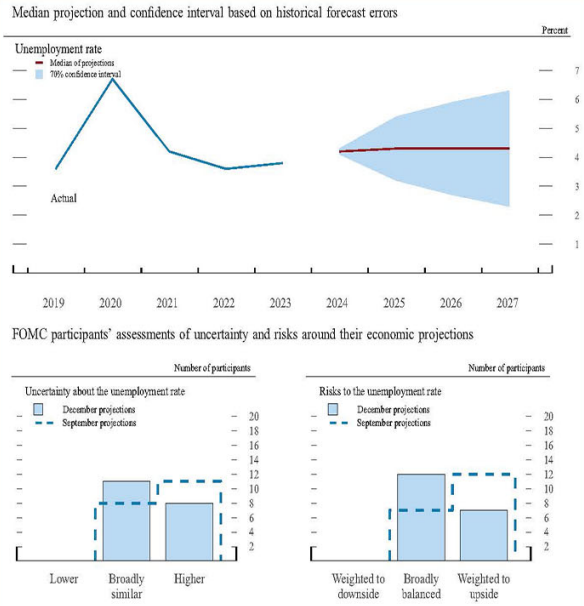


FOMC participants' assessments of uncertainty and risks around their economic projections



Note: The blue and red lines in the top panel show actual values and median projected values, respectively, of the percent change in real gross domestic product (GDP) from the fourth quarter of the previous year to the fourth quarter of the year indicated. The confidence interval around the median projected values is assumed to be symmetric and is based on root mean squared errors of various private and government forecasts made over the previous 20 years; more information about these data is available in table 2. Because current conditions may differ from those that prevailed, on average, over the previous 20 years, the width and shape of the confidence interval estimated on the basis of the historical forecast errors may not reflect FOMC participants' current assessments of the uncertainty and risks around their projections; these current assessments are summarized in the lower panels. Generally speaking, participants who judge the uncertainty about their projections as "broadly similar" to the average levels of the past 20 years would view the width of the confidence interval shown in the historical fan chart as largely consistent with their assessments of the uncertainty about their projections. Likewise, participants who judge the risks to their projections as "broadly balanced" would view the confidence interval around their projections as approximately symmetric. For definitions of uncertainty and risks in economic projections, see the box "Forecast Uncertainty."

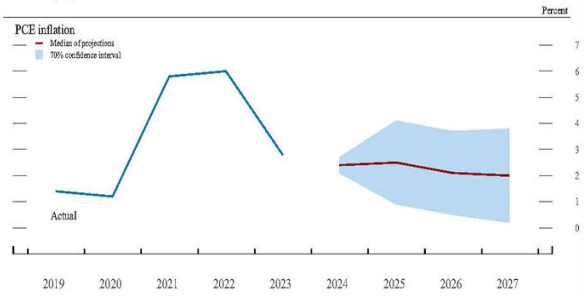
Figure 4.B. Uncertainty and risks in projections of the unemployment rate



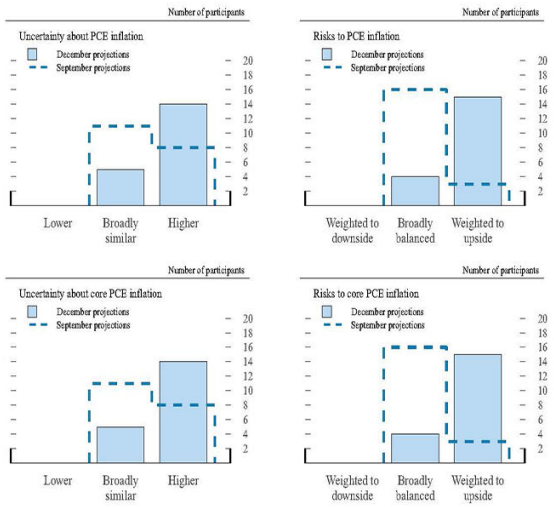
Note: The blue and red lines in the top panel show actual values and median projected values, respectively, of the average civilian unemployment rate in the fourth quarter of the year indicated. The confidence interval around the median projected values is assumed to be symmetric and is based on root mean squared errors of various private and government forecasts made over the previous 20 years; more information about these data is available in table 2. Because current conditions may differ from those that prevailed, on average, over the previous 20 years, the width and shape of the confidence interval estimated on the basis of the historical forecast errors may not reflect FOMC participants' current assessments of the uncertainty and risks around their projections; these current assessments are summarized in the lower panels. Generally speaking, participants who judge the uncertainty about their projections as "broadly similar" to the average levels of the past 20 years would view the width of the confidence interval shown in the historical fan chart as largely consistent with their assessments of the uncertainty about their projections. Likewise, participants who judge the risks to their projections as "broadly balanced" would view the confidence interval around their projections as approximately symmetric. For definitions of uncertainty and risks in economic projections, see the box "Forecast Uncertainty."

Figure 4.C. Uncertainty and risks in projections of PCE inflation

Median projection and confidence interval based on historical forecast errors

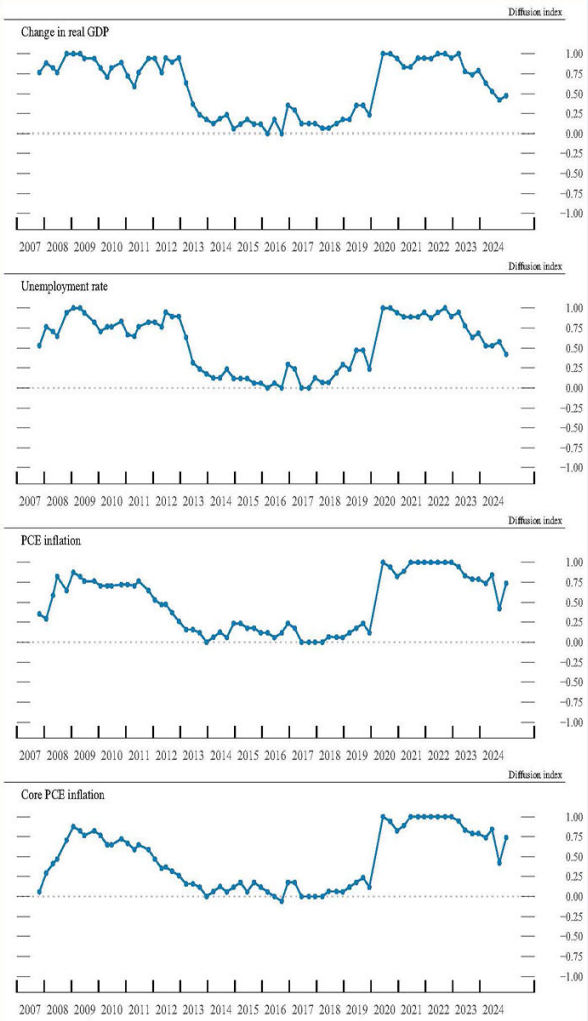


FOMC participants' assessments of uncertainty and risks around their economic projections



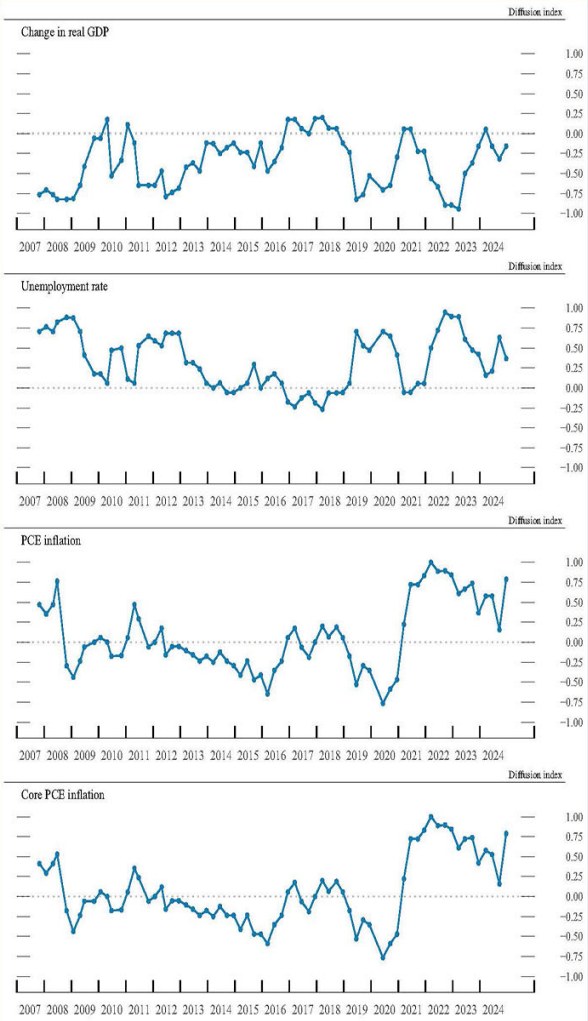
Note: The blue and red lines in the top panel show actual values and median projected values, respectively, of the percent change in the price index for personal consumption expenditures (PCE) from the fourth quarter of the previous year to the fourth quarter of the year indicated. The confidence interval around the median projected values is assumed to be symmetric and is based on root mean squared errors of various private and government forecasts made over the previous 20 years; more information about these data is available in table 2. Because current conditions may differ from those that prevailed, on average, over the previous 20 years, the width and shape of the confidence interval estimated on the basis of the historical forecast errors may not reflect FOMC participants' current assessments of the uncertainty and risks around their projections; these current assessments are summarized in the lower panels. Generally speaking, participants who judge the uncertainty about their projections as "broadly similar" to the average levels of the past 20 years would view the width of the confidence interval shown in the historical fan chart as largely consistent with their assessments of the uncertainty about their projections. Likewise, participants who judge the risks to their projections as "broadly balanced" would view the confidence interval around their projections as approximately symmetric. For definitions of uncertainty and risks in economic projections, see the box "Forecast Uncertainty."

Figure 4.D. Diffusion indexes of participants' uncertainty assessments



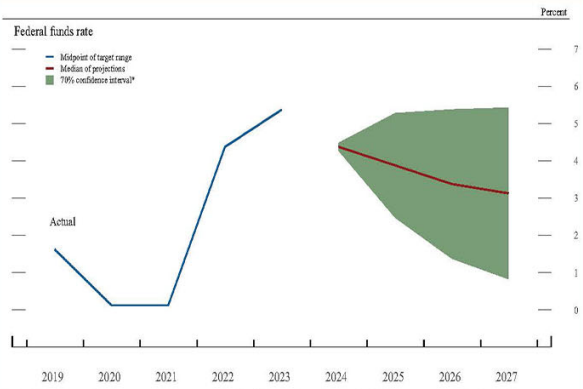
Note: For each SEP, participants provided responses to the question "Please indicate your judgment of the uncertainty attached to your projections relative to the levels of uncertainty over the past 20 years." Each point in the diffusion indexes represents the number of participants who responded "Higher" minus the number who responded "Lower," divided by the total number of participants. Figure excludes March 2020 when no projections were submitted.

Figure 4.E. Diffusion indexes of participants' risk weightings



Note: For each SEP, participants provided responses to the question "Please indicate your judgment of the risk weighting around your projections." Each point in the diffusion indexes represents the number of participants who responded "Weighted to the Upside" minus the number who responded "Weighted to the Downside," divided by the total number of participants. Figure excludes March 2020 when no projections were submitted.

