

**FEDERAL RESERVE'S SECOND MONETARY POLICY
REPORT FOR 1997**

HEARING
BEFORE THE
COMMITTEE ON
BANKING, HOUSING, AND URBAN AFFAIRS
UNITED STATES SENATE
ONE HUNDRED FIFTH CONGRESS

FIRST SESSION

ON

**OVERSIGHT ON THE MONETARY POLICY REPORT TO CONGRESS PURSU-
ANT TO THE FULL EMPLOYMENT AND BALANCED GROWTH ACT OF
1978**

JULY 23, 1997

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FEDERAL RESERVE'S SECOND MONETARY POLICY REPORT FOR 1997

WEDNESDAY, JULY 23, 1997

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

The Committee met at 10:05 a.m., in room SD-538 of the Dirksen Senate Office Building, Senator Alfonse M. D'Amato (Chairman of the Committee) presiding.

OPENING STATEMENT OF CHAIRMAN ALFONSE M. D'AMATO

The CHAIRMAN. The Committee will come to order.

The Committee is pleased to welcome Chairman Greenspan this morning to hear the Federal Reserve's semiannual report to Congress on our Nation's economy.

Chairman Greenspan, *Money* magazine reports that there was a story circulating on Wall Street, and I think it illustrates the magnificent gift that you have at times with respect to obfuscation. Apparently, the report goes that you actually proposed marriage to your wife, Andrea Mitchell, early on when you first met her. I will remind those who are not aware of the fact that you actually dated your wife for a number of years, and the actual marriage didn't occur until a few months ago. It seems that it took Andrea all those years to decipher that you had, in fact, proposed marriage.

[Laughter.]

I think it takes a number of us quite awhile to analyze and to fully appreciate the extent of your remarks.

But let me say this, if I might. I think there is one thing that is very clear and one thing that you have never wavered on, and that is that the Congress of the United States has its job to do, as it relates to getting spending under control and to seeing to it that we work to achieve a balanced budget. We must put our house in order not only for the short term but also for the long term, and that the markets do look at that.

Mr. Chairman, under your stewardship, I believe that you have brought equanimity to the marketplace, as it relates to the policies and the programs that you have implemented.

There have been those who over the years have been rather critical and have been ready to assail you and the Federal Reserve's policy whenever they disagreed with respect to interest rates thinking that that was the panacea for everything.

You have had a steady hand at the tiller, you have navigated through some very difficult seas and we are deeply appreciative.

And I think all of my colleagues share that opinion of your continued leadership.

Mr. Chairman, I am going to ask all of my colleagues to try to keep their remarks to a minimum so we can hear from you because usually it is about 2 hours of listening to ourselves, and we never get to really hear from you.

But we are deeply appreciative of your being here.

Senator Shelby.

OPENING COMMENTS OF SENATOR RICHARD C. SHELBY

Senator SHELBY. Mr. Chairman, heeding your request, I will be short in my remarks.

Chairman Greenspan, I want to again welcome you to the Committee and I want to thank you and the members of the Federal Reserve Board for your diligent pursuit of price stability.

I am very pleased to know, and I've always thought this, that the Board is very aware of the economic conditions and price pressures, and I am concerned with the potential effects of efforts to publicly question and criticize the Federal Reserve Board on its recent increase in the Federal funds rate of 25 basis points.

The Chairman alluded to that.

Such efforts, I believe, set a dangerous precedent and only serve to politicize the Federal Reserve which we should never, never do.

I believe price stability is dependent on central bank independence. I can only hope, Chairman Greenspan, that critics of the recent rate increase realize that the yield on the long bond has decreased almost 50 basis points since the Fed funds hike, increasing the opportunities for families to purchase homes in America as well as existing homeowners to refinance, among other things.

I am convinced, Mr. Chairman, that the only reason we are witnessing the current economic expansion of 76 months and counting is because inflation has been held in check. After all, history has proven time and time again that the best way to truly encourage growth and output in the long run is to provide a monetary environment of low inflation.

That being said, Chairman Greenspan, I wish the Board continued success and we welcome you.

The CHAIRMAN. Thank you, Senator.

Senator Hagel.

OPENING COMMENTS OF SENATOR CHUCK HAGEL

Senator HAGEL. Mr. Chairman, thank you.

Chairman Greenspan, good morning, welcome. I do have a brief statement that I will submit for the record, Mr. Chairman, and add only that we once again welcome you and look forward to your testimony.

The CHAIRMAN. Thank you, Senator.

Senator Allard.

OPENING COMMENTS OF SENATOR WAYNE ALLARD

Senator ALLARD. Thank you, Mr. Chairman.

I just want to say that I am also looking forward to the Chairman's comments.

The CHAIRMAN. Thanks so much. This is an all-time record, just 10 minutes.

Senator Greenspan.

[Laughter.]

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

Chairman GREENSPAN. In light of that, I have a very extended written presentation which I will—

The CHAIRMAN. Mr. Chairman, let me say this to you. We really want you to take your time because we have saved an hour plus.

[Laughter.]

I want you to take as much time as you want and to stress the points that you think are important. I mean that very sincerely.

Chairman GREENSPAN. Thank you.

I have excerpted significantly from my prepared remarks and I request that the full remarks be inserted in the record.

The CHAIRMAN. So ordered.

Chairman GREENSPAN. Mr. Chairman and Members of the Committee, it's always a pleasure to appear here periodically to present the Federal Reserve's report on the economic situation and monetary policy.

The recent performance of the economy, characterized by strong growth and low inflation, has been exceptional—and better than most had anticipated.

Moreover, our Federal Reserve Banks indicate that economic activity is on the rise, and at a relatively high level, in virtually every geographic area and community of the Nation.

This strong expansion has produced a remarkable increase in work opportunities for Americans. A net of more than 13 million jobs has been created since the current period of growth began in the spring of 1991. As a consequence, the unemployment rate has fallen to 5 percent—its lowest level in almost a quarter century. To be sure, not all segments of our population are fully sharing in the economic improvement. Some Americans still have trouble finding jobs, and for part of our workforce real wage stagnation persists.

In contrast to the typical post-war business cycle, measured price inflation is lower now than when the expansion began and has shown little tendency to rebound of late, despite high rates of resource utilization.

With the economy performing so well for so long, financial markets have been buoyant, as memories of past business and financial cycles fade with time. Soaring prices in the stock market have been fueled by moderate long-term interest rates and expectations of investors that profit margins and earnings growth will hold steady, or even increase further, in a relatively stable, low-inflation environment.

The key questions facing financial markets and policymakers are what is behind the good performance of the economy, and will it persist. Many observers, including us, have been puzzled about how an economy, operating at high levels and drawing into employment increasingly less experienced workers, can still produce subdued and, by some measures even falling, inflation rates.

Certainly, public policy has played an important role. Administration and Congressional actions to curtail budget deficits have enabled long-term interest rates to move lower. Deregulation in a number of industries has fostered competition and has held down prices. Finally, the preemptive actions of the Federal Reserve in 1994 contained a potentially destabilizing surge in demand. But the fuller explanation of the recent extraordinary performance may, indeed, lie deeper.

In February 1996, I raised before this Committee the hypothesis tying together technological change and cost pressures that could explain what was even then a puzzling quiescence of inflation. The new information received in the last 18 months remains consistent with those earlier notions, but some additional pieces of the puzzle appear to be falling into place.

The surge in capital investment in high-tech equipment that began in early 1993 has since strengthened. Presumably companies have come to perceive a significant increase in profit opportunities from exploiting the improved productivity of the new technologies.

It is premature to judge definitively whether these business perceptions are the harbinger of a more general and persistent improvement in productivity. Although the anecdotal evidence is ample and manufacturing productivity has picked up, a change in the underlying trend is not yet reflected in our conventional data for the whole economy.

But even if the perceived quicker pace of application of our newer technologies turns out to be mere wheel-spinning rather than true productivity advance, it has brought with it a heightened sense of job insecurity and, as a consequence, subdued wage gains. As I pointed out here last February, polls indicated that despite the significant fall in the unemployment rate, the proportion of workers in larger establishments fearful of being laid off rose from 25 percent in 1991 to 46 percent in 1996.

To be sure, since last year, surveys have indicated that the proportion of workers fearful of layoff has stabilized and the number of voluntary job leavers has edged up. But the increases in the Employment Cost Index still trail behind what previous relationships to tight labor markets would have suggested, and a lingering sense of fear or uncertainty seems still to pervade the job market.

The combination in recent years of subdued compensation per hour and solid productivity advances has meant that unit labor costs of nonfinancial corporations have barely moved, damping inflationary pressures.

While accelerated technological change may well be an important element in solving the current economic puzzle, there have been other influences at play as well in restraining price increases at high levels of resource utilization, including the strong dollar, increasing globalization, deregulation, and changes in the health care industry.

Many of these forces are limited or temporary, and their effects can be expected to diminish, at which time cost and price pressures would tend to reemerge. The effects of an increased rate of technological change, however, might be more persistent.

When I discuss greater technological change, I am not referring primarily to a particular new invention. Instead, I have in mind

the increasingly successful and pervasive application of recent technological advances. Many of these technologies have been around for quite some time. Why might they be having a more pronounced effect now?

What we may be observing in the current environment is a number of key technologies, some even mature, finally interacting to create significant new opportunities for value creation. For example, the applications of the laser were modest until the later development of fiber optics engendered a revolution in telecommunications. Broad advances in software have enabled us to capitalize on the prodigious gains in hardware capacity. The interaction of both of these has created the Internet.

The accelerated synergies of the various technologies may be what has been creating the apparent significant new profit opportunities that presumably lie at the root of the recent boom in high-tech investment.

We do not now know, nor do I suspect can anyone know, whether current developments are part of a once or twice in a century phenomenon that will carry productivity trends nationally and globally to a new higher track, or whether we are merely observing some unusual variation within the context of an otherwise generally conventional business cycle expansion.

But whatever the trend in productivity and, by extension, overall sustainable economic growth, from the Federal Reserve's point of view, the faster the better. We see our job as fostering the degree of liquidity that will best support the most effective platform for growth to flourish. We believe a noninflationary environment is such a platform.

The Federal Reserve's policy problem is not with growth, but with maintaining an effective platform. To do so, we endeavor to prevent strains from developing in our economic system, which long experience tells us produce bottlenecks, shortages, and inefficiencies. In gauging the potential for oncoming strains, it is the effective capacity of the economy to produce that is important to us.

Capacity itself, however, is a complex concept which requires a separate evaluation of its two components, capital and labor. It appears that capital can adapt and expand more expeditiously than in the past to meet demands. Hence, capital capacity is now a considerably less rigid constrain than it once was.

In recent years, technology has engendered a significant compression of lead times between order and delivery for production facilities. This has enabled output to respond increasingly faster to an upsurge in demand, thereby decreasing the incidence of strains on capital capacity and shortages so evident in earlier business expansions.

Even so, today's economy as a whole still can face capacity constraints from its facilities. Indeed, just 3 years ago, bottlenecks in industrial production were putting significant upward pressures on prices at earlier stages of production. Although further strides toward greater facilities flexibility have occurred since 1994, this is clearly an evolutionary, not a revolutionary, process.

Moreover, technology and management changes have had only a limited effect on the ability of labor supply to respond to changes in demand. To be sure, individual firms have acquired additional

flexibility by increased use of out-sourcing and temporary workers. While these techniques put the right workers in the right spots to reduce bottlenecks, they do not increase the aggregate supply of labor. Labor capacity for an individual country is constrained by the size of the working-age population, which, except for immigration, is basically determined several decades in the past.

Of course, capital facilities and labor are not fully separate markets. Within limits, labor and capital are substitutes that despite significant increases in capital equipment in recent years, additions to labor supply have been inadequate to meet the demand for labor. As a consequence, the recent period has been one of significant reduction in labor market slack.

The key point is that continuously digging ever deeper into the available work-age population is not a sustainable trajectory for job creation. The rise in the average work week since early 1996 suggests employers are having increasingly greater difficulty fitting the millions who want a job into available job slots. If the pace of job creation continues, the pressures on wages and other costs of hiring increasing numbers of such individuals could escalate more rapidly.

Thus, there would seem to be emerging constraints on potential labor input. Even before we reach the ultimate limit of sustainable labor supply growth, the economy's ability to expand employment at the recent rate should rapidly diminish.

Fortunately, the very rapid growth of demand over the winter has eased recently and monetary policymakers forecast a continuation of less rapid growth in coming quarters. The pace of expansion is expected to keep the unemployment rate close to its current low level.

We anticipate that consumer prices will rise only $2\frac{1}{4}$ to $2\frac{1}{2}$ percent this year. The central tendency of the projections is that CPI inflation will be $2\frac{1}{2}$ to 3 percent in 1998—a little above the expectation for this year. However, much of this increase is presumed to result from the absence of temporary factors that are holding down inflation this year.

I have no doubt that the current stance of policy—characterized by a nominal Federal funds rate around $5\frac{1}{2}$ percent—will need to be changed at some point to foster sustainable growth and low inflation. Adjustments in the policy instrument in response to new information are a necessary and, I should like to emphasize, routine aspect of responsible policymaking. For the present, as I have indicated, demand growth does appear to have moderated, but whether that moderation will be sufficient to avoid putting additional pressures on resources is an open question. With considerable momentum behind the expansion and labor market utilization rates unusually high, the Federal Reserve must be alert to the possibility that additional action might be called for to forestall excessive credit creation.

The Federal Reserve is intent on gearing its policy to facilitate the maximum sustainable growth of the economy, but it is not, as some commentators have suggested, involved in an experiment that deliberately prods the economy to see how far and fast it will grow. The costs of a failed experiment would be too much of a burden for too many of our citizens.

The key question is how monetary policy can best foster the highest rate of sustainable growth and avoid amplifying swings in output, employment, and prices. The historical evidence is unambiguous that excessive creation of credit and liquidity contributes nothing to the long-term growth of our productive potential and much to costly shorter-term fluctuations.

Our objective has never been to contain inflation as an end in itself, but rather as a precondition for the highest possible long-run growth of output and income—the ultimate goal of macroeconomic policy.

The Federal Reserve recognizes, of course, that monetary policy does not determine the economy's potential. All that it can do is help establish sound money and a stable financial environment in which the inherent vitality of a market economy can flourish and promote the capital investment that, in the long run, is the basis for vigorous economic growth.

Similarly, other Government policies also have a major role to play in contributing to economic growth. A continued emphasis on market mechanisms through deregulation will help sharpen incentives to work, save, invest, and innovate. Also, a fiscal policy oriented toward limited growth and Government expenditures, producing smaller budget deficits and even budget surpluses, would tend to lower interest rates even further, also promoting capital investment. The recent experience provides striking evidence of the potential for the continuation and extension of monetary, fiscal, and structural policies to enhance our economy's performance in the period ahead.

Thank you, Mr. Chairman. I'm available for questions.

The CHAIRMAN. Thank you, Mr. Chairman.

Indeed, I want to say that performance far outstrips rhetoric, and the performance of the economy, the performance of real interest rates as it relates to the steps that the Federal Reserve has taken, demonstrates that you and the Federal Reserve have moved decisively in the right direction in demonstrating the very real concern for inflation. People understand it or are beginning to get the message.

I am going to ask everyone to please attempt to hold their questions to 5 minutes, so that everyone has an opportunity, and the Chairman will also operate under that.

Chairman Greenspan, in your last appearance here before this Committee, you and I discussed the possibility of permitting the Federal Reserve to pay interest on banks' required reserves. Last week, I received a letter and the background of that was the concern that banks were increasingly using retail sweep accounts designed to get around reserve requirements. Since banks do not earn any interest on reserves, the letter from the Federal Reserve said that required reserve balances had fallen by about \$19 billion as a result of the sweep accounts with reserves now only at \$9 billion.

I am pleased that your response expressed the Fed's support for legislation for authorizing the payment of interest on reserves. Your response further recommends allowing depository institutions to pay interest on demand deposits.

I would like to distribute this letter to my colleagues and indicate to them that hopefully we can move forward. I look forward to and

anticipate having hearings and working with you and the Federal Reserve in developing a legislative package.

As you say in your next to the last paragraph, "Allowing the Federal Reserve to pay interest on reserve balances would be a useful step, which we support." You go on to say, "To this end, we would support providing the Federal Reserve the ability to pay interest on required and excess reserve balances, at possibly differential rates to be set by the Federal Reserve. We would also recommend allowing depository institutions to pay interest on demand deposits, which would eliminate a price distortion and the wasteful use of resources to circumvent it."

That is very welcome news. I think it's going to be reflected in terms of banks not taking these extraordinary measures to attempt to maximize their incomes. In the long run, this will result in some very beneficial factors for consumers and others.

Let me ask you this. Why would it be desirable to pay interest on excess reserves? And would you expect to see any significant changes in the level of excess reserves, now averaging about a billion dollars, if the payment of interest is permitted?

Chairman GREENSPAN. It would give us greater control over monetary policy, and it is an effective tool which, in my judgment, while not a major issue, is something which would be helpful.

The CHAIRMAN. Do you anticipate that consumers and small businesses would benefit by permitting the payment of interest on reserves?

Chairman GREENSPAN. I would certainly say yes. First of all, let's remember that what we are discussing now is endeavoring to put into statute, something, which for all practical purposes, is moving into existence in any event. The sweep accounts technologies are so pervasive that within a short period of time, transaction balances that create the need for required reserves will be so pared as to mean that, for practical purposes, required reserves don't really exist. That would then require us to alter our monetary policy regime, which would enable us to function, but would create discontinuities in how we handle our whole function. While we obviously can do it if necessary, it is far better approached by recognizing what the nature of the problem is.

If we were to pay interest on required reserves, we clearly significantly alter the desire for individual institutions to create sweeps. If we also recognize that interest on demand deposits or transaction deposits, generally, is, in effect, being paid to many corporations, the other side of the sweep issue is technologies which enable all people to have interest-earning transaction deposits.

If you extend the number of checks which can be drawn on a nontransaction account, you eventually create a demand deposit. Indeed, the American Bankers Association very recently raised the numbers question and related issues, which emphasize that the technologies are changing. It is important to recognize that we, ourselves, in our regulations should not foster endeavors to go around obsolescent statutes.

I would very strongly urge the Congress to implement the legislation which you are contemplating, Mr. Chairman.

The CHAIRMAN. Let me thank you, Chairman Greenspan, for your responsiveness in providing such detail, because your letter is

over 20 pages of very thoughtful commentary as to how we should attempt to arrive at that position.

We look forward to working with you and your staff and the staff on both sides of the Committee. Hopefully in early September when we come back, we can hold hearings and see if we can't get some legislative action to deal with this, an action that would benefit the consumers, and, as you say, do away with this outmoded process.

The yellow light is on. I am going to hold all of our colleagues, including the Chairman, to that 5-minute rule, so that we can all get an opportunity to raise our questions with you.

Senator Sarbanes.

OPENING COMMENTS OF SENATOR PAUL S. SARBANES

Senator SARBANES. Thank you, Mr. Chairman.

Let me just pursue this subject for a minute. How much would it cost the Fed to pay interest on a reserve balance?

Chairman GREENSPAN. It depends on how one scores this, in the sense that as we see it at this stage, if nothing is done and, if we continue the existing process, there will be a continued erosion of reserve balances, so that the amount of revenues that will be achieved—

Senator SARBANES. Let's leave the erosion aside and use a static analysis. How much would it cost?

Chairman GREENSPAN. It's \$300 million now, and if we project—I don't know whether you want to call it a dynamic analysis—it gets down to about \$150 million annually.

