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FEDERAL RESERVE'S FIRST MONETARY POLICY REPORT FOR 2004

HEARING

BEFORE THE

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

ONE HUNDRED EIGHTH CONGRESS

SECOND SESSION

ON

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

FEBRUARY 12, 2004

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THURSDAY, FEBRUARY 12, 2004

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

The Committee met at 10:02 a.m. in room SD–538 of the Dirksen Senate Office Building, Senator Richard C. Shelby (Chairman of the Committee) presiding.

OPENING STATEMENT OF CHAIRMAN RICHARD C. SHELBY

Chairman SHELBY. The hearing shall come to order.

I am very pleased this morning to welcome Chairman Greenspan before the Committee on Banking, Housing, and Urban Affairs to testify on the Federal Reserve's Semi-Annual Monetary Policy Report to the Congress.

Chairman Greenspan, your testimony and your written report highlight the significant positive developments in our economy in 2003. Following a blistering 8.2 percent increase in the third quarter, the real GDP increased 4 percent in the fourth quarter of 2003. On an annual average basis, productivity rose 4.3 percent in the business sector and 4.2 percent in the nonfarm business sector. Our economy is much stronger now than it was a year ago, and our prospects for 2004 are even brighter.

The job market is also showing signs of recovery. Payroll employment increased by 112,000 jobs in January—the largest monthly gain since 2000—and the unemployment rate fell to 5.6 percent. These improvements are certainly welcome and should continue at a healthy pace.

With this improved economic environment, Congress needs to do its part in achieving the appropriate fiscal policy. The continued strength of our Nation's economy will be dependent on how the Congress goes about achieving this balance. We would certainly welcome your views, Mr. Chairman, on how to address some of these issues today.

Mr. Chairman, this Committee will also have the pleasure of hearing your views on Government-sponsored enterprises in less than 2 weeks at our hearing scheduled for Tuesday, February 24, and we look forward to that meeting. I, and my colleagues on the Committee, are keenly interested in that topic and look forward to that discussion. The condition of the U.S. economy and the direction of monetary policy should provide us with more than enough ground to cover in the time that we have this morning.

Chairman Greenspan, thank you for your appearance today. We look forward to hearing your remarks. I am sure it will be a lively and an informative exchange that will follow.

Senator Sarbanes.

STATEMENT OF SENATOR PAUL S. SARBANES

Senator SARBANES. Thank you very much, Mr. Chairman. I am pleased to join with you in welcoming Federal Reserve Board Chairman Greenspan back before the Committee on Banking, Housing, and Urban Affairs to testify on the Federal Reserve's Semi-Annual Report to Congress on Monetary Policy.

This Committee took the lead in putting that requirement into the statute for these twice-a-year reports, and I think it has worked out very well over the years as a way of, in effect, educating the public, getting a timely review before the Congress, and it broke us out of the pattern of bringing the Chairman up when there seemed to be some crisis developing in the economy. I think it gives us a more orderly and consistent way of reviewing monetary policy.

On Tuesday of this week, the Joint Economic Committee held a hearing on the release of the Economic Report of the President, prepared by the President's Council of Economic Advisers. I will not comment at this point on the view expressed in the Economic Report which has gained so much attention over the last few days, that the outsourcing of U.S. jobs to workers overseas is good for our Nation's economy. That is a topic, in and of itself, of some concern, but there were other aspects of the Economic Report that I want to mention because they are relevant to Chairman Greenspan's testimony this morning.

The first is the Administration's continual lowering of its forecast for jobs over the past 3 years. The forecast of the number of jobs that we would have in calendar year 2004, the year in which we now find ourselves, was 138.3 million in the 2002 Economic Report. That was lowered in last year's Economic Report to 135.2 million, and in this most recent report to 132.7 million. This is total jobs for the country. And we have now learned that, based on the lower job numbers for late 2003 and January of this year, the CEA has now lowered the forecast again to 132 million jobs. So, we have gone from a forecast of over 138 million, just 2 years ago, to 132 million now. In other words, in just 2 years, the forecast of jobs has been lowered by more than 6 million jobs. This obviously reflects the fact that the biggest problem in the economy today is the loss of over 2 million jobs in the last 3 years and the continued failure of jobs to grow at a satisfactory rate. In fact, Chairman Greenspan in his statement this morning notes that "Progress in creating jobs has been limited."

The Chairman's statement will emphasize the role increased productivity has played in restraining job growth, and I think that is an important factor, but the Economic Report of the President points out that heightened uncertainties can lead to reduced economic growth and, in particular, to reluctance by business to hire.

The Economic Report listed a number of these uncertainties but it left off the list the fact that for the last 3 years our Government has been passing tax cuts that generate large and unsustainable

budget deficits for the foreseeable future. The Congressional Budget Office has forecast deficits totalling $5 trillion over the next 10 years on the assumption that current tax cuts are continued and spending growth continues. The tax cuts, which the Administration has trumpeted as the cause of economic recovery, may indeed have caused people to lose confidence that economic growth can be sustained.

We have a situation of very large deficits, a more difficult world environment, and a Government that refuses to face up to the problem of looming deficits. Any observer would be concerned about the long-term sustainability of the recovery in these circumstances.

I cannot help but note at this point the testimony that Chairman Greenspan gave to the Senate Budget Committee in January 2001 in support of the Administration's first tax cut. We have had others since, of course. At that time, Chairman Greenspan warned about the danger of paying off the Federal debt too quickly, and went on to observe that a tax cut was needed to lower the budget surplus. Chairman Greenspan stated:

> The sequence of upward revisions to the budget surplus for several years now has reshaped the choices and opportunities before us. The most recent data significantly raise the probability that sufficient resources will be available to undertake both debt reduction and surplus lowering policy initiatives. The emerging key fiscal policy need is to address the implications of maintaining surpluses beyond the point at which publicly held debt is effectively eliminated. The time has come, in my judgment, to consider a budgetary strategy that is consistent with a preemptive smoothing of the glide path to zero Federal debt or, more realistically, to the level of Federal debt that is an effective, irreducible minimum.

I was at that hearing. I remember it as though it were yesterday. In fact, I recall warning the Chairman that he was taking the lid off the punch bowl and that there would be severe consequences if we followed that fiscal path. Regrettably, we are dealing with those consequences today.

I would like to make a final point. In his testimony today, Chairman Greenspan properly points out that, "Addressing the Federal budget deficit is even more important in view of the widening U.S. current account deficit. Given the already substantial accumulation of dollar-denominated debt, foreign investors, both private and official, may become less willing to absorb ever-growing claims on U.S. residents."

The IMF, in a recently released report, made this point even more forcefully:

> Against the backdrop of a record high U.S. current account deficit and a ballooning U.S. net foreign liability position, the emergence of twin fiscal and current account deficits has given rise to renewed concern. The United States is on course to increase its external liabilities to around 40 percent of GDP within the next few years—an unprecedented level of external debt for a large industrial country. This trend is likely to continue to put pressure on the U.S. dollar, particularly because the current account deficit increasingly reflects low savings rather than high investment.

Although the dollar's adjustment could occur gradually over an extended period, the possible global risks of a disorderly exchange rate adjustment, especially to financial markets, cannot be ignored. Episodes of rapid dollar adjustments failed to inflict significant damage in the past, but with U.S. net external debt at record levels, an abrupt weakening of investor sentiments vis-á-vis the dollar

could possibly lead to adverse consequences both domestically and abroad."

Mr. Chairman, I think it is clear that there are profound underlying problems in our domestic and international financial position that raise serious questions about our economic prospects and are contributing to the failure of our economy to produce jobs.

I look forward to hearing Chairman Greenspan's testimony this morning and the opportunity to ask him some questions.

Chairman SHELBY. Senator Bennett.

STATEMENT OF SENATOR ROBERT F. BENNETT

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

I am moved to repeat what I said at the JEC hearing and very often elsewhere. I do not know what the number will be 5 years from now of the various projections that are being made, but I do know absolutely it will not be the number that is currently projected. I do not know whether it will be too high or too low, that is, the current number, but I do know, with absolute certainty, that the current number is wrong. And I think the review of all of the projections made by CBO and OMB over the years of where things would be 5 years from now uniformly supports that. Every single one of them has been wrong, and we can be certain that every single one of them will be wrong as we go forward.

That does not mean we should not make the projection. We do the best we can, but we should have a little more humility around here as we try to forecast what is going to happen in an $11 trillion economy, in a constantly changing world.

The thing I would like to pursue with Chairman Greenspan during the question period, Mr. Chairman, is a careful look at the unemployment figures, the job creation figures because something is happening, and I do not know—we have tried to pursue it with the Bureau of Labor Statistics, they do not know—whether something structural is happening or whether there is an anomaly that will fix itself in the few months ahead.

The household survey numbers and the payroll survey numbers are moving away from each other in a way they never have done historically. If you look at the payroll survey numbers, we have the job loss that Senator Sarbanes referred to. If you look at household survey numbers, more Americans are working today than has ever been the case in history. And as we go after the Bureau of Labor Statistics that does both surveys and say, "Can you tell us which one is accurate or where the truth lies or where the methodology is faulty," they cannot. They say they are studying it, and they are looking at it. I believe them, that they are studying it and they are looking at it.

At this point, we are basically looking for hunches, and I would like to ask Chairman Greenspan, at the appropriate time, what his hunch may be as to what is happening. If indeed there is a structural change in the way jobs are being created in this country, as the household survey would indicate, then both our measures of unemployment or employment and our measure of productivity both are suspect, if there is a structural change going on.

I look forward to the opportunity of pursuing this with Chairman Greenspan. Because of all of the things that are important around

here, the most important one is that we have data that are accurate when we make our policy decisions. And if the data are being skewed, by virtue of some structural change that is going on below the surface that has no historic basis and demonstrates something new happening in the economy, it is very important that we discover that as quickly as possible and try to get accurate data. I know of no one who has a better sense of smell for these kinds of structural changes than Chairman Greenspan, and I look forward to the opportunity of having that discussion with him.

Chairman SHELBY. Senator Bayh.

COMMENTS OF SENATOR EVAN BAYH

Senator BAYH. At the risk of disappointing all of those who have gathered here today to give an opening statement, I will defer to Chairman Greenspan.

Chairman SHELBY. Senator Allard.

COMMENTS OF SENATOR WAYNE ALLARD

Senator ALLARD. Mr. Chairman, I think that Senator Bayh has started a good trend here. I am going to see if I cannot make it follow through for the rest of the Committee. I have some opening remarks and would like to make them a part of the record.

Chairman SHELBY. They will be made part of the record without objection.

Senator ALLARD. I will pass because I am also interested in hearing what Chairman Greenspan has to say.

Chairman SHELBY. Senator Stabenow.

COMMENTS OF SENATOR DEBBIE STABENOW

Senator STABENOW. Thank you, Mr. Chairman. I would like to make a couple of opening comments because of the fact that I will unfortunately be having to juggle and move in and out of the meeting this morning for multiple Committee hearings.

I want to welcome the Chairman and thank you for your service. I have had an opportunity to read your written statement, and I am hopeful this morning that we will be able to have more of a discussion based on what Senator Sarbanes and Senator Bennett both have talked about in terms of issues related to employment.

I was particularly interested in your statements that once again household spending was the mainstay, with real personal consumption spending increasing nearly 4 percent and outlays on residential structures rising about 10 percent. Mr. Chairman, my concern, is that we are losing, certainly in my State of Michigan, the middle-income, good-wage jobs in our country. I would appreciate your thoughts on the impacting on household spending and consumption which is such a mainstay of the economy, as you point out.

I am hopeful that you will also have an opportunity to talk with us about the fact that employment is not increasing. As you have indicated, new hires and recalls from layoffs are far below what historical experience indicates, and I am very interested in your thoughts on the issues of productivity and employment. I have been hearing and reading more about outsourcing and how that relates to productivity numbers where there may in the past have been 100 people doing a particular job, as an example, there are now 80,

but 20 are being outsourced to another country, does that show up in some way, and is that reflected in what we measure as productivity in this country? I would welcome your thoughts on that.

I was deeply concerned about the Council of Economic Advisers' report earlier this week that indicated that outsourcing jobs to other countries is good for our economy. It has certainly not been good for the State of Michigan, Mr. Chairman.

Thank you.

Chairman SHELBY. Senator Bunning.

STATEMENT OF SENATOR JIM BUNNING

Senator BUNNING. Thank you, Chairman Shelby, and welcome, Chairman Greenspan.

I think it is obvious to everybody by now that I have disagreed with some of your monetary policy decisions. Sometimes I think I am the only one who disagrees, but that is okay. Since you called the emergency meeting in January 2001, I think you have done a pretty good job, particularly on the policy. Personally, I think you should have cut the discount rate months before, and you and I have talked about that, but overall I have agreed with much of what you have done.

However, I do not think you should have changed your statement after the last FMOC meeting. I know you like to have "wiggle room," but everybody knows the Fed is not going to raise interest rates any time soon, maybe not at all in 2004. There is no inflation and no reason to raise rates. But changing your statement brought uncertainty to the markets. You had to know that changing your January statement would bring great uncertainty, and you had to know it would create some havoc in the marketplace. The decision was made to go ahead and delete those four little words "for a considerable period." I disagree strongly with that decision.

Mr. Chairman, your words matter, and you know that. You know what happened when you used the term "irrational exuberance." You know what happened when you used the term "wealth effect." You know how volatile the markets can be. You had to have known what deleting the phrase "for a considerable period" would do.

Yesterday, your words mattered in a very positive way. Your outlook helped the Dow reach a two-and-a-half-year high. Hopefully, what you say here today will not reverse those gains.

You also must be aware that your words matter when you comment on things that you have nothing to do with and the Fed has nothing to do with. I have harped about this before. The job of the Fed is to set monetary policy, and I believe that when the Fed strays from that into other areas that we get in trouble.

I remember when you testified before the Energy Committee about natural gas prices. I just do not understand what the Fed has to do with the spot market for natural gas. I realize that you were invited to testify, and I realize that you will be asked to comment on a number of things that are not under your purview. Senators and Members of Congress like their questions answered, and that kind of puts you in a tight spot, but you do not have to answer those questions, and you do not have to testify on subjects that really are not part of the Fed's jurisdiction.

We all know that your term as Chairman expires this summer, and I expect that you will be nominated to serve as Chairman for the remainder of your 14-year term, and you will probably be approved by the Senate. I am sure you will also not be surprised to find that I will not be able to support you. A lot of people ask me why I put you on the spot when you come to the Hill. They think that we do not get along, that there is some problem. And I try to explain to them that that is not true at all. You and I have talked many times. I remember a very nice luncheon we had down in your office several years ago. I will say to you what I say to them—it is not personal, it is just business.

I think that the Fed continues to get involved in matters outside of its charter. I think that the Fed has made several awful decisions in recent years, like when you took too long to lower rates in the late summer and early fall of 2000. Decisions like these might seem like "pie in the sky" to some people, but they have real results and consequences. If the Fed had acted more quickly in 2000, it could have spared us a recession in which we lost 3 million jobs and just about $7 trillion in stock market value. Mr. Chairman, that is not "pie in the sky." That is "bread and butter."

Thank you for your time, and for allowing me to speak.

Chairman SHELBY. Senator Carper.

COMMENTS OF SENATOR THOMAS R. CARPER

Senator CARPER. Listening to my friend from Kentucky address the Chairman reminds me of why he was probably fairly successful as a pitcher in the American and the National League. And when he said it is nothing personal, looking at those batters in either league, in Detroit, and in Philadelphia and other places, I can imagine you saying, "Well, it is nothing personal, but I am going to throw one high and inside."

[Laughter.]

Mr. Chairman, I am glad you are here today. My job is not to lecture or to admonish you. My job is to ask you hopefully some good questions and maybe to learn from what you have to say.

I do want to just make one brief comment with respect to what Senator Bennett said earlier. He said one thing we know for sure, the projections for 5 years down the road, whatever is being projected we know for sure that is not what the number will be, and that is probably true.

Another thing that we know, I think for sure, is that when my generation begins to retire, the boomers, and we will start retiring about the end of this decade, the pressure on Social Security, and on Medicare and Medicaid are not going to get less. They are going to get more, and as I look at those numbers down the road, and the demographics that back them up, and I look at our budget deficit and our trade deficit, this is a worrisome time for me, and I think for a lot of people. I always look forward to your testimony here with anticipation and probably no more than today.

So having said that, I will just say in the words of another of our colleagues "bring it on, just bring it on."

Chairman SHELBY. Senator Sununu.

COMMENTS OF SENATOR JOHN E. SUNUNU

Senator SUNUNU. Thank you, Chairman Shelby.

Despite the fact that I am sorely disappointed by Senator Bayh's refusal to pontificate——

[Laughter.]

I am pleased to be here to welcome the Chairman. I look forward to his testimony and to the questions.

Thank you, Mr. Chairman.

Chairman SHELBY. Senator Schumer.

STATEMENT OF SENATOR CHARLES E. SCHUMER

Senator SCHUMER. Thank you, Mr. Chairman, and I would like my whole statement to be put in the record.

Chairman SHELBY. Without objection, so ordered.

Senator SCHUMER. I would just like to make a brief point here, and I would like the Chairman to comment on it when he gets a chance, and it is the issue of outsourcing. Many of us, on this side of the aisle, have basically supported free trade, not exclusively, but basically. And I am troubled by the new trends. I do not think they are the same as the old trends. You have three factors which we have not had before:

First, the flow of capital goes to all corners of the earth. Ten years ago our major companies would not have invested in China and India. Now, they feel confident to do it. That is the least important of the three.

The second is broadband. You can have people working almost anywhere around the globe and have instantaneous and full communication with them for no cost.

But third, and most important, for the first time in our history, you will have $50 to $100 million over the next decade, well-educated, well-motivated Chinese and Indians, who are PhD's, who are college graduates who can compete for high-end jobs. The theory of free trade, since World War II at least as it has played out, is the lower-end jobs, the lower-paying jobs, the lower value-added jobs would go overseas, but the high-end jobs would stay here.

But if an American company, an international company has an instantaneous ability to hire someone in India who is asking for $20,000 and does the job that an American gets $100,000 for, we have new trouble. The head of a major securities firm told me that there are 800 people in New York who do the high-end computer programming. These are the ones who do the programs as the derivatives, with billions of dollars sloshing around, things you understand, Mr. Chairman, I do not. They get paid $150,000 a year. He told me in 3 years none of them will be working for us. We will instead hire 800 Indian computer programmers, just as good he said, who ask for $20,000 a year.

The former head of the American Radiological Society told me that we will need half the radiologists we have now 10 years from now because when you break a leg or need a chest X-ray, you will go back to the technician, and the picture will be beamed overseas to a Chinese doctor who will be able to read it just as well, but instead of charging $500 to read the picture, they will charge $50 to read the picture. You will still need radiologists because the more

complicated things will be read by Americans, but the typical, workman-like broken arm, chest X-ray will go there.

So, I think we may have something new here. Free trade works on comparative advantage, but if, for the first time, at the low end, the middle end and the high end, other countries have an advantage over our labor force, where are we headed? That is the question I would like. I do not think the classic theory of free trade works when the means of production can shift in the blink of an eye. I do not know what the answer is. I do not believe the old protectionist nostrums are the answer, but I think we are ignoring the question.

Just one other point, and I will conclude. I feel strongly about this, and it relates a little to what my colleague from Michigan asked. Somehow this is related to the productivity numbers, I think, although again you know much more about this than me. This is the first time we have had such high productivity and no job growth. Productivity grew at 3.3 percent between 1948 and 1973, I think it is—maybe 1977—1973, and there was huge job growth.

In the last 2 years, productivity has grown a little higher, 4 percent, and there is no job growth, virtually no job growth, job loss. Could it be that the shifting of jobs overseas is causing this? That when IBM or Intel hires workers to do the same job at one-fifth the cost, somehow the way we measure productivity—Intel or IBM is still very productive, but it is not happening here.

Nine percent productivity—I mean I know there are bumps in this—but overall something is different when productivity, now it is 2 years, and maybe you will say—and I hope you are right—that if there is 4 percent productivity growth over 5 years, we will see job growth, but I think we are in a different world, and I think we need to look at this differently, and I would ask the Chairman to comment in general on that specific issue, which I think plagues all of us. No one has good solutions, but I do not think by just sticking to the old nostrums everything will be all right. At least I would like to know a trajectory, a scenario as to how we deal if our high-end jobs can go to India and China, as well as our low- and middle-end jobs, whether they be blue collar or white collar.

Thank you, Mr. Chairman. I am sorry to take the time.

Chairman SHELBY. Senator Crapo.

COMMENTS OF SENATOR MIKE CRAPO

Senator CRAPO. Thank you very much, Chairman Shelby.

Chairman Greenspan, welcome to the Banking Committee again. I am going to be very brief as well because I want to get on to your comments.

I would just say that, as with a number of the comments that have been made by my colleagues here, my biggest concern right now is our budget deficit and the trade deficits that we are facing and what the proper policies we must pursue are as we try to address them. Obviously, they have been raised a little bit today. On a broad scale, there are those who say, well, it is easy to balance the budget. Let us just get taxes back up where they will bring in the necessary revenue, and there are those of us who are fighting to keep the tax cuts that we have already adopted permanent.

Then there is the other side of the question, which I know you addressed yesterday. I expect we will discuss today in your comments and in some of the questions, as to whether our focus should be on first trying to address this problem through controlling spending as opposed to first trying to address it through tax-rate increases and what consequences those have for monetary policy.

Again, I look forward to your testimony and all of its aspects. If I am able to be here when the question and answer period comes, I will probably toss you my regular question about derivatives, but one way or the other we will get that on the record again as well because I expect we will be debating that issue at some point again this year.

Thank you very much for being here.

Chairman SHELBY. Senator Reed.

COMMENTS OF SENATOR JACK REED

Senator REED. Thank you very much, Chairman Shelby, and welcome, Chairman Greenspan.

The currently improving economic numbers should not distract us from some very disturbing trends that persist in the growing deficits, and the disappearing jobs, as many of my colleagues have pointed to, large trade deficits and a weakening dollar, and we might be picking up economic speed, but we could very well be heading over the cliff.

And I hope that in the course of your discussion today or your comments that you can address these issues of the deficit, particularly as we approach the baby boom generation, the impact on, as Senator Schumer discussed so well, the structural changes that appear to be siphoning off jobs to places around the world that impact on not only our economy, but also our society, the trade deficit and all of these issues that are critical to our future.

We appreciate your appearance here today and look forward to your testimony. And I would ask that my whole statement be put in the record.

Chairman SHELBY. Without objection, so ordered.

Senator Dole.

STATEMENT OF SENATOR ELIZABETH DOLE

Senator DOLE. Thank you, Mr. Chairman. As you know, I normally submit my statement for the record in the interest of time, but today, since I have——

Chairman SHELBY. It is your time, Senator Dole.

Senator DOLE. —some conflicts as well, I would like to make a few statements on the record.

I want to thank you and Ranking Member Sarbanes for holding this hearing. Welcome, Chairman Greenspan.

According to the payroll survey, 112,000 new jobs were created in January—the largest monthly increase since December 2000. Over the past 7 months, the national unemployment rate has fallen from 6.3 percent in June, to 5.6 percent in January, the fastest steady decline in nearly a decade. That unemployment rate, according to the household survey, is below the average of the 1970's, the 1980's, and the 1990's. The Nation's economy is on the right track, jobs are being created and people are going back to work. This is

a result of the economic growth tax relief package that was signed into law in June 2001, and renewed in May 2003. President Bush proposed bold tax relief, and its implementation has produced very positive results.

Chairman Greenspan, I applaud your ability to keep interest rates down while the President's tax relief creates liquidity in our monetary system.

The positive economic trends that the country has enjoyed lately are certainly a welcome relief, and I expect the positive progress to continue. But while there are good trends in national unemployment numbers, my home State of North Carolina continues to lag behind the national average. Indeed, North Carolina has areas that are severely hurting. The losses of manufacturing jobs, mainly in textiles and furniture, have been felt throughout the State. This past summer, North Carolina experienced the largest layoff in the State's history when Pillowtex, a huge textile company dating back 116 years, closed its doors forever. The result was 4,400 people losing their job in a single day.

I was able to be on the ground in North Carolina to speak with displaced workers about the challenges that lay ahead, and it was a very emotional experience as constituents came up to ask what they were going to do about paying for health care to treat a husband's cancer or a child's illness or what was going to happen to my 401[k].

Local community college officials with whom I visited explained the stark reality that many of these recently displaced workers were not able to read. They were illiterate. They would need the most basic of remedial education, the equivalency of a high school diploma before being retrained in a skill.

In Eastern North Carolina, the layoffs and plant closures have resulted in 2,200 layoffs since the summer, and in just the past 2 weeks, the Western region of North Carolina has lost over 1,100 jobs. These layoffs have produced ripple effects across communities and throughout the State. One of these effects is a strain on the State's community college system. With a vast amount of workers out of a job and in desperate need of retraining, community colleges have said, "Look, we do not have enough space. We do not have enough instructors. We need new programs."

I visited with many of the presidents. I am passionate about their positive role in the State of North Carolina. In short, community colleges are on the front lines in a transitioning economy, and they must have more support.

Today, President Bush will outline his plan entitled, "Jobs for the 21st Century." It dedicates more than $500 million for a series of measures to better prepare current and future workers for jobs in the new millennium. It also includes a $250 million proposal to fund partnerships between community colleges and employers in high-demand job sectors. I want to express my earnest support for this plan and highlight its importance to my home State of North Carolina. But, first, Chairman Greenspan, let me quote you in testimony to the House yesterday: "I must say to you that the community colleges in this country have been in the forefront of a major change in the quality of what we are doing with respect to reestablishing skills." I appreciate that support and could not agree more.

As I mentioned, North Carolina's community college system has been stretched beyond its limits, and I am certain that that is true in many other States. I have worked very closely with the Administration regarding the need for community college funding, and it is my hope that the President's plan will bring timely relief where it is needed most in my State. This Congress will have an opportunity to increase Pell Grant funding and to address community college needs through Higher Education Reauthorization—and I look forward to working with my colleagues to utilize these opportunities to strengthen community colleges. The future of North Carolina's economy depends on it.

Chairman Greenspan, I appreciate your willingness to come and testify today. I look forward to hearing your thoughts on what we must do to ensure that the benefits of a recovering economy can be extended to all areas of North Carolina and the Nation.

Thank you.

Chairman SHELBY. Mr. Chairman, we again welcome you to the Committee. Your written statement will be made part of the record in its entirety. You proceed as you wish.

STATEMENT OF ALAN GREENSPAN, CHAIRMAN, BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM

Chairman GREENSPAN. Thank you very much, Mr. Chairman. I am pleased to be here today to present the Federal Reserve's Monetary Policy Report to the Congress. I believe this is the thirty-third time I am delivering this report. I hope my arithmetic is right. I have not checked it with staff——

Chairman SHELBY. I bet your arithmetic is right.

Chairman GREENSPAN. I know I am close, somewhere in there.

Senator SARBANES. Mr. Chairman, could you pull that microphone a little closer. I think it would be helpful to everybody.

Chairman GREENSPAN. Is this better?

Senator SARBANES. Yes.

Chairman GREENSPAN. When I testified before this Committee in July, I reported that conditions had become a good deal more supportive of economic expansion over the previous few months. Still, convincing signs of a sustained acceleration in activity were not yet in evidence. Since then, the picture has brightened. Gross domestic product expanded vigorously over the second half of 2003. Progress in creating jobs, however, has been limited.

Looking forward, the prospects are good for sustained expansion of the U.S. economy. At the same time, increases in efficiency and a significant level of underutilized resources should help keep a lid on inflation.

In retrospect, last year appeared to have marked the transition from an extended period of subpar economic performance to one of more vigorous expansion. Once again, household spending was the mainstay, while strengthening the capital spending over 2003 contributed importantly to the acceleration of real output.

To a considerable degree, the gathering strength of capital spending reflects a substantial improvement in the financial condition of businesses over the past few years. Firms' profits rose steeply during 2003, following smaller gains in the previous 2 years.

The profitability of the business sector was again propelled by stunning increases in productivity. The strong gains, however, have obviated the need for robust increases in business payrolls. To date, the expansion of employment has significantly lagged increases in output. Gross separations from employment, two-fifths of which have been involuntarily, are about what would be expected from past cyclical experience, given the current pace of output growth. New hires and recalls from layoffs, however, are far below what historical experience indicates. To a surprising degree, firms seem able to continue identifying and implementing new efficiencies in their production processes and thus have found it possible so far to meet increasing orders without stepping up hiring.

In all likelihood, employment will begin to grow more quickly before long as output continues to expand. Productivity over the past few years probably received a boost from the efforts of businesses to work off the stock of inefficiencies that had accumulated in the boom years. As those opportunities to enhance efficiencies become scarcer, and as managers become more confident in the durability of the expansion, firms will surely once again add to their payrolls.

The consequence of the rapid gains in productivity and slack in our labor and product markets has been sustained downward pressure on inflation. Inflation last year was in a range consistent with price stability.

Although the prospects for the U.S. economy look quite favorable, we need to remind ourselves that all forecasts are projections into an uncertain future. We must, as a consequence, remain alert to risks that could threaten the sustainability of the expansion.

Besides the chronic concern about a sharp spike in oil or natural gas prices, a number of risks can be identified. Of particular importance to monetary policymakers is the possibility that our stance could become improperly calibrated to evolving economic developments. But the evidence indicates clearly that our current policy stance will not be compatible indefinitely with price stability and sustainable growth. The real Federal funds rate will eventually need to rise toward a more neutral level. However, with inflation very low and substantial slack in the economy, the Federal Reserve can be patient in removing its current policy accommodation.

The outlook for the Federal budget deficit is another very critical issue for policymakers. As I have noted before, the debate over budget priorities appears to be between those advocating additional tax cuts and those advocating increased spending. Although some stirrings in recent weeks in the Congress and elsewhere have been directed at actions that would lower forthcoming deficits, to date, no effective constituency has offered programs to balance the budget.

Our demographics, especially the retirement of the baby boom generation beginning in just a few years, mean that the ratio of workers to retirees will fall substantially. Without corrective action, this development will put substantial pressure on our ability in coming years to provide even minimal Government services while maintaining entitlement benefits at their current level, without debilitating increases in tax rates.

Addressing the Federal budget deficit is even more important in view of the widening U.S. current account deficit. To date, the current account deficit has been financed with little difficulty.