Figure 5. Uncertainty and risks in projections of the federal funds rate



Note: The blue and red lines are based on actual values and median projected values, respectively, of the Committee's target for the federal funds rate at the end of the year indicated. The actual values are the midpoint of the target range; the median projected values are based on either the midpoint of the target range or the target level. The confidence interval around the median projected values is based on root mean squared errors of various private and government forecasts made over the previous 20 years. The confidence interval is not strictly consistent with the projections for the federal funds rate, primarily because these projections are not forecasts of the likeliest outcomes for the federal funds rate, but rather projections of participants' individual assessments of appropriate monetary policy. Still, historical forecast errors provide a broad sense of the uncertainty around the future path of the federal funds rate generated by the uncertainty about the macroeconomic variables as well as additional adjustments to monetary policy that may be appropriate to offset the effects of shocks to the economy.

The confidence interval is assumed to be symmetric except when it is truncated at zero - the bottom of the lowest target range for the federal funds rate that has been adopted in the past by the Committee. This truncation would not be intended to indicate the likelihood of the use of negative interest rates to provide additional monetary policy accommodation if doing so was judged appropriate. In such situations, the Committee could also employ other tools, including forward guidance and large-scale asset purchases, to provide additional accommodation. Because current conditions may differ from those that prevailed, on average, over the previous 20 years, the width and shape of the confidence interval estimated on the basis of the historical forecast errors may not reflect FOMC participants' current assessments of the uncertainty and risks around their projections.

* The confidence interval is derived from forecasts of the average level of short-term interest rates in the fourth quarter of the year indicated; more information about these data is available in table 2. The shaded area encompasses less than a 70 percent confidence interval if the confidence interval has been truncated at zero.

Table 2. Average Historical Projection Error Ranges

Percentage points

Variable	2024	2025	2026	2027
Change in real GDP[1]	± 0.8	± 1.7	± 2.1	± 2.3
Unemployment rate[1]	± 0.1	± 1.1	± 1.6	± 2.0
Total consumer prices[2]	± 0.3	± 1.6	± 1.6	± 1.8
Short-term interest rates[3]	± 0.1	± 1.4	± 2.0	± 2.3

Note: Error ranges shown are measured as plus or minus the root mean squared error of projections for 2004 through 2023 that were released in the winter by various private and government forecasters. As described in the box "Forecast Uncertainty," under certain assumptions, there is about a 70 percent probability that actual outcomes for real GDP, unemployment, consumer prices, and the federal funds rate will be in ranges implied by the average size of projection errors made in the past. For more information, see David Reifschneider and Peter Tulip (2017), "Gauging the Uncertainty of the Economic Outlook Using Historical Forecasting Errors: The Federal Reserve's Approach," Finance and Economics Discussion Series 2017-020 (Washington: Board of Governors of the Federal Reserve System, February), https://dx.doi.org/10.17016/FEDS.2017.020.

[1] Definitions of variables are in the general note to table 1.

[2] Measure is the overall consumer price index, the price measure that has been most widely used in government and private economic forecasts. Projections are percent changes on a fourth quarter to fourth quarter basis.

[3] For Federal Reserve staff forecasts, measure is the federal funds rate. For other forecasts, measure is the rate on 3-month Treasury bills. Projection errors are calculated using average levels, in percent, in the fourth quarter.

Box 7. Forecast Uncertainty

The economic projections provided by the members of the Board of Governors and the presidents of the Federal Reserve Banks inform discussions of monetary policy among policymakers and can aid public understanding of the basis for policy actions. Considerable uncertainty attends these projections, however. The economic and statistical models and relationships used to help produce economic forecasts are necessarily imperfect descriptions of the real world, and the future path of the economy can be affected by myriad unforeseen developments and events. Thus, in setting the stance of monetary policy, participants consider not only what appears to be the most likely economic outcome as embodied in their projections, but also the range of alternative possibilities, the likelihood of their occurring, and the potential costs to the economy should they occur.

Table 2 summarizes the average historical accuracy of a range of forecasts, including those reported in past *Monetary Policy Reports* and those prepared by the Federal Reserve Board's staff in advance of meetings of the Federal Open Market Committee (FOMC). The projection error ranges shown in the table illustrate the considerable uncertainty associated with economic forecasts. For example, suppose a participant projects that real gross domestic product (GDP) and total consumer prices will rise steadily at annual rates of, respectively, 3 percent and 2 percent. If the uncertainty attending those projections is similar to that experienced in the past and the risks around the projections are broadly balanced, the numbers reported in table 2 would imply a probability of about 70 percent that actual GDP would expand within a range of 2.2 to 3.8 percent in the current year, 1.3 to 4.7 percent in the second year, 0.9 to 5.1 percent in the third year, and 0.7 to 5.3 percent in the fourth year. The corresponding 70 percent confidence intervals for overall inflation would be 1.7 to 2.3 percent in the current year, 0.4 to 3.6 percent in the second and third years, and 0.2 to 3.8 percent in the fourth year. Figures 4.A through 4.C illustrate these confidence bounds in "fan charts" that are symmetric and centered on the medians of FOMC participants' projections for GDP growth, the unemployment rate, and inflation. However, in some instances, the risks around the projections may not be symmetric. In particular, the unemployment rate cannot be negative; furthermore, the risks around a particular projection might be tilted to either the upside or the downside, in which case the corresponding fan chart would be asymmetrically positioned around the median projection.

Because current conditions may differ from those that prevailed, on average, over history, participants provide judgments as to whether the uncertainty attached to their projections of each economic variable is greater than, smaller than, or broadly similar to typical levels of forecast uncertainty seen in the past 20 years, as presented in table 2 and reflected in the widths of the confidence intervals shown in the top panels of figures 4.A through 4.C. Participants' current assessments of the

(continued)

Box 7—*continued*

uncertainty surrounding their projections are summarized in the bottom-left panels of those figures. Participants also provide judgments as to whether the risks to their projections are weighted to the upside, are weighted to the downside, or are broadly balanced. That is, while the symmetric historical fan charts shown in the top panels of figures 4.A through 4.C imply that the risks to participants' projections are balanced, participants may judge that there is a greater risk that a given variable will be above rather than below their projections. These judgments are summarized in the lower-right panels of figures 4.A through 4.C.

As with real activity and inflation, the outlook for the future path of the federal funds rate is subject to considerable uncertainty. This uncertainty arises primarily because each participant's assessment of the appropriate stance of monetary policy depends importantly on the evolution of real activity and inflation over time. If economic conditions evolve in an unexpected manner, then assessments of the appropriate setting of the federal funds rate would change from that point forward. The final line in table 2 shows the error ranges for forecasts of short-term interest rates. They suggest that the historical confidence intervals associated with projections of the federal funds rate are quite wide. It should be noted, however, that these confidence intervals are not strictly consistent with the projections for the federal funds rate, as these projections are not forecasts of the most likely quarterly outcomes but rather are projections of participants' individual assessments of appropriate monetary policy and are on an end-of-year basis. However, the forecast errors should provide a sense of the uncertainty around the future path of the federal funds rate generated by the uncertainty about the macroeconomic variables as well as additional adjustments to monetary policy that would be appropriate to offset the effects of shocks to the economy.

If at some point in the future the confidence interval around the federal funds rate were to extend below zero, it would be truncated at zero for purposes of the fan chart shown in figure 5; zero is the bottom of the lowest target range for the federal funds rate that has been adopted by the Committee in the past. This approach to the construction of the federal funds rate fan chart would be merely a convention; it would not have any implications for possible future policy decisions regarding the use of negative interest rates to provide additional monetary policy accommodation if doing so were appropriate. In such situations, the Committee could also employ other tools, including forward guidance and asset purchases, to provide additional accommodation.

While figures 4.A through 4.C provide information on the uncertainty around the economic projections, figure 1 provides information on the range of views across FOMC participants. A comparison of figure 1 with figures 4.A through 4.C shows that the dispersion of the projections across participants is much smaller than the average forecast errors over the past 20 years.

Appendix: Source Notes

Figure 1. Personal consumption expenditures price indexes

For trimmed mean, Federal Reserve Bank of Dallas; for all else, Bureau of Economic Analysis; all via Haver Analytics.

Figure 2. Price indexes for subcomponents of personal consumption expenditures

Bureau of Economic Analysis via Haver Analytics.

Figure 3. Spot and futures prices for crude oil

ICE Brent Futures via Bloomberg.

Figure 4. Spot prices for commodities

For industrial metals, S&P GSCI Industrial Metals Spot Index; for agriculture and livestock, S&P GSCI Agriculture & Livestock Spot Index; both via Haver Analytics.

Figure 5. Reasons for operating below full capacity

U.S. Census Bureau: Quarterly Survey of Plant Capacity Utilization.

Figure 6. Nonfuel import price index

Bureau of Labor Statistics.

Figure 7. Measures of rental price inflation

Bureau of Economic Analysis, PCE, via Haver Analytics; Apartment List, Inc., via Haver Analytics; Zillow, Inc.; RealPage, Inc.; CoreLogic, Inc.; Federal Reserve Board staff calculations.

Figure 8. Measures of inflation expectations

University of Michigan Surveys of Consumers; Federal Reserve Bank of Philadelphia, SPF.

Figure 9. Inflation compensation implied by Treasury Inflation-Protected Securities

Federal Reserve Bank of New York; Federal Reserve Board staff calculations.

Figure 10. Civilian unemployment rate

Bureau of Labor Statistics via Haver Analytics.

Figure 11. Unemployment rate, by race and ethnicity

Bureau of Labor Statistics via Haver Analytics.

Box 1. Employment and Earnings across Demographic Groups

Figure A. Prime-age employment-to-population ratios compared with the 2019 average ratio, by group

Bureau of Labor Statistics; U.S. Census Bureau, Current Population Survey; Federal Reserve Board staff calculations.

Figure B. Prime-age employment-to-population ratios compared with the 2019 average ratio, by metropolitan status and education

Bureau of Labor Statistics via Haver Analytics; U.S. Census Bureau, Current Population Survey; Federal Reserve Board staff calculations.

Figure C. Median real wage growth, by group

Federal Reserve Bank of Atlanta, Wage Growth Tracker; Bureau of Labor Statistics; U.S. Census Bureau, Current Population Survey.

Figure 12. Nonfarm payroll employment

Bureau of Labor Statistics via Haver Analytics.

Figure 13. Indicators of layoffs

Bureau of Labor Statistics via Haver Analytics; U.S. Department of Labor, Employment and Training Administration.

Figure 14. Labor force participation rate

Bureau of Labor Statistics via Haver Analytics.

Figure 15. Available jobs versus available workers

Bureau of Labor Statistics via Haver Analytics; Federal Reserve Board staff calculations.

Figure 16. U.S. labor productivity

Bureau of Labor Statistics via Haver Analytics.

Box 2. Labor Productivity since the Start of the Pandemic

Figure A. Business-sector productivity

Bureau of Labor Statistics via Haver Analytics; Federal Reserve Board staff calculations.

Figure B. Establishment births and new business applications

Bureau of Labor Statistics, BED via Haver Analytics; Federal Reserve Board staff calculations and U.S. Census Bureau, Business Formation Statistics.

Figure C. Measures of worker reallocation

Federal Reserve Bank of Philadelphia, Fujita, Moscarini, and Postel-Vinay Employer-to-Employer Transition Probability; Bureau of Labor Statistics via Haver Analytics.

Figure 17. Measures of change in hourly compensation

Bureau of Labor Statistics; Federal Reserve Bank of Atlanta, Wage Growth Tracker; all via Haver Analytics.

Figure 18. Change in real gross domestic product and gross domestic income

Bureau of Economic Analysis via Haver Analytics.

Figure 19. Change in real personal consumption expenditures

Bureau of Economic Analysis via Haver Analytics.

Figure 20. Personal saving rate

Bureau of Economic Analysis via Haver Analytics.

Figure 21. Indexes of consumer sentiment

University of Michigan Surveys of Consumers; Conference Board.

Figure 22. Consumer credit flows

Federal Reserve Board, Statistical Release G.19, "Consumer Credit."

