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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 SEVENTEENTH CONGRESS

SECOND SESSION

ON

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

MARCH 3, 2022

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C O N T E N T S

THURSDAY, MARCH 3, 2022

WITNESS

ADDITIONAL MATERIAL SUPPLIED FOR THE RECORD

THE SEMIANNUAL MONETARY POLICY REPORT TO THE CONGRESS

THURSDAY, MARCH 3, 2022

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

The Committee met at 10 a.m., via Webex and in room 538, Dirksen Senate Office Building, Hon. Sherrod Brown, Chairman of the Committee, presiding.

OPENING STATEMENT OF CHAIRMAN SHERROD BROWN

Chairman BROWN. The Senate Committee on Banking, Housing, and Urban Affairs will come to order.

Today's hearing again is in a hybrid format. Our witness is in person. Thank you, Chair Powell. Members have the option to appear either in person or virtually.

I want to start by acknowledging that as we sit here this morning, Ukrainians are showing such courage and resolve, fighting Russian invaders in their homeland. Ukrainian families fleeing indiscriminate bombings are taking refuge in subway tunnels, something that Europe has not seen since the siege of London seven decades ago. I want to express my support for the brave men and women in Ukraine fighting for democracy, and I know all my colleagues on this Committee, of both parties, join me in that.

This is a Russian attack on democracy. It is only the latest, terrible escalation of what has become one of the main goals of the Russian Federation, to attack and undermine democratic norms at home and abroad.

The world is looking to us right now. We are the leader of the free world, and its oldest democracy. It is vital that we live by our values, both abroad and at home. That means a commitment to the rule of law, a commitment to democratic participation, and a commitment to independent institutions that allow our society to function, like the Federal Reserve.

We created the Fed 109 years ago, I guess, as an independent agency, outside of any political party's control, to be staffed with economic experts, not political cronies. It is one of many American institutions that sets our country apart from autocratic regimes.

It is vital that we reaffirm our commitment to the Fed's role, showing the world what a functioning democracy looks like. Let us show up and do our jobs, like Chair Powell comes here, perhaps 14 times a year, it seems to him. That is the best way to achieve a strong, growing economy, that lifts up the whole country.

This time last year, our country and our economy were in a place of deep uncertainty. More than 4 million people were out of a job. Frontline workers were just beginning to get vaccinated. We were in the midst of a public health crisis and economic crisis that needed us all of us—policymakers, business owners, workers, union and non-union alike—to come together and tackle the challenge of this pandemic economy.

And that is what we did. We passed the American Rescue Plan. We got shots into arms, money into people's pockets, workers back on the job, and kids back in school. Against the odds, 2021 became a year of, as the Chair, I am sure, will say, unprecedented economic growth for our country, in job creation, wage gains, GDP. For the first time in two decades—think about this—for the first time in two decades the American economy grew faster than China's economy. Think about that.

We averaged over half a million new jobs per month last year, and we saw the fastest drop ever in the unemployment rate. Wages rose for workers, especially low-wage workers, who began to have a little more power in a tight labor market. American entrepreneurs started a record-setting five million new businesses.

This all translated into American families' household balance sheets, which were healthier in 2021 than before the pandemic. It is because of the actions that Democrats took in this Congress, expanding the Child Tax Credit, and rental and housing assistance.

The American Rescue Plan helped get most Americans vaccinated and made a booster shot available to everyone. Today, over 65 percent of the population is fully vaccinated, more than 75 percent of all adults. Case counts and hospitalizations are dropping. We are one step closer to normal life beyond the pandemic. Americans no longer have to live in fear.

We have come a long way, but the fight is not over, and it has taken a terrible toll on Americans. After 2 years of stress, of massive disruptions in our lives and in our economy, people are simply exhausted. And they are fearful that inflation will make it harder and harder for them to keep up with the cost of living.

The pandemic economy has caused inflation. Families feel it at the gas station. They feel it when they are making rent payments. They feel it when they check out at the grocery store.

We must acknowledge that Russia's invasion of Ukraine will affect the global economy. We learned over the past 2 years how fragile our global supply chains are. Some of us have said for years that we should make more things in America and rely less on China. Elites in Washington, in lobbying for trade change and trade law and tax law, elites in Washington dismissed those concerns for decade. Now they are starting to wake up.

We help prevent long-term inflation by bringing supply chains home, and in the process we rebuild our own industrial base.

The House and Senate have both passed bills investing in domestic manufacturing and research and development. We need to put a comprehensive bill on the President's desk and bring manufacturing, research, and development back to this country.

We are building the capacity to move goods faster and more cheaply with the Bipartisan Infrastructure Bill. While most Americans report mixed feelings about the economy over the past year—

they may have gotten a raise and a tax cut and have more in savings, while also being concerned rightly about rising costs—there is one group that did better than ever last year: America's large corporations. Corporations made record profits in 2021 and they gave their executives and shareholders a bigger slice of the profits than ever. They have reacted with barely controlled glee at the opportunity to raise prices during this pandemic economy.

We can never forget: raising prices is a choice. There is no law saying that if the cost of an input goes up or if transportation costs increase, companies have to raise prices. They have options. They could cut costs elsewhere by making executive bonuses or stock buybacks just a little bit smaller.

But of course they do not. There is not enough competition in the economy, especially drug companies, meatpackers, oil companies, shippers. From the meatpacking industry to the oil cartels, corporations do not face the fair, capitalist free market competition we need to keep prices low and wages high.

And when you combine current inflation with the expenses that have been rising for decades—drug costs, childcare, housing—it is little wonder that many middle-class families in Nevada, Massachusetts, South Carolina, Alabama, Pennsylvania, and Ohio do not feel stable.

It will take all of us to lower these long-term costs, fight inflation, and create an economy where hard work pays off for everyone, no matter who you are, where you live, or what kind of work you do. All workers should be able to find a good-paying job that allows them to raise a family, keep up with the cost of living, and join the middle class.

The Federal Reserve has a responsibility, as you know, Mr. Chair, to tackle inflation, to ensure we have a resilient labor market, a safe and stable banking system, an efficient and reliable payments system, and empowered local communities where consumers, workers, small banks, and small businesses thrive.

And it is more important now than ever that we have a full—full means seven members, first time in a decade; you only have four now, as you know—a full Federal Reserve Board making those decisions.

In a time of deep economic uncertainty, where democracies across the world are threatened by authoritarian strongmen, we must ensure the Fed is operating at full capacity. We have an opportunity, Mr. Chair, as you know, and you know her well, to confirm one of the world's leading experts on cybersecurity in the financial system. Sarah Bloom Raskin chaired the G–7 Cyber Expert Group. We need her in that position now more than ever. All of us need to do our job to get her and the other four Fed noms confirmed. We must fill these positions so that the entire team of decisionmakers can come together, assess the data, and address the problems Americans face.

Today, we have Chair Pro Tempore of the Federal Reserve, Jay Powell, here to deliver a biannual update on the Fed's actions to steer our economic recovery. Chair Powell, thank you, and I look forward to your testimony.

Senator Toomey.

OPENING STATEMENT OF SENATOR PATRICK J. TOOMEY

Senator TOOMEY. Thank you, Mr. Chairman. Let me begin by fully endorsing the sentiments you expressed regarding the appalling Russian invasion of an entirely unjustified war against Ukraine, and share your salute for the extraordinary courage, valor, and commitment of the people of Ukraine.

Chairman Powell, welcome. I do hope we process your nomination soon. Of course, I have been advocating that we do that for some time now, but in the meantime I do know that you and your fellow FOMC members are fully able to do your job of fighting inflation. And, obviously, there is a lot of work to do on that front. January's inflation reached a 40-year high of 7.5 percent, and inflation like that is doing real damage to average Americans.

Some of my colleagues like to observe that wages are growing. The problem is inflation is growing faster, and that causes workers to fall further and further behind, and that is what is happening today. Savers, of course, are earning virtually zero on their savings while inflation significantly erodes the value of those savings.

Our current zero-interest-rate monetary policy that we have had for some time now is probably appropriate at a period of economic crisis or during a recession. It is hard to see that that makes sense during a period of multidecade-high inflation.

Of course, profligate fiscal policy of the year has also contributed to inflation. Democrat supporters of blow-out deficit spending bills like the American Rescue Plan and Build Back Better have looked to blame others for the consequences of their own misguided policy. First they blame global supply chains. Now they have shifted their blame to greedy corporations.

Actually, inflation is pretty easy to understand. It results from more money chasing fewer goods. The Administration's policies such as overregulation and a war on American energy have limited the production of goods, and meanwhile reckless spending has resulted in more money chasing those goods.

Of course, the Fed's accommodative monetary policy has further stimulated demand. For several years now I have warned that it could be extremely difficult to put the inflation genie back in the bottle. Well, the genie is out and the Fed is behind the curve. We need to act with urgency to get inflation under control.

Mr. Chairman, I am also deeply troubled to what appears to be a growing urge to use financial regulators, in general, and the Fed, in particular, to tackle complex political questions that are outside of our financial and monetary system. Questions like how and how quickly to transition to a lower carbon economy. Questions like how to address racially charged social issues. Or even how do we improve primary and secondary education.

Now there is no doubt these are very important issues, but they are wholly unrelated to the Fed's limited statutory mandates and expertise. And yet the Fed has been weighing in on every one of these issues. Some intend to use the Fed's recently developed climate scenario analysis as a mechanism, as part of a tool to steer capital away from carbon-intensive industries. All 12 Reserve Banks have hosted a Racism in the Economy series, where invited speakers advocated for specific policies, including racial reparations and defunding the police, among other very liberal proposals. And the Minneapolis Fed is actively lobbying to change Minnesota's constitution on the issue of K–12 education policy.

Does anyone really think that these activities are within the Fed's statutory mandates? Of course not. What they are is they are challenging and complex issues that require really difficult tradeoffs. And in a democratic society, those tradeoffs have to be made by elected representatives who are directly accountable to the American people.

Consider some tradeoffs associated with addressing global warming. Now if we limit domestic oil and gas production Americans will pay more at the pump. How much more is appropriate? If we suddenly limit domestic production without feasible energy alternatives our Nation and the world will become more reliant on fossil fuels from autocratic nations. We are watching that play out. When does that reliance present an unacceptable national and global security threat?

These are just examples of the unlimited number of equally challenging tradeoffs for all of these politically charged topics, none of which should be decided by unelected and unaccountable central bankers. And yet some of the Reserve Banks are diving right, and when I have requested additional information about their activities, the Reserve Banks stonewall me. When I asked the Board to address the issue, everyone passes the buck. The Fed Board says, "Oh, those things are up to the Reserve Banks," even though the Board oversees the Reserve Banks. And except through the Fed Board the Reserve Banks are completely unaccountable to Congress.

So when I think about this state of affairs, Mr. Chairman, I can only conclude that we need to think seriously about reforming the structure of the Fed. In my view, any Fed reform should preserve and strengthen monetary policy independence, but it should also develop mechanisms to enforce the existing statutory limits on Federal Reserve activity that are not being complied with today. That would require also proper congressional oversight by increasing transparency.

So here are three reform ideas that we ought to discuss. First, unlike the main Fed Board, the Reserve Banks are not subject to FOIA. Well, that should change. Second, we should consider whether or not to subject Federal Reserve bank heads, the regional Reserve Bank heads, to Presidential appointment and Senate confirmation.

Third, we ought to examine the historical 12 Reserve Bank structure. That dates back to a very, very different time. For example, it might make sense to consolidate them into 5 banks, and make each one a permanent voter on the FOMC. Or maybe we should eliminate the Reserve Banks entirely and have the main Fed Board assume these responsibilities.

To be clear, I am not specifically advocating any one of these, but I think we have to consider these and other possibilities. I do not present these ideas lightly. But the Fed was given independence to insulate monetary policy from politics, and Congress has a responsibility to ensure that the Fed does not become a political actor.

Thank you, Mr. Chairman.

Chairman BROWN. Thank you, Senator Toomey.

Mr. Powell, we welcome you to the Committee again, as Chair Pro Tempore of the Federal Reserve. Please begin your testimony. Thank you.

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

Mr. POWELL. Thank you. Chairman Brown, Ranking Member Toomey, and other Members of the Committee, I am pleased to present the Federal Reserve's semiannual Monetary Policy Report.

Before I begin, let me briefly address Russia's attack on Ukraine. The conflict is causing tremendous hardship for the Ukrainian people. The implications for the U.S. economy are highly uncertain, and we will be monitoring the situation closely.

At the Fed, we are strongly committed to achieving the monetary policy goals that Congress has given us: maximum employment and price stability. We pursue these goals based solely on data and objective analysis, and we are committed to doing so in a clear and transparent manner so that the American people and their representatives in Congress understand our policy actions and can hold us accountable. I will review the current economic situation before turning to monetary policy.

Economic activity expanded at a robust 5.5 percent pace last year, reflecting progress on vaccinations and the reopening of the economy, fiscal and monetary policy support, and the healthy financial positions of households and businesses. The rapid spread of the Omicron variant led to some slowing in economic activity early this year, but with cases having declined sharply since mid-January, the slowdown seems to have been brief.

The labor market is extremely tight. Payroll employment rose by 6.7 million in 2021, and job gains were robust in January. The unemployment rate declined substantially over the past year and stood at 4.0 percent in January, reaching the median of FOMC participants' estimates of its longer-run normal level. The improvements in labor market conditions have been widespread, including for workers at the lower end of the wage distribution as well as for African Americans and Hispanics. Labor demand is very strong, and while labor force participation has ticked up, labor supply remains subdued. As a result, employers are having difficulties filling job openings, an unprecedented number of workers are quitting to take new jobs, and wages are rising at their fastest pace in many years.

Inflation increased sharply last year and is now running well above our longer-run objective of 2 percent. Demand is strong, and bottlenecks and supply constraints are limiting how quickly production can respond. These supply disruptions have been larger and longer lasting than anticipated, exacerbated by waves of the virus, and price increases are now spreading to a broader range of goods and services.

We understand that high inflation imposes significant hardship, especially on those least able to meet the higher costs of essentials like food, housing, and transportation. We know that the best thing we can do to support a strong labor market is to promote a long expansion, and that is only possible in an environment of price stability.

The Committee will continue to monitor incoming economic data and will adjust the stance of monetary policy as appropriate to manage risks that could impede the attainment of its goals. The Committee's assessments will take into account a wide range of information, including labor market conditions, inflation pressures and inflation expectations, and financial and international developments. We continue to expect inflation to decline over the course of the year as supply constraints ease and demand moderates because of the waning effects of fiscal support and the removal of monetary policy accommodation. But we are attentive to the risks of potential further upward pressure on inflation expectations and inflation itself from a number of factors. We will use our policy tools as appropriate to prevent higher inflation from becoming entrenched while promoting a sustainable expansion and a strong labor market.

Our monetary policy has been adapting to the evolving economic environment, and it will continue to do so. We have phased out our net asset purchases. With inflation well above 2 percent and a strong labor market, we expect it will be appropriate to raise the target range for the Federal funds rate at our meeting later this month.

The process of removing policy accommodation in current circumstances will involve both increases in the target range of the Federal funds rate and reduction in the size of the Fed's balance sheet. As the FOMC noted in January, the Federal funds rate is our primary means of adjusting the stance of monetary policy. Reducing our balance sheet will commence after the process of raising interest rates has begun, and will proceed in a predictable manner primarily through adjustments to reinvestments.

The near-term effects on the U.S. economy of the invasion of Ukraine, the ongoing war, the sanctions, and of events to come, remain highly uncertain. Making appropriate monetary policy in this environment requires a recognition that the economy evolves in unexpected ways. We will need to be nimble in responding to incoming data and the evolving outlook.

Maintaining the trust and confidence of the public is essential to our work. Last month, the Federal Reserve finalized a comprehensive set of new ethics rules to substantially strengthen the investment restrictions for senior Federal Reserve officials. These new rules will guard against even the appearance of any conflict of interest. They are tough and best in class in government, here and around the world.

We understand that our actions affect communities, families, and businesses across the country. Everything we do is in service to our public mission. We at the Fed will do everything we can to achieve our maximum-employment and price-stability goals. Thank you.

Chairman BROWN. Thank you, Chair Powell. We, of course, are monitoring closely Russia's invasion of Ukraine, the impacts it will have on our partners, including our country. In November, the Fed issued a rule jointly with the OCC and FDIC to require banks to notify their Federal financial regulator of any cybersecurity incident within 36 hours. They already made a requirement of notification but you sped that up, obviously.

Given the increased threat of cyberattacks, expeditious reporting by financial institutions is essential. How does the Fed address any reporting about cyberattacks when they occur? What do you do?

Mr. POWELL. When we receive reports. Well, first of all to date we have not seen any significant issues, but we remain vigilant since the Ukraine war began. So we are in constant, ongoing contact with the financial institutions, especially the large ones, on cyber risk, and particularly in this environment; we have been since a couple of months ago on very high alert. So are they. It is regular communication, back and forth. The channels are open, and all of us are on the highest stage of alert, as you would imagine.

Chairman BROWN. I think it is important. I know that your focus is always on financial institutions. It is important for us to be able to repel cyberattacks, to protect against them. Throughout our economy businesses are reporting cyberattacks on them, and your job is obviously with financial institutions. I am hopeful that you will make those comments increasingly public so that other businesses understand, while you do not have jurisdiction, that other businesses understand the importance of that.

We know the impact of Russia's invasion could go beyond cyberattacks in financial institutions. It is possible because of his actions. Prices of commodities could go up, given any market disruptions, and Americans could see higher prices in the grocery store and at the gas pump. How does the Fed, Mr. Chair, evaluate the economic uncertainty caused by Putin's actions? What steps do you take to mitigate those risks, like inflation?

Mr. POWELL. You know, so we are watching carefully to see how this evolves. I think, to your point, the ultimate effects on the U.S. economy of the war, of the sanctions, and of events yet to come is highly uncertain. And so we need to be alert to what those might be.

What we know so far is that commodity prices have moved up significantly, energy prices in particular. That is going to work its way through our U.S. economy. We are going to see upward pressure on inflation, at least for awhile. We do not know how long that will be sustained for.

In addition, we could see, you know, risk sentiment declining, risk-taking sentiment declining, so you could see lower investment, you could see people holding back on spending. It is hard to say what the effects on both supply and demand will be, and I would just echo that we need to be alert and nimble as we make decisions in what is quite a difficult environment.

Chairman BROWN. The Monetary Policy Report that you released highlighted great news for workers in our economic recovery, wage gains across the Board, but especially for low-wage workers, job growth across sectors, a drop in the unemployment rate that beat forecasters' expectations. All good news. But we clearly have a long way to go when it comes to making sure everyone has a good-quality job. We know from prior economic crises that hiking up interest rates—and I know you will be cautious—but hiking up interest rates too early can depress job growth.

My question is, as the Fed plans to raise interest rates, what steps will you take to ensure that it does not affect the pretty amazing job growth? President Biden mentioned, at the State of the Union, 369,000 manufacturing jobs, many of them in my State of Ohio. How do you ensure that the steps the Fed takes do not affect that kind of job growth?

Mr. POWELL. Well, the labor market as we have it today, unemployment is down to 4 percent and wages are at historic highs for recent history. Quits are at all-time highs or near that. Job openings are at all-time highs. So you are right. This is a great labor market for workers, particularly workers in the lower quartile of earning who are getting the biggest wage increases and really very, very high wage increases.

So the problem really that we are facing is one of high inflation, and over time, the biggest risk to being able to sustain a long expansion and have continued increases in participation, for example, which has tended to lag declines in unemployment, is to sustain or really restore price stability. So that is the single most important thing we can do to really try to have the kind of long expansion that we saw in the last cycle, and saw the many benefits that flowed to people as that expansion extended.

Chairman BROWN. Thank you. In my last 60 seconds, two yes-or-no questions if I could. Do you agree that making testing and vaccinations accessible has already made it possible for people to safely rejoin the labor force?

Mr. POWELL. I do not have any special expertise on that but that sounds right to me.

Chairman BROWN. Do you agree that making childcare affordable would make it possible for parents to return to work and increase the labor supply?

Mr. POWELL. As we, I think, have discussed, there is good research that supports that proposition as well.

Chairman BROWN. Thank you. Senator Toomey.

Senator TOOMEY. Thank you, Mr. Chairman. Chair Powell, just so that we get this on the record here, a couple of quick, simple questions here. Monetary policy is decided by the FOMC of the Fed. Correct?

Mr. POWELL. Yes.

Senator TOOMEY. And there are 12 seats on the FOMC of which 9 are currently filled. Correct?

Mr. POWELL. Actually, there are as many as 19 participants, but you are right, there can be 12 voters. So we have right now 16 of the 19 seats filled, or 9 of the 12 voters.

Senator TOOMEY. OK. So the FOMC is, today, right now, fully capable of determining monetary policy, and the Fed as a whole is fully capable of implementing that policy right now. Is that correct?

Mr. POWELL. Yes. We will do our jobs.

Senator TOOMEY. OK. I was glad to hear your emphasis on the importance of price stability. Here is my concern. You know, it is a little bit easier to raise interest rates to normalize to fight inflation at a time when the economy is booming. What I am a little bit worried about—and I fully acknowledge nobody knows how this is going to play out, but I think it is fair to say that this war has changed the risk profile a little bit with respect to inflation, that you just alluded to. There is certainly some upward pressure on energy, and maybe beyond. And all else being equal, it probably increases the risk that we will be looking at downward revisions in growth. Nothing certain about that, but the risk is higher.

And so I wonder if you could share with us your thoughts on the importance of fighting inflation if we find ourselves in a situation where growth is less robust than what we are hoping for now.

Mr. POWELL. So I would agree on both the supply and demand side there is a lot of uncertainty. Oil prices are higher. That typically does weigh on spending, to some extent. But at the same time we have households and businesses that are in such strong financial shape, it is not clear what those effects are going to be.

So as I mentioned yesterday, I do think that it is going to be appropriate for us to continue to proceed along the lines that we had in mind before the Ukraine invasion happened, and that was to raise interest rates at the March meeting and to continue through the course of the year, based on incoming data and the evolving outlook, to engage in a series of rate increases.

I would say in this very sensitive time at the moment I think it is appropriate for us to be careful in the way we conduct policy, simply because things are so uncertain and we do not want to add to that uncertainty. But that is where it leaves me.

Senator TOOMEY. I just hope that the actual practice going forward at the Fed is consistent with what I think you were alluding to earlier, and that is the need for price stability as a precondition for maximizing the well-being of American workers. If we are in a world where we do not have price stability, they do not have job security. They do not have income security. It is just so important. I sure hope that we exceed all of our expectations about growth this year, but I do not know that.

Let me shift to ask you this. In your view, is it consistent with the statutory mandate of the regional Fed banks to engage in political advocacy, and specifically a racial justice campaign or efforts to amend a State constitution? Is that within the proper domain of regional Fed banks?

Mr. POWELL. So as we have discussed, you know, the Reserve Banks have generally had and exercised a degree of freedom of oversight from the Board, the Board of Governors, in their research activities, in their policy thinking activities, and that has always been thought to be a benefit, including by me, because it avoids the kind of group-think you could get if you had one economic staff in one building and that is where all the Governors were. So it has been a feature rather than a bug of the System, for a long time.

I would echo, though, I strongly share the view that everything we do in the System needs to be clearly linked in ways that people understand to our mandate, and that that is one of the very most important underpinnings of our independence. If we are not doing that then the case for our independence immediately becomes weaker.

Senator TOOMEY. Yes, and I do not think anybody can make the case that amending a State constitution with respect to how a State pays for primary and secondary education has anything to do with that mandate.

Let me ask you the last question. The Fed has embraced the idea of requiring climate scenario analyses for banks, and the justification is this is an important way for banks to understand the nature of the risk that they face. Whatever one thinks of that, is it your view that among the Fed's responsibilities is to determine the pace at which the American economy transitions to a lower carbon economy?

Mr. POWELL. No.

Senator TOOMEY. OK. Thank you. Thank you, Mr. Chairman.

Chairman BROWN. Thank you. Senator Tester, of Montana, is recognized.

Senator TESTER. Thank you, Mr. Chairman and Ranking Member, and I want to thank Chairman Powell for being here today. I appreciate the work that you do, as always.

Look, I think inflation is on everybody's minds and how you deal with it, and as you pointed out the last time you were in front of this Committee, it is not only a demand problem, it is a supply problem. You can help deal with the demand but the supplies issue are a little different thing.

Being in the business of agriculture personally I can see that consolidation in the marketplace is a big deal, and I am talking particularly the meat industry right now, where you have four packers that control 84 percent of this country's meat supply. Competition is critically important if capitalism is going to work. I do not need to tell you that. You know that better than anybody. But there does not seem like there is a lot of competition in a number of different areas, but I will just focus on meatpacking.

No, I will not. Let me back up. Let us talk about consolidation generally, and if that helps drive prices up or down, and then if, in fact, you think it does drive prices up, would inserting more competition in the marketplace help consumers?

Mr. POWELL. First of all, we are not responsible for competition policy. Individual industries can have competition issues, and those are appropriate subjects for the folks who wield those tools. That is not us.

At the aggregate level, the connection between concentration, for example, and inflation is really not clear. Some of the industries that had a lot of consolidation were the very ones that drove low inflation over the last 25 years. You know, retail and wholesale consolidated a whole bunch and a bunch of technology went in, and that was very high productivity and very low inflation. So it is not obvious.

But again, industry by industry there will be cases in which there are competition issues, and those are certainly an appropriate subject for antitrust scrutiny.

Senator TESTER. As we look at the war in Ukraine, and as we look at inflation that is occurring here in this country, and I know you are Chairman of the Fed and I know that these are areas that you might not want to get into, but I will ask anyway. You can always decline to answer. And that is, are there certain things we should be doing right now, or paying particular attention to, in the inflation realm?

Mr. POWELL. I am sorry. In the sense of——

Senator TESTER. In the sense from a congressional standpoint, are there things we should be paying particular attention to? I do not want to answer that question for you, but I think trucking is a big issue in this country right now. I think being able to get products in and out of this country is a big issue right now, from a shipping standpoint. Should we be looking at those kinds of things? Should be looking at other things?

Mr. POWELL. I do think that over time there are certainly things that Congress could do. I think in the near term, really, it is down to the private sector and the supply chains and things like that getting untangled, getting fixed, and it is down to us doing our jobs with our tools.

But I would agree, though, that we need more labor supply. We need more semiconductors and things like that. Clearly you mentioned trucking. We are short workers right now. We had a shock to participation that is much larger than in any other country, and there must be ways to address that, although some of that is voluntary, clearly on the part of people who decided to retire and things like that.

Senator TESTER. OK. Thank you. Thank you, Mr. Chairman.

Chairman BROWN. Senator Shelby is recognized, from Alabama.

Senator SHELBY. Thank you, Mr. Chairman. Chairman Powell, welcome again to the Committee. You have spent a lot of time with us here.

You are the Chairman of the Federal Reserve. We have this hearing now before the U.S. Senate Banking Committee, but millions of people around the world are watching this hearing and watching what you say and also what you do at the Fed. Let us talk some more about price stability because I think that is so important. We know what the term is, but to the average person just explain what you mean by price stability, which is a mandate that the Congress gives the Fed.

Mr. POWELL. We think of price stability as having inflation that is 2 percent, right around 2 percent, but maybe a clearer way——

Senator SHELBY. Stable prices, stable everything. Right?

Mr. POWELL. Yes. But really what it means is that people can go about their daily lives without thinking much about inflation. It comes down to that, that it is just not an important consideration for people living their lives, taking out mortgages, putting their kids through school, or for businesses that are borrowing, and things like that.

Senator SHELBY. It affects everybody in the economy just about, does it not——

Mr. POWELL. It does.

Senator SHELBY.——in one way or the other.

Mr. POWELL. And when inflation goes up, and you are seeing this now, real wages, what matters is whether your wages are going up more or less than inflation, and for the most part real wages are declining, but not for everybody. I think at the bottom end of the wage spectrum real wages have actually been increasing. And that is why we need to get inflation under control.

Senator SHELBY. It is going to be harder to get it under control once it is rampant than it would be when it starts out.

My question to you is this. We know you have a lot of great, gifted economists at the Federal Reserve that furnish you data on every trend on prices dealing with inflation, price stability in the world and how it affects us here, everybody. The Fed obviously missed the trends there. Was it a question of not having the right data or was it a question of ignoring the data you had? Because a lot of private—I would not say all, but a lot of private economists predicted where we are going on this inflation, and they were spot on 2 years ago.

Was it a question of, again, you did not have the data, which you should have, or you misjudged the data, or you ignored the data?

Mr. POWELL. No, no. It was not about data at all. This is really what it was about. When inflation really just about, barely a year ago, in March of last year, started to move up quickly, central banks and macroeconomists really overwhelmingly look at that as like a supply shock, like an oil shock. And what the textbook says is the shock is going to come and it is going to go, and you should not react to it. And so we looked at it that way. And I would say by the middle of last year we started to move away from it, and we moved away from it at an increasing rate of speed. Hindsight says we should have moved earlier, and that turned out to be wrong. Not maybe conceptually wrong, but it is just taking so much longer for the supply side to heal than we thought.

So in hindsight you certainly would not have done that, but I think there really is no precedent for this. We looked at it the way it was. There were certainly some voices, and they have turned out to be right so far. Ultimately, we think the supply side will improve and that will help with inflation. In the meantime, we are going to use our tools and we are going to get this done.

Senator SHELBY. About 40 years ago or more, you know, we had rampant inflation in the United States. We had Chairman, Dr. Volcker, who was Chairman of the Fed, and he was maligned for a little while by people but praised later. But he brought the leadership to the Fed and to the country that we had to squeeze inflation out, at all costs just about. And a lot of it was draconian. You have to do it.

Is the leadership at the Fed under you and Fed prepared to do what it takes to get inflation under control and protect price stability?

Mr. POWELL. Well, let me say I knew Paul Volcker. I am pretty sure I saw him testify in this room many years ago. I think he was one of the great public servants of the era, the greatest economic public servant of the era, and I hope history will record that the answer to your question is yes.

Senator SHELBY. So you are prepared to do what it takes without any reservation to protect price stability.

Mr. POWELL. Yes.

Senator SHELBY. That would be a departure from what you have done. Thank you very much.

Chairman BROWN. Senator Menendez, from New Jersey, is recognized.

Senator MENENDEZ. Thank you, Mr. Chairman. The Biden administration, in coordination with U.S. allies around the world has placed historic sanctions on Russia in response to the invasion of Ukraine. In particular, sanctions on the Russian central bank, cutting off its access to international reserves I believe will have a powerful effect on Putin and the elites who have reaped the benefits of his repressive regime. Sanctions are one of our most important foreign policy tools, but it is not always easy to understand just how effective they can be.

So Chairman Powell, can you explain in layman terms the effect of sanctions imposed on the Russian central bank?

Mr. POWELL. Sure. I should start, though, by saying that everyone should know that we do not implement sanctions. Those are really the province of the elected Government and the Treasury Department. All we do is we are sort of there in the background.

Senator MENENDEZ. I understand.

Mr. POWELL. A technical backstop.

Senator MENENDEZ. I understand. I just want to use your expertise.

Mr. POWELL. Sure. So what the central bank does is—so different currencies in different countries are traded all day long, and in some cases all night long around the globe, and the value of those currencies really matters for people when they are trying to buy something. For example, if you are trying to buy an American car or American radio or an Apple iPhone, it will be priced in dollars. So the ruble weakened dramatically through this, which is the Russian currency, and what those sanctions do is make it very difficult for the central bank of Russia to do its job, which is to support the ruble on behalf of the government. And it is because the sort of resources that it had to support the ruble were tied up in a way that made it difficult to do that. That is part of it.

Senator MENENDEZ. Yes. And those sanctions means that Putin cannot access hundreds of millions in international reserves that he could use to continue to fund his war effort. Is that correct?

Mr. POWELL. Well, yes.

Senator MENENDEZ. Let me ask you this. As the economy continues to recover, we have had a lot of conversation here about managing inflation as a key challenge, the first step to do so, in my mind, is to confirm the five highly qualified nominees President Biden has selected for the Federal Reserve Board, including yourself, and I hope our Republican colleagues will allow us to do that soon.

The next and more challenging step is to address the supply crisis that is driving up much of this inflation. Can you give us a brief update on how persistent supply chain issues are disrupting the recovery and contributing to inflation?

Mr. POWELL. Sure. So a lot of the inflation we are seeing is coming from imported goods or manufactured goods that contain imported content, and the price of shipping, for example, internationally has gone up quite a lot. And there are long delays and the ports are full because demand is really so high. It is a demand problem as well as a supply problem.

You know, we have been feeling very small amounts of progress on that. I have to say, one of the little bit unexpected byproducts of the Ukraine war, it is looking like supply chains—it is not going to help at all with supply chains because ships are not being offloaded and things like that. So there are unanticipated or unexpected effects of what we are doing, which is not to say we should not do them.

So this is not something we have any expertise in fixing, but we have been waiting for that to happen, and it has not happened. We have not seen much relief on the supply side.

The other thing is the supply of labor. You know, there is no problem with labor demand. Really, the ratio of job openings to unemployed is at, by far, the highest level it has ever been, more than 1.7 open jobs per unemployed person. So we have a labor supply problem. We think that getting past the pandemic will really help with that, and, of course, higher wages should help bring people in too.

Senator MENENDEZ. So would strengthening supply chains and resolving bottlenecks help to combat inflation in the long term?

Mr. POWELL. Certainly in the near term it would, and I would think it would be certainly a good thing.

Senator MENENDEZ. You know, we passed the Strategic Competition and Innovation Act last May, and the House now has its own provisions. I am looking forward to a reconciliation of that because that would address bottlenecks, strengthen our supply chains going forward, including funding to boost domestic production of semiconductors and my supply chain database provision as well.

Finally, you just mentioned labor. We are facing a dire labor shortage across the country which is holding back our economy. The Fed's Monetary Policy Report from last week noted that, quote, "Labor supply has been slow to rebound even as labor demand has been remarkably strong." There are currently 11 million job openings nationwide. Immigrants are ready and willing to fill many of those jobs. Would you say that if we had a process in which we could bring those immigrants out of the shadows into the light, have them go through a process, criminal background check, and make sure they paid their taxes, that the role of immigrants in mitigating the current labor shortage and rising inflation would be a significant one?

Mr. POWELL. Seeing that we do not do immigration policy, as an arithmetic fact immigration has been much lower and accounts for, you know, a meaningful part of the labor shortfall.

Senator MENENDEZ. And that is why leading business groups agree with you. Thank you, Mr. Chairman.

Chairman BROWN. Thank you, Senator Menendez.

Senator Crapo, from Idaho, joins us from his office.

Senator CRAPO. Thank you very much, Mr. Chairman, and Chair Powell, thank you for being with us today.

I wanted to start first by following up on some of the line of questioning that Senator Toomey raised, just a couple of quick questions in terms of the ability to manage the Fed and its ability to operate right now.

It is correct that you were recently named by the Federal Reserve Board as the Chairman Pro Tempore pending the handling of your nomination. Is that correct?

Mr. POWELL. Yes.

Senator CRAPO. And in that capacity you have the full ability to chair the Board while we wait for the handling of your nomination. Is that correct?

Mr. POWELL. Yes, it is.

Senator CRAPO. I want to make it very clear, I hope that we handle your nomination soon, and I intend to vote in support of it. But I just wanted to also make it clear that you are fully functioning as the Chair now, in the capacity of Chair Pro Tempore. And it is also correct that you were named in January by the Federal Reserve Board as the Chairman of the FOMC. That is correct also?