Nonetheless, given the already substantial accumulation of dollar-denominated claims, foreign investors, both private and official, may become less willing to absorb ever-growing claims on U.S. residents. Taking steps to increase our national saving through fiscal action to lower Federal budget deficits would help diminish the risks that a further reduction in the rate of purchase of dollar assets by foreign investors could severely crimp the business investment that is crucial for our long-term growth.

The large current account deficits and the associated substantial trade deficits pose another imperative—the need to maintain the degree of flexibility that has been so prominent a force for U.S. economic stability in recent years. The greatest current threat to that flexibility is protectionism. Consequently, creeping protectionism must be thwarted and reversed.

In summary, Mr. Chairman, in recent years, the U.S. economy has demonstrated considerable resilience to adversity. It has overcome significant shocks that, in the past, could have hobbled growth for a much longer period than they have in the current cycle. Looking forward, the odds of sustained robust growth are good, although, as always, risks remain. The Congress can help foster sustainable expansion by taking steps to reduce Federal budget deficits and, thus, contribute to national savings and by continuing to pursue opportunities to open markets and promote trade. For our part, the Federal Reserve intends to use its monetary policy tools to promote our goals of economic growth and maximum employment of our resources in an environment of effective price stability.

Thank you very much, Mr. Chairman, and I look forward to answering any of your questions.

Chairman SHELBY. Thank you, Chairman Greenspan.

Chairman Greenspan, while the job numbers have improved, that is of little comfort to those who have been without work for quite some time or are still underemployed. Are there any, to your knowledge, any historical analogies to the present situation, where there has been a similar disconnect between strong economic growth and job creation or is this an atypical situation?

Chairman GREENSPAN. I think this is atypical or I should put it more exactly, I do not recall a period even remotely like this. It is fairly evident what is happening. And as I mentioned in my prepared remarks, the gross separations, that is, layoffs, firings, and even voluntary job leaving, have gone down quite measurably and, indeed, it looks pretty much the way you would expect it to look given the growth rate of the economy.

When you look on the other side of the equation, new hires from new jobs or recalls from layoffs are extremely subdued, and, indeed, the pattern that you see in the new hires series actually is a mirror reflection of the productivity growth that we see in our other sets of data.

In short, what is happening is that as demand has picked up—and, indeed, it has picked up—businesses have been able to find ways in which they can increase efficiency such that they can meet

new orders and new commitments without bringing on the usual new hires that in the past we would have seen under comparable circumstances.

As I said in the House yesterday, it seems likely that the extraordinary pace of productivity is almost surely going to slow, largely because many of the reasons for it, as best we can judge, are not continuing; namely, issues that reflect the nature of the types of investments and the types of inefficiencies that arose in the boom period which are now being reversed. We have to eventually run out of opportunities to exploit all of those inefficiencies.

So what we are seeing is something new. It is something different. I do not believe it is going to continue. It will continue, in part, because we think productivity will be above what it has been, while surely, over the next year or two, well below what we have seen in the recent quarters.

Chairman SHELBY. Is what is driving the productivity gains, is that the hard work of the American workers plus technology, among other things?

Chairman GREENSPAN. Well, looking back, this extraordinary expansion in high-tech equipment in the 1995 to 2000 period probably had a rate of return on it higher than was realized at the time. In a sense, we have all experienced the situation where we get a new PC, and our initial use of it is probably 10 percent of the capacity, and, indeed, the most generally new things about the PC we do not employ maybe for 6 months or 2 years.

And if you generalize this in the way business is adjusting to the new technologies, there is a long lag before the efficiencies actually materialize because they do not know how to use the stuff, and as they learn, it begins to have a significant impact.

In my judgment, when we look back on this whole period and try to determine the rate of return off that equipment that was installed in the latter part of the 1990's, I suspect we are going to find that the real rate of return was quite a bit higher than we anticipated, either at the point it was being initiated or even 2 or 3 years after it was in place.

Chairman SHELBY. Well, in other words, it has been a sustained impact.

Chairman GREENSPAN. Indeed, it has.

Chairman SHELBY. In light of what many perceive as job creation problems associated with productivity gains, could you just briefly elaborate on the overall and long-term importance of productivity for the economy. Is it, after all, absolutely critical for long-term economic growth and prosperity?

Chairman GREENSPAN. Yes, Mr. Chairman, I think this is a very important point you are making. It is very evident from the data that the improved efficiencies are making it very difficult to get job growth, and, indeed, a good deal of the job loss that we have seen is a result of that, but we can scarcely be against improved efficiencies and increased productivity because, at root, that is where our standards of living ultimately come from.

We will get through all of this problem that we are now engaged in, and if history is any guide, we will have employment expanding at a reasonably good clip within a short period of time. But what is very important for the longer-term outlook for the American

economy is how productive we seem to have been able to become. And while it clearly has a short-term downside, over the long-term, it is an unequivocal positive factor for our country.

Chairman SHELBY. Thank you.

Senator Sarbanes.

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

Chairman Greenspan, *The Wall Street Journal* this morning, in reporting on your testimony yesterday, says, "Mr. Greenspan's warnings on the budget deficit were more urgent than in previous remarks."

I note in your statement that you say, "The imbalance in the Federal budgetary situation, unless addressed soon, will pose serious long-term fiscal difficulties." And then a paragraph later you go on to say, "The fiscal issues that we face pose long-term challenges, but Federal budget deficits could cause difficulties even in the relatively near term."

Now, I also note in reading a *New York Times* article on your testimony yesterday, and I am now quoting, "To the relief of the Administration, though, Mr. Greenspan did not criticize the President's plan to make his tax cuts permanent. That would increase the projected deficit by more than $1 trillion over the next 10 years even if the Government virtually freezes discretionary domestic spending. Mr. Greenspan did not criticize Mr. Bush's budget plan, and because neither Republicans nor Democrats on the House Financial Services Committee asked his opinion about making the tax cuts permanent, he did not volunteer one."

What is your opinion about making the tax cuts permanent?

[Laughter.]

Chairman GREENSPAN. I am glad you asked, Senator.

[Laughter.]

Let me put a little history in this.

Senator SARBANES. And as you answer it, let me just—I am prompted to do this by an editorial that appeared in *The New York Times* last month. "The recent book about former Treasury Secretary Paul O'Neill makes it clear that Mr. Greenspan even had qualms about the extent of the Administration's first round of tax cuts in early 2001. Mr. Greenspan can no longer keep his worries to himself. Whether he musters the full authority of his office to sound the alarm and urges the President and Congress to reconcile Federal revenues and spending will help determine Mr. Greenspan's legacy as Fed Chairman."

Now what is your view about making tax cuts permanent?

Chairman GREENSPAN. In September of 2002, I appeared before the House Budget Committee, strongly requesting that the about-to-expire pay-go and discretionary caps be renewed. They were not. I am still in favor of pay-go and discretionary caps as a critical issue in budgetary processing.

As I indicated yesterday, I think that one of the first orders of business of the Congress would be to restore discretionary caps, and especially pay-go. And if that is indeed the case, under current law, you would have to have a pay-go evaluation for any change in the tax structure. So, I am in favor, as I have indicated in the past, for continuing the tax cuts that are in dispute at this par-

ticular stage, but I would argue strenuously that it should be taken out on the expenditure side.

And let me go further on the question of the issue——

Senator SARBANES. How do you take it out on the expenditure side if, as this points out, even if you just froze expenditures—and we have all of these expenditures in Iraq and homeland security—you would still be running up an additional over $1 trillion deficit?

Chairman GREENSPAN. Let me get to the broader issue which is what concerns me. Everyone is looking at the issue only of the discretionary spending part of the budget, but I suspect that if we were to look at the arithmetic and all of the various alternatives that exist out there, we are going to have to relook at some of the entitlement spending outlays.

In 1983, when I was in charge of the Social Security Commission, and we went through a whole series of evaluations of possible changes, I strongly advocated at the time—and I have done subsequently—things such as indexing the age of eligibility to longevity.

I have argued, on occasion, for getting a better price index to index various different benefits. And I raise these issues largely because I think we have been looking at, we have constructed a good deal of the benefit structure over the last quarter of a century without a firm look at whether or not the real resources were there to meet those benefits.

And I suggest that what we have to do, as difficult as it is going to be, is to relook at some of these commitments that were made without any advertence to what the long-term availability of resources is.

I do not know where you come out on that. I do know that the arithmetic does not work, and I would really suggest that a broader view of what it means to have such a huge change in the number of retirees that will inexorably occur over the next decade, and I think that the sooner we address that the sooner we can assure the people who will be retiring that the benefits that are being promised will, indeed, be forthcoming.

My real concern is that when the time comes to start to pay these benefits, we are going to find that we are in very serious fiscal difficulty. I am not saying we are going to renege on any of those benefits. We cannot, and we will not. But I do think it is important for the people who are retiring to have a sense of security that what is being promised to them as they retire will, indeed, be there, and I mean "there" in real resources.

Finance is merely a means by which we exchange physical goods and services. And when you look at the hard issue of what proportions of the output that we are expected to produce over that period will be going to retirees, we have to make sure that we can do that.

Senator SARBANES. Mr. Chairman, let me just observe that that is a very large issue. In the meantime, we are faced here and now with the issue that is being pressed on the Congress, and very hard by the Administration—in fact, it is their number one priority to do further tax cuts by making these tax cuts permanent. They will undermine our future fiscal strength in terms of dealing with the very problem that you just spent a few minutes outlining for us.

It is difficult for me to understand why you cannot state very simply that one way of addressing the budget deficit is to show re-

straint on both spending and tax cuts, since they both make up the combination that determines budget deficits.

Chairman GREENSPAN. Oh, I am certainly willing to say that. I believe that.

Senator SARBANES. Thank you.

Chairman SHELBY. Senator Allard.

Senator ALLARD. Mr. Chairman, I want to talk a little, and ask you a question about, manufacturing jobs. The loss of manufacturing jobs is not a particularly new phenomena. I think it has been going on for some time actually. I wondered if you would talk about that so the Committee is clear that there are jobs created in the small business sector and then there are the manufacturing jobs themselves. I wonder if you would comment on that and what you see happening in the United States, what you see happening worldwide, and perhaps in some of our competitor nations that have been mentioned, such as China and India.

Chairman GREENSPAN. Well, Senator, one thing that has been going on in this economy for generations is a gradual shift from physical things and manual labor to produce our GDP to ideas and more conceptual-related types of output. As a consequence of that, the actual weight of the GDP, in other words, the raw materials that go into it, has gone up hardly at all. Virtually, all of the increase in our GDP is conceptual ideas, new ways of doing things.

And so it should not be a surprise that the ratio of manufacturing to the GDP has been very gradually going down. It is going down, I must say, very gradually, not in any pronounced way, but because the productivity and efficiencies have been so extraordinary, far better than the rest of the economy, what happens is that with a level of production, which is continuing to rise quite significantly, you have such exceptional efficiencies that they are able to produce that output with ever fewer employees. As you have pointed out, it has been going on for a long number of years.

Senator ALLARD. It seems to me that this has been the case at least back to 1979—I was talking with Senator Bennett here, and he thinks that it has been maybe even 50 years that this phenomena has been occurring. Can you give us kind of a range?

Chairman GREENSPAN. I think you are correct. I think it peaked in 1980, as my recollection serves me, but that process has been going on for quite a good deal of time. Manufacturing productivity growth has outstripped the overall productivity quite significantly.

Senator ALLARD. This is a phenomena that is going to happen with a more modern economy, meaning that which is happening in the United States. In other countries like Japan and China, for example, I would guess there is probably a loss of manufacturing jobs because they also are becoming more efficient. Would you make that assumption?

Chairman GREENSPAN. No, that is a fact. Now, in China, it is a little bit difficult because, while it is true the manufacturing jobs have gone down quite appreciably, a lot of that was the excess staffing that goes on in state-owned enterprises. And so when they rationalized a number of them, their employment numbers came down. It is hard. We do not have enough data from them to disaggregate what part of it is merely extracting what was a very odd way of using people in some of those state-owned enterprises.

Whereas, now they are making a lot of progress, but still there is still a lot of it.

Senator ALLARD. I am concerned about the deficit, as are many other Members in the Senate and a lot of Americans. In your view, what is the greatest problem with our deficit? Is it on the spending side of Government programs or is it our tax cuts?

Chairman GREENSPAN. I have always argued that the problem is on the expenditure side and that our real danger is that we will create longer-term commitments which are very difficult to finance. And one of the problems that commitments have is that it is very difficult, once you have made them, to reverse them.

So as I argued yesterday and on previous occasions, I think that in addressing this budget issue, it is crucially important that we try to find, wherever we can, reductions in outlays before adverting to the question of revenues to fill in the gap.

As I have been saying for quite a good deal of time, I think the budget deficit problem needs to be resolved primarily or fully on the expenditure side. And what I mean by that is that we should be looking at all of the possible changes, reductions we can make in expenditures before we find we have no other alternative but to add taxation to fill in the gap.

The reason for that is we are reasonably certain that if we have a solution primarily from the expenditure side, if not wholly, that we have a stable fiscal output. We do not know the extent to which increased taxes will inhibit the growth of the GDP and, hence, the revenue base. And we have to be quite careful because it is very obvious that if you put very substantial tax rate increases in, you could slow the rate of growth enough so that the revenue base does not increase anywhere near the amount of expectations when you raise taxes.

You have to be careful about being unable to close the gap. So, I think there are far greater risks in failure on the tax side than there is on the expenditure side. I am not talking about cutting expenditures. I am talking about slowing down the rate of increase.

Senator ALLARD. Thank you.

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

Senator BENNETT [presiding]. Yes. I would like to follow that up very briefly here, Mr. Chairman. I have quoted you, and I would like to check and make sure I am quoting you correctly, as having said, "Congress can set the level of expenditure just about anywhere it wants, but it cannot set the level of income wherever it wants. The level of income is a product of the economy, and if the economy is damaged, you are stuck with the level of expenditure that you have committed, but you cannot guarantee the level of income."

Is that a fair summary of——

Chairman GREENSPAN. I do not remember the words, but I certainly agree with them.

[Laughter.]

Senator BENNETT. I think that is precisely what happened in California. They had the rivers of cash that came out of the dot-com boom, and the instant millionaires, and all of the capital gains realizations, and then they built the expectation of that revenue into their budget and made a series of commitments which, when

the bust came, they could not commit because the revenue was not there.

Let me go back to the issue I raised during my opening statement, and I realize this is always dangerous, but I will give you an anecdotal example to suggest what I think may be going on.

On an airplane flying from Salt Lake City to Washington, I sat next to a woman and got into conversation, as you do on airplanes, and this was her story. She worked for a fairly large company. It was a high-tech company. The bust came. She was laid off as they had to downsize their employment. She and a group of her friends got together, organized a small firm that now has only eight employees. She was flying to Washington because this small firm was able to obtain a contract with the Department of the Navy. She was actually doing better financially than she was when she was with the big company, as were her associates who had formed this small group.

Now, statistically, the job that she lost would show up as a lost job in the payroll survey. It would show up as a new job in that household survey, but as far as the payroll survey is concerned, her job is lost, and has never been filled and never will be. Is it not the payroll survey that we use as the base for computing productivity, and therefore would that not indicate that productivity is overstated if there are enough examples, like this woman, of people who have left the payroll world, gone into the self-employment or small business—in her case, it is a small business rather than self-employed—that, for one reason or another, is not plugged into the payroll database, and therefore productivity numbers would be artificially high and job numbers would be artificially low with the Bureau of Labor Statistics?

That is my hunch of what might be going on, but I cannot put my handle on it in any way. I would be interested in the thoughts you might have about some structural changes that are going on.

Chairman GREENSPAN. We have looked at that in some detail, Senator, and we have concluded, for reasons I will give in a moment, that the payroll data do look to be the correct data. Let me express to you why.

If we take the household data and make all of the adjustments that are required to make it conceptually equivalent to the payroll data, we still have this very big difference. In other words, the addition of proprietors and unpaid family workers, the adjustments for multiple jobs and all of the various things is not the answer to this discrepancy. It is deep-seated in the data themselves.

We asked ourselves what could go wrong with either series. We looked first at the payroll data, and we find that it is benchmarked every quarter to the unemployment insurance data system which is a full coverage of wages and salaries that are required for unemployment insurance calculations, so that we have a total number of people which is relatively full coverage for wage and salary workers only.

The monthly series that we publish is merely a sample which works off that quarterly series, and for all practical purposes, the level is relatively a full count. The household series, however, is a sample of 60,000 households. It is a very big, very sophisticated sample, but what that does is merely take ratios of, for example,

the people in the household, and asks are you employed, are you looking for a job, are you out of the labor force? And all they have is a sample of 60,000 which have those data in them.

They create the household employment figures by taking the ratio of employment to the number of people in the household, and they multiply it by the population, the so-called noninstitutional population.

What we did is to take a look at the population projections. We find that the way they are made is, as you know, they take the base, which the last base is 2000, they add births, subtract deaths, and add net immigration.

We then took a look at what the implied population number would be if we started with the data we had from the unemployment insurance benchmark system. Using the household ratios, we then added back the proprietors, the type of person that you were referring to, and the nonlabor force people to get a synthetic, independent estimate of population.

What, indeed, we get is a significantly slower pace of population which, since we presume that the births and the deaths are fairly accurate estimates, and the immigration is not, we then presumed that most of the difference is in immigration. However, we find that we overexplain the problem, so it is not easily that simply explainable, but it is apparent that a goodly part of the problem is that the household employment has been overestimated largely because of what we perceive to be an overestimate of population.

It is interesting, in this regard, that in January the population numbers were revised down by 500,000. Now, we still have not closed the gap, but the presumption is that with these types of analyses, plus the fact that 60,000 is a very large sample, but it still has sample variance in it, we have concluded that, as best we can judge, the payroll series is the more accurate number. And I believe that the Bureau of Labor Statistics has come to the same conclusion.

Senator BENNETT. Yes, they have, and I am not challenging that. We are aware at JEC of all of the statistical noise in the data that you have described, and we have tried to do our own adjustments on the census in the way that you have talked about.

The thing that keeps nagging at me on this issue, and maybe I am obsessing and should forget it, but, historically, the two have run fairly close together. The household survey has always been higher than the payroll survey.

Chairman GREENSPAN. Oh, in level, yes. Absolutely, yes.

Senator BENNETT. But when one moves up, the other moves up not in lockstep, but they have historically kind of moved in the same direction.

Chairman GREENSPAN. That is a fair statement.

Senator BENNETT. In this particular recession and recovery period, that has not been the case. They have diverged in a way that has no historic background, and that leads to the question that I raised in my opening statement, and I do not want to beat this horse any more, but simply put it out for you to continue to think about. Is this sending a signal that there may be some structural change going on, and can we dig into it to the point, as I said in my opening statement, where we are more sure about the data?

If you ask me which is the more reliable, I would say the payroll survey is the more reliable, but I am not as convinced that the household survey is not trying to tell us something as I would be if the two were moving in a historic pattern.

Chairman GREENSPAN. Oh, I think that is a correct way of evaluating it. One thing, obviously, which clearly caught our attention, is the issue you raised at the very beginning; namely, that one way to explain these extraordinary productivity figures is that they are not real, and, indeed, they are a function of the fact that the denominator is being basically underestimated.

So, we are aware that there may be something not fully explained here because, as I mentioned to you just a moment ago, our endeavor to reconcile to the population figure does not quite do it. It overadjusts and implies a decline in immigration to make them reconciled, which is just not credible.

Senator BENNETT. I agree with that, and we have run into the same problem in the JEC as we are trying to deal with this.

I have some other questions, but Senators have returned, and I will wait for a second round.

According to the sheet that we have from Chairman Shelby, I think, Senator Reed, you are next.

Senator REED. Thank you, Mr. Chairman.

Thank you, Chairman Greenspan, for your testimony. I would like to follow up on the line of questioning that Senator Sarbanes began and understand your position on the pay-go rules. You would, one, favor their reinstatement?

Chairman GREENSPAN. Correct.

Senator REED. Two, these pay-go rules would cover any proposed tax changes, they would have to be paid for?

Chairman GREENSPAN. That is what they are there for—both taxes and spending.

Senator REED. Taxes and spending. In that context, would you think it appropriate that tax provisions be looked at to pay for other tax provisions, or would you exclusively urge that expenditures be cut?

Chairman GREENSPAN. I do not have a strong feeling one way or the other. My suspicion is that the success of the pay-go rules—and they were successful—over the years was more that they locked in the requirement that the deficit be addressed. I obviously would prefer it be biased toward reducing outlays, because I think that is the area where the probability of success is highest in the sense of its impact on the economy. But I think that the focus has to be firmly on pay-go in general rather than how it is done.

Senator REED. May I assume, then, that you would at least conceptually oppose provisions that would only make pay-go applicable to expenditures and exclude or protect any of the tax provisions?

Chairman GREENSPAN. I would like to see the pay-go rules that expired in September 2002, be reapplied hopefully in precisely the same way.

Senator REED. In your testimony, you did suggest that because of the dwindling discretionary spending, and because of some accounts that we frankly cannot touch—Department of Defense, maybe not in general, but expenditures in Iraq and Afghanistan—

you are looking at policy options such as increasing the age of eligibility for Social Security, significant changes——

Chairman GREENSPAN. I might add Medicare would be implicit in this.

Senator REED. —and Medicare—you just stole my next phrase—and I think you understand that these are exceedingly difficult choices to make.

Chairman GREENSPAN. I fully understand that. However, the other alternative is to have legislation which repeals the laws of arithmetic.

Senator REED. Well, some of the legislation I have seen lately proposed by the Administration is proposing to repeal the laws of arithmetic, so I hope you gave them the advice, too, Mr. Chairman.

One of the issues with respect to arithmetic is timing. These proposals would be difficult in any case, but the sooner we at least begin to consider them, the better off we will be. I have seen no leadership from the Administration suggesting proposals of this order. Would you urge them to begin this process now?

Chairman GREENSPAN. Certainly.

Senator REED. Thank you.

One of the other areas of concern is the time frames where we look at different dimensions of the budget. We have estimates of 5 years of expenditures and 10 years of expenditures. We look at Social Security in 75-year periods. Do you think it would be helpful if we looked at these proposed tax cuts in 75-year periods?

Chairman GREENSPAN. I do not even think the 75-year period is other than an arbitrary number. I think what we should be looking at is the present value of all outlays and receipts. In other words, as you are aware, when you get to the 76th year, you go off the cliff, and it is very often very odd that people do not understand why, as you go from 1 year to the next with the 75-year pattern, when you drop off the most recent year and you add the huge deficits that you get in the longer years, the numbers change. I think that is an indication that you need to look at this in a much more conceptually appropriate way.

The 75-year number was employed many, many years ago as a convenience of calculation and explanation, but it is not a mathematically appropriate statistic.

Senator REED. But it seems to give us a little longer perspective, obviously, than the 5 years and 10 years that we look at tax cuts and expenditures. I think the same phenomenon seems to take place if you look at these proposed tax cuts. Some of the deficit numbers explode beyond the 5- or 10-year period, yet the Administration talks only in terms of these shorter periods. Is that a conceptual failing?

Chairman GREENSPAN. Well, I think as Senator Bennett pointed out earlier, our forecasts are pretty thin, but while that is true, it is better to have a forecast than none. You do reduce the risks by at least looking out into the future and getting some judgments.

But the budget as it affects the economy is ever-increasingly moving toward a more distant horizon. Remember, we used to have 1-year budgets, then we went to 5-year budgets, now we are going to 10, with supplementals on 20, 30, and 40. And I think that process will continue largely because of the increasing proportion of the

budget which is essentially related to the state of retirement, and that is something we never had before. The average life expectancy was not all that great, and the number of retired people was not that many. But the incredible increase in our standards of living has enabled us to support very large retired populations, and I think as a consequence of that, in evaluating our budget process, our horizon has to move out, and I am not even sure that 10 years is enough, frankly.

Senator REED. Thank you, Mr. Chairman.

Chairman SHELBY. Senator Sununu.

Senator SUNUNU. Thank you, Mr. Chairman.

Chairman Greenspan, you said that one possible reason—possible explanation—for the high rates of productivity if in fact they are not real would be an underestimation of the denominator. I presume that means the denominator is the payroll survey in that equation?

Chairman GREENSPAN. Well, actually, only in part. The base is the payroll survey and the hours that are in that survey. But then, the Bureau of Labor Statistics adds estimates of hours for proprietors and other elements of the overall workforce of nonfarm business, which as you remember is the numerator. So it is not solely the payroll series, but that is by far the dominant factor in the denominator.

Senator SUNUNU. But in responding to Senator Bennett's question, I just want to make sure that was your point——

Chairman GREENSPAN. Yes.

Senator SUNUNU. —that you were suggesting that if the payroll survey were too low a number, then that would artificially inflate the productivity number. Is that a correct statement?

Chairman GREENSPAN. That is correct. I do not believe that that is, indeed, the case.

Senator SUNUNU. No. You were very clear that you thought the payroll survey was most accurate. I just want to make sure that I understood the answer that you provided to Senator Bennett.

Chairman GREENSPAN. That is correct, Senator.

Senator SUNUNU. Senator Bennett may have asked—and I apologize if I missed the response—about the degree to which issues such as the self-employed or contracted workers are taken into consideration in the payroll survey or the household survey. Could you just touch on that briefly?

Chairman GREENSPAN. I will. Contracted workers will either be in the payroll series itself—you will remember that temporary employment is part of the payroll series, and the number of contractual types of work are there as well—but to the extent that they are proprietors, or they are essentially self-employed, they will be picked up in the denominator of the productivity estimate largely from the household survey data, which is really the sole source of self-employed.

Senator SUNUNU. The household data is the only source of the self-employed numbers; is that what you just said?

Chairman GREENSPAN. That is my recollection, yes.

Senator SUNUNU. So there is no effort to, for example, look at IRS filings, who is filing as self-employed, doing their taxes, declaring that they are self-employed, to try to draw some correlation?

Chairman GREENSPAN. Well, I have looked at those data myself. And it is probably a superior procedure to do what the BLS is doing, taking a very large sample survey and estimating from those data themselves.

Senator SUNUNU. Excellent.

It is my understanding that the Fed just recently announced a change in policy with regard to the short-term financing of interest payments on GSE debt. Could you talk about that a little bit, what the rationale for that policy is, when it might be implemented, and what the economic impact might be, or the impact to the financial markets?

Chairman GREENSPAN. Yes, Senator, what you are referring to is what we call "daylight overdraft" in the Federal Reserve System. During the day, there are transfers in and out of Federal Reserve accounts, and there are a huge amount of payments, there are a huge amount of receipts, and over the years, we have endeavored to remove what has been an increasing problem, namely, that a number of the private payers have been paying later in the day, whereas the Federal Reserve pays a lot of the payments for, say, the U.S. Treasury and for agency and GSE debt at 9:15 a.m. in the morning.

The consequence of this is that if you have an owner of a GSE security, whether it is a depository institution directly or a depository institution acting for a customer, we pay at 9:15 a.m., and the receipts that we get from the issuer, we usually do not get until late in the afternoon. So what we are doing is we are paying the depository institution its interest or repayment of principal far in advance of the time during the day that we actually get the funds. We were doing what private sector transfer agents were not doing—namely, they do not pay out any principal or interest until the funds are deposited—and it was a convenience for us to do that early on; it was our decision to do it.

We are now getting to the point where the numbers are getting so large——

Senator SUNUNU. How large?

Chairman GREENSPAN. Well, it is $145 billion on occasion.

Senator SUNUNU. So that is real money.

Chairman GREENSPAN. It is real money.

Now what we have done is to send out a request for comment on a rule stating that by July 2006, I believe it is, that we will be making payments to the depository institutions only when we have predeposited funds, as is done generally in the private sector.

Senator SUNUNU. Why wait so long? Why wait until 2006?

Chairman GREENSPAN. Because it is going to require the individual depository institutions to find alternate means of financing, and we do not sense any urgency of it. We think it is something which has developed over the years on the basis of a policy which we initiated. Now with the size of the numbers that are appearing, we decided that it is important not to be giving out inadvertent subsidies, which is in effect what we are doing, and it will require of necessity that the depository institutions who have been getting payments at 9:15 look for alternate sources of finance, as their payment desks do all day long. And we state in our request for comment that there is obviously an alternate need of how these funds

are going to be raised, and at some point, it is going to be some form of permanent financing on their part.

Senator SUNUNU. Thank you.

Thank you very much, Mr. Chairman.

Chairman SHELBY. Senator Bayh.

Senator BAYH. Thank you, Chairman Shelby, and thank you, Chairman Greenspan.

I have a couple of questions. It seems to me, Mr. Chairman, that one of the things we have learned over the last several years is to keep a fair amount of humility when it comes to forecasting too far out into the future. We have had stock market collapses, unanticipated recessions, wars, terrorist attacks, and all these things have taken a toll upon the country's economy and finances. And recognizing that back when we addressed the issue of tax-cutting and possible entitlement expansion the last time, you had recommended and some of us had embraced the idea of a trigger to try to ensure that while we were giving it our best shot, if there were these unanticipated contingencies, we would not go deeply into deficit, in debt, as has, in fact, turned out to be the case.

My question is—and we favored the idea of a trigger at a time when we were in surplus—wouldn't it also apply to either further tax-cutting or entitlement expansions in time of deficit? Back then, the idea had been to tie it to paying down the debt. Perhaps now we could tie it to a steady glide path and reducing the amount of the deficits as the trigger, something like that.

I would be interested in your thoughts about the possible trigger when it comes to permanency of tax cuts or expansion of entitlements under the current set of circumstances.

Chairman GREENSPAN. Senator, because of the fact that the horizon over which we have to make budgetary policy is continuously moving out and because, as you correctly state, forecasters are in need of considerable humility, we have to have some form of mechanism which is a safety valve on the issue of how expenditures can be controlled—I mean by that when you put out a program, you at least know what the entitlements are or what the central estimates are in general——

Senator BAYH. Although we have learned just recently that that is sometimes subject to variation.

Chairman GREENSPAN. I was about to say in certain things like Social Security, you can know with some degree of accuracy. Our estimates of benefits over time have been pretty good and will continue to be. Health care is a totally different type of operation, as are a number of other things.

But be that as it may, the point at issue is that unless you can forecast either receipts or outlays with some degree of accuracy, you need a fallback trigger position to protect the fiscal status of the system. And over the years, I have argued for two different types of approaches. I have argued for sunsetting virtually everything. My view is that if a program is desirable, sunsetting it will be of no problem whatsoever, because it will be automatically renewed, but it does subject the whole issue of governmental programs to an automatic reevaluation.