Figure 23. Mortgage interest rates

Freddie Mac Primary Mortgage Market Survey via Haver Analytics.

Figure 24. New and existing home sales

For new home sales, U.S. Census Bureau; for existing home sales, National Association of Realtors; all via Haver Analytics.

Figure 25. Distribution of interest rates on outstanding mortgages

ICE, McDash®.

Figure 26. Private housing starts

U.S. Census Bureau via Haver Analytics.

Figure 27. Growth rate in house prices

CoreLogic, Inc., Home Price Index; Zillow, Inc., Real Estate Data; S&P/Case-Shiller U.S. National Home Price Index. The S&P/Case-Shiller index is a product of S&P Dow Jones Indices LLC and/or its affiliates. (For Dow Jones Indices licensing information, see the Data Notes page.)

Figure 28. Change in real business fixed investment

Bureau of Economic Analysis via Haver Analytics.

Figure 29. Change in real imports and exports of goods and services

Bureau of Economic Analysis via Haver Analytics.

Figure 30. Federal receipts and expenditures

Department of the Treasury, Financial Management Service; Office of Management and Budget and Bureau of Economic Analysis via Haver Analytics.

Figure 31. Federal government debt and net interest outlays

For GDP, Bureau of Economic Analysis via Haver Analytics; for federal debt, Congressional Budget Office and Federal Reserve Board, Statistical Release Z.1, "Financial Accounts of the United States."

Figure 32. State and local tax receipts

U.S. Census Bureau, Quarterly Summary of State and Local Government Tax Revenue.

Figure 33. State and local government payroll employment

Bureau of Labor Statistics via Haver Analytics.

Figure 34. Market-implied federal funds rate path

Bloomberg; Federal Reserve Board staff estimates.

Figure 35. Yields on nominal Treasury securities

Department of the Treasury via Haver Analytics.

Figure 36. Corporate bond yields, by securities rating, and municipal bond yield

ICE Data Indices, LLC, used with permission.

Figure 37. Yield and spread on agency mortgage-backed securities

Department of the Treasury; J.P. Morgan. Courtesy of J.P. Morgan Chase & Co., Copyright 2025.

Figure 38. Equity prices

S&P Dow Jones Indices LLC via Bloomberg. (For Dow Jones Indices licensing information, see the Data Notes page.)

Figure 39. S&P 500 volatility

Cboe Volatility Index® (VIX®) via Bloomberg; Refinitiv DataScope; Federal Reserve Board staff estimates.

Box 3. Developments Related to Financial Stability

Figure A. Private nonfinancial-sector credit-to-GDP ratio

Federal Reserve Board, Statistical Release Z.1, "Financial Accounts of the United States"; Bureau of Economic Analysis, national income and product accounts; Federal Reserve Board staff calculations.

Figure B. Nonfinancial business and household debt-to-GDP ratios

Federal Reserve Board, Statistical Release Z.1, "Financial Accounts of the United States"; Bureau of Economic Analysis, national income and product accounts; Federal Reserve Board staff calculations.

Figure 40. Ratio of total commercial bank credit to nominal gross domestic product

Federal Reserve Board, Statistical Release H.8, "Assets and Liabilities of Commercial Banks in the United States"; Bureau of Economic Analysis via Haver Analytics.

Figure 41. Profitability of bank holding companies

Federal Reserve Board, Form FR Y-9C, Consolidated Financial Statements for Holding Companies.

Figure 42. Consumer price inflation in foreign economies

Federal Reserve Board staff calculations; Haver Analytics.

Figure 43. Components of foreign consumer price inflation

Federal Reserve Board staff calculations; Haver Analytics.

Figure 44. Nominal 10-year government bond yields in selected advanced foreign economies

Bloomberg.

Figure 45. Emerging market mutual fund flows and spreads

For bond and equity fund flows, Federal Reserve Board staff calculations and EPFR Global; for EMBI+, J.P. Morgan Emerging Markets Bond Index Plus via Bloomberg.

Figure 46. U.S. dollar exchange rate index

Federal Reserve Board, Statistical Release H.10, "Foreign Exchange Rates."

Figure 47. Selected interest rates

Department of the Treasury; Federal Reserve Board.

Figure 48. Federal Reserve assets and liabilities

Federal Reserve Board, Statistical Release H.4.1, "Factors Affecting Reserve Balances."

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Figure A. Federal Reserve assets

Federal Reserve Board, Statistical Release H.4.1, "Factors Affecting Reserve Balances."

Figure B. Federal Reserve liabilities

Federal Reserve Board, Statistical Release H.4.1, "Factors Affecting Reserve Balances."

Box 6. Monetary Policy Rules in the Current Environment

Figure A. Historical federal funds rate prescriptions from simple policy rules

Federal Reserve Bank of New York, Survey of Primary Dealers; Federal Reserve Bank of St. Louis, Federal Reserve Economic Data; Federal Reserve Board staff estimates.

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Employment Consequences of U.S. Trade Wars

Sanjana Goswami*
University of California, Irvine

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Abstract

This paper provides evidence on the short-run and long-run distributional effects of tariff shocks on employment in the United States. Using monthly data on tariffs and employment, I find that in the period of January 2017 to March 2019, commuting zones more exposed to Chinese retaliatory tariffs experienced a decline in employment growth, whereas U.S. import tariffs had no immediate effect on employment growth. I also study the employment effects of a hypothetical trade war between the United States and China by calculating counterfactual employment changes under three different retaliation scenarios and find that had the U.S. imposed tariffs in the 1991-2007 period on all products, the large job-destroying effect of the 'China shock' would not have occurred, irrespective of the retaliation strategy pursued by China. However in the post-recession period of 2010-2016, the 'China shock' no longer exists and therefore U.S. import tariffs would not have had a job-creating effect. This result corroborates the findings of the short-run analysis.

JEL Classification: F13, F14, F16, F6

Keywords: import penetration, export expansion, tariffs, retaliation, trade war, job creation, job destruction

*Contact: sanjana.goswami@uci.edu

1 Introduction

Tariffs on imports reduce import competition for domestic firms and in turn encourages more firms to enter the market or expand, therefore generating new jobs. On the other hand, retaliatory tariffs on exports hurt domestic firms and they may shrink or even exit and may therefore displace workers. Moreover, tariffs on imports of intermediate products make inputs more expensive and also hurt domestic firms and may displace workers. A trade war imposes tariffs or quotas on imports and foreign countries retaliate with similar forms of trade protectionism. As it escalates, a trade war reduces international trade, and in turn has distributional effects on the labor market. The recent trade escalation prompted by the U.S. administration under President Donald Trump since January 2018 is an unprecedented move, incomparable to any previous episodes of trade disputes since the Great Depression. In this paper, I explore these distributional impacts by studying both the short-term and potential long-run consequences of the U.S-China trade war.

Since January 2018, the U.S. administration under President Trump has started trade wars along several fronts against most of U.S. trading partners, starting with "global safeguard tariffs" on imports of solar panels and washing machines, moving then to tariffs on steel and aluminum under national security grounds, and following with a full-blown trade war with China with the average tariff on Chinese imports above 24 percent, compared to an average of only 3 percent at the onset of the trade war[1]. In March 2018, he famously tweeted that "Trade wars are good, and easy to win".

So far, the U.S. has imposed tariffs on $250 billion in Chinese imports out of $539 billion of Chinese goods that were imported into the U.S. in 2018. China has retaliated with tariffs on $110 billion of U.S. exports out of $120 billion of U.S. goods imported into China in 2018. Further increases and tariffs are expected in October and December 2019, amounting to levies on nearly everything that comes to the United States from China. China is also expected to retaliate in kind. They have already included a 5 percent tariff on U.S. crude oil, the first time fuel has been hit in this trade battle.

Although the legal justifications for these trade wars range from national security (in the case of steel) to protection of intellectual property (in the case of China), the justification that President Trump puts forward when talking to his political base is the protection of the American worker and American jobs. I present evidence that such a claim may have been credible prior to the events of the global financial crisis, but it does not hold in today's environment.

The short-term approach estimates the effects of changes in U.S. import tariffs, U.S. import

[1] Source: Peterson Institute for International Economics

tariffs that propagate downstream to buyers of intermediate inputs, and Chinese retaliatory tariffs on commuting zone-level employment growth. Following Waugh (2019), I use monthly data on employment, U.S-China trade and tariffs from January 2017 to March 2019, and find that Chinese retaliatory tariffs have had a statistically significant and negative effect on commuting zone-level employment growth, whereas U.S. import tariffs have had no effect. This suggests that commuting zones that are relatively more exposed to the export tariffs are disproportionately hurt, whereas commuting zones that are relatively more exposed to the import tariffs are not growing any differently than they were before the trade war.

The long-run approach imposes a hypothetical trade war on a well-studied phenomenon in the empirical international trade literature: the large job-reducing effects of surging imports from China, or the 'China shock', on the U.S. labor market (Autor, Dorn, and Hanson (2013), Acemoglu, Autor, Dorn, Hanson, and Price (2016), etc) in addition to the job-creating effect of exports, which are also substantially large enough to almost offset the losses created by Chinese imports (Feenstra, Ma, and Xu, 2019).

Using an industry-level specification that estimates the effect of the change in Chinese import competition, non-Chinese import competition, and U.S. export expansion on the change in manufacturing employment, I then calculate counterfactual employment levels under three different scenarios of retaliation by China: (i) simple retaliation, which imposes identical restrictions on U.S. exports across all industries, (ii) political retaliation, which targets in particular those industries that have a large proportion of Trump supporters, and (iii) responsible retaliation, which minimizes the impact of retaliation on global supply chains. I do this exercise for two time periods: 1991-2007, where the China shock had a large negative impact on manufacturing employment, and the post-recession period of 2010-2016, where the China shock no longer has an effect on manufacturing employment. A trade war in this empirical model simultaneously reduces both import and export exposure, based on the type of retaliation, thereby bringing back some jobs lost due to Chinese imports while killing some jobs gained due to U.S. export expansion.

To guide this empirical exercise I closely follow Acemoglu, Autor, Dorn, Hanson, and Price (2016) and Feenstra, Ma, and Xu (2019). Using an instrumental variables approach, the former estimates the effects of Chinese import penetration on U.S. employment at both the industry and commuting-zone levels, while the latter expands the approach to consider also the employment effects of U.S. exports. While both papers find that Chinese import exposure is associated with employment losses in the U.S., Feenstra, Ma, and Xu (2019) find that "export exposure" has a countervailing effect that makes up for the Chinese-induced job losses during the 1991-2007 period.

First, I conduct the counterfactual exercise for the 1991-2007 period, where I find that a uniform tariff by the U.S. along with no retaliation by China would bring back enough manufacturing jobs to almost reverse the effects of the China shock. I also find that no matter the type of retaliation strategy by China, had the U.S. taken a protectionist approach during this period by imposing import tariffs, manufacturing employment would have increased.

However, these results would no longer be true if I focus on only the post-recession period of 2010-2016. In this case, I find that the job-reducing effect of the China shock no longer exists. In fact, Chinese import penetration has a positive and insignificant effect on U.S. manufacturing employment. The counterfactual analysis for this period indicates that the trade war would lead to a net destruction of jobs.

While recent research suggests that the trade war of 2018 has reduced real income in the U.S., increased prices of intermediate and final goods, reduced the availability of imported varieties (Amiti, Redding, and Weinstein (2019)) as well as led to aggregate welfare loss (Fajgelbaum, Goldberg, Kennedy, and Khandelwal (2019)), not much is known about the potential effects of trade wars on employment outcomes. This paper provides both a short-term and long-term view of these effects.