Senator SARBANES. Does the Fed make a payment annually into the Treasury?

Chairman GREENSPAN. Yes, it makes a payment far more often than annually.

Senator SARBANES. Well, annually, how much do you pay into the Treasury?

Chairman GREENSPAN. It's roughly \$20 billion in total.

Senator SARBANES. Twenty billion?

Chairman GREENSPAN. I have forgotten the latest year, but that's what it's been averaging.

Senator SARBANES. Mr. Chairman, obviously, we need to hear from the Treasury about this.

The CHAIRMAN. Sure. OMB as well as the CBO in terms of the scoring.

Senator SARBANES. Chairman Greenspan, we are pleased to have you here again before the Committee.

Business Week, on May 19th, had an article, "How Long Can This Last?" Then it said, "Strong growth with little unemployment and low inflation doesn't have to peter out, here's why." And they then develop the case. Of course, 3 years ago, in fact, they had a whole issue devoted to why are we so afraid of growth? You and I have discussed that.

Then I notice that just last week, you're on the cover of *Business Week*. Actually, I must say that it's a very nice picture.

[Laughter.]

It's talking about how the Fed Chairman sees the new economy. Now, I assume that everything that was going to be said was said

yesterday, so people won't go tearing out of the room in order to get to the telephone to effect the market.

I guess we've done the market-effecting as of yesterday. There's certainly a lot of exuberance. Whether it's rational or irrational, I'll forebear from asking here this morning.

I want to pursue this question, though, of real interest. First, producer prices continue to decline; is that correct? In fact, we have had 6 consecutive months of decline in the Producer Price Index, something that's not been seen since 1949. Isn't it reasonable to assume that these declines in producer prices will feed into slower inflation at the consumer level?

Chairman GREENSPAN. Only in part. Remember, producer prices for finished goods, and they comprise both consumer goods and capital goods, among a number of other miscellaneous things. It's only the consumer goods part of that which tends to reflect itself in the goods part of the Consumer Price Index.

As you know, there's a rather significant services element within the Consumer Price Index. Indeed, the prices of services have been rising at a somewhat faster pace, albeit a relatively slow pace, than goods price inflation. So a goodly part of that PPI decline is the declining prices in capital goods which have become increasingly more computer-related, and as a consequence, are subject to the price declines which have so characterized the high-tech industries of this country.

Senator SARBANES. It won't be a straight pass-through, but there will be some impact, I take it?

Chairman GREENSPAN. Yes, that's correct.

Senator SARBANES. Now, I'm just curious; if inflation continues to slow, which has been the case—is that not right?

Chairman GREENSPAN. That is correct.

Senator SARBANES. Won't real short-term interest rates rise, even if the Federal funds rate stays the same?

Let me show you a chart here. This is what's happening to the real Fed funds rate. I mean, there's a tendency, obviously, since the Fed doesn't take any action, and you have taken only one action in recent times to take the rates up, but the real fund rates have moved quite sharply over the last year by a full point as a consequence of the drop in inflation; is that not correct?

Chairman GREENSPAN. I wouldn't necessarily use the 12-month change, but you are quite correct that the real Federal funds rate has risen inversely to the fall in the GDP deflator or the CPI, which we would use to calculate it.

Senator SARBANES. So if the Fed leaves the nominal rate where it is, but inflation continues to drop, you will get an increase in the real interest rates; would you not?

Chairman GREENSPAN. Of course, you would.

Senator SARBANES. Thank you, Mr. Chairman.

The CHAIRMAN. Senator Gramm.

OPENING COMMENTS OF SENATOR PHIL GRAMM

Senator GRAMM. Thank you, Mr. Chairman.

Chairman Greenspan, first of all, let me congratulate you on our economic expansion, on the steadiness of our growth.

I am sure there are school teachers and truck drivers all over America who looked at their retirement account in the last quarter—TIAA CREF rose in value by 10 percent in the last quarter—and they wondered, who should I give credit for this? In a town where there are so many people who want to claim credit, I would like to bestow at least, on my own behalf, the bulk of the credit on you.

I think more than any other institution in our Federal Government, the Federal Reserve Bank, through its policy, being criticized by both Democrats and Republicans at various times for not accommodating their political agenda, I think your institution's policies under your leadership are probably more responsible for the economic growth we're experiencing, for the steadiness of that growth, for the run-up in equity values, than any other institution or any other individual in our Federal Government.

I wanted to take this opportunity to, at least on my behalf, say thank you, and for the millions of people, because they're busy with their own individual lives and may never know your name, who have been beneficiaries of the policies that you have instituted.

I think it has made a great deal of difference. I think you have already written your name on the pages of the monetary history of this country, as probably the greatest central banker in the history of the United States of America.

I wanted to get a chance today to say that, and I don't have any questions, Mr. Chairman.

Chairman GREENSPAN. I very much appreciate those remarks, Senator.

The CHAIRMAN. Thank you.

With the balance of your time, I am going to move to Senator Shelby and then to Senator Kerry.

Senator Shelby.

Senator SHELBY. Thank you, Mr. Chairman.

Chairman Greenspan, some of your written statement spends time explaining the significant capacity and the utilization of that capacity in our economy. Given technology, a strong dollar, increased trade activity, is it unreasonable to believe the denominator in that equation should not be limited to production capacity, only within our borders?

Chairman GREENSPAN. As I tried to outline in my prepared remarks, there is a significant distinction between facilities, the physical facilities themselves, and the labor input. And one of the really fascinating characteristics of the data of the last several years is in the order books for capital equipment where unfilled orders are falling quite dramatically relative to shipments, meaning that the lead times between orders and delivery are becoming rapidly narrower. This means that when demand changes and you need new facilities, your ability to put physical things in place has obviously increased quite measurably.

In addition, the expansion of trade throughout the world and globalization have added to that ability to respond to demand, so that the actual physical ability to produce from our capital stock has clearly improved and the response time falling means that restraints from the physical lack of production flexibility has dropped—for example, from when we ran at 100 percent steel output in our

open-hearth furnaces 50 years ago. Until we got oxygen lances in there and other means to just gradually expand it, we were really rigidified.

At that time, much of American capacity was of that nature. But today it's changed, and the combination of the globalization and the improved technology that removes the length of lead times on deliveries has effectively reduced the impact of previous shortages from facilities that occurred in the past.

It's labor which, because of biology, cannot respond in an increasingly effective way. That is where the ultimate limits are beginning to emerge in the capacity or the potential of this economy.

Senator SHELBY. Chairman Greenspan, how does that change the way that you or we interpret capacity utilization data?

Chairman GREENSPAN. The figures that we publish for capacity utilization do not change. They are, in effect, stipulating what is the amount of gap between production and capacity as it is perceived at that time by the managers of those establishments, because ultimately that's where we get our data.

The difference is not in the measurement of the size of the gap, but in the ability to change that gap, which has changed so dramatically. That's what's important in the whole notion of capacity—it's a different degree of flexibility.

Senator SHELBY. Thank you.

The CHAIRMAN. Senator Kerry.

OPENING COMMENTS OF SENATOR JOHN F. KERRY

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

Chairman Greenspan, welcome. I'm glad to have you here. I join my colleague, Senator Gramm, in applauding your extraordinary stewardship these past few years.

I think we should remember the difficulties of the credit crunch and the banking industry at the beginning of this decade. You made some tough choices then which were absolutely instrumental in making up for Congress' unwillingness to act, and you did it in a most creative and important way. I think much is owed you with respect to monetary policy.

I will not hold my breath, however, and wait for my colleague from Texas to laud the fiscal decisions made in 1993, which I think also contributed to the good economic story we hear today.

Senator GRAMM. You are going to get awfully purple in the face if you do.

[Laughter.]

Senator KERRY. That's why I say I wouldn't even venture to try.

Let me ask you this, Mr. Chairman. I have raised this issue with you before. The trend lines on consumer debt seem to continue in a way that seems to be disturbing. I don't know if it is, but I just want to ask you about it. Even as we see this extraordinary expansion and growth and strong market, et cetera, we continue to see consumer debt increasing.

Consumer debt is now running at record levels, as are personal bankruptcies. My concern is that while in 1995 and 1996, the commercial banks earned a record high profit—and I don't begrudge them that; that's part of the growth in the economy—but at the

same time, consumer debt soared 39 percent in the last 5 years, and it now exceeds \$1 trillion.

Much of the higher growth figures of the last quarter, the nearly 6 percent growth that has been praised, are due to larger than anticipated consumer spending. Personal bankruptcies rose by 6 percent in mid-1995 from the prior year. Consumers owe \$360 billion on their credit cards, which is double the 1990 level. The average household has four credit cards with balances of around \$4,800, which is up from two cards and a balance of \$2,340 2 years ago. Consumer loans comprised 45 percent of bank lending, up from 33 percent in 1986, and nearly 5 percent of credit loans were written off as losses last year, which is up from 3.8 percent a year earlier.

We see people making purchases today with plastic that they did not previously make. You go to the dentist, grocery store, take cab rides, eat at McDonald's, and you pay with credit cards. Master Card has told us that Government transactions like paying taxes and traffic fines with credit cards is one of its fastest growing markets now. The average creditworthy American family receives 30 independent credit card solicitations each year.

Now in a theoretical sense, there's a paradox here.

Generally, we haven't seen a rise in consumer delinquencies until there has been a rise in the unemployment rate. But now the unemployment rate has been static, yet we have seen a rapid rise in consumer delinquencies over the last 6 to 9 months.

So, I would like to ask you just two questions. First, how do you explain this phenomenon, if it is that? Second, are you concerned? Should we be concerned about this level of consumer debt, and what might be embraced in that if there were some downturn and rise in unemployment?

Chairman GREENSPAN. Senator, first, let me describe the process which has engendered this very significant rise in debt to which you allude.

For the purposes of analysis, we create crude estimates of gross extensions of installment or consumer credit to be able to disaggregate the extension versus the repayment and to be able to interrelate it to retail sales. And what we have found is, as I recall the numbers, that the ratio of extensions to sales was rising fairly dramatically for a number of years in the early part of the 1990's which was when most of this debt began to accumulate.

However, in the last year or so, that ratio of extensions to new purchases has flattened out, so that the cumulative process seems to have simmered down considerably in the aggregate sense.

We nonetheless do see, as you have pointed out, some fairly pronounced evidence of delinquencies showing up in credit cards.

The new phenomenon is the home equity loans, which are increasingly being used as a consolidating consumer credit vehicle, and a lot of these loans are fairly highly leveraged against the value of the home. Indeed, there are even some loans which are being made at 125 to 130 percent of the value of the home. In effect, these are character, that is, noncollateralized loans, which are perfectly legitimate to make, if the person's credit standing is good.

But clearly what is occurring is a general movement up in certain areas of the consumer credit markets. Overall, however, there does not seem to be a problem which is creating any concern on our

part. The reason is that if you look at the debt service payments as a percent of income, while they have moved up, it's not by any means clear that they are in a territory which creates particular concern.

In the mortgage market, which has to be interrelated with the consumer credit market, because in many instances they are the same people who are borrowing, if you look at the delinquencies in non-credit card and non-lower quality home equity loans, the default rates and the rates of delinquencies are really remaining quite low.

As a consequence of that, I would say that there is no material concern that raises an issue, with the exception of the localized issues of delinquencies and the very sharp increase in personal bankruptcies, which is unquestionably triggering a number of these delinquencies.

The real problem will occur when, as inevitably will be the case, consumer income growth slows down, and you get a backing-up of credit problems and the usual problems that will invariably exist, or, at least, have existed in the past when incomes have flattened out or fallen.

I see nothing in the current pattern which essentially creates a significant deviation from those expectations. If I had time, I would go into the income distribution effects which are also relevant here, namely, that obviously the significant part of the middle-income and upper-income groups, which are large parts of this consumer credit market, have much larger assets available than they have debts. It is true that in the lower quintiles of household balance sheets you do see some pressures in some groups. There are undoubtedly numbers of families who are in some difficulty. But from a total point of view, one does not yet see the elements of considerable concern.

Senator KERRY. Thank you, Mr. Chairman.

The CHAIRMAN. Senator Mack.

OPENING COMMENTS OF SENATOR CONNIE MACK

Senator MACK. I, too, want to express my welcome to you, Mr. Chairman, and follow along on the remarks of Senator Gramm and Senator Kerry.

The accomplishments of the Fed—and when I say that, it is to you, to the other members of the Board, and to the staff—I think are remarkable, and so I compliment you on that.

I really only have one question to pursue, and it's probably more academic than it is anything else at this point. But we've had this conversation before about the various commissions that have reported that the CPI overstates inflation. Those numbers can be from .8 to 1.5 percent. We're now seeing inflation as gauged by CPI running at about 1.4 percent for the first 6 months of this year. I guess my question is, are we moving from a time of disinflation to deflation, and what are the risks inherent in that?

Chairman GREENSPAN. I would say that while it is certainly the case that the measured inflation rate has come down, and, indeed, if you adjust it to take the bias out of the data, the inflation rate is down still more. However, there are none of the characteristics

in this economic structure which leads us to conclude that we are moving in a direction of deflation.

Deflation is clearly something we should avoid as well, but I see no evidence that is happening. You have to be a little careful about the problem of price measurement. An increasing part of the prices that we are currently publishing are reflecting the very marked declines in prices in an increasingly high-tech arena.

Measuring what prices really mean for a personal computer, for example, or for some significant advance in a microchip is a very interesting technical exercise. We generally tend to measure the unit of output in terms of the power of calculation. And as you know, the technology is advancing at such a pace that that power is moving up exponentially.

We are getting very dramatic declines in price. Even though the price of a PC has not changed all that much over the years, the power that is put into it has made the implicit price, correctly measured by the value of its power, go down dramatically.

The reason I raise this issue is that it is not clear to me that everyone uses all of that power, and that when one is trying to ask, what is the real price change of a particular piece of equipment, it's not self-evident to me that everyone would agree that the value increases that they see that are implicit in the prices that we publish, reflect the improvements that they are able to get out of the machine.

The bottom line of all of this is that some of the ways in which we measure price are increasingly complex and have ranges of error in them. The more we shift toward the increased technology types of equipment, the greater the pressure for prices to decline in a measured form.

This is the reason why, though we've had previous discussions about this and the various indexing of Federal programs, and gotten judgments about what the biases are, there is another issue which we have always discussed, namely increasing difficulty of defining what we mean by price.

So, I want to be careful here that when we talk about deflation, we do not assume that because we are shifting toward the types of equipment in which prices are falling, that therefore we have what would be called financial deflation. That is a different type of concept, and something that we don't yet fully understand.

Senator MACK. What would be the indicators that you would look for that would signal to you that we may be moving or could be moving into a time of deflation?

Chairman GREENSPAN. I would be more concerned about deflation as it reflects asset values as well as prices. In other words, the whole process of what historically we've looked at as deflation has been characterized not only by falling product prices, but also by falling asset prices. And that is a much different type of environment. A period of stable or declining product prices in a period of stable asset prices, does not create the types of disruptions that are inimical to economic growth.

We've seen innumerable cases in our history where prices have actually been falling while asset prices, in fact, are rising and economic growth is quite impressive.

I think it is very important to think in terms, not of deflation as price deflation, per se, but as a process which is inimical to economic growth.

Senator GRAMM. Mr. Chairman, I didn't use all my time, could I just take 1 minute on this subject?

The CHAIRMAN. Yes.

Senator GRAMM. I think an example of what you're talking about, Mr. Chairman, is that from 1865 to 1879 in the specie resumption period, as monetary historians call it, we actually had a decline in prices. The cost of most products declined on average about 1 percent. And yet while we had two major recessions during the period, we had very, very impressive economic growth.

But the thing that was driving that was not any underlying economic force it was that the Federal Government decided that they wanted to go back on the gold standard at the price of gold prior to the Civil War, which was \$20.67 an ounce. They were able, from 1865 to 1879, to run a surplus in the budget. And as greenbacks came in, they burned them, and then as they paid off Government bonds—Government bonds were the assets that were held to issue National Bank Notes which were money—and in all this period where you have actually a debate in the House of Representatives about a surplus policy, it has actually happened before. It was a period where real interest rates were almost negative and where you had fairly substantial economic growth.

Chairman GREENSPAN. It was a period in which the United States moved out of an agrarian society to become in the early part of the 20th century, the major economy in the world.

Senator GRAMM. Twenty million people came here looking for opportunity and freedom and found it.

Chairman GREENSPAN. And they found them.

The CHAIRMAN. With that, we are now going to Senator Hagel.

Chairman GREENSPAN. This is called a short-term monetary policy discussion.

[Laughter.]

Senator HAGEL. Dr. Gramm, thank you. That was enlightening.

Mr. Chairman, I am incapable of offering any new compliments that haven't already been offered this morning, so I would just like to associate myself with all the flattering compliments that have come your way. In fact, much of your reign has produced this kind of stability.

I would like to get to a couple of points that you made in your testimony, to talk about where we go from here and some of the long-term challenges that are out there. I would refer back to your last statement in your testimony. I would just read it back to you very quickly so you have some frame of reference.

You said, "The recent experience provides striking evidence of potential for the continuation and extension of monetary, fiscal, and structural policies to enhance our economy's performance in the period ahead."

I would like to tie to that, your point about the two most important components, ingredients, of capacity in our economy, capital and labor, especially in light of our ongoing tax and budget negotiations, hopefully, our final ongoing negotiations.

I ask you, if you would, to elaborate a little bit, especially on the fiscal and structural policies that we are going to have to deal with, labor, for example, immigration policy. Obviously, we are going to be confronted with a real problem one of these days. I suspect it's seeping in now. But if you wouldn't mind elaborating a little bit on what you see ahead that we are going to have to deal with, and especially in fiscal and structural policies.

Chairman GREENSPAN. There are very few things that economists, sociologists, demographers, or others can forecast with some degree of accuracy.

One thing that I think everybody agrees on is that there's going to be a major shock in the fiscal situation as we move toward 2010, when the very dramatic rise in the birth rate of the period of the end of World War II begins to feed into the various programs which relate to the elderly, which as you know, are a very large part of our expenditure side of the budget, outside of what is devoted to defense spending.

That has very major effects as we look at both the Social Security and Medicare programs. There are others, obviously, civilian retirement and military retirement are also relevant in those contexts as well.

But we see a very large set of pressures impacting the Federal budget. While I obviously strongly supported efforts to move toward a balanced budget, and hopefully a surplus in the short run, we should recognize that the virtual certainty of the impact of the Baby Boom generation on the budget is crucial to the way things develop. Therefore, it strikes me that in the context of reviewing budget policy, even in the short run, that that issue be in the back of everybody's mind, knowing that there is a path there which is going to have to be somehow addressed.

Merely getting to balance by the year 2002, while it is a necessary condition to address the 2010 and beyond period, it is also important to recognize that after 2002, the deficit starts to drift up again, and becomes a significant problem as you move into the second decade of the 21st century.

Because of the very substantial increase in the proportion of the budget which is entitlements or what we used to call uncontrollable spending, it's a new type of budget. It's not the standard annual appropriations of discretionary programs which so dominated the budget many years ago and enabled the Congress, really, to deal year-by-year. Then, if things got out of hand, you could just make a number of changes and correct the problem. But you can't do that anymore.

What the current fiscal policy should have in mind is what types of acts ought to be passed by the Congress which become effective in the year 2008, 2012, 2015?