I think we will be surprised at how many programs will indeed be sunsetted and not be restored, whereas today they just go on far

beyond their original purpose, and I think there is just an enormous amount in our budget which has that characteristic.

Over and above sunsetting, then, is the trigger issue, which I have in recent years advocated as another safety valve. There may be others, and indeed, I would be——

Senator BAYH. I am about to run out of time, Mr. Chairman, forgive me. But you think it still has merit?

Chairman GREENSPAN. Oh, I do indeed, yes.

Senator BAYH. My second question—and again, I apologize, but I have less than a minute—deals with a question of United States sovereignty.

I was restless one night this week and picked up a publication of the International Monetary Fund, "U.S. Fiscal Policies and Priorities for Long Run Sustainability," and before the publication had its intended effect and I went back to sleep, I did pick up some interesting insights from it. Let me just read you one sentence.

"The United States is on course to increase its net external liabilities to around 40 percent of GDP within the next few years, an unprecedented level of external debt for a large industrial country."

There were other countries that had higher levels of debt, but they financed it internally through savings; we do not.

My question is as long as we are financing our governmental operations by borrowing from abroad, principally from foreign central banks, as long as American consumers are sending wealth abroad through their purchases that deal with our balance of trade situation, in the long run, if we allow this to continue apace, or if it does continue apace, doesn't this really affect our sovereignty?

How do we take firm negotiating stances with those to whom we are deeply in debt, whether it is in the trade realm or even events on the North Korean peninsula—just a whole raft of things. Is there not a concern that if we continue apace, it will affect our sovereignty in some other areas?

Chairman GREENSPAN. To the extent that we would be owing debt to other sovereign governments, in that respect, there is a difficulty. But if it is a private negotiation, I am not sure it has the same type of problem which you are alluding to. That in no way says that building up those debts is not a problem, because unlike the Federal budget problem in which those decisions are made essentially in the Congress, current account balances get adjusted by the marketplace in the sense that people accumulate claims against American residents because they want to. As wealth continues inexorably to increase, you have claims that represent it, and a very substantial part of the world has chosen to have claims against the United States as the most secure claims they know how to have.

Without getting into the detail, I recently made a fairly broad analysis which suggests that the dispersion of current account deficits because of international financial intermediation is stretching out, meaning that there are far greater surpluses and deficits now than existed 20 years ago, and it looks as though that is going to continue, meaning that as overall wealth, world wealth, increases, you have to hold it someplace. And what is happening in part is that because of the nature of our society, property rights, in gen-

eral, very strong underlying productivity, we are still the area where people want to invest.

Now, I certainly can conceive of a situation where even if that is the case, you get so much in the way of dollar-denominated claims, you just really want to diversify——

Senator BAYH. You saturate the market.

Chairman GREENSPAN. —so that you will get diversification, and you will then get pressures in the marketplace to adjust. But I would not be overly concerned about the issue in terms of delimiting our sovereign capability of acting in the world because of that. I think that is true only in a very limited sense, and I would be more concerned about the broader implications of our saving and investment policies at home as being a crucial issue.

Senator BAYH. Thank you, Mr. Chairman.

Chairman SHELBY. Senator Carper.

Senator CARPER. Thanks, Mr. Chairman.

There is a recurring theme, I am sure you have noticed, to a lot of these questions, particularly from our side of the aisle, and I just want to pick up where Senator Bayh has left off.

When we run a deficit in Federal operations in our budget, we have the ability to borrow from trust funds, and we borrow from the Social Security trust fund, we borrow from Medicare trust funds and other trust funds that exist. I think we have pretty well exhausted all of those. When that is not enough, we look around the country to see if there are investors in the United States who are willing to loan the Federal Government some money and buy our securities, and there are plenty of people and institutions who are willing to do that.

When we have pretty well brought in those dollars from potential investors with the interest rates they can yield, then we turn around and look around the world to see who outside of our borders will lend this money, and as in the conversation you have had with Senator Bayh, there are a lot of investors around the world who are willing to invest in U.S. securities. And so far, so good.

My fear—and I think you touched on it right at the end—is that we reach a point, almost like on a seesaw, where you start going in the other direction, and potential investors, whether they are banks or individuals around the world, look at the United States, and they look at our securities, and they look at our inability to balance our Federal deficit or to even come close to managing our fiscal matters in a responsible way. They look at the exodus of jobs from this country, not just manufacturing jobs but good-paying technology jobs, and my fear—and I am by nature an optimistic person; I almost always see the glass as at least half-full—and I must say that looking down the road here a few years, especially, as I said earlier, when my generation starts to retire, when the boomers start to retire, I will be honest with you, I do not see the glass as half-full.

I have a fear—and maybe it is misplaced—but a fear that we will reach a point where the rest of the world will say to us: You know, if you want us to continue to invest in your securities and to continue to loan money to your country, we will do it, but not at the interest rates that you are willing to pay.

I think you and the Fed have done a masterful job in managing monetary policy and trying to keep interest rates low and to help make this recession as shallow as it has been, but I want to tell you that I worry that the day will come when the rest of the world says, No, you need to raise your interest rates for us to continue to make those kinds of massive investments. And when we are faced with that prospect, the effect on the economic recovery is not going to be good. Can I just ask you to react to that?

Chairman GREENSPAN. Well, Senator, remember, the way it will happen is not that somebody abroad is going to say, "You have to raise your interest rates," because the major question here is the private flow of funds. What will happen is that foreign investors, for one reason or another, will seek non-U.S. type investments. They are not going to call us and say, "If you do not raise your rates, we are not going to invest here." They just will not invest.

And what can happen and what has happened in the past is that you remove the demand for private securities, and with the same supply, interest rates of necessity start to rise. In other words, it is not necessarily an action of the Federal Reserve or anything necessarily that the Federal Government——

Senator CARPER. I have no quarrel with what you have just said. I agree.

Chairman GREENSPAN. —so the answer is yes, that is clearly something we have to keep in mind.

Senator CARPER. Again looking down that road another 5 years or so, could you just talk with us about what are the implications to our fiscal situation when my generation begins to retire?

Chairman GREENSPAN. We may have humility in forecasting economic and financial issues; we should have none in forecasting that a very substantial number of people currently in our labor force will move into retirement starting in 2008. That forecast is probably one of the very few forecasts which we can get with a very high degree of accuracy.

Also, we have under existing law commitments to those people, and when you multiply current law times the numbers, you get a very considerable rise in obligations of this Government. And as I said earlier, it is very important for us to recognize when and to what extent we may have overcommitted, and if indeed we have, it is very important for us to communicate to this group of people who are looking forward to benefits in retirement that they feel secure that what they have been promised, they will get. And unless and until we review all of these things, I do not think we really know what the nature of the problems are out in the longer term. What we do know is cause for considerable concern.

Senator CARPER. One last quick question if I could. Others have asked you about restoring pay-go procedures within our budget process. There are two ways to go pay-go. One is to say that if a Senator comes in with an idea for raising spending in a particular program, you have to come up with an offset—either cut spending somewhere else or raise revenues to offset it.

The flip side of that is to say that when a Senator comes in with an idea to reduce revenues, there should be an offset of that as well—either you find another place to cut spending or you find an-

other place to raise revenues to offset the revenue loss that is going to come from my initiative or anyone else's.

I think what the Administration has proposed is only the first half of that plan, pay-go only as it affects new spending. My question is should we just do half-a-loaf, or should the restoration of pay-go be consistent with what we have done in the past to say that if you are going to raise spending, you have to come up with the offset, and if you are going to cut revenues, you have to come up with the offset?

Chairman GREENSPAN. Senator, I mentioned earlier that I, in testimony in September 2002, was very concerned about the pending expiration of pay-go, as well as discretionary caps and argued strenuously that they be restored. My view is that what seemed to work in the past, what was in the statute prior to September 2002 is needed, and I think just resurrecting that structure, which was far more successful than I ever imagined it could be, is an essential element in restoring fiscal sanity to our system.

Senator CARPER. Thank you.

Mr. Chairman, I think he just said a mouthful there, and I hope we will take that one to heart.

Chairman SHELBY. Thank you.

Senator Schumer.

Senator SCHUMER. Thank you, Mr. Chairman, and thank you, Chairman Greenspan.

I would like to focus on the area I mentioned at the beginning which I am very concerned about. When people question whether free trade is still the way to go, usually, economists and editorial boards say, "You are being protectionist." But given the new changes, there are lots of very—not lots—there are a few very respected economists who are saying we should reexamine because the world has changed.

Mr. Roach of Morgan Stanley calls it "global labor arbitrage."

I would like to read you a quote from two very respected economists, Ralph Gomory and William Baumol, and get your comments on that. They are saying what the free trade theory is. This is from their book, "Global Trade and Conflicting National Interests":

"However, it is also true that in the time since these basic models of international trade were formulated, there have been major change in the world economy. David Ricardo's world of agriculture, slow-moving technology, and tiny businesses has been replaced by a world dominated by manufactured goods, rapidly evolving technology, and huge firms. This calls for reexamination of those classical models."

There is another paragraph, and then they say:

"However, as modified by us, the theory shows that there are in fact inherent conflicts in international trade. This means that it is often true that improvement in one country's productive capability is attainable only at the expense of another country's general welfare. An improvement in the productive capability of a trading partner that allows it to compete effectively with a home country industry, instead of benefitting the public as a whole, may come at the expense of the home country overall, and this harm is not the localized damage previously mentioned—loss of jobs in the immediately affected industry—but an adverse effect that is felt throughout the home country."

As I mentioned to you earlier, it seems to me that the Ricardo theory relied on factors of production that were staying in a country, not in a world with broadband, with an international labor market that is rapidly changing. And I think I mentioned just two examples; I have heard many. The head of a major insurance com-

pany said except for salespeople, who have to deal face-to-face, if he is doing his job, 80 percent of his workers should be overseas within 10 years.

Can you comment on both my opening statement and particularly the comments of Professor Gomory and Baumol?

Chairman GREENSPAN. Certainly.

Senator SCHUMER. I do not know a solution here, to be honest with you, but do you disagree with the view that the basic changes in the last 5 years perhaps should cause us to reexamine the classical theory of free trade, which is when each country specializes, everyone does better?

Chairman GREENSPAN. I see no reason to do so, and let me tell you why. Instead of thinking in terms of trade per se, I think it is important to start in a different direction and then come back to trade.

The real question is the question which Adam Smith originally raised: What causes the wealth of nations?

We have two statistics in this country which we have to explain. One is that employment has moved in parallel with the adult population for generations. There are aberrations, but in general, it has happened.

More important, real wages have gone up at all times. And I might say that both of those trends have occurred irrespective of whether we have had a trade deficit or a trade surplus, whether we have had high outsourcing or low outsourcing. If, indeed, the wealth of the Nation, meaning the United States, is independent of the degree or nature of trade, then the question is what causes the wealth of nations. And here, even though we do not have any recent evaluations for developed countries, there has been an extraordinary amount of research on less-developed countries which looks to me wholly applicable to developed countries as well. You start off with what are the factors which seem to make the difference.

One is the skill and education level of the indigenous population. Two is the extent to which there is a rule of law which facilitates the way that populations trade internally. In that regard, property rights turn out to be a very critical issue. And the two of those are sometimes augmented by the degree of natural resources that are there, but that is a very minor question.

This, therefore, raises the issue of why is it that the United States has been able to increase our per capita income not every year, but over a period of time. And it largely comes down to the fact that our skills, along with our degree of intelligence, is what determines what our real income is wholly independent of which particular job we had and what proportion of our total consumption was imported.

I submit to you that if, indeed, that is the case, then the issue of trade is constructed in a different context. Then the question is how do people exchange goods and services, how do you create specialization of labor within an economy, within a city, within a company, to create maximum wealth. In a context of fully free trade, then, national boundaries are utterly irrelevant to where people move or not move.

Yesterday, I raised the very important issue in this regard of education. I think our real concern should not be the question of whether or not trade is increasing internally or externally. I think we have to be very concerned about the fact that there are very substantial people who are obviously losing jobs not only because of trade but also because of internal productivity. That is something which is a public policy question we have to be very much concerned about, but it should not change our view of what the economic forces are which are moving world events in that regard.

What I am saying here is that if we have, as I mentioned before, an economy which is increasingly conceptual—that is, the quality of the goods are more and more—it means that for us to function, we need a level of skills of our working population which is continuously becoming more conceptual to match the type of goods and services that consumers want—or, to put it another way, that workers acting as consumers request. And what we are observing at this stage——

Senator SCHUMER. Could you comment on 100 million well-educated people added——

Chairman GREENSPAN. —I will; I will exactly do that, because that is where the critical issue is. In any event, what is happening in the United States is we are finding that the lesser skills are turning out to be in surplus supply, and therefore, the real wages of our lower-income are going nowhere, but the premiums for skills in the upper areas of our skill area have been rising for the last two decades, which is another way of saying that we are not moving our younger people through our school system from the fourth grade through 12 sufficiently quickly to put them into college and into areas where their capabilities get to a point where the supply of skills meets the burgeoning demand, which incidentally will bring down the wage rate and will reduce the inequality of income which is involved here. And there have been very disturbing international studies that American students in math and science in the fourth grade are average, maybe even slightly better than average internationally; by the time they get to the 12th grade, they are way down below the average.

We do something wrong which obviously, people in Singapore, Hong Kong, Korea, and Japan do far better than we. There is nothing wrong with our students—they are just as good if not better in the fourth grade. They are teaching in these strange, exotic places for some reason far better than we do it. And because we are not doing it, then the issue you raise, Senator, disturbs me, because what will ultimately determine the standard of living of this country is the skill of the people. I think we are fortunate in that we have a Constitution and a rule of law so that people find it sufficiently attractive to invest here, and that has helped us to a very considerable degree—but unless we somehow resolve the education problem, then I think the issue you raise about the 100 million Indians, Chinese, and the like is an issue.

I should, however, say parenthetically remember that that was our concern about Japan in the 1950's and the 1960's, and when the demand for those so-called low-wage workers, highly-educated workers, began to move, the Japanese wage rates just took off. So it is not as though Chinese and Indian software engineers, for ex-

ample, are always going to be at a very significant differential. Because of the very large numbers of them, it will be for a while, but eventually, the gap will close. But whether it closes or not should not be relevant to us if we cannot solve our education issue.

Senator SCHUMER. Thank you.

Thank you, Mr. Chairman.

Chairman SHELBY. Senator Miller.

STATEMENT OF SENATOR ZELL MILLER

Senator MILLER. Thank you, Mr. Chairman.

Mr. Chairman, thank you. I know you have been at this a long time already this morning, and we appreciate your generous and your knowledgeable remarks. I do not want to continue to beat this horse, but I listened very carefully to what you had to say to Senator Schumer, and I apologize for not being here when Senator Allard asked you about the loss of manufacturing jobs.

I really want to embrace what you are saying, and what you are saying about education I could not agree with more. However, in the interim, I get letters like this one. It is from a pre-K school class in Trion, Georgia. Now, obviously, they are an advanced class of preschoolers:

"Dear Senator Miller, we are a pre-K class from Trion, a small mill town in northwest Georgia. The main industry in our area is Mount Vernon Mills. The mill has been in business since 1845 and is a main source of employment in our area. They employ about 1,900 people. Many of them are our parents."

"We are very worried about our mill. They have been on short time more in the past year than at any time in the mill's 158-year history. We are and continue to be the largest producer of denim in one location, but we fear this may change unless something is done. Back current legislation for 27.5 percent tariffs on Chinese goods."

I told you they were a very advanced class; they know about tariffs and quotas.

"This company is vital to our area. They make regular donations to our schools, including $1 million several years ago to help build our new school. The old one is in a floodplain and badly damaged. Without this mill, our town will not survive, and neither will our school. Won't you please help save our mill and the American textile manufacturing industry by putting quotas on Chinese imports? Please help save our mill."

"Ms. Janice and Ms. Cathy's pre-K class, Trion pre-K."

Now, I know that those kids did not write that letter, but I can guarantee you that those kids have heard that kind of talk around the kitchen table back home, and they have seen their daddy or mamma is worried about their job, and that makes them worried about their future.

Mr. Chairman, assure me again that it is not the end of the world to lose all these manufacturing jobs. What happens to the tax base when something like this happens? I know you talk a lot, and I agree with you on the retraining of workers, but will there be enough new jobs to employ all the retrained workers, say, in Trion, Georgia? Can America live on consumption alone?

Chairman GREENSPAN. No, Senator Miller, we cannot, and indeed, I think this is an issue which requires a considerable amount of attention.

I know there is a gulf between people who are advocating the abstraction of free trade and those confronting the letter that you have. It is a very difficult public policy question, because the way

our system functions is that it is continuously churning—that is, as a famous Harvard professor said, it is called "creative destruction" in the sense that we are continuously using the resources of obsolescent technologies to finance cutting-edge technologies, and the difference in the productivity in the cutting-edge technology less that of the obsolescent technology is a rise in productivity that is the source of a rise in our standards of living.

So, economists will tell you that the process is basically one in which there are lots of losers and gainers in the process, and indeed, if you look at the equivalent in the labor markets, as I have mentioned previously, we hire a million people every week in this country, and a million, more or less, are either laid off or quit. But the important issue here is that there is an extraordinary churning in the labor market, and there are a very large number of people in the wrong end of that churn who are in very serious straits.

We have 2 million people who have been looking for a job for over a year. Now that is a relatively small percent of the 150-odd million people who are employed, but it is a large number of people, and we have to be very careful to recognize that there are winners and losers here, and I think it is crucially important that we, one, as I have indicated previously, recognize that if you are going to get obsolescent technologies or ones that become obsolescent because we have different patterns of labor and capital—but for example, if you go back 20 or 30 years and look at the textile mills in the South, and these are absolutely first-rate operations, world-class—I know, because a lot of them were my clients, and I know what they were doing—the trouble, unfortunately, is that a number of developing nations have evolved and copied a lot of our technologies.

It was an American who created the cotton gin. The cotton gin was the critical issue which enabled a major textile industry to really start in this country, and up until very recently, we were at the cutting edge. It was true in steel, it is true in motor vehicles. And we are finding that we are fading in those areas, and yet fairly recently, we had 4 percent unemployment, and we have always been having a very significant increase in real wages.

Human ingenuity is producing ever more useful ways of operating. I think it is important that we do not stop that process, because that is where our standard of living, that is where American greatness, is coming from. But on the other hand, we should be very careful to recognize that we are not dealing with averages, we are dealing with real people. And that is the reason I support community colleges, which are turning out to be by far the most useful vehicle to retrain people—because if they have an adequate education, you can retrain them.

That is why I am worried about the school system. If you can retrain them, the evidence suggests that to be sure, when you lose a job, you usually get the next one at a lower pay, but ultimately, you move up. If you have that situation, you have to craft programs that get people retrained and, where you cannot get them retrained, find other ways of assuaging their problem, which was not of their making.

Senator MILLER. Thank you, Mr. Chairman.

It is hard, though, to look at the big picture when you are one of the flesh and blood that is caught up in that little picture.

Chairman GREENSPAN. It certainly is.

Senator MILLER. Eli Whitney was a New Englander who came to Georgia and invented that cotton gin, by the way.

Thank you, sir.

Chairman SHELBY. Senator Corzine.

STATEMENT OF SENATOR JON S. CORZINE

Senator CORZINE. Thank you, Mr. Chairman.

I apologize for not being here today. I was listening to incredible minds and public servants. Secretary Powell was in our Foreign Relations Committee meeting.

This discussion that you are having about the wealth of nations and its growth through productivity and the capacity expansions is both spot on given our current situation, but I think the piece—and you have alluded to it a couple of times, because you cannot talk about averages and really have this apply to our workforce and income distribution that we have in our Nation. I think one of our major problems is that we continue to look at averages when we look at per capita income and some of the metrics that you have mentioned and others have mentioned, but when you look at it in the way you just suggested—someone who loses a job, their next job is at a lower real wage, and you are seeing that happen more broadly in the economy—whether that is a trend, I think it is early, but there are a number of studies out that show that in the bottom 80 percentile of American workers, there is beginning to be an erosion of real wages. So, we are getting that offset by what is going on at the top, and some of this is education, there is no question.

But how long does it take for that adjustment process to occur, and should there be public policies that actually address that? Obviously, you talked about community colleges and the budget, and I know we had an initiative talked about in the State of the Union, but if you look at the real spending on community colleges that is going on in the other elements of the budget, we are cutting them.

I just do not understand how we can continue to forecast 2.5 million jobs when this process of growing the wealth of the globe as well as the Nation with the kinds of problems of income distribution. So, I think today's discussion is extraordinary, but unless it deals with the distribution of income and talks about something other than averages, I think we are missing the point with the broad base of Americans.

Chairman GREENSPAN. Well, Senator, I think the income distribution issue is very critical because we cannot have a significant inequality of income and expect to have support for the type of institutions which have made this country great.

A point that I am trying to make is that the nature of our production processes, the nature of our capital facilities, are requiring an ever higher degree of skill on the part of our working population to staff the plant and equipment. Indeed, we have been doing it. If you go back to the turn of the previous century when people were coming off farms, our education system was remarkably effective. We had created high schools which taught people how to take the skills which essentially staffed a major expansion in manufac-

turing. By World War II, we were far ahead of any other country in our level of general education.

Since then, we have had this continuous requirement for increased skills, but because we have been doing it very slowly, too many of our people who should have been in college or graduate school or whatever end up not making it through high school. And if you just think in terms of what would happen if we had the same schooling that a number of East Asian countries are having, there would be a far larger number of people going into high school and a far larger number of people going from high school to college to graduate school. We would move the whole population structure up. We would reduce the excess supply of those in the lower-skilled areas and those who are still lower-skilled would find their wage rate would rise, but moving up the population into the higher skills would create excesses there and lower the wage levels in the upper-skilled levels and thereby reduce the degree of income inequality very significantly.

There is another piece of this which is, of course, immigration, which has an interesting effect, but the point that I am making is that this is a problem which is best, and I fear may only be, addressed through education. And if that is the case, it is very important that we focus on what is wrong with our system—why do fourth graders, who in math and science do as well as the rest of the world, if not better, find that by the time they get out of high school, they are way down at the bottom of the ladder? Why is that? What are we doing wrong?

I think if we could answer that question, we would find the public policies which would solve a good number of problems that are reflected in the type of letter that Senator Miller just read.

Senator CORZINE. Thank you.

Chairman SHELBY. Chairman Greenspan, you have been very patient with us this morning. I have four questions, and I will submit them for the record. I am just going to touch on them here.

The first has to do with the sustainability of the current account deficit. You have talked about that some. I will put that in the record and get it to you.

The second one has to do with the possible fragility of the Chinese financial system, the banking system, as a lot of us see it.

Then, the third one would deal with the decline of the dollar versus the euro, the long-term consequences and so forth.

The fourth one deals with price indices and the Federal budget in reference to some testimony you gave one time dealing with income tax brackets; have they been inflated using the chain-weighted CPI rather than the cost and so forth.

I will get those to you for the record.

The last question I want to ask you is not necessarily here before us today, and that deals with hedging. The SEC staff recently issued a report recommending that hedge fund advisors register with the SEC. What is your perspective on the registration of hedge fund advisors, and how would it impact the industry? In other words, do you agree with that recommendation?

Chairman GREENSPAN. No, I do not, Senator. I think that hedge funds, which I would define as financial institutions in which the investors are only of high income levels—if I get this wrong, Sen-

ator, please correct me—the value that these institutions have is to create a very significant amount of liquidity in our system, and I think that while they have a reputation of being a peculiar type of financial group, they have been very helpful to liquidity and hence the international flexibility of our financial system. We have to be very careful that we make sure that they do not become an investment vehicle for people in lower and moderate incomes, because that appropriately requires registration and SEC——

Chairman SHELBY. Perhaps on the retail level.

Chairman GREENSPAN. —it requires SEC oversight. I grant you that registering advisors in and of itself is not a problem, but the question is what is the purpose of that unless you are going to go further, and therefore, I feel uncomfortable with that issue.

Chairman SHELBY. Thank you.

Senator Bennett.

Senator BENNETT. Thank you, Mr. Chairman.

I was interested in the same question as the Chairman just asked and appreciate your answer.

I have no further questions other than just one last shot at the thing that we are talking about here. One more time, trade is good, even if it is trade in services as opposed to trade in hard goods. Trade is good for both sides. Trade is good for this country. Is this an overall summary that you would be comfortable with?

Chairman GREENSPAN. I would, Senator.

Senator BENNETT. I think it is important that we remember that, because there are some who say, well, yes, trade in hard goods is okay, but when we get into services, then trade is not good. And I appreciated your answer to Senator Schumer when you talked about the historical impact of trade whether we were in recession or boom times, whether we were in war or otherwise—just historically, American productivity has produced this benefit.

I tell my constituents that when it comes to trading, we are the meanest, toughest, biggest kid on the block, and therefore, we want the most trade we can possibly get. We are not afraid of anybody as a Nation in trading if we can lower all of the barriers.

So that is the last point I wanted to make, and I appreciate your comment. Trade is good—let us remember that.

Chairman GREENSPAN. Yes, sir.

Chairman SHELBY. Senator Corzine, do you have a parting statement or question?

Senator CORZINE. Thank you.

I have a couple of quick questions.

First of all, I would just comment on the hedge fund issue. I think there are some questions about the "retailization"—bit big, crazy word—that people have seen, where you break it up and are selling——

Chairman GREENSPAN. I think that is where the issue really lies.

Senator CORZINE. Yes. And there are also issues about what the limits are today versus when rules were promulgated, whether it is 200,000, and what is a sophisticated investor.

Then there is this continuing element, no matter how you feel about hedge funds, like in every other walk of life, there is always the 5 percent or the 2 percent, and they seem to end up being in

some of the more reckless and dangerous worlds on a consistent basis—but for another day.

Let me ask a quick question. You have been an advocate of triggers, and I want to know, actually, if we had taken your advice, would the trigger have been pulled with regard to the current tax cuts that are being requested to be made permanent as we go forward now, given the changed circumstances of our——

Chairman GREENSPAN. It depends on the way the trigger was constructed. It could have been, it could not have been, depending on what the form of the trigger——

Senator CORZINE. The way you conceived of it, though, when you spoke to us.

Chairman GREENSPAN. As I conceived of it then, I said in the 2001 testimony, which Senator Sarbanes was discussing, that because forecasts are so difficult, and we could not be certain that the surpluses were going to be in place, that we would probably need to take a new look at whether, in fact, the surpluses were dissipating. If, indeed, you took the literal words of the testimony I gave back then, yes, I think the way you put it would be accurate.

Senator CORZINE. I am going to submit for the record one other question——

Chairman SHELBY. Without objection, it will be done.

Senator CORZINE. —with regard to the top 10 countries holding our national debt. I have a particular curiosity about the Caribbean banking centers and what its implications are with respect to our concern about funding of all kinds of miscellaneous problems that could potentially exist. I would love to hear an analysis of what is driving the fourth-highest concentration of our debt being held by Caribbean banking centers.

Chairman GREENSPAN. I am sorry—was that a question to me?

Senator CORZINE. That is a question that we can ask, if there could be an analysis.

Chairman GREENSPAN. You want us to look at it.

Senator CORZINE. Yes, please.

Chairman GREENSPAN. In the context, as you are far more aware than I, that the amount of information that those individual institutions and those various areas produce is less than we would like to see. But we will take a look at it and see what we can find.

Senator CORZINE. I think the issue in the funding of global terror, one wonders why so much of the external debt of the United States is being housed among institutions that we have very little idea about.

Chairman GREENSPAN. We will see what we can find, Senator.

Senator CORZINE. Thank you.

Chairman SHELBY. Thank you, Senator Corzine.

Chairman Greenspan, again we thank you for your appearance, and we look forward to your next appearance in less than 2 weeks.

Chairman GREENSPAN. Thank you very much, Mr. Chairman.

Chairman SHELBY. The hearing is adjourned.

[Whereupon, at 12:33 p.m., the hearing was adjourned.]

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

PREPARED STATEMENT OF SENATOR WAYNE ALLARD

I would like to thank Chairman Shelby very much for holding this hearing, and I would also like to join my colleagues in welcoming Federal Reserve Board Chairman Greenspan to the Committee today to discuss monetary policy and the state of the U.S. economy. I always look forward to the opportunity to hear from Chairman Greenspan on economic issues and those factors that are driving and hindering economic growth.

I was pleased to hear in your testimony before the House yesterday that the picture of the U.S. economy has brightened since you last testified here in July. I share your views, and know the people of Colorado have been seeing the improving economic environment as well. I was also pleased to hear that the prospects are good for sustained expansion of the U.S. economy and look forward to finding ways to sustain that growth.

Recognizing that fiscal policy is far less powerful than monetary policy in influencing Gross Domestic Product growth and employment, Congress must do its part by pursuing policies of low taxation, limited Federal regulation and free trade in order to see the United States improve and prosper with wealth and opportunity. The President's tax cuts have played an integral part in helping to sustain the U.S. economy after the mild recession and terrorist attacks in 2001. Sound monetary policy coupled with wise decisions on fiscal policy will allow Americans to benefit from the fruits of a flourishing economy.

Chairman Greenspan, once again thank you for appearing before the Banking Committee today. I look forward to your testimony.

PREPARED STATEMENT OF SENATOR CHARLES E. SCHUMER

Thank you, Chairman Shelby and Ranking Member Sarbanes, and thank you, Chairman Greenspan, for being here today.

As I travel all across my State I hear one question, one fear, one concern—jobs. People who do not have them want them. People who have them are just waiting for the shoe to drop and their job to go overseas in the relentless pursuit for the cheapest labor.

Who can blame them? Despite historically low interest rates, large tax cuts, record spending and record deficit levels, our highly stimulated economy again missed expectations in January with a weaker number of mainly low-paying service jobs. According to the Bureau of Labor Statistics after the first 10 recessions, jobs always hit their low point around the end of the recession and never more than 3 months after the recession ended. But this time, the low point in jobs came in August 2003—21 months after the last recession ended.

After the first 10 recessions, there was a complete recovery in the number of jobs within 2 years after the end of the recession. But this time, the recession has been over for 26 months and we still have 2.3 million fewer payroll jobs than when the recession started.

Mr. Chairman, at times it seems some believe we have discovered productivity for the first time. But the United States has a history of strong productivity—in fact, productivity has been the key to our strength and high standards of living.