Mr. POWELL. Actually, I was elected by the FOMC to be chair.

Senator CRAPO. You were elected by the FOMC.

Mr. POWELL. Yes.

Senator CRAPO. All right. And let me move on to just one other aspect of it. You have already discussed the dual mandate of the Fed today, the low and stable inflation rate, and maximum employment. Disturbingly to me, there are some who are suggesting that the Federal Reserve should, in addition to that, or even to claim it as a part of that, that the Federal Reserve should stop so-called suboptimal industries from having access to capital, either to restrict their access to capital or to deprive their access to capital. Do you believe that any kind of standard such as that should be something that the Federal Reserve Board should pursue in its supervisory capacity?

Mr. POWELL. No, I do not.

Senator CRAPO. All right. I appreciate that because this is a disturbing trend that has come in a number of different contexts over the last few years, and the notion that we should utilize our Federal regulatory and supervision authorities to decide which industries are optimal and restrict those that we do not like politically from access to capital is a very alarming idea that I think American should reject quickly.

Finally, I just have one more question. Obviously, related to Ukraine and the issue of oil and energy markets have come to the forefront as a result of a number of different aspects, whether it is sanction questions or whether it is simply the issues of depriving Russia access to the utilization of Nord Stream, and many other aspects. Do you expect that the strains on the oil or energy markets that we will see coming out of this war will act to push inflation even higher or will act as an impediment to our ability to get inflation under control?

Mr. POWELL. In the near term we already see this. Oil prices are up substantially from where they were 2 months, 3 months ago, and that will get into gasoline prices and other fuel prices, and that will show up in higher inflation. The question really is what will be the extent of those, and even more important, what will be their persistence? So typically with an oil spike prices go up and they either stay at that level or they go down. In either of those cases they add to the price level but not to inflation.

The concern, though, is there is already a lot of upward inflation pressure, and additional inflation pressure does probably raise, at the margin, the risk that inflation expectations will start to react in a way that is negative for controlling inflation.

Senator CRAPO. All right. Thank you very much.

Chairman BROWN. Thank you, Senator Crapo.

Senator Warner, from Virginia, is recognized from his office.

Senator WARNER. Thank you, Mr. Chairman. Chair Powell, it is great to see you, at least remotely.

I want to at least point out, because I want to move to Ukraine where my friend, Senator Crapo, raised some of the issues. It is, obviously, the responsibility of the Fed, as we are looking at the economy, to evaluate systemic risk to the economy. Is it not?

Mr. POWELL. Yes.

Senator WARNER. Thank you. And you and others have testified that whether we call it climate change, sea level rise, dramatic changes in weather that brings about flooding, storms, you name it, that is appropriate for review, and while obviously the terminology of designating a particular industry I agree should not be, but the systemic risks, I think, are critically important, and I appreciate the fact that you have recognized that. I think we need to continue to recognize that. We lived through that, literally, and if we look at the number of natural disasters from fires in the West to floods in my State or floods in the South it is here to stay.

I want to talk about, I am Chair of the Intel Committee and I am very, very concerned about what is happening in Ukraine. I am very proud of the fact that the Administration has worked in concert with our European allies rather than acting solo. I was in Munich 11 days ago, and if you would have told me 11 days later that the Europeans would have used SWIFT, struck down Nord Stream 2, Germany would change its complete position on funding arms, Sweden, Finland, we would have sanctioned Putin, I think all terribly important to have a Western response to this aggression.

On the SWIFT issue, I think it is good. I do think we need to get our European allies, as well, to sanction some of the smaller banks as we have. I think we also need to look at non-SWIFT abilities of transfer. And I am concerned that—the Chairman and Senator Warren and Senator Reed and I are very concerned about some of the leakage that could be taking place through cryptocurrencies. I think there is a great deal of value in ultimately digital-based currencies, but the concern I have is that crypto exchanges DeFi—there is a stat I got the other day that I thought was very impressive—7,000 stocks on our public markets, 17,000 different crypto tokens on crypto exchanges, literally a million crypto tokens being developed in decentralized finance.

And I know this is not directly—this is more Secretary Yellen's purview, but you and the Fed have gained a lot of expertise in this space. Do you see the possibility at least of Putin or his oligarchs using digital payments and other alternative payment methodology to avoid these sanctions, in a sense to transfer their assets out since we have been able to kind of clamp down within the traditional banking realm?

Mr. POWELL. So you are right. This is right in the heart of what Secretary Yellen is working on. I believe she actually addressed this yesterday in some public remarks. And I am not privy to any private information about this. You are reading about it. I saw that transactions, crypto transactions are spiking in Ukraine and in Russia.

I think it really underscores the need to have a strong regulatory regime that permits appropriate activity but that prevents inappropriate activity. And we do have laws on the books and all that, but I think for digital finance generally we need a legal framework that would really take away as much as possible of the possibility that people could use unbacked cryptocurrencies as a way to evade the law or to finance terrorism and hide their ill-gotten gains, and things like that. I think it is very important.

Senator WARNER. And again, I appreciate the fact that the Fed has, I think, both expertise-wise ramped up in this space. I do think the notion of the United States having a digital currency when we see the challenges around the digital yuan from China. But I do think the amount of capital flows that are going into this area, of nonbanked in many ways, there is not that kind of clear regulatory overview. It is something we need to look at, and I think as an independent source we are going to need to continue to draw upon not only yours but the enormous resources you have got at the Fed to at least follow the capital flows. And I am gravely concerned that Putin and his oligarchs may use this escape valve to escape these sanctions.

Thank you, Mr. Chairman.

Chairman BROWN. Thank you, Senator Warner.

Senator Scott, from South Carolina, is recognized.

Senator SCOTT. Thank you, Mr. Chairman, and thank you, Chair Powell, for investing the time with us. We have seen you a lot lately, and I think it is important that we continue to have the conversation in public about the priorities of the Fed.

One of the concerns that I have, I think both Senator Toomey and Senator Crapo have discussed the importance of the Fed staying on mission and not looking for ways to expand their mission, looking at nominees like Ms. Raskin's approach in public statement as it relates to the environmental responsibilities that the Fed should take on. I am completely, unequivocally opposed to that direction. I know that there is a lot of attention being paid these days to ESG. I think that is a bad direction for the Fed. I think the Fed should focus its attention on its primary responsibilities, and frankly not even get involved in congressional matters.

I know that Senator Tester had some important questions to the wrong person about truckers. I think if we were going to have a long, serious debate about your opinion on what Congress should do to help truckers we would start back in the Obama administration and look at the hours of service that curtailed the number of available truckers that we have and the amount of time that they could spend on the roads.

So there are a lot of things that the Fed should not do. The one thing that we want you to continue to do is to focus on the impact that everyday folks, like in Abbeville, South Carolina, or in Anderson, South Carolina, are feeling the pressure from the inflationary effects of this economy. We cannot tie that to Russia or conflict. We can just tie that to bad decisions by Democrats and the Biden administration when on day one you cutoff the Keystone XL pipeline, which could have pumped 800,000 barrels a day, and we are dependent on Russian oil, and 600,000 barrels a day. The inflationary impact that South Carolinians have felt since December of 2020, where prices were $1.99 and now they are $3.40.

I think about the seniors who are trapped in too much month and too little money. And I think to myself that too many folks on fixed incomes throughout this country, and specifically in South Carolina, are having to make decisions about rationing—rationing medicine, rationing food, and rationing energy, whether it is in your car or at your home. This is a crisis.

I love to hear that our wages are up 4 or 5 percent, but inflation is up 7.5 percent, so the net effect is that the invisible tax that we refer to here in Washington as inflation is eroding and degrading the spending power of everyday Americans, and they are not gullible. They know exactly what has changed, and any time you put fuel on a fire you should expect it to get hotter, and our economy reflects that same direction.

And those are concerns that I have, and I know that yesterday you spoke at length about how the Fed policymakers are working to game out a variety of policy scenarios to grapple with the uncertain economic risks posed by the ongoing geopolitical turmoil while simultaneously working to curb still-rising prices, and I think that is an important and incredible balance that you will be in charge of. And frankly, I did not vote for you the first time but I am voting for you this time, because I think that you have proven that you have kept your eye on the ball and it is necessary for folks in my State and around this country.

I would love for you to spend my 90 seconds left, talk to me about the gaming out of scenarios that the Fed is going through so that the average person in our country can appreciate the depth of knowledge and the time that you are investing in helping us understand the scenarios that could happen.

Mr. POWELL. Sure. So we have tools to bring inflation down, and they work by raising interest rates. We do that over time, and what that does is it increases mortgage rates but just at the margin, and the same thing with car loans and things like that. And ultimately that slows down demand, ideally in a way that comes to a gradual halt, and economic activity continues. So that is what we are trying to do here.

Right now we need to move away from very low interest rates. They are not appropriate for the current situation in the economy. The economy is very strong. Unemployment is low, wages are going up, the labor market is quite healthy, and inflation is way too high. So we are accountable for inflation, and we are going to use our tools to bring it down.

Senator SCOTT. May I have a little bit more time, Chairman? I know this is your Committee. Thank you, sir. Very kind.

So a question for you. As you think about the next meeting, when you discuss the interest rate increases, are there increments that you would consider not foreshadowing your decision but the incremental increases that you think would bring the spending and the inflation down while not overchallenging the economy?

Mr. POWELL. Yes. So as I mentioned yesterday, my thinking at this time, which is at a very, very sensitive time in markets and in the world because of what we are seeing happening in Ukraine, and we do not know the economic implications of that, I said that I would be recommending and supporting a one-quarter of 1 percent interest rate increase at our March meeting, which is 2 weeks from yesterday.

But I also said that if we do not see inflation behaving as we expect it to behave, which is to peak and begin to come down, if we see inflation behaving in ways not consistent with that, then we are prepared to raise by more than that amount, in a meeting or meetings.

Senator SCOTT. Very good. I would simply say for, as I call them, the kitchen table economists all across the country, typically moms making hard decisions on rationing the amount of resources that they have and the priorities that they have, I think it is really important for us to make it as clear as possible and as simple as possible their understanding and appreciation for what is happening. When you are trying to run a very strong and heavy load at home and you have a full-time job, think what we can do to talk in a way that makes it easy for us to digest at home, we are doing our public, the average person in our country, a lot of good to understand what we are trying to explain. Thank you.

Chairman BROWN. Senator Warren, from Massachusetts, is recognized.

Senator WARREN. Thank you, Mr. Chairman. Right now our country is trying to enforce strong sanctions against Russia, weather the political economic fallout of the Ukraine crisis, and address the pandemic-related inflation and corporate price-gouging that is hurting American families. Much is at stake for our country.

But Republicans on this Committee refuse to show up and vote on five nominees to the Fed. They refuse to do their job. This is shameful and it is risky. Any Republican talking today about the risks facing our economy should be willing to show up and vote on Fed nominees.

So let us talk about one of those risks, Mr. Chairman. As Russia has invaded Ukraine, the centerpiece of the U.S. response is economic sanctions. The United States and its allies have rolled out some of the strongest economic sanctions in history, severely restricting Russia's access to the global financial system, by sanctioning the biggest banks and companies, by kicking Russian banks out of SWIFT, the international payments messaging system, and by freezing the Russian central bank's foreign reserves.

These sanctions are powerful, but Russia can dodge some of this pain by using the same cryptocurrency tools that are currently used by drug traffickers, cyber criminals, and tax cheats. I will pick one example here. We have all become familiar with ransomware, where a cybercriminal infects someone's computer system, locks it up, then demands payment in order to unlock the system. And how do they get paid? Through unregulated cryptocurrencies like Bitcoin.

Chair Powell, do you know who cybersecurity experts say is the world leader in ransomware attacks and in getting paid through cryptocurrencies that allow them to obscure and hide their trails?

Mr. POWELL. I could guess.

Senator WARREN. Do you want to make a guess here, based on what we are talking about today? It is Russia. You know, if you listen to our own national security agencies the answer is Russia, and that is why, when President Biden held an international summit last year to fight ransomware, Russia, the biggest source of the problem, was intentionally not invited.

According to one estimate by the blockchain analysis company, Chainalysis, Russia-linked actors collected nearly three-quarters of all ransomware revenue in the world last year, and hundreds of millions of crypto dollars are collected in Moscow each quarter. As much as half of those come from illicit crypto wallet addresses. Russia is the world's expert on moving money outside legal channels.

So Chair Powell, obviously, you do not administer sanctions but you are an expert on the international financial system. So I just want to take a look at this. Are other countries currently using cryptocurrencies to evade sanctions? I am thinking here of North Korea, Iran, Venezuela?

Mr. POWELL. Honestly, it is not something we are responsible for. I mean, I have read publicly that those things have happened, though, yes.

Senator WARREN. Well, the Treasury Department, the Department of Justice, the United Nations, and the IMF all say that the answer is yes. Crypto takes the sting out of sanctions, and in fact, the Treasury Department warned last year that crypto could undermine our sanctions regime. Theoretically, the crypto industry is supposed to enforce sanctions as well.

So let me ask, Chair Powell, is the crypto industry enforcing sanctions right now?

Mr. POWELL. So what I have read—again, this is really for the Treasury Department, but I have read the same things you have and that you had in your letter, which is some reluctance expressed on the part of the crypto industry to do that.

Senator WARREN. All right. They are supposed to, but the problem is they have not been doing a very good job. Just read the Treasury Department's sanctions review or the U.N. reports on sanctions compliance. We know that many crypto exchanges and wallets are not collecting information about the identities of their customers, are not screening their platforms for illicit activity, and are not reporting sanctions violations. Heck, this is how North Korea has been able to move money around and finance its illegal missile programs.

Here is the thing. The whole point of crypto is that it allows someone to conduct financial transactions without having to go through the traditional banking system or traditional financial intermediaries. Right now, millions of transactions are taking place that are completely unregulated, with no one verifying who gets what. And that means that while sanctions can make it very difficult for Russian companies, political leaders, and billionaires to move money around in the traditional financial system, there is another shadow unregulated world that they can turn to.

Crypto poses a variety of threats, to financial stability, to investor protection, to our environment, but crypto is also providing a new way for countries to sanction-proof themselves. Cracking down on crypto is a critical piece of holding Russia accountable for its aggression. We cannot fool around any longer. We need to get new crypto rules in place.

Thank you, Mr. Chairman.

Chairman BROWN. Thank you. Senator Moran, from Kansas, is recognized.

Senator MORAN. Chairman, thank you. Chairman, thank you. At least one member of the Open Market Committee has said that combining a relatively steep path of rate increases with a relatively modest reduction in the balance sheet could flatten the yield curve and distort incentives for private sector intermediation, especially for community banks.

Help me understand the relationship between balance sheet decisions and rate increase decisions and what thought process you would undertake in that regard.

Mr. POWELL. Basically we think of the interest rate as the active tool of monetary policy, and we think of the balance sheet as something we do really in urgent situations. We buy assets and that tends to drive down long-term rates.

So what we are very much about to do, and we are going to do this over the course of this year, is both raise interest rates and we are going to begin to allow the balance sheet to shrink and run off. As the balance sheet shrinks, you know, the securities are maturing is what is happening, and Treasury, on the other side of the wall, Treasury is deciding what to issue. So they issue long, short, in the middle. That is what they do. And that will have an effect on the yield curve and on financial conditions, but those are decisions that Treasury makes.

But the way we do it, though, to answer your question, is we want to decide a path for the balance sheet and then we want to let it go in the background and have the interest rate tool, meeting to meeting, be the active policy tool. I hope that is responsive.

Senator MORAN. And what is the different consequence between altering the balance sheet and altering interest rates?

Mr. POWELL. For the shape of the yield curve, you mean?

Senator MORAN. Yes. What happens differently in the economy as a result of doing one or the other, or what is the reason to do them together?

Mr. POWELL. Well, when we are using them actively, cutting interest rates and buying assets, buying longer-term assets, we are trying to provide support for the economy. The interest rates affect shorter-term rates actually more than they affect longer-term rates. Quantitative easing affects longer-term rates, and those are important in the economy.

When you turn it around, really, as I tried to explain, we shrink the size of the balance sheet. So for example, if Treasury were to issue only long bonds, well that would drive up rates and that would tend to tilt the yield curve up. But that is a question for Treasury, the issuance question.

Senator MORAN. I am trying to understand while you are trying to explain it, and the fault probably lies with me. But in regard to interest rates, long-term, short-term, does it matter which of those tools you use, and is there a consequence different to an American industry, a sector of our economy as a result of the machinations between those two tools?

Mr. POWELL. Not really. Not really. So again, our interest rate is an overnight interest rate, right, and so when we change it, it will affect asset prices all the way out the curve. It will affect equity prices and things like that. But ultimately, if you are zero lower bound and you cannot cut anymore, then in one sense you could be out of tools. And so, actually, Milton Friedman was one of the first to talk about this many years ago with respect to Japan. You can always affect longer-term interest rates by buying sovereign debt, and so that tends to bring down longer-term rates. They all matter for the economy. To the extent you borrow long, if you are someone who likes to borrow very long, like investment-grade companies, then your rates will go down for 30-year lending. For most people the short end is more important.

Senator MORAN. Mr. Chairman, I am not going to ask you about energy policy, but let me ask what percentage or what is the quantification of how inflation is related to energy prices.

Mr. POWELL. Energy inflation, when we talk about core inflation we exclude inflation from energy and food prices because those are quite volatile. So right now, I guess, if you look at it the way we look at it, core PCE is about 5, in the range of 5, and energy inflation and food inflation you put on top of that is in the high 6's. So it is close to a couple of percent, I believe.

Senator MORAN. And just in my last 14 seconds, I always worry about farmers and ranchers, small towns, community banks, lenders to those farmers and ranchers. Interest rates and energy prices combined have a huge consequence to those who feed and clothe and provide energy to us and the world. And decisions that you make have perhaps an exacerbated consequence to somebody who borrows significant amounts of money to put seed in the ground at a time in which fertilizer costs, diesel fuel is extremely high. Every input a farmer faces today is here. While commodity prices have risen, they have not risen sufficiently to overcome the cost of production.

Mr. POWELL. We are very much aware of that. Some of this shock is going to be very tough for agricultural companies, and that is something we will be monitoring. We do not have the tools to deal with that very well, but that is clearly a risk.

Senator MORAN. Mr. Chairman, thank you.

Chairman BROWN. Thank you. Senator Smith, from Minnesota, is recognized.

Senator SMITH. Thank you, Mr. Chair. Thank you so much, Chair Powell. It is wonderful to see you again, and I really appreciate the questions that Senator Moran is asking about kind of how this actually works, the mechanics of the economics of this. Because the impacts of interest rates, the interest rates are the tool that the Fed has to address inflation, but in a world where the causes of inflation are so complex it can have a tool with other impacts that you do not necessarily anticipate—or you can anticipate it but you cannot control for that.

So I want to come back to that, because I am very much thinking about this in the context of workforce and what we need to do about workforce. You laid out at the beginning of your testimony that the American economy is really strong. We have seen millions and millions of Americans go back to work, fastest economic growth since 1984, unemployment rate is very low, and the economy is in good shape, notwithstanding the fact that we have got real challenges around rising prices for American families.

In Minnesota, the biggest economic challenge that I hear people talk about is the workforce challenge, that there just are not enough people to do the work that we have. It is interesting. The U.S. Chamber noted that women are participating in the labor force at the lowest rate since the 1970s, and this is having significant impacts on our ability.

I cannot vouch for the U.S. Chamber's numbers but it reflects what I have heard, which is that there is a very big discrepancy between the number of men that have come back to the workforce and the number of women that have come back. So why is this happening? It is complicated, of course. There are a lot of early retirements. But there is a real issue with childcare and women being able to—women and men, but women in particular—being able to come back to the workforce.

And so, Chair Powell, can you help me understand this? If we were to invest, as a country, if we were to invest in making childcare more affordable, more accessible, what impact would that have on the overall economic conditions of this country, I mean, this workforce challenge that we have? And I want to try to understand the interplay between that and inflation and how this all comes together.

Mr. POWELL. You know, it would, of course, depend on the design of the program and how well executed it was, and that kind of thing. But there is research. So labor economists, including one of our Reserve Bank presidents, have written and done research on this and looked at other countries, try to control for other factors, but look to see whether childcare that can be afforded or is free contributes to labor force participation among women, and they have come back with positive results on that. And, you know, that does make sense. It is intuitive, I think, but that is what the research tends to show.

Senator SMITH. Right. And so public investment—if we decided, which I think we should, but if we were to decide to make a public investment in making childcare more affordable, that would not contribute to inflation, would it?

Mr. POWELL. You know, to the extent it got people back in the workforce and got them working over time it would help relieve the labor shortage and things like that, so it would be positive.

Senator SMITH. That is the way it seems to me too, that if one of the contributors—if you have more people working you are going to be addressing the workforce challenges. Of course, I think it is a good thing that wages are going up, and I think that is part of what is happening in the economy is the relative power of employers versus workers has shifted so that workers have more power and they are shifting jobs if they can get better salaries, get better wages in other places, and that might be contributing to rising wages. But it is generally, I think, a good thing.

So assuming the Fed does what it is planning on doing and raising interest rates, what impact does that have on the workforce shortage, if any? What does that interplay look like?

Mr. POWELL. Well, again, our tools do not really go very much to supply. They go to demand. So right now we have substantial excess demand, as I mentioned, and I think the first 15 pages of our report are actually a really good summary of the labor market inflation and supply chain bottlenecks. I would do that commercial. But you have more than 1.7 job openings per unemployed person, and that is an overheated labor market. The level of quits is at an all-time high, and the level of job openings.

So it seems to me there is a lot that we could do to gradually bring demand back down to where demand and supply are more in sync, without risking damage of the kind you are talking about.

Senator SMITH. So raising interest rates would cause companies to cut back. They are not going to have as many job openings.

Mr. POWELL. Yes. I mean, it slows economic activity across the economy gradually because buyer borrowing costs, mortgage rates will go up, the rates for car loans, all of those rates that affect consumers' buying decisions, and with a lag it will tend to slow down——

Senator SMITH. Job creation.

Mr. POWELL. In addition, it has effects through wealth effects, because housing prices will not go up as much and equity prices will not go up as much, and so people will spend less. And what we hope to achieve is bringing the economy to a level where demand and supply are in sync.

Senator SMITH. Thank you. Mr. Chair, I am just thinking about what President Biden said at the State of the Union, which is that as we grapple with this problem what we want to do is we want to lower costs, not lower wages. And so I think this is just part of the dynamic that we are all trying to figure out here. Thank you so much for being with us, Chair Powell.

Chairman BROWN. Thank you, Senator Smith.

Senator Daines, of Montana, is recognized.

Senator DAINES. Chairman, thank you. Chairman Powell, good to have you back here.

Everybody is talking about inflation as we are sitting here today. It is raging in my home State of Montana, a 40-year high at 7.5 percent in January. Core inflation rose 6 percent. And we recognize it is both above estimates and both well above the Federal Reserve's 2 percent target.

As we take a look at what is going on in Europe and Russia as it relates to energy prices, energy independence, national security, we are seeing it is all interconnected. As many countries in Europe continue to decommission nuclear power plants and stop investing in traditional energy, they have become now more dependent on adversaries like Russia for energy, and now we are seeing the cost of energy is skyrocketing.

Sadly, I think this is a sneak peek at the path that America is headed down if President Biden, and frankly our colleagues across the aisle, continue to undermine made-in-America energy. In order to help lower energy costs, help our allies be less reliant on Putin and Russia, I believe we must unleash American energy and support truly the all-of-the-above American energy portfolio, which includes oil, natural gas, nuclear, hydro, and coal. I think it is more important now than ever before.

Chairman Powell, the Fed demonstrated unprecedented amount of speed to cut rates in March of 2020, when it first cut rates then by 50 basis points and followed that soon after by cutting rate to zero and launching a new round of quantitative easing (QE). My question is this. Has the Fed looked at what impact $125-per-barrel oil might have on growth and inflation? Because I think we were just here about a year ago having a conversation about inflation. Of course, we have moved away from any conversations about anything transitory now, as we certainly have some inflation here that is far more than transitory. But I think it would be fair to say none of us at that moment would have thought we would be seeing oil at $100 a barrel, or more.

My question is, have you looked at what $125 a barrel looks like, $150 a barrel, even $175 a barrel, what that might mean in terms of growth in inflation?

Mr. POWELL. The answer is yes. We run simulations and we are running those all the time right now. In addition, we have these rules of thumb that show what happens to gas prices, what happens to inflation, what happens to growth. They are crude rules of thumb but they give us a way of thinking about what the effects would be, and they are what you would think. You know, inflation goes up, gas prices go up, and growth goes down a little bit.

Senator DAINES. So as you have done that modeling, what kind of impact are we going to see on inflation in your models if we have got, let us say, $125 or $150 a barrel?

Mr. POWELL. Well, you know, let us say that that is $50 above where oil was during the fourth quarter of last year. I want to say it was in the $75, $80 range, something like that. And the thing that matters more than anything is how long does it persist for. You can have an oil spike, and if it just comes and goes, prices will go up but it will not actually affect ongoing inflation. That is really the key thing.

But, you know, I want to say $10 of oil—and I hope I do not get this wrong—is like two-tenths, something like that, of inflation.

Senator DAINES. Yes. How about on economic growth? What is your sense?

Mr. POWELL. It is more like one-tenth. These are rules of thumb.

Senator DAINES. Yes. And I think these numbers I quoted here are not outlandish. I mean, you have seen how quickly this is moving, how volatile the situation is. I am glad you are modeling it, but we are very, very concerned, certainly, as you are, where this might go.

I want to talk about the balance sheet of the Fed. The Federal Reserve's balance sheet is nearing $9 trillion, which is more than double where it was before the pandemic. Could you describe how unwinding the balance sheet as a tool to fight inflation compares to raising interest rates? For example, would a $500 billion reduction in the size of the balance sheet equate to a 50-basis-point hike in interest rates?

Mr. POWELL. It would be a very crude calculation because we do think that the signaling value of QE is a big part of it, and you do not have that when you are having the balance sheet run up. I do not have that one in my head. You are right, though. That is the sign that it would be tightening policy.

We really think of getting the balance sheet running in the background and shrinking in a predictable way, and we think about the interest rates as the active tool.

Senator DAINES. Last question. Do you think we could be on the cusp of a wage-price spiral, and what factors are you using to make the determination?

Mr. POWELL. Obviously, that is something we really do not want. The big thing we do not want is to have inflation become entrenched and self-perpetuating. And it is a question of inflation psychology really, and it having what we call having unanchored inflation expectations. And that is why we are moving ahead with our program to raise interest rates and get inflation under control. That is a serious concern and one that we monitor careful. And again, it will depend on—wage increases have been very high, particularly at the low end, and it will depend on whether those are persistent or not.

Senator DAINES. Thank you, Mr. Chairman.

Chairman BROWN. Thank you, Senator Daines.

Senator Van Hollen, of Maryland, is recognized.

Senator VAN HOLLEN. Thank you, Mr. Chairman. Welcome, Mr. Chairman. I was listening to your testimony, and you pointed out that you have got a lot of job openings, a lot of vacancies. And you pointed out that there were some commonsense measures we could take to address those, including more affordable childcare, so more people could ensure that their kids are in a safe and secure and affordable place while they are at work, and in response to Senator Menendez, allowing people to come out of the shadows in our economy with some immigration reform. And I think those are both commonsense measures, as you said, that we should take.

You are in a tough position given all of the variables we are seeing. We are seeing higher economic growth. In fact, you have testified previously that because of the American Rescue Plan we have seen much more robust economic and job growth than had been estimated before then. You have got a war in Ukraine, which is putting upward pressure on oil and gas prices, and that in effect, that could also have an impact in slowing down the economy. I was interested in Senator Toomey's line of questioning. I mean, you have got to navigate that.

Another variable here, of course, is the possibility of another variant of the coronavirus coming back and wreaking havoc. Is that not another major unknown that you have got to factor into your decisionmaking?

Mr. POWELL. Yes. Yes, it is.

Senator VAN HOLLEN. And as you think of that, along the commonsense lines, does it not make sense that we be fully prepared so that if there is another variant and outbreak that we are able to quickly address it, quickly reduce the economic fallout that we witnessed around the original outbreak? Does that not also make common sense?

Mr. POWELL. It sounds like it. I am not sure where I am going here. It sounds like a fiscal proposal.

Senator VAN HOLLEN. Well, it is like the other ones are kind of common sense. I am not asking you to make a judgment totally within, you know, monetary policy or the Fed's domain in that sense. But from an economic perspective—and you have an important role to play there—it seems to me that the more prepared we are to fight a new variant, the better off we will be, from an economic perspective. Right?

Mr. POWELL. Yes.

Senator VAN HOLLEN. I just point that out because we just received a request from the President for a supplemental assistance package to stockpile more antivirals, so people could be treated more quickly, to stockpile tests so that we could quickly determine where we experience an outbreak, and to stockpile more vaccines, and also to work globally to prevent a new variant from developing. Again, just from an economic perspective, those preparations would make common sense, would they not?

Mr. POWELL. They would. And, you know, variant to variant, the economy has gotten better at dealing with this, the American people have. So I think anything that allows us to continue living our economic lives is a plus.

Senator VAN HOLLEN. I appreciate that. I think that we just need to take some practical steps, as you said.

Can you just talk a little bit about the assessment that you made regarding the households being in strong financial shape? You mentioned that, and I think it is worth just elaborating on that a little bit, because we have wage income but we also have the income people received as a result of the American Rescue Plan, right, $1,400 per person, and other emergency assistance we provided. And that has put households, overall, in strong financial shape. I think those are the words you used. Is that right?

Mr. POWELL. Yes. Just as you say, the level of savings, even among those that the lower end of the income spectrum is much higher than it was just continuing the prior trend. In the surveys that we undertake, people feel better about their financial situation than they have in a long time.

Senator VAN HOLLEN. Right, and again, we have had this back and forth about real wage growth, and I think if you look at people at the lower end of the economic spectrum you have seen real wage growth, as you indicated. But if you look even overall at all households, in terms of their personal income last year, after-tax personal income compared this year, overall that has improved, right?

Mr. POWELL. Yes, in nominal terms.

Senator VAN HOLLEN. No. I am asking in real terms, actually.

Mr. POWELL. You know, it depends on whether you are looking at 1 year or 2 year and which measure you are looking at. But if you are talking about a particular piece of data I do not have it at hand, but I know that for many real wages rose in 2020, and in the aggregate declined marginally in 2021.

Senator VAN HOLLEN. Yes. But I am talking about all the income available to a household, in real terms. I am happy to follow up.

Mr. POWELL. That would be great.

Senator VAN HOLLEN. Thank you.

Chairman BROWN. I think, Senator Van Hollen, you were in part referring to the child tax credit and assistance that low-income people had.

Senator VAN HOLLEN. Child tax credit, $1,400 per individual. All those helped in terms of personal household savings in real time, in real terms.

Chairman BROWN. What matters is the quality of life.

Senator Kennedy is recognized, from Louisiana.

Senator KENNEDY. Thank you, Mr. Chairman. Mr. Chairman, the President has requested that the Congress appropriate additional money to fight COVID. Senator Van Hollen just referred to it. Do we have that money?

Mr. POWELL. I feel like I am getting into fiscal policy here. I really want to leave this to——

Senator KENNEDY. Yes, sir. But do we have that money?

Mr. POWELL. Do we have that money? Well, in the sense of——

Senator KENNEDY. Do we even have 5 percent of that money?

Mr. POWELL. I do not know what you mean by "have the money."

Senator KENNEDY. Will we have to borrow the money?

Mr. POWELL. Yes, I think we are running a deficit, so I think a lot of spending is on the basis of borrowing.

Senator KENNEDY. OK. Let me ask you about the sanctions on Russia's central bank. The West has sanctioned its bank, and you say it is—or some say that it has basically prevented Russia from using those foreign reserves, because they are foreign reserves. They are not in Russia. They are in other banks in other countries. Has China joined in that sanction?

Mr. POWELL. No, I do not believe so.

Senator KENNEDY. So if China wants to it could support the ruble, could it not?

Mr. POWELL. In theory, yes.

Senator KENNEDY. OK. Now does that sanction on the foreign reserves of Russia by the West, does that stop dollars and euros from coming into Russia?

Mr. POWELL. I think other sanctions do. They are not getting any hard currency. I think a lot of payment of dollars into Russia is coming to a grinding halt.

By the way, I should say we are really not responsible for sanctions, as you obviously know.

Senator KENNEDY. I know that. You are not responsible for climate change either, but that does not stop the Federal Reserve, or for elementary and secondary education, but that has not stopped the Federal Reserve from having an opinion, not you but some of your colleagues.

Now the West has said, the President has said we are going to throw Russia out of the international community and we are going to throw Russia out of the international marketplace, and obviously we all agree with that. And he sanctioned everything. But he has not sanctioned Russia's energy. Europe is going to continue to buy Russian oil and gas, despite the fact that Europe has 1,000 trillion cubic feet of natural gas that it refuses to produce. And America, right now, we are continuing to buy Russian oil.

So how are we going to throw Russia out of the international community and global markets if we do not attack their oil?

Mr. POWELL. That really is a question for the elected Government, for the Administration, and particularly the Treasury Department.

Senator KENNEDY. I know, but I am asking your opinion, because you are a smart man.

Mr. POWELL. I appreciate that very much, but my opinion is that it is not something I would have an opinion on, as Fed Chair. We do not do energy policy. We do not do sanctions. We are technical support. We are not the policymakers. It would be like the Secretary of the Treasury coming in and talking about monetary policy.

Senator KENNEDY. OK. Let me take you back to the spring of 2020. Governments shut down the private sector in virtually every country. Markets are panicking. Everybody is looking at you to calm things down. You did. You did. And one of the things you did, aside from the currency swap plan that you established—well played—you said we, meaning the Federal Reserve, are going to provide capital to American businesses. OK? And you did. And you kept us going, and I thank you for that.

Suppose, though, the Federal Reserve had said, at that time, we are going to keep American businesses going and we are going to supply the capital, except we are going to use this opportunity to bankrupt the oil and gas community, the oil and gas sector. Where would we be today if we had done that?

Mr. POWELL. You would be very unhappy with me, and appropriately so.

Senator KENNEDY. Why is that? Because some of your possible new colleagues think we should have done that. Ms. Raskin has talked about that, said we should have taken the opportunity, at that point, to bankrupt oil and gas.

Mr. POWELL. I do not want to——

Senator KENNEDY. I know.

Mr. POWELL.——get into the——

Senator KENNEDY. I know. I just thought I would slip that in. I am not asking you to comment on Ms. Raskin, our reserve trust, or the other things that we need to get to the bottom of. I am asking you to tell me what would have happened if we had used that opportunity to bankrupt the fossil fuel industry, as Ms. Raskin suggested we should?

Mr. POWELL. Well——

Senator KENNEDY. Strike the Raskin part. That makes you nervous. I can tell.

Mr. POWELL. You know, we are a creature of law. You passed the CARES Act. It did not say anything about picking and choosing, and we were not going to do that, and we did not do it.

Senator KENNEDY. Do you think picking and choosing is a bad idea?

Mr. POWELL. I think, you know, we actually have a document I have right here from 2009. It is sort of our document where we negotiated with the Treasury Department who does what, and it talks about the fact that we do not get into allocating credit. We try to affect broad credit conditions. We do not allocate credit to particular industries. And that is a document that we think is sort of one we live with.

Senator KENNEDY. Thank you, Mr. Chairman.

Chairman BROWN. Thank you, Senator Kennedy.