Those are going to be the types of legislative endeavors which will be, if you wait too long, virtually impossible to enact. It is far easier to enact laws today which become effective in 15 years so that the people affected will have time to plan. It would be unfair to wait until the last minute and say: There is no more money in the cash box; we have to change our programs; too bad. I don't think that's fair.

If there are going to be changes—and, indeed, if you look at the economics of the budget, there have to be because the arithmetic doesn't work—it's incumbent upon the Congress to give those who are affected by those programs the maximum lead time to adjust their own personal accounts in order that they don't find themselves in impossible situations at retirement.

Senator HAGEL. Thank you, Mr. Chairman.

The CHAIRMAN. Senator Grams.

OPENING COMMENTS OF SENATOR ROD GRAMS

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

Chairman Greenspan, welcome. It's great to see you again. As everybody here, I want to add my compliments to the job and the decisions that you have made. But in saying that, I know the economy is strong today, and I hate to be the pessimist at this sunny day picnic who says it's going to rain.

We know that if we have a picnic every day, one of these days, it is going to rain. I grew up on a small dairy farm in Minnesota, and we always had a philosophy that you had to have enough in reserves in case the crops failed this year to be able to plant next year and survive. We have some good times, and in the good times, it's a better opportunity to plan for tomorrow in case it does rain.

So, I would just like to ask you, while we are enjoying this strong economy today, is there something that we should be concerned about or at least planning for, for the downside of tomorrow?

Chairman GREENSPAN. Let me just say what the Federal Reserve is doing. We recognize that while things are doing exceptionally well today, we can't assume it's going to happen indefinitely. As a consequence, because we see such exceptional value in maintaining this expansion, we think it's incumbent upon us, as we have discussed over the years, and as I discuss at length in these prepared remarks, to remember that the policy of the central bank doesn't impact the economy and prices until a year or so after we implement it. So, we are continuously focusing on the longer term, not as long a term as I was mentioning to Senator Hagel with respect to fiscal policy, but we too have this long-term focus. Because if we are going to maintain the stable platform which keeps this expansion going as long as it can physically continue, we have to have long-term planning ourselves.

Indeed, the reason why we moved in March was to tighten up the system ever so slightly because we believed that the risks in the longer term were increasing. Unless policy, both in the fiscal and the monetary areas, recognizes that the timeframe in which we are enacting policy is lengthy, we will find ourselves running out of seed grain, as you put it, at some point because we had failed to look forward into the future.

I would suggest that the major thrust of Congressional action, as it responds to the economy, in my judgment, really gets to two areas: one, the fiscal policy area, which is explained, I hope, in some detail in the question that Senator Hagel raised; and two, we ought to recognize the extraordinary benefits that are coming out of the deregulatory policies that the Congress and the regulatory agencies have embarked upon.

We are seeing already significant values in deregulating a number of controls in the agricultural area. We are beginning to see the ability of farmers to plant fence-to-fence without acreage controls which are an anachronism from a period gone in our history with very dubious potential advantages. And when one talks about economic growth, let's remember that the gross farm product is part of the gross domestic product.

The more we can produce in all of the areas of the economy, the greater off our society will be, the greater our ability to address the problems of an increasing, up until recent years, unequal income distribution, questions of welfare, which I think Congress has very courageously addressed very recently and other issues.

I think we are focusing on the right things. The question is do we have the political will to do what is required. Stage one is focus, stage two is understanding, and hopefully, stage three is action.

Senator GRAMS. As we look ahead, it looks like with the increasing revenues that we could balance the budget earlier than we even expect. When we reach that point the question is, is it smart to carry the debt that we have and the interest payments that go along with it once the budget is balanced, and then spend all future increases in revenue? Or would it be better to begin paying down the debt to have a structure in there that says you have to keep spending at a limit but take care of the debt we have as well?

Chairman GREENSPAN. Let me just say that one of the immediate aspects of a surplus, if it looks as though it's a structural surplus, which would be very difficult to do beyond the year 2008 or 2009, but even for the intermediate period, it would do two things.

First, it would indicate that Congress is moving in a direction in which the big bulge in potential deficits for the second decade of the next century and beyond are not likely to occur because you are addressing it in advance.

Second, nominal long-term interest rates have come down considerably from their peaks in the early 1980's but we are still above where we were in the 1950's and the 1960's because there's still a significant inflation premium built into long-term interest rates. That's because there is still a belief that the American Government is not going to be able to handle inflation in a manner which one can presume a noninflationary environment is here to stay.

Back in the early 1950's and early 1960's, there was a general view in this country that inflation was not something indigenous to the United States except during times of war. The great shock of the 1970's and the stagflation and the big surge of inflation has left a residue of inflation expectations embodied in long-term interest rates. While significantly less than it was say 15 years ago, it is nonetheless still appreciably above where it had been in the early post-World War II period. That means that there is a capability of getting lower rates and if we do, it means much greater capital investment, much more intensive use of our resources, and much lower mortgage interest rates for homeownership.

There are an awful lot of positives which spill out that gives you a sense of a virtuous economic cycle where you get lower long-term interest rates, you get increased capital investment, increased productivity, increased growth, and lower inflation. It is a process which we should endeavor to foster. And the major way of doing

it is to recognize that passing the zero budget deficit line doesn't mean you should stop there. There's nothing that says that.

On the contrary, the benefits that are achieved from going from high-budget deficits to low-budget deficits to balance continue as you move over that line into surpluses. I would think that understanding that process and fostering that process would be something of considerable value to the future of the country.

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

The CHAIRMAN. Senator Sarbanes.

Senator SARBANES. Thank you, Mr. Chairman.

Of course, that is assuming that the economy is continuing to function at or near full employment.

Chairman GREENSPAN. That is correct.

Senator SARBANES. Otherwise you run the risk of moving the economy downward. Then actually not only would you not run surpluses, you would start running deficits again.

Chairman GREENSPAN. True. But what I'm saying is that our old notions of fiscal drag are not applicable to this situation because we still have a substantial element of inflation expectations embodied in long-term rates.

It's only when you get down to very low rates, which existed back in the 1960's, that a notion of fiscal drag as being something which could slow the rate of the economy will function. In today's environment, that's not the model that's working.

Senator SARBANES. Mr. Chairman, I have four subjects I want to cover very quickly as time runs.

First of all, you have repeatedly come before us and said we have to get the deficit down, that's very important to the workings of the economy. That it is easier to have sort of a responsive monetary policy if fiscal policy is on the right course.

I wonder if you would redistribute some of this praise which has come to you this morning, which I don't really quarrel with, but recognizing that we brought the deficit down from \$290 billion to I think this year less than \$50 billion, it is also an important contributor to the state of the economy.

Chairman GREENSPAN. In my written comments, I state exactly that, and there's no question in my mind, as I have said over the years, that the decline in the deficit, which is the result of both the Administration's and Congress' actions, has been very helpful to this country.

Senator SARBANES. I just want to underscore the perception that I think is in your statement on the first page where you note that "The expansion has enabled many in the working-age population, a large number of whom would have otherwise remained out of the labor force or among the longer-term unemployed, to acquire work experience and improved skills."

I think this is a very important point. We need this good sustained period of growth and this low unemployment to sort of reach that population. Also to reach into the inner cities.

We are getting anecdotal evidence at least now that the economy is picking up in the inner cities and I think it is a very important dimension of having the kind of economy that we are dealing with right now.

That is just a comment but I appreciate the sensitivity that is reflected here in the statement.

Now let me turn to this real interest rate question.

I'm struck by all these articles that are being written about you, one way or another, and they all seem to take the view that unless you raise interest rates, the open market community is somehow falling down on the job.

I take that back, not all, a lot accept where we are and think it's working pretty well and want to stay the course. But some Cassandras keep crying the fact of the matter is, with inflation dropping, just by keeping the Fed fund right where it is, nominally you in effect are raising the real Federal funds rate. Is that not the case?

Chairman GREENSPAN. That is correct, Senator.

Senator SARBANES. So, I think those who are sort of trying to undercut you on this inflation question need to take a look at what's happening to this Federal funds rate which is now the highest it has been, well, that's 1994.

Actually, I understand that we have to go back to 1989, 1990, to find a time when the Fed funds rate, the real Fed funds rate was up at this level. That is what I regard as a constraining action on the economy having some impact. I understand that leading economic sectors like autos and housing are down for the first 6 months of this year. Durable goods manufacturing are flat, as I understand it.

So, I think it is very important that there be an understanding that with inflation dropping, even keeping the Fed funds rate right where it is raises the real Fed funds rate, and therefore is a constraining action with respect to the economy.

Chairman GREENSPAN. Senator, if I could just interject in there.

Senator SARBANES. Just so I get to my fourth point, yes, sure.

Chairman GREENSPAN. That's the reason why I mentioned in my prepared remarks that movements in the nominal Federal funds rates are routine aspects of monetary policy. We are, in effect, making monetary policy every day by what we do and what we do not do, and we are aware of the process by which the elements of various structures of rates are affected by what we do or what we do not do.

Obviously, our awareness of the Federal funds rate in real terms rising is something which is part of our general policy understanding, so, the notion that the only time that monetary policy changes is when we change the Federal funds rate or the discount rate is not correct.

There's a continuous process. And one of the reasons why it is important to recognize that what we do is routine in a sense is that we are doing it all the time, and that's why it's the fundamental outcome of the policy that matters, not every particular move of the real rate or the nominal rate that we think is important.

Senator SARBANES. I think this is an important point because some writers are writing this as though just holding a position does not reflect a policy when circumstances are changing. For instance, the one I'm addressing, when inflation goes down.

Mr. Chairman, can I just put one final question?

The CHAIRMAN. Yes.

Senator **SARBANES**. Chairman Greenspan, I would like to draw you out a bit. I mean, this is off of this subject but just to get some of your thinking on what you expect the impact on the international monetary system to be of the European Monetary Union, assuming the EU is able to move toward a common currency.

I guess that really should be the subject of its own hearing but how significant is that and its potential impact on the entire international monetary scene?

Chairman **GREENSPAN**. It is fairly obvious that a single currency in the European Community will enhance their ability to function in the same manner that the single currency within the 50 States of the United States enables us to function.

It is going to create differences, obviously, in the elements of the adjustment process within Europe, and all I can say to you is that to the extent that it enhances Europe's ability to become an effective world competitor, it's going to help us, not hinder us, because what all the post-World War II evidence, not to mention the earlier pre-war evidence, clearly suggests is the greater the real growth in trade, the greater the ability of globalization and integration of the various major elements within the international financial system, the better it is for everybody.

So, we hope that the struggles that they are making, which are obviously considerable, bring fruition and success because it will be to everybody's advantage if that happens.

The **CHAIRMAN**. Senator Faircloth.

OPENING COMMENTS OF SENATOR LAUCH FAIRCLOTH

Senator **FAIRCLOTH**. Thank you, Mr. Chairman.

Thank you, Chairman Greenspan, for being here and I thank you for the service you've rendered to the country.

I think your policies have absolutely proven to have been correct, although there has been criticism of them. Certainly there always will be, but I think you have done an excellent job of staying the course with the economy. We are proud of what you have done.

I am concerned that there might be more leverage in the market than we might be led to believe. I would like your opinion. I understand that home equity loans, some of those have risen pretty rapidly with the possible effect that the proceeds of the loans were going into fueling the market.

The next thing I wonder, I heard that the State of New Jersey had issued bonds and they were to be invested in the stock market. Is that right? And what is your opinion of the concerns I have?

Chairman **GREENSPAN**. I discussed the issue of home equity loans just before you came in.

Senator **FAIRCLOTH**. I'm sorry I was late.

Chairman **GREENSPAN**. It's an important question. It's the one interesting area where, as you point out, the loans are all of a sudden expanding rapidly and some of them are changing in nature from standard, old-fashioned home equity loans where you just dip a little bit into your equity, to now where there are a lot of loans which are becoming huge parts of equity value and, in certain instances, more than the total equity value.

There's some problems that are starting to emerge in there. It's still a very small part of the consumer markets and not something

that we are, at this particular stage, particularly concerned about, but you are raising an issue which we have to keep an eye on, and we are looking at that.

I'm not familiar with these Jersey issues.

Senator FAIRCLOTH. I might not be correct.

Chairman GREENSPAN. Now, I see what it is. It is a taxable bond issue to fund a pension plan. Borrowing to fund pension plans is an interesting issue in public pension finance and private pension finance. I don't know enough about it to make any particular comment on it.

Senator FAIRCLOTH. Do you have any concern that there is more leverage in the market than you might feel comfortable with?

Chairman GREENSPAN. You mean overall?

Senator FAIRCLOTH. In the stock market, yes.

Chairman GREENSPAN. Oh, the stock market. It is very difficult to know what the degree of financing is. If you are referring to the issue of stock market credit, so-called margin credit, there is no question that in the last couple of months margin credit has risen very substantially. It is well over \$100 billion now. But when you take it as a percent of the market value of the stocks to which they apply, the ratio is still below where it was, for example, in early 1995. So as a ratio to the value of stocks, to be sure it has increased recently but it is still low relative to the overall values, just a little over 1 percent actually of \$10 trillion.

Senator FAIRCLOTH. But it has increased in the last month or two?

Chairman GREENSPAN. Yes, that's correct. The absolute amount of the margin did increase substantially in May and June.

Senator FAIRCLOTH. Thank you, Mr. Chairman.

The CHAIRMAN. Thank you.

Senator Kerry.

Senator KERRY. Mr. Chairman, thank you.

Chairman Greenspan, in your answer to Senator Hagel, you commented on the need for Congress to pass remedies that would be taking effect in 2007, 2008, 2012 in order to deal with this problem of the arithmetic, the fact that the arithmetic just doesn't add up. And we agree it doesn't add up.

But aren't those the very years in which the current Republican tax cut plan explodes in terms of cost? If the arithmetic doesn't add up today, and Congress puts plans in place to deal with that, isn't there a contradiction in what Congress is about to do with respect to the back-end of those taxes beyond the year 2002?

Chairman GREENSPAN. Senator, I haven't looked at the data in sufficient detail to make a judgment on that, but as I understand it, there is a dispute as to exactly how those numbers will unfold, and I have not had a chance to look to make a judgment.

Senator KERRY. I assume you would agree that if, in fact, the numbers were scored in a way that show that they do enlarge at the back end?

Chairman GREENSPAN. The question of how the scoring is done is a real crucial question and I haven't looked at the specific procedures in a manner which would give me any confidence to give a judgment.

Senator **SARBANES**. If the Senator would yield. It has always been my understanding that you have always put deficit reduction ahead of tax cuts?

Chairman **GREENSPAN**. That is correct, Senator.

Senator **KERRY**. But you did say that the deficit will increase as of 2002, the deficit itself goes up.

Chairman **GREENSPAN**. It will surely increase in a current services context so to speak, as we move into the latter part of the first decade of the next century and into the second decade.

Senator **KERRY**. So there would be an inherent contradiction if the deficit goes up in a plan that, in fact, increases the capacity of the deficit to go up?

Chairman **GREENSPAN**. The only thing that could be a factor here, which we are not terribly sure of, is the question of the long-term growth rate of the economy.

In my prepared remarks, I raised the question of whether there's a change in the process and I conclude that we don't know yet. That's an issue which I would suspect will be relevant to this discussion but for fiscal policy purposes, I think it's far more prudent to assume that it will not happen in a material way that will affect the overall projection of the current services deficit.

Senator **KERRY**. I was also struck by your prepared testimony where you say that, "There would seem to be emerging constraints on potential labor input. Even before we reach the ultimate limit of sustainable labor supply growth, the economy's ability to expand employment at the recent rate should rapidly diminish. The availability of unemployed labor could no longer add to growth, irrespective of the degree of slack in physical facilities at the time."

Then you say, "Simply adding new facilities will not increase production unless output per worker improves. Such improvements are possible if worker's skills increase, but such gains come slowly through improved education and on the job training."

I take it from your testimony, which I read, that we are fast reaching this point where the gains that we get appropriately come through that advance in technology that you talk about. I would assume that again you would also place a significant premium on our ability to provide that education, our ability to provide the on-the-job education and our investments in technology. In education we are increasing some aspects of availability, but on-the-job training and the technology investments we are reducing on the fiscal side. Do you have any comment about that, and sort of when we have reached that point and how critical this is to the continued growth?

Chairman **GREENSPAN**. The experience that analysts have had with respect to looking at various different types of training programs more often than not shows that on-the-job training or closely related job training is far more effective than any other type of training that one can get.

The advantage of this particular expansion, by effectively absorbing inexperienced people into the job market, people in fact who have no experience, has given them the best type of training you can get, which is on-the-job training, because it does two things.

It gives you the skills, and it also gives you the self-esteem that you need to recognize that you can go further. Unless we recognize that process, especially with our educational system generally, then

we are going to find that as we move into the 21st century, where technology becomes an increasingly important aspect of value creation, we are going to leave a significant part of our population behind. That would be a great tragedy which we can avoid with forward planning and an understanding of how to get people to obtain the skills that are going to be necessary for the workforce of the 21st century.

Senator KERRY. Just a final question, if I may, Mr. Chairman.

You also talk about the obvious relationship of immigration to the economy. Are we reaching the point where immigration may be more important to the capacity to sustain growth than it has been because of this apex of technology and its relationship to the labor market?

Chairman GREENSPAN. As I conclude in my prepared remarks, as you get into the 21st century, the ability to put up facilities is increasingly going to create far less problems of restraint from the physical parts of the system.

But we have a working-age population, 16 to 64, which is demographically determined at a much earlier stage and is not subject to significant alteration with the exception of immigration.

And as I point out in the prepared remarks, in the period from early 1994 to the current period, a little more than a third of the growth in the working-age population is the result of net immigration, both legal and illegal.

Senator KERRY. Thank you very much.

Thank you, Mr. Chairman.

The CHAIRMAN. Senator Grams.

Senator GRAMS. Thank you, Mr. Chairman. I have just a couple of quick questions.

Mr. Greenspan, talking about the budget, and I know your job is to make decisions on economic policy for the country, but in making those decisions you have to look to Capitol Hill to see what the budgets are doing. Looking at this current budget deal, which does have ramifications for 5 years, and in some implications, up to 10 years, would you look at the spending levels and say they were acceptable? They're too high or too low? Would you look at the tax cuts? Are the tax cuts too high, too low, or sufficient, especially in the area for consumers for one thing to spur economic growth, but also for investment of capital, either reinvestment or new investment? How would you size up this budget looking at the decisions you have to make on economic policy?

Chairman GREENSPAN. As I've indicated to this Committee many times in the past, as a technical matter, you cannot balance budgets over the long run by raising taxes because the very process itself will inhibit income growth, reduce revenues, and, indeed, end up being counterproductive.

The only way to address a long-term structural budget deficit problem is through the expenditure side. It's the only way that you will succeed or can succeed in a permanent manner.

I don't want to get involved with the specific elements that are currently involved, but merely indicate to you that you can't avoid coming to grips with the expenditure side because of the entitlement structure as now stated in law. It strikes me that short of a surprising increase in the underlying tax base, spending is running

faster than the revenues that will come out of a growing tax base with the projected demographics that we're currently looking at.

Senator GRAMS. One final question. You mentioned earlier about deregulation, how it's helped to improve the economy in many ways. One thing this Committee will be dealing with is, of course, the benefits of financial modernization. How do you view that as being an important step in adding to future economic growth?

Chairman GREENSPAN. There is no question that we have anachronistic legislation enacted in the thirties which still significantly affects our regulatory structures and the financial system. I have testified many times that the Glass-Steagall Act is one of those anachronisms and the sooner it is repealed, the better.