It is true that over the last 8 years, from 1996–2003, productivity growth has averaged 2.9 percent. And during the preceding 20 years, 1974–1995, productivity growth was much lower, averaging only 1.5 percent growth per year. But during the period 1948–1973, productivity growth was much stronger on average, stronger even than what we have experienced since 1995, averaged 3.3 percent growth per year.

Yet the recessions during the previous high-productivity growth period were not marked by the continual job losses and jobless recovery that we are in the midst of today. During those recession and recoveries, jobs returned quickly. In fact, the two times that the unemployment rate was below 4.0 percent were during the high productivity periods of the late 1990's and the late 1960's.

So to me productivity is not an answer. We have been a highly productive economy for a long time that should not be news to anyone. And in fact, our economic team should have factored in strong productivity in our stimulus—high productivity cannot be used as an excuse for the failure to produce jobs.

What is news is that we are now having high productivity but no wage growth. That is the real story. That is what is puzzling with this economy. And I think that fact signals the bigger change. I believe what we are seeing is something brand new, the first stage of a new economic era—a seismic shift—characterized by massive global labor competition for every job.

It is not simply an issue of white collar service jobs moving offshore. That is only one manifestation of a larger phenomenon.

The real concern is that any job that does not require daily face-to-face interaction will be moved from high-wage countries like the United States to low-wage countries like India and China where huge amounts of skilled labor is available at a fraction of the cost.

The proper term for this new era is "Global Labor Arbitrage," a phrase recently coined by Morgan Stanley's Chief Economist, Stephen Roach. In this arbitrage, multinational companies—often U.S companies—source labor from wherever it is most advantageous to them and shift operations to wherever is most accommodating to their needs.

In manufacturing industries, factories, plants, and jobs are moved overseas for the extra margin earned by substituting in skilled, cheap foreign labor for U.S. workers. In services industries, skilled, foreign, low-cost labor is virtually imported into the country via the Internet and employees here are left to look for new work. The result of this arbitrage is enormous pressure on U.S. jobs and wages.

In this new age of global labor arbitrage the United States is handicapped by our past success. Over many years we have fought hard to build industries and create a system where our citizens enjoy high wages and a high standard of living, as well as some basic social benefits and worker protections. Now suddenly, United States workers are being forced to compete with hundreds of millions of skilled Indian and Chinese workers who are ready, willing, and able to work for a fraction of the cost, and largely without regulatory controls.

What makes the experience of this new age particularly jarring for U.S. workers is that it is their own companies who are leading the charge to move jobs overseas. These businesses are even asking United States workers to train their foreign replacements.

While some argue that the high productivity of the U.S. worker will save the day by keeping good jobs here and wages high, the facts to date do not support that case. While labor productivity is, in fact high, wages have been stagnant and job growth is far behind schedule. Yet corporate profits are near records. In the past, U.S. workers' productivity was a result of good training coupled with the ability to work with the best equipment and technology. But today, armed with United States technology and capital, and trained by United States workers, a Chinese or Indian professional can be just as productive as his or her United States counterpart, but at a fraction of the cost. The company gains efficiency, while the Nation loses productive capacity.

So in my view, the emergence of a new era of global labor arbitrage needs to be addressed for what it is—a new phenomenon in our economy. We need to face up to the new reality.

Thank you.

PREPARED STATEMENT OF SENATOR JACK REED

Thank you, Mr. Chairman. The Federal Reserve's mission is to conduct monetary policy. But monetary policy doesn't operate in a vacuum. Sound fiscal policies, like those we pursued in the 1990's, complement monetary policy in creating an environment of economic growth and job creation in the United States not abroad. In contrast, large budget deficits like those we experienced from the early 1980's to the early 1990's are a drain on national saving that is harmful to long-term growth.

I am afraid that fiscal discipline has become a fading memory and more tax cuts for the upper income have become the trend. We now have large deficits and debt as far as the eye can see. The President's budget includes $521 billion in deficit spending just in 2005, a complete reversal from just 3 years ago. At least in the 1980's, the pressures on the budget from the retirement of the baby boomers were off in the distant future and there was time to restore fiscal discipline. This time, however, the biggest tax cuts will be kicking in at just about the same time that the baby boom starts retiring.

We used to get a clear signal from the Federal Reserve about the importance of fiscal discipline and the preeminence of deficit reduction and paying down the public debt over tax cuts as the way to stimulate investment and growth. But that signal has gotten a little garbled in the past couple of years. I hope that in addition to discussing his views on the economic outlook, Chairman Greenspan will spend some time talking about how the choices we make in the coming year about taxes and other fiscal priorities will affect that outlook.

Mr. Chairman, I look forward to your testimony.

PREPARED STATEMENT OF ALAN GREENSPAN

CHAIRMAN, BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM

FEBRUARY 12, 2004

Mr. Chairman and Members of the Committee, I am pleased to be here today to present the Federal Reserve's Monetary Policy Report to the Congress.

When I testified before this Committee in July, I reported that conditions had become a good deal more supportive of economic expansion over the previous few months. A notable reduction in geopolitical concerns, strengthening confidence in economic prospects, and an improvement in financial conditions boded well for spending and production over the second half of the year. Still, convincing signs of a sustained acceleration in activity were not yet in evidence. Since then, the picture has brightened. The gross domestic product expanded vigorously over the second half of 2003 while productivity surged, prices remained stable, and financial conditions improved further. Overall, the economy has made impressive gains in output and real incomes; however, progress in creating jobs has been limited.

Looking forward, the prospects are good for sustained expansion of the U.S. economy. The household sector's financial condition is stronger, and the business sector has made substantial strides in bolstering balance sheets. Narrowing credit risk spreads and a considerable rally in equity prices have reduced financing costs and increased household wealth, which should provide substantial support for spending by businesses and households. With short-term real interest rates close to zero, monetary policy remains highly accommodative. And it appears that the impetus from fiscal policy will stay expansionary, on net, through this year. These circumstances all should spur the expansion of aggregate demand in 2004. At the same time, increases in efficiency and a significant level of underutilized resources should help keep a lid on inflation.

In retrospect, last year appears to have marked a transition from an extended period of subpar economic performance to one of more vigorous expansion. Once again, household spending was the mainstay, with real personal consumption spending increasing nearly 4 percent and real outlays on residential structures rising about 10 percent. Last year's reductions in personal income tax rates and the advance of rebates to those households that were eligible for the expanded child tax credit boosted the growth of real disposable personal income. The very low level of interest rates also encouraged household spending through a variety of channels. Automakers took advantage of low interest rates to offer attractive incentive deals, buoying the purchase of new vehicles. The lowest home mortgage rates in decades were a major contributor to record sales of existing residences, engendering a large extraction of cash from home equity. A significant part of that cash supported personal consumption expenditures and home improvement. In addition, many households took out cash in the process of refinancing, often using the proceeds to substitute for higher-cost consumer debt. That refinancing also permitted some households to lower the monthly carrying costs for their homes and thus freed up funds for other expenditures. Not least, the low mortgage rates spurred sales and starts of new homes to very high levels.

These developments were reflected in household financing patterns. Home mortgage debt increased about 13 percent last year, while consumer credit expanded much more slowly. Even though the ratio of overall household debt to income continued to increase, as it has for more than a half-century, the rise in home and equity prices enabled the ratio of household net worth to disposable income to recover to a little above its long-term average. The low level of interest rates and the large volume of mortgage refinancing activity helped reduce households' debt-service and financial-obligation ratios a bit. And many measures of consumer credit quality improved over the year, with delinquency rates on consumer loans and home mortgages declining.

A strengthening in capital spending over 2003 contributed importantly to the acceleration of real output. In the first quarter of the year, business fixed investment extended the downtrend that began in early 2001. Capital spending, however, ramped up considerably over the final three quarters of 2003, reflecting a pickup in expenditures for equipment and software. Outlays for high-tech equipment showed particular vigor last year. Even spending on communications equipment, which had been quite soft in the previous 2 years, accelerated. A growing confidence of business executives in the durability of the expansion, strong final sales, the desire to renew capital stocks after replacements had been postponed, and favorable financial conditions all contributed to the turnaround in equipment spending.

By contrast, expenditures on nonresidential structures continued to contract on balance, albeit less rapidly than in 2001 and 2002. High vacancy rates for office

buildings and low rates of capacity utilization in manufacturing evidently limited the demand for new structures. Inventory investment likewise failed to pick up much momentum over the year, as managers remained cautious. Firms finished 2003 with lean inventories relative to sales, an encouraging sign for the expansion of production going forward.

To a considerable degree, the gathering strength of capital spending reflects a substantial improvement in the financial condition of businesses over the past few years. Firms' profits rose steeply during 2003 following smaller gains in the previous 2 years. The significantly stronger cashflow generated by profits and depreciation allowances was more than adequate to cover rising capital expenditures in the aggregate. As a result, businesses had little need to borrow during 2003. For the nonfinancial business sector as a whole, debt is estimated to have grown just 3½ percent.

Firms encountered very receptive conditions in longer-term credit markets in 2003. Interest rate spreads on both investment-grade and speculative-grade bond issues narrowed substantially over the year, as investors apparently became more confident about the economic expansion and saw less risk of adverse shocks from accounting and other corporate scandals. Corporate treasurers took advantage of the attractive market conditions by issuing long-term debt to lengthen the maturities of corporate liabilities.

As a consequence, net short-term financing was extremely weak. The stock of business loans extended by banks and commercial paper issued by nonfinancial firms declined more than $100 billion over the year, apparently owing to slack demand for short-term credit rather than to a constriction in supply. Interest-rate spreads on commercial paper, like those on corporate bonds, were quite narrow. And although a Federal Reserve survey indicates that banks had continued to tighten lending conditions early in the year, by the second half, terms and standards were being eased noticeably. Moreover, responses to that survey pointed to a lack of demand for business loans until late in the year.

Partly as a result of the balance-sheet restructuring, business credit quality appears to have recuperated considerably over the past few years. Last year, the default rate on bonds fell sharply, recovery rates on defaulted issues rose, the number of rating downgrades moderated substantially, and delinquencies on business loans continued to decline. The improved balance sheets and strong profits of business firms, together with attractive terms for financing in open markets and from banks, suggest that financial conditions remain quite supportive of further gains in capital spending in coming quarters.

The profitability of the business sector was again propelled by stunning increases in productivity. The advance in output per hour in the nonfarm business sector picked up to 5¼ percent in 2003 after unusually brisk gains in the previous 2 years. The productivity performance of the past few years has been particularly striking in that these increases occurred in a period of relatively sluggish output growth. The vigorous advance in efficiency represents a notable extension of the pickup that started around the mid-1990's. Apparently, businesses are still reaping the benefits of the marked acceleration in technology.

The strong gains in productivity, however, have obviated robust increases in business payrolls. To date, the expansion of employment has significantly lagged increases in output. Gross separations from employment, two-fifths of which have been involuntary, are about what would be expected from past cyclical experience, given the current pace of output growth. New hires and recalls from layoffs, however, are far below what historical experience indicates. To a surprising degree, firms seem able to continue identifying and implementing new efficiencies in their production processes and thus have found it possible so far to meet increasing orders without stepping up hiring.

In all likelihood, employment will begin to grow more quickly before long as output continues to expand. Productivity over the past few years has probably received a boost from the efforts of businesses to work off the stock of inefficiencies that had accumulated in the boom years. As those opportunities to enhance efficiency become scarcer and as managers become more confident in the durability of the expansion, firms will surely once again add to their payrolls.

A consequence of the rapid gains in productivity and slack in our labor and product markets has been sustained downward pressure on inflation. As measured by the chain-weighted price index for personal consumption expenditures excluding food and energy, prices rose less than 1 percent in 2003. Given the biases in such indexes, this performance puts measured inflation in a range consistent with price stability—a statutory objective of the Federal Reserve and a key goal of all central banks because it is perceived as a prerequisite for maximum sustainable economic growth.

The recent performance of inflation has been especially notable in view of the substantial depreciation of the dollar in 2003. Against a broad basket of currencies of our trading partners, the foreign exchange value of the U.S. dollar has declined about 13 percent from its peak in early 2002. Ordinarily, currency depreciation is accompanied by a rise in dollar prices of imported goods and services, because foreign exporters endeavor to avoid experiencing price declines in their own currencies, which would otherwise result from the fall in the foreign exchange value of the dollar. Reflecting the swing from dollar appreciation to dollar depreciation, the dollar prices of goods and services imported into the United States have begun to rise after declining on balance for several years, but the turnaround to date has been mild. Apparently, foreign exporters have been willing to absorb some of the price decline measured in their own currencies and the consequent squeeze on profit margins it entails.

Part of exporters' losses, however, have apparently been offset by short forward positions against the dollar in foreign exchange markets. A marked increase in foreign exchange derivative trading, especially in dollar-euro, is consistent with significant hedging of exports to the United States and to other markets that use currencies tied to the U.S. dollar. However, most contracts are short-term because long-term hedging is expensive. Thus, although hedging may delay the adjustment, it cannot eliminate the consequences of exchange rate change. Accordingly, the currency depreciation that we have experienced of late should eventually help to contain our current account deficit as foreign producers export less to the United States. On the other side of the ledger, the current account should improve as U.S. firms find the export market more receptive.

* * *

Although the prospects for the U.S. economy look quite favorable, we need to remind ourselves that all forecasts are projections into an uncertain future. The fact that most professional forecasters perceive much the same benign short-term outlook that is our most likely expectation provides scant comfort. When the future surprises, history tells us, it often surprises us all. We must, as a consequence, remain alert to risks that could threaten the sustainability of the expansion.

Besides the chronic concern about a sharp spike in oil or natural gas prices, a number of risks can be identified. Of particular importance to monetary policymakers is the possibility that our stance could become improperly calibrated to evolving economic developments. To be sure, the Federal Open Market Committee's current judgment is that its accommodative posture is appropriate to foster sustainable expansion of economic activity. But the evidence indicates clearly that such a policy stance will not be compatible indefinitely with price stability and sustainable growth; the real Federal funds rate will eventually need to rise toward a more neutral level. However, with inflation very low and substantial slack in the economy, the Federal Reserve can be patient in removing its current policy accommodation.

In the process of assessing risk, we monitor a broad range of economic and financial indicators. Included in this group are a number of measures of liquidity and credit creation in the economy. By most standard measures, aggregate liquidity does not appear excessive. The monetary aggregate M2 expanded only 5¼ percent during 2003, somewhat less than nominal GDP, and actually contracted during the fourth quarter. The growth of non-Federal debt, at 7¾ percent, was relatively brisk in 2003. However, a significant portion of that growth was associated with the record turnover of existing homes and the high level of cash-out refinancing, which are not expected to continue at their recent pace. A narrower measure, that of credit held by banks, also grew only moderately in 2003. All told, our accommodative monetary policy stance to date does not seem to have generated excessive volumes of liquidity or credit.

That said, as we evaluate the risks to the economy, we also assess developments in financial markets. Broad measures of equity prices rose 25 percent in 2003, and technology stocks increased twice as quickly. The rally has extended into this year. And as I noted previously, credit spreads on corporate bonds have narrowed considerably, particularly for speculative-grade issues. This performance of financial markets importantly reflects investors' response to robust earnings growth and the repair of business balance sheets over the past few years. However, history shows that pricing financial assets appropriately in real time can be extremely difficult and that, even in a seemingly benign economic environment, risks remain.

The outlook for the Federal budget deficit is another critical issue for policymakers in assessing our intermediate- and long-run growth prospects and the risks to those prospects. As you are well aware, after a brief period of unified budget surpluses around the beginning of this decade, the Federal budget has reverted to

deficits. The unified deficit swelled to $375 billion in fiscal 2003 and appears to be widening considerably further in the current fiscal year. In part, these deficits are a result of the economic downturn and the period of slower growth that we recently experienced, as well as the earlier decline in equity prices. The deficits also reflect fiscal actions specifically intended to provide stimulus to the economy, a significant step-up in spending for national security, and a tendency toward diminished restraint on discretionary spending. Of course, as economic activity continues to expand, tax revenues should strengthen and the deficit will tend to narrow, all else being equal. But even budget projections that attempt to take such business-cycle influences into account, such as those from the Congressional Budget Office and the Office of Management and Budget, indicate that very sizable deficits are in prospect in the years to come.

As I have noted before, the debate over budget priorities appears to be between those advocating additional tax cuts and those advocating increased spending. Although some stirrings in recent weeks in the Congress and elsewhere have been directed at actions that would lower forthcoming deficits, to date no effective constituency has offered programs to balance the budget. One critical element—present in the 1990's but now absent—is a framework of procedural rules to help fiscal policy makers make the difficult decisions that are required to forge a better fiscal balance.

The imbalance in the Federal budgetary situation, unless addressed soon, will pose serious longer-term fiscal difficulties. Our demographics—especially the retirement of the baby-boom generation beginning in just a few years—mean that the ratio of workers to retirees will fall substantially. Without corrective action, this development will put substantial pressure on our ability in coming years to provide even minimal Government services while maintaining entitlement benefits at their current level, without debilitating increases in tax rates. The longer we wait before addressing these imbalances, the more wrenching the fiscal adjustment ultimately will be.

The fiscal issues that we face pose long-term challenges, but Federal budget deficits could cause difficulties even in the relatively near term. Long-term interest rates reflect not only the balance between the current demand for, and current supply of, credit, but they also incorporate markets' expectations of those balances in the future. As a consequence, should investors become significantly more doubtful that the Congress will take the necessary fiscal measures, an appreciable backup in long-term interest rates is possible as prospects for outsized Federal demands on national saving become more apparent. Such a development could constrain investment and other interest-sensitive spending and thus undermine the private capital formation that is a key element in our economy's growth prospects.

Addressing the Federal budget deficit is even more important in view of the widening U.S. current account deficit. In 2003, the current account deficit reached $550 billion—about 5 percent of nominal Gross Domestic Product. The current account deficit and the Federal budget deficit are related because the large Federal dissaving represented by the budget deficit, together with relatively low rates of U.S. private saving, implies a need to attract saving from abroad to finance domestic private investment spending.

To date, the U.S. current account deficit has been financed with little difficulty. Although the foreign exchange value of the dollar has fallen over the past year, the decline generally has been gradual, and no material adverse side effects have been visible in U.S. capital markets. While demands for dollar-denominated assets by foreign private investors are off their record pace of mid-2003, such investors evidently continue to perceive the United States as an excellent place to invest, no doubt owing, in large part, to our vibrant market system and our economy's very strong productivity performance. Moreover, some governments have accumulated large amounts of dollar-denominated debt as a byproduct of resisting upward exchange rate adjustment.

Nonetheless, given the already-substantial accumulation of dollar-denominated debt, foreign investors, both private and official, may become less willing to absorb ever-growing claims on U.S. residents. Taking steps to increase our national saving through fiscal action to lower Federal budget deficits would help diminish the risks that a further reduction in the rate of purchase of dollar assets by foreign investors could severely crimp the business investment that is crucial for our long-term growth.

The large current account deficits and the associated substantial trade deficits pose another imperative—the need to maintain the degree of flexibility that has been so prominent a force for U.S. economic stability in recent years. The greatest current threat to that flexibility is protectionism, a danger that has become increasingly visible on today's landscape. Over the years, protected interests have often endeavored to stop in its tracks the process of unsettling economic change. Pitted

against the powerful forces of market competition, virtually all such efforts have failed. The costs of any new protectionist initiatives, in the context of wide current account imbalances, could significantly erode the flexibility of the global economy. Consequently, creeping protectionism must be thwarted and reversed.

* * *

In summary, in recent years the U.S. economy has demonstrated considerable resilience to adversity. It has overcome significant shocks that, in the past, could have hobbled growth for a much longer period than they have in the current cycle. As I have noted previously, the U.S. economy has become far more flexible over the past two decades, and associated improvements have played a key role in lessening the effects of the recent adverse developments on our economy. Looking forward, the odds of sustained robust growth are good, although, as always, risks remain. The Congress can help foster sustainable expansion by taking steps to reduce Federal budget deficits and thus contribute to national saving and by continuing to pursue opportunities to open markets and promote trade. For our part, the Federal Reserve intends to use its monetary tools to promote our goals of economic growth and maximum employment of our resources in an environment of effective price stability.

RESPONSE TO WRITTEN QUESTIONS OF SENATOR SHELBY FROM ALAN GREENSPAN

Q.1. Chairman Greenspan, the U.S. current account deficit and the offsetting financial holdings of foreign country residents have sparked concerns among some economists and others. They question how long foreign country residents will sustain the deficit by increasing their holdings of dollar-denominated assets in their portfolios.

What factors do you believe are the most important in determining how long such capital flows can be sustained?

What do you believe is the most serious long-term cost to the U.S. economy that arises from the current account deficit?

A.2. As noted in your question, the U.S. current account deficit is also, by definition, a measure of the portion of U.S. net investment in domestic plant and equipment that is financed with foreign funds, both debt and equity. The impressive productivity performance of the U.S. economy during this period of the widening of the U.S. current account deficit has motivated global investors (both U.S. and foreign) to place their funds disproportionately in U.S. assets because of the expectation of higher returns, adjusted for risk, on these relatively more productive assets.

It is difficult to predict how long global investors will continue to place their funds disproportionately in U.S. assets. To date, the U.S. current account deficit has been financed with little difficulty. Although the foreign exchange value of the dollar has fallen over the past year, the decline generally has been gradual, and no material adverse side effects have been visible in U.S. capital markets. While demands for dollar-denominated assets by private foreign investors are off their record pace of mid-2003, such investors evidently continue to perceive the United States as an excellent place to invest, no doubt owing, in large part, to our vibrant market system and our economy's very strong productivity performance. In addition, some governments have added to their official holdings of dollar-denominated debt as a by-product of resisting upward pressure on their exchange rates.

But the current account deficit, as you state in your question, is also a measure of the increase in the level of claims that foreigners have on U.S. assets. As the stock of such claims grows, foreign investors, both private and official, may become less willing to absorb ever-growing claims on U.S. residents. Taking steps to increase our national saving through fiscal action to lower Federal budget deficits would help diminish the risks that a reduction in the rate of purchase of dollar assets by foreign investors could severely crimp the business investment that is crucial for our long-term growth.

The U.S. economy is best served by following policies that provide the basis for maximum long-term growth with stable prices in an environment characterized by private, flexible markets. Probably the most serious long-term costs that could arise from the U.S. current account deficit would come if we followed policies aimed at reducing this deficit that are inconsistent with our fundamental policy objectives, in particular, protectionist trade policies that interfere with the degree of flexibility that has been so positive a force for U.S. economic performance in recent years. Over the years, protected interests have often endeavored to stop in its

tracks the process of unsettling economic change. Pitted against the powerful forces of market competition, virtually all such efforts are counterproductive and have failed. Creeping protectionism must be thwarted and reversed.

Q.2. Chairman Greenspan, in your speech before the Dallas World Affairs Council last December, you noted that, even if China's currency were allowed to float freely and consequently rose against the dollar, that U.S. employment rates would be unlikely to rise on account of a shift away from China toward increased imports from other, low-cost manufacturing countries.

In your speech, you also referred to the potential difficulties the Chinese banking system would have in the event the currency peg were precipitously removed.

Could you expand on how instability in China's financial markets and banking system caused by the removal of the currency peg would adversely affect the United States?

What reforms does the Chinese government need to undertake before removal of the peg is possible? Are they moving in that direction?

A.2. The condition of the Chinese banking system is currently quite weak. Chinese banks officially reported having bad debts that amounted to 15 percent of their loans, but market analysts estimate that the true level of nonperforming loans among Chinese banks is in the range of 40 to 50 percent of all loans. Even the officially reported figure suggests that the banking system's liabilities may exceed the value of its assets. Banking systems can operate in such a weakened state only if depositors, perhaps because they are content with an implicit government guarantee on bank liabilities, leave their money in their banks. Many in China fear that removal of capital controls that restrict the ability of domestic investors to invest abroad and to sell or to purchase foreign currency—which is a necessary step to allow a currency to float freely—could cause an outflow of deposits from Chinese banks, destabilizing the system.

U.S. residents do not have substantial claims on Chinese banks, but financial instability in a major emerging market economy such as China would present a risk to the global economic outlook.

The Chinese government needs to take a number of steps—some of which are already underway—to strengthen its banking system. It needs to strengthen accounting and bank supervisory systems, in order to assess accurately the size of the problem. Problem loans that are uncovered will need to be reserved against, and this will likely require government capital injections (because the alternative is losses for bank depositors and a possible loss of confidence in the banking system). More important, however, are steps that eliminate state interference in bank lending decisions and that create the financial discipline and incentives that are a crucial part of a viable credit system. Banks need to improve their lending decisions, internal controls, and risk management systems. Before this will happen, bank managers need to be given the training, incentives, and authority to evaluate credit risk and to make loans based on those evaluations, as well as the authority to take steps to cut

costs. In addition, bankruptcy laws and foreclosure policies need to be strengthened.

As mentioned, the Chinese government seems to be moving to strengthen the banking system. For example, they have recently imposed more stringent accounting rules on nonperforming loans. In addition, several of the largest state-owned banks recently received capital injections from the government, and some reports suggest that the authorities are encouraging the banks to modernize their operations.

Q.3. Many of our trading partners are concerned about the decline in the relative value of the dollar and that decline's implications for economies dependent upon exports to the American market. For the past year, the euro has been consistently stronger than the dollar. Yet, our trade deficit with Western Europe for 2003 exceeded that for 2002. Much has been made of the growth in American exports during the final quarter of 2003, but the trade balance hasn't changed because of the continued high level of imports.

If the rise of the euro against the dollar hasn't resulted in the kind of shift in trade balance we might have anticipated, what does this tell us about conventional beliefs regarding the relationship between exchange rates and trade?

A.3. Trade balances are determined mainly by countries' relative incomes, by relative prices, including exchange rates, and by comparative advantage. These determinants are inherently multilateral; the movement of the dollar vs. the euro not only influences our trade with Western Europe but also influences both U.S. and European trade with third countries, such as those in Asia. Some adjustment in our multilateral trade balance has begun to take place; our trade and current account deficits have narrowed as a share of GDP during 2003, after widening steadily since 1997, even though the U.S. economy continues to expand at a faster rate than our trading partners.

Some analysts might have expected the deficit to narrow more rapidly, although such adjustment most often occurs over 2 to 3 years. Ordinarily, currency depreciation is accompanied by a rise in dollar prices of imported goods and services, because foreign exporters endeavor to avoid experiencing price declines in their own currencies, which would otherwise result from the fall in the foreign exchange value of the dollar. Reflecting the swing from dollar appreciation to dollar depreciation, the dollar prices of goods and services imported by the United States have begun to rise after declining on balance for several years, but the turnaround to date has been mild. Apparently, to date, foreign exporters have been willing to absorb much of the price decline measured in their own currencies and the consequent squeeze on profit margins it entails.

The currency depreciation that we have experienced of late should eventually help to contain our current account deficit as foreigners export less to the United States. On the other side of the ledger, the current account should improve as U.S. firms find the export market more receptive.

Q.4. In your written testimony to the Committee last year, you noted that the fiscal year 2002 budget deficit would have been $40 billion smaller if entitlement benefits and individual income tax

brackets had been inflated using the chain weighted CPI rather than the existing cost of living adjustment.

Do you still feel that the cost of living adjustment underlying OMB and CBO's budget projections overstates inflation? If so, how much do you think Congress could have saved had we used the chain weighted CPI?

A.4. Although the Bureau of Labor Statistics has made significant changes and very materially improved the cost of living indexes currently used to adjust taxes and spending, I believe that these indexes still overstate inflation. One major issue is substitution bias, which the BLS's new chain weighted CPI index largely corrects. The other major issue that remains is the incomplete adjustment of quality change in the existing cost of living indexes; it may be quantitatively more important than the substitution bias.

If, over the past decade, the chain weighted CPI had been used instead of the current official indexes, the cumulative unified budget deficit and the level of Federal debt would have been reduced about $200 billion. About 40 percent of these savings are attributable to reductions in indexed spending programs and the remaining 60 percent are attributable to higher taxes (including debt service).

RESPONSE TO WRITTEN QUESTIONS OF SENATOR SCHUMER FROM ALAN GREENSPAN

Q.1. The President has stated that his tax cuts are leading to job creation. As I look at the data, that does not seem to be the case. The record of job creation under his leadership is much worse than we have ever seen in any past recession/recovery cycle since WWII.

It is startling to me that this recession was shorter than many but, in fact, has taken much, much longer than any other post-war period to create jobs. And we still have 716,000 fewer jobs 26 months after the official end of the recession than we had when the "recovery" began. What few jobs have been created are low end service jobs—restaurant work, temporary work, etc.—not the jobs that we continue to lose to this day that contribute to an expanding middle class.

Given that past recoveries—following much steeper recessions—have been so much stronger than under this President is there any evidence that his policies have made things better than they otherwise would have been?

Mr. Chairman, do you believe that the President's tax cut policies have created any net jobs to date in this country?

A.1. As I have stated publicly before, there can be little doubt that the tax cuts of 2001 and 2003 helped shore up a weak economy, raising the level of economic activity and employment above what it otherwise would have been. Of course, quantifying the exact magnitude of that effect is extremely difficult because of the many other events that have affected the economy during the past 3 years, among them the terrorist attacks of September 11, 2001, the corporate governance scandals, and the war with Iraq. Moreover, it would appear that a larger share of the boost to output was achieved through productivity gains than typically has occurred in previous instances of expansionary fiscal policy, with a concomitant damping influence on employment.

Q.2. There has been a great deal of credit for the positives and negatives in the economy given to productivity. However, I believe the data shows that productivity has also, in fact, been quite high in past periods. So while I agree with those who argue that productivity is a factor, productivity alone does not seem to fully explain what is happening in today's economy.

Specifically, according to the Bureau of Labor Statistics, looking at the last 10 recessions, jobs hit their low point around the end of the recession and never more than 3 months after the recession ended. But this time the low point in jobs came in August 2003—21 months after the last recession ended.

In the last 10 recessions, there was a complete recovery in the number of jobs within 2 years after the end of the recession. But this time the recession has been over for 26 months and we still have 2.3 million fewer payroll jobs than when the recession started.

It is true that over the last 8 years, from 1996–2003, productivity growth has averaged 2.9 percent. And during the preceding 20 years, 1974–1995, productivity growth was much lower, averaging only 1.5 percent growth per year. But during the period 1948–1973, productivity growth was much stronger, stronger even than what we have experienced since 1995, averaging 3.3 percent growth per year.