2 Background

International trade has important distributional impacts on the labor market. Pavcnik (2017) surveys the empirical evidence on the distributional effects of trade in both developed and developing countries. Economists have long recognized that free trade has the potential to raise living standards and that both the importing and exporting countries gain by engaging in trade. The growing body of empirical evidence supports the view of most theoretical trade models that trade reallocates resources within a country, and both destroys and creates jobs, with implications for income distribution. Evidence suggests that while the countries benefit overall, there are some losers as well. Trade's adverse effects appear to be highly geographically concentrated and long-lasting in developing and developed countries alike. The harmful effects of trade are permanent for some workers that lose their jobs to import competition. The "China shock" literature of Autor, Dorn, and Hanson (2013) and Pierce and Schott (2016) have established that import competition from China contributed to substantial job losses (by around 1.5 million jobs) in U.S. manufacturing in the 1990s and 2000s.

The 2018 trade war between the U.S. and its trading partners will also likely have distributional consequences across industries, and across regions with different patterns of comparative

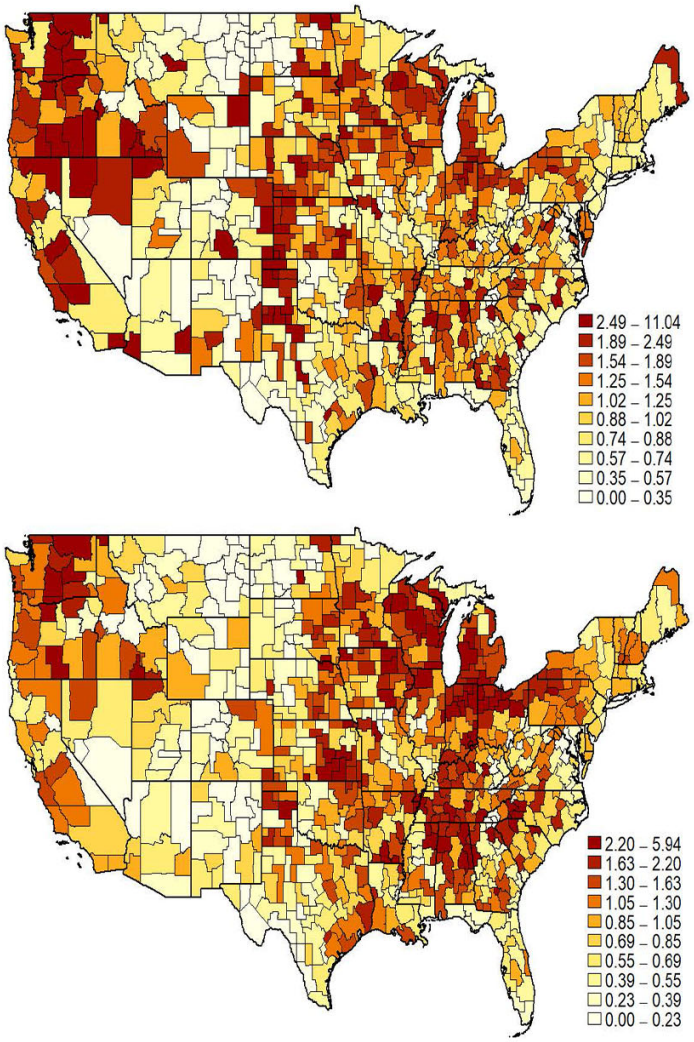


Figure 1: Chinese retaliatory export tariff exposure (top) and U.S. import tariff exposure (bottom) by commuting zone

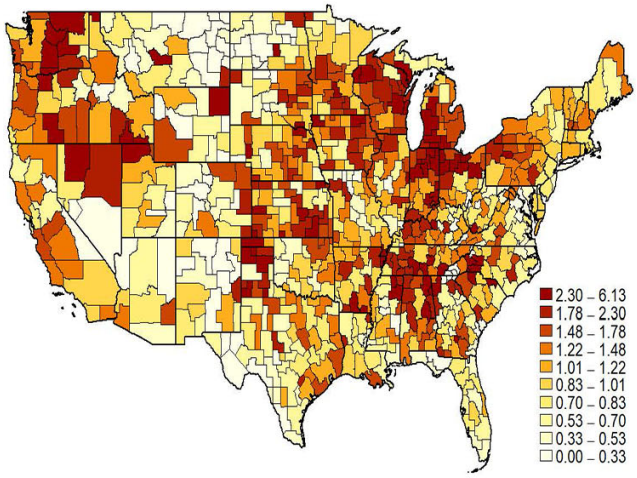


Figure 2: Downstream U.S. import tariff exposure by commuting zone

advantage. The kind of retaliation executed by partner countries will determine the extent of the distributional impacts of the trade war. Figure 1 shows the exposure to Chinese import and export tariffs in December by region. The regions in the map are commuting zones, which are geographic units of analysis intended to more closely reflect the local economy where people live and work. County boundaries are not always adequate confines for a local economy and often reflect political boundaries rather than an area's local economy. Exposure here is defined as the change in a commuting zone's tariff between December 2017 and December 2018[2]. Import tariffs seem to be more concentrated in the Rust Belt around the Great Lakes region, whereas retaliatory tariffs seems to be concentrated in the Corn Belt of the Mid-West, which is dominated by farming and agriculture and the North-West part of the country.

Figure 2 shows the regional distribution of U.S. import tariffs that propagate downstream to industries that purchase the products as inputs. These downstream import tariffs can be thought of as a proxy for tariffs on intermediate inputs. The regional distribution of these tariffs are similar to the import tariffs with slight variation in the degree of exposure to some regions. In Section 4, I will be exploiting the variation in these three measures of commuting-zone level tariffs to estimate the effect of the U.S.-China trade war on regional employment growth.

[2]The construction of the commuting-zone level tariffs are described more in detail in Section 4.1.1

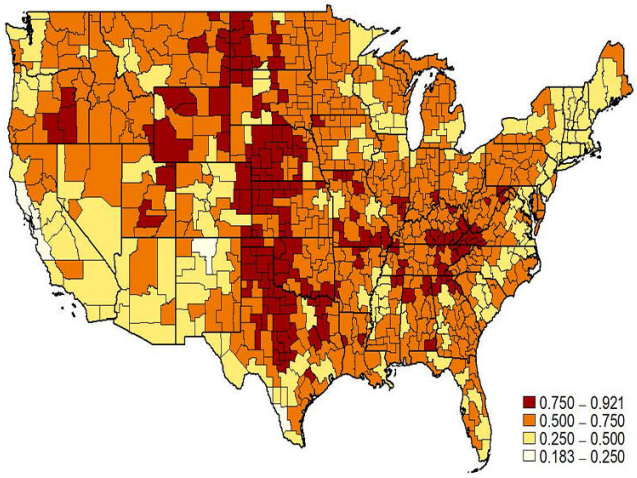


Figure 3: Share of votes towards the Republican party in the 2016 presidential election by commuting zone

In Section 5, I compare three different hypothetical retaliation strategies — simple, political, and responsible — which have varying degrees of decline in manufacturing employment due to falling Chinese export exposure. Figure 3 shows the distribution of commuting zones according to the 2016 presidential election vote shares to the Republican party. There are commuting zones in the middle of the country that are affected more by actual Chinese retaliation, similar to the higher political concentration in this figure but the rest of the export tariff map looks different for many other parts of the country, which suggests that China is not just following a pure political retaliation strategy. Fetzer and Schwarz (2019) present evidence that Chinese retaliation was directly targeted to areas that swung to Donald Trump in 2016 but also suggest that the retaliation strategy was sub-optimal.

Figure 4 shows the distribution of commuting zones according to degree of intra-industry trade between U.S. and China in 2016. Values closer to zero denote higher level of intra-industry trade, values closer to one are for industries where the U.S. is a net exporter and values closer to negative one are for industries where the U.S. is a net importer. The commuting zone level of this index is then constructed as an employment weighted-average measure of the industry level index. If China would like to minimize the impact of their retaliation on global supply chains, it would target industries for which the U.S. is a net exporter and there is little intra-industry trade, i.e., a subset

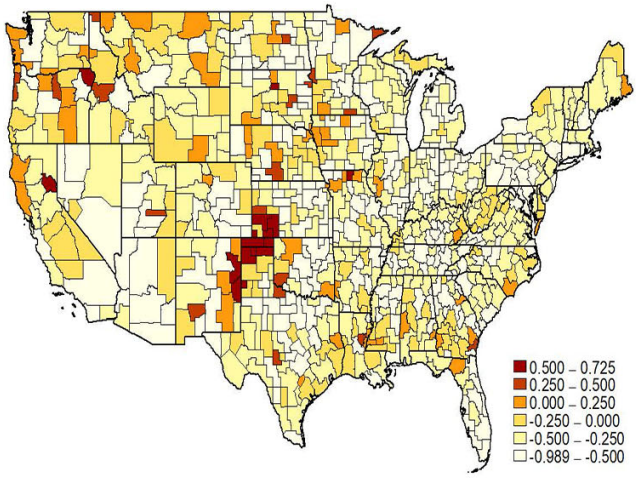


Figure 4: Distribution of a measure of U.S.-China intra-industry trade by commuting zone

of the darkest shaded commuting-zones. There is some resemblance to the export tariff map in Figure 1 but the darker shaded regions in the figure are more geographically dispersed.

In order to understand better the implications of a simple, political or responsible retaliation strategy that China could adopt, I impose a hypothetical trade war with these different retaliation strategies on past episodes of import competition and export expansion in the United States.

3 Overview of the Sino-American Trade War

Following is a brief overview of the trade war timeline. Wong and Koty (2018) and Bown and Kolb (2018) are two excellent resources which track the timeline of events for the trade war that started in January 2018.

First wave: In October 2017, the United States International Trade Commission found that imports of solar panels and washing machines have caused injury to the U.S. solar panel and washing machine industries and recommended that President Trump impose "global safeguard" tariffs. These tariffs of 30 percent on all solar panel imports, except for those from Canada, (worth US$8.5 billion) and 20 percent on washing machine imports (worth US$1.8 billion) went into effect in February 2018.

Second wave: In April 2017, the office of the United States Trade Representative (USTR) was

authorized to investigate whether steel and aluminium imports pose a threat to national security and in March 2018, the U.S. imposed a 25 percent tariff on all steel imports (except from Argentina, Australia, Brazil, and South Korea) and a 10 percent tariff on all aluminium imports (except from Argentina and Australia). Along with some other countries, China retaliated with tariffs on U.S. aluminum waste and scrap, pork, fruits and nuts, and other US products, worth $2.4 billion in export value to match the U.S. steel and aluminum tariffs covering Chinese exports worth $2.8 billion. Subsidies for American farmers were then announced to provide relief from falling U.S. agricultural exports.

Third wave: In August 2017, the USTR initiated an investigation into certain acts, policies and practices of the Chinese government relating to technology transfer, intellectual property and innovation. In March 2018, after finding China guilty of unfair trade practices, the U.S. announces its China-specific import tariffs, which get implemented in three stages: (i) In June 2018, U.S. tariffs on $34 billion of Chinese imports go into effect, which targets mostly intermediate inputs and capital equipment in sectors like machinery, mechanical appliances, and electrical equipment. In parallel with U.S. import tariffs, China's tariffs on $34 billion of US imports also go into effect, which mostly target U.S. transportation (vehicles, aircraft, and vessels) and vegetable products (largely soybeans). (ii) In August 2018, the U.S. imposed tariffs on another $16 billion of imports from China. China immediately responded with its own revised tariffs on $16 billion of US exports. (iii) In September 2018, the largest wave of the U.S.-China trade war went into effect. U.S. tariffs on $200 billion of Chinese imports take effect, along with retaliatory tariffs by China on $60 billion of U.S. imports. These are tariffs on intermediate goods, capital goods, and also consumer goods.