Senator Ossoff, from Georgia, is recognized.

Senator OSSOFF. Thank you, Mr. Chairman. Chair Powell, thank you for joining us again. Thank you, as always, for your service.

Please explain to the Committee and to the American public what steps the Fed is taking and expects to take in response to the increase in price level for consumer goods, gas, and groceries.

Mr. POWELL. Well, as I discussed yesterday, we are embarking on a series of rate increases over the course of this year, and no doubt beyond, and we are also going to be shrinking the size of our balance sheet as the year goes on. So what those things will do is they will raise interest rates across the economy and that has the effect of moving demand back down to where it is more aligned with supply and getting inflation back down to a level that we would recognize, that is consistent with our mandate of around 2 percent.

Senator OSSOFF. And what considerations will inform you and your team as you determine the rate at which you reduce the value of assets on the Fed's balance sheet?

Mr. POWELL. The way we think about that is we want to set—and this is the meeting we are going to have in 2 weeks—we are going to set a pace at which runoff will happen, subject to caps, so that if there is more runoff—basically, when securities mature we can just not reinvest that money and we can just give that money back to the Treasury Department, and that is what we do, up to a certain limit. We like to have caps so that it is not volatile and it does not affect markets.

So essentially it is what we think we can do in ways that will not interfere with market function and that will get us back expeditiously to a balance sheet which is the one we need, which is just the right size to implement monetary policy, consisting of demand for our liabilities plus a buffer. Ample reserves, we call it.

Senator OSSOFF. We are seeing right now the impact of geopolitical events on markets' likely impact on the price level potentially on unemployment and therefore on your mandate. I would like to request that you consider providing this Committee with a Members-only briefing that would cover two subjects.

The first is how the Federal Intelligence Coordination Office that connects you and your team with the intelligence community, performs in ensuring that you and your team are up to date on the latest intelligence that could provide a forewarning of geopolitical events that impact your mandate and financial markets in the U.S. economy.

And the second is a briefing on the resilience of your internal systems and the mechanisms of action for monetary policy in the event of a cyberattack or a continuity of Government event such that you can continue to do your job even if the Nation's information technology or financial infrastructure is degraded or under attack.

Will you and your team provide to this Committee in a Members-only or closed or classified setting, as necessary, that information?

Mr. POWELL. Sure. The second one, for sure. I am not sure there is a lot to really—well, we can talk about this offline in terms of what there is to talk about, but we are delighted to come up if you want to have us up for a briefing. If the Chair and the Ranking Member want us to come up, we will come up at any time.

Senator OSSOFF. OK. We will coordinate that with Committee leadership and look forward to making that happen.

How do you consider the labor participation rate when you think about what it means to fulfill your mandate with respect to employment?

Mr. POWELL. It is one of the key measures. There are many, many measures that go into determining what is maximum employment. Ultimately, maximum employment is, one way to think about it, the highest level that is consistent with price stability. And so at a certain point, labor supply has not increased at the pace that everyone expected it to increase at. It is still meaningfully below where it ought to be, even based on its trend. It is very hard to understand why that is. There is a great discussion of it in the Monetary Policy Report.

So essentially what we do is we make a forecast, and that forecast now amounts to relatively modest additional improvement in labor force participation. We factor that into how tight the labor market will be. That will give us a view on unemployment, on wages, and things like that. And so that is how we do it. And the reason it is fairly modest improvements is that is what we have seen so far.

Senator OSSOFF. The Chairman is a stickler for time so I am just going to get this last question in here. Will you please provide to my office the research that the Fed has conducted or third-party academic research that you consider credible with respect to the distributional effects of monetary policy over the last 15 years, the quantitative easing programs, the massive increase in the money supply from central banks across the world, how that has impacted the Gini coefficient and other distributional and inequality measures?

Mr. POWELL. I would be delighted to.

Senator OSSOFF. Thank you. Thank you, Mr. Chairman.

Chairman BROWN. Thank you, Senator Ossoff.

Senator Hagerty, from Tennessee, is recognized.

Senator HAGERTY. Thank you, Mr. Chairman and Ranking Member. I appreciate you getting us together today again. And, Mr. Chairman, I appreciate you being here.

I would like to talk a little bit about what Senator Kennedy was just talking about, what Senator Daines touched on with respect to energy. As a candidate, President Biden promised that he would do away with the oil and gas industry here in America if he were elected, and I think that has been one of the campaign promises that he has been very effective at essentially undertaking a war on that industry, whether it is killing the Keystone XL pipeline permits, whether it is terminating oil and gas leases on Federal lands, pressuring asset managers and banks to stop lending, to divest from energy projects.

It has been a very extensive effort to decrease American energy production. That has had the effect of costing American jobs. It has had an effect of raising domestic prices for energy. But it has also had an effect, as Senator Kennedy mentioned, of making it extremely difficult for the Biden administration to respond to Russia's invasion of Ukraine, because it makes it very difficult for President Biden to hit Vladimir Putin where it will really hurt. It makes it difficult to sanction Putin's energy. The reason for that is sanctioning Putin's energy, again according to the argument that Senator Kennedy eloquently laid out, is going to raise prices for energy around the world, given our dependence on Russian energy and others.

We are in a tough spot, and energy touches so many aspects of our economy. I hope I could get your insight in terms of how you look at the trendline for energy prices, Mr. Chairman, and how that is going to affect monetary policy moving forward.

Mr. POWELL. Well, I mean, in the near term clearly energy prices have gone up and they may go up further. It depends upon events to come. And that is going to push up inflation. Certainly in the near term gas prices will go up. As I mentioned earlier, there will be effects on inflation, on growth, on gas prices, and it all comes down to how persistent will they be. You know, if it is a spike that comes back down, or it looks like it is coming back down, then that is one thing. If it is persistent, then that is a different thing. And we would be much more concerned at the latter, and also, frankly, the effect that just another oil price shock would have on general inflation expectations. We will be watching that very carefully.

Senator HAGERTY. I wake up every morning and check futures prices. I am sure you have got many variables that you watch, and I would look forward to your insight in terms of what you think are the most informative variables as you think about monetary policy in the long run.

I would like to turn to the Fed's accountability right now, and again, this touches on inflation. I think that the Federal Reserve is in a very difficult situation right now, Mr. Chairman. You and I have talked about it. A lot of the stimulus spending, fiscal policy have made your job very difficult. We have had that discussion in hearings before. But with January's CPI at 7.5 percent, it really does feel like the Fed is behind the curve right now and may have to take more aggressive actions than otherwise would have been the case.

And I saw that the most recent *Monetary Policy Report* omitted the section on monetary policy rules. And I know those rules are not intended to be prescriptive there but they are to consult, for contextualization. But it was concerning that they were missing. And again, I think those rules would have indicated that we are behind the curve, that there is more to be done on inflation. And it brought me to think about how does the Fed think about accountability? How do you think about holding the Fed accountable for managing inflation?

Mr. POWELL. So we will bring them back for the July thing. Honestly, we sometimes do and sometimes do not. And, by the way, I would recommend, the Cleveland Fed has really all of the rules. There are a range of rules, but clearly the median rule is, you know, so . . .

But in terms of accountability, you know, it starts with transparency from us, and, you know, explaining to you. You are the mechanism through which we get our transparency. We deliver transparency and we get our democratic accountability by explaining ourselves in understandable terms to you and by you holding us accountable. And in our system of Government it runs through this Committee and the Senate, and the House as well.

And so we try to be very transparent. We try to be engaged with Members and explain and hear your concerns and all those kinds of things. Ultimately, it is the bottom line. We both came from the business world. It is what you deliver, and we need to deliver price stability—we are not currently doing that—and we are very highly motivated to get the economy back to a place where we have inflation under control, but also a strong economy and a strong labor market.

Senator HAGERTY. I could not agree with you more. Accountable and, frankly, credibility are so important for the Fed. I know the Ranking Member has talked a good deal about mission creep at the Fed, politicization at the Fed. I will just underscore and associate myself with his remarks there as well, in terms of my concern there, because it does get very deep to the credibility of an organization that we are all so dependent upon to be credible, to be transparent as you described, and to accurately telegraph where we are headed as a Nation and as the most significant economy in the world.

Thank you, Mr. Chairman.

Chairman BROWN. Thank you, Senator Hagerty.

Senator Cortez Masto, who waited patiently in person for her turn, is now recognized from her office.

Senator CORTEZ MASTO. Thank you. Thank you, Mr. Chair, and thank you, Chairman Powell, for being here.

I listened until I had to run over to the Natural Resources Committee—but one question I have for you, and I appreciate your candor always, clearly the focus is price stability, but we are having challenges right now. Based on what you know now, with our economy and the facts before us, do you believe that the Fed should have engaged its monetary tools a year ago instead of waiting until March to engage some of those, to address price instability?

Mr. POWELL. I am sorry. I did not hear the last part of your question. I apologize. It was not——

Senator CORTEZ MASTO. No, that is OK. Do you believe—and let me know if you cannot hear me OK—do you believe that the Federal Reserve, based on what you know now, with the facts and the economy, should have engaged their tools to address the price instability a year ago instead of waiting until March?

Mr. POWELL. I do not know about a year ago. I would say this. You know, we thought that the supply side problems would get better faster than this. They have not. Had we known that they were not going to get better then certainly we would have engaged our tools earlier.

Senator CORTEZ MASTO. OK. Let me talk about the Monetary Policy Report. You make a strong case that the USA economy is the best in the world. Do you believe that our economy has weathered the COVID–19 pandemic more effectively than other nations?

Mr. POWELL. I think there is quite a lot of evidence to that effect, yes.

Senator CORTEZ MASTO. Thank you. And I appreciate your consistent focus on leisure and hospitality industry. As you well know, I talk to you about it all the time, coming from the State of Nevada. Can you speak to the Fed's report that wages in the leisure and hospitality sector are improving quickly?

Mr. POWELL. Yes. I mean, that is an area where we have seen very large wage increases, but, you know, it is still one of those very much an in-person business, and I guess it is still difficult to hire people, which is, of course, why the wages have gone up so much.

Senator CORTEZ MASTO. And why do you think that nearly a third of all jobs added to the economy in January were in leisure and hospitality? I am curious.

Mr. POWELL. I just think that is where the job openings are. You know, that is still the part of the economy—I do not need to tell you—that is the part of the economy that still has to fully recover.

Senator CORTEZ MASTO. Thank you. That is what I wanted to hear, because it is true. I see the unemployment numbers in my State, the highest unemployment rates are in southern Nevada where the hospitality and leisure industry is, and we cannot forget that. And that has been the challenge to our workforce in general, and getting people back to work.

I know Senator Smith asked you this question, but let me just reiterate this, going back to a full workforce. There are interesting facts in the monetary report, particularly in the first 73 pages, but there was nothing in the labor force discussion regarding about the importance of women in that labor force. I am assuming you utilize that factor as well. Does the Federal Reserve analyze women's workforce participation?

Mr. POWELL. Oh yes, very much so. There is a story there. I do not know why it did not go into this, if it is not in there. But, I mean, early on women bore the brunt of participation and of job loss, but over the course of the pandemic much of that effect has really reversed, so you are back now to—we were looking at this earlier this week—if you look at the change in participation or unemployment for men and women, it is very hard to see any difference at this point. But that was not the case a year ago, where women bore the brunt then, but not so much now.

Senator CORTEZ MASTO. And do you think impact of lack of childcare has impacted and been a barrier for women to get back in the workforce?

Mr. POWELL. Yes, and there is a table, I think on page 11 in our book that shows who is not participating. Actually, childcare is not so much. Caregiving overall is a big number. But according to this data anyway, childcare as such is no longer big from a macroeconomics standpoint. I know for the people affected it is big.

Senator CORTEZ MASTO. Thank you. And then one of the other areas that we have been talking about, the rising prices that we see and that I hear about at home, I see at home, one area though is around housing and the focus on how we can reduce costs and prices for affordable housing. And so there is work being done that we have done already, but also that we can still address to increasing the housing supply here, incentivize that at the Federal level.

I am just curious. Would you believe that investments in increasing the supply of housing affecting the inflation that we see in the housing market and inflation overall?

Mr. POWELL. If you are getting into fiscal policy to support affordable housing, that is certainly a worthy and important issue but really not our doing.

Senator CORTEZ MASTO. No, just the fact of supply and demand. If what we are seeing is more of a demand for housing and lack of supply, and if we are to incentivize that increase in the supply of housing that should lower costs, that should help address the inflationary——

Mr. POWELL. I think if you create more supply then you will get prices going down, pretty much in anything.

Senator CORTEZ MASTO. Yes, I appreciate that. Chairman Powell, thank you again.

Chairman BROWN. Thanks, Senator Cortez Masto.

Senator Tillis, from North Carolina, is recognized.

Senator TILLIS. Thank you, Mr. Chairman. Chair Powell, thank you for being here and thank you again for your long track record of being very accessible. When we call you answer the phone, and I appreciate that.

I wanted to talk briefly. Senator Smith talked about childcare and in response—I am paraphrasing—you said it depends on how it would be designed and executed. And then you just made a point in response to Senator Cortez Masto that not so much childcare but dependent care. It could be a parent that you are taking care of. It could be a disabled spouse. It could be any number of other instances.

And I think if we stop talking—well, let me back up, and say, do you think that a universal childcare, flood the zone, even for nonworking persons would be helpful in fixing the problems that you have right? Like everybody gets it, whether you are going to work or not.

Mr. POWELL. That is really not for me to say. That is a real legislative question.

Senator TILLIS. But it is sort of a flooding. I know you cannot answer it because there are pending proposals there, but it just seems to me that if we wanted to really stop talking past each other and start talking about policies that makes sense, that free people up who have marketable skills or who could go to school and get marketable skills, and focus on that segment of the population, that is probably an area where we could get some consensus, that would have a positive economic impact on productivity, potentially even revenue, more people working, more businesses prospering. So that is something I think our Members should look at versus some of the positions we have had here where we have not made any progress, and I think we should.

We filed a bill this week, Senator Tester and I have been working on, and I appreciate the Chair's support for what we are trying to do for the LIBOR transition. Could you speak to the importance—with all the other things going on here some Members may not be dialed into it and not necessarily think it is important. Could you speak to the importance of getting the LIBOR transition legislation passed, which I understand that you all are in support of in its final form?

Mr. POWELL. Yes. So it is very important because there will be some remaining contracts that are not covered by fallback language, and this really is to plug that hole. It is very important from a financial stability standpoint. It is good that we are down to this last so-called hard tail, but this is important legislation.

Senator TILLIS. Thank you for that. I hope that we can get it moved forward.

In any research or reports that you are getting, economic research or reports, how well, and I know it would vary sector to sector, but how well are small businesses doing right now?

Mr. POWELL. You know, startups or small businesses—I guess every startup is a small business—are really high and have been right through the pandemic. We did not see that coming but that has been the case.

You know, I remember seeing that small businesses at the beginning of the pandemic did not have the resources. We were very, very worried about losing a lot of small businesses, through no fault of their own, at the beginning of the pandemic, but that really did not happen.

Senator TILLIS. Was that likely Paycheck Protection, other stimulus measures probably had an impact on that? Some of them just figured out how to weather the storm?

Mr. POWELL. Yes, and I just think the overall economy, for what Congress did and what we did, you know, I think the economy recovered so much quicker than we were afraid.

Senator TILLIS. In North Carolina we are approaching about $90 billion in agriculture product every year. I talked with a farmers' group yesterday that are struggling with access to labor and increased costs. Do you think the way that they fix their problems or businesses that are struggling with the cost of inputs up, inflated, they can pass some of that to the consumer, not all of it? But is it your general sense or intuition that most of these small businesses are flush with cash and margins?

Mr. POWELL. I mean, it depends on the sector, I would think, some of them. The agricultural businesses are paying big fertilizer costs, and we hear a lot of stress in that sector.

Senator TILLIS. So I know you are not an economist, but intuitively do you think, just looking certain sectors in the eye and saying cut costs is even a viable option, given where we are with the inflationary pressures?

Mr. POWELL. I think businesses are always minimizing their costs. But if we are talking about the President's speech——

Senator TILLIS. I think there is a general consensus that any business that is not trying to cut costs so they can increase their margins or pay their employees more, then they are not competent business people. Could you at least agree with that?

Mr. POWELL. I absolutely agree with that.

Senator TILLIS. So to suggest that they are not cutting costs right now would suggest that maybe they are not competent. I do not expect you to respond to that but that is what I infer from the statements from the President.

Thank you, Mr. Chairman.

Chairman BROWN. Thank you, Senator Tillis.

Senator Warnock, from Georgia, is recognized.

Senator WARNOCK. Thank you so much, Mr. Chairman, and thank you, Chair Powell, for being here again today.

Every day I hear from Georgians who are feeling the pinch of rising costs in their wallets. Wages grew last year, but this growth has not kept pace with rising costs for housing, for gas, for groceries. Georgia families are swimming upstream, and while supply chain disruptions contribute to the problem, they are not the sole cause. Three global shipping alliances control delivery for the majority of imported goods. Two companies account for 70 percent of

America's diaper market, and just four meat processors control more than 80 percent of the beef industry.

This type of market concentrations lowers competition and gives giant companies more power to use inflation as an excuse to raise prices, leaving Georgia families to foot the bill while their executives and investors get richer and richer. This is why I pushed for a Federal investigation into apparent price gouging by international cargo carriers, carriers that have seen as much as 2,000 percent increase in profit in the midst of a pandemic.

Chairman Powell, yes or no. Do you agree that more market competition is generally good for the economy and for consumers?

Mr. POWELL. I do.

Senator WARNOCK. And that too much market concentration poses a risk, a risk that consumers can feel and are feeling, in fact, right now with rising prices?

Mr. POWELL. I think that concentration is an appropriate subject for the competition authorities.

Senator WARNOCK. But does market concentration pose a risk for rising prices? Yes or no.

Mr. POWELL. Yes. I would not want to be heard to say, though, that that is the main source of inflation, but it certainly is——

Senator WARNOCK. So do you believe there is a role for the Federal Reserve to promote market competition to help ease inflationary pressures?

Mr. POWELL. So outside of the banking industry we do not have a role in competition policy as such. We do administer statutes that bear on that, but ultimately, though, our jobs are inflation and maximum employment, as you know very well. The industries that you are talking about and the kind of issues that you are talking about really are for the antitrust people rather than for monetary policy.

Senator WARNOCK. But dealing with inflation is part of your——

Mr. POWELL. Yes.

Senator WARNOCK.——your mission and your mandate, and if market concentration is contributing to that, does that not involve the Fed's mandate?

Mr. POWELL. But we do not have the tools to deal with market concentration. You know, we are supposed to achieve maximum employment and price stability. That is the classic role for the antitrust people at the FTC and Justice Department and at the State level, rather than for us.

Senator WARNOCK. Will you commit to a study on how market concentration has affected the price of consumer goods during the pandemic and share that study with Congress and antitrust enforcers?

Mr. POWELL. So I think I can do better than that, which is, we actually have a good amount of research from inside the Fed and from outside the Fed that bears on these questions, and we will be happy to share that with you right away.

Senator WARNOCK. All right. Thank you so much. I look forward to working with you to address the root causes of rising costs for Georgia families, for American families, in general. All right?

Mr. Chairman, I have got 50 seconds left but I am going to defy Baptist preacher gravity and that is the end of my questions.

Chairman BROWN. Thank you, Senator Warnock.

Follow that advice, Senator Rounds, from South Dakota.

Senator ROUNDS. Thank you, Mr. Chairman. Mr. Chairman, first of all, thanks for what you do. I appreciate it, and I appreciate your openness with us.

I want to go back and kind of simplify a couple of things if we can a little bit, just in terms of the issues surrounding inflation. I think it is fair to say that one way you can divide it is into two parts, one being the supply side pressure on inflation, and the second side being the demand side.

I think the last time that you were here before this Committee we talked about the fact that the Fed really had the ability to impact the demand side. Is it fair to say that that is where most of your capabilities are today?

Mr. POWELL. Yes. Very much so.

Senator ROUNDS. In order to do that—and I know that the question is, is trying to get inflation down to 2 percent or so—what would you say is, of the total amount, right now we are running 7.5 percent, how much of that can the Fed actually impact with their policies? What part of it is demand-driven versus supply driven in the analysis that you do?

Mr. POWELL. That is a really interesting question, and I do not have a precise answer for that. I think it is clearly both, and that is why I would say to get back to 2 percent inflation we really do think we are going to need help from the supply side in the form of just the bottlenecks and shortages and all that being alleviated as well.

Senator ROUNDS. When you make a determination as to the tools that are available to you, and in particular primarily raising the basic interest rates that are available to you right now, how much of that inflation do you think you can impact using the tools that you have got right now? What I am pointing at is, it seems to me that if we decided that the tools that you have are available to fix all of inflation, we put you in a really tough spot, and we may very well go way overboard on the amount of interest increases and not be able to actually impact a significant part of the inflation itself. A fair concern to have?

Mr. POWELL. Yes, and I think we need to bear in mind, and we will keep in mind, that some of this is because of very strong demand meeting a limited supply, an inflexible supply. Cars are a great example. Ordinarily, if there is demand for cars, a lot of demand, the car makers go, "This is great. We will make more cars and we will raise the prices too." You cannot make more cars without more semiconductors, right? You can only make the amount that you are making. And so what happens is it all goes into higher prices.

So we can lower car demand by raising rates, and we will do that, but ultimately we need more semiconductors so that there can be more cars as well, to really get back to 2 percent inflation.

Senator ROUNDS. Fuel costs have gone up, in some cases, 40 percent in the last year, though. You cannot really impact——

Mr. POWELL. No, we cannot.

Senator ROUNDS.——that portion of it.

Mr. POWELL. No. Well, I mean, we can impact demand, but really these prices are set at the global level, by and large, and so really, we cannot affect it.

Senator ROUNDS. The section of the Monetary Policy Report on our debt and deficit explains that due to the extreme Federal spending the Federal deficit surged by 15 percent of nominal GDP in 2020, and Federal deficits are expected to increase by roughly $5.4 trillion by the end of fiscal year 2030. Federal debt by the public jumped to above 100 percent of nominal GDP in 2020, the highest debt-to-GDP ratio since 1947, and it remained there in 2021.

If the Fed is slated to raise interest rates potentially more than five times this year, the interest on the Federal debt will also rise, further ballooning the national debt. What effect does a ballooning national debt have on the economy, and how does the Fed factor that into its forecasting of that portion of the challenge?

Mr. POWELL. Our unsustainable fiscal path does not really have a bearing on that. You know, we work in business cycle limit. That is sort of the timeframe we can think about things, given our tools and what they do. You know, we are on an unsustainable fiscal path, meaning that the debt is growing faster than the economy. That, by definition, is unsustainable in the long run. We need to get back to that, but the time to do that is when the economy is strong, and that is really all I can say. That is all I can say about it.

Senator ROUNDS. OK. One last question. This week the Fed announced a proposed plan to improve the process for financial institutions looking to get access to Fed master account. It seems unique that it would happen right now with everything else going on with regard to nominations here before us. Would it suggest that the Fed believes that the process has been abused in the past or is this just an arbitrary determination being made right now? What is the reason for this investigation?

Mr. POWELL. Well, it is just that we have had burgeoning—it is really digital finance and all the new kinds of charters and all of those things, and there is a need for us to—and we put a lot of time and thought into the extent to which we should provide master accounts to fintechs that may or may not have deposit insurance. You know, it is highly precedential, and we wanted to get it right.

We have been thinking about this for a long time, as one of your colleagues knows well. And this is a proposal. It is out for comment, I think, for 45 days, and it gives sort of three tiers, and we want to get public feedback on that. But I think it has taken us awhile to get to this. There is no magic to the timing, but it is just a reflection of what is going on in the world of digital finance.

Senator ROUNDS. Very good. Mr. Chairman, thank you.

Chairman BROWN. Thank you, Senator Rounds.

Senator Reed, from Rhode Island, is recognized.

Senator REED. Thank you, Mr. Chairman. Thank you, Chairman Powell, for your great work.

Senator Cortez Masto raised the issue of housing, and for families all across the country, particularly in my home State of Rhode Island, this is one of the biggest forms of inflation they are seeing. It has been reported that housing prices, year over year, have gone up 20 percent. Rent nationwide in January rose 14 percent in 2021, the last numbers we have.

I had school principals in yesterday, and they were commenting about some of their families having to leave a working-class community in Rhode Island because they cannot afford the housing—and this is in not luxury housing—to go into poorer neighborhoods just to have some shelter.

And I am afraid there is another factor that is going to really exacerbate what is going on, and that is private equity and Wall Street have decided that they are going to buy up as many homes as they can, and that disrupts what we assume is the typical housing market for both rental, i.e., relatively small owners have rental properties in the State, they have a relationship with their tenants. When it comes to homes, you buy a starter house, and then you move up, and you sell it, and these are families, through a realtor, selling it. Now we have got the big machines that are just buying up houses, throwing people out, and I think that is something that is going to essentially sneak up on us like the derivatives crisis and a lot of other crises in the past.

But what you are going to do, and within your authority, is address the demand side of the economy. This is really a supply side issue. I would assume you would agree.

Mr. POWELL. Yes.

Senator REED. But if we do not address it, we will see continued inflation in housing and continued problems, and that is contributing significantly to the overall inflation rate. Is that accurate?

Mr. POWELL. I think in housing it is land, labor, lots, materials, and it is very strong demand. All of those are scarce, and it is a very strong demand hitting, and so that is why you are seeing prices go up.

Senator REED. Will the interest rate increases, do you think, affect demand for housing?

Mr. POWELL. I expect they will, yes. It is a very interest-sensitive sector.

Senator REED. Yes. And in terms of rental housing that typically, because of the supply shortage, will be passed on to the renter, I would assume.

Mr. POWELL. Yes.

Senator REED. So, you know, we have a problem that affects families all through this country, and one of the consequences of what you are going to do is raise prices, at least slightly. But we have to deal with it, and that is on the supply side. I know that is not your bailiwick.

But, you know, we are talking in general terms about inflation, and if we do not get a handle on housing inflation the American people will still be, and particularly the lower-income working families will be hammered by this. So I hope we can come together on the fiscal side and do something that is appropriate.

We are witnessing extraordinarily disturbing conflict in Ukraine, and it is going to have repercussions in many dimensions. I think it will also have repercussions in the financial world, and I hope the Fed is tuning in and watching closely.

I think the Chinese are particularly interested in the fact that we have been able to assemble a global coalition to basically shut down the Russian economy, and they will start thinking about how they can avoid that fate if they get into a similar circumstance. They have, I think, a rudimentary SWIFT system, which they might try promoting much more, which could interfere with the system that we have invested.

Then cryptocurrency will be exploited. I think also, too, that the whole issue of the dollar as the medium of exchange to the world, which is the key that is really making our sanctions effective, the Chinese again will look very closely, as they have in the past.

So first, I presume you are going to look at this issue very closely, and second, inform us of what developments, and then third, you might just indicate what you think might happen.

Mr. POWELL. Yes to all of the above. I mean, you are asking some longer-term questions, the reserve currency and the Chinese messaging system that is like SWIFT. In the near term, those are not going to be big questions in this one particular instance, but in the longer run I think those things are very much on the table.

Senator REED. And so we will see, at some point, and again, not in months but probably years, movement, particularly by the Chinese, to insulate themselves from the same thing that is happening in Russia now.

Mr. POWELL. And that is going on now. I mean, that has been going on for some time. But it may change the trajectory.

Senator REED. It is an accelerant.

Mr. POWELL. Yes.

Senator REED. Thank you, Mr. Chairman. Thank you very much.

Chairman BROWN. Thank you, Senator Reed.

Senator Sinema, from Arizona, is recognized from her office.

Senator SINEMA. Thank you, Mr. Chairman, and thank you to Chair Powell for being here today to speak about these important issues.

As you know, over the last 2 years we have seen the significant impact of the COVID–19 pandemic on our global supply chains for both industrial and consumer goods. While our economy is beginning to recover, we are already seeing the impact that Vladimir Putin's illegal, violent attack on Ukraine will have on the price of oil and gas here at home.

I am supportive of the strong, swift actions the Administration has taken to sanction major Russian banks and Russian oligarchs in response to the unprovoked war that Russia is waging against Ukraine. I believe we can go farther and do more.

I am also mindful of the impacts that these sanctions are having and will continue to have on everyday people, not just in Russia and Ukraine but also here at home. These sanctions can affect the availability and pricing of essential goods for hard-working Arizona families by further disrupting global supply chains.

Let me be clear. Arizonans stand with Ukraine in their fight to determine their destiny. We are supportive of the actions taken thus far to hold Russia accountable. And Arizonans are also concerned with the price of groceries and everyday goods, and we are paying too much at the pump right now.

So in a global economy, sanctions often involve economic tradeoffs. How is the Fed assessing the impact of Russia's illegal war and the United States and allied sanctions against Russian banks on the pricing of oil and gas for consumers?

Mr. POWELL. Thank you. Oil and gas prices have been going up really for a couple of months now, in anticipation of this, and then they have gone up substantially in the last couple of weeks, and, you know, the really important question for the economy is how long that will persist. The immediate impact will be to raise gas prices and other fuel prices and prices for companies using energy. So inflation will move up. People will feel that certainly at the gas pump. And also, you know, crudely, you would expect at least a little bit of lower economic activity due to higher energy prices.

But again, it is both the magnitude of that, and that will really depend on events that have not happened yet. How big will those increases be, and second, how long do they persist? If they are brief and go away, or if just the price of oil stays at a certain level for a while, then the effect on inflation will be temporary.

So we will be watching all of those things. And, you know, we run simulations and that sort of thing. That is one of the things we like to do, and so to make ourselves think about the possibilities. Of course, everything is so uncertain. It is just very hard to say where this is going. And I think in that environment we need to move carefully with our policy, and that is what we are planning to do.

Senator SINEMA. How much do you expect these changes in oil and gas prices to affect the availability and pricing of other goods that rely on oil and gas in the United States, and do you expect there to be a noticeable impact in the consumer price index?

Mr. POWELL. I think certainly you will see gas prices move up, as they do when oil prices go up, and that will show up in the consumer price index. It will show up in the headline index. It does not show up in the core index but it shows up in the headline index. And the headline index, of course, is what people are actually paying at any given time. So it will show up.

Senator SINEMA. Does Russia's war in Ukraine change the Fed's thinking about interest rates?

Mr. POWELL. Too early to say. I do think before the invasion we were planning to raise rates this year. We were planning to make a series of interest rate increases. That is still the case. I think right now, in this very sensitive time where uncertainty is highly elevated and we really do not know which way things are going to go, I think we need to move carefully.

But we certainly think it is appropriate for us to go ahead with our plan, and also our plan to shrink the balance sheet, but just knowing that we do not want to add to uncertainty. Our goal is always to promote financial stability and macroeconomic stability, and that means that at times like this we move carefully, and that is what we will be doing.

Senator SINEMA. Last question. The sanctions on Russia's central bank are also affecting American companies who have holdings in Russia. So what assessments are the Fed making about the impact of American companies' dealings in Russia, and how could the Fed respond to stabilize the markets if that does become an issue?

Mr. POWELL. Particularly the large financial institutions, but really American businesses, generally really do not have major exposures to Russia, and they have gotten less over the years. So particularly with the big banks, there are some meaningful exposures but they are not large in the context of the overall institution.

So, in a sense, the first-order effects on the U.S. economy from trade or from investment or from operations on the ground are not going to be large. There can be other effects, though, second-order effects, and unintended consequences and all that, so we are watching the situation very carefully.

Senator SINEMA. Thank you. Mr. Chairman, I see my time has expired. Thank you.

Chairman BROWN. Thank you, Senator Sinema.

Thank you to Chairman Powell for joining us today. For Senators who wish to submit questions for the hearing record, those questions are due 1 week from today, Thursday, March 10th, close of business. Chair Powell, please submit your responses to questions within the 45 days from the day you receive them.

Thank you again for your testimony. The hearing is adjourned.

[Whereupon, at 12:23 p.m., the hearing was adjourned.]

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

PREPARED STATEMENT OF CHAIRMAN SHERROD BROWN

I want to start by acknowledging that as we sit here this morning, Ukrainians are showing such courage and resolve, fighting Russian invaders in their homeland.

Ukrainian families fleeing indiscriminate bombings are taking refuge in subway tunnels—something that Europe hasn't seen since the siege of London seven decades ago. I want to express my support for the brave men and women in Ukraine fighting for democracy, and I know all my colleagues on this Committee, of both parties, join me in that.

This is a Russian attack on democracy. And it's only the latest, terrible escalation of what has become one of the main goals of the Russian Federation—to attack and undermine democratic norms at home and abroad.

The world is looking to us right now. We are the leader of the free world, and its oldest democracy. It's vital that we live by our values—both abroad and at home.

That means a commitment to the rule of law. A commitment to democratic participation. And a commitment to independent institutions that allow our society to function, like the Federal Reserve.

We created the Fed as an independent agency, outside of any one party's control, to be staffed with economic experts—not political cronies. It's one of many American institutions that sets our country apart from autocratic regimes.

It is vital that we reaffirm our commitment to the Fed's role, showing the world what a functioning democracy looks like. Let's show up and do our jobs—like Chair Powell comes here, perhaps 14 times a year, it must seem to him.

That's the best way to achieve a strong, growing economy, that lifts up the whole country.

This time last year, our country and our economy were in a place of deep uncertainty. More than 4 million people were out of a job. Frontline workers were just beginning to get vaccinated.

We were in the midst of a public health crisis and economic crisis that needed us all—policymakers, business owners, workers—to come together and tackle the challenge of this pandemic economy.

And that's what we did. We passed the American Rescue Plan. We got shots into arms, money into people's pockets, workers back on the job, and kids back in school.

Against the odds, 2021 became a year of unprecedented economic growth for our country—in job creation, wage gains, GDP. For the first time in two decades, the American economy grew faster than China's.

We averaged over half a million new jobs per month last year, and saw the fastest drop ever in the unemployment rate. Wages rose for workers—especially low-wage workers. American entrepreneurs broke started a record-setting 5 million new businesses.

This all translated into American families' household balance sheets, which were healthier in 2021 than before the pandemic. That's because of the actions Democrats took in this Congress—expanding the Child Tax Credit, and rental and housing assistance.

The American Rescue Plan helped get most Americans vaccinated and make a booster shot available to everyone. Today, over 65 percent of the population is fully vaccinated—including more than 75 percent of all adults. Case counts and hospitalizations are dropping. And now we are one step closer to normal life beyond the pandemic. Americans no longer have to live in fear.

We have come a long way, but the fight isn't over—and it has taken an incredible toll on Americans. After 2 years of stress, of massive disruptions in our lives and in our economy, people are exhausted.

And they are fearful that inflation will make it harder and harder for them to keep up with the cost of living.

The pandemic economy has caused inflation. Families feel it at the gas station. They feel it when they're making rent payments. And they feel it when they check out at the grocery store.

And we must acknowledge that Russia's invasion of Ukraine will affect the global economy.

We learned over the past 2 years how fragile our global supply chains are.

Some of us have said for years that we should make more things in America and rely less on China. Elites in Washington that dismissed those concerns for decades are now finally starting to wake up.

We help prevent long-term inflation by bringing supply chains home—and in the process, we create jobs and rebuild our industrial base.

The House and Senate have both passed bills investing in domestic manufacturing and research and development. We need to put a comprehensive bill on the

President's desk and bring manufacturing, research, and development back to America.

And we're building the capacity to move goods faster and more cheaply with the Bipartisan Infrastructure Bill.