Yet, as above, the recessions during the previous high productivity growth period were not marked by the continual job losses and jobless recovery that we are in the midst of today. During those recession and recoveries, jobs returned quickly.

In fact, the two times that the unemployment rate was below 4.0 percent were during the high productivity periods of the late 1990's and the late 1960's.

So, again, productivity alone does not appear to be the answer. We have been a highly productive economy for a long time. And in fact, our economic team should have factored in strong productivity in our stimulus—high productivity cannot be used as an excuse for the failure to produce jobs.

Mr. Chairman, do you agree with the data above? What factors other than productivity should we be considering to explain the differences between this "recovery" and past recoveries?

A.2. The explanations for the surge in productivity over the past 2 years are wide-ranging. One hypothesis is that some of the increase represents a temporary rise in the level of productivity, reflecting a view that an unusual amount of caution is leading businesses to press workers and facilities to a greater degree than can be sustained over the longer haul. By this hypothesis, as that caution dissipates, employment growth will pick up and the level of output per hour will drop back.

Another hypothesis is that the level of productivity has undergone a one-time permanent upward shift. This hypothesis builds on the idea that the heavy emphasis on exploiting new and expanding markets in the second half of the 1990's may have diverted management attention from the hard work of controlling costs. The extent to which businesses have succeeded in boosting output with less labor over the past 2 years or so points up the possibility that a considerable stock of inefficiencies accumulated in the boom years and that this stock is still being worked off.

Finally, yet another hypothesis stresses a more-lasting increase in the growth of output per hour. This notion focuses on the considerable lag between the introduction of new technologies and their full integration into production processes and business practices. To reap the full benefits of technological innovation takes much learning time, especially if there are large synergies through network effects.

Of course, given the exceptionally high rate of growth in output per hour recently, some combination of short-term and longer-term productivity-enhancing forces seems likely to have been at work. In any event, one consequence of these improvements in efficiency has been a temporary ability of many businesses to meet increases in demand without expanding payrolls. Over longer periods of time, however, productivity should not raise the unemployment rate. And, I am confident that the same will be true going forward.

Q.3. Mr. Chairman, what is news is that we are now having high productivity but only meager wage growth. How do you explain that productivity is going up but wages are almost flat—why aren't Americans getting paid for their higher output? Have workers suddenly become worse negotiators on their own behalf for better wages or is there another factor at work, and if so what is it?

A.3. Employee remuneration has not been flat. During 2003, wages, as measured by the Bureau of Labor Statistics (BLS) employment cost index, rose 3 percent for workers in private industry; the hourly compensation, which includes employee benefits, rose 4 percent. An alternative measure of employee remuneration—compensation per hour from the BLS data on productivity and on costs—increased 3.6 percent during 2003 for workers in the private nonfarm business sector.

More generally, over the long sweep of time real hourly compensation and productivity tend to track each other. This tendency is reflected in one of the most well-documented empirical regularities of macroeconomics: The long-run relative stability of the compensation share of national income. Although the compensation share of income fluctuates over the course of the business cycle—typically rising in the latter part of expansion and initial phase of contraction and then falling during the early part of expansions—the share shows no distinct trend. It averaged around 61 percent during the 1950's and 1960's and has averaged around 65 percent since then. This indicates that over time both labor and capital share the fruits of productivity growth.

Q.4. Mr. Chairman, given our world of free trade and mobile factors of production, some argue that the extraordinary productivity of the U.S. worker will save the day by keeping good jobs here and wages high. But the facts to date do not support that case. While labor productivity is, in fact high, wages have been stagnant and job growth is far behind schedule. Yet corporate profits are near records.

In the past, U.S. workers' productivity was a result of good education and training coupled with the ability to work with the best equipment and technology.

Given your comments on the strong educational systems in East Asia, do you agree that it is possible that, armed with United

States technology, management, and capital, and trained by United States workers, a Chinese or Indian professional can be just as productive as his or her United States counterpart, but at a fraction of the cost? Or do you think that one United States worker based in Rochester, for example, can compete with 4 or 6 or even 10 workers available for the same price in Bangalore?

A.4. As you note in your question, concerns have been expressed about an increasing number of better paying white collar jobs that have been lost to foreign outsourcing. There is a sense of unease that this development potentially will have significant adverse long run implications for unemployment and the standard of living of the average American. It is instructive to put the current developments in historical context. Jobs in the United States were perceived as migrating to low-wage Japan in the 1950's and 1960's, to low-wage Mexico in the 1990's, and most recently to low-wage China. Japan, of course, is no longer characterized by a low-wage workforce, and many in Mexico are now complaining of job losses to low-wage China. That said, however, over the long sweep of time, the United States has not experienced a net drain of jobs to other nations. For more than half a century, the unemployment rate has averaged less than 6 percent with no evident trend, and the real earnings of the average worker have continued to rise. History clearly shows that our economy is best served by a full and vigorous engagement in the global economy.

Q.5. Mr. Chairman, I have heard a case made that the President's policies have hindered job creation in two ways.

First, some executives tell me there is little confidence in the President's fiscal management. People fear the economy could be driven into a double-dip recession triggered by a currency crisis in turn driven by a crisis in confidence by foreign purchasers of our debt and other factors. Deficits and debt are the direct result of the high spending we have seen under this Administration.

Second, I have been told the major factor weighing on the economy last year was not, in fact, September 11 as some argue, it was the decision to go to war with Iraq. That process introduced an enormous amount of uncertainty into the economy which slowed the natural recovery we were in.

Can you comment on these two points? Are there grounds for pointing out that the President's fiscal policies and war policies may have, in fact, slowed down the recovery? Is it reasonable to conclude that his policies are holding back the natural recovery cycle that we have seen in every previous recovery except this one?

A.5. As I have indicated above, several hypotheses have been put forward to explain the unusual performance of the labor market recently; but the available evidence to date does not provide sufficient guidance on their relative importance.

Q.6. Chairman Greenspan, do you think it is time for a "budget summit" where we bring in leaders from both parties and we put everything on the table—tax cuts, spending programs—not just one side or another. The goal would be to come up with a plan in the best interests of the country.

I recall you were part of such an effort related to Social Security two decades ago. Would you support a bi-partisan budget summit?

A.6. A decision of whether to have a "budget summit" is, of course, entirely up to the President and the Members of Congress. Nevertheless, the Nation faces enormous fiscal challenges in the coming years that must be dealt with. As I noted in my testimony before the House Budget Committee on February 25, 2004, the resolution of this situation will require difficult choices. One important first step would be the restoration of the budget enforcement mechanisms. None of the options for resolving the challenge will be easy, as they all will involve lowering claims on resources or raising financial obligations. It falls on the Congress and the President to determine how best to address the competing claims. But history has shown that, when faced with major challenges, the Congress has risen to the occasion.

Q.7. The papers are reporting that economists at the Fed are "puzzled" by the labor market. It does not square with past recoveries, as the data shows. I know you believe productivity is a key factor in that difference. But, as you know, we have had strong productivity in the past, and the labor market recovered more strongly and quickly than now.

My question is whether you think there could be something else going on, reflected in the ability of companies to so easily source cheap and very skilled labor offshore—either by moving plants overseas or by virtually importing that labor via the Internet?

Could we, in fact, be seeing lots of new jobs being created, just not here in the United States? Is this new offshoring phenomenon something worth spending more time on? Could it partially explain the strange quality of this recovery? Could it explain this strange disconnect where profits and productivity are up but wages are flat and jobs are down?

A.7. As I indicated above, over the long sweep of time, the United States has not experienced a net drain of jobs to other nations. For more than half a century, the unemployment rate has averaged less than 6 percent with no evident trend. Moreover, real earnings of the average worker have continued to rise. Over the past century, per capita real income has risen at an average rate of more than 2 percent per year, declining notably only during the Great Depression of the 1930's and immediately following World War II. Incomes trended higher whether international outsourcing was large or small. The reason for this positive long run trend in living standards appears to be that more fundamental economic forces determine real incomes, irrespective of the specific jobs in which they are earned and irrespective of the proportion of domestic consumption met by imports.

Q.8. Some have argued that "protectionist" trade policies have a long history of failure. However, as I have reviewed the recent studies, that statement appears to be incorrect and contrary to our own history of development. In short, the United States had a history of protecting what some call "infant industries" as did Britain—until we had captured enough scale that we were ready to open them up to global competition.

In fact, according to some recent works, protectionist policies were the case for much of our history and much of Britain's history and that protection, according to some, helped to create great na-

tional wealth. I am referring to data presented in a recent World Bank Paper and a book called, "Kicking Away the Ladder," by Ha-Joon Chang. In other words, the stories of the success of free trade policies do not square with the historical data. Is the analysis presented in Professor Chang's book incorrect? If it is, where is it flawed? And if it is not factually incorrect, could the United States be guilty of advocating trade policies to the current developing world different than we ourselves followed in our own developing years? Advocating a double standard, so to speak.

How do you reconcile the data presented in his book—and other studies—that show a heavy use of tariffs during our most productive and highest growth years with those who argue that our history shows that tariffs do not work?

Given that Professor Chang and others provide strong data and specific cases where protectionism has led to economic success for different industries, can you help provide comparable historical examples—not theory but real history—and comparable data where protectionism has failed?

A.8. Professor Ha-Joon Chang's book provides an interesting description of the history of government policies, institutions, and economic growth in a range of countries. As Professor Chang points out, history provides important lessons for current policy decisions.

However, Professor Chang's work does not prove that protectionism enhances growth, for two main reasons. First, although there have been historical periods during which protectionism and robust economic growth have occurred simultaneously, such a contemporaneous occurrence does not necessarily imply causality. In other words, just because some countries have had high tariffs and, at the same time, have experienced strong economic growth does not mean that the high tariffs caused the high growth. Second, as Professor Chang himself points out, a wide range of policies support economic development, so that even his own analysis does not demonstrate that protectionism in and of itself leads to high growth. In fact, in a number of the cases highlighted by Professor Chang, supportive policies (such as infrastructure development and support of an educational system) other than protectionism affected growth.

Research has found a positive correlation between tariffs and growth in the late 19th Century.[1] However, a number of studies, that is, Irwin (2002b), show that simultaneous occurrence of protectionism and growth does not necessarily imply that tariffs promote growth. In some cases, tariffs were put in place to raise revenue rather than to protect domestic industry from foreign competition.[2]

In addition, history provides a number of examples in which inward-looking development policies actually hindered growth. First, consider the case of Latin America, where some countries followed development strategies incorporating "import-substituting industrialization," beginning in the 1930's. Taylor (1998) argues that these inward-looking development strategies hindered growth. Taylor (1994) examines the specific case of Argentina, which followed such an inward-looking import substitution policy. Import restrictions from the 1930's to the 1950's led to an increase in the price

[1] For example, see O'Rourke (2000).
[2] See Irwin (2002b).

of imported capital goods, thereby dampening incentives for investment. He notes that, "With this quantitative support, the argument that Argentina's retreat into import-substitution policies cost her dearly in terms of slow growth remains as cogent as ever."[3]

India also provides an example in which inward-looking protectionist policies were associated with adverse effects on growth. Bhagwati (1993) claims that India's overall inward-looking policies through the 1970's (and, to a lesser extent, in the 1980's) adversely affected private-sector efficiency and contributed to poor performance in terms of export activity, industrialization, and growth. Srinivasan and Tendulkar (2003) also discuss the adverse effects of inward-oriented policies during periods of India's recent history.

Finally, our own country's history provides an example of the adverse effects of protectionism. The notorious Smoot-Hawley tariff of 1930 likely contributed to at least some extent to the subsequent deterioration in U.S. trade flows and economic performance.[4]

More broadly, a number of studies have found a positive relationship between economic openness and growth, including Dollar and Kraay (2001) and Edwards (1998).

Thus, Professor Chang's analysis does not show that protectionism spurs growth. In fact, other evidence indicates that, to the contrary, inward-looking policies may well impede growth. In addition, his analysis does not clearly distinguish between the effects of protectionism and the effects of pro-growth policies such as infrastructure development and support of a strong educational system. It could even be argued that because of these other supportive policies some countries experienced growth despite their protectionist policies.

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Q.9. I agree with your comments on the importance of education to our national competitiveness and strength. However, that is, realistically, a long-term fix and the job losses are happening each day. What do we do in the near term to reduce the human toll of lost jobs to competition from lower wage, skilled offshore labor? As you said, the problems may not lie with the workers but on our educational system, how do we make sure they do not pay too severe a price for a systemic failure?

A.9. As I have indicated, we need to increase our efforts to ensure that as many of our citizens as possible have the opportunity to capture the benefits that flow from free and open trade. One critical element is to provide ongoing training and education to displaced workers. As you point out, retraining and upgrading skills take time. Over the shorter term, as I noted in my appearance on March 11 before the House Committee on Education and the Workforce, a continuation of unemployment insurance benefits deserves consideration. Moreover, trade adjustment assistance and other income support programs are available to ease the adjustment faced by some workers.

RESPONSE TO WRITTEN QUESTION OF SENATOR CORZINE FROM ALAN GREENSPAN

Q.1. With regard to the top 10 countries holding our national debt. I have a particular curiosity about the Caribbean banking centers and what its implications are with respect to our concern about funding of all kinds of miscellaneous problems that could potentially exist. I would love to hear an analysis of what is driving the fourth highest concentration of our debt being held by Caribbean banking centers.

A.1. According to the most recently published estimates, as of end-December 2003, entities located in Caribbean banking centers held $69 billion in U.S. Treasury securities, making them the fourth largest holder of U.S. Treasury securities—behind the holdings of Japan ($545 billion), China ($149 billion), and the United Kingdom ($113 billion), and ahead of Hong Kong ($58 billion). Securities re-

porting systems worldwide, including that of the United States, have well-known and significant shortcomings in accurately attributing ultimate beneficial ownership of cross-border liabilities. These shortcomings are especially severe vis-à-vis financial centers with large custodial operations and tax havens where conduit investment vehicles are established. Thus, a significant portion of the Treasuries attributed to the Caribbean are undoubtedly held for the benefit of residents elsewhere. Although the custodial issue present in reporting against other financial centers is likely less severe in the case of the Caribbean, the prevalence of conduit vehicles there significantly obscures ultimate beneficial ownership.

An examination of reports filed with U.S. regulators indicates that between $7 billion and $18 billion of the Treasuries attributed to the Caribbean are held directly on the balance sheets of banks within the Federal Reserve/FFIEC reporting systems. As such, the direct holders of these securities are familiar to U.S. regulators. Moreover, because the United States "Know Your Customer" (KYC) requirements extend to the consolidated entity, those people or entities who hold the claims that form the counterpart liabilities to these Treasury holdings are subject to the KYC screening. The remaining Treasuries are likely held at banks managed and controlled by non-U.S. residents or other investment vehicles, such as hedge funds.

The reporting requirements of hedge fund managers/advisors can be extensive, although they vary considerably with the size and the nature of the investment. However, the reporting requirements are almost exclusively related to positions in equities, futures, and options on futures and are generally at the level of the manager/advisor, which can aggregate investments for both domestic and foreign funds. Thus, the current reporting by hedge funds sheds little light on the geographic attribution of their Treasury positions.

Of late, Treasury holdings in the Caribbean have not been growing as rapidly as those attributed to most of the other top holders. Between March 2003 and December 2003, Treasuries attributed to the Caribbean increased $7.6 billion (12 percent), compared with increases of $146 billion (36 percent) for Japan, $16 billion (12 percent) for China, $30 billion (36 percent) for the United Kingdom, and $8 billion (17 percent) for Hong Kong. The increase in Caribbean holdings is similar to that registered by Switzerland (the tenth largest holder and another prominent financial center) which increased its holdings of Treasuries $4.2 billion (12 percent) over the period.

According to the Financial Stability Forum's "Report of the Working Group on Offshore Centres," offshore financial centers (OFC's) are used by a variety of firms and individuals for a variety of reasons, some legitimate and benign, some not. In particular, the report states that OFC's are used by:

- International companies, to maximise profits in low tax regimes.
- International companies, to issue securitised products through special purpose vehicles.
- Individuals and companies, to protect assets from potential claimants.

- Investors (individuals, investment funds, trusts, etc.), to minimise income and withholding taxes and to avoid disclosing investment positions.
- Financial institutions with affiliates in OFC's, to minimise income and withholding tax and to avoid regulatory requirements in the "onshore" jurisdictions in which they operate.
- Financial institutions, to assist customers in minimising income and withholding tax.
- Insurance companies, to accumulate reserves in low tax jurisdictions and to conduct business in responsive regulatory environments.
- Criminals and others, to launder proceeds from crime through banking systems without appropriate checks on the sources of such funds and to use local secrecy legislation as a means of protection against enquiries from law enforcement and supervisory authorities (including foreign authorities), and/or to commit financial fraud.

Some of these activities also happen in other jurisdictions and the fact that they take place does not necessarily mean that the OFC authorities approve of such practices (for example, money laundering, financial fraud). (Financial Stability Forum, "Report of the Working Group on Offshore Centres," April 5, 2000, p. 10.)

RESPONSE TO WRITTEN QUESTIONS OF SENATOR HAGEL FROM ALAN GREENSPAN

Q.1. Could you discuss how the U.S. labor pool will be impacted by the increasing retirement of the baby boomers? What initiatives should policymakers be considering to address this issue?

A.1. The baby-boom generation has had a large effect on the labor force. The growth rate of the labor force was boosted considerably when the baby boomers began working, and the growth rate is likely to fall considerably as they retire. Over the next 30 years, the growth rate of the working-age population in the United States is projected to fall from about 1 percent per year today to about ½ percent per year in 2030. One upshot of this slowdown in labor force growth is that the ratio of working age to total population will decrease. Increases in life expectancy, while undeniably desirable, also decrease the ratio of working age to total population. By 2030, the ratio of working age to total population is projected to be about 6 percent below the level it is today.

In its simplest terms, economic output is determined by the size of the labor force multiplied by the productivity of that labor. As the ratio of workers to population declines, then holding all else constant, per capita output will fall. Of course, everything else may not be constant. For example, as life expectancy and health status continue to improve, and as the demand for labor increases, older workers may choose to delay retirement. Increased work effort by older workers could have a significant impact on the labor force; however, the experience to date suggests that, despite the increasing feasibility of work, Americans have not delayed retirement. Indeed, there has been a long-term trend toward earlier and earlier retirement. While some analysts believe this trend has slowed, few anticipate a rapid turnaround, even given the increase in retire-

ment age for Social Security from 65 to 67 that will be fully phased in by 2027. Nonetheless, the potential for increased work effort by the elderly should not be discounted, particularly if policies to encourage such behavior are enacted.

The rate of productivity growth also may be affected by the slowdown in labor force growth. While still quite uncertain, some research has suggested that by increasing the incentives for labor-saving technologies, an aging workforce may actually spur technological development. Although it is unclear what direct effect policy can or should have on technological innovation, it is clear that maintaining the flexibility of our labor and capital markets is key to our ability to translate improved technology into greater economic output.

Q.2. In addition, does your research suggest that foreigners improve our ability to fund the health and retirement benefits of baby boomers?

A.2. Immigration is another potential source of labor growth. The official population projections assume that the current level of immigration will continue indefinitely, and on net, immigration represents about half of the growth of the labor force projected for the United States. Fully offsetting the effects of demographic change on elderly dependency by increasing immigration would require a much larger change in immigration than is currently anticipated. But as the influx of foreign workers in response to the tight labor markets of the 1990's showed, immigration does respond to labor shortages. The assumption under the intermediate projections of the Social Security actuaries—that immigration will decline somewhat from today's level—may prove to be overly conservative.

Q.3. What level of concern do you have for the long-term effects on the Nation's economy due to the trillions of dollars of underfunded obligations that we face? How is the rest of the world perceiving this risk?

A.3. The aging of the population in the United States will have significant effects on our fiscal situation and our economy. In particular, it makes our pay-as-you-go Social Security and Medicare programs, as currently constituted, unsustainable in the long run. The effects on the economy will depend, in large part, on how long we wait before we make changes to our retirement programs. As I noted in my February testimony, the budget scenarios considered by the CBO in its December assessment of the long-term budget outlook offer a sobering illustration of the potential effects on the economy of not reforming Social Security and Medicare in anticipation of the baby boomers' retirement. These scenarios suggest that, under a range of reasonably plausible assumptions, we could be in a situation in the decades ahead in which rapid increases in the unified budget deficit set in motion an unsustainable dynamic in which large deficits result in ever-growing interest payments leading to ever-growing deficits in future years.

Q.4. Is it not true that the global trend with all industrial countries, including China, has been a loss of manufacturing jobs in large part due to advancements in productivity and improvements in information technology and communications?

A.4. For the industrial economies and many emerging market economies, manufacturing employment as a share of total employment has been trending down for decades. A primary factor behind this downward trend has been improvement in productivity supported, in part, by advancements in technology and communication. Such gains underlie advances in living standards everywhere.

In terms of the number of manufacturing jobs, however, the pattern is less clear. In Canada, Italy, and Mexico, for example, the number of manufacturing jobs has remained fairly stable or risen over the past one to two decades. The experience of other countries is more varied. In the United Kingdom and in Germany after reunification, manufacturing employment has fallen relatively continuously. In Japan, manufacturing employment rose through the early 1990's but has dropped off sharply subsequently. Manufacturing employment in China rose through the mid-1990's but has since declined, in part reflecting government efforts to reform state-owned enterprises. For the United States, the number of manufacturing jobs generally hovered between 20 and 21 million from 1980 to 2000. It has only been in the most recent downturn that the number of U.S. manufacturing jobs has fallen significantly below 20 million.

Q.5. The Argentine debt default, the largest sovereign default in history, caused billions in losses for United States financial institutions, not to mention the losses throughout Canada and Europe. How will this influence emerging market investments and risk selection among banks in the future?

A.5. Argentina is still in the process of restructuring its debt so the final extent of creditor losses has yet to be determined. It seems clear, however, that the Argentine debt default will invoke significant losses on the holders of Argentine sovereign debt. In addition, foreign financial institutions operating in Argentina, including several United States banks, sustained losses as a result of the actions the Argentine government took toward the financial system in the wake of the default.

To date, other than cutting off capital flows to Argentina, the Argentine default appears to have had little lasting effect on overall performance in the market for emerging market sovereign debt. However, foreign direct investment flows to Latin America have been weaker recently. The events in Argentina appear to have reminded lenders and investors of the potential risks of investing in emerging markets.

For use at 11:00 a.m., EST
Wednesday
February 11, 2004

Board of Governors of the Federal Reserve System

Monetary Policy Report to the Congress

February 11, 2004

Letter of Transmittal

BOARD OF GOVERNORS OF THE
FEDERAL RESERVE SYSTEM
Washington, D.C., February 11, 2004

THE PRESIDENT OF THE SENATE
THE SPEAKER OF THE HOUSE OF REPRESENTATIVES

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

Sincerely,

Alan Greenspan, Chairman

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Monetary Policy Report to the Congress

Report submitted to the Congress on February 11, 2004, pursuant to section 2B of the Federal Reserve Act

Monetary Policy and the Economic Outlook

The economic expansion in the United States gathered strength during 2003 while price inflation remained quite low. At the beginning of the year, uncertainties about the economic outlook and about the prospects of war in Iraq apparently weighed on spending decisions and extended the period of subpar economic performance that had begun more than two years earlier. However, with the support of stimulative monetary and fiscal policies, the nation's economy weathered that period of heightened uncertainty to post a marked acceleration in economic activity over the second half of 2003. Still, slack in resource utilization remained substantial, unit labor costs continued to decline as productivity surged, and core inflation moved lower. The performance of the economy last year further bolstered the case that the faster rate of increase in productivity, which began to emerge in the late 1990s, would persist. The combination of that favorable productivity trend and stimulative macroeconomic policies is likely to sustain robust economic expansion and low inflation in 2004.

At the time of our last *Monetary Policy Report to the Congress,* in July, near-term prospects for U.S. economic activity remained unclear. Although the Federal Open Market Committee (FOMC) believed that policy stimulus and rapid gains in productivity would eventually lead to a pickup in the pace of the expansion, the timing and extent of the improvement were uncertain. During the spring, the rally that occurred in equity markets when the war-related uncertainties lifted suggested that market participants viewed the economic outlook as generally positive. By then, the restraints imparted by the earlier sharp decline in equity prices, the retrenchment in capital spending, and lapses in corporate governance were receding. As the price of crude oil dropped back and consumer confidence rebounded last spring, household spending seemed to be rising once again at a moderate rate. Businesses, however, remained cautious; although the deterioration in the labor market showed signs of abating, private payroll employment was still declining, and capital spending continued to be weak. In addition, economic activity abroad gave few signs of bouncing back, even though long-term interest rates in major foreign economies had declined sharply. At its June meeting, the FOMC provided additional policy accommodation, given that, as yet, it had seen no clear evidence of an acceleration of U.S. economic activity and faced the possibility that inflation might fall further from an already low level.

During the next several months, evidence was accumulating that the economy was strengthening. The improvement was initially most apparent in financial markets, where prospects for stronger economic activity and corporate earnings gave a further lift to equity prices. Interest rates rose as well, but financial conditions appeared to remain, on net, stimulative to spending, and additional impetus from the midyear changes in federal taxes was in train. Over the remainder of the year, in the absence of new shocks to economic activity and with gathering confidence in the durability of the economic expansion, the stimulus from monetary and fiscal policies showed through more readily in an improvement in domestic demand. Consumer spending and residential construction, which had provided solid support for the expansion over the preceding two years, rose more rapidly, and business investment revived. Spurred by the global recovery in the high-tech sector and by a pickup in economic activity abroad, U.S. exports also posted solid increases in the second half of the year. Businesses began to add to their payrolls, but only at a modest pace that implied additional sizable gains in productivity.

The fundamental factors underlying the strengthening of economic activity during the second half of 2003 should continue to promote brisk expansion in 2004. Monetary policy remains accommodative. Financial conditions for businesses are quite favorable: Profits have been rising rapidly, and corporate borrowing costs are at low levels. In the household sector, last year's rise in the value of equities and real estate exceeded the further accumulation of debt by enough to raise the ratio of household net worth to disposable income after three consecutive years of decline. In addition, federal spending and tax policies are slated to remain stimulative during the current fiscal year, while the restraint from the state and local sector should diminish. Lastly, the lower foreign exchange value of the dollar and a sustained economic expansion among our trading partners are likely to boost the demand for U.S. production. Considerable uncertainty, of course, still attends the economic outlook despite these generally

favorable fundamentals. In particular, questions remain as to how willing businesses will be to spend and hire and how durable will be the pickup in economic growth among our trading partners. At its meeting on January 27–28, 2004, the Committee perceived that upside and downside risks to the attainment of sustainable growth for the next few quarters are roughly equal.

Prospects for sustained high rates of increase in productivity are quite favorable. Businesses are likely to retain their focus on controlling costs and boosting efficiency by making organizational improvements and exploiting investments in new equipment. With the ongoing gains in productivity, the existing margins of slack in resource utilization should recede gradually, and any upward pressure on prices should remain well contained. The FOMC indicated at its January meeting that, with inflation low and resource use still slack, it can be patient in removing its policy accommodation.

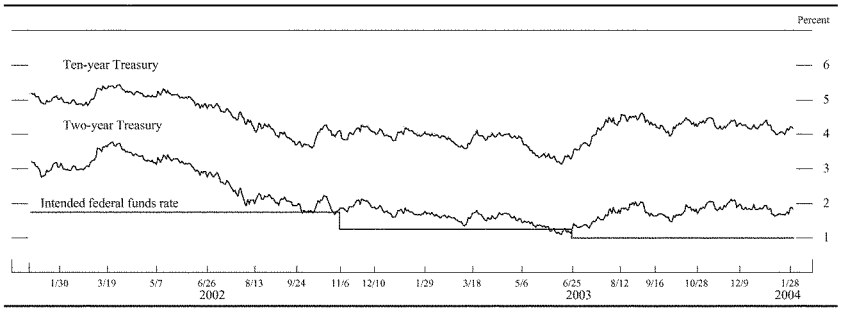
Monetary Policy, Financial Markets, and the Economy over 2003 and Early 2004

During the opening months of 2003, the softness in economic conditions was exacerbated by the substantial uncertainty surrounding the onset of war in Iraq. Private nonfarm businesses began again to cut payrolls substantially, consumer spending slowed, and business investment was muted. Although the jump in energy prices pushed up overall inflation, slack in resource utilization and the rapid rise in labor productivity pushed core inflation down. In financial markets, the heightened sense of caution among investors generated safe-haven demands for Treasury and other fixed-income securities, and equity prices declined.

At its meeting on March 18, the FOMC maintained its 1¼ percent target for the federal funds rate to provide support for a stronger economic expansion that appeared likely to materialize. The Committee noted that the prevailing high degree of geopolitical uncertainty complicated any assessment of prospects for the economy, and members refrained from making a determination about the balance of risks with regard to its goals of maximum employment and stable prices. At the same time, the Committee agreed to step up its surveillance of the economy, which took the form of a series of conference calls in late March and early April to consult about developments. When military action in Iraq became a certainty, financial markets began to rally, with risk spreads on corporate debt securities narrowing and broad equity indexes registering notable gains. Economic news, however, remained mixed.

Indicators of the economy at the time of the May 6 FOMC meeting continued to suggest only tepid growth. Uncertainty in financial markets had declined, and rising consumer confidence and a wave of mortgage refinancing appeared to be supporting consumer spending. However, persistent excess capacity evident in labor and product markets pointed to possible further disinflation. The lifting of some of the uncertainty clouding the economic outlook allowed the Committee to make the determination that the risks to economic growth were balanced but that the probability of an unwelcome substantial fall in inflation exceeded that of a pickup in inflation. The FOMC judged that, taken together, the balance of risks was weighted toward weakness. The Committee left the federal funds rate target at 1¼ percent, but the Committee's announcement prompted a rally in the Treasury market, and coupon yields fell substantially as market participants marked down their expectations for the path of the federal funds rate.

Selected interest rates



NOTE. The data are daily and extend through February 4, 2004. The dates on the horizontal axis are those of scheduled FOMC meetings.