4 Short-term effects on Employment

4.1 Data and Empirical Strategy

4.1.1 Tariff Data

U.S. import tariffs for the events described in Section 3 come from Bown and Zhang (2019), and Chinese retaliatory tariffs come from Bown, Jung, and Zhang (2019). Following Waugh (2019)[3], I first convert the tariffs from Harmonized System (HS) 6-digit product level to the 3-digit North American Industry Classification System (NAICS) level by taking a trade-weighted average of the

[3] A recent working paper by Waugh (2019) studies the effect of Chinese retaliatory tariffs on county-level consumption, proxied by new auto sales and finds a decline in consumption growth. He also finds a decline in employment growth.

Table 1: Commuting zone level summary statistics

	Median	Mean
Δ Export tariff	0.33	1.32
Δ Import tariff	0.49	1.06
Δ Downstream import tariff	0.59	1.21
Total employment in 2017 (in thousands)	32	164
Goods employment in 2017 (in thousands)	9	29

Notes: Tariff changes are between December 2017 and December 2018.

tariffs in the following manner:

$$\tau^z_{jt} = \sum_{p \in P} \frac{F_{p,j,2017}}{F_{j,2017}} \tau^z_{pt}, \tag{1}$$

where τ^z_{jt} is the monthly 3-digit NAICS industry level tariff measure and τ^z_{pt} is the monthly HS6 product level tariff measure. $z \in \{m, x\}$, where τ^m stands for import tariff and τ^x stands for export tariff. $F_{p,j,2017}$ is the amount of trade in 2017 at the product level, whereas $F_{j,2017}$ is theamount of trade in 2017 at the industry level. For import tariffs, I use 2017 import values as weights, whereas for retaliatory tariffs, I use 2017 export values. Monthly trade data for total U.S. imports, U.S. exports and China-specific imports and exports come from U.S. International Trade Data of the Census Bureau. I then create monthly commuting zone-level measures of import tariff exposure and Chinese retaliatory tariff exposure measures from January 2017 to March 2019 in the following manner:

$$\tau^z_{ct} = \sum_{j \in J} \frac{L_{c,j,2017}}{L_{c,2017}} \tau^z_{jt}, \tag{2}$$

where τ^z_{ct} is the monthly commuting zone-level tariff measure and τ^z_{jt} is the monthly industry-level tariff measure. $L_{c,j,2017}$ is the employment level in 2017 at the commuting zone-industry level, whereas $L_{c,2017}$ is the employment level in 2017 at the commuting zone level. τ^z_{ct} captures region-specific tariffs such that if a commuting zone mostly employs workers for a certain industry which has a high tariff, then the commuting zone-level tariff will reflect the high tariff.

Table 1 reports summary statistics for the commuting zone-level change in tariffs from December 2017 to December 2018. Across 722 commuting zones, the average import tariff increased by 1.06 percent, whereas the average export tariff increased by about 1.32 percent.

While import tariffs may reduce foreign competition for import-competing firms thereby increasing domestic employment, if these import tariffs are on intermediate inputs then domestic employment may not increase. In order to study the effect of tariffs on intermediate inputs, I allow for downstream linkages across industries. Downstream linkages refer to effects flowing downward from a selling industry to a purchasing industry: if an industry expands due to import tariffs on

competing products, purchasing industries have more access to domestic inputs, which may cause them to expand too; however, these domestic inputs may replace cheaper Chinese inputs, which has a countervailing impact on purchasing industries. Thus, an increase in downstream import tariff exposure may decrease or increase an industry's employment.

To calculate downstream import tariff exposure, which is a weighted average of the industries' import tariff exposure measure, I use the 2018 input-output table from the Bureau of Labor Statistics (BLS) as follows. If μ_{jg} denotes industry g's purchases from industry j, the share of industry g in total purchases of industry j is $\omega_{jg}^{D} = \mu_{jg} / \sum_{g'} \mu_{jg'}$. The downstream import tariff measure for industry j during subperiod τ is

$$D\tau_{jt} = \sum_{g} \omega_{jg}^{D} \tau_{gt}, \tag{3}$$

where τ_{gt} is the import tariff in industry g at time t described in equation (1). The commuting-zone level of downstream import tariff is then constructed in the way described in equation (2).

4.1.2 Employment Data

Monthly county and industry level data on employment comes from the Quarterly Census of Employment and Wages (QCEW) of the Bureau of Labor Statistics (BLS), which covers about 97 percent of all employment in the U.S. The source data for the QCEW comes from the Unemployment Insurance (UI) program of the U.S. I use two different measures of employment: total private employment, which excludes government employment, and total private, goods-producing employment but mostly use the latter because it is more likely to capture employment in the tradable goods sector. I aggregate county level employment to the commuting-zone level using concordances provided by Autor and Dorn (2013). Table 1 shows that the average private sector employment in 2017 was 164,000 and the average private sector goods producing employment was 29,000.

4.2 Estimation

I closely follow Waugh (2019) to study the effect of import and export tariffs on employment growth using the following specification:

$$\Delta \ln L_{ct} = \beta_c + \beta_t + \beta_m \Delta \ln(1 + \tau_{ct}^{m}) + \beta_d \Delta \ln(1 + D\tau_{ct}^{m}) + \beta_x \Delta \ln(1 + \tau_{ct}^{x}) + \varepsilon_{ct}, \tag{4}$$

where $\Delta \ln L_{ct}$ is the 12-month log difference in employment in commuting zone c, $\Delta \ln(1 + \tau_{ct}^{m})$ is the 12-month log differenced import tariff rate, $\Delta \ln(1 + D\tau_{ct}^{m})$ is the 12-month log differenced downstream import tariff rate and $\Delta \ln(1 + \tau_{ct}^{x})$ is the 12-month log differenced export tariff rate. β_m measures the effect of a commuting zone's exposure to U.S. import tariffs on its employment,

Table 2: Effect of Tariffs on Short-term Employment Growth

	Total Employment		*Goods Employment*	
	(1)	(2)	(3)	(4)
Δ Export Tariffs	-0.19**	-0.37**	-0.43*	-0.88**
	(0.07)	(0.14)	(0.19)	(0.29)
Δ Import Tariffs	0.07	0.27	0.13	0.40
	(0.06)	(0.24)	(0.19)	(0.60)
Δ Downstream Import Tariffs		0.002		-0.06
		(0.31)		(0.72)

Notes: The time period is January 2017 to March 2019. Regressions are weighted by commuting zone's population in 2017 (Source: U.S. Census Bureau). Standard errors are clustered at the commuting zone level. The coefficients are statistically significant at the *10%, **5%, or ***1% level.

β_d measures the effect of a commuting zone's exposure to U.S. downstream import tariffs on its employment whereas β_x measures the effect of a commuting zone's exposure to Chinese retaliatory tariffs on its employment. This specification includes commuting zone fixed effects, which control for commuting zone specific growth and time fixed effects. Standard errors are clustered at the commuting zone level and regressions are weighted by the commuting zone employment in 2017.

Table 2 reports results from the specification in (4). The coefficients on imports tariffs are statistically insignificant across all specifications, implying that import tariffs haven't yet had an impact on employment growth in the short-run. The coefficients on downstream imports tariffs are also statistically insignificant. The coefficient on export tariffs is negative across all specifications, implying that relatively more export tariff exposed commuting zones experienced reductions in employment growth.

Table 3 shows that commuting zones most exposed to export tariffs experienced a small decline in employment growth, whereas commuting zones least exposed to export tariffs experienced an increase in employment growth after the onset of the trade war. Most exposed and least exposed commuting zones are those belonging to top and bottom quartiles of the corresponding tariff distribution. In the case of import tariffs and downstream import tariffs, both most and least exposed commuting zones perform better after the trade war started. However, the gap in employment growth between most and least exposed commuting is increasing for all three types of tariffs, with the highest deviation observed for the export tariff distribution.

The result that export tariffs led to a decline in employment growth in the short-run is robust across all specifications. These retaliatory tariffs affected domestic firms and displaced workers in the local labor markets where these tariffs were the largest. On the other hand, import tariffs did not encourage domestic firms to increase hiring. Moreover, import tariffs on intermediate goods,

Table 3: Average Employment Growth pre and post the U.S.-China trade war by Tariff Quartile

	Export Tariffs		Import Tariffs		Downstream Tariffs	
	Pre	Post	Pre	Post	Pre	Post
Most exposed	0.0089	0.0088	0.0076	0.0093	0.0086	0.0094
Least exposed	0.0147	0.0170	0.0086	0.0113	0.0109	0.0137
Difference	-0.0058	-0.0081	-0.0010	-0.0020	-0.0023	-0.0044

Notes: Employment growth, calculated as the 12-month log difference, is averaged across commuting zones and time periods. Pre-trade war period is January 2018 to June 2018 and the post-trade war period is July 2018 to January 2019. Most exposed and least exposed commuting zones are those belonging to top and bottom quartiles of the corresponding tariff distribution.

also did not lead to any increased hiring or firing by domestic firms that use these tariffed products as their inputs. Therefore, the net employment consequences of the current U.S.-China trade wars is negative so far.

5 Long-run effects on Employment

5.1 Specification and Counterfactual Formula

Now, I examine how a hypothetical trade war would have changed manufacturing employment in the past. I closely follow the specification used by Feenstra, Ma, and Xu (2019) (henceforth, FMX) to study the effect of import and export exposure on net employment changes in U.S. manufacturing, which is given by:

$$\Delta \ln L_{j\tau} = \beta_\tau + \beta_{m1}\Delta IP^C_{j\tau} + \beta_{m2}\Delta IP^{ROW}_{j\tau} + \beta_x \Delta EP_{j\tau} + \eta Z_j + \varepsilon_{j\tau}, \tag{5}$$

where for industry j during subperiod τ, $\Delta \ln L_{j\tau}$ is the annual change in log employment, and $\Delta IP^C_{j\tau}$, $\Delta IP^{ROW}_{j\tau}$, and $\Delta EP_{j\tau}$ are the changes in Chinese import penetration, non-Chinese import exposure from the rest of the world (ROW), and U.S. export exposure respectively. The term β_τ denotes a subperiod fixed effect, and $\varepsilon_{j\tau}$ is the error term. Z_j is a vector of time-invariant industry-level controls, which includes the share of production and non-production workers in each industry, the log of average industry wage, the ratio of capital to value-added, computer and high-tech equipment investment (all measured in the initial year of 1991), and 10 one-digit sectoral dummies which allows for differential trends in these broad manufacturing categories. Z_j also includes pretrend variables measures over 1976-1991, which are change in industry's share of total employment, and the change in log average wage. I fit this equation for stacked first differences covering two subperiods: 1991-1999, and 1999-2007. As in Acemoglu, Autor, Dorn, Hanson, and Price (2016) (henceforth, AADHP), for any variable X, I define its annual change during subperiod

τ, ΔX_τ, as

$$\Delta X_\tau = 100 * \frac{\left(X_{t_{\tau,\text{end}}} - X_{t_{\tau,\text{start}}}\right)}{t_{\tau,\text{end}} - t_{\tau,\text{start}}},$$

where $t_{\tau,\text{end}}$ is the end-year of subperiod τ, and $t_{\tau,\text{start}}$ is the start-year of subperiod τ. It is always the case that $\tau \in \{1, 2\}$, where subperiod 1 corresponds to 1991-1999, and subperiod 2 corresponds to 1999-2007. The employment data used in all specifications is from the County Business Patterns (CBP) database of the U.S. Census Bureau, which has data on number of employees, establishments, and payroll for the universe of all businesses at the detailed industry level.