There is, as you know, considerable discussion going on in the House of Representatives on potential new regulation in this area and I have testified at length on this, and I would like to send you a copy of my testimony if you wouldn't mind, so you could get a broader notion of what we're responding.

Senator GRAMS. I'd appreciate that. Thank you very much.

Thank you, Mr. Chairman.

The CHAIRMAN. Senator Faircloth, do you have any further questions?

Senator FAIRCLOTH. No, I do not.

The CHAIRMAN. Senator Sarbanes.

[No response.]

Mr. Chairman, I want to thank you for your graciousness for being here again with us today. I look forward to working with you.

You know that the Senate has heretofore passed Glass-Steagall reform so it will be interesting if the House can pass a bill. Then it would be my intent to take that up, but I'm not going to take it up unless or until we see that they really can give us a product and get it over here. Then we can work out whatever the differences are. But I think it's long overdue. We passed it heretofore, and I think your words today are very, very encouraging.

Thank you for coming today. We look forward to working with you in the future on a number of the projects that we've discussed, and I want you to have a good summer.

Chairman GREENSPAN. Thank you very much, Senator.

The CHAIRMAN. We stand in recess.

[Whereupon, at 11:45 a.m., the Committee was recessed.]

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

PREPARED STATEMENT OF SENATOR ALFONSE M. D'AMATO

The Committee is pleased to welcome Chairman Greenspan this morning to hear the Federal Reserve's semiannual report to the Congress on our Nation's economy.

Chairman Greenspan, *Money* magazine reports that there is a joke circulating on Wall Street that I think well illustrates your gift for obfuscation. Apparently, the report goes that you actually proposed marriage to your wife, Andrea Mitchell, when you first started dating—which I will remind everyone was many years ago. The actual marriage did not occur until a few months ago. Apparently, it took Andrea all those years to decipher that you had, in fact, made a marriage proposal. Andrea is not alone. It takes awhile for many of us to analyze and understand your remarks.

Chairman Greenspan, clearly the financial markets understood the message you delivered to the Congress yesterday and look forward to your elaborating on your comments today. Yesterday, the Dow Jones Industrial Average closed up 155 points—above 8,000 points for the second time this year and a new record high (8,062), following your testimony. This Committee awaits an encore performance today although we would also appreciate your insights as to whether yesterday's reaction was what you anticipated.

Chairman Greenspan, as many have noted on countless occasions, the Fed has done a remarkable job under your tenure. Our economic expansion is in its 7th year, making it the third longest in the post-World War II period. Thirteen million new jobs have been created. Continued low-interest rates have allowed thousands of businesses to expand and millions of families to buy homes. This is good news for the American worker, whose wages haven't been eaten away by high inflation. It is good news for American business which relies on stable growth for marketplace success. It is also good news for the American people who continue to enjoy one of the highest standards of living in the world.

With the economic boom continuing, I believe now is a good time for us to look more carefully at those areas and those people who may have been left behind. I am increasingly concerned about local communities who face economic disruptions because of businesses or Government facilities closing shop. Also, as you will note in your remarks, workers continue to worry about their job security despite one of the lowest unemployment rates since the 1970's. I would appreciate your insights as to whether this means enough is being done to educate our workers to use new technologies. Finally, I am also concerned about whether some consumers may have too easy access to credit and are being taken advantage of by financial institutions.

I know that you will touch on these concerns in your remarks and we can have a fuller discussion. We look forward to hearing your comments this morning about the state of our economy and our markets.

PREPARED STATEMENT OF SENATOR CHUCK HAGEL

Good morning and welcome to you, Chairman Greenspan. Today our economy is in good condition and that is, in part, due to your deft handling of monetary policy. We are enjoying a combination of economic factors that many think are incompatible—low inflation and low unemployment. I will be interested to hear from the Chairman as to what conditions have made this possible and what we, as legislators, can do to help extend the length of the expansion.

Congress is currently engaged in a debate on tax and spending reconciliation bills. While no one is going to be completely satisfied with the end product, I believe we are moving in the right direction—less taxes and less spending. Just as the markets will micro-analyze every word the Chairman utters today, the markets will also react to our commitment to balancing the budget. This is a goal I hope we are all committed to.

I look forward to hearing Chairman Greenspan's testimony.

PREPARED STATEMENT OF SENATOR LAUCH FAIRCLOTH

Mr. Chairman, I want to thank Mr. Greenspan for being here.

I have said this before, I think the robust economy we have is due to his steady hand at the Federal Reserve Board.

Some Members of Congress have not always been happy with his interest rate policies, but I think his policies have proven to be the reasonable course of action.

Further, I don't think it should be overlooked that for the last 3 years this Congress has tried to cut spending and reduce regulatory interference in the private

sector. I think these two factors are fueling a lot of this growth, particularly in the high-tech sector of the economy. We need to keep these policies in place—and I think we will keep the economy growing.

Thank you, Mr. Chairman.

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

JULY 23, 1997

I am pleased to appear before this Committee to present the Federal Reserve's report on the economic situation and monetary policy.

The recent performance of the economy, characterized by strong growth and low inflation, has been exceptional—and better than most anticipated. During the first quarter of 1997, real gross domestic product expanded at nearly a 6 percent annual rate, after posting a 3 percent increase over 1996. Activity apparently continued to expand in the second quarter, albeit at a more moderate pace. The economy is now in the seventh consecutive year of expansion, making it the third longest post-World War II cyclical upswing to date.

Moreover, our Federal Reserve Banks indicate that economic activity is on the rise, and at a relatively high level, in virtually every geographic region and community of the Nation. The expansion has been balanced, in that inventories, as well as stocks of business capital and other durable assets, have been kept closely in line with spending, so overhangs have been small and readily corrected.

This strong expansion has produced a remarkable increase in work opportunities for Americans. A net of more than 13 million jobs has been created since the current period of growth began in the spring of 1991. As a consequence, the unemployment rate has fallen to 5 percent—its lowest level in almost a quarter century. The expansion has enabled many in the working-age population, a large number of whom would have otherwise remained out of the labor force or among the longer-term unemployed, to acquire work experience and improved skills. Our whole economy will benefit from their greater productivity. To be sure, not all segments of our population are fully sharing in the economic improvement. Some Americans still have trouble finding jobs, and for part of our workforce real wage stagnation persists.

In contrast to the typical post-war business cycle, measured price inflation is lower now than when the expansion began and has shown little tendency to rebound of late, despite high rates of resource utilization. In the business sector, producer prices have fallen in each of the past 6 months. Consumers also are enjoying low inflation. The Consumer Price Index rose at less than a 2 percent annual rate over the first half of the year, down from a little over 3 percent in 1996.

With the economy performing so well for so long, financial markets have been buoyant, as memories of past business and financial cycles fade with time. Soaring prices in the stock market have been fueled by moderate long-term interest rates and expectations of investors that profit margins and earnings growth will hold steady, or even increase further, in a relatively stable, low-inflation environment. Credit spreads at depository institutions and in the open market have remained extremely narrow by historical standards, suggesting a high degree of confidence among lenders regarding the prospects for credit repayment.

The key questions facing financial markets and policymakers are what is behind the good performance of the economy, and will it persist. Without question, the exceptional economic situation reflects some temporary factors that have been restraining inflation rates. In addition, however, important pieces of information, while just suggestive at this point, could be read as indicating basic improvements in the longer-term efficiency of our economy. The Federal Reserve has been aware of this possibility in our monetary policy deliberations and, as always, has operated with a view to supplying adequate liquidity to allow the economy to reach its high-potential on a sustainable basis.

Nonetheless, we also recognize that the capacity of our economy to produce goods and services is not without limit. If demand were to outrun supply, inflationary imbalances would eventually develop that would tend to undermine the current expansion and inhibit the long-run growth potential of the economy. Because monetary policy works with a significant lag, policy actions are directed at a future that may not be clearly evident in current experience. This leads to policy judgments that are by their nature calibrated to the relative probabilities of differing outcomes. We moved the Federal funds rate higher in March because we perceived the probability of demand outstripping supply to have increased to a point where inaction would

have put at risk the solid elements of support that have sustained this expansion and made it so beneficial.

In making such judgments in March and in the future, we need to analyze carefully the various forces that may be affecting the balance of supply and demand in the economy, including those that may be responsible for its exceptional recent behavior. The remainder of my testimony will address the various possibilities.

Inflation, Output, and Technological Change in the 1990's

Many observers, including us, have been puzzled about how an economy, operating at high levels and drawing into employment increasingly less experienced workers, can still produce subdued and, by some measures even falling, inflation rates. It will, doubtless, be several years before we know with any conviction the full story of the surprisingly benign combination of output and prices that has marked the business expansion of the last 6 years.

Certainly, public policy has played an important role. Administration and Congressional actions to curtail budget deficits have enabled long-term interest rates to move lower, encouraging private efficiency-enhancing capital investment. Deregulation in a number of industries has fostered competition and held down prices. Finally, the preemptive actions of the Federal Reserve in 1994 contained a potentially destabilizing surge in demand, short-circuiting a boom-bust business cycle in the making and keeping inflation low to encourage business innovation. But the fuller explanation of the recent extraordinary performance may well lie deeper.

In February 1996, I raised before this Committee a hypothesis tying together technological change and cost pressures that could explain what was even then a puzzling quiescence of inflation. The new information received in the last 18 months remains consistent with those earlier notions; indeed, some additional pieces of the puzzle appear to be falling into place.

A surge in capital investment in high-tech equipment that began in early 1993 has since strengthened. Purchases of computer and telecommunications equipment have risen at a more than 14 percent annual rate since early 1993 in nominal terms, and at an astonishing rate of nearly 25 percent in real terms, reflecting the fall in the prices of this equipment. Presumably companies have come to perceive a significant increase in profit opportunities from exploiting the improved productivity of these new technologies.

It is premature to judge definitively whether these business perceptions are the harbinger of a more general and persistent improvement in productivity. Supporting this possibility, productivity growth, which often suffers as business expansions mature, has not followed that pattern. In addition, profit margins remain high in the face of pickups in compensation growth, suggesting that businesses continue to find new ways to enhance their efficiency. Nonetheless, although the anecdotal evidence is ample and manufacturing productivity has picked up, a change in the underlying trend is not yet reflected in our conventional data for the whole economy.

But even if the perceived quicker pace of application of our newer technologies turns out to be mere wheel-spinning rather than true productivity advance, it has brought with it a heightened sense of job insecurity and, as a consequence, subdued wage gains. As I pointed out here last February, polls indicated that despite the significant fall in the unemployment rate, the proportion of workers in larger establishments fearful of being laid off rose from 25 percent in 1991 to 46 percent by 1996. It should not have been surprising then that strike activity in the 1990's has been lower than it has been in decades and that new labor union contracts have been longer and have given greater emphasis to job security. Nor should it have been unexpected that the number of workers voluntarily leaving their jobs to seek other employment has not risen in this period of tight labor markets.

To be sure, since last year, surveys have indicated that the proportion of workers fearful of layoff has stabilized and the number of voluntary job leavers has edged up. And perhaps as a consequence, wage gains have accelerated some. But increases in the Employment Cost Index still trail behind what previous relationships to tight labor markets would have suggested, and a lingering sense of fear or uncertainty seems still to pervade the job market, though to a somewhat lesser extent.

Consumer surveys do indicate greater optimism about the economy. However, it is one thing to believe that the economy, indeed, the job market, will do well overall, but quite another to feel secure about one's individual situation, given the accelerated pace of corporate restructuring and the heightened fear of skill obsolescence that has apparently characterized this expansion. Persisting insecurity would help explain why measured personal saving rates have not declined as would have been expected from the huge increase in stock market wealth. We will, however, have a better fix on savings rates after the coming benchmark revisions to the national income and product accounts.

The combination in recent years of subdued compensation per hour and solid productivity advances has meant that unit labor costs of nonfinancial corporations have barely moved. Moreover, when you combine unit labor costs with nonlabor costs—which account for one-quarter of the total costs on a consolidated basis—total unit costs for the year ended in the first quarter of 1997 rose only about half a percent. Hence, a significant part of the measured price increase over that period was attributable to a rise in profit margins, unusual well into a business expansion. Rising margins are further evidence suggesting that productivity gains have been unexpectedly strong; in these situations, real labor compensation usually catches up only with a lag.

While accelerated technological change may well be an important element in unraveling the current economic puzzle, there have been other influences at play as well in restraining price increases at high levels of resource utilization. The strong dollar of the last 2 years has pared import prices and constrained the pricing behavior of domestic firms facing import competition. Increasing globalization has enabled greater specialization over a wider array of goods and services, in effect allowing comparative advantage to hold down costs and enhance efficiencies. Increased deregulation of telecommunications, motor and rail transport, utilities, and finance doubtless has been a factor restraining prices, as perhaps has the reduced market power of labor unions. Certainly, changes in the health care industry and the pricing of health services have greatly contributed to holding down growth in the cost of benefits, and hence overall labor compensation.

Many of these forces are limited or temporary, and their effects can be expected to diminish, at which time cost and price pressures would tend to reemerge. The effects of an increased rate of technological change might be more persistent, but they too could not permanently hold down inflation if the Federal Reserve allows excess liquidity to flood financial markets. I have noted to you before the likelihood that at some point workers might no longer be willing to restrain wage gains for added security, at which time accelerating unit labor costs could begin to press on profit margins and prices, should monetary policy be too accommodative.

When I discuss greater technological change, I am not referring primarily to a particular new invention. Instead, I have in mind the increasingly successful and pervasive application of recent technological advances, especially in telecommunications and computers, to enhance efficiencies in production processes throughout the economy. Many of these technologies have been around for some time. Why might they be having a more pronounced effect now?

In an intriguing paper prepared for a conference last year sponsored by the Federal Reserve Bank of Boston, Professor Nathan Rosenberg of Stanford documented how, in the past, it often took a considerable period of time for the necessary synergies to develop between different forms of capital and technologies. One example is the invention of the dynamo in the mid-1800's. Rosenberg's colleague Professor Paul David had noted a number of years ago that it wasn't until the 1920's that critical complementary technologies of the dynamo—for example, the electric motor as the primary source of mechanical drive in factories and central generating stations—were developed and in place and that production processes had fully adapted to these inventions.

What we may be observing in the current environment is a number of key technologies, some even mature, finally interacting to create significant new opportunities for value creation. For example, the applications for the laser were modest until the later development of fiber optics engendered a revolution in telecommunications. Broad advances in software have enabled us to capitalize on the prodigious gains in hardware capacity. The interaction of both of these has created the Internet.

The accelerated synergies of the various technologies may be what have been creating the apparent significant new profit opportunities that presumably lie at the root of the recent boom in high-tech investment. An expected result of the widespread and effective application of information and other technologies would be a significant increase in productivity and reduction in business costs.

We do not now know, nor do I suspect can anyone know, whether the current developments are part of a once or twice in a century phenomenon that will carry productivity trends nationally and globally to a new higher track, or whether we are merely observing some unusual variations within the context of an otherwise generally conventional business cycle expansion. The recent improvement in productivity could be just transitory, an artifact of a temporary surge in demand and output growth. In view of the slowing in growth in the second quarter and the more moderate expansion widely expected going forward, data for profit margins on domestic operations and productivity from the second quarter on will be especially relevant in assessing whether recent improvements are structural or cyclical.

Whatever the trend in productivity and, by extension, overall sustainable economic growth, from the Federal Reserve's point of view, the faster the better. We see our job as fostering the degree of liquidity that will best support the most effective platform for growth to flourish. We believe a noninflationary environment is such a platform because it promotes long-term planning and capital investment and keeps the pressure on businesses to contain costs and enhance efficiency.

The Federal Reserve's policy problem is not with growth, but with maintaining an effective platform. To do so, we endeavor to prevent strains from developing in our economic system, which long experience tells us produce bottlenecks, shortages, and inefficiencies. These eventually create more inflation, which undermines economic expansion and limits the longer-term potential of the economy.

In gauging the potential for oncoming strains, it is the effective capacity of the economy to produce that is important to us. An economy operating at a high level of utilization and growing 5 percent a year is in little difficulty if capacity is growing at least that fast. But a fully utilized economy growing at 1 percent will eventually get into trouble if capacity is growing less than that.

Capacity itself, however, is a complex concept, which requires a separate evaluation of its two components, capital and labor. It appears that capital, that is, plant and equipment, can adapt and expand more expeditiously than in the past to meet demands. Hence, capital capacity is now a considerably less rigid constraint than it once was. In recent years, technology has engendered a significant compression of lead times between order and delivery for production facilities. This has enabled output to respond increasingly faster to an upsurge in demand, thereby decreasing the incidence of strains on capital capacity and shortages so evident in earlier business expansions.

Reflecting progressively shorter lead times for capital equipment, unfilled orders to shipment ratios for nondefense capital goods have declined by 30 percent in the last 6 years. Not only do producers have quicker access to equipment that embodies the most recent advances, but they have been able to adjust their overall capital stock more rapidly to increases in demand.

The current lack of material shortages and bottlenecks, despite the high level and recent robust expansion of demand, is striking. The effective capacity of production facilities has increased substantially in recent years in response to strong final demands and the influence of cost reductions possible with the newer technologies. Increased flexibility is particularly evident in the computer, telecommunications, and related industries, a segment of our economy that seems far less subject to physical capacity constraints than many older-line establishments, and one that is assuming greater importance in our overall output. But the shortening of lags has been pervasive even in more mature industries, owing in part to the application of advanced technologies to production methods.

At the extreme, if all capital goods could be produced at constant cost and on demand, the size of our Nation's capital stock would never pose a restraint on production. We are obviously very far from that nirvana, but it is important to note that we are also far from the situation a half-century ago when our production processes were dominated by equipment such as open hearth steel furnaces, which had very exacting limits on how much they could produce in a fixed timeframe and which required huge lead times to expand their capacity.

Even so, today's economy as a whole still can face capacity constraints from its facilities. Indeed, just 3 years ago, bottlenecks in industrial production—though less extensive than in years past at high levels of measured capacity utilization—were nonetheless putting significant upward pressures on prices at earlier stages of production. More recently vendor performance has deteriorated somewhat, indicating that flexibility to meet demands still has limits. Although further strides toward greater facilities flexibility have occurred since 1994, this is clearly an evolutionary, not a revolutionary, process.

Labor Markets

Moreover, technology and management changes have had only a limited effect on the ability of labor supply to respond to changes in demand. To be sure, individual firms have acquired additional flexibility by increased use of outsourcing and temporary workers. In addition, smaller work teams can adapt more readily to variations in order flows. While these techniques put the right workers at the right spots to reduce bottlenecks, they do not increase the aggregate supply of labor. That supply is sensitive to changes in demand, but to a far more limited extent than for facilities. New plants can almost always be built. But labor capacity for an individual country is constrained by the size of the working-age population, which, except for immigration, is basically determined several decades in the past.

Of course, capital facilities and labor are not fully separate markets. Within limits, labor and capital are substitutes, and slack in one market can offset tightness in another. For example, additional work shifts can expand output without significant addition to facilities, and similarly more labor-displacing equipment can permit production to be increased with the same level of employment.

Yet despite significant increases in capital equipment in recent years, new additions to labor supply have been inadequate to meet the demand for labor. And as a consequence, the recent period has been one of significant reduction in labor market slack.