While most Americans report mixed feelings about the economy over the past year—they may have gotten a raise and a tax cut and have more in savings, while also being concerned about rising costs—there's one group that did better than ever last year: corporations.

Corporations made record profits in 2021 and gave their executives and shareholders a bigger slice of the profits than ever.

And they've reacted with barely controlled glee at the opportunity to raise prices higher than ever.

We can never forget: raising prices is a choice. There is no law saying that if the cost of an input goes up or if transportation costs increase, companies have to raise prices.

They have options. They could cut costs elsewhere by making executive bonuses or stock buybacks a little tiny bit smaller.

But of course they don't—there's not enough competition in the economy. From the meatpacking industry to the oil cartels, corporations don't face the fair, capitalist competition we need to keep prices low and wages high.

And when you combine current inflation with all the expenses that have been rising for decades—prescription drugs, childcare, housing—it's little wonder that even many middle-class families don't feel stable.

It will take all of us to lower these long-term costs, fight inflation, and create an economy where hard work pays off for everyone—no matter who you are, where you live, or what kind of work you do.

All workers should be able to find a good-paying job that allows them to raise a family, keep up with the cost of living, and join the middle class.

The Federal Reserve has a responsibility to tackle inflation, and to ensure we have a resilient labor market, a safe and stable banking system, an efficient and reliable payments system, and empowered local communities where consumers, workers, small banks, and small businesses thrive.

And it's more important now than ever that we have a full Federal Reserve Board making those decisions.

In a time of deep economic uncertainty—where democracies across the world are threatened by authoritarian strongmen—we must ensure the Fed is operating at full capacity. We have an opportunity to confirm one of the world's leading experts on cybersecurity in the financial system—she chaired the G7 Cyber Expert Group. Let's get her on the job.

At this critical time, we must fill these positions so that the entire team of decisionmakers can come together, assess the data, and address the problems Americans face.

Today, we have Chair Pro Tempore of the Federal Reserve, Jay Powell, here to deliver a biannual update on the Fed's actions to steer our economic recovery.

Chair Powell, thank you, and I look forward to your testimony.

PREPARED STATEMENT OF SENATOR PATRICK J. TOOMEY

Chairman Powell, welcome. I hope we process your nomination soon. In the meantime, I'm confident that you and your fellow FOMC members are fully able to do your job to fight inflation.

Obviously, there's much work to be done. January's inflation reached a 40-year high of 7.5 percent. Inflation like that harms average Americans.

Even though wages are growing, inflation is growing faster and causing workers to fall further and further behind. Savers are earning virtually zero on their savings while inflation erodes their value. Our current zero-interest-rate monetary policy would be appropriate for a period of economic crisis—not a period of multidecade high inflation.

Of course, the profligate fiscal policy of the last year has also contributed to inflation. Democrat supporters of blowout, deficit spending bills like the American Rescue Plan and Build Back Better have looked to blame others for the consequences of their misguided policies.

First, they blamed global supply chains. Now they have shifted their blame to "greedy corporations."

Actually, inflation is pretty easy to understand. It results from more money chasing fewer goods.

The Administration's policies, such as over-regulation and a war on American energy, have limited the production of goods. And reckless spending has resulted in more money chasing those goods.

Meanwhile, the Fed's accommodative monetary policy has further stimulated demand. For many years now, I've warned that it could be extremely difficult to put the inflation genie back in the bottle. Well, the genie is out, and the Fed is behind the curve. We must act with urgency to get inflation under control.

I'm also deeply troubled by what appears to be a growing urge to use financial regulators, including the Fed, to tackle complex political questions outside the financial system.

Questions like: how (and how quickly) to transition to a lower carbon economy? How to address racially charged social issues? Or even how can we improve primary and secondary education?

No doubt, these are important issues. But, they're wholly unrelated to the Fed's limited statutory mandates and expertise. And yet the Fed has been weighing in on every one of these issues.

Some intend to use the Fed's recently developed climate scenario analysis to steer capital away from carbon intensive industries. All 12 Reserve Banks have hosted a "Racism in the Economy" series where invited speakers advocated for racial reparations and defunding the police, among other far-left proposals. And the Minneapolis Fed is actively lobbying to change Minnesota's constitution—on the issue of K–12 education policy.

Does anyone truly think these activities are within the Fed's statutory mandates? Of course not.

They are challenging and complex issues that require difficult tradeoffs. And in a democratic society, those tradeoffs must be made by elected representatives who are directly accountable to the American people.

Consider some tradeoffs associated with addressing global warming. If we limit domestic oil and gas production, Americans will pay more at the pump. How much more is appropriate?

If we suddenly limit domestic production without feasible energy alternatives, our Nation and the world will become more reliant on fossil fuels coming from autocratic nations. When does that reliance present an unacceptable national and global security threat?

There are an unlimited number of equally challenging tradeoffs for each of these politically charged topics—none of which should be decided by unelected and unaccountable central bankers. And yet, some of the Reserve Banks are diving right in.

When I've requested additional information about their activities, the Reserve Banks stonewall me. When I ask the Board to address the issue, everyone passes the buck. The Fed Board says it's up to the Reserve Banks, even though the Board oversees the Reserve Banks. And except through the Fed Board, the Reserve Banks are unaccountable to Congress.

From this state of affairs, I can only conclude that the Fed requires reform. Any Fed reform should preserve and strengthen monetary policy independence; develop mechanisms to enforce the existing statutory limits on the Federal Reserve's actions; and strengthen Congressional oversight by increasing transparency.

Here are three reform ideas. First, unlike the Fed Board, the Reserve Banks are not subject to FOIA. That should change.

Second, we should consider subjecting the Reserve Bank heads to presidential appointment and Senate confirmation.

Third, we should examine the historical 12 Reserve Bank structure. For example, it may make sense to consolidate them into 5 banks, making each a permanent voter on the FOMC. Or perhaps we should eliminate the Reserve Banks entirely by having the Board assume their responsibilities.

To be clear, I do not present these ideas lightly. The Fed was given independence to insulate monetary policy from politics. Congress has a responsibility to ensure that the Fed does not become a political actor.

PREPARED STATEMENT OF JEROME H. POWELL

CHAIR PRO TEMPORE, BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM

MARCH 3, 2022

Chairman Brown, Ranking Member Toomey, and other Members of the Committee, I am pleased to present the Federal Reserve's semiannual *Monetary Policy Report.*

Before I begin, let me briefly address Russia's attack on Ukraine. The conflict is causing tremendous hardship for the Ukrainian people. The implications for the U.S. economy are highly uncertain, and we will be monitoring the situation closely.

At the Federal Reserve, we are strongly committed to achieving the monetary policy goals that Congress has given us: maximum employment and price stability. We pursue these goals based solely on data and objective analysis, and we are committed to doing so in a clear and transparent manner so that the American people and their representatives in Congress understand our policy actions and can hold us accountable. I will review the current economic situation before turning to monetary policy.

Current Economic Situation and Outlook

Economic activity expanded at a robust 5½ percent pace last year, reflecting progress on vaccinations and the reopening of the economy, fiscal and monetary policy support, and the healthy financial positions of households and businesses. The rapid spread of the Omicron variant led to some slowing in economic activity early this year, but with cases having declined sharply since mid-January, the slowdown seems to have been brief.

The labor market is extremely tight. Payroll employment rose by 6.7 million in 2021, and job gains were robust in January. The unemployment rate declined substantially over the past year and stood at 4.0 percent in January, reaching the median of Federal Open Market Committee (FOMC) participants' estimates of its longer-run normal level. The improvements in labor market conditions have been widespread, including for workers at the lower end of the wage distribution as well as for African Americans and Hispanics. Labor demand is very strong, and while labor force participation has ticked up, labor supply remains subdued. As a result, employers are having difficulties filling job openings, an unprecedented number of workers are quitting to take new jobs, and wages are rising at their fastest pace in many years.

Inflation increased sharply last year and is now running well above our longer-run objective of 2 percent. Demand is strong, and bottlenecks and supply constraints are limiting how quickly production can respond. These supply disruptions have been larger and longer lasting than anticipated, exacerbated by waves of the virus, and price increases are now spreading to a broader range of goods and services.

Monetary Policy

We understand that high inflation imposes significant hardship, especially on those least able to meet the higher costs of essentials like food, housing, and transportation. We know that the best thing we can do to support a strong labor market is to promote a long expansion, and that is only possible in an environment of price stability.

The Committee will continue to monitor incoming economic data and will adjust the stance of monetary policy as appropriate to manage risks that could impede the attainment of its goals. The Committee's assessments will take into account a wide range of information, including labor market conditions, inflation pressures and inflation expectations, and financial and international developments. We continue to expect inflation to decline over the course of the year as supply constraints ease and demand moderates because of the waning effects of fiscal support and the removal of monetary policy accommodation. But we are attentive to the risks of potential further upward pressure on inflation expectations and inflation itself from a number of factors. We will use our policy tools as appropriate to prevent higher inflation from becoming entrenched while promoting a sustainable expansion and a strong labor market.

Our monetary policy has been adapting to the evolving economic environment, and it will continue to do so. We have phased out our net asset purchases. With inflation well above 2 percent and a strong labor market, we expect it will be appropriate to raise the target range for the Federal funds rate at our meeting later this month.

The process of removing policy accommodation in current circumstances will involve both increases in the target range of the federal funds rate and reduction in the size of the Federal Reserve's balance sheet. As the FOMC noted in January, the federal funds rate is our primary means of adjusting the stance of monetary policy. Reducing our balance sheet will commence after the process of raising interest rates has begun, and will proceed in a predictable manner primarily through adjustments to reinvestments.

The near-term effects on the U.S. economy of the invasion of Ukraine, the ongoing war, the sanctions, and of events to come, remain highly uncertain. Making appropriate monetary policy in this environment requires a recognition that the economy evolves in unexpected ways. We will need to be nimble in responding to incoming data and the evolving outlook.

Maintaining the trust and confidence of the public is essential to our work. Last month, the Federal Reserve finalized a comprehensive set of new ethics rules to substantially strengthen the investment restrictions for senior Federal Reserve officials. These new rules will guard against even the appearance of any conflict of interest. They are tough and best in class in Government, here and around the world.

We understand that our actions affect communities, families, and businesses across the country. Everything we do is in service to our public mission. We at the Federal Reserve will do everything we can to achieve our maximum-employment and price-stability goals.

Thank you. I am happy to take your questions.

RESPONSES TO WRITTEN QUESTIONS OF CHAIRMAN BROWN FROM JEROME H. POWELL

Q.1. The record levels of leveraged lending prepandemic continue to rise and a recent report issued by the Federal Reserve, Office of the Comptroller of the Currency, and Federal Deposit Insurance Corporation noted that "credit risk associated with leveraged lending is high." U.S. banks have both direct and indirect exposure to leveraged loans. How is the Fed assessing increased credit risk associated with leveraged loans? What are you doing to mitigate financial stability risk as interest rates rise?

A.1. The Federal Reserve regularly monitors and assesses risks to supervised institutions and to the broader system from leveraged lending. We use our supervisory tools to closely monitor risks, assess unknowns, and work to develop a comprehensive understanding of the market. Our analysis includes efforts to quantify bank holdings of leveraged loans and assess the direct and indirect exposures of large banking institutions. In terms of nonbanks, we strive to understand their funding structures and the amount of leveraged loans they hold. We also work to understand the characteristics and credit quality of the loans themselves and the market dynamics in this space. Currently, this work does not suggest that the leveraged loan market poses a greater financial stability risk than in other time periods.

The Federal Reserve also assesses the broader financial stability consequences of credit and interest rate risk stemming from increased leveraged lending activity. This assessment is done as part of our ongoing, comprehensive program of financial stability monitoring. Our *Financial Stability Report* provides in further detail how our framework for assessing financial stability looks for vulnerabilities in the financial system that could amplify the effects of shocks or adverse unexpected economic developments. We track vulnerabilities in four key areas: asset valuations, debt owed by businesses and households, funding risk, and leverage among financial institutions. In the near team and longer run, the strength of the economy will influence how the system responds to stress. Our objective is to ensure that the overall financial system is able to handle shocks without amplifying them and causing damage to the broader economy.

Thus, a crucial part of our assessment is based on the fact that the banking system remains highly resilient and bank capital ratios have remained at multidecade highs. However, we are not complacent and are continuously monitoring for new or emerging risks, including those that may arise from leveraged lending.

Q.2. In light of President Biden's Executive order on Ensuring Responsible Development of Digital Assets, the Chairman of the Federal Reserve is "encouraged to evaluate the extent to which a United States CBDC, based on the potential design options, could enhance or impede the ability of monetary policy to function effectively as a critical macroeconomic stabilization tool." What factors will the Fed consider in evaluating the effectiveness of a CBDC to further monetary policy?

A.2. As part of the Federal Reserve's exploration of both the potential benefits and potential risks and policy considerations of a U.S.

central bank digital currency (CBDC), the Federal Reserve has been researching the possible impact of a CBDC on monetary policy implementation. We are also actively engaged on these topics with our international counterparts at other central banks and multilateral financial institutions to understand and learn from their experiences.

Under the current monetary policy regime, the Federal Reserve exercises control over the level of the federal funds rate and other short-term interest rates primarily through the setting of the Federal Reserve's administered rates. In this framework, the introduction of a CBDC could affect monetary policy implementation and interest rate control by altering the supply of reserves in the banking system.

In the case of non-interest-bearing CBDCs, the level and volatility of the public's demand for a CBDC might be comparable to other factors that currently affect the quantity of reserves in the banking system, such as changes in physical currency or overnight repurchase agreements. A CBDC that pushed reserves lower may have little effect on the federal funds rate if the initial supply of reserves were large enough to provide an adequate buffer. Over the long term, the Federal Reserve might have to increase the size of its balance sheet to accommodate CBDC growth, similar to the balance-sheet impact of issuing increasing amounts of physical currency.

The interactions between CBDCs and monetary policy implementation could be more pronounced and more complicated if a CBDC was interest-bearing at levels that are comparable to rates of return on other safe assets. In this case, the level and volatility of the public's demand for a CBDC could be quite substantial. The potential for significant foreign demand for a CBDC in this scenario would further complicate monetary policy implementation.

As noted in the discussion paper released by the Board of Governors earlier this year, various design elements of a CBDC could have important effects on the way the public comes to use CBDCs and, by implication, the way in which CBDCs interact with monetary policy implementation. For example, limitations on the amounts of a CBDC that may be held or on the amount of a CBDC that could be accumulated in a given time period could have significant effects on the aggregate amount of a CBDC outstanding and variations in the CBDC over time in response to economic and financial developments. The Federal Reserve will continue to research these and other important topics related to CBDCs.

RESPONSES TO WRITTEN QUESTIONS OF SENATOR TOOMEY FROM JEROME H. POWELL

Q.1. *Fed Master Accounts.* As you know, there has been an increasing interest among financial institutions, members of Congress, academics, and other stakeholders regarding the Federal Reserve's process for reviewing requests for accounts and services at Federal Reserve Banks (Fed master accounts). In May 2021, the Federal Reserve issued a request for comment (RFC) on proposed guidelines for evaluating such requests.[1] The RFC emphasizes that a "more transparent and consistent approach to such requests should be adopted by the Reserve Banks."[2] Earlier this month, the Federal Reserve issued a supplement to the RFC, which proposes a three-tiered review framework for evaluating Fed master account applications.

Notwithstanding, there is a lack of transparency regarding the Federal Reserve's process for evaluating Fed master account applications, including with respect to (1) institutions that have previously applied and (2) the status of those applications. As you know, a Fed master account is a type of public benefit.[3] Other agencies that confer similar types of benefits are transparent about applications for those benefits and the status of past and current applications. For example, the public can see on the FDIC's website the institutions that have applied for federal deposit insurance and the status of their applications.[4] Similarly, the public can see on the FCC's website what entities have applied for Federal communications licenses and the status of those applications.[5] However, the public cannot go to the Federal Reserve's website to see the same information regarding Fed master accounts.

In order to provide the public with the same degree of transparency for this public benefit, please provide the following information:

A list of every institution that has applied for a Fed master account in the past 20 years, identifying the type of each institution (e.g., traditional bank, trust company, fintech company); and the status of each application (e.g., approved, denied, withdrawn, under review).

A.1. Through the Federal Reserve Act, Congress gave the Federal Reserve Banks (Reserve Banks) the authority to open master accounts to eligible institutions. Consistent with the longstanding practice of the Federal Reserve, information regarding which institutions have requested or maintain master accounts is considered confidential business information of the requestors and the Reserve Banks. As such, the Federal Reserve does not disclose that information publicly.

Institutions offering novel types of financial products or with novel charters have emerged in recent years, and many of these institutions have requested access to accounts and payment services offered by Reserve Banks. As you note, the Board has proposed guidelines that are intended to ensure the Reserve Banks use a transparent and consistent set of factors when reviewing such requests for accounts and payment services.

Q.2. *Congressional Investigation Records Request.* As you know, I made a request last year for Federal Reserve Board records pertaining to a congressional investigation of the Federal Reserve and Fed Regional Banks exceeding their mandates by engaging in

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[1] *https://www.federalreserve.gov/newsevents/pressreleases/bcreg20210505a.htm.*
[2] Id.
[3] See, e.g., *https://www.brookings.edu/research/the-fed-wants-to-veto-state-banking-authorities-but-is-that-legal/* ("The master account allows a financial institution to participate in the payment system. Without it, a financial institution can't really function as a financial institution.").
[4] *https://www.fdic.gov/regulations/applications/actions.html.*
[5] *https://wireless2.fcc.gov/UlsApp/ApplicationSearch/searchAppl.jsp.*

politically charged activities. My staff has communicated with Federal Reserve Board staff about this request, but to date I have not received any requested records that were not already publicly available.

Will you commit to producing all of the requested records? Please answer "yes" or "no."

If so, when should I expect to receive the requested records?

If not, please fully explain your answer.

A.2. Board staff have worked together with your staff to respond to your records request. The Board provided your staff with approximately 2,000 pages of documents on April 19. This is in addition to the over 7,000 pages provided previously.

Q.3. *Federal Reserve's Balance Sheet.* In January 2022, the FOMC "decided to continue to reduce the monthly pace of its net asset purchases, bringing them to an end in early March."[6] As of March 2, 2022, the Fed's portfolio included nearly $5.75 trillion of Treasury securities, and the Fed was reinvesting its maturing Treasuries at auction.[7] In January 2021, the FOMC also released its "Principles for Reducing the Size of the Federal Reserve's Balance Sheet." In those plans, the FOMC announced that it will be "significantly reducing" the size of the balance sheet, primarily by letting its securities mature without reinvestment.[8]

Has the Fed determined how its balance sheet runoff will affect Treasury auctions and cash flows?

If so, what are those effects?

A.3. Response not received in time for publication.

Q.4. *Financial Stability Oversight Council (FSOC).* On September 25, 2020, the Financial Stability Oversight Council (FSOC) released a statement on its activities-based review of the secondary mortgage market. FSOC's statement affirmed the overall quantity and quality of the regulatory capital required by the Federal Housing Finance Agency's (FHFA) June 30, 2020, proposed rule to establish a new regulatory capital framework for Fannie Mae and Freddie Mac (each, a GSE). Specifically, FSOC stated that "risk-based capital requirements and leverage-ratio requirements that are materially less than those contemplated by the proposed rule would likely not adequately mitigate the potential stability risk posed by the Enterprises." FSOC committed to "continue to monitor . . . FHFA's implementation of the regulatory framework to ensure potential risks to financial stability are adequately addressed." On December 17, 2020, FHFA finalized the regulatory capital framework for the GSEs.

On September 27, 2021, FHFA proposed amendments that would have materially reduced the GSEs' regulatory capital requirements. In your January 19, 2022, answers to my questions submitted following the January 11, 2022, hearing, you stated that "Board staff continues to assess FHFA's proposed amendments to its capital rule." You also noted that "FHFA did not seek the Board's input on the proposed amendment to its capital rule."

[6] *https://www.federalreserve.gov/newsevents/pressreleases/monetary20220126a.htm.*
[7] *https://www.federalreserve.gov/releases/h41/20220303/.*
[8] *https://www.federalreserve.gov/newsevents/pressreleases/monetary20220126c.htm.*

On February 25, 2022, FHFA finalized those amendments largely as proposed. The amendments reduced the tier 1 capital that must be maintained by a GSE to avoid restrictions on capital distributions from 4 percent to roughly 3 percent of the GSE's adjusted total assets. The amendments also reduced Freddie Mac's combined capital requirements from 4 percent to 3.6 percent as of September 30, 2021, with further reductions likely to follow due to continued house price appreciation, among other things. Fannie Mae's combined capital requirements also could further decline as it reverts to prepandemic levels of credit risk transfer coverage (about twice the year-end 2021 levels according to its annual reports on Form 10–K).

As a member of FSOC, what steps do you think FSOC should take with respect to FHFA's now-finalized amendments to fulfill FSOC's commitment to "continue to monitor . . . FHFA's implementation of the regulatory framework to ensure potential risks to financial stability are adequately addressed"?

Do you think that these new risk-based capital requirements and leverage-ratio requirements are "materially less than those contemplated by the proposed rule" and are adequate to "mitigate the potential stability risk posed by the Enterprises".

Does the absence of any comment to-date by FSOC on FHFA's now-finalized amendments pose a risk to the credibility of the Council or risk politicizing the Council?

A.4. The Treasury Secretary is the Chair of the Financial Stability Oversight Council (FSOC) and is better placed to speak to the steps the FSOC is taking to evaluate amendments to the Federal Housing Finance Agency's (FHFA) capital rule for GSEs. I believe it is important that the GSEs be subject to risk-based capital requirements and leverage-ratio requirements that are adequate to mitigate the potential stability risk posed by the GSEs. An enhanced supervisory tool set for such private entities should include various prudential measures, such as resolution planning, stress testing, and liquidity management. I welcome the efforts of the FHFA to incorporate those measures into their supervisory framework. While these efforts and actions by the GSEs to distribute credit risk are positive developments, it is important to ensure that the overall levels of capital required at the GSEs are appropriate for the risks they are taking.

Board staff actively monitors potential developments in the financial markets, including rules from other regulatory bodies that may have an impact on financial stability. As such, staff continues to assess any such impact by the amendments to the FHFA's capital rule.

Q.5. *Basel III Capital Requirements.* In 2017, the Basel Committee on Banking Supervision (BCBS) made changes to the Basel III capital framework that would require financial institutions to alter how they capitalize for credit risk, market risk, and operational risk exposures. It is expected that the United States will soon propose to implement these reforms, which could significantly raise capital requirements for certain banks. There are concerns that such increases could reduce the availability of credit for employers.

How do you plan to administer Basel III in a way that does not reduce credit for any business?

What is your expected timeline for implementation of Basel III?

A.5. Strong capital levels are a source of strength for U.S. banking organizations, making them more resilient to economic shocks and allowing them to extend credit to businesses and individuals through the economic cycle, including in a severe recession. The U.S. banking sector entered the COVID-19 pandemic in a position of strength, having spent the previous decade implementing and adapting to more robust regulatory capital requirements. The experience of the COVID-19 pandemic has demonstrated that U.S. banking organizations are well-capitalized, including through multiple rounds of supervisory stress tests.

The final Basel III reforms are intended to produce more robust and internationally consistent capital requirements for the largest banking organizations, building on the improvements to the capital framework following the 2007–2009 financial crisis. Staffs of the U.S. Federal banking agencies continue to work actively on a proposal to implement the revised framework for the largest firms, as appropriate for the U.S. banking system. In doing so, we are considering factors such as credit availability and the resilience of firms.

We plan to make any proposed changes through the standard notice-and-comment rulemaking process. At this time, I do not have a specific timeline for the proposal.

RESPONSES TO WRITTEN QUESTIONS OF SENATOR REED FROM JEROME H. POWELL

Q.1. Last year's temporarily boosted Child Tax Credit provided families with up to $250–$300 per child per month from July through December. These payments drastically cut child poverty and helped Americans cover the cost of essential daily expenses.

Did the boosted Child Tax Credit support economic growth in 2021?

Did monthly Child Tax Credit payments help parents cover higher grocery, gas, and other living costs last year?

A.1. As you note, last year Congress expanded the Child Tax Credit (CTC) on a temporary basis. The legislation increased CTC benefit amounts, made the credit fully refundable, and shifted issuance of the credit to a monthly basis from July through December 2021, whereas previously it was issued annually. These temporary changes in the CTC likely impacted the U.S. economy since, generally, an increase in household incomes likely temporarily boosted aggregate demand and thereby supported economic growth.[1] How-

[1] For analysis of how fiscal policy, including tax credits, can boost aggregate demand, see, for example, Cashin, Lenney, Lutz, and Peterman, "Fiscal Policy and Aggregate Demand in the U.S. Before, During and Following the Great Recession", Finance and Economics Discussion Series 2017–061. Washington, DC: Board of Governors of the Federal Reserve System. For additional discussion of the likely economic effects of the CTC, see Parolin, Z., Ananat, E., Collyer, S.M., Curran, M., and Wimer, C., "The Initial Effects of the Expanded Child Tax Credit on Material Hardship", National Bureau of Economic Research Working Paper 29285, 2021; Parolin, Z., Collyer, S., Curran, M., and Wimer, C., "Monthly Poverty Rates Among Children After the Expansion of the Child Tax Credit", Poverty & Social Policy Brief 5(4), Columbia University, 2021; and Perez-Lopez, Daniel, "Economic Hardship Declined in Households With Children as Child

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ever, when considering such policies, fiscal policy makers also consider a wide range of tradeoffs, including the expansion of annual Federal deficits or the need to raise taxes to fund these policies. It is the responsibility of the Congress and the Administration to evaluate the effectiveness of the CTC and decide on its appropriate size and structure going forward.

Q.2. As we've seen in recent weeks with the economic response to Russia's unprovoked invasion of Ukraine, our Nation's sanctions tools are so effective because the dollar is ubiquitous in cross-border payments. It is an economic and national security priority to protect the international role of the dollar. Do you believe a U.S. digital currency can help maintain the attractiveness of the dollar, especially as foreign central banks have recently launched their own digital currencies?

A.2. Today, the dollar is widely used around the world because of the size of the U.S. economy, our deep and liquid financial markets, the strength of our institutions, and the commitment of the United States to the rule of law. It is important, however, to consider the implications should many foreign jurisdictions introduce central bank digital currencies (CBDC).

The Federal Reserve is examining the potential benefits and risks of issuing a U.S. CBDC, including implications for the use of the dollar abroad. The dollar is important to global financial markets—it is not only the predominant global reserve currency, but it is also the most widely used currency in international payments. Thus, it is also essential to consider what the future status of global financial markets and transactions would look like with and without a Federal Reserve-issued CBDC.

In March, the Biden administration issued an Executive order to ensure the responsible development of digital assets to protect consumers, financial stability, and national security. The Executive order calls for analysis of the potential implications of a U.S. CBDC and foreign CBDCs on the U.S. national interest and financial centrality. The Federal Reserve will work closely with its interagency colleagues on these important topics, which will complement ongoing CBDC research at the Federal Reserve.

The Federal Reserve is also working closely with international colleagues on CBDC and related topics. For example, in 2020 the Federal Reserve collaborated with six other central banks and the Bank for International Settlements (BIS) to produce a report on foundational principles for CBDCs.[2] The Federal Reserve has continued this work with further analysis of policy options and practical implementation issues, joining other central banks in issuing a series of reports last fall on system design and interoperability,

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Tax Credit Payments Arrived", U.S. Census Bureau, August 11, 2021. For studies of employment changes due to the introduction of the expanded CTC, see, for example, Ananat, E., Glasner, B., Hamilton, C., and Parolin, Z., "Effects of the Expanded Child Tax Credit on Employment Outcomes: Evidence From Real-World Data From April to December 2021", National Bureau of Economic Research Working Paper No. 29823, 2022; Bastian, J., "Investigating the Effects of the 2021 Child Tax Credit Expansion on Poverty and Employment", Working Paper, February 14, 2022; and Corinth, K., Stadnicki, M., Meyer, B.D., and Wu, D., "The Anti-poverty, Targeting, and Labor Supply Effects of the Proposed Child Tax Credit Expansion", Becker Friedman Institute for Economics Working Paper No. 2021–115, University of Chicago, 2021.

[2] Bank for International Settlements, "Central Bank Digital Currencies: Foundational Principles and Core Features" (Basel: BIS, October 2020), *https://www.bis.org/publ/othp33.pdf.*

user needs and adoption, and financial stability implications.[3] Additionally, the Federal Reserve collaborated with the G7 to produce a set of public policy principles for retail CBDCs.[4] We also work with the Financial Stability Board and BIS on ways to improve cross-border payments, which includes studying how CBDCs might be used for cross-border payments.[5]

The Federal Reserve Board also issued a discussion paper in January as a first step in a public discussion between the Federal Reserve and stakeholders about CBDCs.[6] The paper is not intended to advance any specific policy outcome, nor is it intended to signal that the Federal Reserve will make any imminent decisions about the appropriateness of issuing a U.S. CBDC. Moreover, the Federal Reserve does not intend to proceed with issuance of a CBDC without clear support from the executive branch and from Congress, ideally in the form of a specific authorizing law. Irrespective of any conclusion on whether to issue a CBDC, the Federal Reserve will continue to play an active role in developing international standards for CBDCs.

RESPONSES TO WRITTEN QUESTIONS OF SENATOR MENENDEZ FROM JEROME H. POWELL

Q.1. How does the Federal Reserve ascertain how much of rising prices is due to demand exceeding supply on the one hand and a reduction in the value of money on the other?

A.1. Response not received in time for publication.

Q.2. What is the Federal Reserve's current expectation of how much reducing its balance sheet and increasing interest rates will contribute to reducing inflation as opposed to other actions Congress or the executive branch may take to address workforce, competition, supply chains, and related issues?

A.2. Response not received in time for publication.

Q.3. At the hearing, your testimony was that you expect to be tightening credit in order to reduce demand in the economy.

What are the ways that the Federal Reserve can increase velocity at the same time it is reducing the money supply?

A.3. Response not received in time for publication.

Q.4. The latest Monetary Policy Report states that "While all groups have experienced at least a partial recovery in employment rates since April 2020, the shortfall in employment remains especially large for lower-wage workers and for Hispanics, African Americans, and other minority groups."

What effect do you expect raising interest rates to have on unemployment of these groups?

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[3] Bank for International Settlements, "Central Banks and the BIS Explore What a Retail CBDC Might Look Like", press release, September 2021, *https://www.bis.org/press/p210930.htm.*

[4] G7, "Public Policy Principles for Retail Central Bank Digital Currencies" (CBDCs), October 2021, *https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment-data/file/1025235/G7__Public__Policy__Principles__for__Retail__CBDC__FINAL.pdf.*

[5] Financial Stability Board, "Enhancing Cross-border Payments: Stage 3 Roadmap" (Washington, DC: FSB, October 2020), *https://www.fsb.org/2020/10/enhancing-cross-border-payments-stage-3-roadmap/.*

[6] "Money and Payments: The U.S. Dollar in the Age of Digital Transformation", *https://www.federalreserve.gov/publications/money-and-payments-discussion-paper.htm.*

Will the Fed continue to monitor the effects of raising interest rates on low-income and minority workers as it considers future anti-inflation actions?

A.4. Response not received in time for publication.

RESPONSES TO WRITTEN QUESTIONS OF SENATOR WARREN FROM JEROME H. POWELL

Q.1. You have now refused, on three separate occasions, to provide Congress with the full set of requested information on the ethics scandal arising from top Fed officials' trades in stocks, bonds, and other investments and potential insider trading. In my letter to you on January 10, 2022, and two previous letters, I requested the full contents of the March 23, 2020, email reported in the *New York Times*, and complete copies of any other ethics advice or information provided to Fed officials between January 1, 2020, and the present. I was provided with an excerpt of this email by the Board's Congressional Liaison Office on October 21, 2021, and none of the other information I requested. I request again that you share this email in full, as well as complete copies of any other ethics advice or information provided to Fed officials between January 1, 2020, and the present.

A.1. As discussed in my response to your office dated February 14, the Federal Reserve Board's (Board) Office of the Congressional Liaison shared all of the substantive content of the March 23 email with your office on October 21, 2021. On an ongoing basis, the Board's ethics office sends regular reminders of ethics obligations to Federal Reserve policymakers and staff.

Q.2. In my letters, I also requested that Fed staff provide my staff a briefing on the Fed's "broad set of new rules" that were announced on October 21, 2021, regarding the purchase and trading of individual securities and the timeliness of reporting and public disclosure by Fed policymakers and senior staff. These new rules have since been released, yet it is unclear that these rules are strong enough to meet the shortcomings of ethical standards at the Fed. Will you commit to ensuring a briefing is provided by March 24, 2022?

A.2. The Board's Legal Division conducted a briefing for the staff of the Senate Committee on Banking, Housing, and Urban Affairs and the staff of its members on March 23.

Q.3. I asked you to provide information on Vice Chair Clarida's "errors" in his financial disclosures. You did not provide a response, citing the ongoing Inspector General investigation. However, the existence of this investigation does not preclude you from answering these questions, so I ask again: When did Fed officials first learn that Vice Chair Clarida had made "inadvertent errors"[1] in his initial financial disclosure? When did Clarida file his amended disclosure? When was this amended disclosure made publicly available on the Office of Government Ethics website?

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[1] *New York Times*, "A Fed Official's 2020 Trade Drew Outcry. It Went Further Than First Disclosed", Jeanna Smialek, January 6, 2022, *https://www.nytimes.com/2022/01/06/business/economy/richard-clarida-fed-stockfund.html.*

A.3. In light of the Office of Inspector General's investigation, it would not be appropriate for me to comment on the disclosures of any specific individuals, including the former Vice Chair.

ADDITIONAL MATERIAL SUPPLIED FOR THE RECORD

For use at 11:00 a.m. EST
February 25, 2022

MONETARY POLICY REPORT

February 25, 2022

Board of Governors of the Federal Reserve System

Letter of Transmittal

Board of Governors of the
Federal Reserve System

Washington, D.C., February 25, 2022

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, Chairman

Statement on Longer-Run Goals and Monetary Policy Strategy

Adopted effective January 24, 2012; as reaffirmed effective January 25, 2022

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.

Contents

Note: This report reflects information that was publicly available as of noon EST on February 23, 2022 (the one exception is the GDP data published on February 24, 2022). Unless otherwise stated, the time series in the figures extend through, for daily data, February 22, 2022; for monthly data, January 2022; and, for quarterly data, 2021: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.

Summary

U.S. economic activity posted further impressive gains in the second half of last year, but inflation rose to its highest level since the early 1980s. The labor market tightened substantially further amid high demand for workers and constrained supply, with the unemployment rate reaching the median of Federal Open Market Committee (FOMC) participants' estimates of its longer-run normal level and nominal wages rising at their fastest pace in decades. With demand strong, and amid ongoing supply chain bottlenecks and constrained labor supply, inflation increased appreciably last year, running well above the FOMC's longer-run objective of 2 percent and broadening out to a wider range of items. As 2022 began, the rapid spread of the Omicron variant appeared to be causing a slowdown in some sectors of the economy, but with Omicron cases having declined sharply since mid-January, the slowdown is expected to be brief.

Over the second half of last year, the FOMC held its policy rate near zero to support the continued economic recovery. The Committee began phasing out net asset purchases in November and accelerated the pace of the phaseout in December; net asset purchases will end in early March. With inflation well above the FOMC's longer-run objective and a strong labor market, the Committee expects it will soon be appropriate to raise the target range for the federal funds rate.