To quantify the employment effects of import and export exposure measures, I follow FMX and calculate the predicted employment changes from specification (5) as:

$$\Delta L_{j\tau} = \sum_j \left[1 - e^{-\left(\Delta \tilde{IP}_{j\tau} + \Delta \tilde{EP}_{j\tau}\right)}\right] L_{j,end}, \tag{6}$$

where $\Delta \tilde{IP}_{j\tau} = \hat{\beta}_{m1} \Delta IP^C_{j\tau} + \hat{\beta}_{m2} \Delta IP^{ROW}_{j\tau}$, and $\Delta \tilde{EP}_{j\tau} = \hat{\beta}_x \Delta EP^C_{j\tau} + \hat{\beta}_x \Delta EP^{ROW}_{j\tau}$. $L_{j,end}$ is the employment level in the end year of τ. Moreover, using a second-order approximation $e^x - 1 \approx x + x^2/2$, the effects of imports and exports can be calculated separately as follows:

$$\sum_j \left[1 - e^{-\left(\Delta \tilde{IP}_{j\tau} + \Delta \tilde{EP}_{j\tau}\right)}\right] \approx \sum_j \left[\left(1 - e^{-\Delta \tilde{IP}_{j\tau}}\right) + \left(1 - e^{-\Delta \tilde{EP}_{j\tau}}\right) - C_{j\tau}\right], \tag{7}$$

where $C_{j\tau} = \Delta \tilde{IP}_{j\tau} \Delta \tilde{EP}_{j\tau}$ is a combined effect that is generally small.

5.2 Types of retaliation

A "trade war" in this empirical model is captured by simultaneous reductions in import exposure (which reflects the U.S. protectionist policy) and export exposure (which reflects retaliation responses of U.S. trading partners). It is reasonable to expect both imports and exports to decline due to tariff increases. Using a monthly panel dataset of tariffs and trade data up to November 2018, Fajgelbaum, Goldberg, Kennedy, and Khandelwal (2019) estimate the immediate effects of the trade war and find that imports from targeted countries declined 31.5 percent within products, while targeted U.S. exports fell 11.0 percent.

I consider three different scenarios of retaliation from China: *(i) simple retaliation*, which imposes identical restrictions on U.S. exports to China across all industries, *(ii) political retaliation*, which targets in particular those industries that have a large proportion of people that voted for Donald Trump in the 2016 presidential election, and *(iii) responsible retaliation*, which minimizes the impact of retaliation on global supply chains.

5.2.1 Simple Retaliation

I modify the formula in (6) so that a 10 percent uniform import tariff increase is met by a 10 percent uniform export tariff increase across all industries. Since the effect of a change in tariff on trade volumes would be different for different industries, I use trade cost elasticities (θ_j) from Caliendo and Parro (2015)[4]. A ten percent increase in tariffs would therefore lead to $10 \times \theta$ percent decline in both import and export exposure. For instance, the trade cost elasticity in the Food sector is 2.62. A 10 percent increase in trade costs (which includes tariffs) in this sector would decrease both import and export exposure by 26.2 percent.

The formula used to calculate the effect of this simple retaliation is given by (6), where

$$\Delta\tilde{IP}_{j\tau} = [(1 - 0.1\theta_j) \times \hat{\beta}_{m1}\Delta IP^{C}_{j\tau}] + \hat{\beta}_{m2}\Delta IP^{ROW}_{j\tau},$$

and

$$\Delta\tilde{EP}_{j\tau} = [(1 - 0.1\theta_j) \times \hat{\beta}_{x}\Delta EP^{C}_{j\tau}] + \hat{\beta}_{x}\Delta EP^{ROW}_{j\tau}$$

The U.S. imports a lot more from China than it exports to China. In order to see the effect of balanced trade war, I restrict the effect of U.S. import tariffs such that the U.S. targets the same volume of trade as China. The average across 1991 to 2007 for U.S. exports to China is $27 billion in 2007 dollars. The average for U.S. imports from China in the same period is $131 billion. I therefore allow U.S. import tariffs on only 20 percent ($\approx 27/131$) of each industry's U.S. imports from China.

The formula used to calculate the effect of a balanced trade war under simple retaliation is given by (6), where

$$\Delta\tilde{IP}_{j\tau} = [(1 - 0.1\theta_j) \times 0.20 \times \hat{\beta}_{m1}\Delta IP^{C}_{j\tau} + 0.80 \times \hat{\beta}_{m1}\Delta IP^{C}_{j\tau}] + \hat{\beta}_{m2}\Delta IP^{ROW}_{j\tau},$$

and

$$\Delta\tilde{EP}_{j\tau} = [(1 - 0.1\theta_j) \times \hat{\beta}_{x}\Delta EP^{C}_{j\tau}] + \hat{\beta}_{x}\Delta EP^{ROW}_{j\tau}$$

5.2.2 Political Retaliation

Under political retaliation, a partner country tries to maximize political damage by targeting those industries with large proportions of Trump supporters. Using 2016 presidential election data[5], I approximate the share of Trump supporters in each industry as

$$T_j = \frac{\sum_c L_{jc} \times \mathbb{1}_c\{R\}}{L_j} \in (0, 1),$$

[4] Appendix Table A.1 contains the different values of θ_j used.
[5] Compiled by Tony McGovern from The Guardian and townhall.com.

where L_{jc} is total employment in industry j in commuting zone c in 2016, $\mathbb{1}_c\{R\}$ is an indicator function taking the value of 1 if the Republican party won the majority vote (greater than 50 percent) in commuting zone c in the 2016 Presidential election. Based on this measure of political alignment, I calculate predicted employment changes when China targets U.S. export value for those industries in which $T_j > 0.5$.

The formula used to calculate the effect of this political retaliation is given by (6), where

$$\Delta\tilde{IP}_{j\tau} = [(1 - 0.1\theta_j) \times \hat{\beta}_{m1}\Delta IP^C_{j\tau}] + \hat{\beta}_{m2}\Delta IP^{ROW}_{j\tau},$$

and

$$\Delta\tilde{EP}_{j\tau} = [(1 - 0.1\theta_j) \times \hat{\beta}_x\Delta EP^C_{s\tau}] + \hat{\beta}_x\Delta EP^C_{p\tau} + \hat{\beta}_x\Delta EP^{ROW}_{j\tau},$$

where s denotes the subset of industries for which $T_j > 0.5$ and p denotes the subset of industries for which $T_j \leq 0.5$.

For a balanced trade war, I again restrict the effect of U.S. import tariffs such that the U.S. targets the same volume of trade as China. The average across 1991 to 2007 for U.S. exports to China in Trump-majority industries is $10 billion in 2007 dollars. I therefore allow U.S. import tariffs on only 8 percent ($\approx 10/131$) of each industry's U.S. imports from China. The formula used to calculate the effect of a balanced trade war under political retaliation is given by (6), where

$$\Delta\tilde{IP}_{j\tau} = [(1 - 0.1\theta_j) \times 0.08 \times \hat{\beta}_{m1}\Delta IP^C_{j\tau} + 0.92 \times \hat{\beta}_{m1}\Delta IP^C_{j\tau}] + \hat{\beta}_{m2}\Delta IP^{ROW}_{j\tau},$$

and

$$\Delta\tilde{EP}_{j\tau} = [(1 - 0.1\theta_j) \times \hat{\beta}_x\Delta EP^C_{s\tau}] + \hat{\beta}_x\Delta EP^C_{p\tau} + \hat{\beta}_x\Delta EP^{ROW}_{j\tau}.$$

5.2.3 Responsible Retaliation

Under responsible retaliation, partner countries protect themselves by not targeting U.S. exports from industries that are heavily involved in global supply chains, as disruptions in global value chains are more likely to have negative spillover effects in their economies. Letting X_{ij} and M_{ij} denote respectively U.S. exports and imports to/from country i in industry j, I construct a modified version of the Grubel-Lloyd index of intraindustry trade as

$$GL_{ij} = \frac{X_{ij} - M_{ij}}{X_{ij} + M_{ij}} \in [-1, 1],$$

which is close to zero for high levels of intraindustry trade, which I interpret as an indication of integrated supply chains. Based on that index, under the responsible-retaliation scenario China

will target U.S. export value for higher indexed industries, for which the U.S. is a net exporter and there is little intraindustry trade, i.e., $GL_{US,C} > 0.5$.

The formula used to calculate the effect of this responsible retaliation is given by (6), where

$$\Delta\tilde{IP}_{j\tau} = [(1 - 0.1\theta_j) \times \hat{\beta}_{m1}\Delta IP^C_{j\tau}] + \hat{\beta}_{m2}\Delta IP^{ROW}_{j\tau},$$

and

$$\Delta\tilde{EP}_{j\tau} = [(1 - 0.1\theta_j) \times \hat{\beta}_{x}\Delta EP^C_{s\tau}] + \hat{\beta}_{x}\Delta EP^C_{p\tau} + \hat{\beta}_{x}\Delta EP^{ROW}_{j\tau},$$

where s denotes the subset of industries for which $GL_{US,C} > 0.5$ and p denotes the subset of industries for which $GL_{US,C} \leq 0.5$.

The average across 1991 to 2007 for U.S. exports to China in $GL_{US,C} > 0.5$ industries is \$3.4 billion in 2007 dollars. I therefore allow U.S. import tariffs on only 3 percent ($\approx 3.4/131$) of each industry's U.S. imports from China. The formula used to calculate the effect of a balanced trade war under responsible retaliation is given by (6), where

$$\Delta\tilde{IP}_{j\tau} = [(1 - 0.1\theta_j) \times 0.03 \times \hat{\beta}_{m1}\Delta IP^C_{j\tau} + 0.97 \times \hat{\beta}_{m1}\Delta IP^C_{j\tau}] + \hat{\beta}_{m2}\Delta IP^{ROW}_{j\tau},$$

and

$$\Delta\tilde{EP}_{j\tau} = [(1 - 0.1\theta_j) \times \hat{\beta}_{x}\Delta EP^C_{s\tau}] + \hat{\beta}_{x}\Delta EP^C_{p\tau} + \hat{\beta}_{x}\Delta EP^{ROW}_{j\tau}.$$

5.3 Measures of Trade Exposure

I closely follow AADHP to construct their measure of Chinese import penetration, which is defined as

$$IP^C_{jt} = \frac{\mathbb{M}^C_{jt}}{\mathbb{Y}_{j91} + \mathbb{M}_{j91} - \mathbb{X}_{j91}},$$

where $\mathbb{M}^C_{jt}$ represents real U.S. imports from China of goods from industry j at year t, and $\mathbb{Y}_{j91} + \mathbb{M}_{j91} - \mathbb{X}_{j91}$ is real domestic absorption of U.S. industry j (the industry's real output, plus real imports, less real exports) in 1991. An increase in IP^C_{jt} over time indicates tougher competition from China, and thus, larger changes in IP^C_{jt} are related to higher Chinese import exposure. Nominal imports and exports data is gathered from the United Nations Comtrade database, and nominal output is given by the value of shipments from the NBER productivity database. To calculate real values, I follow AADHP and use as deflator the Personal Consumption Expenditure Price Index (PCEPI) of the Bureau of Economic Analysis (BEA). I use AADHP's 392 manufacturing industries at the 4-digit SIC (Standard Industrial Classification) level to extend their analysis to include 2016.