Of the more than 2 million net new hires at an annual rate since early 1994, only about half have come from an expansion in the population aged 16–64 who wanted a job, and more than a third of those were net new immigrants. The remaining 1 million plus per year increase in employment has been pulled from those who had been reported as unemployed (600 thousand annually) and those who wanted, but had not actively sought, a job (more than 400 thousand annually). The latter, of course, are not in the official unemployment count.

The key point is that continuously digging ever deeper into the available work-age population is not a sustainable trajectory for job creation. The unemployment rate has a downside limit if for no other reason than unemployment, in part, reflects voluntary periods of job search and other frictional unemployment. There is also a limit on how many of the additional 5 million who wanted a job last quarter but were not actively seeking one could be readily absorbed into jobs—in particular, the large number enrolled in school, and those who may lack the necessary skills or face other barriers to taking jobs. The rise in the average work week since early 1996 suggests employers are having increasingly greater difficulty fitting the millions who want a job into available job slots. If the pace of job creation continues, the pressures on wages and other costs of hiring increasing numbers of such individuals could escalate more rapidly.

To be sure, there remain an additional 34 million in the working-age population (age 16–64) who say they do *not* want a job. Presumably, some of these early retirees, students, or homemakers might be attracted to the job market if it became sufficiently rewarding. However, making it attractive enough could also involve upward pressures in real wages that would trigger renewed price pressures, undermining the expansion.

Thus, there would seem to be emerging constraints on potential labor input. Even before we reach the ultimate limit of sustainable labor supply growth, the economy's ability to expand employment at the recent rate should rapidly diminish. The availability of unemployed labor could no longer add to growth, irrespective of the degree of slack in physical facilities at that time. Simply adding new facilities will not increase production unless output per worker improves. Such improvements are possible if worker's skills increase, but such gains come slowly through improved education and on-the-job training. They are also possible as capital substitutes for labor, but are limited by the state of technology. More significant advances require technological breakthroughs. At the cutting edge of technology, where America finds itself, major improvements cannot be produced on demand. New ideas that matter are hard won.

The Economic Outlook

As I previously noted, the recent performance of the labor markets suggests that the economy was on an unsustainable track. Unless aggregate demand increases more slowly than it has in recent years—more in line with trends in the supply of labor and productivity—imbalances will emerge. We do not know, however, at what point pressures would develop—or, indeed, whether the economy is already close to that point.

Fortunately, the very rapid growth of demand over the winter has eased recently. To an extent this easing seems to reflect some falloff in growth of demand for consumer durables and for inventories to a pace more in line with moderate expansion in income. But some of the recent slower growth could simply be a product of abnormal weather patterns, which contributed to a first-quarter surge in output and weakened the second quarter, in which case the underlying trend could be somewhat higher than suggested by the second-quarter data alone. Certainly, business and consumer confidence remains high and financial conditions are supportive of growth. Particularly notable is the run-up in stock market wealth, the full effects of which apparently have not been reflected in overall demand, but might yet be.

Monetary policymakers, balancing these various forces, forecast a continuation of less rapid growth in coming quarters. For 1997 as a whole, the central tendency of their forecasts has real GDP growing 3 to 3¼ percent. This would be much more brisk than was anticipated in February, and the upward revision to this estimate

largely reflects the unexpectedly strong first quarter. The central tendency of monetary policymakers' projections is that real GDP will expand 2 to 2½ percent in 1998. This pace of expansion is expected to keep the unemployment rate close to its current low level.

We are reasonably confident that inflation will be quite modest for 1997 as a whole. The central tendency of the forecasts is that consumer prices will rise only 2¼ to 2½ percent this year. This would be a significantly better outcome than the 2¾ to 3 percent CPI inflation foreseen in February.

Federal Open Market Committee members do see higher rates of inflation next year. The central tendency of the projections is that CPI inflation will be 2½ to 3 percent in 1998—a little above the expectation for this year. However, much of this increase is presumed to result from the absence of temporary factors that are holding down inflation this year. In particular, the favorable movements in food and energy prices of 1997 are unlikely to be repeated, and non-oil import prices may not continue to decline. While it is possible that better productivity trends and subdued wage growth will continue to help damp the increases in business costs associated with tight labor markets, this is a situation that the Federal Reserve plans to monitor closely.

I have no doubt that the current stance of policy—characterized by a nominal Federal funds rate around 5½ percent—will need to be changed at some point to foster sustainable growth and low inflation. Adjustments in the policy instrument in response to new information are a necessary and, I should like to emphasize, routine aspect of responsible policymaking. For the present, as I indicated, demand growth does appear to have moderated, but whether that moderation will be sufficient to avoid putting additional pressures on resources is an open question. With considerable momentum behind the expansion and labor market utilization rates unusually high, the Federal Reserve must be alert to the possibility that additional action might be called for to forestall excessive credit creation.

The Federal Reserve is intent on gearing its policy to facilitate the maximum sustainable growth of the economy, but it is not, as some commentators have suggested, involved in an experiment that deliberately prods the economy to see how far and fast it can grow. The costs of a failed experiment would be much too burdensome for too many of our citizens.

Clearly, in considering issues of monetary policy we need to distinguish carefully between sustainable economic growth and unsustainable accelerations of activity. Sustainable growth reflects the increased capacity of the economic system to produce goods and services over the longer run. It is largely the sum of increases in productivity and in the labor force. That growth contrasts with a second type, a more transitory growth. An economy producing near capacity can expand faster for a short time, often through unsustainably low short-term interest rates and excess credit creation. But this is not growth that promotes lasting increases in standards of living and in jobs for our Nation. Rather, it is a growth that creates instability and thereby inhibits the achievement of our Nation's economic goals.

The key question is how monetary policy can best foster the highest rate of sustainable growth and avoid amplifying swings in output, employment, and prices. The historical evidence is unambiguous that excessive creation of credit and liquidity contributes nothing to the long-run growth of our productive potential and much to costly shorter-term fluctuations. Moreover, it promotes inflation, impairing the economy's longer-term potential output.

Our objective has never been to contain inflation as an end in itself, but rather as a precondition for the highest possible long-run growth of output and income—the ultimate goal of macroeconomic policy.

In considering possible adjustments of policy to achieve that goal, the issue of lags in the effects of monetary policy is crucial. The evidence clearly demonstrates that monetary policy affects the financial markets immediately but works with significant lags on output, employment, and prices. Thus, as I pointed out earlier, policy needs to be made today on the basis of likely economic conditions in the future. As a consequence, and in the absence of once-reliable monetary guides to policy, there is no alternative to formulating policy using risk-reward tradeoffs based on what are, unavoidably, uncertain forecasts.

Operating on uncertain forecasts, of course, is not unusual. People do it every day, consciously or subconsciously. A driver might tap the brakes to make sure not to be hit by a truck coming down the street, even if he thinks the chances of such an event are relatively low; the costs of being wrong are simply too high. Similarly, in conducting monetary policy the Federal Reserve needs constantly to look down the road to gauge the future risks to the economy and act accordingly.

Growth of Money and Credit

The view that the Federal Reserve's best contribution to growth is to foster price stability has informed both our tactical decisions on the stance of monetary policy and our longer-run judgments on appropriate rates of liquidity provision. To be sure, growth rates of monetary and credit aggregates have become less reliable as guides for monetary policy as a result of rapid change in our financial system. As I have reported to you previously, the current uncertainties regarding the behavior of the monetary aggregates have implied that we have been unable to employ them as guides to short-run policy decisions. Accordingly, in recent years we have reported annual ranges for money growth that serve as benchmarks under conditions of price stability and a return to historically stable patterns of velocity.

Over the past several years, the monetary aggregates—M2 in particular—have shown some signs of reestablishing such stable patterns. The velocity of M2 has fluctuated in a relatively narrow range, and some of its variation within that range has been explained by interest rate movements, in a relationship similar to that established over earlier decades. We find this an encouraging development, and it is possible that at some point the FOMC might elect to put more weight on such monetary quantities in the conduct of policy. But in our view, sufficient evidence has not yet accumulated to support such a judgment.

Consequently, we have decided to keep the existing ranges of growth for money and credit for 1997 and carry them over to next year, retaining the interpretation of the money ranges as benchmarks for the achievement of price stability. With nominal income growth strong relative to the rate that would likely prevail under conditions of price stability, the growth of M2 is likely to run in the upper part of its range both this year and next, while M3 could run a little above its cone. Domestic nonfinancial sector debt is likely to remain well within its range, with private debt growth brisk and Federal debt growth subdued. Although any tendency for the aggregates to exceed their ranges would not, in the event, necessarily call for an examination of whether a policy adjustment was needed, the Federal Reserve will be closely examining financial market prices and flows in the context of a broad range of economic and price indicators for evidence that the sustainability of the economic expansion may be in jeopardy.

Concluding Comment

The Federal Reserve recognizes, of course, that monetary policy does not determine the economy's potential. All that it can do is help establish sound money and a stable financial environment in which the inherent vitality of a market economy can flourish and promote the capital investment that in the long run is the basis for vigorous economic growth. Similarly, other Government policies also have a major role to play in contributing to economic growth. A continued emphasis on market mechanisms through deregulation will help sharpen incentives to work, save, invest, and innovate. Similarly, a fiscal policy oriented toward limited growth in Government expenditures, producing smaller budget deficits and even budget surpluses, would tend to lower real interest rates even further, also promoting capital investment. The recent experience provides striking evidence of the potential for the continuation and extension of monetary, fiscal, and structural policies to enhance our economy's performance in the period ahead.

**RESPONSE TO WRITTEN QUESTIONS OF SENATOR SHELBY
FROM ALAN GREENSPAN**

Q.1. According to the minutes from the May 20, 1997, Federal Open Market Committee Meeting, it was stated that “. . . recent developments have underscored the fact that historical experience was not a fully reliable guide to the prospective behavior of prices; accordingly, the inflation outlook remained subject to considerable uncertainty.” In addition, your testimony spoke of the “absence of once-reliable monetary guides to policy.” What historical relationships are now in question besides NAIRU? Is capacity utilization still a good predictor for the Producer Price Index? Are gold and commodities still reliable leading indicators of the PPI inflation?

A.1. The degree of wage and price inflation that has accompanied the tightening of labor markets over the past few years has fallen short of what would have been expected based on most simple econometric relations derived from historical data. Many of those models involve, implicitly, a “NAIRU” concept, and the level of unemployment at which inflation is predicted to pick up is typically well above the 5 percent area we have seen in recent months. One can readily identify factors, such as the dollar’s appreciation on exchange markets or the unusual degree of insecurity people feel with respect to their jobs, that have disturbed the traditional relationships of late, but the residual uncertainty about the dynamics of the inflation process in today’s economy is significant.

Considerable uncertainty also attends the relations between monetary aggregate behavior and the performance of the economy. However, as we have noted, there are hints of a return in the past couple of years to more “normal” patterns in the demand for money. This is reflected in the chart (on page 21) in the Monetary Policy Report, where one can see that the velocity of M2 and the so-called opportunity cost of holding M2 assets have been moving in parallel of late, after a major break with the historical pattern in the early 1990’s. The pace of innovation in financial markets remains rapid though, and a period of renewed predictability in the behavior of velocity has been relatively brief, so there is the clear possibility of another disturbance in the money demand relation. We’re watching closely in the hope that monetary aggregates might become a more useful guide for policy. As regards other policy relevant relations, we do continue to monitor the behavior of industrial capacity utilization for information about current or potential inflationary pressures. Through heavy investment in plant and, especially, equipment, manufacturers have expanded capacity rapidly, and the level of capacity utilization has not been very high in the recent period—consistent with the subdued behavior of producer prices. When capacity utilization rose to levels appreciably above historical averages earlier in the expansion, we did see an acceleration of producer prices—confirming the continuing importance of this variable as an indicator of inflationary pressures.

The price of gold generally is a broad measure of inflationary expectations and movements in commodities prices certainly are mirrored in the PPI—especially in the crude and intermediate goods sub-indexes—and they may be indicative of whether bottlenecks are developing that could be the precursor of more general strains on production capabilities. We continue to find value in

tracking these developments at earlier stages of processing, but it is important to remember that basic commodities constitute only a small part of the cost of producing most goods, so that even rather noticeable movements in commodities prices may have only a faint echo in the prices of finished goods.

Q.2. The real Federal funds rate currently stands above its long-term average, and even the level required to slow the economy in 1994. Has the real Federal funds rate necessary to slow the economy changed over time? If so, to what degree?

A.2. As I emphasized in my testimony, the Federal Reserve has no intention of fostering any slower growth of economic activity than the pace that can be sustained, and from our perspective the faster that pace, the better. In assessing what stance of monetary policy would be consistent with sustainable economic growth, the FOMC is continuously attempting to answer a question similar to the one that you posed.

The answer to that question does vary over time, depending on what else is happening in financial markets and the economy. For example, in the early 1990's the real Federal funds rate had to be kept unusually low for a long time to counter the effects of the credit crunch. It does appear currently that the level of real short-term interest rates consistent with continued good macroeconomic performance is higher than on average over the last four decades or so. This phenomenon may well be a consequence of the recent evidently improved profit opportunities, mentioned in my testimony, resulting from higher returns on capital investment projects, especially those associated with taking advantage of newer technologies. Perceptions of enhanced profitability have been reflected in high and rising equity prices, despite relatively elevated real short-term interest rates. Whether higher real returns across the maturity spectrum will prove to be lasting or not is now unknowable, and will bear special monitoring as time passes.



BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

ALAN GREENSPAN
CHAIRMAN

July 14, 1997

The Honorable Alfonse M. D'Amato
Chairman
Committee on Banking, Housing,
and Urban Affairs
United States Senate
Washington D.C. 20510

Dear Mr. Chairman:

I appreciate the opportunity to respond to the important issues raised in your letter of April 28 regarding the payment of interest on reserves.

As you note, the lack of interest on reserve balances at the Federal Reserve is in effect a tax on depository institutions. Naturally, banks and their customers try to minimize such tax liabilities, using resources and incurring expenses in the process. Efforts to avoid reserve taxes on business transaction accounts have been widespread for many years, and movements out of transaction deposits have been spurred as well by the prohibition of interest payments on demand deposits. In recent years, technological advances have facilitated the spread of "tax avoidance" into consumer checking accounts. In the process, required reserve balances possibly could be reduced to a point that would complicate the implementation of monetary policy. Should this occur, the Federal Reserve would need to adapt its monetary policy instruments, which could involve disruption and cost to private parties as well as to the Federal Reserve.

Payment of interest on reserves would address these potential complications, reducing the need, or easing the way, for any such adaptations. Reduced costs for banks—both the direct costs of the tax and the indirect cost of tax avoidance—would over time tend to get passed through to customers.

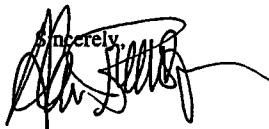
You have asked a number of specific questions related to these and other important issues regarding the payment of interest on reserves, and our responses are enclosed.

The Honorable Alfonse M. D'Amato

Page 2

I hope these comments and the responses to your questions will be helpful to you in formulating legislation to pay interest on reserves. Allowing the Federal Reserve to pay interest on reserve balances would be a useful step, which we support. We would further recommend that any legislation incorporate an adequate measure of flexibility so that the central bank could adapt the tools of monetary policy to potential future financial market developments. To this end, we would support providing the Federal Reserve the ability to pay interest on required and excess reserve balances, at possibly differential rates to be set by the Federal Reserve. We would also recommend allowing depository institutions to pay interest on demand deposits, which would eliminate a price distortion and the wasteful use of resources to circumvent it.

A more fundamental change—eliminating reserve requirements and the tax it implies—could also be considered, but it might well require significant adjustments in the implementation of monetary policy, including the adoption of procedures to control volatility in overnight interest rates that have not been tested in our financial sector. If Congress intended to move in this direction, statutory authority to pay explicit interest on the remaining balances held at the Federal Reserve would be especially useful for monetary policy purposes.

Sincerely,


Enclosures

ATTACHMENT 1—SPECIFIC QUESTIONS

Q.1. If the Fed were permitted to pay interest on reserves, what would be the impact on reserve levels?

A.1. The impact on reserve levels would depend in part on the type of reserves on which interest would be paid. Interest could be paid on required reserve balances at the Federal Reserve (that is, required reserves less vault cash), on excess reserve balances, or on both. If interest were paid on required reserve balances, then some depositories would likely discontinue their existing programs to sweep retail deposits into non-reservable accounts, and others would decline to implement new sweep programs. (Retail sweep programs, which employ computer-assisted procedures to sweep checking and demand deposit balances into savings deposits, have reduced transaction deposits by over \$210 billion since they began to be implemented in early 1994.) The net effect would be a higher level of both transaction deposits and required reserve balances than would prevail in the absence of interest on reserves.

We estimate that required reserve balances have fallen by about \$19 billion as a result of the implementation of retail sweep programs, and they are now around \$9 billion. Over the next couple of years, absent interest payments on reserves, required reserve balances could decline by perhaps another \$5 billion as retail sweep programs reach saturation levels. (Based on the behavior of banks that have already instituted sweep programs, we expect that a residual of around \$3 billion to \$5 billion of required reserve balances would remain. A number of banks—especially those with a large volume of business demand deposits and little vault cash—would be unlikely to reduce their required reserve balances to zero with retail sweep programs.)

The proportion of sweeps that would be unwound with the payment of interest on reserves is uncertain. Most of the expense of sweeps for depositories is incurred in the design and implementation stage, and once installed, maintenance costs are probably low, so incentives to discontinue the programs are small. But maintenance costs are not zero, and might be considerable if computer systems are changed—for example, in the course of a merger. In our survey of large banks undertaken in the spring of 1996, about two-thirds of the banks then sweeping indicated that they would unwind sweeps if interest were paid on reserves at the Federal funds rate. After accounting for the additional sweeps that would be implemented if interest were not paid on reserves, and for trend growth, the total effect of paying interest on required reserve balances would be to boost the level of such balances by roughly \$17 billion to \$19 billion, once depository institutions have adjusted.

Allowing the payment of interest on excess reserves would also be helpful under certain circumstances. The rate of remuneration on excess reserves would act as a floor under the Federal funds rate, and such a floor would be a useful element in limiting variability of the funds rate if interest were not to be paid on required reserve balances, or if, despite such interest payments, required reserve balances did not remain high enough. The payment of interest on excess reserves could stimulate an increase in the demand

for excess reserves relative to the current average level of about \$1 billion. The extent of the increase would depend in part on the level of required reserve balances—with lower or no required balances, the demand for excess reserves would be larger. The demand would also depend on the rate paid on excess reserves; it could be large if the rate were only slightly below the FOMC's expected Federal funds rate, but much smaller if the rate were set well under the expected funds rate. (The interest rate on excess reserves could not be above the Federal funds rate, because lenders would not accept both the private credit risk on Federal funds and a lower interest rate than that offered by the Federal Reserve.)

Q.2. What impact would eliminating the restriction on payment of interest on demand deposits have on the level of required reserves?

A.2. Allowing explicit interest payments should stimulate an increase in demand deposits and hence in required reserves. For demand deposits held by households, there would be little effect, as depositories are already allowed to offer interest-bearing checking accounts to households. However, partly because of the prohibition against interest on demand deposits, businesses hold a substantial proportion of their liquid assets outside such deposits, in instruments such as money market mutual fund shares, repurchase agreements, and Eurodollar deposits. Banks have long offered their business customers, especially the larger ones, cash management facilities to sweep demand deposit balances at the end of each day into these investments. And there are reports that some money market mutual funds are beginning to solicit small businesses for transactions-oriented accounts that would substitute for demand deposits. A number of firms might shift funds out of these instruments and into checking accounts, if such accounts were to pay explicit interest.