Recent Economic and Financial Developments

Economic activity and the labor market. In the second half of 2021, gross domestic product (GDP) growth slowed somewhat from its brisk first-half pace but nevertheless rose at a solid annualized rate of 4.6 percent. Average monthly job gains remained robust at 575,000 in the second half. The unemployment rate has plummeted almost 2 percentage points since June and, at 4 percent in January, has reached the median of FOMC participants' estimates of its longer-run normal level. Moreover, unemployment declines have been widespread across demographic groups. That said, labor force participation only crept up last year and remains constrained. The tight labor supply, in conjunction with a continued surge in labor demand, has resulted in strong nominal wage growth, especially for low-wage workers. Supply bottlenecks also continued to significantly limit activity throughout the second half, while the Delta and Omicron waves led to notable, but apparently temporary, slowdowns in activity.

Inflation. The personal consumption expenditures (PCE) price index rose 5.8 percent over the 12 months ending in December, and the index that excludes food and energy items (so-called core inflation) was up 4.9 percent—the highest readings for both measures in roughly 40 years. Upward pressure on inflation from prices of goods experiencing both supply chain bottlenecks and strong demand, such as motor vehicles and furniture, has persisted, and elevated inflation has broadened out to a wider range of items. Services inflation has also stepped up further, reflecting strong wage growth in some service sectors and a significant increase in housing rents. While measures of near-term inflation expectations moved substantially higher over the course of last year, measures of longer-term inflation expectations have moved up only modestly; they remain in the range observed over the decade before the pandemic and thus appear broadly consistent with the FOMC's longer-run inflation objective of 2 percent.

Financial conditions. Yields on nominal Treasury securities across maturities increased notably since mid-2021, with much of the increase having occurred in the past couple of months, as the expected timing for the beginning of the removal of monetary policy accommodation has moved forward significantly. Equity prices decreased slightly, on net, and corporate bond yields rose but remain low, with stable corporate credit quality. Financing conditions for consumer credit continue to be largely accommodative except for borrowers with low credit scores. Mortgage rates for households remain low despite recent increases. Bank lending standards have eased across most loan categories, and bank credit has expanded. All told, financing conditions have been accommodative for businesses and households.

Financial stability. While some financial vulnerabilities remain elevated, the large banks at the core of the financial system continue to be resilient. Measures of valuation pressures on risky assets remain high compared with historical values. Nonfinancial-sector leverage has broadly declined, and credit growth in the household sector has been driven almost exclusively by residential mortgages and auto loans to prime-rated borrowers. Vulnerabilities from financial-sector leverage are within their historical range, with relatively lower leverage at banks partially offset by higher leverage at life insurers and hedge funds. Funding markets remain stable. Domestic banks continue to maintain significant levels of high-quality liquid assets, while assets under management at prime and tax-exempt money market funds have declined further since mid-2021. The Federal Reserve continues to evaluate the potential systemic risks posed by hedge funds and digital assets and is closely monitoring the transition away from LIBOR. (See the box "Developments Related to Financial Stability" in Part 1.)

International developments. Foreign GDP has continued to recover briskly, on balance, despite successive waves of the pandemic, which have been mirrored in slowdowns and rebounds in economic activity. This recovery has been supported by vaccination rates that have steadily increased in both advanced foreign economies and emerging market economies (EMEs). Inflation rose notably in many economies in the second half of last year, importantly boosted by higher energy and other commodity prices as well as supply chain constraints. Several emerging market foreign central banks and a few advanced-economy foreign central banks have raised policy rates, though foreign monetary and fiscal policies have generally continued to be accommodative.

Foreign financial conditions have tightened modestly but are generally contained. In advanced foreign economies, sovereign yields have increased since the first half of last year on firming expectations for higher policy rates. The change in financial conditions in EMEs has been relatively muted in the face of the shift in monetary policy in some advanced economies. The trade-weighted value of the dollar appreciated modestly, on net, over the past six months. Recent geopolitical tensions related to the Russia–Ukraine situation are a source of uncertainty in global financial and commodity markets.

Monetary Policy

Interest rate policy. The FOMC has continued to keep the target range for the federal funds rate at 0 to ¼ percent since the previous *Monetary Policy Report*. With inflation well above the Committee's 2 percent longer-run goal and a strong labor market, the Committee expects it will soon be appropriate to raise the target range for the federal funds rate.

Balance sheet policy. From June 2020 until November 2021, the Federal Reserve expanded its holdings of Treasury securities by $80 billion per month and its holdings of agency mortgage-backed securities by $40 billion per month. In December 2020, the Committee indicated that it would continue to increase its holdings of securities at least at this pace until the economy had made substantial further progress toward its maximum-employment and price-stability goals. Last November, the Committee judged that this criterion had been achieved and began to reduce the monthly pace of its net asset purchases. In December, in light of inflation developments and further improvements in the labor market, the Committee announced it would double the pace of reductions in its monthly net asset purchases. At its January meeting, the FOMC decided to continue to reduce its net asset purchases at this accelerated pace, which will bring them to an end in early March, and issued a statement of principles for its planned approach for significantly reducing the size of the Federal Reserve's balance sheet.[1] A number of participants at the meeting commented that conditions would likely warrant beginning to reduce the size of the balance sheet sometime later this year.[2]

In assessing the appropriate stance of monetary policy, the Committee will continue to monitor the implications of incoming information for the economic outlook. The Committee is firmly committed to its price-stability and maximum-employment goals and is prepared to use its tools to prevent higher inflation from becoming entrenched while promoting a sustainable expansion and strong labor market.

Special Topics

Low labor supply. Labor supply has been slow to rebound even as labor demand has been remarkably strong. The labor force participation rate remains well below estimates of its longer-run trend, principally reflecting a wave of retirements among older individuals and increases in the number of people out of the labor force and engaged in caregiving responsibilities. The ongoing pandemic has also affected labor supply through fear of the virus or the need to quarantine. Moreover, savings buffers accumulated during the pandemic may have enabled some people to remain out of the labor force. (See the box "The Limited Recovery of Labor Supply" in Part 1.)

Wage and employment growth across jobs and workers. Wage and employment gains were widespread across jobs and industries last year, with the lowest-wage jobs experiencing the largest gains in both median wages and employment. Wage growth in the leisure and hospitality industry accelerated sharply, which, together with a lagging employment rebound and high job openings, suggests a lack of available workers in the industry. Median wages also increased across racial and ethnic groups, leaving differences in wage levels across groups little changed relative to 2019. (See the box "Differences in Wage and Employment Growth across Jobs and Workers" in Part 1.)

Broadening of inflation. Higher PCE price inflation broadened out over the course of 2021, with the share of products experiencing notable price increases moving appreciably higher. The broadening was evident in both goods and services, though most of last year's very high inflation readings were concentrated in goods, a reflection of the strong demand and supply bottlenecks that have particularly affected these items. (See the box "How Widespread Has the Rise in Inflation Been?" in Part 1.)

Supply bottlenecks. Supply chain bottlenecks have plagued the economy for much of the past year. Against a backdrop of robust demand for goods, global distribution networks have been strained, and domestic manufacturers have had trouble finding the materials and labor needed to fill orders for their products. U.S. ports have been congested amid record volumes of shipping, and delivery times for materials have remained elevated. Supply shortages of semiconductors have been particularly acute and have weighed heavily

1. See the January 26, 2022, press release regarding the Principles for Reducing the Size of the Federal Reserve's Balance Sheet, available at https://www.federalreserve.gov/newsevents/pressreleases/monetary20220126c.htm.

2. The minutes for the January 2022 FOMC meeting note these comments and are available on the Federal Reserve's website at https://www.federalreserve.gov/monetarypolicy/fomcminutes20220126.htm.

on motor vehicle production and sales. While there are some signs of improvement, general supply chain bottlenecks are not expected to resolve for some time. (See the box "Supply Chain Bottlenecks in U.S. Manufacturing and Trade" in Part 1.)

Developments in the Federal Reserve's balance sheet. The size of the Federal Reserve's balance sheet continued to grow, albeit at a slower rate given the reduced monthly pace of net asset purchases since November. However, reserve balances—the largest liability on the Federal Reserve's balance sheet—were little changed, on net, reflecting growth in nonreserve liabilities such as currency and overnight reverse repurchase agreements (ON RRP). The elevated level of reserves continued to put broad downward pressure on short-term interest rates, while the decline in Treasury bill supply over 2021 has contributed to a shortage of short-term investments. Amid these developments, the ON RRP facility continued to serve its intended purpose of helping to provide a floor under short-term interest rates and support effective implementation of monetary policy. (See the box "Developments in the Federal Reserve's Balance Sheet and Money Markets" in Part 2.)

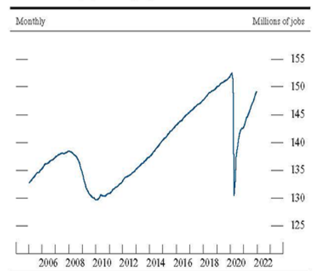
Part 1
Recent Economic and Financial Developments

Domestic Developments

The labor market has continued to recover rapidly

Payroll employment increased by 3.5 million jobs in the second half of 2021, bringing the gains for the year to a robust 6.7 million. And despite the headwind caused by the Omicron wave, employment growth in January remained robust at 467,000 (figure 1). Payroll gains over the past year have been widespread across industries, with a particularly large increase in the leisure and hospitality sector as people continued their return to many activities that had been curtailed by the pandemic.

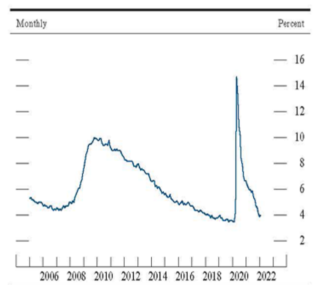
1. Nonfarm payroll employment



Source: Bureau of Labor Statistics via Haver Analytics.

Meanwhile, the unemployment rate continued to move down rapidly, declining from 6.7 percent at the end of 2020 to 4.0 percent this January (figure 2). Notably, the nearly 2 percentage point decline in the unemployment rate since June of last year was the fastest half-year decline since the 1950s, apart from the unprecedented rebound when the economy first reopened in 2020. Moreover, this decline was broad based across racial and ethnic groups and was particularly large for Hispanics and African Americans (figure 3). While these recent declines brought the gaps between Hispanic and African American unemployment rates and those of whites and Asians to near historic lows, the gaps nevertheless remain and largely reflect long-standing structural issues.

2. Civilian unemployment rate



Source: Bureau of Labor Statistics via Haver Analytics.

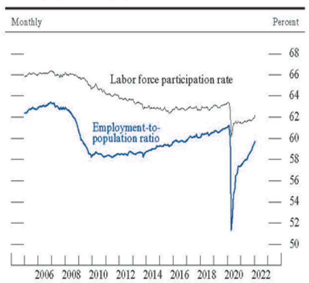
Labor demand is very strong, but labor supply remains constrained . . .

Last year's job gains were driven by an appreciable and steady rise in labor demand as the economy reopened and activity bounced back. By the end of the year, the number of unfilled job openings was about 60 percent above pre-pandemic levels and at an all-time high. However, labor supply struggled to

3. Unemployment rate, by race and ethnicity

NOTE: 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.
SOURCE: Bureau of Labor Statistics via Haver Analytics.

4. Labor force participation rate and employment-to-population ratio



NOTE: The labor force participation rate and the employment-to-population ratio are percentages of the population aged 16 and over.
SOURCE: Bureau of Labor Statistics via Haver Analytics.

keep up. In particular, the labor force participation rate—which measures the share of people either working or actively seeking work—moved up only a little over the past year and remains below its February 2020 level (figure 4).[3] Several pandemic-related factors appear to be holding back labor

3. The 0.3 percentage point jump in the labor force participation rate (LFPR) in January 2022 is the result of revisions to the Current Population Survey (CPS) population controls, which introduced a discontinuity in the LFPR between December and January. (The Bureau of Labor Statistics (BLS) does not revise its published estimates for December 2021 and earlier months.) Population controls—population estimates for disaggregated demographic groups that are used to weight the CPS sample to make it representative of the U.S. population—are updated annually based on information provided by the Census Bureau. The BLS has indicated that the LFPR revision was mostly due to an increase in the size of the population in age groups that participate in the labor force at high rates (those aged 35 to 64) and a large decrease in the size of the population aged 65 and older, which participates at a low rate.

supply, including a pandemic-induced surge in retirements, increased caregiving responsibilities, and fears of contracting COVID-19. (See the box "The Limited Recovery of Labor Supply.") As a result, the recovery in employment—though rapid—has been incomplete, with payrolls nearly 3 million below their pre-pandemic level as of January.

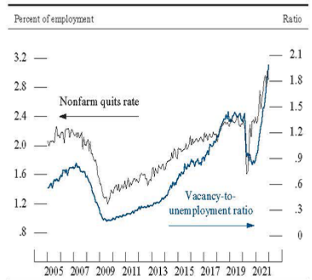
. . . resulting in an extremely tight labor market . . .

A wide range of indicators have been pointing to a very tight labor market, reflecting robust demand for workers and constrained supply. There were two job openings per unemployed person at year-end, the highest level on record (figure 5). Both households' and small businesses' perceptions of labor market tightness were near or above the highest levels observed in the history of these series. The share of workers quitting jobs each month, an indicator of the availability of attractive job prospects, climbed from 2.4 percent to 2.9 percent last year, reaching an all-time high. Moreover, employers continued to report widespread hiring difficulties.

. . . and a broad-based acceleration in wages

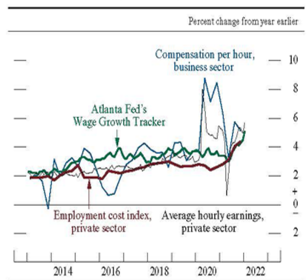
Measures of hourly labor compensation growth have risen sharply over the past year in nominal terms, reflecting the influences of strong labor demand and pandemic-related reductions in labor supply. Total hourly compensation as measured by the employment cost index, which includes both wages and benefits, rose at an annual rate of 5.2 percent in the second half of 2021, lifting the 12-month change to 4.4 percent, well above pre-pandemic rates (figure 6). Wage growth as computed by the Federal Reserve Bank of Atlanta, which tracks the median 12-month wage growth of individuals responding to the Current Population Survey, has also been rising smartly, as have average hourly earnings and compensation per hour in the business

5. Ratio of job openings to job seekers and quits rate



NOTE: The data are monthly and extend through December 2021. The vacancy-to-unemployment ratio data are the ratio of job openings to unemployed excluding temporary layoffs.
SOURCE: Bureau of Labor Statistics, Job Openings and Labor Turnover Survey.

6. Measures of change in hourly compensation



NOTE: Business-sector compensation is on a 4-quarter percent change basis. 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.
SOURCE: Bureau of Labor Statistics; Federal Reserve Bank of Atlanta, Wage Growth Tracker; all via Haver Analytics.

The Limited Recovery of Labor Supply

Although labor demand has bounced back strongly over the past year, labor supply has been much slower to rebound, resulting in an extremely tight labor market. In particular, the labor force participation rate (LFPR)—the share of working-age adults either employed or actively seeking work—fell early in the pandemic and changed little last year despite plentiful job openings and rapidly rising wages (figure A).[1]

The behavior of the LFPR reflects a combination of factors that have limited the recovery of labor supply following the pandemic. The most important of these factors are listed in turn.

Retirements: The retired share of the population is now substantially higher than before the pandemic, accounting for more than two-thirds of the net decline in the LFPR. About half (0.6 percentage point) of this increase was to be expected even in the absence of the pandemic, as additional members of the large baby-boom generation have reached retirement age in the past two years.[2] The other half of the increase comes from excess retirements, above and beyond what would have been expected in the absence of the pandemic, due to individuals "pulling forward" their planned future retirements by a couple of years.[3] The effect of this factor is likely to dwindle as the date when these individuals had previously planned to retire is reached, provided that younger cohorts continue to retire at expected rates.

(continued)

A. Change in labor force participation

Monthly

Metric	Dec. 2020	June 2021	Dec. 2021
Change since Feb. 2020	−1.9	−1.7	−1.5
Contribution of			
Retirement	−.8	−1.1	−1.1
Expected retirement	−.3	−.4	−.6
Excess retirements	−.5	−.7	−.6
Caregiving	−.8	−.5	−.4
Parents of school-age children*	−.3	−.1	−.1
Parents of only young children**	−.1	.0	.0
Nonparents	−.4	−.4	−.4
Disability, illness, and schooling	.2	.1	.5
Other reasons, including COVID-19 fears	−.6	−.2	−.4

Note: The data are monthly and extend through December 2021. The data comprise individuals aged 16 and over. Contributions are derived from Current Population Survey (CPS) non-labor-force participants' answers to the question "What best describes your current situation at this time?" We break out categories for the answers "in retirement"; "taking care of home or family," which we categorize as caregiving; "ill or disabled" and "in school," which we combine; and "other." Contribution lines are seasonally adjusted by Federal Reserve Board staff. Details may not sum to totals due to rounding.

*Adults with at least one child between ages 6 and 17.

**Adults with at least one child only between ages 0 and 5.

Source: Bureau of Labor Statistics; Federal Reserve Board staff calculations using CPS microdata.

1. The table shows changes only through December 2021 to maintain comparability with pre-pandemic data. With the release of January 2022 data, the BLS revised the population base for labor force statistics, which complicates comparisons with pre-pandemic data.

2. For estimates of the effects of population aging on the LFPR during the 2020–22 period that predate the pandemic, see Joshua Montes (2018), "CBO's Projection of Labor Force Participation Rates," Working Paper Series 2018-04 (Washington: Congressional Budget Office, March), https://www.cbo.gov/publication/53616.

3. Federal Reserve Board staff calculations from the Current Population Survey indicate that many of the excess retirements are concentrated among individuals aged 71 to 73 at the beginning of the pandemic, who had likely planned to retire in the next few years.

Caregiving: Many individuals who have left the labor force have taken on caregiving responsibilities during the pandemic, accounting for an additional 0.4 percentage point of the LFPR shortfall as of December 2021.[4] Caregiving responsibilities among parents of school-aged children exerted a large drag on labor supply in 2020, when schools were largely closed. This drag on labor supply eased over the course of 2021 as schools reopened, although the ongoing pandemic may leave parents unsure whether in-person schooling could be disrupted again. Other caregiving responsibilities (for example, elder care) remain a drag on labor supply, accounting for nearly all of the negative contribution of this category to the LFPR.

Additional factors: Labor supply has also been held back by other short-term factors related to the pandemic, including fear of contracting the virus and—especially during the Omicron wave—high numbers of quarantining workers.[5] As of early January 2022, nearly 3 percent of out-of-work adults reported fear of contracting or spreading the virus as their main reason for being out of work; the rate is even higher among individuals with no college education, who are more likely to work in contact-intensive sectors when employed.[6] This factor may exacerbate other labor supply factors, as retirees or caregivers may be especially fearful of contracting or spreading the virus. Additionally, many households built up larger-than-normal savings during the pandemic, which may have enabled workers to retire, spend time on caregiving, or remain out of the labor force until virus conditions subside. Finally, reduced immigration likely has held back total labor supply, even though the effect on the LFPR is likely to be much smaller.[7]

4. The contribution of caregiving responsibilities is measured by the increase in nonparticipants in the Current Population Survey who report "taking care of home or family" as their current situation. Note that this question refers to the respondent's current situation rather than the causal reason why they left the labor force; nonetheless, it is reasonable to infer that caregiving responsibilities are an important factor contributing to the net decline in LFPR.

5. Many workers have had to quarantine during the Omicron wave, resulting in the number of workers absent from work due to illness being more than 600,000 higher in December 2021 than is typical for this time of year and about 2.5 million higher in January 2022. However, because these workers are counted as employed in the Current Population Survey, these absences do not affect the LFPR. In addition, some vaccine-hesitant workers who are subject to vaccine mandates may have left the labor force and may be reluctant to return.

6. See the data from week 41 of the Household Pulse Survey, which can be found on the Census Bureau's website at https://www.census.gov/data/tables/2021/demo/hhp/hhp41.html#tables.

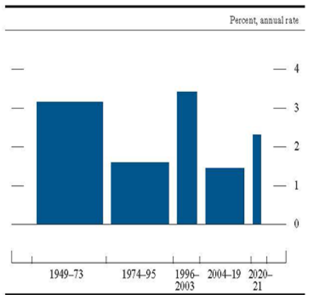
7. Slower immigration during the pandemic period has reduced population growth—and labor force growth—since 2019, lowering the foreign-born working-age population in the United States by about 2 million people, according to one estimate. See Giovanni Peri and Reem Zaiour (2022), "Labor Shortages and the Immigration Shortfall," *Econofact*, January 11, https://econofact.org/labor-shortages-and-the-immigration-shortfall. Although foreign-born individuals tend to have higher LFPRs than the overall population, the difference is not large enough for the reduced immigration to have a substantial effect on the (overall) LFPR.

sector.[4] Indeed, nominal wages are increasing at the fastest pace in at least 20 years. This wage growth has been widespread across most sectors and particularly large in the leisure and hospitality sector and for lower-wage workers. (See the box "Differences in Wage and Employment Growth across Jobs and Workers.") Even so, in the aggregate, these wage gains did not keep pace with the rise in prices last year.

Labor productivity also appears to have accelerated

The extent to which sizable wage gains raise firms' costs and act as a source of inflation pressure depends importantly on the pace of productivity growth. In that regard, the behavior of labor productivity since the start of the pandemic has been encouraging. Over the 2020–21 period, productivity growth in the business sector averaged 2.3 percent per year—about 1 percentage point faster than its average pace since the mid-2000s (figure 7). Some of this acceleration in productivity might be the result of transitory factors. For example, worker effort, which surged in response to employment shortages and hiring difficulties, appears to be elevated, possibly above sustainable levels.[5] But other pandemic-related developments could have a more persistent effect on productivity growth. For example, the pandemic has resulted in a high

7. Change in business-sector output per hour



NOTE: Changes are measured from Q4 of the year immediately preceding the period through Q4 of the final year of the period.
SOURCE: Bureau of Labor Statistics via Haver Analytics.

4. The average hourly earnings and compensation per hour measures are no longer likely to be as significantly affected by changes in the composition of the workforce as they were early in the pandemic, when job losses were much larger for lower-wage workers, which raised average wages and measured wage growth. This process then reversed as many lower-wage workers, particularly in services, were rehired, thus lowering average wages and measured wage growth. The employment cost index and Federal Reserve Bank of Atlanta wage growth measure are largely free of such composition effects.

5. The November 2021 Beige Book—in which the Federal Reserve reports on discussions with our business and other contacts throughout the country—reported that many employers were planning to increase hiring because of concerns that their current workforce was being overworked.

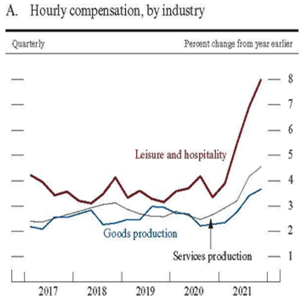
Differences in Wage and Employment Growth across Jobs and Workers

Wages have increased strongly during the past year, especially for workers in lower-paying jobs and industries. For example, figure A shows that compensation growth for leisure and hospitality jobs as measured by the employment cost index was stronger than for goods-producing and service-producing industries overall in the second half of 2021. The leisure and hospitality industry was substantially affected by social distancing earlier in the pandemic, leading to outsized employment losses relative to other industries and a much weaker recovery. However, job openings for this industry are very high, which, in combination with strong wage growth, indicates that the comparatively weak employment rebound in leisure and hospitality now largely reflects a lack of available workers.

The industry-specific effects of the pandemic are also apparent in the patterns of employment and wages for lower-paying jobs relative to higher-paying jobs. As shown in figure B, job losses initially aligned closely with workers' level of earnings, with the lowest-wage jobs (which are disproportionately found in service-producing industries) experiencing the greatest employment declines. As the economy has reopened, lower-wage employment has rebounded more. Consistent with the rebound in labor demand for these jobs coupled with hiring difficulties, figure C shows that wage growth has been especially strong for lower-wage jobs.

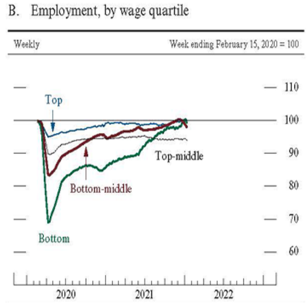
(continued on next page)

A. Hourly compensation, by industry



NOTE: The data are the employment cost index for total compensation.
SOURCE: Bureau of Labor Statistics via Haver Analytics.

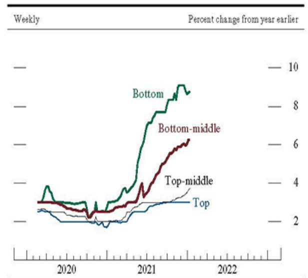
B. Employment, by wage quartile



NOTE: Series are adjusted to make total employment consistent with Current Employment Statistics private employment. Wage quartile cutoffs are adjusted for wage growth over time. The data extend through January 15, 2022.
SOURCE: Federal Reserve Board staff calculations using ADP, Inc., Payroll Processing microdata.

Differences in Wage and Employment Growth *(continued)*

C. Median wage growth, by quartile



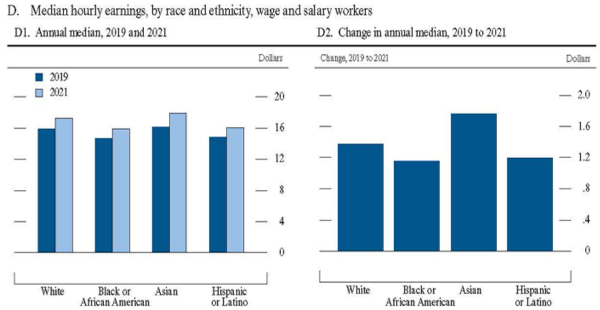
NOTE: Quartiles are defined by hourly wage distribution from base period of year-over-year calculations. Wages are measured as hourly earnings, excluding tips, overtime, and other forms of compensation. The data extend through January 15, 2022.

SOURCE: Federal Reserve Board staff calculations using ADP, Inc., Payroll Processing microdata.

Finally, figure D illustrates how wages have evolved across racial and ethnic groups over the course of the pandemic. In 2019, median hourly wages were around $1 higher for Asian and white workers relative to Black and Hispanic workers. From 2019 to 2021, median wages increased between $1.10 and $1.90 for all groups, leaving the disparities in wage levels across these groups little changed relative to 2019.[1]

1. The wage estimates in figure D are only for workers paid hourly and exclude the incorporated self-employed. Because hourly wages for demographic groups are published at only an annual frequency by the Bureau of Labor Statistics, it is not possible to infer from these data whether some demographic groups experienced faster wage gains more recently (for example, whether wage growth has been faster for demographic groups with lower median wages in the second half of 2021, mirroring the more rapid wage growth for lower-paying jobs, as illustrated in figure C).

D. Median hourly earnings, by race and ethnicity, wage and salary workers



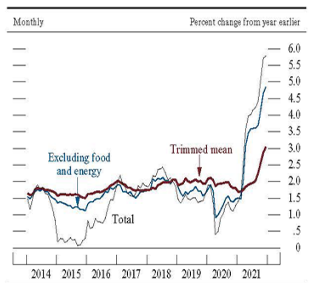
NOTE: The data exclude incorporated self-employed.
SOURCE: Bureau of Labor Statistics.

rate of new business formation, the widespread adoption of remote work technology, and a wave of labor-saving investments. Nevertheless, it is too early to tell what the ultimate effect of the pandemic will be on productivity growth in coming years.

Inflation increased significantly last year . . .

Consumer prices posted further sizable increases in the second half of 2021. Monthly increases in personal consumption expenditures (PCE) prices averaged about the same in the second half as in the first half, bringing the 12-month change in December to 5.8 percent—far above the Federal Open Market Committee's (FOMC) longer-run objective of 2 percent (figure 8). The core PCE price index, which excludes the more volatile food and energy prices categories, rose 4.9 percent last year as supply chain bottlenecks, hiring difficulties, and other capacity constraints amid strong demand exerted pervasive upward pressure on prices. Notably, these were the largest price increases since the early 1980s. In January, a further sizable rise in the consumer price index (CPI) indicated that price pressures had not yet begun to abate.

8. Change in the price index for personal consumption expenditures



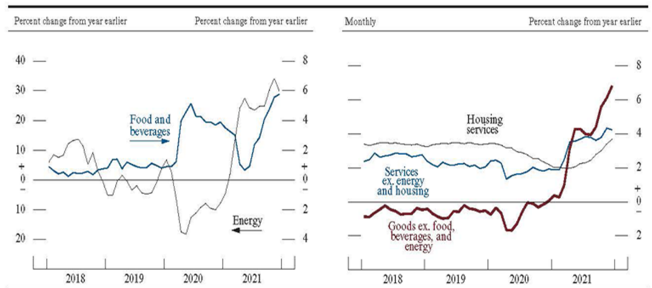
NOTE: The data extend through December 2021.
SOURCE: For trimmed mean, Federal Reserve Bank of Dallas; for all else, Bureau of Economic Analysis; all via Haver Analytics.

. . . and became more broad based in the second half . . .

Whereas the sizable price increases seen last spring were concentrated in a few key items, inflationary pressures broadened over the second half of 2021. As an illustration, the Federal Reserve Bank of Dallas trimmed mean index, which removes the PCE categories with the largest price increases and decreases each month, rose only modestly in the first half of last year but picked up in the second half and increased 3.1 percent for the year as a whole—its highest reading since 1991.

The broadening of price inflation is further evident when examining the price indexes for major PCE categories (figure 9). In the first half of 2021, rising inflation was driven by

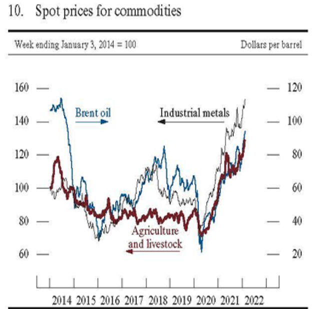
9. Personal consumption expenditures price indexes



NOTE: The data are monthly and extend through December 2021.
SOURCE: Bureau of Economic Analysis via Haver Analytics.

NOTE: The data extend through December 2021.
SOURCE: Bureau of Economic Analysis via Haver Analytics.

10. Spot prices for commodities



NOTE: The data are weekly averages of daily data and extend through February 18, 2022.
SOURCE: For oil, ICE Brent Futures via Bloomberg; for industrial metals, S&P GSCI Industrial Metals Index Spot via Haver Analytics; for agriculture and livestock, S&P GSCI Agriculture & Livestock Spot Index via Haver Analytics.

sharp increases in prices for certain goods such as motor vehicles, which experienced strong demand coupled with severe supply chain bottlenecks; a recovery in demand for nonhousing services, where many prices rebounded after having softened earlier in the pandemic; and rapid increases in energy prices. In the second half, prices of those items continued to move higher, and prices began to rise more rapidly for food and beverages (as increases in the costs of food commodities, labor, and transportation were passed on to consumers) as well as for housing services (as rents began to reflect the large increase in housing demand). (See the box "How Widespread Has the Rise in Inflation Been?")

. . . with further upward pressure on inflation from rising commodity and import prices

Oil prices continued climbing over the second half of last year and into this year, reaching their highest level in over seven years (figure 10). Demand for oil rose as the global economy recovered further, and oil supply was constrained by U.S. oil production disruptions due to Hurricane Ida and by only modest production increases by OPEC (Organization of the Petroleum Exporting Countries) and its partners. Geopolitical tensions with Russia have also contributed to higher energy prices, including oil and natural gas.

How Widespread Has the Rise in Inflation Been?

Consumer price inflation increased markedly in 2021, with the price index for personal consumption expenditures (PCE) rising 5.8 percent over the 12 months through December, following a subdued increase of 1.3 percent in 2020. In the first half of last year, the increase in inflation was driven by a fairly small number of categories. In contrast, over the second half of the year, relatively high price increases became more widespread, suggesting that broader-based inflationary pressures had taken hold. This discussion reviews how inflation evolved across a comprehensive set of product categories last year to help shed light on the forces generating higher inflation.

Although price increases driven by bottlenecks and production constraints have been more concentrated in a relatively small set of product categories that have been particularly affected by these supply–demand imbalances, labor shortages, rising wages, and other broad-based cost pressures likely contributed to a pickup in inflation across a wide range of goods and services.

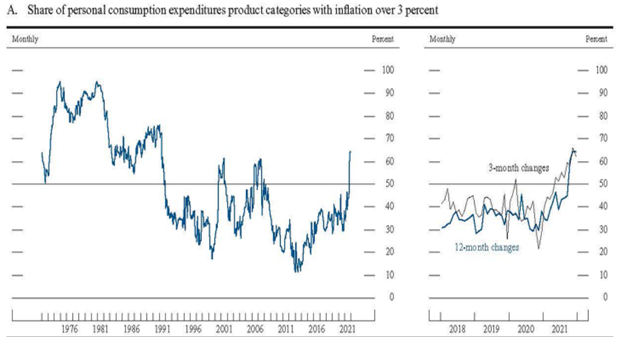
Figure A divides PCE into 146 product categories and presents the share of those categories for which prices were increasing by over 3 percent.[1] This share was stable at around 35 percent between 2016 and 2019—close to the average share observed since the mid-1990s—and continued to be stable in 2020. However, the share of products with more than 3 percent inflation increased last year to above 60 percent. And, as is evident from the black line, the share of categories with price increases of more than 3 percent (annual rate) over a three-month window increased gradually over the course of the year. As shown by the left panel, the share of product categories with inflation above 3 percent temporarily reached a similar level on two other occasions since the 1990s (in 2001 and 2007), but this share is still notably lower than that in the high-inflation regime of the 1970s.

As seen in figure B, which reports the shares of product categories with 12-month price changes above 3 percent separately for goods and services, the increase in the breadth of large price increases was especially unusual for goods. Yet the share of higher inflation in services has also been moving up in the past few months, likely in part because of mounting inflation pressures from the labor market.

(continued on next page)

1. The figure presents the consumption-weighted share of product categories with 12-month price changes—and, for the recent period, annualized three-month price changes—over 3 percent. The calculation based on three-month changes provides a timely account of broadening in total PCE price inflation but is somewhat more volatile. A price increase of 3 percent is one standard deviation above the mean of annualized price increases for the different PCE product categories from 2016 to 2019.

A. Share of personal consumption expenditures product categories with inflation over 3 percent

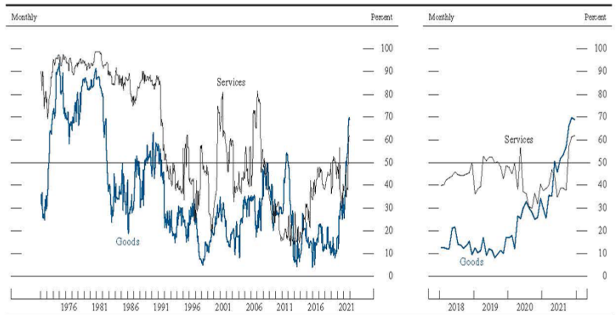


Note: Each series is created from 146 product categories. Each product category is weighted by its expenditure share in personal consumption expenditures. Series are derived from 12-month price changes, except where otherwise indicated. The data extend through December 2021. The flat line in each panel marks where 50 percent of product categories experience inflation over 3 percent.

Source: Bureau of Economic Analysis; Federal Reserve Board staff calculations.