By the time of the June 24–25 FOMC meeting, risk spreads had narrowed further and equity prices had extended their rise, but the prospects for sustained economic expansion still seemed tentative. Although Committee members referred to signs of improvement in some sectors of the economy, they saw no concrete evidence of an appreciable overall strengthening in the economic expansion and viewed the excess capacity in the economy as likely to keep inflation in check. The Committee lowered the target for the federal funds rate 1/4 percentage point, to 1 percent, to add further support to the economic expansion and as a form of insurance against a further substantial drop in inflation, however unlikely. The members saw no serious obstacles to further conventional policy ease down to the zero lower bound on nominal interest rates should that prove to be necessary. The Committee also discussed alternative means of providing monetary stimulus should the target federal funds rate be reduced to a point at which they would have little or no latitude for additional easing through this traditional channel.

Longer-term interest rates backed up following the meeting, as investors had apparently placed substantial odds on a policy move larger than 25 basis points and may have been disappointed that the announcement failed to mention any potential "unconventional" monetary policy options. Ten-year Treasury yields rose sharply during the following weeks in reaction to interpretations of the Chairman's congressional testimony, the release of Committee members' economic projections, and positive incoming news about the economy and corporate profits. A substantial unwinding of hedging positions related to mortgage investments may well have amplified the upswing in market yields. Over the intermeeting period, labor markets continued to be soft, but industrial production, personal consumption expenditures, and business outlays all strengthened, and the housing market remained robust. By the time of the August 12 FOMC meeting, members generally perceived a firming in the economy, most encouragingly in business investment spending, and believed that, even after the rise in longer-term rates, financial conditions were still supportive of vigorous economic growth. Given the continued slack in resource use across the economy, however, members saw little risk of inducing higher inflation by leaving the federal funds rate at its accommodative level. On the basis of the economic outlook, and to reassure market participants that policy would not reverse course soon, Committee members decided to include in the announcement a reference to their judgment that under the anticipated circumstances, policy accommodation could be maintained for a "considerable period."

Through the September 16 and October 28 FOMC meetings, the brightening prospects for future growth put upward pressure on equity prices and longer-term interest rates. The Committee's retention of the phrase "considerable period" in the announcements following each of these meetings apparently provided an anchor for near-term interest rates. The Committee's discussion at these two meetings focused on the increased evidence of a broadly based acceleration in economic activity and on the continued weakness in labor markets. Rising industrial production, increased personal consumption and business investment spending, higher profits, receptive financial markets, and a lower foreign exchange value of the dollar all suggested that sustained and robust economic growth was in train. The Committee's decision to leave the stance of monetary policy unchanged over this period reflected, in part, a continuing confidence that gains in productivity would support economic growth and suppress inflationary pressures. In fact, the Committee generally viewed its goal of price stability as essentially having been achieved.

By the time of the December 9 FOMC meeting, the economic expansion appeared likely to continue at a rate sufficient to begin to reduce slack in labor and product markets. Equity markets continued to rally, and risk spreads, particularly on the debt of speculative-grade firms, narrowed further. The labor market was finally showing some signs of improvement, and spending by households remained strong even as the impetus from earlier mortgage refinancings and tax cuts began to wane. The acceleration in capital spending and evidence that some firms were beginning to accumulate inventories seemed to signal that business confidence was on the mend. However, twelve-month core consumer price inflation was noticeably lower than in the previous year. Even though the unemployment rate was expected to move down gradually, continued slack in labor and product markets over the near term was viewed as sufficient to keep any nascent inflation subdued. Uncertainty about the pace at which slack would be worked down, however, made longer-run prospects for inflationary pressures difficult to gauge. Given the better outlook for sustained economic growth, the possibility of pernicious deflation associated with a pronounced softening in real activity was seen as even more remote than it had been earlier in the year. The Committee indicated that keeping policy accommodative for a considerable period was contingent on its expectation that inflation would remain low and that resource use would remain slack.

At its meeting on January 27–28, 2004, the Committee viewed a self-sustaining economic expansion as even more likely. Members drew particular reassurance from reports of plans for stronger capital spending and the widespread distribution of increased activity across regions. Accommodative financial market conditions, including higher equity prices, narrower risk spreads on

bonds, and eased standards on business loans, also seemed supportive of economic expansion. However, some risks remained in light of continued lackluster hiring evidenced by the surprisingly weak December payroll employment report. With the likelihood for rapid productivity growth seemingly more assured, Committee members generally agreed that inflation pressures showed no sign of increasing and that a bit more disinflation was possible. Under these circumstances, the Committee concluded that current conditions allowed monetary policy to remain patient. As to the degree of policy accommodation, the Committee left its target for the federal funds rate unchanged. The Committee's characterization that policy could be patient instead of its use of the phrase "considerable period" in its announcement prompted a rise in Treasury yields across the yield curve and a fall in equity prices.

Economic Projections for 2004

Federal Reserve policymakers expect that the economic expansion will continue at a brisk pace in 2004. The central tendency of the forecasts of the change in real gross domestic product made by the members of the Board of Governors and the Federal Reserve Bank presidents is 4½ percent to 5 percent, measured from the final quarter of 2003 to the final quarter of 2004. The full range of these forecasts is somewhat wider—from 4 percent to 5½ percent. The FOMC participants anticipate that the projected increase in real economic activity will be associated with a further gradual decline in the unemployment rate. They expect that the unemployment rate, which has averaged 5¾ percent in recent months, will be between 5¼ percent and 5½ percent in the fourth quarter of the year. With rapid increases in productivity likely to be sustained and inflation expectations stable, Federal Reserve policymakers anticipate that inflation will remain quite low this year. The central tendency of their forecasts for the change in the chain-type price index for personal consumption expenditures (PCE) is 1 percent to 1¼ percent; this measure of inflation was 1.4 percent over the four quarters of 2003.

Economic projections for 2004

Percent

Indicator	Memo 2003 actual	Federal Reserve Governors and Reserve Bank presidents	
		Range	Central tendency
Change, fourth quarter to fourth quarter[1]			
Nominal GDP	5.9	5½–6½	5½–6¼
Real GDP	4.3	4–5½	4½–5
PCE chain-type price index	1.4	1–1½	1–1¼
Average level, fourth quarter			
Civilian unemployment rate	5.9	5¼–5½	5¼–5½

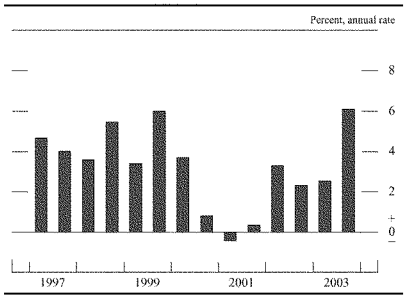
1. Change from average for fourth quarter of previous year to average for fourth quarter of year indicated.

Economic and Financial Developments in 2003 and Early 2004

The pace of economic expansion strengthened considerably in the second half of 2003 after almost two years of uneven and, on balance, sluggish growth. In early 2003, accommodative monetary policy and stimulative fiscal policies were in place, but economic activity still seemed to be weighed down by a number of factors that had restrained the recovery earlier: Geopolitical tensions were again heightened, this time by the impending war in Iraq, businesses remained unusually cautious about the strength of the expansion, and economic activity abroad was still weak. In June the continued lackluster economic growth and a further downshift in inflation from an already low level prompted a further reduction in the federal funds rate. In addition, the tax cuts that became effective at midyear provided a significant boost to disposable income. In the succeeding months, the macroeconomic stimulus began to show through clearly in sales and production, and some of the business caution seemed to recede. Real GDP increased at an annual rate of 6 percent, on average, in the third and fourth quarters of last year. In contrast, between late 2001 and mid-2003, real GDP had risen at an annual rate of only 2½ percent.

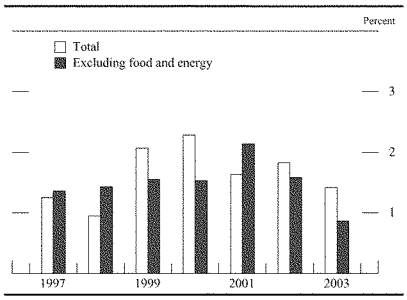
During the period of recession and subpar economic expansion, considerable slack developed in labor and product markets. The firming of economic activity in the second half of last year produced modest increases in rates of resource utilization. Sustained efforts by busi-

Change in real GDP



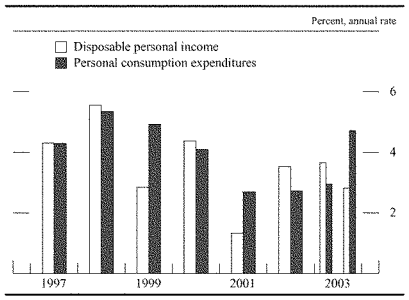
Note. Here and in subsequent charts, except as noted, change for a given period is measured to its final quarter from the final quarter of the preceding period.

Change in PCE chain-type price index



NOTE. The data are for personal consumption expenditures (PCE).

Change in real income and consumption



nesses to control costs led to further rapid gains in productivity. As a result, unit labor costs declined, and core rates of inflation continued to slow in 2003; excluding food and energy, the PCE chain-type price index increased just 0.9 percent last year. Measures of overall inflation, which were boosted by movements in food and energy prices, were higher than those for core inflation.

Domestic financial market conditions appeared to become increasingly supportive of economic growth last year. The economic expansion lowered investors' perception of, and perhaps aversion to, risk, and continued disinflation was interpreted as a sign that monetary policy would remain on hold, even as the economy picked up steam. Although yields on Treasury coupon securities rose modestly on balance over the year, risk spreads on corporate debt narrowed to the point that yields on corporate issues declined. The low-interest-rate environment spurred considerable corporate bond issuance and generated a massive wave of mortgage refinancing activity by households. Equity markets began to rally when the uncertainty over the timing of military intervention in Iraq was resolved. The climb in stock prices continued for the rest of the year, driven by improving corporate earnings reports and growing optimism about the prospects for the economy. At the same time, with economic conditions abroad improving and with concerns about the financing burden of the U.S. current account deficit gaining increased attention in financial markets, the dollar fell appreciably on a trade-weighted basis.

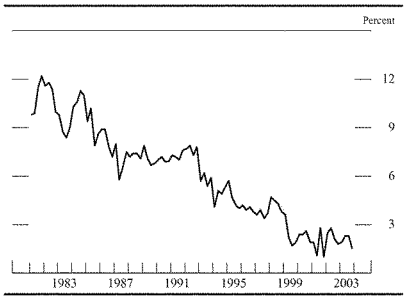
The Household Sector

Consumer Spending

Early in 2003, consumer spending was still rising at about the same moderate pace as in 2001 and 2002. In the late spring and in the summer, however, households stepped up their spending sharply. As a result, in the second half of last year, real personal consumption expenditures rose at an annual rate of 4 3/4 percent after having increased at a rate of just under 3 percent in the first half. Although wage and salary earnings rose slowly during most of the year, the midyear reductions in tax rates and the advance of rebates to households eligible for child tax credits provided a substantial boost to after-tax income. In 2003, real disposable personal income increased 3 1/4 percent, after having risen 3 1/2 percent in 2002. Low interest rates provided additional impetus to household spending by reducing borrowing costs for new purchases of houses and durable goods; they also indirectly stimulated spending by facilitating an enormous amount of mortgage refinancing.

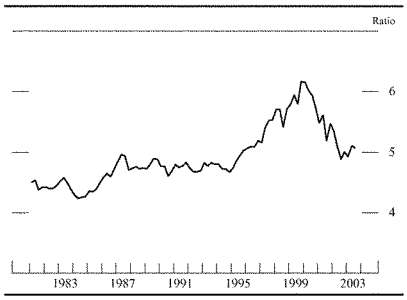
The personal saving rate has fluctuated within a fairly narrow range around 2 percent over the past three years. Although households continued to see the value of their

Personal saving rate



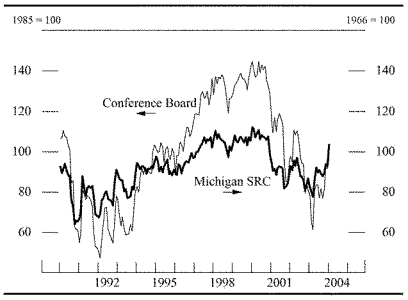
NOTE. The data are quarterly and extend through 2003:Q4.

Wealth-to-income ratio



NOTE. The data are quarterly and extend through 2003:Q3. The wealth-to-income ratio is the ratio of household net worth to disposable personal income.

Consumer sentiment



NOTE. The data are monthly and extend through January 2004.
SOURCE. University of Michigan Survey Research Center and The Conference Board.

homes appreciate over this period, they also were adjusting to the substantial drop in equity wealth that occurred after the peak in the stock market in 2000. By itself, a fall in the ratio of household wealth to income of the magnitude that households experienced between 2000 and 2002 might have triggered a noticeable increase in the personal saving rate. However, in this case, the tendency for households to save more as their wealth declines appears to have been tempered in part by their willingness to take advantage of the attractive pricing and financing environment for consumer goods.

Real consumer expenditures for durable goods surged more than 11 percent in 2003. Sales of new motor vehicles remained brisk as many consumers responded to the low financing rates and various incentive deals that manufacturers offered throughout the year. Falling prices also made electronic equipment attractive to consumers, and spending on home furnishings likely received a boost from the strength of home sales. Altogether, real outlays for furniture and household equipment jumped 13½ percent in 2003.

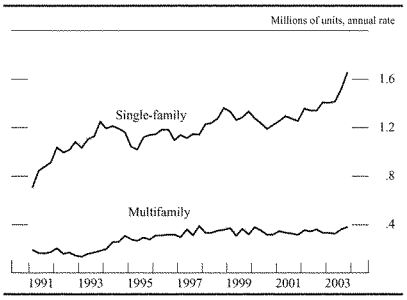
In contrast, real consumer expenditures on nondurable goods and on services continued to rise at a moderate pace, on balance, last year. Outlays for food and apparel increased a bit faster than in 2002, and the steady uptrend in spending for medical services was well maintained. However, consumers responded to the higher cost of energy by cutting back their real spending on gasoline, fuel oil, and natural gas and electricity services.

Consumer confidence was shaken temporarily early in 2003 by concerns about the consequences of a war in Iraq, but it snapped back in the spring. Toward year-end, sentiment appeared to brighten more as households saw their current financial conditions improve and gained confidence that business conditions would be better during the year ahead. Those positive views became more widely held in January, and the index of consumer sentiment prepared by the Michigan Survey Research Center (SRC) reached its highest level in three years.

Residential Investment

Housing activity was robust for a second consecutive year in 2003. After having risen 7 percent in 2002, real expenditures on residential construction jumped more than 10 percent in 2003. These gains were fueled importantly by the lowest levels of mortgage interest rates in more than forty years, which, according to the Michigan SRC's survey of consumer sentiment, buoyed consumer attitudes toward homebuying throughout the year. The average rate on thirty-year fixed-rate mortgages dropped

Private housing starts



NOTE. The data are quarterly and extend through 2003:Q4.

sharply during the first half of 2003 and reached a low of 5 1/4 percent in June. Although the thirty-year rate subsequently firmed somewhat, it remained below 6 percent, on average, in the second half of last year.

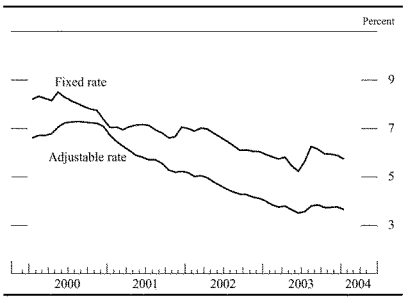
Construction of new single-family homes accelerated during 2003, and for the year as a whole, starts averaged 1.5 million units, an increase of 10 percent compared with the level in 2002. Sales of both new and existing single-family homes also picked up sharply further last year. The brisk demand for homes was accompanied by rapid increases in the average price paid for them. The average price paid for new homes rose 10 percent over the four quarters of 2003, and the average price of existing homes was up 7 3/4 percent over the same period. However, house price inflation was lower after adjusting for shifts in the composition of transactions toward more expensive homes. The constant-quality price index for new homes, which eliminates the influence of changes in their amenities and their geographic distribution, increased 4 3/4 percent over the four quarters of 2003—down from an increase of 6 percent during 2002. The year-over-year increase in Freddie Mac's index of the prices paid in repeat sales of existing homes stood at 5 1/2 percent as of the third quarter of 2003, compared with a rise of 7 1/4 percent as of the third quarter of 2002.

Starts in the multifamily sector totaled 350,000 units in 2003, a pace little changed from that of the past several years. Vacancy rates for these units rose and rents fell during the year, but falling mortgage rates apparently helped to maintain building activity.

Household Finance

Household debt increased 10 3/4 percent last year, in large part because of the surge in mortgage borrowing induced by record-low mortgage interest rates. Refinancing activity was torrid in the first half of the year, as mortgage rates declined. Some of the equity that households extracted from their homes during refinancings was apparently used to fund home improvements and to pay down higher-interest consumer debt. When mortgage rates rebounded in the second half of the year, mortgage borrowing slowed from the extremely rapid clip of the first half, but it remained brisk through year-end. Consumer credit increased at a pace of 5 1/4 percent in 2003, a little faster than a year earlier, as revolving credit picked up somewhat from the slow rise recorded in 2002. Despite the pickup in household borrowing, low interest rates kept the household debt-service and financial-obligation ratios—which gauge pre-committed expenditures relative to disposable income—at roughly the levels posted in 2002. Most measures of delinquencies on consumer loans and home mortgages changed little on net last year, and

Mortgage rates

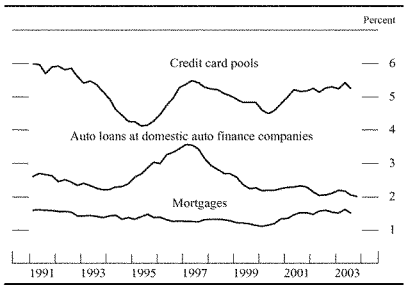


NOTE. The data, which are monthly and extend through January 2004, are contract rates on thirty-year mortgages.
SOURCE. Federal Home Loan Mortgage Corporation.

household bankruptcies held roughly steady near their elevated level in 2002.

Even with the rapid expansion in debt, net worth of the household sector increased as the value of household assets rose noticeably. Stock prices were boosted by the rise in corporate earnings and the ebbing of uncertainty about future economic growth. Households directed substantial flows into stock mutual funds in the third and fourth quarters despite highly publicized scandals in the mutual fund industry. Although the companies directly implicated in wrongdoing experienced heavy outflows from their funds, most of these withdrawals apparently were transferred to other mutual funds with little effect on the industry as a whole. A considerable rise in real estate wealth further augmented household assets. Although prices of existing homes climbed more slowly

Delinquency rates on selected types of household loans



NOTE. The data are quarterly. The rates for credit card pools and mortgages extend through 2003:Q3; the rate for auto loans extends through 2003:Q4.
SOURCE. For mortgages, the Mortgage Bankers Association; for auto loans, the Big Three automakers; for credit cards, Moody's Investors Service.

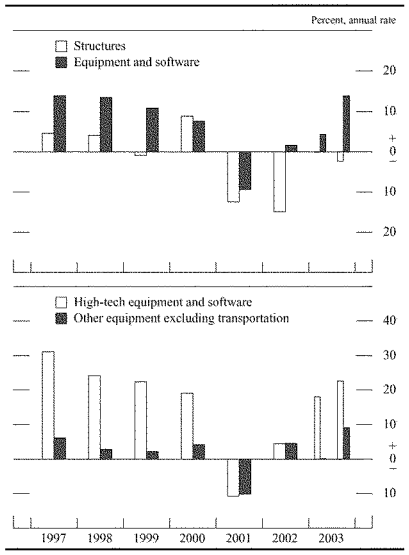
than they had in the previous year, the rate of increase remained sizable. Overall, the advance in the value of household assets outstripped the accumulation of household debt by enough to boost the ratio of net worth to disposable income over the year.

The Business Sector

Fixed Investment

Business spending on equipment and software was still sluggish at the beginning of 2003. However, it accelerated noticeably over the course of the year as profits and cash flow rebounded and as businesses gained confidence in the strength of the economic expansion and in the prospective payoffs from new investment. At the same time, business financing conditions were very favorable: Interest rates remained low, equity values rallied, and the enhanced partial-expensing tax provision gave a special incentive for the purchase of new equipment and software. After having changed little in the first quarter of the year, real outlays for equipment and software increased at an annual rate of 11¾ percent over the remaining three quarters of the year.

Change in real business fixed investment



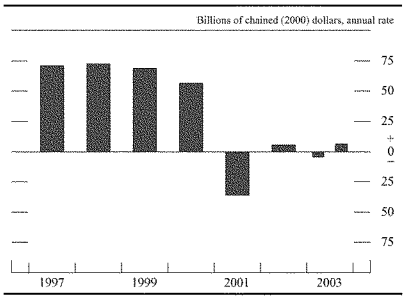
NOTE. High-tech equipment consists of computers and peripheral equipment, software, and communications equipment.

Outlays for high-technology items—computers and peripherals, software, and communications equipment—which had risen a moderate 4½ percent in 2002, posted a significantly more robust increase of more than 20 percent in 2003. That gain contributed importantly to the pickup in overall business outlays for equipment and software and pushed the level of real high-tech outlays above the previous peak at the end of 2000. The increase in spending last year on computing equipment marked the sharpest gain since 1998, and investment in communications equipment, which had continued to contract in 2002 after having plummeted a year earlier, turned up markedly.

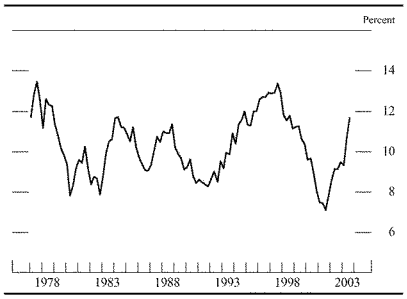
In contrast, the recovery in spending on non-high-tech equipment was, on balance, more muted, in part because outlays for transportation equipment continued to fall. The prolonged slump in business purchases of new aircraft continued in 2003 as domestic air carriers grappled with overcapacity and high fixed costs. By the fourth quarter, real outlays for aircraft had dropped to their lowest level in ten years. In the market for heavy (class 8) trucks, sales were quite slow in early 2003 when businesses were concerned about the performance of models with engines that met new emission standards. But as potential buyers overcame those concerns, sales recovered. By the fourth quarter of 2003, sales of medium and heavy trucks had moved noticeably above the slow pace of 2001 and 2002. Apart from outlays for transportation equipment, investment in other types of non-high-tech equipment was, on balance, little changed during the first half of the year. Demand was strong for medical equipment, instruments, and mining and oilfield machinery, but sales of industrial equipment and farm and construction machinery were sluggish. In the second half of the year, however, the firming in business spending for non-high-tech items became more broadly based.

The steep downturn in nonresidential construction that began in 2001 moderated noticeably in 2003, although market conditions generally remained weak. After having contracted at an average annual rate of 13½ percent during 2001 and 2002, real expenditures for nonresidential construction slipped just 1¼ percent, on balance, during 2003. Spending on office buildings and manufacturing structures, which had dropped sharply over the preceding two years, fell again in 2003. The high office vacancy rates in many areas and low rates of factory utilization implied little need for new construction in these sectors even as economic activity firmed. Investment in communications infrastructure, where a glut of long-haul fiber-optic cable had developed earlier, also continued to shrink. In contrast, outlays for retail facilities, such as department stores and shopping malls, turned up last year,

Change in real business inventories



Before-tax profits of nonfinancial corporations as a percent of sector GDP



NOTE. The data are quarterly and extend through 2003:Q3. Profits are from domestic operations of nonfinancial corporations, with inventory valuation and capital consumption adjustments.

and the retrenchment in construction of new hotels and motels ended. In addition, investment in drilling and mining structures, which is strongly influenced by the price levels for crude oil and natural gas, increased noticeably in 2003.

Inventory Investment

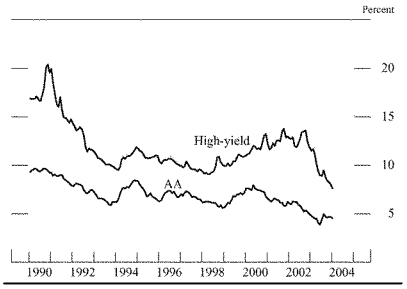
During 2002, businesses appeared to have addressed most of the inventory imbalances that had developed a year earlier. But the moderate pace of final demand during the first half of 2003 apparently restrained firms from embarking on a new round of inventory accumulation. Even though final sales picked up in the second half of the year, the restraint seemed to recede only gradually. Over the first three quarters of 2003, nonfarm businesses trimmed their inventories at an average annual rate of 2 3/4 billion in constant-dollar terms, and the preliminary estimate for the final quarter of the year indicated only modest restocking. As a result, most firms appear to have ended the year with their inventories quite lean relative to sales, even after taking into account the downward trend in inventory-sales ratios that has accompanied the ongoing shift to improved inventory management. Motor vehicle dealers were an exception; their days' supply of new vehicles moved higher on average for a second year in a row.

Corporate Profits and Business Finance

Higher profits allowed many firms to finance capital spending with internal funds, and business debt rose only slightly faster than the depressed rate in 2002. Moreover, a paucity of cash-financed merger and acquisition activity further limited the need to issue debt. Gross equity issuance was extremely weak in the first half of the year but perked up in the latter half in response to the rally in equity prices. Nevertheless, for the year as a whole, firms extinguished more equity than they issued.

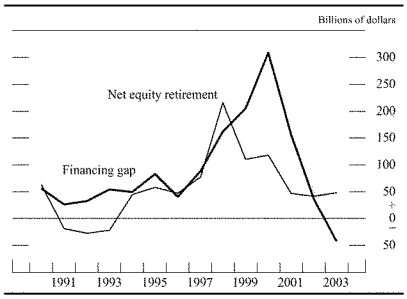
The pace of gross corporate bond issuance was moderate at the start of the year but shot up in late spring as firms took advantage of low bond yields to pay down short-term debt, to refund existing long-term debt, and to raise cash in anticipation of future spending. Bond issuance by investment-grade firms slowed after midyear as firms accumulated a substantial cushion of liquid assets and as interest rates on higher-quality debt backed up. However, issuance by speculative-grade firms continued

Corporate bond yields



NOTE. The data are monthly averages and extend through January 2004. The AA rate is calculated from bonds in the Merrill Lynch AA index with a remaining maturity of seven to ten years. The high-yield rate is the yield on the Merrill Lynch 175 high-yield index.

Financing gap and net equity retirement at nonfinancal corporations

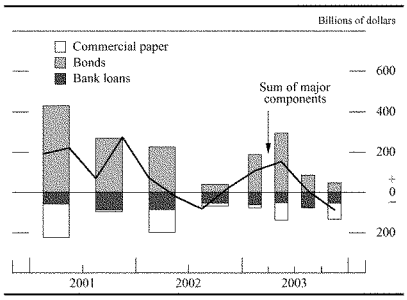


NOTE. The data are annual; 2003 is based on partially estimated data. The financing gap is the difference between capital expenditures and internally generated funds. Net equity retirement is the difference between equity retired through share repurchases, domestic cash-financed mergers, or foreign takeovers of U.S. firms and equity issued in public or private markets, including funds invested by venture capital partnerships.

apace, with the yields on their debt continuing to decline dramatically presumably because of investors' increased optimism about the economic outlook and greater willingness to take on risk. The sum of bank loans and commercial paper outstanding, which represent the major components of short-term business debt, contracted throughout the year. In large part, this decline reflected ongoing substitution toward bond financing, but it also was driven by the softness of fixed investment early in the year and the liquidation of inventories over much of the year.

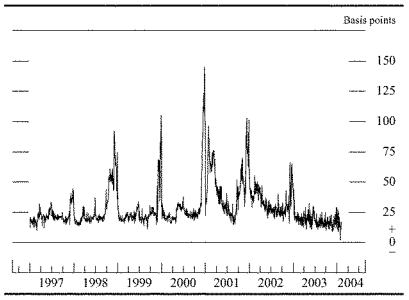
Respondents to the Senior Loan Officer Opinion Survey on Bank Lending Practices noted that terms and standards on business loans were tightened during the first half of the year but that both had been eased considerably by year-end. They also reported that demand for business loans was quite weak for much of the year. However, despite the fact that outstanding levels of business loans continued to decline, survey responses in the last quarter of the year indicated that demand for loans had begun to stabilize. Many banks cited customers' increased investment and inventory spending as factors helping to generate the increase in loan demand toward the end of the year. The apparent divergence between survey responses and data on actual loan volumes may suggest that demand for lines of credit has increased but that these lines have not yet been drawn. In other short-term

Major components of net business financing



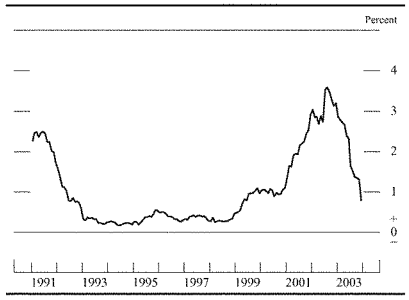
NOTE. Seasonally adjusted annual rate for nonfinancial corporate business. The data for the sum of major components are quarterly. The data for 2003:Q4 are estimated.

Spread of low-tier CP rates over high-tier CP rates



NOTE. The data are daily and extend through February 4, 2004. The series shown is the difference between the rate on A2/P2 nonfinancial commercial paper and the AA rate.

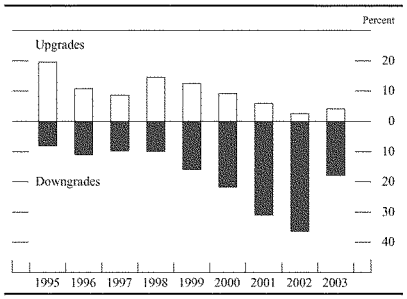
Default rate on outstanding bonds



NOTE. The default rate is monthly and extends through December 2003. The rate for a given month is the face value of bonds that defaulted in the twelve months ending in that month divided by the face value of all bonds outstanding at the end of the calendar quarter immediately preceding the twelve-month period.

SOURCE. Moody's Investors Service.

Ratings changes of nonfinancial corporate bonds



NOTE. For a given year, the percentage is calculated as the par value of bonds that were upgraded or downgraded in that year and outstanding in the fourth quarter of the previous year divided by the par value of the outstanding bonds of all nonfinancial corporations in that quarter.
SOURCE. Moody's Investors Service.

financing developments, nonfinancial firms that issued commercial paper in 2003 found a very receptive market, in large part because of the scarcity of outstanding issues. Many of the riskiest borrowers had exited the market in 2002, and remaining issuers improved their attractiveness to investors by continuing to restructure their balance sheets.