The measure of Chinese import exposure in industry j during subperiod τ is then given by the annual change in import penetration, $\Delta IP^{C}_{j\tau}$ as:

$$\Delta IP^{C}_{j\tau} = \frac{\Delta \mathbb{M}^{C}_{j\tau}}{\mathbb{Y}_{j91} + \mathbb{M}_{j91} - \mathbb{X}_{j91}}. \tag{8}$$

Similarly, the measure of import exposure from the rest of the world (ROW), not including China, in industry j is given by,

$$\Delta IP^{ROW}_{j\tau} = \frac{\Delta \mathbb{M}^{ROW}_{j\tau}}{\mathbb{Y}_{j91} + \mathbb{M}_{j91} - \mathbb{X}_{j91}}. \tag{9}$$

For export exposure, I follow FMX. They use an analogous measure to (8) as

$$\Delta EP_{j\tau} = \frac{\Delta \mathbb{X}_{j\tau}}{\mathbb{Y}_{j91}}, \tag{10}$$

where $\Delta EP_{j\tau}$ measures the change in export exposure of industry j during subperiod τ, defined as changes in U.S. industry exports $\Delta \mathbb{X}_{j\tau}$, divided by initial industry shipments $\mathbb{Y}_{j91}$. Thus, $\Delta EP_{j\tau}$ is a measure of export intensity, capturing the share of export value out of total industrial output.

5.4 Intrumental Variables

Both import and export exposure measures in (5) suffer from endogeneity problems. Other than a Chinese supply shock, $\Delta IP^{C}_{j\tau}$ could be capturing U.S. domestic shocks that increase U.S. demand for Chinese imports. Therefore, AADHP use as an instrumental variable the sum of Chinese exports to eight other high-income countries. This should reflect China's supply shock to the world and falling trade costs that are common for high-income importing countries. At the same time, the industry import demand shocks are assumed to be uncorrelated between the U.S. and these high-income countries. [6] In particular, the instrument is defined as $\Delta IP^{*C}_{j\tau}$, with

$$IP^{C*}_{jt} = \frac{\mathbb{M}^{C*}_{jt}}{\mathbb{Y}_{j88} + \mathbb{M}_{j88} - \mathbb{X}_{j88}},$$

where $\mathbb{M}^{C*}_{jt}$ is the sum of eight high-income countries' real imports from China of goods from industry j at year t, and the denominator is real domestic absorption of U.S. industry j in 1988. Similarly, IP^{ROW*}_{jt} should capture supply shocks from the rest of the world that affect U.S. imports and are not driven exclusively by U.S. demand shocks.

The effects of export expansion coming from foreign demand shocks on U.S. employment are also difficult to identify. In order to deal with this problem, FMX create two types of instruments. The first type of instrument, which they call OTH, is analogous to the AADHP import instrument:

$$\Delta EP^{*}_{j\tau} = \frac{\Delta \mathbb{X}^{OTH}_{jt}}{\mathbb{Y}_{j91}},$$

[6] These countries are Australia, Denmark, Finland, Germany, Japan, New Zealand, Spain, and Switzerland.

Table 4: Estimation of U.S. Manufacturing Employment

	(1)	(2)	(3)	(4)	(5)
Δ Chinese imports	-0.51***	-0.77***	-0.74***	-0.71***	1.81
	(0.10)	(0.15)	(0.15)	(0.17)	(0.97)
Δ Non-Chinese imports	0.23**	0.11	0.08	0.04	-0.18
	(0.09)	(0.12)	(0.10)	(0.16)	(0.51)
Δ Exports	0.23	0.59***	0.61***	0.61*	0.13
	(0.15)	(0.19)	(0.18)	(0.26)	(0.13)
Estimation method	OLS	2SLS	2SLS	2SLS	2SLS
FMX instruments		Both	OTH	OTH	OTH
Time period	1991-2007	1991-2007	1991-2007	1991-2011	2010-2016

Notes: Robust standard errors in parentheses, clustered on three-digit SIC industries. The estimations comes from specification 5. OTH denotes the first type of instrument from FMX described in Section 5.4. The sample includes 784 observations: 392 manufacturing industries during two periods (1991-1999 and 1999-2007, or 2010-2013 and 2013-2016). All regressions are weighted by start-of-period employment share of the industry and include period dummies, industry dummies, trend and control variables capturing initial industry conditions. The coefficients are statistically significant at the *10%, **5%, or ***1% level.

where the numerator captures the change in export expansion of eight other high-income economies to the world (except for the United States). This is based on the assumption that these high-income countries face similar import demand shocks in foreign countries as does the United States in its exports to those countries. The world's rising demand for goods could be due to income growth in emerging economies since the 1980s, which drives demand for high-quality consumption goods from high-income countries (Costa, Garred, and Pessoa (2016)), and also due to the involvement of emerging economies in global supply chains, which drives up their demand for capital goods that are supplied by high-income countries (Eaton and Kortum (2001)). FMX provide evidence that these foreign demand shocks are not substantially correlated with U.S. domestic demand shocks, which supports the validity of this instrument. This is the instrument I use in my analysis. [7]

5.5 Estimation

Table 4 presents the industry-level results for the manufacturing sector. All regressions in columns (1)-(4) include 392 manufacturing industries, subperiod fixed effects, and are weighted by 1991 employment. The first three rows show $\hat{\beta}_{m1}$, $\hat{\beta}_{m2}$, and $\hat{\beta}_z$ from the estimation of (5).

Column (1) starts with an OLS regression, where import exposure from China has a significantly negative impact on the industrial employment growth, while import exposure from the rest of the

[7] The second type of instrument also corrects for domestic supply shocks and is based on a constant-elasticity, monopolistic competition framework. However, the estimation using either type of instrument yield similar results and therefore, I use only the first instrument as the second instrument requires data on tariffs that is unavailable for more recent years.

world has a positive and significant effect and export expansion has a positive but insignificant effect on employment. More specifically, a one percentage point rise in industry Chinese import penetration reduces domestic industry employment by 0.51 percentage points, while a one percentage point rise in import penetration from ROW increases industrial employment by 0.23 percentage points.

As noted in Section 5.4, estimates for the import exposure and export exposure could be biased due to simultaneous changes in domestic demand. Thus, starting from column (2), I present results that use two-stage least squares (2SLS). Based on the results in column (2), using both types of FMX instruments, a one percentage point rise in industry Chinese import penetration reduces domestic industry employment by 0.77 percentage points, while a one percentage point rise in export expansion increases industrial employment by 0.59 percentage points. Both of these effects are larger in absolute terms with 2SLS than with OLS. For a positive domestic demand shock that increases domestic employment, the OLS coefficient on imports is biased up since both imports and employment are increasing, and the OLS coefficient on exports is biased down since exports are decreasing while employment is increasing.

The effect of import penetration from ROW is till positive but insignificant. Column (3) uses only the first type of instrument as described by $\Delta IP^*_{j\tau}$ and $\Delta EP^*_{j\tau}$, where I find that a one percentage point rise in industry import penetration reduces domestic industry employment by 0.74 percentage points and a one percentage point rise in export expansion increases industrial employment by 0.61 percentage points. As noted earlier, the results from using only the first instrument is similar to using both instruments of FMX. Column (4) include 2 stacked periods, with the final period ending in 2011. This is the time period most commonly used in the "China shock" literature. The general result that Chinese import exposure reduces jobs while export expansion creates them holds across columns (1)-(4).

I estimate the specification in (5) again for only the post-recession period of 2010-2016 using two stacked periods (2010-2013 and 2013-2016) and using the level of employment in 2010 as weights, 2010 start-of-period controls, and trade exposure measures with industry shipments from 2010 in the denominator. I find that the effect of the "China Shock" disappears in this period (column (5)). Using U.S. Census micro data, Bloom, Handley, Kurman, and Luck (2019) also find strong employment impacts of Chinese imports from 2000 to 2007, but nothing from 2008 to 2015. In particular, they find that rising Chinese imports were historically responsible for manufacturing job losses and services job gains in the U.S., but exposure to the China shock has not been a major factor for the last decade.

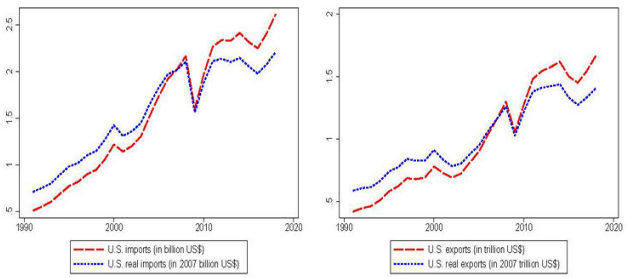


Figure 5: U.S. imports and exports over time

I also find the coefficient on export exposure to be insignificant. There has been some evidence of a decline in U.S. export value in recent years, which may be responsible for this result. The International Trade Administration, which keeps a database of jobs supported by the export sector, has calculated that approximately 500,000 jobs supported by goods exports were lost between 2014 and 2016 and this decline was due to the fall in the value of exports. Figure 5 shows a decline in both imports and exports around the year 2015.

5.6 Employment Impact of a Hypothetical Trade War, 1991-2007

Column (1) of Table 5 shows predicted net employment changes from the specification in column (3) of Table 4, where $\hat{\beta}_{m1}$, $\hat{\beta}_{m2}$, and $\hat{\beta}_x$ are the coefficients from the regression, and $L_{j,end}$ is the employment in industry j in the end year of the period (i.e., 1999 or 2007). U.S. export expansion net of import penetration led to a net gain of 542,000 jobs in the U.S. manufacturing sector during 1991-2007. 671,000 jobs were lost due to import penetration and 1,198,000 jobs were also gained due to export expansion. Export expansion created enough jobs to offset job losses due to Chinese import penetration.[8]

Column (2) reports the calculations of predicted employment changes for 1991-2007 under the scenario where the U.S. imposed 10 percent uniform tariffs on all Chinese imports and there is no retaliation by China. The number of jobs gained due to reduction in import competition is around 670,000 jobs, which is about the same amount that were lost due to Chinese import competition during this time period. This implies that had the U.S. imposed uniform import tariffs during this time, the "China shock" would not have occurred. The tariffs would not have allowed Chinese imports to rapidly increase the way they did in the 2000s.

[8]This is the key result of FMX

Table 5: Predicted changes in manufacturing employment (in thousands) due to an unbalanced trade war between U.S. and China (1991-2007)

	No Trade War	No Retaliation	Simple Retaliation	Political Retaliation	Responsible Retaliation
	(1)	(4)	(3)	(4)	(5)
1991-1999					
Imports	-124	103	103	103	103
Exports	735	735	710	730	734
Net	613	823	799	818	822
1999-2007					
Imports	-547	-104	-104	-104	-104
Exports	463	463	418	455	458
Net	-71	368	323	360	364
1991-2007					
Total Imports	-671	-1	-1	-1	-1
Total Exports	1,198	1,198	1,128	1,185	1193
Total Net	**542**	**1191**	**1,122**	**1,178**	**1186**

Notes: These calculations come from the coefficients in Table 4 column (3). The formula used to calculate the effect of no retaliation on the full volume of U.S. imports from China is given by (6), where $\Delta\hat{IP}_{j\tau} = [(1-0.1\theta_j)\times\hat{\beta}_{m1}\Delta IP^{C}_{j\tau}] + \hat{\beta}_{m2}\Delta IP^{ROW}_{j\tau}$, and $\Delta\hat{EP}_{j\tau} = \hat{\beta}_x\Delta EP^{C}_{j\tau} + \hat{\beta}_x\Delta EP^{ROW}_{j\tau}$.

Columns (3)-(5) report calculations for three different retaliation scenarios described in Section 5.2. Here I find that all scenarios of retaliation make the U.S. better off and that the net outcomes are not that much worse compared to the scenario with no retaliation. The number of jobs gained due to the import tariffs is very large and the number of jobs lost due to retaliatory tariffs is very little. The U.S. is able to take advantage of the huge trade deficit with China.