How Widespread Has the Rise in Inflation Been? *(continued)*

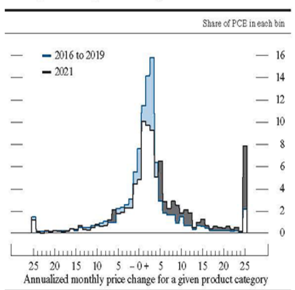
B. Share of personal consumption expenditures goods and services categories with inflation over 3 percent



NOTE: The series for goods is created from 81 product categories, and the series for services is created from 65 product categories. Each product category is weighted by its expenditure share in personal consumption expenditures (PCE) goods or PCE services. Series are derived from 12-month price changes. The data extend through December 2021. The flat line in each panel marks where 50 percent of product categories experience inflation over 3 percent.
SOURCE: Bureau of Economic Analysis; Federal Reserve Board staff calculations.

While robust price increases became more prevalent across product categories in the past year, the size of price increases still varied significantly across product categories. To better understand the drivers of the high aggregate inflation last year, figure C presents the full distribution of price changes for different products and further emphasizes the different roles being played by prices of goods versus services in explaining changes in this distribution compared with the 2016–19 period.

C. Distribution of inflation across personal consumption expenditures product categories



NOTE: The height of each line indicates the share of personal consumption expenditures (PCE) spent on product categories whose annualized monthly price changed by the percentage indicated on the horizontal axis. Values on the horizontal axis are binned in unit increments and are truncated at positive and negative 25 percent. Blue shading indicates that the PCE spending share was greater in 2016 to 2019 than in 2021 for the associated values of price change on the horizontal axis. Gray shading indicates that the PCE spending share was greater in 2021 than in 2016 to 2019 for the associated values of price change on the horizontal axis. The histogram includes 146 product categories over the periods indicated.
SOURCE: Bureau of Economic Analysis; Federal Reserve Board staff calculations.

In figure C, the blue line depicts the distribution of annualized monthly price changes observed from 2016 to 2019, while the black line depicts the distribution in 2021.[2] In both periods, this distribution is very wide, reflecting the sizable heterogeneity in price behavior across items. The higher and broader inflation during 2021 is reflected in the chart as a rightward shift in the distribution of price changes relative to the 2016–19 period.[3]

(continued)

2. For each of the 146 disaggregated product categories mapped back to 1972, the chart presents one-month annualized inflation rates for each of the months indicated in the legend. From 2016 to 2019 there are 7,008 observations (48 months times 146 categories) sorted into 51 bins (negative 25 or lower, negative 24, . . . , negative 1, 0, 1, . . . , 24, and 25 or higher), while in 2021 there are 1,752 observations (12 months times 146 categories). The product categories are weighted according to their share in overall PCE. The comparison shown in figure C does not importantly depend on the length of the pre-pandemic comparison period; for example, the distribution of price changes over 2000 to 2019 looks similar to the distribution over 2016 to 2019.

3. As the price change distribution shifts rightward and inflation becomes more broadly experienced across product categories, a greater percent of spending occurs on products with inflation exceeding 3 percent, as depicted in figure A. However, by combining all increases of at least 3 percent, figure A does not portray the marked increase in the number of very large price increases, particularly for goods affected by supply chain disruptions.

Four aspects of the change in the distribution are worth noting:

(1) fewer items with price decreases, which are depicted in the blue shaded areas below zero on the horizontal axis

(2) a notable decline in the occurrence of price increases of between 1 and 4 percent, shown by the blue shaded area in the middle of the distribution

(3) more items with inflation between 5 and 12 percent as well as slightly more with inflation between 13 and 24 percent, shown in the gray shaded area in those ranges on the horizontal axis

(4) a striking 6 percentage point increase at the very top of the distribution, indicated by the large (gray shaded) spike in the share of items with price increases of at least 25 percent

These features of the distribution of price changes can be better understood by considering the contributions of goods and services to the changes. First, the left panel of figure D shows the contribution of goods to the total price change distribution between 2016 and 2019 (the blue line) and 2021 (the black line). Goods account for about 4 percentage points of the 6 percentage point increase in the spike at the top of the price change distribution in figure C as well as nearly all of the rightward shift in the price change distribution in excess of 12 percent inflation. Moreover, the increased occurrence of high inflation for goods is a stark departure from small positive or slightly negative price changes between 2016 and 2019 (seen in the blue shading). These observations are consistent with the very large price increases in goods categories such as motor vehicles and other categories disrupted by supply constraints against the backdrop of strong demand as consumption shifted away from services during the pandemic.

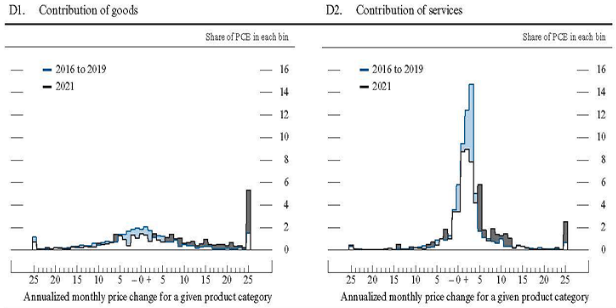
Second, the right panel of figure D shows the contribution of services to the total price change distribution. Services account for the vast majority of the shift from the middle of the distribution of price changes (the blue shaded area) to inflation between 5 and 12 percent (the gray shaded area), while they account for less than one-third of the increase in the spike at the top of the distribution.

In summary, the share of products experiencing notable price increases moved appreciably higher in 2021, with the broadening due to both goods and services prices. That said, most of last year's very high inflation readings were concentrated in goods—a reflection of strong demand in the face of supply bottlenecks that have particularly affected these items. Finally, although currently more widespread than in recent history, large price increases were considerably less widespread than was seen during the high-inflation regime of the 1970s. In the period ahead, the large price changes in goods may ease once supply chain disruptions finally resolve, but, if labor shortages continue and wages rise faster than productivity in a broad-based way, inflation pressures may persist and continue to broaden out.

D. Distribution of inflation across personal consumption expenditures product categories

D1. Contribution of goods

D2. Contribution of services



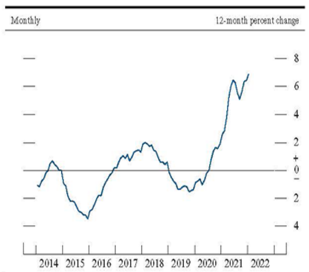
NOTE: The height of each line indicates the share of personal consumption expenditures (PCE) spent on product categories whose annualized monthly price changed by the percentage indicated on the horizontal axis. Values on the horizontal axis are binned in unit increments and are truncated at positive and negative 25 percent. Blue shading indicates that the PCE spending share was greater in 2016 to 2019 than in 2021 for the associated values of price change on the horizontal axis. Gray shading indicates that the PCE spending share was greater in 2021 than in 2016 to 2019 for the associated values of price change on the horizontal axis. The histograms include 81 product categories for goods (left panel) and 65 product categories for services (right panel) over the periods indicated.

SOURCE: Bureau of Economic Analysis; Federal Reserve Board staff calculations.

Nonfuel commodity prices have risen with the global economic recovery since the first half of last year, reflecting considerable increases in the prices of both industrial metals and agricultural commodities. Although still below their peak last year, lumber prices have increased sharply again in recent months because of elevated demand from residential construction and supply disruptions.

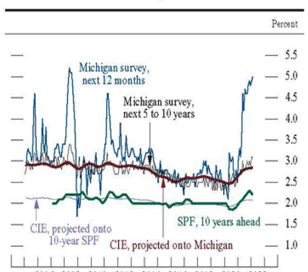
Import prices and the cost of transporting imported goods—a cost not included in measured import prices—are rising, and bottlenecks in supply chains have exacerbated the rise (see the box "Supply Chain Bottlenecks in U.S. Manufacturing and Trade"). Import price inflation has also remained elevated largely because of continued increases in commodity prices, bringing the 12-month change through January 2022 to 6.9 percent (figure 11).

11. Nonfuel import price index



SOURCE: Bureau of Labor Statistics via Haver Analytics.

12. Measures of inflation expectations



NOTE: The Survey of Professional Forecasters (SPF) data are quarterly, begin in 2007:Q1, and extend through 2022:Q1. The Index of Common Inflation Expectations (CIE) data are quarterly and extend through 2022:Q1. The Michigan survey data are monthly and extend through February 2022; the February data are preliminary.

SOURCE: University of Michigan Surveys of Consumers; Federal Reserve Bank of Philadelphia, SPF; Federal Reserve Board, CIE; Federal Reserve Board staff calculations.

Measures of near-term inflation expectations rose notably, but longer-term expectations moved up less

Inflation expectations likely influence actual inflation by affecting wage- and price-setting decisions. In the University of Michigan Surveys of Consumers, households' expectations for inflation over the next 12 months continued to climb, reaching levels that are among the highest observed since the early 1980s (figure 12). In contrast, expectations for average inflation over the next 5 to 10 years from the same survey flattened out in the second half of 2021 after having moved up modestly in the first half, and they now stand near levels observed about a decade ago. Meanwhile, 10-year PCE inflation expectations in the Survey of Professional Forecasters edged up, on net, since mid-2021 and stood at 2.2 percent in the first quarter of this year. That increase was driven by higher expectations for the next five years, with expectations for inflation remaining at 2 percent over years 6 through 10.

Supply Chain Bottlenecks in U.S. Manufacturing and Trade

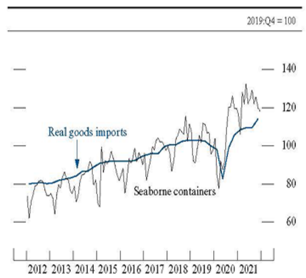
Over the past year, global transportation and distribution networks have been overwhelmed, and manufacturers have struggled to find the materials and labor needed to meet demand for their products. Demand for goods has been notably boosted, as ongoing concerns about COVID-19 have led consumers and businesses to shift spending away from services, such as travel, in favor of goods, such as those related to increased time at home. While some distribution and production bottlenecks showed signs of improvement toward the end of last year, other bottlenecks are expected to remain for some time.

The surge in demand for imports has strained shipping networks worldwide, and U.S. ports have been particularly congested. About one-third of all U.S. goods imports (by value) arrive via seaborne containers, and, consistent with the strength in imports of consumer and capital goods in 2021, the number of containers processed at domestic ports last year was significantly higher than in any previous year (figure A). The combined ports of Los Angeles and Long Beach have faced substantial congestion, with the number of ships waiting for a berth recently reaching an all-time high.[1] Elevated levels of port congestion in the United States and abroad have caused on-time arrivals of global shipping vessels to plunge and have resulted in dramatic increases in charter rates for container ships (figure B). Moreover, once goods arrive in port, major bottlenecks in U.S. trucking and rail transportation have further delayed their movement. Trucking cargo rates have risen sharply since mid-2020, and some measures are now more than 15 percent above the levels prevailing in 2019.

(continued on the next page)

1. Though primarily driven by strong demand for goods, the congestion has been worsened by COVID-19 outbreaks in emerging Asia, where port delays have tied up vessels and containers, sending ripple effects through the global network.

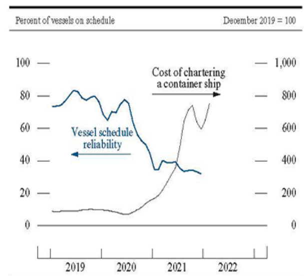
A. U.S. imports



NOTE: The seaborne containers data are monthly, are not seasonally adjusted, and extend through December 2021. The real goods imports data are quarterly and are seasonally adjusted.

SOURCE: Bureau of Economic Analysis; Maryland Port Administration; Virginia Port Authority; South Carolina Ports Authority; Port of Houston Authority; Port of Los Angeles; Port of Long Beach; Port of New York and New Jersey; Port of Oakland; Georgia Ports Authority; Northwest Seaport Alliance; all via Haver Analytics; Federal Reserve Board staff calculations.

B. Developments in shipping



NOTE: "On schedule" is defined as a vessel arriving within 1 day of its listed schedule. The shipping data are monthly averages of daily data and extend through February 22, 2022. Vessel reliability data are monthly and extend through December 2021.

SOURCE: NewConTex, © VHSS e.V., Hamburg and Bremen Shipbrokers' Association; Sea-Intelligence (2021), *Global Liner Performance*, issue 125 (January).

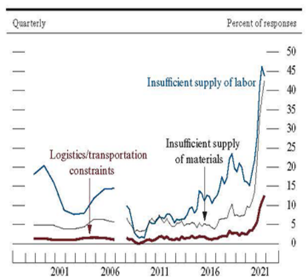
Supply Chain Bottlenecks *(continued)*

Distribution problems have also weighed heavily on domestic production. In 2021, a record number of manufacturers reported that an insufficient supply of materials was one reason they were unable to produce at full capacity (figure C). Together with increasingly strong demand for goods, these limitations on production led to backlogs of orders and to supplier delivery times well above historical norms (figure D). With supply unable to satisfy demand, prices for a wide range of goods increased last year, sometimes sharply. Indeed, the producer price index for overall manufacturing was more than 15 percent higher in the fourth quarter of 2021 than its year-earlier level (figure E).

Domestic production has been further hampered by manufacturers' inability to hire and retain skilled

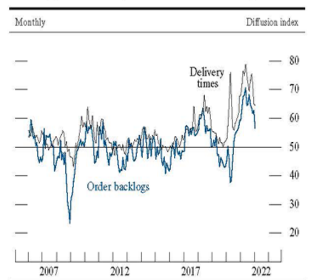
(continued)

C. Reasons for operating below capacity



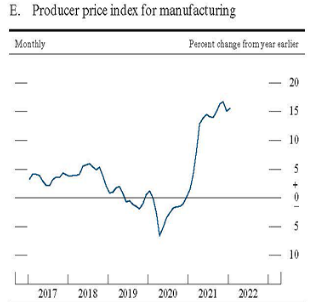
NOTE: Gaps in series represent the end of the Annual Survey of Plant Capacity in 2006 and the start of the Quarterly Survey of Plant Capacity in 2008. Survey respondents are given the choice of many reasons for operating below capacity and may select more than one reason.
SOURCE: Census Bureau, Survey of Plant Capacity Utilization.

D. Suppliers' delivery times and order backlogs



NOTE: Values greater than 50 indicate that more respondents reported longer delivery times or order backlogs relative to a month earlier than reported shorter delivery times or order backlogs.
SOURCE: Institute for Supply Management, ISM Manufacturing *Report on Business*.

E. Producer price index for manufacturing



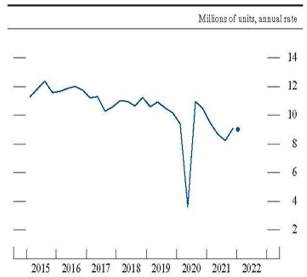
SOURCE: Bureau of Labor Statistics via Haver Analytics.

labor. Despite adding about 350,000 workers in 2021, by the end of the year manufacturing employment was still about 250,000 below where it was just before the pandemic. Although manufacturers have long noted difficulties in finding workers, labor market conditions were particularly tight in 2021. At the end of the year, factory workers were quitting their jobs at near-record rates, and manufacturing plants had listed approximately 850,000 job openings—about twice as many openings as in the 2017–19 period.

The motor vehicle sector has faced a particularly acute and well-publicized shortage of semiconductor chips, reflecting a combination of factors. On the demand side, consumers' appetite for cars and trucks has remained remarkably strong, and the chip content per vehicle has increased.[2] Meanwhile, the supply of semiconductors was disrupted by COVID-induced shutdowns in foreign countries—such as Malaysia and Vietnam—that are major players in the semiconductor supply chain. Even when enough of certain types of chips have been available, an undersupply of complementary chips has, at times, created problems for manufacturers. These chip shortages have led to widespread shutdowns and production slowdowns at U.S. motor vehicle assembly plants. Without an ample supply of new vehicles, many dealerships sold off remaining inventories and raised prices. The lean inventories and high prices weighed heavily on vehicle sales for much of 2021. Recently, however, semiconductor shortages have begun to ease somewhat, as indicated by an increase in U.S. vehicle production (figure F). Nevertheless, these shortages have persisted, and statements by some auto industry executives suggest that they expect production bottlenecks to continue well into this year.

Outside the auto sector, supply chain bottlenecks show some signs of improvement. Capacity expansion at some ports in late 2021 and waning seasonal demand likely contributed to recent declines in the cost of shipping. Additionally, inland rail hubs have decongested somewhat, facilitating the flow of containers inland. Also, late last year, domestic manufacturers saw slower increases in the price of inputs, improving delivery times, and fewer items in short supply than they had earlier. A few commodities have experienced a notable increase in availability. One example is steel, for which delivery times and prices have fallen sharply after having been elevated for much of last year.

F. Light motor vehicle production

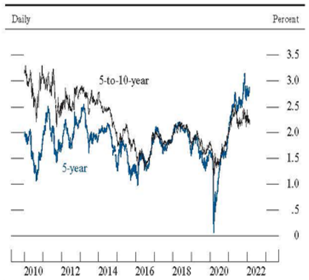


NOTE: The data are quarterly averages and are adjusted using Federal Reserve Board seasonal factors. The dot represents the monthly value for January 2022.

SOURCE: Ward's Automotive Group, AutoInfoBank and Intelligence Data Query; Chrysler Group LLC, North American Production Data; General Motors Corporation, GM Motor Vehicle Assembly Production Data.

2. Although the chip content per vehicle has been rising for a while, demand for some vehicles particularly rich in semiconductors—notably, electric vehicles and luxury models—has risen especially sharply during the pandemic.

13. Inflation compensation implied by Treasury Inflation-Protected Securities



NOTE: The data are at a business-day frequency and are based on smoothed nominal and inflation-indexed Treasury yield curves.
SOURCE: Federal Reserve Bank of New York; Federal Reserve Board staff calculations.

Market-based measures of inflation compensation, which are based on financial instruments linked to inflation, are sending a similar message. A measure of CPI inflation compensation over the next five years implied by Treasury Inflation-Protected Securities (TIPS) continued to rise, on net, through the second half of 2021, reaching its highest level over the past decade.[6] In contrast, the TIPS-based measure of CPI inflation compensation 5 to 10 years ahead rose over the first half of 2021 but has settled around 2¼ to 2½ percent since then (figure 13). While elevated relative to pre-pandemic levels, this measure is well within the range of values observed in the first half of the previous decade and, because CPI inflation tends to run around ¼ percentage point above PCE price inflation, it suggests inflation compensation close to 2 percent on a PCE basis.

The common inflation expectations (CIE) index constructed by Federal Reserve Board staff combines a wide variety of inflation expectations measures—including the measures cited earlier—into a single indicator that is rescaled to match the level and volatility of existing inflation expectation indicators.[7]

6. Inflation compensation implied by the yields on Treasury securities, known as the TIPS breakeven inflation rate, is defined as the difference between yields on conventional Treasury securities and yields on TIPS, which are linked to actual outcomes regarding headline CPI inflation. Inferring inflation expectations from such market-based measures of inflation compensation is not straightforward, because these measures are affected by changes in premiums that provide compensation for bearing inflation and liquidity risks. These measures likely also capture shifts in the demand and supply of TIPS relative to those of nominal Treasury securities.

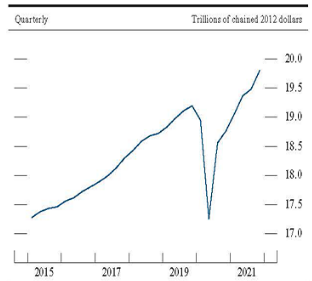
7. The CIE is estimated using a dynamic factor model. The level of the model's estimated factor does not have an economic interpretation and therefore must be rescaled to match an existing indicator of inflation expectations to yield a level interpretation. For more details, see Hie Joo Ahn and Chad Fulton (2021), "Research Data Series: Index of Common Inflation Expectations," FEDS Notes (Washington: Board of Governors of the Federal Reserve System, March 5), https://doi.org/10.17016/2380-7172.2873.

The measures used in the CIE differ along several key dimensions—the type of economic agent, data source (survey- or market-based measure), time horizon, and inflation measure. Both CIE indexes shown in figure 12 look most similar to the measures of longer-term expectations: They trended up in the first half of last year, reversing the downward drift observed in the years before the pandemic, but then flattened out at a level similar to those observed roughly a decade ago.

Gross domestic product growth stepped down modestly in the second half of last year . . .

The level of real gross domestic product (GDP) recovered further in the second half of 2021, but growth was somewhat slower, on average, than in the first half (figure 14). GDP growth is reported to have slowed notably to 2.3 percent at an annual rate in the third quarter but rebounded to a brisk 7 percent in the fourth quarter. Despite the solid average growth in the second half, several factors—including last summer's Delta wave and waning fiscal stimulus—likely weighed on demand growth. Moreover, supply chain bottlenecks, hiring difficulties, and other capacity constraints continued to significantly restrain economic activity. While there have been some recent signs of these constraints easing, the time frame for further improvement is highly uncertain. All told, at the end of 2021 GDP stood 3 percent above its level in the fourth quarter of 2019, before the pandemic began, but 1.5 percent below its level if growth had continued at its average pace over the five years before the pandemic.

14. Real gross domestic product



SOURCE: Bureau of Economic Analysis via Haver Analytics.

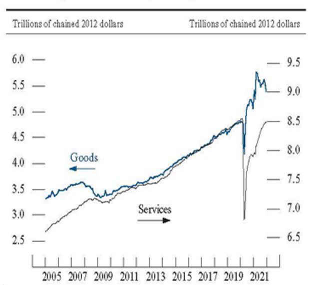
. . . while the rapid spread of the Omicron variant appears to have slowed the pace of economic activity early this year

Fueled by the highly transmissible Omicron variant, new cases of COVID-19 began rising sharply in mid-December, peaked in mid-January with daily cases about three times as high as last winter's surge, and have fallen quickly since then. Although Omicron appears to cause less severe symptoms than previous variants, several indicators suggest it has damped the pace of economic activity early this year. High-frequency indicators reveal that flight cancellations, school closures, and temporary closings of small businesses jumped as the new year began, while demand for COVID-sensitive services like air travel, lodging, and restaurant meals flagged. Nevertheless, with cases rapidly declining and spending indicators having rebounded, Omicron seems likely to cause the continued reopening of the economy to slow only briefly.

Real consumer spending growth eased . . .

Consumer spending on goods edged lower, on balance, over the second half of 2021 as the boost from fiscal stimulus waned and low inventories held back purchases of some goods, particularly motor vehicles. Even so, goods spending remains quite elevated relative to its pre-pandemic trend (figure 15). The further reopening of the economy boosted spending on services in the second half, albeit at a less rapid pace than last spring, as the Delta wave weighed on demand for in-person services in the summer and the Omicron wave began to do so late in the year. Despite the continued recovery in services spending, this spending remains well below its pre-pandemic trend. In all, the data over the second half of 2021 indicate only a moderate amount of rebalancing of consumer demand toward services and away from goods.

15. Real personal consumption expenditures



NOTE: The data are monthly and extend through December 2021.
SOURCE: Bureau of Economic Analysis via Haver Analytics.

. . . as higher prices damped otherwise healthy income and wealth positions . . .

Real consumer spending has been supported by further gains in household income and wealth, but that support was curbed by the marked rise in prices over the past year, especially for households that have not benefited from higher asset prices. Household disposable income in nominal terms has proven resilient due to the improving labor market, even as fiscal stimulus has waned, but after factoring in the higher prices, real disposable incomes edged lower over the year. Nevertheless, also supporting consumption, in the aggregate, are the substantial savings households have accumulated from curtailed services spending and historic levels of household-focused fiscal stimulus distributed earlier in the pandemic, as evidenced by a personal saving rate that, while no longer elevated, has not fallen below its pre-pandemic trend (figure 16). Furthermore, as a result of the large gains in home and equity prices since mid-2020, the wealth position of households that own these assets remains very solid (figure 17).

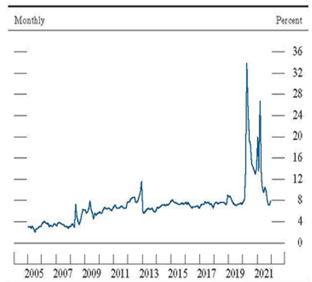
. . . and contributed to declining consumer sentiment

Amid the continued acceleration in prices in the second half of last year and despite solid household balance sheets, a closely watched index of consumer sentiment plunged (figure 18). Since the middle of 2021, the University of Michigan index fell below the levels seen at the onset of the pandemic, as survey respondents' concerns over inflation weighed heavily on their outlooks. The Conference Board index, an alternative measure of consumer sentiment, also deteriorated but, in contrast to the Michigan index, remains well above its earlier pandemic lows.

Meanwhile, consumer credit conditions continued to normalize

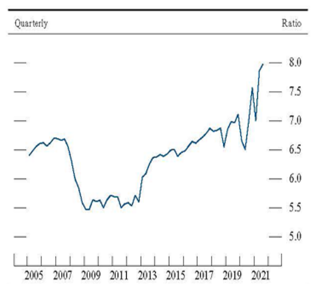
Financing has been generally available to support these gains in consumer spending. Standards for consumer loans, which banks reported eased in 2021 relative to 2020, are now generally in line with the standards that persisted before the pandemic; as a result, financing conditions are now largely accommodative for borrowers with high credit scores, though lending standards and terms remain somewhat tighter than pre-pandemic levels for borrowers with low credit scores. After initial declines at the onset of the pandemic, the growth rate of consumer

16. Personal saving rate



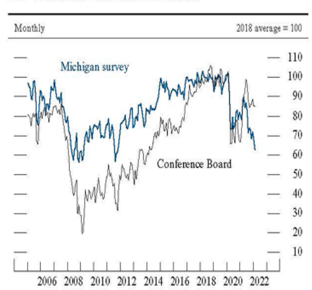
NOTE: The data extend through December 2021.
SOURCE: Bureau of Economic Analysis via Haver Analytics.

17. Wealth-to-income ratio



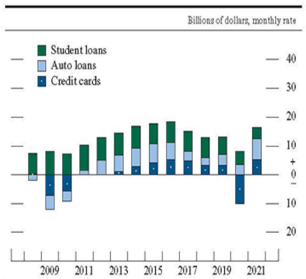
NOTE: The series is the ratio of household net worth to disposable personal income. The data extend through 2021:Q3.
SOURCE: For net worth, Federal Reserve Board, Statistical Release Z.1, "Financial Accounts of the United States"; for income, Bureau of Economic Analysis via Haver Analytics.

18. Indexes of consumer sentiment



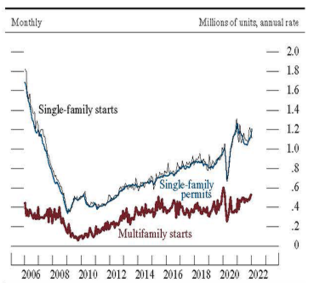
NOTE: The data extend through February 2022. The February data for the Michigan survey are preliminary.
SOURCE: University of Michigan Surveys of Consumers; Conference Board.

19. Consumer credit flows



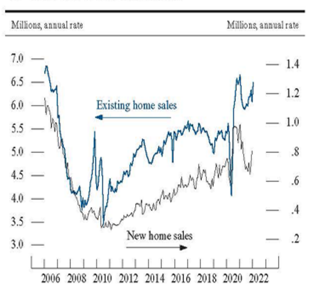
NOTE: The data are seasonally adjusted by the Federal Reserve Board.
SOURCE: Federal Reserve Board, Statistical Release G.19, "Consumer Credit."

20. Private housing starts and permits



SOURCE: Census Bureau via Haver Analytics.

21. New and existing home sales



NOTE: The data are monthly. New home sales include only single-family sales and extend through December 2021. Existing home sales include single-family, condo, and co-op sales.
SOURCE: For new home sales, Census Bureau; for existing home sales, National Association of Realtors; all via Haver Analytics.

credit recovered strongly in 2021, driven by the continued expansion of auto loans and an appreciable rebound in credit card balances (figure 19). Delinquency rates for nonprime auto and credit card borrowers remained well below pre-pandemic levels, likely stemming from forbearance programs and fiscal support.

Housing construction fell as supply constraints held back activity . . .

Residential investment is well above pre-pandemic levels but fell back somewhat last year, as construction was limited by persistent bottlenecks that led to materials shortages. In recent months, the sector has shown signs of a rebound, as single-family permits have risen steadily (figure 20). Nevertheless, the timing of the resolution of these supply constraints remains highly uncertain. Prices of lumber and other materials have moved up appreciably, and shortages of other construction inputs—such as labor and lots ready for development—remain acute.

. . . amid surging demand for housing . . .

Demand for housing surged earlier during the pandemic and has remained strong, with home sales well above levels seen in the years before the pandemic despite very tight inventory of homes available for sale (figure 21). This surge in demand is likely due to a combination of factors, including increased work-from-home arrangements; shifts away from other types of consumer spending, such as travel and leisure; and mortgage rates that remain low despite notable recent increases (figure 22). Meanwhile, mortgage credit remained broadly available for a wide range of potential borrowers. Although mortgage credit for borrowers with low credit scores remained tighter than before the pandemic, it eased over the second half of last year.

. . . which has contributed to record house price growth

As a result of supply constraints and surging demand, house price growth reached record levels, and, even after adjusting for overall inflation, home prices have surpassed their peak of the mid-2000s (figure 23). According to data from Zillow, national house prices rose almost 20 percent last year. Moreover, strong house price growth has been widespread across the United States, as nearly 80 percent of metropolitan areas experienced annual house price increases of at least 10 percent. Homebuying sentiment, as measured by the Michigan survey, remains depressed, reflecting the low inventory of homes and high prices.

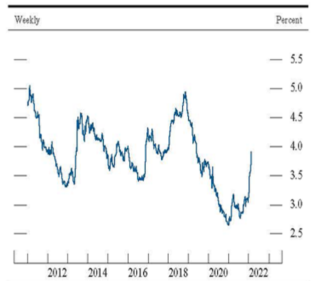
Business investment slowed in response to supply constraints . . .

Investment in equipment and intangibles grew at an annual rate of just 4 percent in the second half of last year, a marked step-down from the nearly 14 percent pace in the first half. As with other sectors of the economy, investment demand has remained strong, while supply constraints have limited spending, as evidenced by shipments of capital goods increasingly lagging orders and equipment prices rising sharply. Supply bottlenecks in the motor vehicle sector have been particularly acute, and business spending on vehicles declined appreciably in the second half of 2021. Investment in nonresidential structures declined further last year despite a sharp rebound in oil drilling and remains well below pre-pandemic levels (figure 24). This sector typically lags in recoveries, and shortages of building materials may be further restraining activity.

. . . while financing conditions remain accommodative

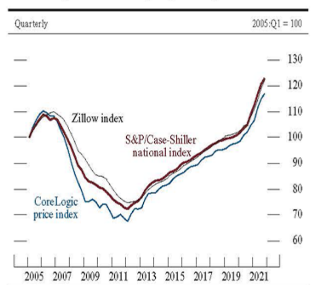
Corporate financing conditions through capital markets remained broadly accommodative for nonfinancial firms and continued to be supported by corporate bond yields that remain very low by historical standards. Amid these low yields and ample investor demand, gross issuance of corporate bonds continued at a robust pace, albeit down from the exceptional pace seen in 2020. In contrast, bank lending to businesses was, on net, subdued last year.

22. Mortgage rates



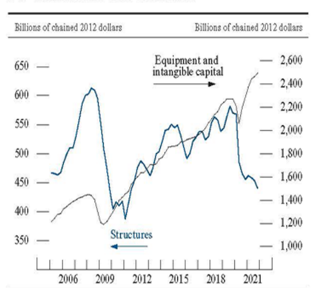
NOTE: The data are contract rates on 30-year, fixed-rate conventional home mortgage commitments and extend through February 17, 2022.
SOURCE: Freddie Mac Primary Mortgage Market Survey.

23. Real prices of existing single-family houses



NOTE: Series are deflated by the personal consumption expenditures price index.
SOURCE: Bureau of Economic Analysis via Haver Analytics; CoreLogic 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 note on the Contents page.)

24. Real business fixed investment

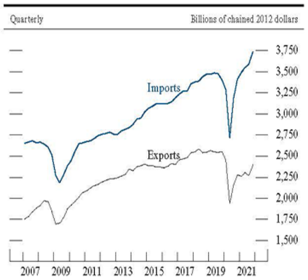


NOTE: Business fixed investment is known as "private nonresidential fixed investment" in the national income and product accounts. The data are quarterly.
SOURCE: Bureau of Economic Analysis via Haver Analytics.

While commercial real estate loans grew at a modest pace similar to the years just before the pandemic, commercial and industrial loan balances contracted as a result of loan forgiveness associated with the Paycheck Protection Program (PPP), elevated paydowns, and generally weak borrower demand.

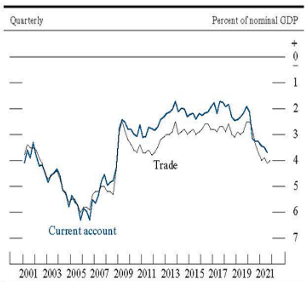
Meanwhile, financing conditions for small businesses have improved notably over the past year and have generally been stable in recent months. Lending standards have eased, and loan origination volumes are in line with pre-pandemic levels, though loan demand remains weak for the smallest firms. Moreover, default and delinquency rates are now within their pre-pandemic range. Nevertheless, the pandemic continues to negatively affect the operations of small businesses, especially in the most affected industries (accommodation and food services, arts, entertainment, and recreation).

25. Real imports and exports of goods and services



SOURCE: Bureau of Economic Analysis via Haver Analytics.

26. U.S. trade and current account balances



NOTE: GDP is gross domestic product. Current account balance data extend through 2021:Q3.
SOURCE: Bureau of Economic Analysis via Haver Analytics.

The strong U.S. demand has partly been met through a rapid rise in imports

Driven by the strength in U.S. economic activity, particularly the strong demand for goods and a desire to restock inventories, U.S. imports have continued to increase at a notable pace. High levels of imported goods have kept international logistics channels operating under high pressure, which has continued to impair the timely delivery of goods to U.S. customers. By contrast, U.S. exports increased modestly over the second half of 2021 and remain below pre-pandemic levels (figure 25). Given the relative strength in imports compared with exports, both the nominal trade deficit and the current account deficit have increased as a share of GDP relative to 2019 (figure 26).

Federal fiscal actions provided a diminishing degree of support to economic activity . . .

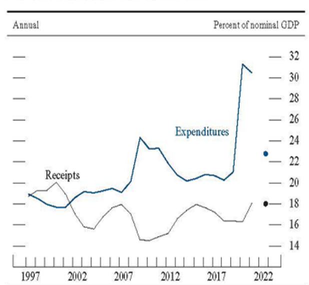
In response to the pandemic, the federal government enacted a historic set of fiscal policies to ameliorate hardship caused by the viral outbreak and support the economic recovery. Policies such as stimulus checks, supplemental unemployment insurance, and child tax credit payments have aided households; grants-in-aid have supported state and local governments; and business support programs such as the PPP have helped sustain firms. Although these temporary policies continue to support the *level* of GDP, they have begun to unwind and are now likely imposing a drag on GDP *growth* as the effects on spending wane over time. In addition to pandemic-support policies, the Infrastructure Investment and Jobs Act will gradually boost spending on infrastructure over the next 10 years and is only partially offset by new revenues and other spending reductions.