Gross equity issuance rose over the course of 2003 as the economic outlook strengthened and stock prices moved higher. The market for initial public offerings continued to languish in the first half of the year but showed signs of life by the end of the summer. The volume of seasoned offerings also picked up in the second half of the year. On the other side of the ledger, merger and acquisition activity again extinguished shares in 2003, although only at a subdued pace. In addition, firms continued to retire a considerable volume of equity through share repurchases. For the year as a whole, net equity issuance was negative.

Corporate credit quality improved, on balance, over the year. Notably, the default rate on corporate bonds declined sharply, delinquency rates on commercial and industrial (C&I) loans at commercial banks turned down, and the pace of bond-rating downgrades slowed considerably. Low interest rates and the resulting restructuring of debt obligations toward longer terms also importantly contributed to improved business credit quality. Bank loan officers noted that the aggressive tightening of lending standards in earlier years was an important factor accounting for the lower delinquency and charge-off rates in recent quarters.

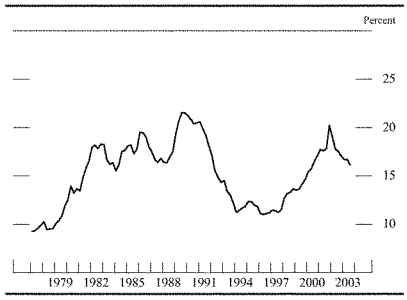
Commercial mortgage debt increased noticeably during most of 2003 despite persistently high vacancy rates, falling rents, and sluggish growth in construction expenditures. Low interest rates on this type of collateralized debt may have induced some corporate borrowers to tap the market to pay down more-costly unsecured debt. Delinquency rates on commercial mortgages generally remained low throughout 2003, and risk spreads were relatively narrow. Loan performance has held up well because of low carrying costs for property owners and because the outstanding loans generally had been structured to include a sizable equity contribution, which makes default less attractive to borrowers.

The Government Sector

Federal Government

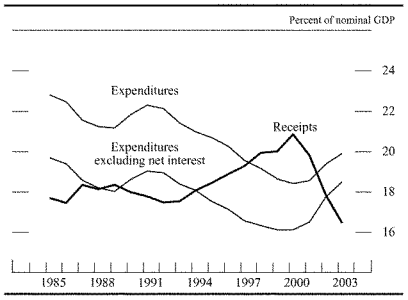
The federal budget deficit continued to widen in fiscal year 2003 as a result of the slow increase in nominal

Net interest payments of nonfinancial corporations as a percent of cash flow



NOTE. The data are quarterly and extend through 2003:Q3.
SOURCE. Bureau of Economic Analysis.

Federal receipts and expenditures



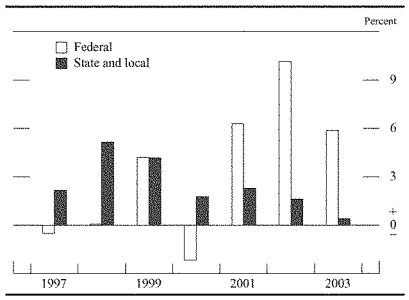
NOTE. The budget data are from the unified budget and are for fiscal years (October through September); GDP is for the year ending in Q3.

incomes, outlays associated with the war in Iraq, and legislative actions that reduced taxes and boosted spending. The deficit in the unified budget totaled $375 billion, up substantially from the deficit of $158 billion recorded in fiscal 2002. The Congressional Budget Office is projecting that the unified federal deficit will increase further in fiscal 2004, to more than $475 billion.

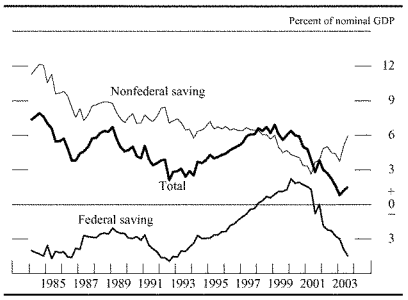
Federal receipts have fallen in each of the past three years; the drop of nearly 4 percent in fiscal 2003 brought the ratio of receipts to GDP to 16½ percent, 2 percentage points below the average for the past thirty years. About half of the decrease in receipts last year was a consequence of legislation that shifted due dates for corporate payments between fiscal years. In addition, personal income tax collections dropped sharply because of the slow rise in nominal wages and salaries, diminished capital gains realizations in 2002, and the tax cuts enacted under the Jobs and Growth Tax Relief Reconciliation Act of 2003. The act advanced refund checks to households eligible for the 2003 increment to the child tax credit and resulted in lower withholding schedules for individual taxpayers. The act also expanded the partial-expensing incentive for businesses, but because corporate profits accelerated sharply last year, corporate tax receipts rose appreciably after adjusting for the shifts in the timing of payments.

At the same time, federal outlays other than for interest expense rose rapidly for the second consecutive year in fiscal 2003; these outlays increased about 9 percent after having risen 11 percent in fiscal 2002. Spurred by operations in Iraq, defense spending soared again, and outlays for homeland security rose further. Spending for income support, such as unemployment insurance, food stamps, and child credits under the earned income tax credit program, also posted a sizable increase. The ongoing rise in the cost and utilization of medical services

Change in real government expenditures on consumption and investment



Net national saving



NOTE. The data are quarterly and extend through 2003:Q3. Nonfederal saving is the sum of personal and net business saving and the net saving of state and local governments.

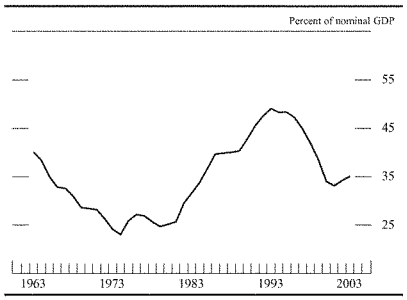
continued to push up spending for Medicare and Medicaid. Overall, real federal consumption and investment (the measure of federal spending that is included in real GDP) increased 6 percent over the four quarters of 2003, after having risen 10 percent a year earlier.

The federal government had contributed increasingly to national saving in the late 1990s and 2000 as budget deficits gave way to accumulating surpluses. However, with the swing back to large deficits in recent years, the federal government has again become a drain on national saving. Using the accounting practices followed in the national income and product accounts (NIPA), gross federal saving as a percent of GDP dropped sharply in late 2001 and has trended down since then; the drop contributed to a decline in overall gross national saving as a percent of GDP from 18 percent in calendar year 2000 to 13 percent, on average, in the first three quarters of 2003. Federal saving net of estimated depreciation fell from its recent peak of 2½ percent of GDP in 2000 to negative 4 percent of GDP, on average, in the first three quarters of 2003. As a result, despite a noticeable pickup in saving from domestic nonfederal sources, overall net national saving, which is an important determinant of private capital formation, fell to less than 1½ percent of GDP, on average, in the first three quarters of 2003, compared with a recent high of 6½ percent of GDP in 1998.

Federal Borrowing

The Treasury ramped up borrowing in 2003 in response to the sharply widening federal budget deficit, and federal debt held by the public as a percent of nominal GDP increased for a second year in a row after having trended down over the previous decade. As had been the case in

Federal government debt held by the public



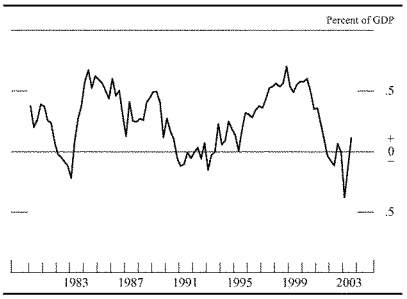
NOTE. Through 2002, the data for debt are year-end figures, and the corresponding value for GDP is for Q4 at an annual rate; the final observation is for 2003:Q3. Excludes securities held as investments of federal government accounts.

2002, the Treasury was forced to resort temporarily to accounting devices in the spring of 2003 when the statutory debt ceiling became a constraint, but debt markets were not disrupted noticeably. In May, the Congress raised the debt ceiling from $6.4 trillion to $7.4 trillion. With large deficits expected to persist, the Treasury made a number of adjustments to its regular borrowing program, including reintroducing the three-year note, increasing to monthly the frequency of five-year note auctions, reopening the ten-year note in the month following each new quarterly offering, and adding another auction of ten-year inflation-indexed debt. As a result of these changes, the average maturity of outstanding Treasury debt, which had reached its lowest level in decades, began to rise in the latter half of 2003.

State and Local Governments

State and local governments faced another difficult year in 2003. Tax receipts on income and sales continued to be restrained by the subdued performance of the economy. Despite further efforts to rein in spending, the sector's aggregate net saving, as measured in the NIPA, reached a low of negative $40 billion (at an annual rate), or negative 0.4 percent of GDP, in the first quarter of the year. Most of these jurisdictions are subject to balanced-budget requirements and other rules that require them to respond to fiscal imbalances. Thus, in addition to reducing operating expenses, governments drew on reserves, issued bonds, sold assets, and made various one-time adjustments in the timing of payments to balance their books. In recent years, many have also increased taxes and fees, thereby reversing the trend toward lower taxes that prevailed during the late 1990s.

State and local government net saving



NOTE. The data, which are quarterly, are on a national income and product account basis and extend through 2003:Q3.

Recent indications are that the fiscal stress in this sector is beginning to ease. The improvement reflects a noticeable upturn in tax collections in recent quarters while restraint on operating expenditures largely remains in place. On a NIPA basis, real spending on compensation and on goods and services purchased by state and local governments was little changed in the second half of 2003, as it was over the preceding year. However, investment in infrastructure, most of which is funded in the capital markets, accelerated in the second half of 2003. As of the third quarter of 2003, state and local net saving had moved back into positive territory.

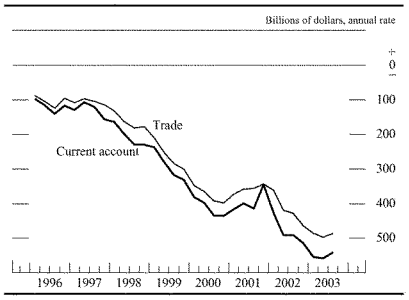
State and Local Government Borrowing

Gross issuance of debt by state and local governments was quite robust last year. Weak tax receipts from a sluggish economy, significant demands for infrastructure spending, and low interest rates all contributed to the heavy pace of borrowing. Borrowing was strongest in the second quarter of the year, as governments took advantage of the extraordinarily low longer-term rates to fund capital expenditures and to advance refund existing higher-cost debt. Because of the financial stresses facing these governments, the credit ratings of several states, most notably California, were lowered last year. Although bond downgrades outnumbered upgrades for the sector as a whole, the imbalance between the two was smaller than it was in 2002.

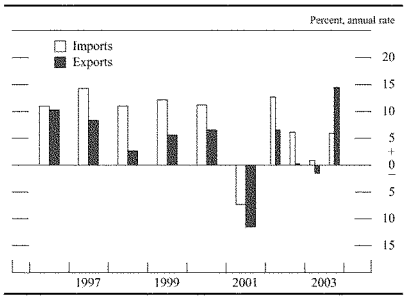
The External Sector

Over the first three quarters of 2003, the U.S. current account deficit widened relative to the comparable

U.S. trade and current account balances



Change in real imports and exports of goods and services



NOTE. The data are quarterly and extend through 2003:Q3.

period in 2002, a move largely reflecting developments in the deficit on trade in goods and services. Net investment income rose over the same period, as receipts from abroad increased and payments to foreign investors in the United States declined.

International Trade

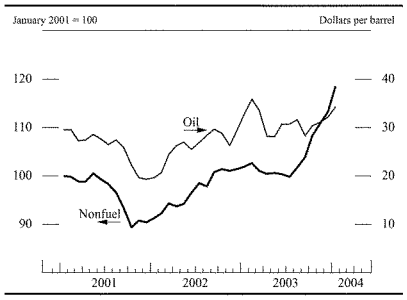
The trade deficit widened considerably in the first half of 2003 but narrowed slightly in the third quarter, as the value of exports rebounded in response to strengthening foreign economic activity and the depreciation of the dollar. Available trade data through November suggest that the trade deficit narrowed further in the fourth quarter, as an additional strong increase in exports outweighed an increase in imports.

Real exports of goods and services increased about 6 percent in 2003. Exports of services rose about 5 percent. They were held down early in the year by a drop in receipts from foreign travelers, owing to the effects of the SARS (severe acute respiratory syndrome) epidemic and the war in Iraq; services exports rebounded strongly later in the year as those concerns receded. Exports of goods rose about 6¾ percent over the course of the year—considerably faster than in 2002. Exports increased in all major end-use categories of trade, with particularly strong gains in capital goods and consumer goods. Reflecting the global recovery in the high-tech sector, exports of computers and semiconductors picked up markedly in 2003, particularly in the second half. By geographic area, exports of goods increased to Western Europe, Canada, and, particularly, to developing countries in East Asia—a region where economic activity expanded at a rapid pace last year. Prices of exported goods rose in 2003, with prices of agricultural exports recording particularly large increases. In response to poor crops and strong demand, prices for cotton and soybeans increased sharply. For beef, disruptions in supply led to notably higher prices through much of 2003. Beef prices, however, fell back in late December after a case of mad cow disease was discovered in the state of Washington and most countries imposed bans on beef imports from the United States.

Real imports of goods and services rose about 3½ percent in 2003. Imports of services fell in the first half of the year but bounced back in the second half, as concerns about the SARS epidemic and the war in Iraq came and went; for the year as a whole, real imports of services were about unchanged from the previous year. Real imports of goods expanded about 4 percent in response to the strengthening of U.S. demand, but the pattern was choppy, with large gains in the second and fourth quarters partially offset by declines in the first and third. Despite a surge in the second quarter, the volume of oil imports increased modestly, on balance, over the course of the year. Real non-oil imports were up about 4½ percent, with the largest increases in capital goods and consumer goods. Imports of computers posted solid gains, whereas imports of semiconductors were flat.

Despite a substantial decline in the value of the dollar, the prices of imported non-oil goods rose only moderately in 2003. By category, the prices of consumer goods were unchanged last year, and prices of capital goods excluding aircraft, computers, and semiconductors increased only a little more than 1 percent. Price increases were larger for industrial supplies. The price of imported natural gas spiked in March and rose again late in the year; these fluctuations were large enough to show through to the overall price index for imported goods. At year-end, prices of industrial metals rose sharply, with the spot price of copper reaching the highest level in six and one-half years. The strength in metals and other commodity prices has been attributed, at least in part, to depreciation

Prices of oil and of nonfuel commodities

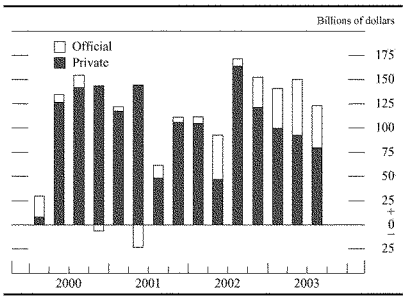


NOTE. The data are monthly and extend through January 2004. The oil price is the spot price of West Texas intermediate crude oil. The price of nonfuel commodities is a weighted average of thirty-nine primary-commodity prices from the International Monetary Fund.

of the dollar and strong global demand, particularly from China.

In 2003, the spot price of West Texas intermediate (WTI) crude oil averaged more than $31 per barrel—the highest annual average since the early 1980s. The spot price of oil began to rise at the end of 2002 when ethnic unrest in Nigeria and a nationwide strike in Venezuela sharply limited oil supplies from those two countries. In the first quarter of 2003, geopolitical uncertainty in the period leading up to the war in Iraq also added upward pressure on oil prices. On March 12, the spot price of WTI closed at $37.83 per barrel, the highest level since the Gulf War in 1990. When the main Iraqi oil fields had been secured and it became apparent that the risks to oil supplies had subsided, the spot price of WTI fell sharply to a low of $25.23 per barrel on April 29. However, oil prices began rising again when, because of difficult security conditions, the recovery of oil exports from Iraq was slower than expected. Prices also were boosted in September by the surprise reduction in OPEC's production target. In the fourth quarter of 2003 and early 2004, strengthening economic activity, falling oil inventories, and the continued depreciation of the dollar contributed to a further run-up in oil prices.

U.S. net financial inflows

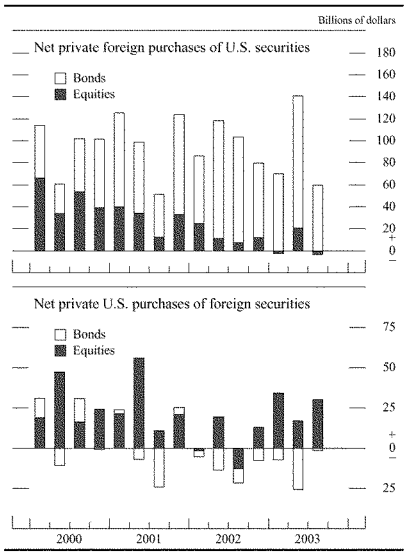


SOURCE. Department of Commerce.

The Financial Account

The financing counterpart to the current account deficit experienced a sizable shift in 2003, as net private inflows fell while foreign official inflows increased. Private foreign purchases of U.S. securities were at an annual rate of about $350 billion through November, about $50 billion lower than in the previous year. Private foreign purchases of U.S. equities continued to recede, and, although the level of bond purchases was little changed in the aggregate, foreign purchases shifted somewhat away from agency bonds and toward corporate bonds. Over the same period, purchases by private U.S. investors of foreign securities increased nearly $80 billion. Accordingly, net inflows through private securities transactions decreased

U.S. net international securities transactions



SOURCE. Department of Commerce and the Federal Reserve Board.

markedly. In contrast, foreign official purchases of U.S. assets surged to record levels in 2003, with the accumulation of dollar reserves particularly high in China and Japan.

Compared with the pace in 2002, foreign direct investment in the United States increased, as merger activity picked up and corporate profits improved. U.S. direct investment abroad held relatively steady at a high level that was largely the result of continued retained earnings. On net, foreign direct investment outflows fell about $50 billion through the first three quarters of 2003.

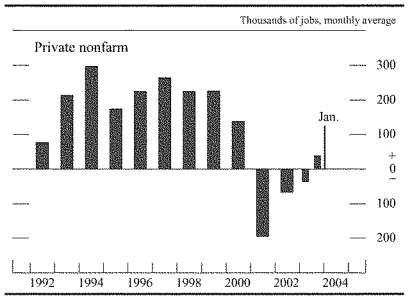
The Labor Market

Employment and Unemployment

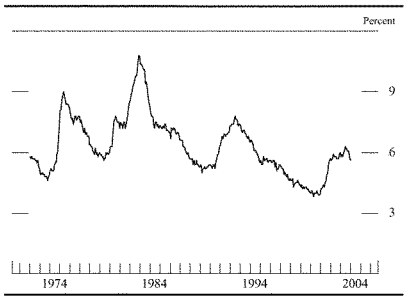
With economic activity still sluggish during the first half of 2003, the labor market continued to weaken. Over the first eight months of the year, private nonfarm payroll employment fell, on average, more than 35,000 per month, extending the prolonged period of cutbacks that began in early 2001. The civilian unemployment rate, which had hovered around 5¾ percent for much of 2002, moved up to 6¼ percent by June. However, by late in the summer, the labor market began to recover slowly. Declines in private payrolls gave way to moderate increases in employment; over the five months ending in January, private nonfarm establishments added, on average, about 85,000 jobs per month. By January, the unemployment rate moved back down to 5.6 percent.

During the late summer and early fall, prospects for business sales and production brightened, and firms began to lay off fewer workers. Initial claims for unemployment insurance dropped back, and the monthly Current Population Survey (CPS) of households reported a decline in the number of workers who had lost their last job. However, for many unemployed workers, jobs continued to be difficult to find, and the number of unemployed who had been out of work for twenty-seven weeks or more remained persistently high. The labor force participation rate, which tends to be sensitive to workers' perceptions of the strength of labor demand, drifted lower. Although the CPS indicated a somewhat greater improvement in employment than the payroll report—even after adjusting for conceptual differences between the two measures—the increase in household employment lagged the rise in the working-age population, and the ratio of employment to population fell further during 2003.

Net change in payroll employment



Civilian unemployment rate



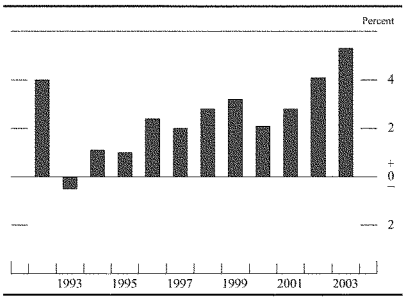
NOTE. The data are monthly and extend through January 2004.

The modest upturn in private payroll employment that began in September was marked by a step-up in hiring at businesses supplying professional, business, and education services, and medical services continued to add jobs. Employment in both the construction industry and the real estate industry rose further, although the number of jobs in related financial services dropped back a bit as mortgage refinancing activity slackened. At the same time, although manufacturers were still laying off workers, the monthly declines in factory employment became smaller and less widespread than earlier. Employment stabilized in many industries that produce durable goods, such as metals, furniture, and wood products, as well as in a number of related industries that store and transport goods. In several other areas, employment remained weak. Manufacturers of nondurables, such as chemicals, paper, apparel, and textiles, continued to cut jobs. Employment in retail trade remained, on net, little changed.

Productivity and Labor Costs

Business efforts to increase efficiency and control costs led to another impressive gain in labor productivity last

Change in output per hour

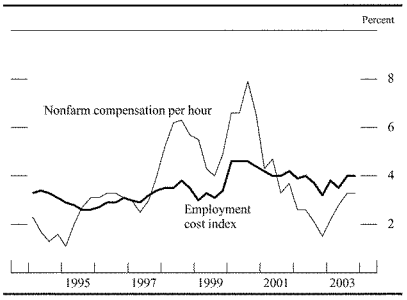


NOTE. Nonfarm business sector.

year. Output per hour in the nonfarm business sector surged 5¼ percent in 2003 after having risen a robust 4 percent in 2002 and 2¾ percent in 2001. What is particularly remarkable about this period is that productivity did not decelerate significantly when output declined in 2001, and it posted persistently strong gains while the recovery in aggregate demand was sluggish. Typically, the outsized increases in productivity that have occurred during cyclical recoveries have followed a period of declines or very weak increases in productivity during the recession and have been associated with rebounds in economic activity that were stronger than has been the case, until recently, in this expansion.

On balance, since the business cycle peak in early 2001, output per hour has risen at an average annual rate of 4 percent—noticeably above the average increase of 2½ percent that prevailed between 1996 and 2000. In the earlier period, an expansion of the capital stock was an important element in boosting the efficiency of workers and their firms; that impetus to productivity has weakened in the recent period as a result of the steep cutbacks in business investment in 2001 and 2002. Instead, the recent gains appear to be grounded in organizational changes and innovations in the use of existing resources—which are referred to as multifactor productivity. The persistence of a rapid rise in multifactor productivity in recent years, along with signs of a pickup in capital spending, suggests that part of the step-up in the rate of increase of labor productivity may be sustained for some time.

Measures of change in hourly compensation



NOTE. The data are quarterly and extend through 2003:Q4. For nonfarm compensation, change is over four quarters; for the employment cost index (ECI), change is over the twelve months ending in the last month of each quarter. Nonfarm compensation is for the nonfarm business sector; the ECI is for private industry excluding farm and household workers.

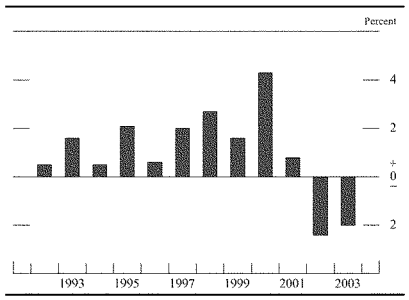
In 2003, the employment cost index (ECI) for private nonfarm businesses, which is based on a survey conducted quarterly by the Bureau of Labor Statistics, rose 4 percent—about ¾ percentage point more than the increase in 2002. Compensation per hour in the nonfarm business sector, which is based on data constructed for the NIPA, is estimated to have increased 3¼ percent in 2003, up from 1½ percent in 2002. In recent years, the NIPA-derived series has shown much wider fluctuations in hourly compensation than the ECI, in part because it includes the value of stock option exercises, which are excluded from the ECI. The value of options exercised shot up in 2000 and then dropped over the next two years.

Most of the acceleration in hourly compensation in 2003 was the result of larger increases in the costs of employee benefits. The ECI for wages and salaries rose 3 percent—up slightly from the pace in 2002 but still well below the rates of increase in the preceding six years. Wage gains last year likely were restrained by persistent slack in the demand for labor as well as by the pressure on employers to control overall labor costs in the face of the rapidly rising cost of benefits. Employer costs for benefits, which had risen 4¾ percent in 2002, climbed another 6½ percent in 2003. The cost of health insurance as measured by the ECI has been moving up at close to a double-digit rate for three consecutive years. In addition, in late 2002 and early 2003, employers needed to substantially boost their contributions to defined-benefit retirement plans to cover the declines in the market value of plan assets.

Prices

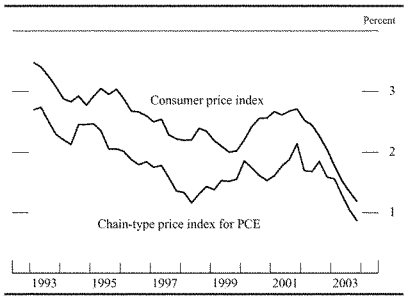
Headline consumer price inflation in 2003 was maintained by an acceleration in food prices and another sizable increase in energy prices, but core rates of inflation fell for a second year. Although the strong upturn in economic activity in the second half of last year began to reduce unemployment and to boost industrial utilization rates,

Change in unit labor costs



NOTE. Nonfarm business sector.

Change in consumer prices excluding food and energy

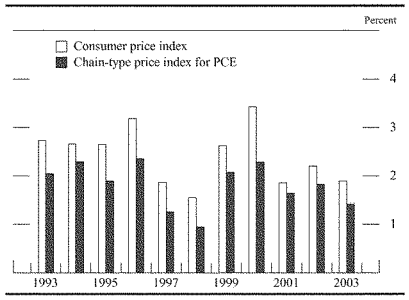


NOTE. Change is over four quarters, and the data extend through 2003:Q4.

considerable slack in labor and product markets continued to restrain inflation throughout the year. A further moderation in the costs of production also helped to check inflation: As a result of another rapid rise in productivity, businesses saw their unit labor costs decline in 2003 for a second consecutive year. In contrast, prices for imported goods excluding petroleum, computers, and semiconductors increased at about the same rate as prices more generally; between 1996 and 2002, these import prices fell relative to overall prices for personal consumption expenditures (PCE). The chain-type price index for PCE excluding food and energy rose just under 1 percent in 2003, about 3/4 percentage point less than in 2002. A broader measure of inflation, the chain-type price index for GDP, increased 1 1/2 percent in 2003, the same slow pace as in 2002. Both measures of inflation were roughly a percentage point lower than in 2001.

Consumer energy prices fluctuated widely over the four quarters of 2003, and the PCE index for energy was up 7 1/4 percent over the period. In the first quarter of the year, the combination of a further rise in the cost of crude oil, increased wholesale margins for gasoline, and unusually tight supplies of natural gas pushed up consumer energy prices sharply. Although the prices of petroleum-based products turned down when the price of crude oil fell back in March, a number of supply disruptions in late summer resulted in another temporary run-up in the retail price of gasoline. In the spring, the price of natural gas began to ease as supplies improved, but it remained high relative to the level in recent years. Electricity prices also moved up during 2003, in part because of the higher input costs of natural gas. In January 2004, a cold wave in the Northeast, together with the rise in the price of crude oil since early December, once again led to spikes in the prices of gasoline and natural gas.

Change in consumer prices



The PCE price index for food and beverages increased 2 3/4 percent in 2003 after having risen just 1 1/4 percent a year earlier. Much of the acceleration can be traced to strong demand for farm products, but prices paid by consumers for food away from home—which depend much more heavily on the cost of labor than on prices of food products—were up 3 percent in 2003, also somewhat more than overall consumer price inflation. Poor harvests abroad, especially in Europe, contributed importantly to the heightened demand for U.S. farm products. Thus, despite a bumper crop of corn and some other grains in the United States, world stocks were tight and prices remained high. In addition, the U.S. soybean crop was crimped by late-season heat and dryness, which further tightened world supplies. Concerns about the cases of mad cow disease that were identified in herds in Japan and Canada supported strong domestic and export demand for U.S. beef for most of last year while supplies edged down. But, at year-end, when a case of mad cow

Alternative measures of price change

Percent

Price measure	2001	2002	2003
Chain-type			
Gross domestic product	2.4	1.4	1.5
Gross domestic purchases	1.6	1.7	1.6
Personal consumption expenditures	1.6	1.8	1.4
Excluding food and energy	2.1	1.6	.9
Chained CPI	1.5	1.8	1.4
Excluding food and energy	2.1	1.6	.6
Fixed-weight			
Consumer price index	1.8	2.2	1.9
Excluding food and energy	2.7	2.1	1.2

Note. Changes are based on quarterly averages and are measured to the fourth quarter of the year indicated from the fourth quarter of the preceding year.

disease was discovered in a domestic herd, export demand for U.S. beef plunged and drove the price of live cattle down sharply. A portion of the drop in cattle prices likely will show through to consumer prices for beef early this year.

The decline in core inflation in 2003 was broadly based. Prices of core consumer goods fell somewhat faster than a year earlier; the declines were led by larger cuts in prices of apparel, motor vehicles, electronic equipment, and a variety of other durable goods. At the same time, prices of non-energy services rose less rapidly. The deceleration in core consumer prices measured by the CPI is somewhat greater than that measured by the PCE index. In each index, the costs of housing services to tenants and owners rose less in 2003 than in 2002, but because these costs receive a larger weight in the CPI, their slowing contributed a greater amount to the CPI's deceleration. In addition, the different measurement of the prices of medical services in the two series contributed to the smaller deceleration in non-energy services in the PCE. The medical services component of the CPI, which measures out-of-pocket expenses paid by consumers, increased 4 percent in 2003, down from 5½ percent a year earlier. Alternatively, the PCE for medical services is a broader measure that uses producer price indexes (PPI) to capture the costs of services provided by hospitals and doctors; it continued to increase more slowly than the CPI for medical services last year, 3¼ percent, but it was up slightly from its increase of 2½ percent in 2002.