However, several factors should limit the magnitude of the response to the payment of interest on demand deposits. First, according to our last survey on this topic, in 1992, perhaps one-third to one-half of total demand deposits are held in compensating balance accounts, on which corporations gain "earnings credits" that are used to offset charges for bank services. As this is a form of implicit interest, the payment of explicit interest might provide rather little stimulus to the demand deposits of such corporations.

Furthermore, banks can already offer businesses an interest-earning money market deposit account, a product that competes with money fund shares. Although such accounts have restricted transaction facilities, they are likely to have higher offering rates than interest-bearing demand deposits, limiting the attractiveness of the latter. Finally, perceptions of the relative risk of demand deposits, which are uninsured above \$100,000, versus some of the alternative investments might also be a restraining influence.

On balance, if the banks could pay explicit interest on demand deposits, we imagine that they would likely gain a modest fraction of market share away from institutional money funds, while a substantial amount of the daily sweeping into bank repurchase agreements and Eurodollar deposits might be curtailed, and the potential for further shifts of transactions accounts to money funds would be reduced. It is impossible to predict with any confidence

the effects of removing a restriction that has been in place for more than half a century. But it seems reasonable to suppose that the payment of interest on demand deposits could boost the level of such deposits by several tens of billions of dollars, depending on how banks chose to position interest-bearing business transaction accounts against their own alternative products and competing market instruments. Of course, if no interest were paid on required reserve balances, the response to the payment of interest on demand deposits would be more limited because of the continued reserve tax.

Q.3. What would be an appropriate rate for the Fed to pay on bank reserves?

A.3. If the Federal Reserve were granted the power to pay interest on reserves, the actual rate paid, and any differential between rates on required reserve balances and excess reserves, would best be left to the Federal Reserve. The rate or rates paid on reserves would have to be allowed to vary with the general level of short-term interest rates. Under current procedures, the rate paid on required reserve balances would likely be set very close to the FOMC's expected Federal funds rate. The funds rate is the rate at which depositories trade reserves among themselves. The rate on excess reserves could be set either slightly or more noticeably below this rate. However, if the FOMC shifted its focus away from the Federal funds rate as an instrument, toward other market interest rates, or toward other instruments for monetary policy, an alternative procedure for setting the interest rates on reserves might need to be employed.

Q.4. Would you anticipate that the average consumer would see a benefit from lifting the statutory prohibition of paying interest on reserves?

A.4. Yes, we would expect that, over time, the competitive forces of the marketplace would impel depositories to pass along to their depositors or borrowers much of the reduced intermediation costs from paying interest on reserves. An immediate pass-through would be likely on the earnings credit rates on compensating balances of businesses, which typically have been explicitly reduced by the cost to banks of reserve requirements. For many bank customers, however, it may take some time before any benefits are visible. For example, what limited information we have suggests very little returns to bank customers so far from the reduction in reserve taxes associated with the implementation of retail sweep programs.

Q.5. Would the implementation of monetary policy be adversely affected by eliminating reserve requirements?

A.5. Elimination of reserve requirements would reduce the costs of financial intermediation for depositories through a number of channels. It would remove the reserve tax and the costly efforts of depositories to avoid it. It would also remove a complex area of regulation of depositories, which is not needed for safety and soundness purposes.

However, unless we were to change our operating procedures, the elimination of reserve requirements could have adverse implica-

tions for the implementation of monetary policy, assuming no other legislative changes. Depositories must meet reserve requirements that exceed their vault cash by holding a specified average balance at Reserve Banks over a 2-week maintenance period. Banks and thrifts can arbitrage across the days of the maintenance period, holding smaller balances when overnight interest rates are high, and larger balances when rates are low. This arbitrage helps to stabilize overnight interest rates. In addition, the demand for the 2-week average reserve balances can be readily estimated by the Federal Reserve when it assesses the need to supply reserves through open market operations. In the absence of reserve requirements, the demand for balances at Reserve Banks would be based on the daily need of the depositories for balances to cover the clearing of customer payments through their reserve accounts, which depositories themselves have a hard time predicting because of possible large unexpected customer transactions flows late in the business day. Consequently, the Federal Reserve also would have difficulty predicting the demand for reserve balances and determining the appropriate size of daily open market operations. In the absence of interday arbitrage of the Federal funds rate by banks, and with highly uncertain daily demands for reserves, overnight interest rates could become quite volatile.

Required clearing balances could help to mitigate such effects, but would not likely be a sufficient stabilizing influence. (Required clearing balances allow depositories to earn implicit interest to offset charges for the use of Federal Reserve services—an analog of the compensating balances banks offer to businesses. They are called “required” because a depository must precommit to holding a certain average amount over a 2-week maintenance period.) If reserve requirements were eliminated, required clearing balances would increase, thereby helping to provide a stable 2-week average demand for balances at Reserve Banks. The volume of required clearing balances on which an institution can obtain earnings credits is limited, however, by the charges for the Federal Reserve services it uses and by the level of interest rates. If the Federal Reserve began to provide a lower volume of services, the level of feasible required clearing balances could decline. In addition, when interest rates rise, earnings credit rates rise as well, and the level of clearing balances needed to pay for a given level of services from the Federal Reserve falls.

If the level of feasible required clearing balances for an institution were less than the balances needed as a cushion against unexpected payment flows late in the day, then the institution’s daily demand for balances could be quite variable in the absence of reserve requirements. If numerous large depositories were in this position, then required clearing balances would not represent the marginal demand for balances, and the benefits of interday arbitrage and relatively predictable 2-week average demands would be lost. In the event, required clearing balances would be of little help in mitigating the volatility in short-term market rates.

The Federal Reserve could nevertheless manage to implement monetary policy effectively without reserve requirements, and several industrialized countries already do so—as noted below in the response to your last question. However, we would have to make

a number of changes in our operating procedures, and banks and other market participants would need to adapt to the new structure. Several of these changes are discussed in answer to your next question.

Q.6. If the continued decline of reserves would produce greater interest rate volatility, what options would the Federal Reserve have to counteract this effect?

A.6. With the decline in reserves experienced so far, interest rate volatility has increased only slightly. A moderate rise in the volatility of overnight interest rates would not likely be transmitted significantly to longer-term rates, nor have noticeable adverse macroeconomic effects. Even a more sizable increase in the volatility of overnight interest rates might not have serious effects on overall financial stability, although we have not experienced such an eventuality. However, a moderate—and certainly a severe—rise in volatility would increase the unanticipated gains and losses of money market participants, and the heightened uncertainty might induce them to incur greater expenses in reserve and cash management.

Under current legislation, the Federal Reserve has some options for stabilizing—or at least putting bounds on—short-term interest rates if volatility were to rise significantly in an environment of low or no required reserves. For example, more active use of the discount window by depositories when reserve markets are under pressure could help to limit upward movements in the Federal funds rate. While depositories have been less inclined to turn to the discount window for temporary adjustment credit in recent years, we might be able to find ways to encourage greater use of this facility. An alternative, employed in many European countries, would involve a more thorough overhaul of our credit facilities, with less administrative restraint on use of the discount window, and a setting for the discount rate above the usual overnight market rates. This type of “Lombard” facility would prove useful in restraining upward spikes of the funds rate, if the reluctance of depositories to use discount window credit could be overcome. We would still need to control borrowing by troubled institutions for whom even a penalty rate might be below market. Also, this facility could affect the institutional arrangements involving the role of Reserve Banks’ Boards of Directors in establishing discount rates, especially if such a rate were based on a fixed spread above the FOMC’s expected Federal funds rate.

Moreover, the Federal Reserve could add reserves on a more flexible basis throughout the day to help cap the funds rate, although there are limits to such operations, as discussed later. To prevent the funds rate from dropping too low, we could consider arranging sweeps of our own—rolling the excess reserve balances of depositories into matched sale/purchase agreements with us late in the day. The interest rate we paid on such contracts would act as a floor for the Federal funds rate. However, an innovation of this nature might involve significant administrative costs in developing the system and related software, and in operating it, including making assignments of collateral, opening a special securities wire late in the business day, and administering any limitations on the amounts or frequency of such sweeps for individual depositories.

These costs could be largely avoided if the Federal Reserve were allowed to pay interest on excess reserves. The payment of interest on excess reserves might also allow other alternatives for controlling the Federal funds rate. For example, we could conceivably follow a procedure of setting the rate on excess reserves very close to our intended Federal funds rate and then ensuring an overabundant supply of reserves through occasional outright purchases of securities, so that the funds rate would tend to be stabilized around its intended level, without the need for a Lombard facility, and with a reduced need for daily adjustments in reserve levels through temporary open market operations.

In addition, the Federal Reserve could contemplate other types of changes in its procedures for implementing monetary policy on a daily basis. For instance, we might consider moving away from the current procedure of conducting discrete, auction-like, quantity-based open market operations, usually only once per day. Instead, we could enter the market regularly several times each day. Alternatively, we could post buy and sell rates for overnight repurchase agreements during an extended period of trading each day and let the market determine the net quantity of additions to reserves. However, in either of these cases, we are unlikely to be able to add sizable quantities of reserves with open market operations near the end of the day, when much of the funds rate volatility occurs; collateral for repurchase agreements is quite limited then because dealers have already obtained all the financing they need.

One other option would be for the Federal Reserve to look for ways to increase the demand for required clearing balances. One suggestion has been for us to allow the earnings credits on such balances to be traded among depositories. However, as mentioned above, it would be ill-advised to rely exclusively on required clearing balances to stabilize interest rates, given the sensitivity of such balances to the level of interest rates and to the usage of Federal Reserve services.

In sum, as you can see, we have a number of possible means of reducing volatility in the Federal funds market, should that become necessary, and other alternatives could be made available with further legislation. Nevertheless, there are drawbacks to many of these possibilities, and in some cases further study would be needed before we could select the precise features to be implemented.

Q.7. Would the Federal Reserve's reliance on only the required clearing balances pose any concerns relative to the payment system?

A.7. If the Federal Reserve relied solely on the required clearing balances, the overall balances available for effecting payments would be substantially reduced, and both daylight and overnight overdrafts of accounts at Reserve Banks could become larger and more frequent. Such effects could increase the risks borne by the Federal Reserve, but since payments through us are almost always considered final, systemic risks in the payment system would not be increased. Reserve Banks would be able to offset the risks they would bear through collateralization, and their existing administrative procedures and penalty charges would tend to encourage more

efficient account management and hence discourage the overdrafts from occurring to some extent.

Q.8. When the Federal Reserve began its series of interpretative letters authorizing sweep accounts, was there any analysis or discussion of the likely level of bank usage of these accounts and/or the effect on reserves?

A.8. Enclosed as Attachment 2 is a staff memo to the Board, dated March 3, 1993, regarding the original proposal to establish a retail sweep program. It shows that the Federal Reserve was fully aware of the possibility of substantial reductions in transaction accounts and reserves following the implementation of retail sweep programs. Although the implications of the drop in reserves were not discussed in the memo, the Board was well aware of the possible increase in reserve market volatility from a drop in reserves, since this subject was considered thoroughly about a year before when the Board reduced the reserve requirement on transactions deposits from 12 to 10 percent. Nevertheless, the sweep proposal was not in violation of our regulations. Retail sweep programs are in essence an extension to the household sector of a financial innovation that became widespread for business accounts in the mid-1970's. Improvements in computer technology and software over the years have made it possible for such programs to be implemented even for the small accounts of numerous households.

Q.9. How does our reserve policy, including the level of reserves required and the nonpayment of interest on reserves, compare to that of the central banks in other industrialized countries?

A.9. Among the foreign G-10 countries, Canada, Belgium, and Sweden effectively have no reserve requirements at present. In other foreign G-10 countries, required reserve ratios vary considerably, as do the base of deposits against which these requirements are applied. Many countries have reduced required reserve ratios to quite low levels. Interest is paid on reserves in Italy, the Netherlands, and Switzerland. A table of data is being provided for your reference in Attachment 3.

ATTACHMENT 2

BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM
DIVISION OF MONETARY AFFAIRS

Date: March 3, 1993
To: Board of Governors
From: Division of Monetary Affairs (David Lindsey)
Legal Division (Oliver Ireland) *D.E.L.*
Subject: First Union's Proposed Money Management Service

First Union has proposed to institute a new money management service directed at households. The proposal apparently has been formulated in response to the Board's recent interpretation of Regulation D that prohibited an earlier practice by First Union, which involved sweeping funds from NOW accounts into large time deposits.

The new arrangement would sweep balances above a prespecified maximum level from the depositor's NOW account into his or her MMDA. When NOW account balances fall below a prespecified minimum level, funds would be moved from the MMDA to the NOW account. The maximum and minimum levels for each individual NOW account would be set based on an analysis of the historical pattern of activity in the account. If a sixth transfer from the MMDA occurred within a one-month period, all remaining balances in the depositor's MMDA would be swept into the NOW account, to prevent violations of the limit of six automatic transfers per month from MMDAs.

The proposed sweep arrangement differs from the recently prohibited practice of sweeping NOW account funds into large time deposits. That arrangement commingled depositors' funds, allowing an individual depositor to rely on other depositors'

funds to prevent overdrafts should his or her portion of the maturing CD be insufficient to cover NOW-account debits.

The new plan will allow more of a depositor's balances to be maintained in MMDAs than at present; hence, the bank will be able to lower its reserve requirements. Potentially, the depositor and the bank both could benefit, assuming the bank passes along part of the reduction in its funding costs to the depositor. The extent of the reduction will depend in part on First Union's ability to predict debits and credits to individual customers' NOW accounts. In proposing the program, First Union seems to be signalling that it believes an appreciable reduction is possible. If First Union successfully implements the program, it is likely that other banks will emulate it, and a significant erosion of the reserve base could occur.¹

The proposal does not appear to violate Regulation D as currently formulated: in effect, it would simply extend to households the benefits of sweep accounts that have been enjoyed by corporations for many years. First Union plans to proceed with this arrangement in the absence of a prohibition from the Board. Please let Mr. Lindsey or Mr. Ireland know if you have any comments on or objections to this proposal by March 8, 1993.

1. First Union's proposal would reduce M1, but would have no effect on M2, as both NOW accounts and MMDAs are included in M2.

	Required Reserve Ratios (%) and Types of Liabilities Subject to Them	Remuneration on Reserves	Calculation and Maintenance Periods and Time Lag Between Them
France	0.5 on some passbook savings accounts, CDs, repos, and some off-balance-sheet liabilities 1.0 on transaction and sight deposits, and large time deposits	None	Required reserves computed on the last day of the previous month, maintained for 1 month ending on the 15th of the current month, 15-day lag
Germany	1.5 on savings deposits 2.0 on sight deposits defined as less than 1-month maturity, time deposits, CDs, and repos	None	Calculation is averaged over calendar month ending on the 15th of the month, maintained for 1 month through month-end, 15-day lag
Italy	15.0 on transaction and sight deposits, time and savings deposits, and CDs, applied to the change in eligible liabilities	Required reserves are remunerated at 5.5 %, excess reserves at 0.5%	Calculation is averaged over the month prior to the previous calendar month, maintenance period is 1 month ending on the 14th day of the current month, 45-day lag
Japan	0.05 - 1.3 on transactions and sight deposits ¹ 0.05 - 1.2 on time and savings deposits ¹ 0.05- 1.8 on CDs ¹ 0.1 - 0.15 on other liabilities	None	Calculation is averaged over previous month, maintenance period is 1 month ending on the 15th day of the current month, 15-day lag
Netherlands	variable on transaction and sight deposits, time and savings deposits, CDs, repos, and other liabilities	Remunerated at nearly market rates ²	Calculation is averaged over previous 3 months, maintenance period is 7-10 days, variable lag
Switzerland	2.5 on transaction and sight deposits, and about 20 percent of various forms of savings deposits	Most reserves are not remunerated ³	Calculation is averaged over previous 3 months, maintenance period is 1 month ending on the 17th day of the current month, 51-day lag
United Kingdom	0.35 on most domestic-currency-denominated liabilities plus any foreign currency liability (as part of the netting of foreign currency positions)	None	Calculated in April and October on average liabilities reported at the end of the 6 previous months, lag and maintenance period are 6 months

Notes: No reserve requirements are in place in Belgium and Sweden. In Canada banks must maintain a non-negative balance before overdrafts on their account with the Bank of Canada only on average during 1-month periods. ¹Ratio varies with size of the corresponding liability category. ²Weighted average of the rate on ordinary and special advances. ³Postal checking deposits are paid 25%.

Sources: *Implementation and Tactics of Monetary Policy*, BIS Conference Papers Vol. 3, March 1997, pp. 312-321, various publications of foreign central banks, and *Annual Report 1994*, European Monetary Institute, April 1995, pp. 128-131 and 353-354

For use at 2:00 p.m., E.D.T.
Tuesday
July 22, 1997

Board of Governors of the Federal Reserve System



Monetary Policy Report to the Congress
Pursuant to the
Full Employment and Balanced Growth Act of 1978

July 22, 1997

Letter of Transmittal

BOARD OF GOVERNORS OF THE
FEDERAL RESERVE SYSTEM
Washington, D.C., July 22, 1997

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 the Full Employment and Balanced Growth Act of 1978.

Sincerely,

A handwritten signature in black ink, appearing to read "Alan Greenspan", written in a cursive style.

Alan Greenspan, Chairman

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Section 1: Monetary Policy and the Economic Outlook

The economy continued to perform exceptionally well in the first half of 1997. Real output grew briskly, while inflation ebbed. Sizable further increases in payrolls pushed the unemployment rate below 5 percent for the first time in nearly twenty-five years. Although growth in real gross domestic product appears to have slowed in the spring, this slackening came on the heels of a dramatic surge in the opening months of the year; all indications are that the expansion remains well intact. The members of the Board of Governors and the Reserve Bank presidents anticipate that the economy will grow at a moderate pace in the second half of this year and in 1998 and that inflation will remain low. Conditions in financial markets are supportive of continued growth: Longer-term interest rates are in the lower portion of the range observed in this decade, the stock market has registered all-time highs, and credit remains readily available to private borrowers.

Since the February report on monetary policy, Federal Reserve policymakers have revised upward their expectations for growth of real activity in 1997 and trimmed their forecasts of inflation. This combination of revisions highlights the extraordinarily positive condition still prevailing more than six years into the current economic expansion. In part, the recent confluence of higher-than-expected output and lower inflation has reflected the favorable influences on prices of retreating oil prices and a strong dollar. But it may also be attributable to more durable changes in our economy, notably a greater flexibility and competitiveness in labor and product markets and more rapid, technology-driven gains in efficiency. In essence, the economy may be experiencing an upward shift in its longer-range output potential.