. . . while significantly raising the budget deficit and federal debt

Overall, the Congressional Budget Office estimates that fiscal policies enacted since the start of the pandemic—including the infrastructure bill—will increase federal deficits by roughly $5.4 trillion by the end of fiscal year 2030, with the largest deficit effects in fiscal 2020 and 2021.[8] These policies, combined with the effects of automatic stabilizers—the reduction in tax receipts and increase in transfers that occur as a consequence of depressed economic activity—caused the federal deficit to surge to 15 percent of nominal GDP in fiscal 2020 and remain elevated at 12½ percent in fiscal 2021. But with fiscal support fading, the deficit is expected to fall sharply this year to a level closer to that observed in the years just before the pandemic (figure 27).

8. For more information, see Congressional Budget Office (2020), "The Budgetary Effects of Laws Enacted in Response to the 2020 Coronavirus Pandemic, March and April 2020," June, https://www.cbo.gov/system/files/2020-06/56403-CBO-covid-legislation.pdf; Congressional Budget Office (2021), "The Budgetary Effects of Major Laws Enacted in Response to the 2020–21 Coronavirus Pandemic, December 2020 and March 2021," September, https://www.cbo.gov/system/files/2021-09/57343-Pandemic.pdf; and Congressional Budget Office (2021), "Senate Amendment 2137 to H.R. 3684, the Infrastructure Investment and Jobs Act, as Proposed on August 1, 2021," August 9, https://www.cbo.gov/system/files/2021-08/hr3684_infrastructure.pdf.

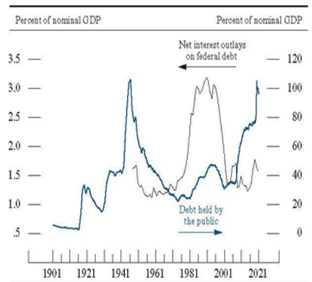
27. Federal receipts and expenditures



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. The dots represent fiscal year 2022 projections for receipts and expenditures from the Congressional Budget Office's July 2021 report, *An Update to the Budget and Economic Outlook: 2021 to 2031*.

SOURCE: Department of the Treasury, Financial Management Service; Office of Management and Budget and Bureau of Economic Analysis via Haver Analytics.

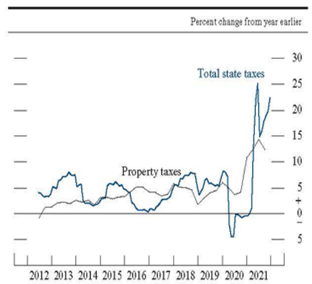
28. Federal government debt and net interest outlays



NOTE: The data for net interest outlays are annual, begin in 1948, and extend through 2021. Net interest outlays are the cost of servicing the debt held by the public. Federal debt held by the public equals federal debt less Treasury securities held in federal employee defined-benefit retirement accounts, evaluated at the end of the quarter. The data for federal debt are annual from 1901 to 1951 and quarterly thereafter and extend through 2021:Q3. GDP is gross domestic product.

SOURCE: 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."

29. State and local tax receipts



NOTE: State tax data are year-over-year percent changes of 12-month moving averages, begin in June 2012, extend through December 2021, and are aggregated over all states except Wyoming, for which data are not available. Revenues from Washington, DC, are also excluded. Data are missing for July through December for Connecticut, October through December for New Mexico, and December for Nevada and Oregon, as these states have longer reporting lags than others. Property tax data are year-over-year percent changes of 4-quarter moving averages, begin in 2012:Q2, extend through 2021:Q3, and are primarily collected by local governments.

SOURCE: Monthly State Government Tax Revenue Data via Urban Institute; Census Bureau, Quarterly Summary of State and Local Government Tax Revenue.

As a result of the unprecedented fiscal support over the past two years, federal debt held by the public jumped to around 100 percent of nominal GDP in 2020—the highest debt-to-GDP ratio since 1947—and remained at a similar level in 2021. Nevertheless, net interest outlays—primarily reflecting debt service payments—have remained relatively flat over the past two years due to historically low interest rates on government borrowing (figure 28).

State and local government finances have been bolstered by federal aid and strong growth in tax revenue . . .

Federal policymakers have provided a historic level of fiscal support to state and local governments, with aid totaling nearly $1 trillion—more than covering pandemic-related budget shortfalls in the aggregate. Moreover, following the pandemic-induced slump, total state tax collections rose smartly in 2021, pushed up by the economic expansion (figure 29). At the local level, property taxes have continued to rise apace, and the typically long lags between changes in the market value of real estate and changes in taxable assessments suggest that property tax revenues will continue to rise going forward, given the rise in house prices. Meanwhile, conditions in municipal bond markets remained accommodative: Yields stayed near historical lows, and issuance continued at a solid pace, on par with pre-pandemic issuance.

. . . but hiring and construction outlays continued to lag

Despite the return to in-person schooling this year and the strong fiscal position of state and local governments, employment levels have regained only about one-half of their sizable pandemic losses, with the shortfall concentrated in public education (figure 30). One reason appears to be that public-sector wages have not kept pace with the rapid gains in the private sector, which is likely inhibiting the ability of these governments to staff back up to pre-pandemic levels.

Meanwhile, real construction outlays by state and local governments appear to have declined significantly in 2021, and real infrastructure spending by these governments is currently about 10 percent below pre-pandemic levels.

Financial Developments

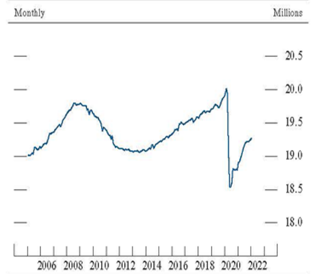
The path of the federal funds rate expected to prevail over the next few years steepened notably

The market-based expected path of the federal funds rate steepened notably amid news about the labor market recovery, rising inflation pressures, and the accompanying prospect of tighter monetary policy. Market-based measures suggest that investors anticipate the federal funds rate will soon begin to rise and move above 1 percent in the middle of this year, about two and a half years earlier than expected in July (figure 31).[9] Similarly, according to the results of the Survey of Primary Dealers and the Survey of Market Participants, both conducted by the Federal Reserve Bank of New York in January, the median respondent views the target range as most likely to increase later in the current quarter, about one and a half years earlier than in the June surveys.[10]

Treasury yields increased substantially across maturities . . .

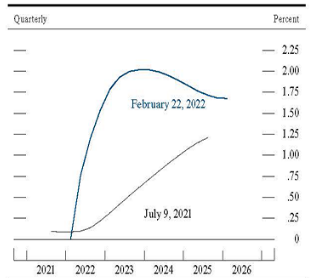
Yields on nominal Treasury securities across maturities have risen notably since early July, with much of the increase having occurred in the past couple of months as the anticipation for an imminent start to the removal of monetary accommodation has firmed (figure 32). Uncertainty about longer-term

30. State and local government payroll employment



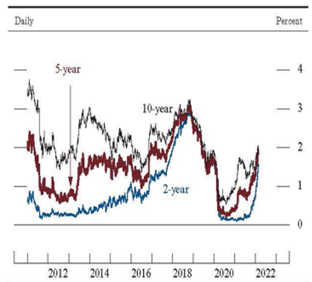
Note: The data are seasonally adjusted.
Source: Bureau of Labor Statistics via Haver Analytics.

31. 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, 2021, is compared with that as of February 22, 2022. The path is estimated with a spline approach, assuming a term premium of 0 basis points. The July 9, 2021, path extends through 2025:Q3 and the February 22, 2022, path through 2026:Q1.
Source: Bloomberg; Federal Reserve Board staff estimates.

32. Yields on nominal Treasury securities

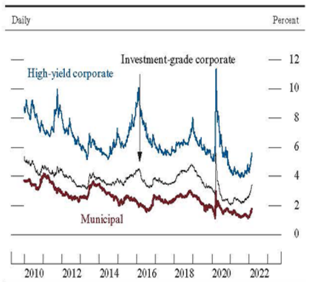


Source: Department of the Treasury via Haver Analytics.

9. These measures are based on a straight read of market quotes and are not adjusted for term premiums.

10. The results of the Survey of Primary Dealers and the Survey of Market Participants are available on the Federal Reserve Bank of New York's website at https://www.newyorkfed.org/markets/primarydealer_survey_questions.html and https://www.newyorkfed.org/markets/survey_market_participants, respectively.

33. Corporate bond yields, by securities rating, and municipal bond yield



NOTE: Investment-grade corporate reflects the effective yield of the ICE Bank of America Merrill Lynch (BofAML) triple-B U.S. Corporate Index (C0A4). High-yield corporate reflects the effective yield of the ICE BofAML High Yield Index (H0A0). Municipal reflects the yield to worst of the ICE BofAML U.S. Municipal Securities Index (U0A0).

SOURCE: ICE Data Indices, LLC, used with permission.

34. Yield and spread on agency mortgage-backed securities

NOTE: The data are daily. 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.

SOURCE: Department of the Treasury; J.P. Morgan. Courtesy of J.P. Morgan Chase & Co., Copyright 2022.

interest rates—as measured by the implied volatility embedded in the prices of near-term swap options on 10-year swap interest rates—also increased markedly, reportedly reflecting an increase in uncertainty about inflation and the policy outlook.

. . . while spreads of other long-term debt to Treasury securities widened moderately

Across credit categories, corporate bond yields have risen substantially, and their spreads over yields on comparable-maturity Treasury securities have widened moderately since early July (figure 33). Still, both yields and spreads remain near the bottom of their historical distributions, and corporate credit quality is generally healthy and stable. News about the spread of new coronavirus variants appeared to have only limited and temporary effects on corporate bond spreads.

Since early July, yields on 30-year agency mortgage-backed securities—an important pricing factor for home mortgage rates—increased, and spreads over comparable-maturity Treasury securities widened moderately but stayed near the low end of their historical range (figure 34). Municipal bond yields moved higher, and spreads over comparable-maturity Treasury securities widened to levels close to their historical medians.

Broad equity price indexes declined slightly on net

Broad indexes of equity prices decreased a little, on net, since early July. Recent declines amid expectations of an earlier beginning to the removal of policy accommodation have offset previous gains, which were supported by strong corporate earnings that had seemed resilient to pandemic developments (figure 35). Stocks of small-capitalization firms underperformed notably, as the likelihood for a tighter stance of monetary policy has increased. Bank stock prices rose, on net, buoyed by an improved economic outlook and expectations of higher levels of interest rates and net interest margins in the future. Measures of volatility for the S&P 500 index, both an option-implied metric (the VIX) and a comparable forward-looking measure based on realized volatility, increased somewhat amid evolving monetary policy expectations and concerns over the Omicron variant and stand above their respective historical medians (figure 36). (For a discussion of financial stability issues, see the box "Developments Related to Financial Stability.")

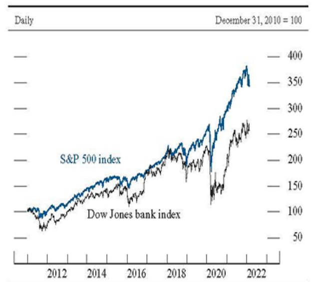
Markets for Treasury securities, mortgage-backed securities, and corporate and municipal bonds functioned well . . .

Markets for Treasury securities and mortgage-backed securities functioned smoothly since July even as some measures of liquidity conditions for Treasury securities deteriorated moderately, which reflected increased yield volatility due, in part, to uncertainty about the path of monetary policy. Measures of market functioning in corporate and municipal bond markets indicated liquid and stable trading conditions. Bid-ask spreads for corporate bonds across credit ratings currently stand below pre-pandemic levels and near the bottom of their historical distributions.

. . . while short-term funding market conditions remained stable

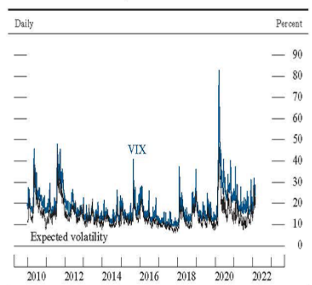
Short-term funding markets continued to function smoothly. The effective federal funds rate and other overnight unsecured rates declined slightly relative to the interest rate on reserve balances since early July. Secured overnight rates remained stable, with the Secured Overnight Financing Rate steady at the offering rate on the overnight reverse repurchase agreement (ON RRP) facility on most days since early July. Ample liquidity and a limited supply of Treasury bills kept short-term interest rates low and led to increased usage of the ON RRP facility. (See the box "Developments in the Federal Reserve's Balance Sheet and Money Markets" in Part 2.)

35. Equity prices



SOURCE: S&P Dow Jones Indices LLC via Bloomberg. (For Dow Jones Indices licensing information, see the note on the Contents page.)

36. S&P 500 volatility



NOTE: The VIX is a measure of implied volatility that represents the expected annualized change in 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.

SOURCE: Cboe Volatility Index® (VIX®) via Bloomberg; Refinitiv Datascope and Federal Reserve Board staff estimates.

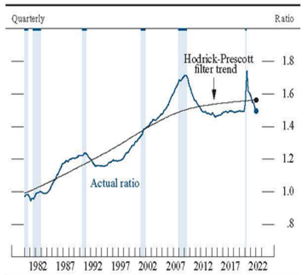
Developments Related to Financial Stability

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. Although some asset valuations are elevated, measures of household and business leverage have declined, and the banking system has shown considerable resilience since the onset of the pandemic. Structural vulnerabilities in other parts of the financial system are still being addressed, including those related to various types of investment funds and vulnerabilities in Treasury market functioning.

Prices of risky assets remain elevated, supported in part by a low interest rate environment and low term premiums on Treasury securities. One common measure of equity valuations, the ratio of equity prices to forecast earnings, remains high compared with historical values. Spreads on corporate bonds and leveraged loans continue to be low. Price indexes for a range of commercial real estate sectors are at or near historical highs, and vacancy rates have declined. Residential home prices have continued to rise, with nearly 80 percent of metropolitan statistical areas seeing double-digit annual growth rates during 2021.

Nonfinancial-sector leverage has broadly declined. The rapid growth of nominal gross domestic product (GDP) has brought the ratio of nominal credit to nominal GDP, which measures the aggregate debt owed by the private nonfinancial sector relative to the size of the economy, down to near its pre-pandemic levels (figure A). Household debt relative to nominal GDP remains firmly below its long-run trend, and household credit growth has been driven almost exclusively by prime-rated borrowers. Homeowner equity is high, and mortgage delinquency and foreclosure rates are below their pre-pandemic levels despite the end of pandemic-related relief and forbearance programs. Because of high corporate cash holdings, aggregate net nonfinancial business leverage sits at its lowest level since 2014. Fueled by strong earnings and low borrowing costs, most businesses saw a sharp increase in their ability to service their debt burdens, with the interest coverage ratio (the ratio of earnings to interest expenses) for the median firm solidly above pre-pandemic levels and near historical highs. However, for firms in industries hit hardest by the pandemic, including airlines, hotels, and restaurants, leverage remains elevated and interest coverage ratios are lower.

A. Private nonfinancial-sector credit-to-GDP ratio and trend



NOTE: The dots represent 2022:Q1 nowcasts. The shaded bars indicate periods of business recession as defined by the National Bureau of Economic Research. GDP is gross domestic product.

SOURCE: Federal Reserve Board, Statistical Release Z.1, "Financial Accounts of the United States"; National Income and Product Accounts, Bureau of Economic Analysis; Federal Reserve Board staff calculations.

Vulnerabilities from financial-sector leverage are well within their historical range. Risk-based capital ratios at domestic bank holding companies reached a 20-year high during the first quarter of 2021. These capital ratios declined modestly over the rest of the year as banks increased their share repurchases and dividend payouts amid an improved economic outlook and the Federal Reserve's lifting of restrictions on capital distributions. Throughout 2021, robust economic growth and strong capital markets contributed to high bank profitability, which fosters resilience through greater loss absorption capacity and an ability to retain earnings to raise capital if needed. In contrast, leverage at certain nonbank financial institutions, including life insurers and hedge funds, has remained near historical highs. Data limitations and the complexity of hedge fund strategies can obscure the true nature of leverage in that sector. However, one common measure of hedge fund leverage, the ratio of gross notional exposures to equity capital, is near its peak since data became available in 2012.

(continued)

Funding markets remain relatively stable. Domestic banks continue to maintain significant levels of high-quality liquid assets. Assets under management at prime and tax-exempt money market funds (MMFs), which experienced significant outflows during the March 2020 turmoil, continued to decline, on net, since mid-2021, while those at government MMFs remained near historical highs. In December 2021, the Securities and Exchange Commission (SEC) proposed reforms to MMFs intended to mitigate the financial stability risks they pose, including the adoption of swing pricing for certain fund types, increased liquidity requirements, and other measures meant to make them more resilient to redemptions. The market for digital assets, including stablecoins, has grown rapidly. The market value of stablecoins exceeded $150 billion as of January 2022. As detailed in a November 2021 report released by the President's Working Group on Financial Markets, the Federal Deposit Insurance Corporation, and the Office of the Comptroller of the Currency, some stablecoins are partially backed by assets that may lose value or become illiquid, making them susceptible to runs.[1] Prefunded resources at central counterparties (CCPs) are high, particularly relative to current market volatility, reducing the likelihood of margin shortfalls and liquidity strains if volatility increases. Nevertheless, increased retail trading has exposed new challenges for the risk-management frameworks of the CCPs that clear equities and equity options. Financial institutions with significant holdings of long-term fixed-rate debt instruments (for example, Treasury securities, agency mortgage-backed securities (MBS), corporate bonds, and mortgage loans), such as banks and mutual funds, may recognize revaluation losses if long-term interest rates increase further, though some of those losses could be offset by higher interest income.

Treasury Market Resilience

In November 2021, the Interagency Working Group composed of staff from the Department of the Treasury, Federal Reserve Board, Federal Reserve Bank of New York, SEC, and Commodity Futures Trading Commission released a report detailing ongoing vulnerabilities in the U.S. Treasury market and principles to promote a well-functioning Treasury market.[2] The report also outlined multiple ongoing workstreams designed to further enhance the group's understanding of Treasury market vulnerabilities and to consider policy options that may further strengthen the market.

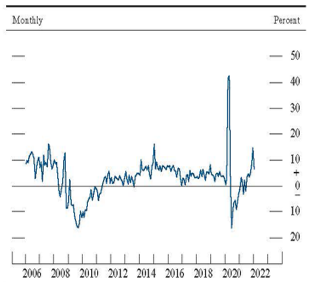
LIBOR Transition

The shift away from the widely used U.S. dollar (USD) LIBOR reference rates stepped up notably in recent months, in line with regulatory guidance to end most new use of USD LIBOR by December 31, 2021, and well ahead of the cessation of those rates on June 30, 2023. The transition away from USD LIBOR has largely been completed in floating-rate debt markets, where nearly 90 percent of new issuance now references the Secured Overnight Financing Rate (SOFR). In securitization markets, the government-sponsored enterprises had stopped accepting LIBOR adjustable-rate mortgages (ARMs) in 2020, are now accepting only SOFR ARMs, and have tied all of their associated MBS issuance to SOFR. Interest rate swap markets saw increases in volumes for SOFR-based trades in the second half of 2021, and this pace accelerated rapidly in January such that SOFR-based swaps trading now accounts for the majority of risk traded in this market, indicating widespread awareness and adoption of risk-free reference rates. Eurodollar futures have lagged the swap market, although volumes for SOFR-based futures contracts are increasing there also. The transition in business lending has been slower, although recent data suggest that the use of USD LIBOR as a reference rate for business loans has fallen sharply since the start of the year and that the pace of SOFR adoption is accelerating.

1. See President's Working Group on Financial Markets, Federal Deposit Insurance Corporation, and Office of the Comptroller of the Currency (2021), *Report on Stablecoins* (Washington: PWGFM, FDIC, and OCC, November), https://home.treasury.gov/system/files/136/StableCoinReport_Nov1_508.pdf.

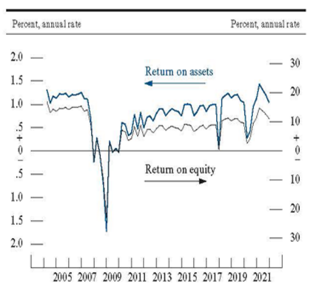
2. See U.S. Department of the Treasury, Board of Governors of the Federal Reserve System, Federal Reserve Bank of New York, U.S. Securities and Exchange Commission, and U.S. Commodity Futures Trading Commission (2021), *Recent Disruptions and Potential Reforms in the U.S. Treasury Market: A Staff Progress Report* (Washington: Department of the Treasury, Board of Governors, FRBNY, SEC, and CFTC, November), https://home.treasury.gov/system/files/136/IAWG-Treasury-Report.pdf.

37. Growth in total loans and leases



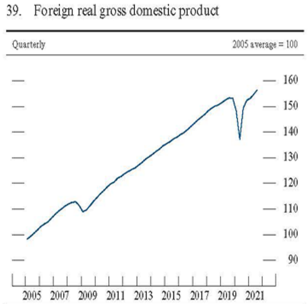
NOTE: The data are calculated as monthly annualized growth rates and are seasonally and break adjusted.
SOURCE: Federal Reserve Board, Statistical Release H.8, "Assets and Liabilities of Commercial Banks in the United States."

38. Profitability of bank holding companies



NOTE: The data are quarterly and are seasonally adjusted.
SOURCE: Federal Reserve Board, Form FR Y-9C, Consolidated Financial Statements for Bank Holding Companies.

39. Foreign real gross domestic product



NOTE: Foreign gross domestic product is computed on a representative sample of 40 countries and aggregated using U.S. trade weights. The data extend through 2021:Q3.
SOURCE: Federal Reserve Bank of Dallas, Database of Global Economic Indicators, "Real Gross Domestic Product," accessed via https://www.dallasfed.org/institute/dgei/gdp.aspx.

Bank credit expanded and bank profitability remained strong

Total loans and leases outstanding at commercial banks expanded significantly in the second half of last year, driven by continued solid growth in commercial real estate, residential real estate, and consumer loans, which outweighed declines in commercial and industrial loans (figure 37). In both October and January, the Senior Loan Officer Opinion Survey on Bank Lending Practices, conducted by the Federal Reserve, reported easier standards for most loan categories over the second half of 2021.[11] In the January survey, respondents generally anticipated a further easing of lending standards and stronger loan demand over the current year. Bank profitability remained strong, declining slightly over the second half of last year but remaining at pre-pandemic levels, helped by the continued release of loan loss reserves, given solid credit quality indicators (figure 38). Delinquency rates on bank loans remained low relative to historical averages throughout the second half of 2021.

International Developments

The recovery abroad continued in the second half of the year . . .

Economic activity abroad continued to recover briskly in the second half of last year (figure 39), as a noticeable pickup in vaccinations and greater adaptability allowed many foreign economies to further reopen. Unemployment rates in advanced foreign economies (AFEs) have now generally returned to levels near those that prevailed before the pandemic. That said, the emergence of the Delta variant of the virus last summer slowed the recovery of some economies, especially in Asia, and resulted in factory and port closures, which, in turn, exacerbated supply bottlenecks.

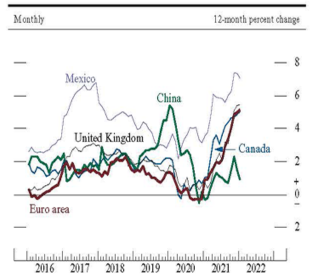
11. The survey is available on the Federal Reserve Board's website at https://www.federalreserve.gov/data/sloos/sloos.htm.

More recently, the Omicron outbreak has been a headwind and a risk, especially for countries with lower vaccination rates; and order backlogs in industries such as automobile manufacturing remain high. Still, production bottlenecks in Asia have started to unwind.

. . . and foreign inflation increased significantly in most economies

As in the United States, foreign inflation has picked up noticeably since late 2020 (figure 40). This higher inflation has been mostly driven by soaring prices for energy and food, which, combined, account for well over half of the level of inflation abroad (figure 41). Higher prices for core goods have also contributed to the rise of inflation, but core inflation abroad has risen less than in the United States, in part because demand for durable goods in foreign economies appears to have increased relatively less sharply.

40. Consumer price inflation in selected foreign economies

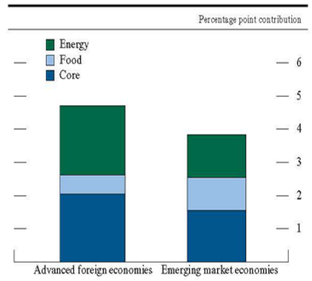


SOURCE: For the United Kingdom, Office for National Statistics; for the euro area, Statistical Office of the European Communities; for Canada, Statistics Canada; for Mexico, Instituto Nacional de Estadística, Geografía e Informática; for China, China National Bureau of Statistics; all via Haver Analytics.

Many foreign central banks are tightening monetary policy or have signaled a future shift in stance

In light of elevated inflation, many policymakers are moving to reduce the significant monetary stimulus undertaken since the start of the pandemic. Several emerging market central banks, including those of Brazil, Korea, and Mexico, have already raised their policy rates because of concerns over the persistence of inflationary pressures.

41. Consumer price inflation in foreign economies

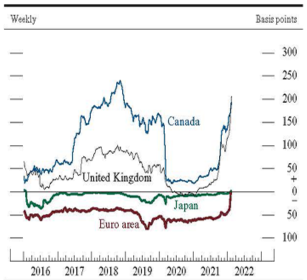


NOTE: The advanced foreign economy aggregate is the average of Canada, the euro area, and the United Kingdom, weighted by U.S. goods imports. The emerging market economy aggregate is the average of Argentina, Brazil, Chile, China, Colombia, Hong Kong, India, Israel, Mexico, Russia, Saudi Arabia, Singapore, South Korea, and the 5 original member countries of the Association of Southeast Asian Nations, weighted by U.S. goods imports. The inflation measure is the Harmonised Index of Consumer Prices for the euro area and the consumer price index for other economies. The key identifies bars in order from top to bottom. The data are the Q4-over-Q4 percent change for 2021.

SOURCE: Haver Analytics.

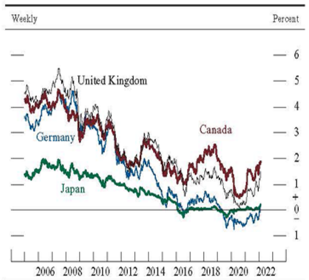
In AFEs, a few central banks, including those of New Zealand, Norway, and the United Kingdom, have started raising their policy rates, and the Bank of Canada has signaled its intention to raise its policy rate soon (figure 42). Others have taken steps to normalize their balance sheet policies: The Bank of Canada, the Bank of England, and the Reserve Bank of Australia have ceased net asset purchases, and the European Central Bank plans to reduce its asset purchases this year. In contrast, the Bank of Japan has communicated that it is not in a rush to tighten policy, noting that measures of

42. 12-month policy expectations for selected advanced foreign economies



NOTE: The data are weekly averages of daily 12-month market-implied central bank policy rates. The 12-month policy rates are implied by quotes on overnight index swaps tied to the policy rates. The data extend through February 18, 2022.
SOURCE: Bloomberg; Federal Reserve Board staff estimations.

43. Nominal 10-year government bond yields in selected advanced foreign economies



NOTE: The data are weekly averages of daily benchmark yields and extend through February 18, 2022.
SOURCE: Bloomberg.

underlying inflation in Japan remain below its 2 percent target.

Foreign financial conditions tightened some but remain accommodative . . .

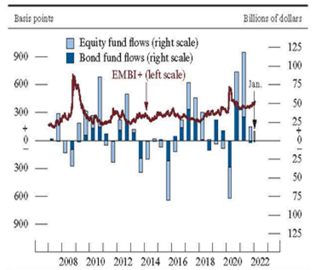
Expectations for faster removal of monetary policy accommodation, amid higher inflation and easing concerns about the pandemic, led to notable increases in sovereign yields in several AFEs (figure 43). Despite expectations for tighter monetary policy, the strength in corporate earnings and reduced concerns about the pandemic have supported AFE equities, which are little changed, on net, since mid-2021.

The change in financial conditions in emerging market economies (EMEs) has been relatively muted despite the shift in advanced-economy monetary policy expectations and increased geopolitical tensions. Net inflows to EME-dedicated funds stepped down and hovered around zero, in contrast with notable outflows during the 2013–14 period, and EME sovereign spreads widened only somewhat (figure 44). In China, solvency problems in the real estate sector and regulatory uncertainty appeared to weigh on stock prices of large Chinese firms listed in Hong Kong, with the Hang Seng Index decreasing notably. Brazilian equity prices also decreased amid political uncertainty, while some other EME stock indexes registered moderate gains. More recently, geopolitical tensions surrounding Russia and Ukraine have led to the underperformance of Eastern European equity indexes.

. . . and the dollar appreciated moderately on net

The broad dollar index—a measure of the trade-weighted value of the dollar against foreign currencies—has risen modestly since mid-2021 (figure 45). The dollar appreciated against Latin American currencies amid increased political uncertainty in some countries, while it was mixed against Asian EME currencies. The dollar appreciated against many AFE currencies, in part reflecting the more notable increase in the U.S. near-term yields compared with the AFE counterparts.

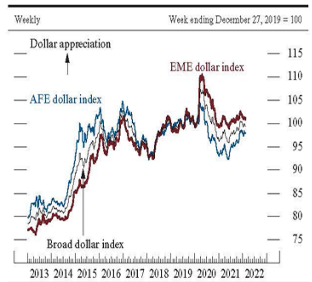
44. Emerging market mutual fund flows and spreads



NOTE: The bond and equity fund flows data are semiannual sums of weekly data from December 28, 2006, to December 29, 2021, and a monthly sum of weekly data from December 30, 2021, to January 26, 2022. Weekly data span Thursday through Wednesday, and the semiannual and monthly values are sums over weekly data for weeks ending in that half year or month. The fund flows data exclude funds located in China. The J.P. Morgan Emerging Markets Bond Index Plus (EMBI+) data are weekly averages of daily data, extend through January 28, 2022, and exclude Venezuela.

SOURCE: For bond and equity fund flows, EPFR Global; for EMBI+, J.P. Morgan Emerging Markets Bond Index Plus via Bloomberg.

45. U.S. dollar exchange rate indexes



NOTE: The data, which are in foreign currency units per dollar, are weekly averages of daily values of the broad dollar index, advanced foreign economies (AFE) dollar index, and emerging market economies (EME) dollar index. The weekly data extend through February 18, 2022. As indicated by the leftmost arrow, increases in the data reflect U.S. dollar appreciation and decreases reflect U.S. dollar depreciation.

SOURCE: Federal Reserve Board, Statistical Release H.10, "Foreign Exchange Rates."

Part 2
Monetary Policy

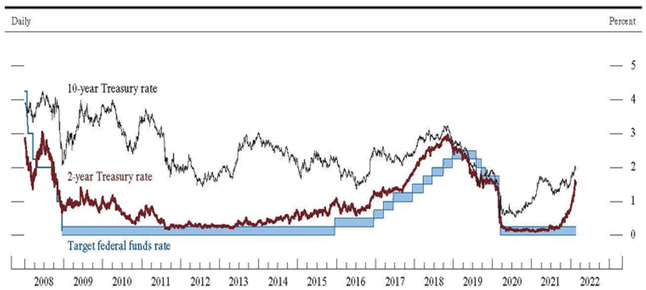
The Federal Open Market Committee has maintained the federal funds rate near zero . . .

The Federal Open Market Committee (FOMC) has been providing forward guidance for the target range for the federal funds rate, indicating that the range would be maintained at 0 to ¼ percent until specific employment and inflation criteria had been met. Consistent with that guidance, the FOMC has maintained the target range for the federal funds rate at 0 to ¼ percent (figure 46). In December, the Committee concluded that the inflation criteria in the forward guidance had been met and the target range would be maintained until labor market conditions had reached levels consistent with the Committee's assessments of maximum employment. In January, the Committee stated that, with inflation well above 2 percent and a strong labor market, it expected it would soon be appropriate to raise the target range for the federal funds rate.

. . . and the Committee has gradually reduced the monthly pace of its net asset purchases of Treasury securities and agency mortgage-backed securities, which will end in early March

From June 2020 until November 2021, the Federal Reserve had been expanding its holdings of Treasury securities by $80 billion per month and its holdings of agency mortgage-backed securities (MBS) by $40 billion per month. At its November meeting, in light of the substantial further progress the economy had made toward maximum employment and price stability, the Committee decided to reduce the monthly pace of its net asset purchases by $10 billion per month for Treasury securities and by $5 billion per month for agency MBS. At its December meeting, in light of inflation developments and the further improvement in the labor market, the Committee began to reduce the monthly pace of net purchases more rapidly, by

46. Selected interest rates



Note: The 2-year and 10-year Treasury rates are the constant-maturity yields based on the most actively traded securities.
Source: Department of the Treasury; Federal Reserve Board.

$20 billion per month for Treasury securities and by $10 billion per month for agency MBS. At its January meeting, the Committee decided to continue to reduce the monthly pace of net purchases and conclude net purchases in early March.

The FOMC will continue to monitor the implications of incoming information for the economic outlook

The Committee will continue to monitor incoming economic data and would be prepared to adjust the stance of monetary policy as appropriate to manage risks that could impede the attainment of its goals. The Committee's assessments will take into account a wide range of information, including readings on public health, labor market conditions, inflation pressures and inflation expectations, and financial and international developments. With appropriate policy, inflation is expected to decline over the course of the year as supply constraints ease and demand moderates due to waning effects of fiscal support and the removal of monetary policy accommodation. The FOMC will use its policy tools as appropriate to prevent higher inflation from becoming entrenched while promoting a sustainable expansion and strong labor market.

The Federal Reserve issued a statement regarding principles for reducing the size of its balance sheet

Following the conclusion of its January meeting, the FOMC issued a set of principles regarding its planned approach for significantly reducing the size of the Federal Reserve's balance sheet.[12] With these principles, the Committee reiterated its view that changes in the target range for the federal funds rate are its primary means of adjusting the stance of monetary policy and conveyed its expectation that reducing the size of the Federal Reserve's balance sheet would occur after the process of increasing the target range for the federal funds rate had begun. The Committee also noted that it would determine the timing and pace of reductions in the size of its balance sheet so as to promote its maximum-employment and price-stability goals and that reductions would occur over time in a predictable manner, primarily by adjusting the amounts reinvested of principal payments received from securities held in the System Open Market Account (SOMA). Furthermore, the FOMC communicated that, over time, it intended to maintain securities holdings in amounts needed to implement monetary policy efficiently and effectively in its ample reserves regime. The Committee also noted that, in the longer run, it intended to hold primarily Treasury securities in the SOMA, thereby minimizing the effect of Federal Reserve holdings on the allocation of credit across sectors of the economy. Finally, the Committee emphasized that it was prepared to adjust any details of its approach in light of economic and financial developments.

The size of the Federal Reserve's balance sheet continued to grow, although at a diminished pace since November

The Federal Reserve's balance sheet has grown to $8.9 trillion from $8.1 trillion in July, reflecting continued net asset purchases of U.S. Treasury securities and agency mortgage-backed securities to support smooth market functioning and foster accommodative financial conditions, thereby supporting the flow of credit to households and businesses (figure 47). All of the Federal Reserve's emergency credit and liquidity facilities have

12. See the January 26, 2022, press release regarding the Principles for Reducing the Size of the Federal Reserve's Balance Sheet, available at https://www.federalreserve.gov/newsevents/pressreleases/monetary20220126c.htm.

been closed for new lending for some time, and the residual outstanding balances at those facilities have continued to decline.[13]

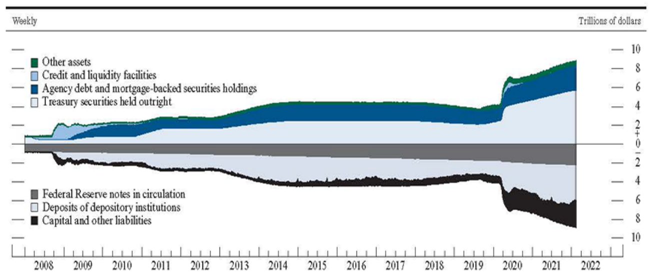
Reserve balances have changed little, on net, since July and stand near $4 trillion. Usage of the overnight reverse repurchase agreement facility increased significantly. (See the box "Developments in the Federal Reserve's Balance Sheet and Money Markets.")