Table 6 shows calculations for a balanced trade war between U.S. and China under three different retaliation scenarios. Columns (1) and (5) report the actual predicted employment changes from the specification in (5) for total U.S. trade and U.S.-China trade respectively. Column (5) shows that the employment decrease due to import competition is mostly driven by Chinese import competition, whereas the employment increase due to export expansion is mostly driven by exports to countries other than China. The net effect on employment from Chinese trade alone is negative and quite large ($\approx$ 800,000 jobs).

Columns (2) and (6) report the calculations of predicted employment changes based on the scenario of simple retaliation described in section 5.2.1. Both U.S. and China target similar trade volumes in this case ($27 billion in 2007 dollars). The simple trade war leads to a net increase in employment relative to the no-trade-war scenario. This is because the jobs gains due to falling import exposure is more than the jobs lost due to falling export exposure, which is driven by the larger negative effect of Chinese import competition relative to the positive effect of U.S. export expansion.

Table 6: Predicted changes in manufacturing employment (in thousands) due to a balanced trade war between U.S. and China (1991-2007)

	All U.S. trade				*U.S.-China trade*			
	No Trade War	Simple Retaliation	Political Retaliation	Responsible Retaliation	No Trade War	Simple Retaliation	Political Retaliation	Responsible Retaliation
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1991-1999								
Imports	-124	-76	-106	-118	-281	-231	-262	-274
Exports	735	710	730	734	39	9	34	38
Net	613	633	625	618	-240	-222	-227	-236
1999-2007								
Imports	-547	-450	-509	-534	-631	-534	-593	-619
Exports	463	418	455	458	75	31	66	70
Net	-71	-21	-42	-63	-553	-502	-525	-545
1991-2007								
Total imports	-671	-526	-615	-653	-912	-764	-855	-893
Total exports	1,198	1128	1,185	1,193	114	39	99	108
Total Net	**542**	**612**	**583**	**555**	**-794**	**-724**	**-752**	**-781**

Notes: These calculations come from the coefficients in Table 4 column (3).

Table 7: Characteristics of Trump manufacturing industries (1991-2007)

Number of industries	165
Average trade cost elasticity	5.97
Share of employment in 1991	0.37
Share of employment in 2007	0.40
Share of Chinese imports in 1991	0.16
Share of Chinese imports in 2007	0.28
Share of non-Chinese imports in 1991	0.44
Share of non-Chinese imports in 2007	0.48
Share of exports in 1991	0.42
Share of exports in 2007	0.44

Table 8: Characteristics of industries where the U.S. is a net exporter and there is very little intra-industry trade with China (1991-2007)

Number of industries	38
Average trade cost elasticity	6.65
Share of employment in 1991	0.08
Share of employment in 2007	0.09
Share of imports from China in 1991	0.01
Share of imports from China in 2007	0.004
Share of exports to China in 1991	0.10
Share of exports to China in 2007	0.34

A balanced trade war with political retaliation by China as described in Section 5.2.2 also gives a net gain of manufacturing jobs compared to the no-trade-war scenario. The net effect is slightly worse than the simple retaliation case, since the retaliation by China is on a subset of industries. Table A.2 lists the top ten Trump industries and some characteristics of Trump industries are highlighted in Table 7. Industries with a higher share of Trump supporters are fewer in number (165 out of 392), have a lower average trade cost elasticity (5.97 versus 7.71 for non-Trump industries), and a lower share of total manufacturing employment (39 percent on average). Trump industries also export more globally than they import from China.

Responsible retaliation as described in Section 5.2.3 focuses only on those industries where U.S. is a net exporter and there is little intra-industry trade between the U.S. and China. Responsible retaliation by China also gives a net increase in employment compared to the no-trade-war scenario. Table 8 presents a summary of some characteristics of these industries. There is a very low share of employment in these industries to begin with.

Overall, it appears that the U.S. seems to gain in net employment no matter how the partner countries retaliate. This is also driven by the fact that the negative effect of Chinese import exposure is much larger than the positive effect of U.S. export exposure, which in turns makes the job creating effect of import tariffs larger.

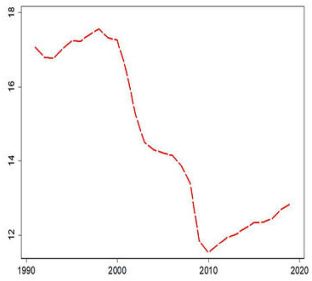


Figure 6: Average U.S. manufacturing employment over time (in millions)

5.7 Employment Impact of a Hypothetical Trade War, 2010-2016

The China shock of the 2000s may not be relevant in 2018 as a motivation for protectionism. Import tariffs now are unlikely to bring back manufacturing jobs that were labor-intensive in the 1990s and 2000s but are now replaced by automation and offshoring. Using U.S. Census micro data, Bloom, Handley, Kurman, and Luck (2019) find strong manufacturing employment impacts of Chinese imports from 2000 to 2007, but nothing from 2008 to 2015. Moreover, they find that find almost all of the manufacturing job losses were in large, multinational firms that were offshoring manufacturing jobs while simultaneously expanding in services and that there is no evidence that Chinese import competition generated net job losses.

Given this insight, I now focus on only the post-recession period of 2010-2016 to see how the long-run employment consequences of the trade war might actually turn out. Note from figure 6 that although manufacturing employment has been unable to return to pre-China shock levels, there has been a steady increase in these jobs in the past decade.

As discussed in Section 5.5, Table 4 column (5) shows that neither Chinese import penetration nor U.S. export expansion have any significant effect on manufacturing employment. In fact, even the sign for the coefficient on Chinese import exposure changes. This supports previous evidence that the China shock is no longer prevalent since the Great Recession of 2008.

Using the coefficients from column (5), I find that the actual predicted net change in employment due to import and export exposure during 2010-2016 is positive (Table 9). Because Chinese imports no longer have a negative effect on employment, any kind of retaliation scenario would lead a reduction in jobs compared to the no-trade-war scenario. Had there been protectionism during this post-recession period even with no retaliation by China, the U.S. would have lost more

Table 9: Predicted changes in manufacturing employment (in thousands) due to an unbalanced trade war between U.S. and China (2010-2016)

	No Trade War	No Retaliation	Simple Retaliation	Political Retaliation	Responsible Retaliation
	(1)	(4)	(3)	(4)	(5)
2010-2013					
Imports	103	6	6	6	6
Exports	44	44	42	43	43
Net	145	50	48	49	49
2013-2016					
Imports	71	6	6	6	6
Exports	-31	-31	-30	-31	-31
Net	40	-25	-24	-24	-25
2013-2016					
Total Imports	174	12	12	12	12
Total Exports	13	13	12	12	12
Total Net	**185**	**25**	**24**	**24**	**24**

Notes: These calculations come from the coefficients in Table 4 column (5). The formula used to calculate the effect of no retaliation on the full volume of U.S. imports from China is given by (6), where $\Delta\hat{IP}_{jr} = [(1 - 0.1\theta_j) \times \hat{\beta}_{m1}\Delta IP_{jr}^{C}] + \hat{\beta}_{m2}\Delta IP_{jr}^{ROW}$, and $\Delta\hat{EP}_{jr} = \hat{\beta}_x\Delta EP_{jr}^{C} + \hat{\beta}_x\Delta EP_{jr}^{ROW}$.

manufacturing jobs. This is completely opposite to the result in Section 5.6.

6 Discussion

The result that U.S. import tariffs would have reversed the loss of manufacturing jobs due to Chinese import competition between 1991-2007 is what one would expect. Much of the U.S. political debate focuses on the huge number of manufacturing jobs lost due to trade with China and other factors, such as technological advancement. However, trade with China has led to many positive outcomes. Not only do cheaper Chinese products make American consumers better off, American producers also benefit a lot from access to the Chinese consumer market. Companies like KFC and General Motors sell more of their products in China than they do in the U.S. Moreover, although the number of manufacturing jobs plummeted, manufacturing output continued to grow, except during the 2008 recession. The result that after the Great Recession, there was no effect of Chinese import competition on manufacturing jobs combined with the fact that manufacturing output has continued to grow, suggests that production patterns have shifted already during this time towards more automation and offshoring and import tariffs might bring back some jobs but is unlikely to reopen factories and cause a reversal of the manufacturing decline. The jobs that were lost were more labor-intensive and using older technology, and are unlikely to be revived.

The ongoing trade war also creates a lot of uncertainty, which may slow down or delay major business investment decisions both for exporting and importing firms. With no end to the trade

war in sight, companies may be already looking to shift production to other countries, such as Vietnam. The short-term effects of the ongoing trade war on employment suggest that import tariffs are not yet causing a change in the employment growth but export tariffs are already having a negative impact. China is already able to hurt U.S. employment but the tariffs imposed by the U.S. itself is not having any immediate impact.

There have been studies on other short-run outcomes, which all estimate mostly negative effects. Fajgelbaum, Goldberg, Kennedy, and Khandelwal (2019) estimate annual consumer and producer losses from higher cost of imports to be $68.8 billion, which is 0.37 percent of GDP. The aggregate welfare loss was found to be $7.8 billion (0.04 percent of GDP). They also find that tradable-sector workers in heavily Republican counties were the most negatively affected by the trade war. Amiti, Redding, and Weinstein (2019) find that the burden of U.S. import tariffs fall on domestic consumers, with a reduction in U.S. real income of $1.4 billion per month in 2018.

7 Concluding Remarks

While Chinese import competition reduced a large number of U.S. manufacturing jobs, export expansion has also been very large for the U.S., thereby creating enough jobs to offset the job losses due to Chinese imports between 1991-2007. The reverse would have happened if there was a trade war during this period since U.S. import tariffs would limit the job reducing effect of Chinese import competition, while retaliatory tariffs on U.S. exports would reduce the job creating effect of U.S. export expansion. I calculate the effect of a hypothetical trade war on employment under three different retaliation scenarios and find that the United States would have experienced a net gain in jobs relative to the actual no-trade-war scenario between 1991-2007 irrespective of the kind of retaliation imposed by China. This is because the job creating effect of import tariffs turn out to be much larger than the job destroying effect of retaliatory tariffs. However, the opposite is true when I consider the post-recession period of 2010-2016, which is more representative of the manufacturing industry composition in the United States today.

I also find that the immediate effects of the Chinese retaliatory tariffs from the ongoing U.S.-China trade war on commuting zone-level employment growth is negative and statistically significant, whereas there is no significant effect of U.S. import tariffs. These results combined together suggest that the employment consequences of the U.S-China trade wars are negative in the short-run and are unlikely to be largely positive in the long-run either because of the shift in the nature of manufacturing production towards automation and offshoring in the past decade.

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Table A.1: Trade cost elasticities

Food	2.62	Metal products	6.99
Textile	8.10	Machinery n.e.c	1.45
Wood	11.50	Office	12.95
Paper	16.52	Electrical	12.91
Petroleum	64.85	Communication	3.95
Chemicals	3.13	Medical	8.71
Plastic	1.67	Auto	1.84
Minerals	2.41	Other Transport	0.39
Basic metals	3.28	Other	3.98

Notes: These values come from the benchmark 99 percent sample of Caliendo and Parro. This sample was contructed by dropping countries with the lowest 1 percent share of trade they contribute to a particular sector.

Table A.2: Top 10 Trump industries

SIC code	Description	T_j
3633	Household laundry equipment	1.00
2273	Carpets and rugs	0.90
3792	Travel trailers and campers	0.88
2252	Hosiery, n.e.c.	0.82
3799	Transportation equipment, n.e.c.	0.82
2281	Yarn spinning mills	0.79
2611	Pulp mills	0.79
2493	Reconstituted wood products	0.78
2015	Poultry slaughtering and processing	0.77
3715	Truck trailers	0.76