To the extent that aggregate supply is expanding more rapidly, monetary policy can accommodate extra growth in demand without fostering increased inflationary pressures. In late March, however, the Federal Open Market Committee concluded that there was a significant risk that aggregate demand would grow faster in the coming quarters than available supply, which, with utilization already at a very high level, would place the economy's resources under increasing strain. If such unsustainable growth persisted, the resulting inflationary imbalances would eventually undermine the health of the expansion—the all too frequent pattern of past business cycles. To protect against the possibility of such

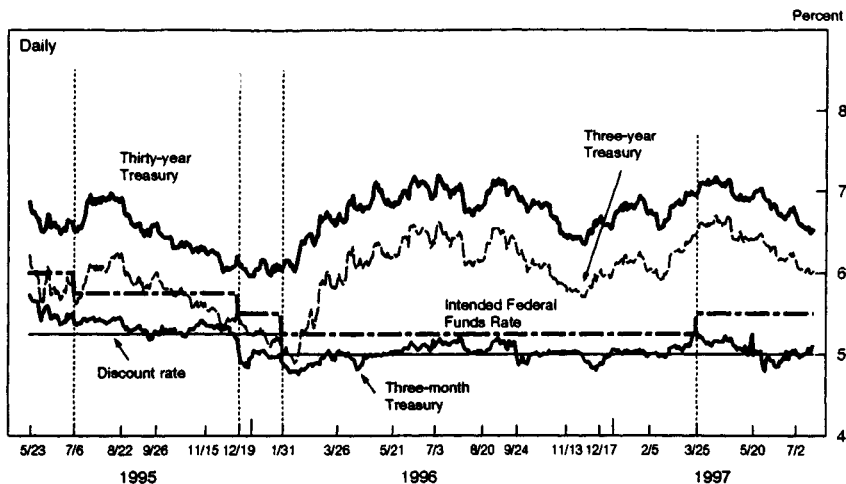
an outcome, the Committee tightened policy slightly. With the softening of demand in the spring, the Committee was able to maintain a steady posture in the money market while closely monitoring economic developments. The ongoing objective of monetary policy is to help the nation achieve maximum sustainable economic growth and the highest average living standards. The Federal Reserve recognizes that it can best accomplish this objective by keeping inflation in check, because an environment of price stability is most conducive to sound, long-term planning by households and businesses.

Monetary Policy, Financial Markets, and the Economy over the First Half of 1997

The rapid economic growth observed in the closing months of 1996 continued in the first quarter of this year, with real GDP advancing almost 6 percent at an annual rate. Consumer spending surged, fueled by a significant increase in income, upbeat consumer attitudes, and the effects of the huge run-up in equity prices over the past couple of years on household net worth. Business fixed investment was strong, and companies restocked inventories that had become thin as sales soared. The advance in real output provided support for considerable new hiring; rising pay and greater job availability drew additional people into the workforce, lifting the labor force participation rate to a new high during the first quarter of the year. The underlying trend in consumer price inflation was still subdued. Inflation pressures were held in check by smaller food price increases, declining prices for non-oil imports, the marked expansion of industrial capacity in recent years, and continuing efforts by businesses to boost efficiency.

At their meeting in late March, Federal Open Market Committee (FOMC) members expected that the growth of economic activity would ease in the coming months, but they were uncertain about the likely extent of that slowing. Although the first-quarter burst in production had owed importantly to a number of temporary factors, many of the fundamentals underlying consumer and business demand remained quite positive. The Committee was concerned about the risk that if outsized gains in real output continued, pressures on costs and prices would emerge that could eventually undermine the expansion. Therefore, to help foster more sustainable trends in output and guard against potential inflationary imbalances, the Committee firmed policy slightly by

Selected Interest Rates



Note. Dotted vertical lines indicate days on which the Federal Open Market Committee (FOMC) announced a monetary policy action. The dates on the horizontal axis are those on which the FOMC held meetings. Last observations are for July 18, 1997.

raising the expected federal funds rate from around 5¼ percent to around 5½ percent.

The unsustainably strong pace of economic growth in the first quarter weighed on financial markets. Interest rates rose substantially, even before the System's action, despite favorable news on inflation. Because the policy tightening was widely anticipated, rates were little affected by the announcement, but they moved up a little more in the following weeks as incoming data suggested persistent strength in economic activity. Equity prices rose early in the first quarter and then declined, changing relatively little on net. The trade-weighted value of the dollar in terms of the other G-10 currencies increased about 7 percent in the first quarter, reflecting the unexpectedly strong economic growth in the United States and market uncertainty about economic performance abroad.

As the second quarter progressed, it became increasingly evident that economic activity had indeed decelerated. The expansion of consumer spending eased considerably, while business fixed investment remained strong. Employment continued to climb rapidly, pushing the unemployment rate down below 5 percent on average in the second quarter—the lowest level since the early 1970s.

Despite high levels of employment and production through the first half of the year, there were few signs that inflation was deviating significantly from recent trends. Although overall consumer price inflation dipped in the second quarter as energy prices declined, consumer prices excluding food and energy increased at about the same pace in the first half of the year as in 1996.

Continued favorable price movements and the slowing of economic growth suggested to financial market participants that inflation might remain damped without a further tightening of financial conditions, and this belief prompted a substantial drop in interest rates from late April to mid-July, reversing the earlier advance. With resource utilization still at very high levels, and with economic and financial conditions conducive to robust increases in spending, the FOMC at its May meeting continued to view the risks as skewed toward the re-emergence of inflationary pressures. But the moderation in aggregate demand and uncertainty about the relationship between utilization rates and inflation led the Committee to leave reserve conditions unchanged in May and again in July. The drop in market interest rates in the second quarter may also have been encouraged by favorable news about this year's federal budget

deficit and by the agreement between the President and the Congress to balance the budget in fiscal year 2002. Spurred by lower rates and greater optimism about the long-term outlook for earnings, the stock market surged in the second quarter and into July. The value of the dollar rose somewhat further in foreign-exchange markets, on balance, an increase more than accounted for by an appreciation against continental European currencies.

During the first half of the year, credit remained available on favorable terms to most households and businesses. High delinquency rates for consumer loans encouraged many banks to tighten standards, but consumer loan rates generally stayed fairly low relative to benchmark Treasury rates, and consumer credit continued to grow faster than income and only a little below the pace of 1996. Home mortgage debt advanced at a moderate rate, with home equity loans expanding especially rapidly in the spring. Businesses continued to have access to ample external funding both directly in capital markets and through financial intermediaries. The spreads between yields on corporate bonds and Treasury securities stayed low or fell further, and, relative to market rates, bank business loan rates held near the lower end of the range seen in the current expansion.

Total domestic nonfinancial debt expanded more slowly in the first half of 1997 than in 1996, mainly because of a reduced pace of federal borrowing. Trends in the monetary aggregates during the first half of 1997 were similar to those in 1996, with M2 near the upper end of the range set by the FOMC and M3 somewhat above its range. This outcome was in line with FOMC expectations, because the ranges had been set to be consistent with conditions of price stability, and inflation, while damped, remained above this level. The behavior of M2 in the first part of the year was again reasonably well explained by changes in nominal GDP and interest rates.

Economic Projections for 1997 and 1998

After growing swiftly on balance over the first half of the year, economic activity is expected to expand more moderately in the second half of 1997 and in 1998. For this year, the central tendency of the GDP growth forecasts put forth by members of the Board of Governors and the Reserve Bank presidents is 3 percent to 3½ percent, measured as the change in real output between the final quarter of 1996 and the final quarter of 1997. For 1998, most of the forecasts anticipate growth of real GDP within a range of

2 percent to 2½ percent. With this pace of continued economic expansion over the next six quarters, the central tendency of forecasts for the civilian unemployment rate remains a little under 5 percent through 1998, about the average for the second quarter of this year.

Economic activity appears to have entered the second half with considerable positive momentum. Households have experienced hefty gains in employment, income, and wealth, and their optimism about the future is quite high. These factors seem likely to outweigh any drag on consumer demand that might be associated with the debt-servicing problems that some households have experienced. Lower mortgage rates are buttressing demand for homes. In the business sector, healthy balance sheets and profits and a moderate cost of external funds, along with a continuing desire to install new technology, are providing support and impetus for investment in equipment. Meanwhile, investment in structures should follow last year's strong performance with further increases, because of declining vacancy rates in some sectors and ready access to financing.

Notwithstanding the economy's positive momentum, growth is expected to be more moderate in the next year and a half than in the first half of 1997. In part, this deceleration is likely to reflect the influence on demand of the substantial buildup of stocks of household durables and business plant and equipment thus far in the expansion. As well, the pace of inventory investment will need to slacken considerably relative to that observed in the first part of this year, lest stock-to-sales ratios become uncomfortably high. In the external sector, the strength of the dollar on exchange markets since last year could damp export sales and encourage U.S. firms and households to purchase foreign-produced goods and services.

Federal Reserve policymakers believe that this year's rise in the CPI will be smaller than that of 1996, mostly because of favorable developments in the food and, especially, energy sectors. After last year's run-up, crude oil prices have dropped back significantly, pulling down the prices of petroleum products. Food price increases also have been subdued this year, as the decline in grain prices that began in the middle of last year has been working its way through to the retail level. Looking ahead to next year, the governors and Reserve Bank presidents expect larger increases in the CPI, with a central tendency from 2½ percent to 3 percent. Food and energy prices are not expected to repeat this year's

Economic Projections for 1997 and 1998

Percent

Indicator	Federal Reserve governors and Reserve Bank presidents	
	Range	Central tendency
1997		
<i>Change, fourth quarter to fourth quarter¹</i>		
Nominal GDP	5 to 6	5 to 5½
Real GDP	3 to 3½	3 to 3¼
Consumer price index ²	2 to 2¼	2¼ to 2½
<i>Average level in the fourth quarter</i>		
Civilian unemployment rate	4¾ to 5¼	4¾ to 5
1998		
<i>Change, fourth quarter to fourth quarter¹</i>		
Nominal GDP	4¼ to 5¾	4½ to 5
Real GDP	2 to 3	2 to 2½
Consumer price index ²	2½ to 3	2½ to 3
<i>Average level in the fourth quarter</i>		
Civilian unemployment rate	4½ to 5¼	4¾ to 5

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

2. All urban consumers.

salutary performance, and non-oil import prices may be less of a restraining influence than in 1997, absent a continued uptrend in the dollar. Moreover, there is a risk that high levels of resource utilization could begin putting upward pressure on business costs.

As noted in past monetary policy reports, the CPI forecasts of Federal Reserve policymakers incorporate the technical improvements that the Bureau of Labor Statistics is making to the CPI in 1997 and 1998. A series of technical changes is estimated to have trimmed reported rates of CPI inflation slightly in recent years, and the additional changes will affect the index this year and next. In light of the challenges of accurately measuring price changes in a complex and dynamic economy, the governors and Reserve Bank presidents will continue

placing substantial weight on other price indexes, along with the CPI, in gauging progress toward the long-run goal of price stability.

The Administration has not yet released an update of the economic projections contained in the February *Economic Report of the President*. The earlier Administration forecasts were broadly similar to those in the Federal Reserve's February report, with Administration forecasts for growth and inflation within or near the range anticipated by Federal Reserve policymakers in February. Because of developments in the economy since that time, the central tendency of forecasts for real GDP growth put forth by the members of the Board of Governors and the Reserve Bank presidents has moved higher, while their forecasts for the CPI have moved down.

Ranges for Growth of Monetary and Debt Aggregates
Percent

Aggregate	1996	1997	Provisional for 1998
M2	1 to 5	1 to 5	1 to 5
M3	2 to 6	2 to 6	2 to 6
Debt	3 to 7	3 to 7	3 to 7

Note. Change from average for fourth quarter of preceding year to average for fourth quarter of year indicated.

**Money and Debt Ranges
for 1997 and 1998**

At its meeting earlier this month, the Committee reaffirmed the ranges for 1997 growth of money and debt that it had established in February: 1 percent to 5 percent for M2, 2 percent to 6 percent for M3, and 3 percent to 7 percent for the debt of the domestic nonfinancial sectors. The Committee also set provisional ranges for 1998 at the same levels as for 1997.

In choosing the ranges for M2 and M3, the Committee recognized the continuing uncertainty about the future behavior of the velocities of the two aggregates. For several decades until the 1990s, these aggregates exhibited fairly stable trends relative to nominal spending, and variations in M2 growth around its trend were reasonably closely related to changes in the spread between market rates and yields on the assets in M2. These relationships were disrupted in the first part of this decade. Between 1991 and early 1994, the velocities of M2 and M3 climbed well above the levels that were predicted by past experience, as households shifted substantial amounts out of lower-yielding deposits into higher-yielding stock and bond mutual funds, and as banks and thrift institutions sharply curtailed their lending

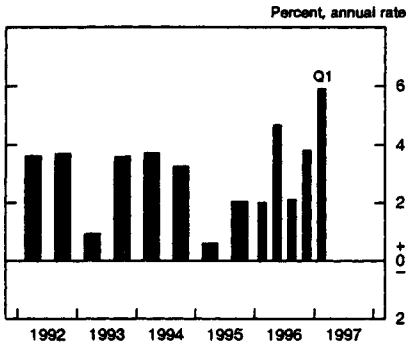
to focus on rebuilding capital. Since mid-1994, the velocities have been moving more nearly in line with their historical patterns with respect to changes in opportunity costs—albeit at higher levels. This recent period of renewed stability is still brief, however, and has occurred at a time of relatively stable financial and economic conditions, leaving open the important question of whether the stability would be sustained in the future under a wider variety of circumstances.

In light of this uncertainty, the Committee again decided to view the ranges as benchmarks for monetary growth rates that would be consistent with approximate price stability and historical velocity relationships. If velocities change little over the next year and a half, Committee members' expectations of nominal GDP growth in 1997 and 1998 imply that M2 and M3 will likely finish around the upper boundaries of their respective ranges each year. The debt of the domestic nonfinancial sectors is expected to remain near the middle of its range this year and next. The Committee will continue to monitor the behavior of the monetary aggregates and domestic nonfinancial debt—as well as a wide range of other data—for information about economic and financial developments.

Section 2: Economic and Financial Developments in 1997

The economy has continued to perform exceptionally well this year. Real gross domestic product surged almost 6 percent at an annual rate in the first quarter of 1997, and available data point to a healthy, though smaller, increase in the second quarter. Financial conditions remained supportive of spending. Despite a modest tightening of money market conditions by the System, most interest rates were little changed or declined a bit on net during the first half of the year, and equity prices surged ahead. With relatively few exceptions, credit remained readily available from both intermediaries and financial markets on generally favorable terms. The rapid increases in output led to a further tightening of labor markets in the first six months of 1997, and labor costs accelerated a little from the pace of a year earlier. Price inflation has been subdued, held down in part by declines in energy prices, smaller increases in food prices, and lower prices for non-oil imports that have followed in the wake of the appreciation of the dollar. In addition, intense competition, adequate plant capacity, and ongoing efficiency gains have helped to restrain inflation pressures in the face of rising wages.

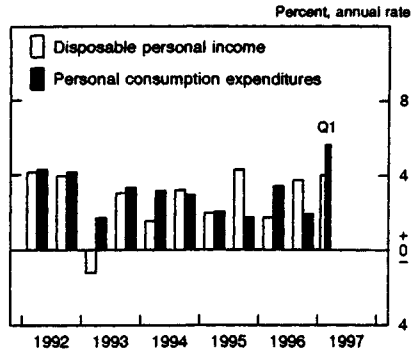
Change in Real GDP



The Household Sector

Spending, Income, and Saving. After posting a sizable increase in 1996, real personal consumption expenditures jumped 5½ percent at an annual rate in the first quarter of 1997. Although the advance in spending slowed thereafter—partly because of unusually cool weather in late spring—underlying fundamentals for the household sector remain favor-

Change in Real Income and Consumption



able to further solid gains; notably, real incomes have continued to rise, and many consumers have benefited from sizable gains in wealth. With this good news in hand, consumers have become extraordinarily upbeat about the economy's prospects. Indexes of consumer sentiment—such as those compiled by the Survey Research Center at the University of Michigan and the Conference Board—have soared to some of the highest readings since the 1960s. Despite this generally healthy picture, some households still face difficulties meeting debt obligations, and delinquency rates for consumer loans have remained at high levels.

Real outlays for consumer durables surged 18¾ percent (annual rate) in the first quarter of this year but apparently slowed considerably in the second quarter. After changing little, on net, last year, consumer purchases of motor vehicles increased rapidly early in the year, a result of sound fundamentals, a bounceback from the strike-depressed fourth quarter, and enlarged incentives offered by auto makers. In the second quarter, sales were once again held down noticeably by strike-related supply constraints, as well as by some payback from the elevated first-quarter pace. Smoothing through the ups and downs, the underlying pace of demand in the first half of the year likely remained reasonably close to the 15 million unit rate that has prevailed since the second half of 1995. Purchases of durable goods other than motor vehicles also took off in the first quarter; computers and other electronic equipment were an area of notable strength, as house-

holds took advantage of rapidly falling prices to acquire the latest technology. According to available monthly data, purchases of durables other than motor vehicles and electronic equipment moderated in the second quarter. Although a pause in the growth of spending is not surprising after the strong first quarter, unusually cool spring weather, leading to the postponement of purchases of some seasonal items, may also have contributed to the moderation.

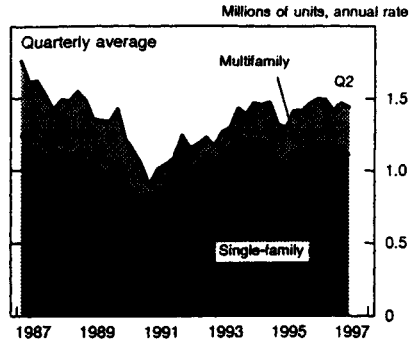
Growth of real spending for nondurables also appears to have slowed considerably from a strong first-quarter pace. Within services, weather conditions held down growth of real outlays for energy services in the first quarter and boosted them in the second. Growth of real outlays for other services—typically the steadiest component of consumption—picked up at the end of 1996 and appears to have stayed ahead of last year's 2½ percent pace in the first half of 1997.

Consumer spending continued to draw support from healthy advances in income this year, as gains in wages and salaries boosted personal disposable income. These gains translated into a 4 percent annual rate advance in real disposable income in the first quarter, after a significant 2¾ percent advance last year. Although month-to-month movements were affected by unevenness in the timing of tax payments, the underlying trend in real disposable income remained strong into the second quarter.

On top of rising incomes, further increases in net worth—primarily related to the soaring stock market—have given many households the financial wherewithal to spend. In light of the very large gains in wealth, the impetus to consumption appears to have been smaller than might have been anticipated on the basis of historical relationships, suggesting that other factors may be offsetting the effect of higher net worth. One such factor could be a greater focus on retirement savings, particularly among the large cohort of the population reaching middle age. Concerns about the adequacy of saving for retirement have likely been heightened by increased public discussion of the financial problems of social security and federal health programs. In addition, debt problems may be restraining the spending of some households.

Residential Investment. The underlying pace of housing activity has remained at a high level this year, even though some indicators suggest that activity has edged off a bit from last year's pace. In the single-family sector, housing starts through June aver-

Private Housing Starts



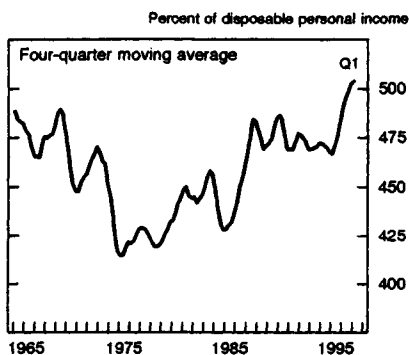
aged 1.14 million units at an annual rate, a shade below the pace of starts in 1996. Although starts dipped in the second quarter, the decline was from a first-quarter level that, doubtless, was boosted by mild weather. Mortgage rates have zig-zagged moderately this year; the average level has differed little from that in 1996. With mortgage rates low and income growth strong, a relatively large proportion of families has been able to afford the monthly cost of purchasing a home. Home sales have remained strong, helping to keep inventories of unsold new units relatively lean—a favorable factor for prospective building activity. Other indicators of demand remain quite positive. According to the latest survey by the National Association of Homebuilders, builders' ratings of new home sales strengthened in recent months to the highest level since last August. Moreover, consumers' assessments of conditions for homebuying, as reported by the Survey Research Center at the University of Michigan, remained very favorable into July. In addition, the volume of applications for mortgages to purchase homes has moved up recently to a high level.