13. A list of credit and liquidity facilities established by the Federal Reserve in response to COVID-19 is available on the Federal Reserve's website at https://www.federalreserve.gov/funding-credit-liquidity-and-loan-facilities.htm.

The Federal Reserve established two standing repurchase agreement facilities

In July of last year, the Federal Reserve established a domestic standing repurchase agreement (repo) facility and a standing repo facility for foreign and international monetary authorities. These facilities are intended to serve as backstops in money markets to support the effective implementation of monetary policy and smooth market functioning. The rates for these facilities have been maintained at levels somewhat higher than rates in overnight funding markets, consistent with their intended roles as backstops.

47. 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 reverse repurchase agreements, 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 February 16, 2022.

SOURCE: Federal Reserve Board, Statistical Release H.4.1, "Factors Affecting Reserve Balances."

Developments in the Federal Reserve's Balance Sheet and Money Markets

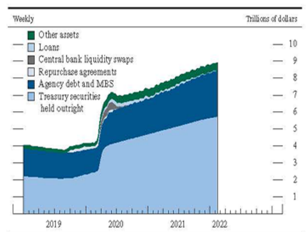
The size of the Federal Reserve's balance sheet increased from $4.2 trillion before the pandemic to its current level of roughly $8.9 trillion, largely reflecting an increase in System Open Market Account holdings from asset purchases (figure A). As net asset purchases have continued, albeit at a slower pace in recent months, the Federal Reserve's liabilities have also increased (figure B).[1] This discussion reviews recent developments in the size and composition of the Federal Reserve's balance sheet and conditions in money markets.

The Federal Reserve's net asset purchases continued at a pace of $120 billion per month from July through October. At its November meeting—in light of the substantial further progress the economy had made toward the Federal Open Market Committee's goals since December 2020—the Committee decided to begin reducing the monthly pace of its net asset purchases by $10 billion per month for Treasury securities and $5 billion per month for agency mortgage-backed securities. At its December meeting—in light of inflation developments and further improvement in the labor market—the Committee decided to double the pace of reductions in its net asset purchases, implying that increases in securities holdings would cease by mid-March. The Federal Reserve's net asset purchases since July 2021 have led to an $813 billion increase in its total assets (figure C).

Federal Reserve liabilities increased in line with changes in its assets. The level of reserve balances was little changed, on net, while other liabilities—most notably the overnight reverse repurchase agreements (ON RRP)—increased substantially. Another Federal

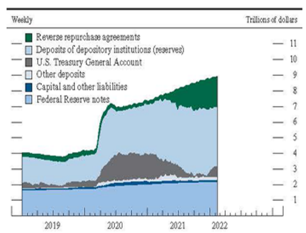
(continued)

A. Federal Reserve assets



Note: MBS is mortgage-backed securities. The key identifies shaded areas in order from top to bottom. The data extend through February 16, 2022.
Source: Federal Reserve Board, Statistical Release H.4.1, "Factors Affecting Reserve Balances."

B. Federal Reserve liabilities



Note: "Capital and other liabilities" includes Treasury contributions. The key identifies shaded areas in order from top to bottom. The data extend through February 16, 2022.
Source: Federal Reserve Board, Statistical Release H.4.1, "Factors Affecting Reserve Balances."

1. For general explanations of several liabilities on the Federal Reserve's bala2nce sheet, see the box "The Role of Liabilities in Determining the Size of the Federal Reserve's Balance Sheet" in Board of Governors of the Federal Reserve System (2019), *Monetary Policy Report* (Washington: Board of Governors, February), pp. 41–43, https://www.federalreserve.gov/monetarypolicy/files/20190222_mprfullreport.pdf.

C. Balance sheet comparison
Billions of dollars

	February 16, 2022	July 7, 2021	Change
Assets			
Total securities			
Treasury securities	5,739	5,202	537
Agency debt and MBS	2,707	2,322	385
Net unamortized premiums	350	351	−1
Repurchase agreements	0	0	0
Loans and lending facilities			
PPPLF	28	88	−60
Other loans and lending facilities	40	72	−32
Central bank liquidity swaps	0	1	−1
Other assets	48	61	−13
Total assets	**8,911**	**8,098**	**813**
Liabilities and capital			
Federal Reserve notes	2,185	2,139	45
Reserves held by depository institutions	3,797	3,856	−59
Reverse repurchase agreements			
Foreign official and international accounts	257	264	−7
Others	1,644	786	858
U.S. Treasury General Account	709	725	−16
Other deposits	251	237	14
Other liabilities and capital	67	91	−24
Total liabilities and capital	**8,911**	**8,098**	**813**

Note: MBS is mortgage-backed securities. PPPLF is Paycheck Protection Program Liquidity Facility.
Source: Federal Reserve Board, Statistical Release H.4.1, "Factors Affecting Reserve Balances."

Reserve liability—balances maintained in the Treasury General Account (TGA)—varied significantly over recent months in connection with developments related to the debt limit. The U.S. Treasury lowered its outstanding balance in the TGA from $725 billion in the beginning of July 2021 to a low of $42 billion on December 16, 2021. Following the debt limit resolution on December 16, 2021, which raised the debt limit of the U.S. government, both net Treasury bill issuance and the TGA balance increased to more normal levels.[2]

Money markets continued to function smoothly amid these developments, with ample liquidity putting broad downward pressure on short-term interest rates. In addition, the limited supply of Treasury bills during the debt limit episode pushed bill yields lower. In this environment of ample liquidity, limited Treasury bill supply, and low repurchase agreement rates, the ON RRP facility continued to serve its intended purpose of helping to provide a floor under short-term interest rates and support effective implementation of monetary policy.[3] Usage of the facility has nearly doubled, on average, since early July, primarily driven by greater participation from government money market funds.[4] The ON RRP take-up reached a record high of $1.9 trillion on year-end before retracing to around $1.6 trillion in early January.

2. For details, see U.S. Congress, Senate (2021), "A Joint Resolution Relating to Increasing the Debt Limit," S.J. Res., 117 Cong. *Congressional Record* (daily edition), vol. 167, December 14, pp. S 9134–53, https://www.congress.gov/bill/117th-congress/senate-joint-resolution/33.

3. The ON RRP facility helps keep the effective federal funds rate from falling below the target range set by the Federal Open Market Committee, as institutions with access to the ON RRP should be unwilling to lend funds below the ON RRP's preannounced offering rate. The ON RRP facility is primarily used by nonbank counterparties such as money market funds. The rate offered through the ON RRP facility complements the interest on reserve balances rate in supporting effective monetary policy implementation.

4. In light of the potential for expanded use of the facility and given growth in money market fund assets under management in recent years, the Federal Open Market Committee raised the per-counterparty cap on ON RRP participation to $160 billion per day from $80 billion at its September 2021 meeting.

Part 3
Summary of Economic Projections

The following material was released after the conclusion of the December 14–15, 2021, meeting of the Federal Open Market Committee.

In conjunction with the Federal Open Market Committee (FOMC) meeting held on December 14–15, 2021, 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 2021 to 2024 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 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.

Table 1. Economic projections of Federal Reserve Board members and Federal Reserve Bank presidents, under their individual assumptions of projected appropriate monetary policy, December 2021

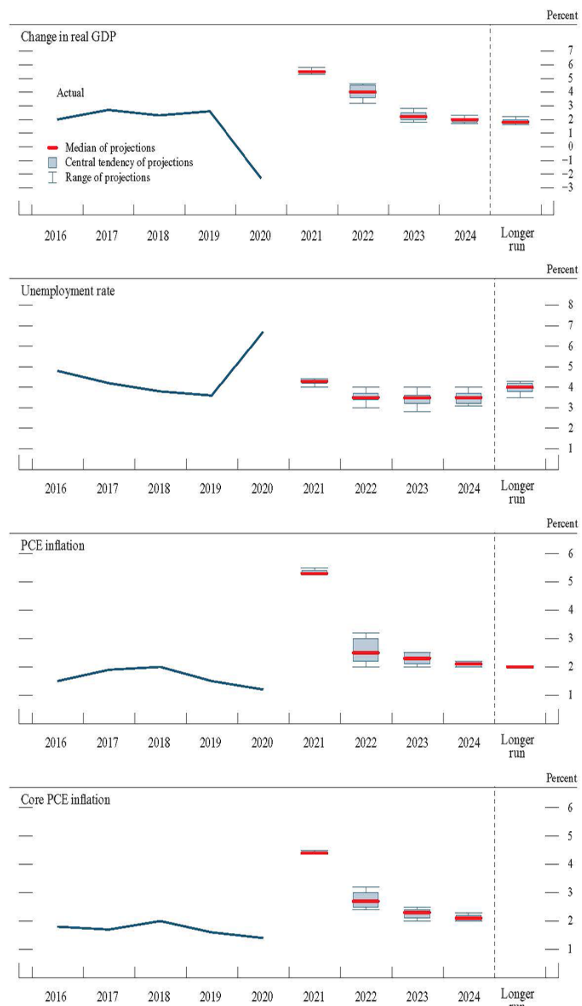
Percent

Variable	Median[1]					Central tendency[2]					Range[3]				
	2021	2022	2023	2024	Longer run	2021	2022	2023	2024	Longer run	2021	2022	2023	2024	Longer run
Change in real GDP	5.5	4.0	2.2	2.0	1.8	5.5	3.6–4.5	2.0–2.5	1.8–2.0	1.8–2.0	5.3–5.8	3.2–4.6	1.8–2.8	1.7–2.3	1.6–2.2
September projection	5.9	3.8	2.5	2.0	1.8	5.8–6.0	3.4–4.5	2.2–2.5	2.0–2.2	1.8–2.0	5.5–6.3	3.1–4.9	1.8–3.0	1.8–2.5	1.6–2.2
Unemployment rate.....	4.3	3.5	3.5	3.5	4.0	4.2–4.3	3.4–3.7	3.2–3.6	3.2–3.7	3.8–4.2	4.0–4.4	3.0–4.0	2.8–4.0	3.1–4.0	3.5–4.3
September projection	4.8	3.8	3.5	3.5	4.0	4.6–4.8	3.6–4.0	3.3–3.7	3.3–3.6	3.8–4.3	4.5–5.1	3.0–4.0	2.8–4.0	3.0–4.0	3.5–4.5
PCE inflation..........	5.3	2.6	2.3	2.1	2.0	5.3–5.4	2.2–3.0	2.1–2.5	2.0–2.2	2.0	5.3–5.5	2.0–3.2	2.0–2.5	2.0–2.2	2.0
September projection	4.2	2.2	2.2	2.1	2.0	4.0–4.3	2.0–2.5	2.0–2.3	2.0–2.2	2.0	3.4–4.4	1.7–3.0	1.9–2.4	2.0–2.3	2.0
Core PCE inflation[4].....	4.4	2.7	2.3	2.1		4.4	2.5–3.0	2.1–2.4	2.0–2.2		4.4–4.5	2.4–3.2	2.0–2.5	2.0–2.3	
September projection	3.7	2.3	2.2	2.1		3.6–3.8	2.0–2.5	2.0–2.3	2.0–2.2		3.5–4.2	1.9–2.8	2.0–2.3	2.0–2.4	
Memo: Projected appropriate policy path															
Federal funds rate......	0.1	0.9	1.6	2.1	2.5	0.1	0.6–0.9	1.4–1.9	1.9–2.9	2.3–2.5	0.1	0.4–1.1	1.1–2.1	1.9–3.1	2.0–3.0
September projection	0.1	0.3	1.0	1.8	2.5	0.1	0.1–0.4	0.4–1.1	0.9–2.1	2.3–2.5	0.1	0.1–0.6	0.1–1.6	0.6–2.6	2.0–3.0

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 21–22, 2021. One participant did not submit longer-run projections for the change in real GDP, the unemployment rate, or the federal funds rate in conjunction with the September 21–22, 2021, meeting, and one participant did not submit such projections in conjunction with the December 14–15, 2021, meeting.

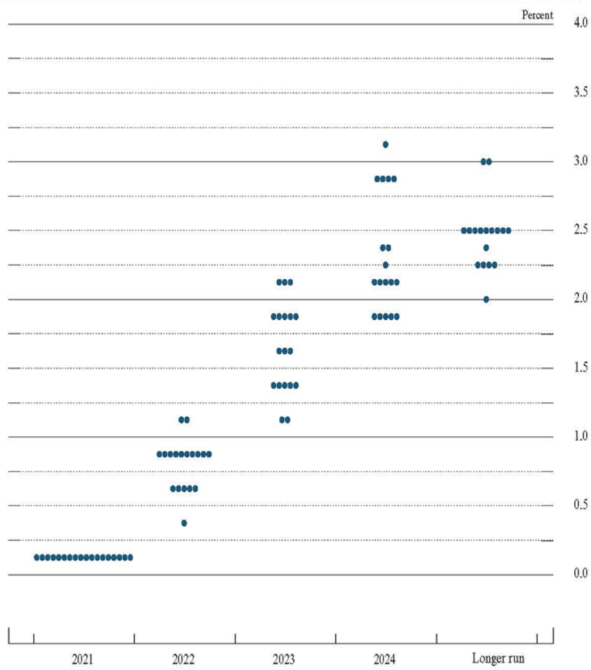
1. For each period, the median is the middle projection when the projections are arranged from lowest to highest. When the number of projections is even, the median is the average of the two middle projections.
2. The central tendency excludes the three highest and three lowest projections for each variable 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.

Figure 1. Medians, central tendencies, and ranges of economic projections, 2021–24 and over the longer run



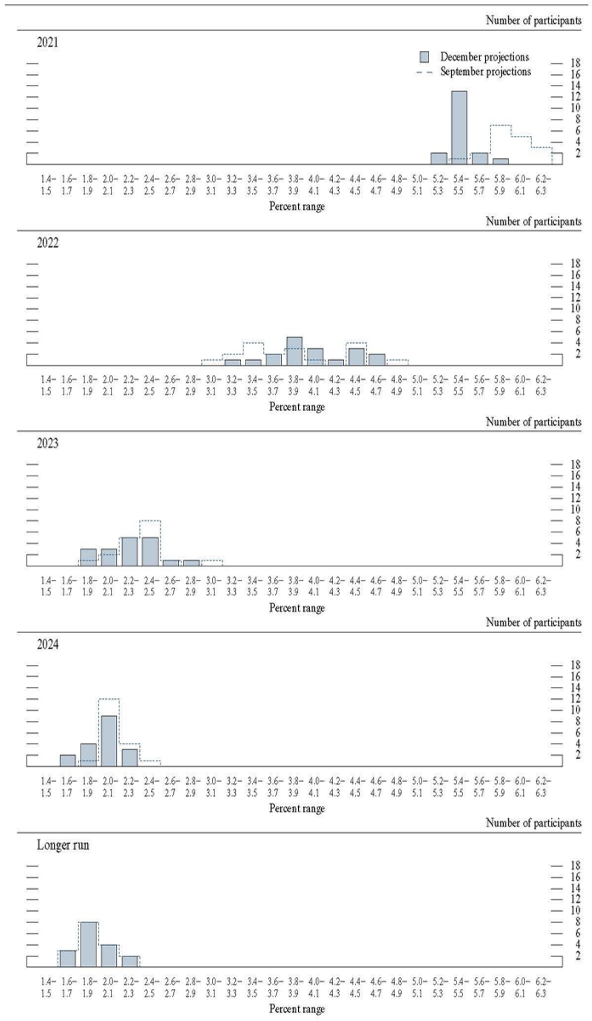
Note: Definitions of variables and other explanations are in the notes to table 1. The data for the actual values of the variables are annual.

Figure 2. FOMC participants' assessments of appropriate monetary policy: Midpoint of target range or target level for the federal funds rate



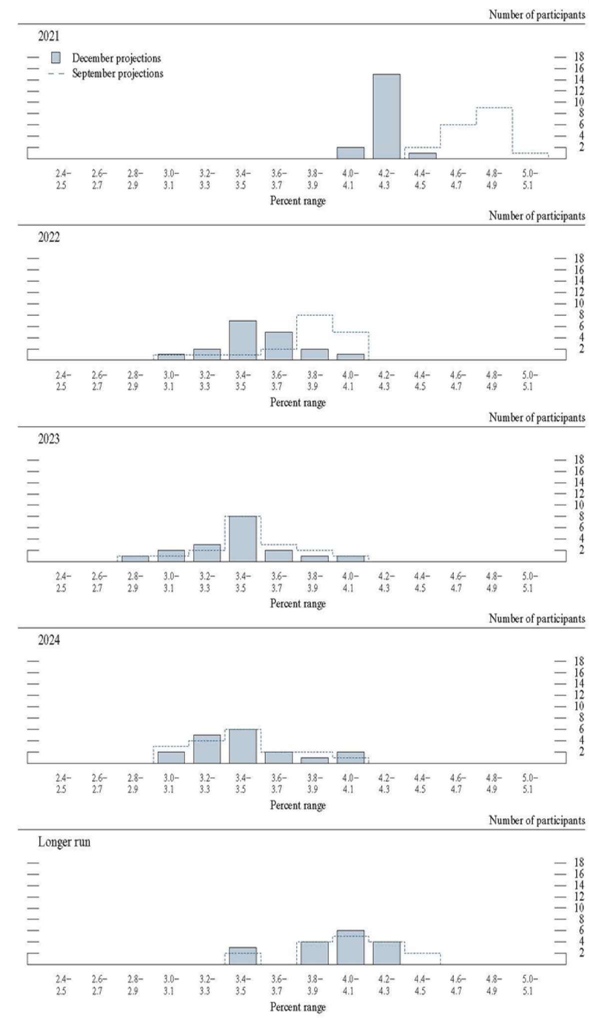
NOTE: Each shaded circle indicates the value (rounded to the nearest 1/8 percentage point) of an individual participant's judgment of the midpoint of the appropriate target range for the federal funds rate or the appropriate target level for the federal funds rate at the end of the specified calendar year or over the longer run. One participant did not submit longer-run projections for the federal funds rate.

Figure 3.A. Distribution of participants' projections for the change in real GDP, 2021–24 and over the longer run



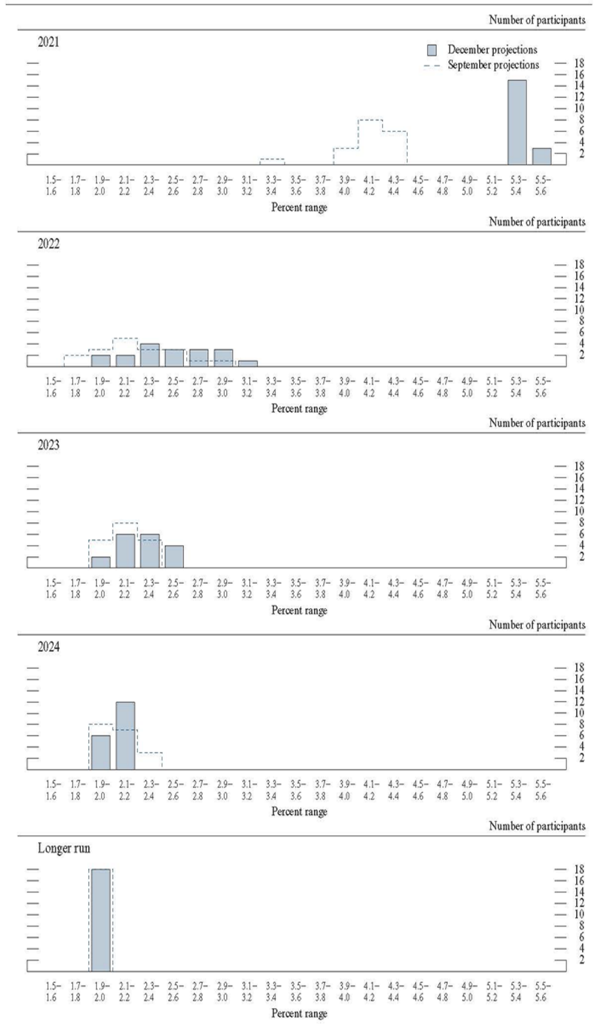
Note: Definitions of variables and other explanations are in the notes to table 1.

Figure 3.B. Distribution of participants' projections for the unemployment rate, 2021–24 and over the longer run



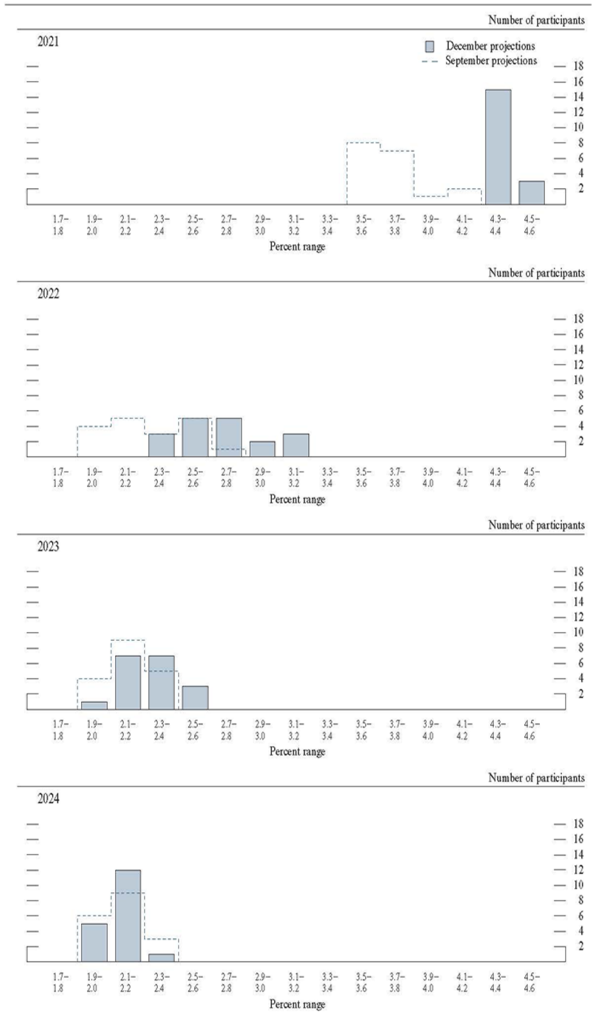
NOTE: Definitions of variables and other explanations are in the notes to table 1.

Figure 3.C. Distribution of participants' projections for PCE inflation, 2021–24 and over the longer run



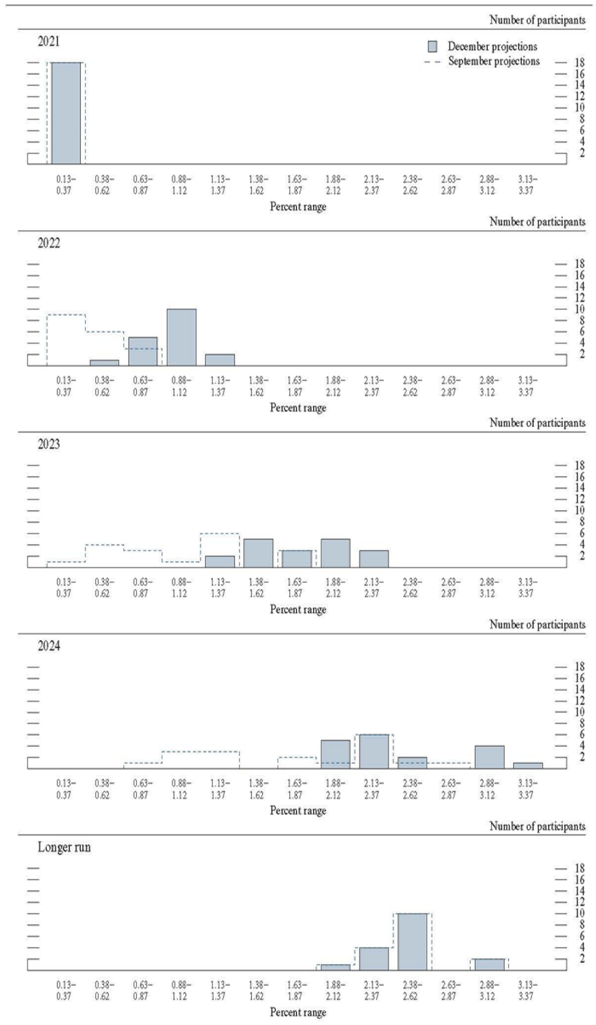
Note: Definitions of variables and other explanations are in the notes to table 1.

Figure 3.D. Distribution of participants' projections for core PCE inflation, 2021–24



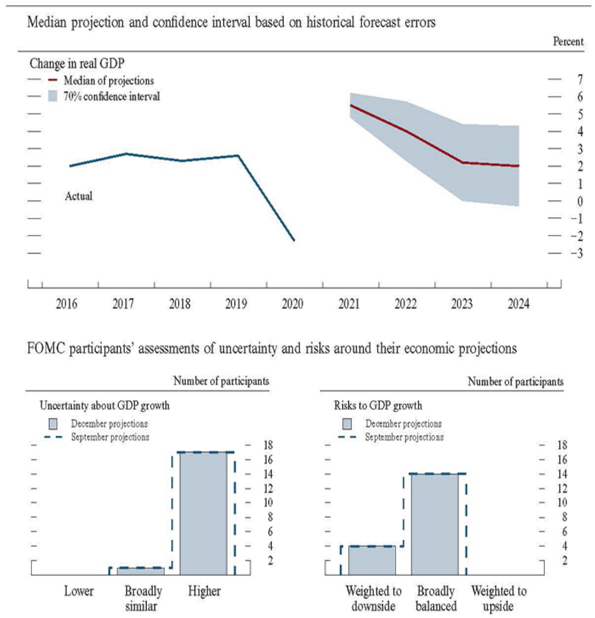
NOTE: Definitions of variables and other explanations are in the notes to table 1.

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, 2021–24 and over the longer run



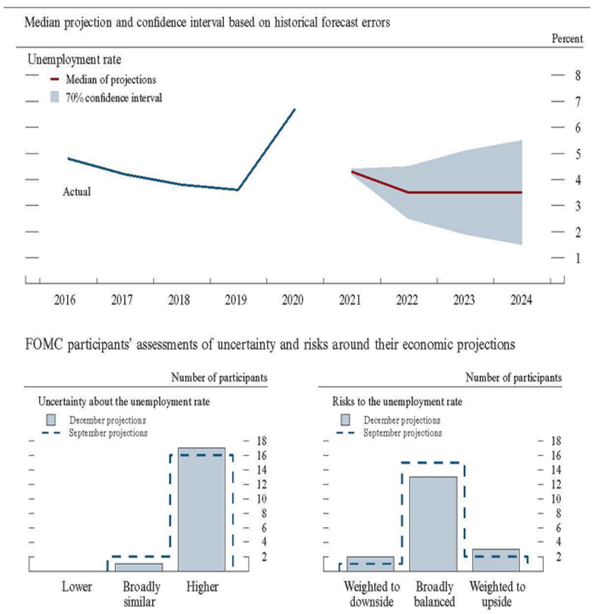
NOTE: Definitions of variables and other explanations are in the notes to table 1.

Figure 4.A. Uncertainty and risks in projections of GDP growth



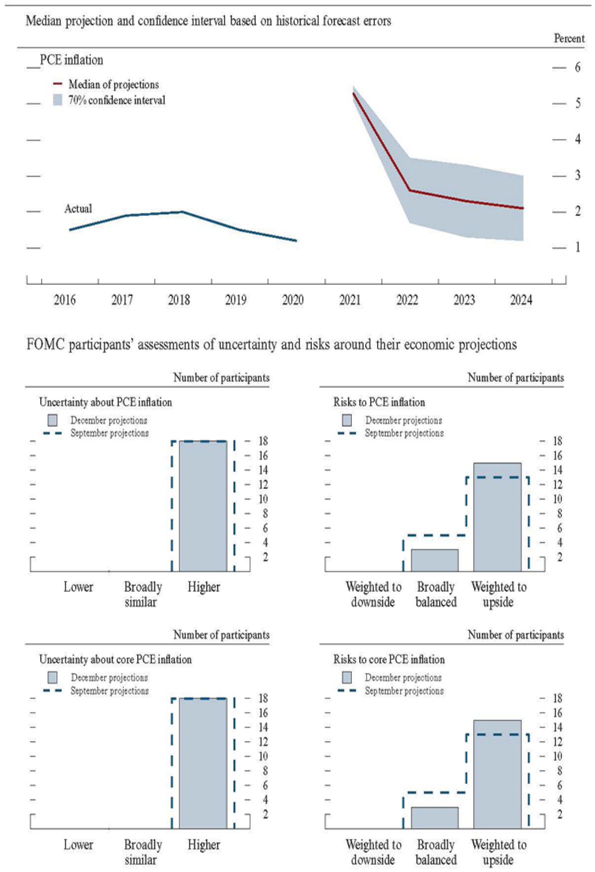
NOTE: The blue and red lines in the top panel show actual values and median projected values, respectively, of the percent change in real gross domestic product (GDP) from the fourth quarter of the previous year to the fourth quarter of the year indicated. The confidence interval around the median projected 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



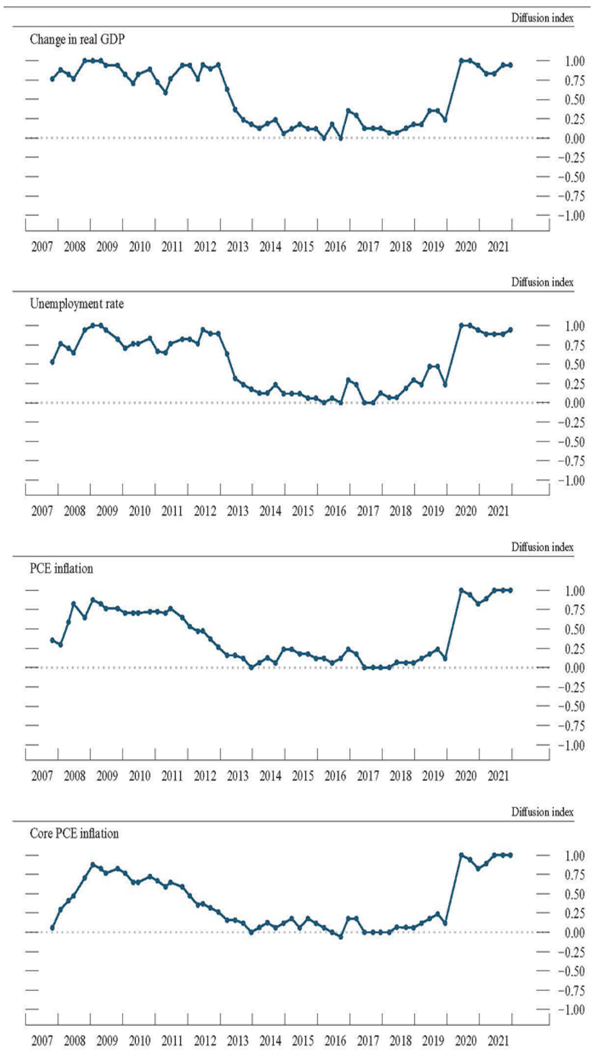
Note: The blue and red lines in the top panel show actual values and median projected values, respectively, of the average civilian unemployment rate in the fourth quarter of the year indicated. The confidence interval around the median projected values is assumed to be symmetric and is based on root 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



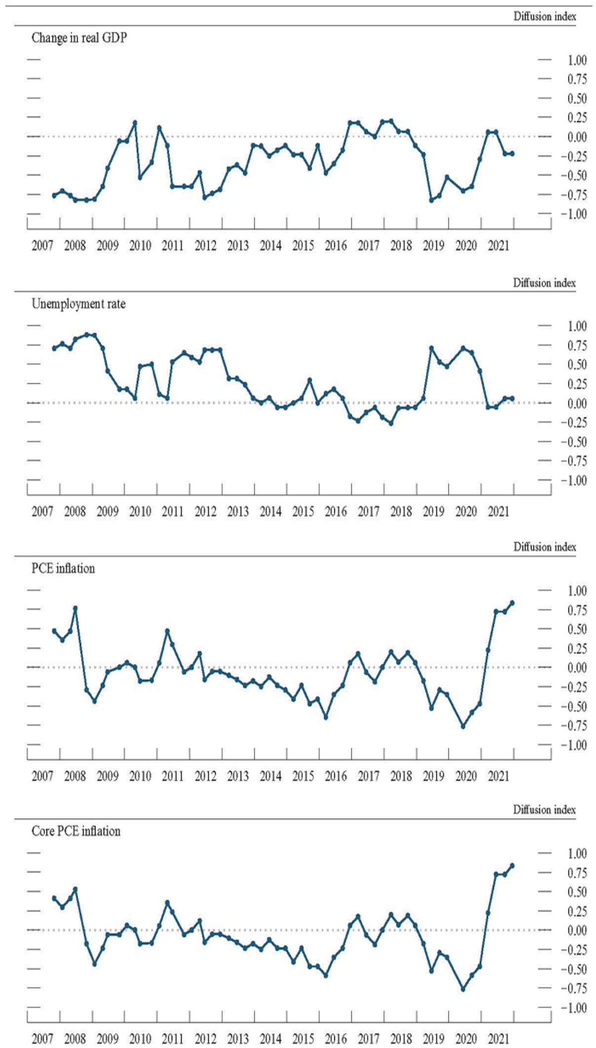
Note: The blue and red lines in the top panel show actual values and median projected values, respectively, of the percent change in the price index for personal consumption expenditures (PCE) from the fourth quarter of the previous year to the fourth quarter of the year indicated. The confidence interval 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



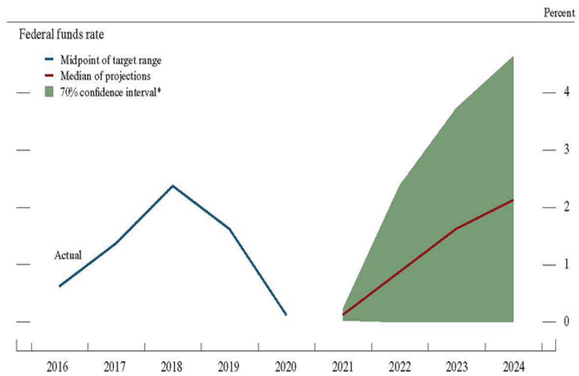
Note: For each SEP, participants provided responses to the question "Please indicate your judgment of the uncertainty attached to your projections relative to the levels of uncertainty over the past 20 years." Each point in the diffusion indexes represents the number of participants who responded "Higher" 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	2021	2022	2023	2024
Change in real GDP[1]	±0.7	±1.7	±2.2	±2.3
Unemployment rate[1]	±0.1	±1.0	±1.6	±2.0
Total consumer prices[2]	±0.2	±0.9	±1.0	±0.9
Short-term interest rates[3] . .	±0.1	±1.5	±2.1	±2.5

NOTE: Error ranges shown are measured as plus or minus the root mean squared error of projections for 2001 through 2020 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.

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 2.3 to 3.7 percent in the current year, 1.3 to 4.7 percent in the second year, 0.8 to 5.2 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 1.8 to 2.2 percent in the current year, 1.1 to 2.9 percent in the second year, 1.0 to 3.0 percent in the third year, and 1.1 to 2.9 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'

(continued)

current assessments of the 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.