Survey measures of expected inflation were little changed, on balance, in 2003. According to the Federal Reserve Bank of Philadelphia's survey of professional forecasters, expectations for CPI inflation ten years ahead remained at 2½ percent last year. As measured by the Michigan Survey Research Center survey of households, median five- to ten-year inflation expectations, which averaged 3 percent in 2001, were steady at 2¾ percent in 2003 for a second consecutive year. Inflation compensation as measured by the spread between the yield on nominal Treasury securities and their indexed counterparts varied over a wide range in 2003, settling at just under 2½ percent at year-end. Shorter-term inflation expectations also posted some wide swings during 2003; year-ahead expectations in the Michigan SRC survey spiked early in the year with the sharp increase in energy prices and dipped briefly to an unusually low level at midyear as actual inflation eased in response to lower energy prices. However, year-ahead inflation expectations settled back to just over 2½ percent at the end of the year, about the same as at the end of 2002.

The PPI for crude materials excluding food and energy products, which had dropped 10 percent in 2001, rose 11¾ percent in 2002 and another 17½ percent in 2003. The upswing was driven by the pickup in demand associated with the acceleration in both domestic and worldwide industrial activity and by the pass-through of higher energy costs. Such wide cyclical swings in commodity prices have only a small effect on movements in the prices of intermediate and finished goods. At later stages of production and distribution, commodity costs represent only a small share of overall costs, and some portion of the change in commodity prices tends to be absorbed in firms' profit margins. Thus, the recent pickup in prices at the intermediate stage of processing has been more muted; after having fallen almost 1½ percent in 2001, the PPI for core intermediate materials rose 1¼ percent in 2002 and 2 percent in 2003.

U.S. Financial Markets

On balance, financial market conditions became increasingly supportive of growth over 2003 as investors became more assured that the economy was on solid footing. Equity prices marched up after the first quarter of the year in response to the initiation and swift conclusion of major combat operations in Iraq, positive earnings reports, and—in the second half of the year—a stronger pace of economic growth. Risk spreads on corporate debt declined, with the spreads on the debt of both investment-grade firms and speculative-grade firms ending 2003 at their lowest levels since 1998. Thus, although Treasury coupon yields ended the year 30–40 basis points higher, yields on many corporate bonds ended the year lower. Commercial banks appeared somewhat slower than bond investors to lend at more favorable terms; nevertheless, by late in the year, banks had eased both standards and terms on C&I loans.

Demand for short-term debt, however, remained very weak, and business loans and outstanding commercial paper continued to run off. In response to a widening budget deficit and a rapid expansion of federal debt, the Treasury increased the frequency of its debt auctions. Declines in mortgage interest rates over the first half of

Interest rates on selected Treasury securities

NOTE. The data are daily and extend through February 4, 2004.

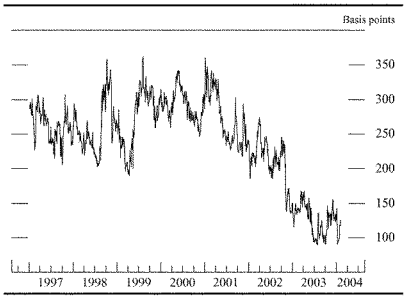
the year led to an extraordinary increase in mortgage debt, as originations for home purchase and for refinancings both climbed to record levels.

Interest Rates

Interest rates fell for most of the first half of 2003, primarily in response to continuing weak economic data and an associated marking down of expectations for the federal funds rate. Global uncertainty ran high, particularly surrounding the timing of military intervention in Iraq, which elevated safe-haven demands and depressed yields on Treasury securities. Moreover, the weak March employment report and other disappointing news about economic activity seemed to cause a substantial shift in views about monetary policy. Data from the federal funds futures market suggested a significant probability of a further easing of policy and did not imply any tightening before early 2004. Even as geopolitical tensions eased, weaker-than-expected economic data continued to hold down Treasury yields. The FOMC's statement following its May meeting that an "unwelcome fall in inflation" remained a risk reinforced the notion that monetary policy would stay accommodative, and, indeed, judging from market quotes on federal funds futures, market participants anticipated further easing. Mortgage rates followed Treasury yields lower, precipitating a huge surge of mortgage refinancing. To offset the decline in the duration of their portfolios stemming from the jump in prepayments, mortgage investors reportedly bought large quantities of longer-dated Treasuries, amplifying the fall in yields. Interest rates on corporate bonds also declined in the first half of the year, prompting many firms to issue long-term debt to pay down other, more expensive forms of debt and build up cash assets. Growing confidence that the frequency and severity of corporate accounting scandals were waning likely contributed to the narrowing in risk spreads. By the end of spring, default rates on corporate bonds had begun to decline, and corporate credit quality appeared to stabilize.

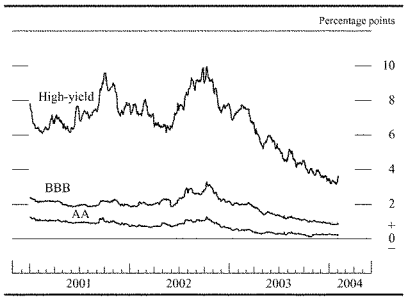
By the time of the June FOMC meeting, federal funds futures data implied that market participants had generally come to expect an aggressive reduction in the target federal funds rate, so the Committee's decision to lower the target rate by only 25 basis points came as a surprise to some. In addition, some investors were reportedly disappointed that the statement following this meeting included no mention of "unconventional" monetary policy actions that would be aimed at lowering longer-term yields more directly than through changes in the federal funds rate target alone. As a result, market interest rates backed

Implied volatility of short-term interest rates



NOTE. The data are daily and extend through February 4, 2004. The series shown is the implied volatility of the three-month eurodollar rate over the coming four months, as calculated from option prices.

Spreads of corporate bond yields over the ten-year Treasury yield



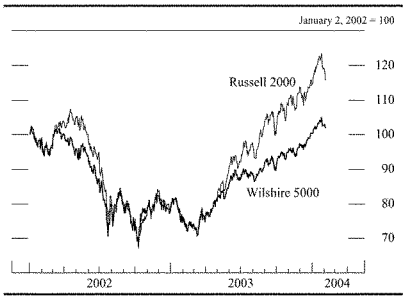
NOTE. The data are daily and extend through February 4, 2004. The spreads compare the yields on the Merrill Lynch AA, BBB, and 175 high-yield indexes with the yield on the ten-year off-the-run Treasury note.

up, with the move probably amplified by the unwinding of mortgage-related hedging activity. The Chairman's monetary policy testimony in July, and the FOMC's statements at subsequent meetings that noted that policy could remain accommodative for "a considerable period," apparently provided an anchor for the front end of the yield curve. At the same time, increasingly positive economic reports bolstered confidence in the markets, and longer-dated Treasury securities ended the year about 40 basis points above their year-earlier levels. But, with the expansion evidently gaining traction and investors becoming more willing to take on risk, corporate risk spreads, particularly those on speculative-grade issues, continued to fall over the second half of the year. Treasury yields fell early in 2004, largely in response to the weaker-than-expected December labor market report. After the release of the Committee's statement following its January meeting, Treasury yields backed up a bit as futures market prices implied an expectation of an earlier onset of tightening than had been previously anticipated.

Equity Markets

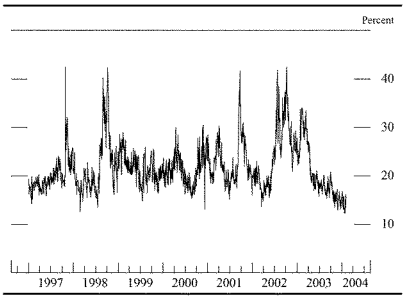
Broad equity price indexes ended the year 25 percent to 30 percent higher. Early in the year, stock prices were buffeted by mixed news about the pace of economic expansion and by heightened geopolitical tensions. Rising oil prices boosted the shares of energy companies very early in the year while, by and large, stocks in other sectors were stumbling. By spring, however, positive news on corporate earnings—often exceeding expectations—and easing of geopolitical tensions associated with the initiation of military action in Iraq boosted equity prices significantly. Subsequently, the swift end to major combat operations in Iraq caused implied volatility on the S&P 500 index to fall substantially. Over the rest of the year, increasingly positive earnings results contributed to a sustained rally in stock prices, and implied volatility in equity markets fell further. Corporate scandals—albeit on a smaller scale than in previous years—continued to emerge in 2003, but these revelations appeared to leave little lasting imprint on broad measures of stock prices. For the year as a whole, the Russell 2000 index of small-cap stocks and the technology-laden Nasdaq composite index, which rose 45 percent and 50 percent, respectively, noticeably outpaced broader indexes. To date in 2004, equity markets have continued to rally.

Major stock price indexes



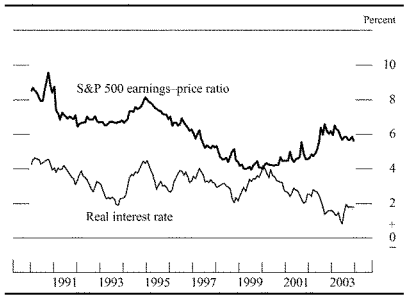
NOTE. The data are daily and extend through February 4, 2004.

Implied S&P 500 volatility



NOTE. The data are daily and extend through February 4, 2004. The series shown is the implied volatility of the S&P 500 stock price index as calculated from the prices of options that expire over the next several months.
SOURCE. Chicago Board Options Exchange.

S&P 500 forward earnings–price ratio and the real interest rate



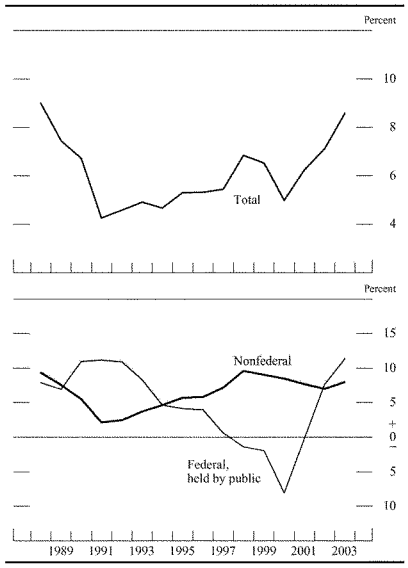
NOTE. The data are monthly and extend through December 2003. The forward earnings–price ratio is based on I/B/E/S consensus estimates of earnings over the coming year. The real interest rate is estimated as the difference between the ten-year Treasury rate and the expected ten-year inflation rate reported in the survey by the Federal Reserve Bank of Philadelphia.

With the sustained rise in stock prices, the ratio of expected year-ahead earnings to stock prices for firms in the S&P 500 edged down over 2003. The gap between this ratio and the real ten-year Treasury yield—a crude measure of the equity risk premium—narrowed a bit over the course of the year, though it remains in the upper part of the range observed over the past two decades.

Debt and Financial Intermediation

Aggregate debt of the domestic nonfinancial sectors is estimated to have increased about 8¼ percent in 2003, just over a percentage point faster than in 2002. Federal debt accelerated sharply, rising 11 percent, owing to the larger budget deficit. Household debt rose almost as rapidly, and the increase in state and local government debt also was substantial. In contrast, business borrowing remained subdued last year.

Change in domestic nonfinancial debt

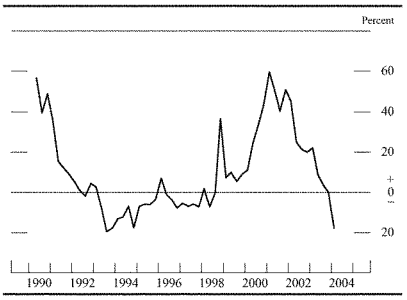


NOTE. For 2003, change is from 2002:Q4 to 2003:Q3 at an annual rate. For earlier years, the data are annual and are computed by dividing the annual flow for a given year by the level at the end of the preceding year. The total consists of nonfederal debt and federal debt held by the public. Nonfederal debt consists of the outstanding credit market debt of state and local governments, households, nonprofit organizations, and nonfinancial businesses. Federal debt held by the public excludes securities held as investments of federal government accounts.

In the business sector, investment spending, particularly in the beginning of the year, was mainly financed with internal funds, limiting, though not eliminating, businesses' need to increase debt. With long-term rates falling through midyear and credit spreads—especially for riskier borrowers—narrowing, corporate treasurers shifted their debt issuance toward bond financing and away from shorter-term debt. Household borrowing also shifted in response to lower longer-term rates. Mortgage rates followed Treasury rates lower in the spring, and mortgage originations for both home purchases and refinancings surged. Refinancing activity appears to have held down growth of consumer credit as households extracted equity from their homes and used the proceeds, in part, to pay down higher-cost consumer debt. Nevertheless, consumer credit posted a moderate advance in 2003, buoyed by heavy spending on autos and other durables. A substantial widening of the federal deficit forced the Treasury to increase its borrowing significantly. To facilitate the pickup in borrowing, the Treasury altered its auction cycle to increase the frequency of certain issues and reintroduced the three-year note.

Depository credit rose 6 percent in 2003 and was driven by mortgage lending and the acquisition of mortgage-backed securities by both banks and thrift institutions. Consumer lending also was substantial, as lower interest rates and auto incentives spurred spending on durable goods. In contrast, business loans fell 7¼ percent over 2003, a drop similar to the runoff in 2002. Survey evidence suggests that the decline in business lending at banks was primarily the result of decreased demand

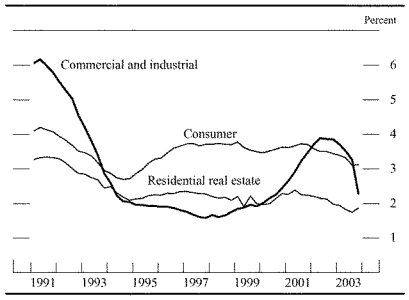
Net percentage of domestic banks tightening standards on commercial and industrial loans to large and medium-sized firms



NOTE. The data are based on a survey generally conducted four times per year; the last reading is from the January 2004 survey. Large and medium-sized firms are those with annual sales of $50 million or more. Net percentage is the percentage reporting a tightening less the percentage reporting an easing.

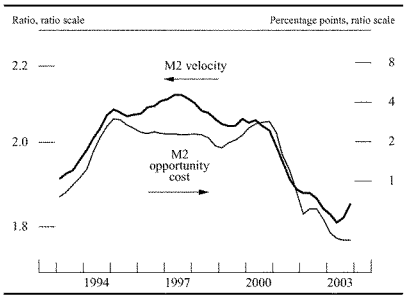
SOURCE. Federal Reserve Senior Loan Officer Opinion Survey on Bank Lending Practices.

Delinquency rates on selected types of loans at banks



NOTE. The data, from bank Call Reports, are quarterly, seasonally adjusted, and extend through 2003:Q4.

M2 velocity and opportunity cost



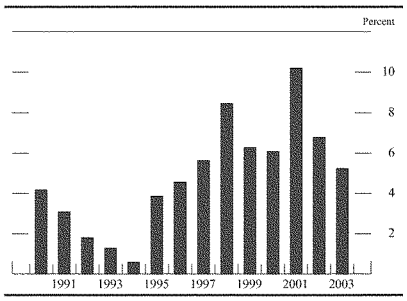
NOTE. The data are quarterly and extend through 2003:Q4. The velocity of M2 is the ratio of nominal gross domestic product to the stock of M2. The opportunity cost of holding M2 is a two-quarter moving average of the difference between the three-month Treasury bill rate and the weighted average return on assets included in M2.

for these loans, with respondent banks often citing weak investment and inventory spending. Moreover, the contraction was concentrated at large banks, whose customers tend to be larger corporations that have access to bond markets, and the proceeds of bond issuance were apparently used, in part, to pay down bank loans. The January 2004 Senior Loan Officer Opinion Survey reported a pickup in business loan demand arising mainly from increased spending on plant and equipment and on inventories. Supply conditions apparently played a secondary role in the weakness in business loans in 2003. Banks tightened standards and terms on business loans somewhat in the first half of the year, but by year-end they had begun to ease terms and standards considerably, in part because of reduced concern about the economic outlook.

The M2 Monetary Aggregate

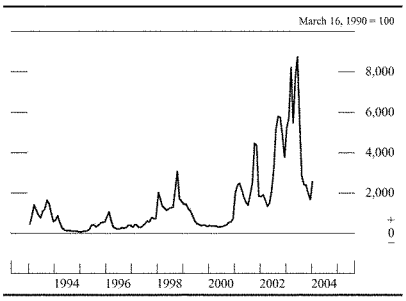
M2 increased 5 1/4 percent in 2003, a pace somewhat slower than in 2002 and a bit below the rate of expansion of nominal income. The deceleration in M2 largely reflected a considerable contraction in the final quarter of the year after three quarters of rapid growth. The robust growth in money around midyear was concentrated in liquid deposits and likely resulted in large part from the wave of mortgage refinancings, which tend to boost M2 as the proceeds are temporarily placed in non-interest-bearing accounts pending disbursement to the holders of mortgage-backed securities. Moreover, around the middle of the year, the equity that was extracted from home values during refinancings probably provided an

M2 growth rate



NOTE. M2 consists of currency, travelers checks, demand deposits, other checkable deposits, savings deposits (including money market deposit accounts), small-denomination time deposits, and balances in retail money market funds.

Mortgage refinancing application index



NOTE. The data are monthly and extend through January 2004.
SOURCE. Mortgage Bankers Association.

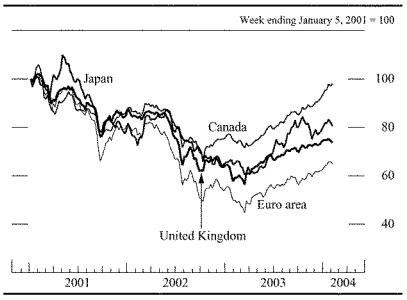
additional boost to deposits for a time, as households temporarily parked these funds in M2 accounts before paying down other debt or spending them. In the fourth quarter, M2 contracted at an annual rate of 2 percent, the largest quarterly decline since consistent data collection began in 1959. As mortgage rates backed up and the pace of refinancing slowed, the funds that had been swelling deposits flowed out, depressing M2. The sustained rally in equity markets after the first quarter of the year may also have slowed M2 growth, as expectations of continued higher returns led households to shift funds from M2 assets to equities, a view reinforced by the strong flows into equity mutual funds.

International Developments

Economic growth abroad rebounded in the second half of last year as factors that weighed on the global economy in the first half—including the SARS epidemic and uncertainty surrounding the war in Iraq—dissipated. Foreign growth also was boosted by the strong rebound in the U.S. economy, the revival of the global high-tech sector, and, in many countries, ample policy stimulus.

Strong second-half growth in China stimulated activity in other emerging Asian economies and Japan by raising the demand for their exports. Growth in Japan also was spurred by a recovery in private spending there on capital goods. Economic activity in Europe picked up in the second half, as export growth resumed. Economic growth in Latin America has been less robust; the Mexican economic upturn has lagged that of the United States, and Brazil's economy has only recently begun to recover from the effects of its 2002 financial crisis.

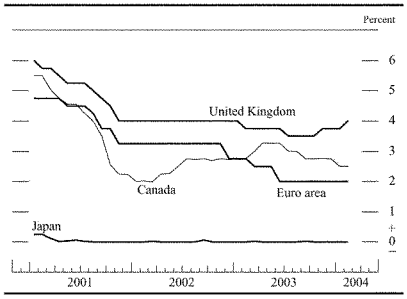
Equity indexes in selected foreign industrial countries



NOTE. The data are weekly. The last observations are the average of trading days through February 4, 2004.

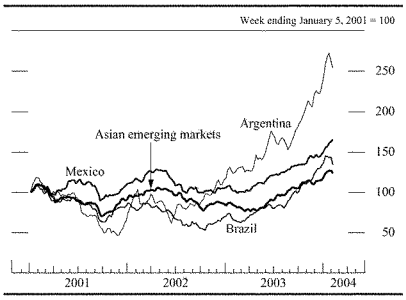
Monetary authorities abroad generally eased their policies during the first half of 2003 as economic activity stagnated. In the second half, market participants began to build in expectations of eventual monetary tightening abroad, and official interest rates were raised by year-end in the United Kingdom and Australia. Canadian monetary policy followed a different pattern; the Bank of Canada raised official interest rates in the spring as inflation moved well above its 1 percent to 3 percent target range but cut rates later in the year and again early this year as slack emerged and inflation moderated. Similarly, lower inflation in Mexico and Brazil allowed authorities to ease monetary policy during 2003. The Bank of Japan maintained official interest rates near zero and continued to increase the monetary base.

Official interest rates in selected foreign industrial countries



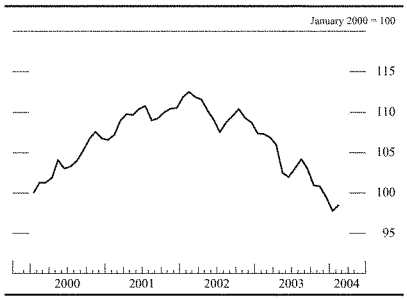
NOTE. The data are as of month-end; the last observations are for February 5, 2004, when the Bank of England raised its official rate. The data shown are the call money rate for Japan, the overnight rate for Canada, the refinancing rate for the euro area, and the repurchase rate for the United Kingdom.

Equity indexes in selected emerging markets



NOTE. The data are weekly. The last observations are the average of trading days through February 4, 2004. Asian emerging markets are China, Hong Kong, India, Indonesia, Malaysia, Pakistan, the Philippines, Singapore, South Korea, Taiwan, and Thailand.

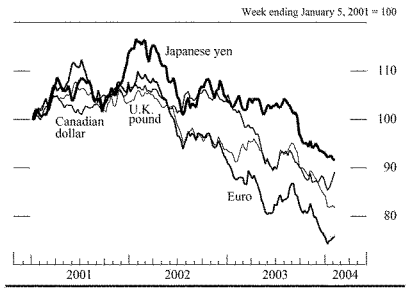
U.S. dollar nominal exchange rate, broad index



NOTE. The data are monthly and are in foreign currency units per dollar. The last observation is the average of trading days through February 4, 2004. The broad index is a weighted average of the foreign exchange values of the U.S. dollar against the currencies of a large group of major U.S. trading partners. The index weights, which change over time, are derived from U.S. export shares and from U.S. and foreign import shares.

In foreign financial markets, equity prices fell, on average, until mid-March but since then have risen in reaction to indications of stronger-than-expected global economic activity. Emerging-market equity indexes outpaced those in the industrial countries in 2003, with markets in Latin America posting particularly strong gains. Around midyear, long-term interest rates declined to multiyear lows in many countries as economic growth slowed and inflationary pressures diminished, but those rates moved higher in the second half as growth prospects improved. Bond spreads came down substantially during the year, both for industrial-country corporate debt and for emerging-market sovereign debt; spreads of the J.P. Morgan Emerging Market Bond Index (EMBI+) over U.S. Treasury securities fell to their lowest levels since before the Russian crisis of 1998. Gross capital flows to emerging markets, however, remained well below their 1997 peak.

U.S. dollar exchange rate against selected major currencies



NOTE. The data are weekly and are in foreign currency units per dollar. Last observations are the average of trading days through February 4, 2004.

The foreign exchange value of the dollar continued to decline last year as concerns over the financing of the large and growing U.S. current account deficit took on greater prominence. The dollar declined 18 percent against the Canadian dollar, 17 percent against the euro, and 10 percent against the British pound and the Japanese yen. In contrast, the value of the dollar was little changed, on net, against the currencies of our other important trading partners, in part because officials of China and of some other emerging Asian economies managed their exchange rates so as to maintain stability in terms of the dollar. Among Latin American currencies, the dollar declined against the Brazilian and Argentine currencies but appreciated against the Mexican peso. On balance, the dollar depreciated 9 percent during 2003 on a trade-weighted basis against the currencies of a broad group of U.S. trading partners.

Industrial Economies

The euro-area economy contracted in the first half of 2003, weighed down in part by geopolitical uncertainty and higher oil prices. In the second half, economic activity in the euro area began to grow as the global pickup in activity spurred a recovery of euro-area exports despite the continued appreciation of the euro. The monetary policy of the European Central Bank (ECB) was supportive of growth, with the policy interest rate lowered to 2 percent by midyear. Consumer price inflation slowed to around 2 percent, the upper limit of the ECB's definition of price stability. Despite increased economic slack, inflation moved down only a little, partly because the summer drought boosted food prices. For the second straight year, the governments of Germany and France each recorded budget deficits in excess of the 3 percent deficit-to-GDP limit specified by the Stability and Growth Pact. However, in light of economic conditions, European Union finance ministers chose not to impose sanctions.

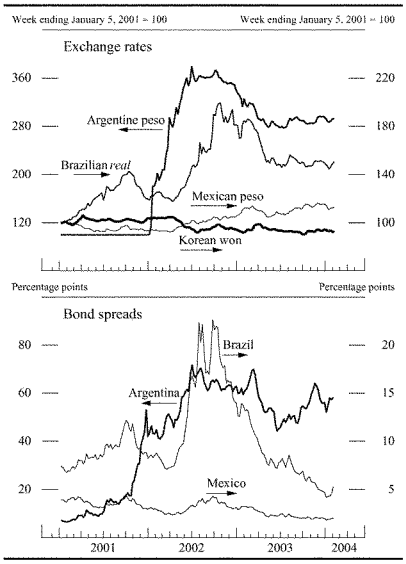
After a sluggish first quarter, the U.K. economy expanded at a solid pace for the remainder of 2003, supported by robust consumption spending and considerable government expenditure. The Bank of England cut rates in the first half of the year but reversed some of that easing later in the year and early this year as the economy picked up and housing prices continued to rise at a rapid, albeit slower, pace. In June, the British government

announced its assessment that conditions still were not right for the United Kingdom to adopt the euro. In December, the British government changed the inflation measure to be targeted by the Bank of England from the retail prices index excluding mortgage interest (RPIX) to the consumer prices index. U.K. inflation currently is well below the objective of 2 percent on the new target index.

The Canadian economy contracted in the second quarter owing to the impact of the SARS outbreak in Toronto on travel and tourism, but it rebounded in the latter half of the year. Canadian economic growth continued to be led by strong domestic demand; consumption remained robust and investment spending accelerated, offsetting the negative effect of Canadian dollar appreciation on both exports and import-competing industries. Canadian consumer price inflation swung widely last year, rising to 4 1/2 percent on a twelve-month basis in February before falling to 1 1/2 percent in November and ending the year at 2 percent. The swing partly reflected movements in energy prices, but changes in auto insurance premiums and cigarette taxes also played an important role.

Japanese real GDP recorded significant growth in 2003 for the second straight year. Private investment spending made the largest contribution to the expansion. Consumer spending remained sluggish as labor market conditions continued to be soft. However, nominal wages stabilized following a sharp drop in 2002, and leading indicators of employment moved higher. Despite an appreciation of the yen late in the year, Japanese exports posted a strong increase in 2003 primarily because of gains in exports to China and other emerging Asian economies. With consumer prices continuing to decline, the Bank of Japan (BOJ) maintained its policy interest rate near zero and eased monetary policy several times during 2003 by increasing the target range for the outstanding balance of reserve accounts held by private financial institutions at the BOJ. The BOJ also took other initiatives last year to support the Japanese economy, including launching a program to purchase securities backed by the assets of small- and medium-sized enterprises. Japanese banks continued to be weighed down by large amounts of bad debt, but some progress was made in resolving problems of insufficient bank capital and in reducing bad-debt levels from their previous-year highs.

U.S. dollar exchange rates and bond spreads for selected emerging markets



NOTE. The data are weekly averages. Last observations are the average of trading days through February 4, 2004. Exchange rates (top panel) are in foreign currency units per dollar. Bond spreads (bottom panel) are the spreads of the J.P. Morgan Emerging Market Bond Index (EMBI+) over U.S. Treasury securities.

Emerging-Market Economies

Growth in the Asian developing economies rebounded sharply in the second half of 2003 after having contracted in the first half. The outbreak of SARS in China and its spread to other Asian economies was the primary factor depressing growth in the first half, and the subsequent recovery of retail sales and tourism after the epidemic was contained was an important factor in the sharp rebound. The pattern of Asian growth also reflected the sharp recovery of the global high-tech sector in the second half after a prolonged period of weakness. Exports continued to be the main engine of growth for the region. However, domestic demand contributed importantly to growth in China, where state-sector investment increased at a rapid clip and a boom in construction activity continued. Supply problems caused food prices and overall consumer prices in China to rise on a twelve-month basis last year, following a period of price deflation during the previous year. In addition, concerns emerged that some sectors of the Chinese economy, particularly the property markets in Beijing and Shanghai, may be overheating.

Korean economic growth turned negative in the first half, as the high level of household debt, labor unrest, and concerns over North Korea's nuclear development depressed private-sector spending. A sharp rise in exports

spurred a revival of growth in the second half even as domestic demand remained subdued.

The Mexican economy remained sluggish through much of the year but recently has shown some signs of improvement. After lagging the rise in U.S. production, Mexican industrial production posted strong gains in October and November, although it remains well below the peak it reached in 2000. Exports rose late last year to almost the peak they had reached in 2000. Consumer price inflation came down over the course of 2003 to 4 percent, the upper bound of the 2 percent to 4 percent target range. The Bank of Mexico has left policy unchanged since tightening five times between September 2002 and March 2003, but market interest rates have fallen owing to weakness in economic activity.

The Brazilian economy contracted in the first half of 2003 partly as a result of the 2002 financial crisis and the consequent monetary policy tightening. It then expanded moderately in the second half, boosted by strong export growth and a recovery in investment spending. Brazilian financial indicators improved significantly in 2003, in part because the Brazilian government began to run a substantial primary budget surplus and to reform the public-sector pension system. The Brazilian stock market soared nearly 100 percent last year, and Brazil's EMBI+ bond spread narrowed by nearly two-thirds. As the Brazilian currency stabilized and began to appreciate, Brazil's inflation outlook improved, allowing the central bank to reverse fully its earlier rate hikes and to reduce the overnight interest rate to a multiyear low, although real interest rates remained high.

The Argentine economy rebounded in 2003 from the sharp contraction that occurred in the wake of its financial crisis in 2001–02. Still, economic activity remains far below pre-crisis levels, and many of Argentina's structural problems have not been addressed. With the government still in default to its bondholders, the country's sovereign debt continued to carry a very low credit rating, and its EMBI+ spread remained extremely high. Even so, the Argentine peso appreciated on balance in 2003, and the Merval stock index nearly doubled over the course of the year.