The pace of multifamily starts has been well maintained. These starts averaged close to 320,000 units at an annual rate from January to June, a little above last year's figure for starts. Even so, the pace of multifamily construction remains well below peaks in the 1970s and 1980s, partly because of changes in the nation's demographic composition as the bulge of renters in the 1980s has moved on to home ownership. Another factor that has restrained multifamily construction is the growing popularity of manufactured housing ("mobile homes"), which provides an alternative to rental housing for some households. In particular, the price of a typical manufactured unit

is considerably less than that of a new single-family house, making manufactured homes especially attractive to first-time buyers and to people purchasing second houses or retirement homes. Shipments of these homes trended up through last fall and then flattened out at a relatively high level.

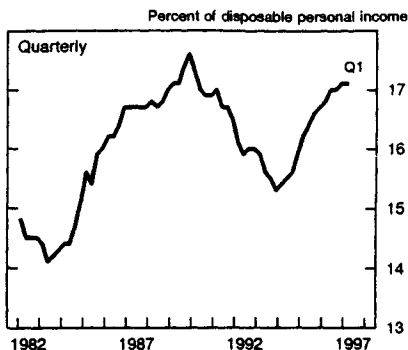
Household Finance. Household balance sheets strengthened in the aggregate during the first half of 1997, but debt-payment problems continued at a high level in several market segments. Indebtedness grew less rapidly than it had in 1996, and further gains in equity markets pushed up the ratio of household net worth to disposable personal income to its highest mark in recent decades. Consumer credit increased at a 6¼ percent annual rate between December 1996 and May 1997, compared with 8¼ percent in 1996. The growth of mortgage debt was somewhat slower in the first quarter than in 1996 and, according to available indicators, probably stayed at roughly the same rate during the second quarter.

Household Net Worth



The estimated ratio of required payments of loan principal and interest to disposable personal income remained high in the first quarter, after climbing rapidly between early 1994 and early 1996 and rising more slowly in the second half of last year. This measure of the debt-service burden of households has nearly returned to the peak reached toward the end of the last business cycle expansion. Adding estimated payments on auto leases to households' scheduled monthly debt payments boosts the ratio a little more than 1 percentage point and places it just above its previous peak.

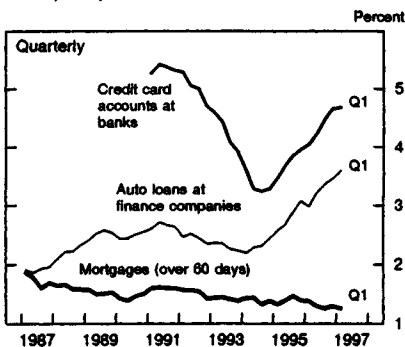
Household Debt-Service Burden



Note. Debt service is the estimated sum of required interest and principal payments on consumer and household-sector mortgage debt.

Indicators of households' ability to service their debt have been mixed. The delinquency rate for mortgage loans past due sixty days or more is at its lowest level in two decades, but delinquency rates for consumer loans are relatively high. According to data from the Report of Condition and Income filed by banks (the Call Report), the delinquency rate for credit card loans was roughly unchanged in the first quarter of 1997, remaining at its highest value since late 1992, when the economy was in the midst of a sluggish recovery and the unemployment rate was more than 2 percentage points higher than today. For

Delinquency Rates on Household Loans



Note. Data on credit-card delinquencies are from the Call Report; data on mortgage delinquencies are from the Mortgage Bankers Association.

auto loans at the finance companies affiliated with the major manufacturers, the delinquency rate rose again in the first quarter, continuing the steady run-up in this measure over the past three years.

Anecdotal evidence suggests that the recent increases in consumer credit delinquency rates had been partly anticipated by lenders, reflecting the normal seasoning of loans as well as banks' efforts to stimulate borrowing by making credit more broadly available and automakers' attempts to stimulate sales using the same approach. During the past several years, lenders have aggressively sought business from people who might not have been granted credit previously, in part because of lenders' confidence in new "credit scoring" models that statistically evaluate an individual's creditworthiness. Despite these new tools, banks evidently have been surprised by the extent of the deterioration of their consumer loans and have tightened lending standards as a result. Nearly half the banks responding to the Federal Reserve's May survey on bank lending practices had imposed more stringent standards for new credit card accounts over the preceding three months, with a smaller fraction reining in other consumer loans. About one-third more of the responding banks expected charge-off rates on consumer loans to increase further over the remainder of the year than expected charge-off rates to decrease; many of those expecting an increase cited consumers' growing willingness to declare bankruptcy. Rising delinquency rates have also put pressure on firms specializing in subprime auto loans, with some reporting reduced profits and acute liquidity problems.

According to the most recently available data, personal bankruptcies surged again in the first quarter of the year after rising 30 percent in 1996. The rapid increases of late are partly related to the same increase in financial stress evident in the delinquency statistics, but they may also be tied to more widespread use of bankruptcy as a means of dealing with such stress. Changes in federal bankruptcy law effective at the start of 1995 increased the value of assets that may be protected from liquidation, and there may also be a secular trend toward less stigma being associated with declaring bankruptcy.

The Business Sector

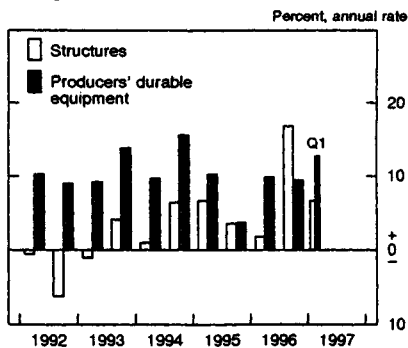
Investment Expenditures. Following a fifth year of sizable increases in 1996, real business fixed investment rose at an annual rate of 11 percent in the first quarter. The underlying determinants of investment spending remain solid: strong business sales,

sizable increases in cash flow, and a favorable cost of capital, especially for high-tech equipment. To be sure, a significant portion of this investment has been required to update and replace depreciated plant and equipment; nevertheless, the current pace of investment implies an appreciable expansion of the capital stock.

Real outlays for producers' durable equipment jumped at an annual rate of 12¾ percent in the first quarter of this year after rising 9¾ percent last year. As in recent years, purchases of computers and other information processing equipment contributed importantly to this gain. The computer sector has been propelled by declining prices of new and more powerful products and by a drive in the business sector to improve efficiency with these latest technological developments. Real purchases of communications equipment also have been robust, boosted by rapidly growing demand for wireless phone services and Internet connections as well as by upgrades to telephone switching and transmission equipment in anticipation of eventual deregulation of local phone markets. In addition, purchases of aircraft by domestic airlines moved higher on net in 1995 and 1996 and—on the basis of orders and production plans of aircraft makers—are expected to rise considerably further this year. For the second quarter, data on orders and shipments of nondefense capital goods in April and May imply that healthy increases in equipment investment have continued.

Real business spending for nonresidential structures posted another sizable increase in the first quarter after advancing a hefty 9 percent in 1996. Although the latest data suggest a slowing of the pace

Change in Real Business Fixed Investment

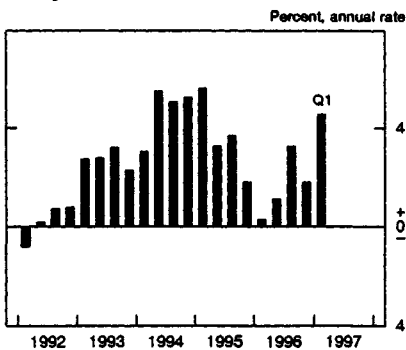


of advance in the second quarter, the economic factors underlying this sector point to continued increases. Vacancy rates have been falling and rents have been improving. Financing for commercial construction reportedly is in abundant supply, especially with substantial amounts of capital flowing to real estate investment trusts (REITs).

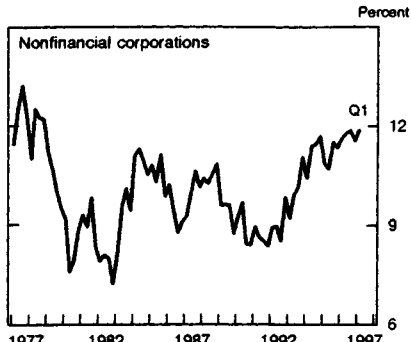
Trends in construction continue to differ among sectors. Increases in office construction were especially robust in recent quarters, as vacancy rates fell for both downtown and suburban properties. With office-based employment expanding, this sector has continued to recover from the severe slump of the late 1980s and early 1990s; even so, the level of construction activity is barely more than half that of the mid-1980s. Construction of other commercial buildings has increased steadily during the past five years, and the gain in the first quarter of this year was sizable. Since the current expansion began, the non-office commercial sector has provided a large contribution to overall construction spending. Industrial construction dropped back in the first quarter after jumping at the end of last year; the trend for this sector has been relatively flat on balance in recent years.

During 1996, investment in real nonfarm business inventories was modest compared with the growth of sales, and the year ended with lean inventories in many sectors. In the first quarter of this year, businesses moved to rebuild stocks, and inventory investment picked up substantially. Outside of motor vehicles, stocks rose in the first quarter, with particularly sizable increases coming from a continued ramp-up in production of aircraft and from a restocking of petroleum products during a period when prices

Change in Real Nonfarm Business Inventories



Before-Tax Profit Share of GDP



Note. Profits from domestic operations with inventory valuation and capital consumption adjustments, divided by gross domestic product of the nonfinancial corporate sector.

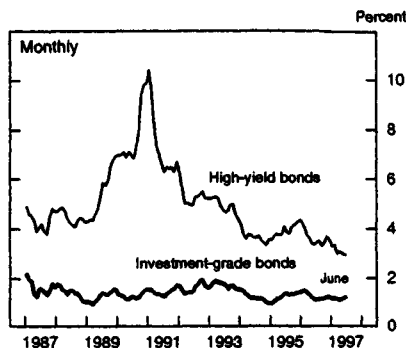
eased. Nevertheless, with extraordinarily strong sales, inventory-sales ratios still moved down further in the major sectors. Available monthly data suggest that vigorous inventory investment outside of motor vehicles continued through mid-spring, as firms responded to strength in current and prospective sales. For motor vehicles, inventories moved up some in the first quarter of this year, after strike-related reductions in the fourth quarter. In the second quarter, the monthly pattern of motor vehicles stocks was bounced around somewhat by strikes; cutting through the noise, inventories of light vehicles still appear to be in balance.

Corporate Profits and Business Finance.

The continued rapid advance of business investment this year has been financed through both strong cash flow and substantial borrowing at relatively favorable terms. Economic profits (book profits after inventory valuation and capital consumption adjustments) in the first quarter were 7¼ percent higher than a year earlier. For the nonfinancial sector, domestic profits were more than 9 percent higher, reaching their highest share of those firms' domestic output in the current expansion. Despite abundant profits, the financing gap for these companies—the excess of capital expenditures (including inventory investment) over internally generated funds—has widened somewhat since the middle of 1996. To fund that gap, and the ongoing net retirement of equity shares, nonfinancial corporations increased their debt 6½ percent at an annual rate in the first quarter, compared with 5¼ percent during 1996.

External funding has remained readily available to businesses on favorable terms. The spreads between yields on investment-grade bonds and yields on Treasury securities have stayed low since the beginning of the year, while the spreads on high-yield bonds have declined further to historically narrow levels. Price-earnings ratios are high, implying a low cost of equity financing. Further, banks remain accommodative lenders to businesses. According to the Federal Reserve's most recent survey of business lending, the spreads between loan rates and market rates have held about steady for borrowers of all sizes, with rate spreads for large loans near the lower end of the range seen over the past decade. Moreover, surveys by the National Federation of Independent Business indicate that small businesses have not had difficulty obtaining credit.

Spreads Between Yields on Private and Treasury Securities



Note. Yield on Merrill Lynch Maeter II index of high-yield bonds is compared with that on a seven-year Treasury note; yield on Moody's index of A-rated investment-grade bonds is compared with that on a ten-year Treasury note.

The plentiful supply of credit probably stems from several factors. Most banks are well positioned to lend: Their profits are strong, rates of return on equity and on assets are high, and capital is ample. In addition, continued substantial inflows into stock and high-yield bond mutual funds suggest that investors may now perceive less risk in these areas or may be more willing to accept risk. In fact, businesses generally are in very good financial condition, with the estimated ratio of operating cash flow to interest expense for the median nonfinancial corporation remaining quite high in the first part of the year.

Moreover, delinquency rates for business loans at banks have stayed extremely low, as has the default rate on speculative-grade debt.

The increase in the pace of business borrowing in the first half of 1997 was widespread across sources of finance. Nonfinancial corporations stepped up their borrowing from banks. The outstanding commercial paper of these corporations also increased on net from December through June, after declining a little in 1996. Meanwhile, these businesses' net issuance of long-term bonds in the first half of the year exceeded last year's pace, with speculative-grade offerings accounting for the highest share of gross issuance on record.

At the same time, the pace of gross equity issuance by nonfinancial corporations dropped considerably in the first half of this year. In particular, the market for initial public offerings has been cooler than in 1996, despite some pickup of late; new issues have been priced below the intended range more often than above it, and first-day trading returns have been relatively low. Net equity issuance has been deeply negative again this year, as gross issuance has been more than offset by retirements through share repurchases and mergers. The bulk of merger activity in the 1980s involved share retirements financed by borrowing, but the recent surge—which largely involves friendly intra-industry mergers—has been financed about equally through borrowing and stock swaps. Structuring deals as stock swaps can reduce shareholders' tax liabilities and enable the combined firm to use a more advantageous method of financial accounting. The dollar value of nonfinancial mergers in which the target firm was worth more than a billion dollars set a record in 1996, and merger activity appears to be on a very strong track this year as well.

The Government Sector

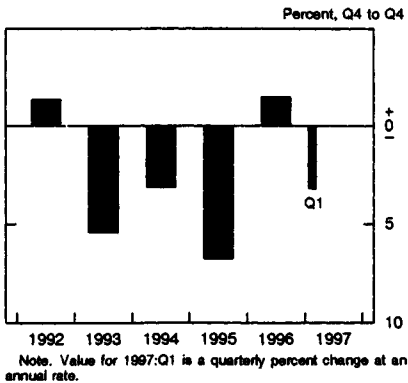
Federal. The federal budget deficit has come down considerably in recent years and should register another substantial decline this fiscal year. Over the first eight months of fiscal year 1997—the period October through May—the deficit in the unified budget was \$65 billion, down \$43 billion from the comparable period of fiscal 1996. The recent reduction in the deficit primarily reflected extremely rapid growth of receipts for the second year in a row, although a continuation of subdued growth in outlays also contributed to the improvement. Given recent developments, the budget deficit as a share

of nominal GDP this fiscal year is likely to be at its lowest level since 1974.

Federal receipts were almost 8½ percent higher in the first eight months of fiscal year 1997 than in the year-earlier period and apparently are on track to outpace the growth of nominal GDP for the fifth year in a row. Individual income tax payments have risen sharply this fiscal year—on top of a hefty increase last year—reflecting strong increases in households' taxable labor and capital income; preliminary data from the Daily Treasury Statement indicate that individual income tax revenues remained strong in June. Moreover, corporate tax payments posted another sizable advance through May of this fiscal year.

Federal outlays during the first eight months of the fiscal year rose 3½ percent in nominal terms from the comparable period last year. Although this increase is up from the restrained rate of growth in fiscal 1996—which was held down by the government shutdown—spending growth remained subdued across most categories. Outlays for income security programs rose modestly in the first eight months of the fiscal year, partly as a result of the continued strong economy, and spending on the major health programs grew somewhat more slowly than their average pace in recent years. Although still restrained, outlays for defense have ticked up this fiscal year after trending down for several years.

Change in Real Federal Expenditures on Consumption and Investment



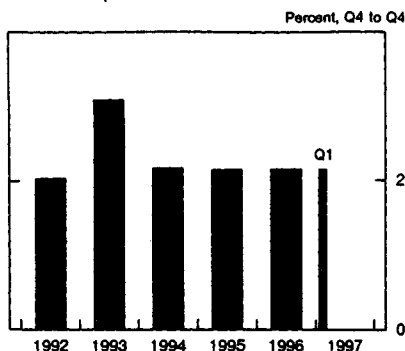
As for the part of federal spending that is included directly in GDP, real federal expenditures on consumption and gross investment declined 3¼ percent in the first quarter of 1997, a shade more than the average rate of decline in recent years. An increase in real nondefense spending was more than offset by a decline in real defense outlays.

The substantial drop in the unified budget deficit reduced federal borrowing in the first half of 1997 compared with the first half of 1996. The Treasury responded to the smaller-than-expected borrowing need by reducing sales of bills; this traditional strategy of allowing borrowing swings to be absorbed primarily by variation in bill issuance enables the Treasury to have predictable coupon auctions and to issue sufficient quantities of coupon securities to maintain their liquidity. The result this past spring was an unusually large net redemption of bills, which pushed yields on short-term bills down relative to yields on other Treasury securities and on short-term private paper.

The issuance of inflation-indexed securities at several maturities has been a major innovation in federal debt management this year. The Treasury sold indexed ten-year notes in January and April and added five-year notes earlier this month. A small number of agency and other borrowers issued their own inflation-indexed debt immediately after the first Treasury auction, and the Chicago Board of Trade recently introduced futures and options contracts based on inflation-indexed securities. As one would expect at this stage, however, the market for indexed debt has not yet fully matured: Trading volume as a share of the outstanding amount is much smaller than for nominal debt, and a market for stripped securities has yet to emerge.

State and Local. The fiscal condition of state and local governments has remained positive over the past year, as the surplus of receipts over current expenditures has been stable at a relatively high level. Strong growth in sales and incomes has led to robust growth in revenues, despite numerous small tax cuts, and many states have held the line on spending in the past several years. Additionally, the welfare reform legislation passed in August 1996, while presenting long-term challenges to state and local governments, actually has eased fiscal pressures in recent quarters: Block grants to states are based largely on 1992–94 grant levels, but caseloads more recently have been falling. Overall, at the state level, accumulated surpluses—current surpluses plus those from past years—were on track to end fiscal year 1997 at a

Change in Real State and Local Expenditures on Consumption and Investment

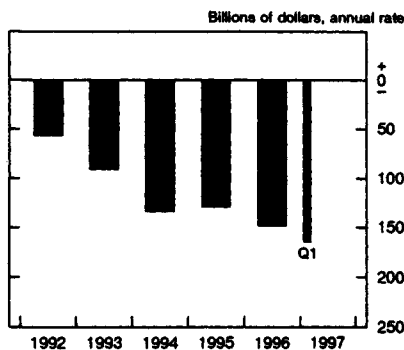


Note. Value for 1997:Q1 is a quarterly percent change at an annual rate.

healthy level, according to a survey by the National Association of State Budget Officers taken shortly before the end of most states' fiscal years.

Real expenditures for consumption and gross investment by state and local governments increased moderately in the first quarter of this year, about the same as the pace of advance in the past two years. For construction, the average level of real outlays during the first five months of the year was a little higher than in the fourth quarter. Hiring by state and local governments over the first half of the year was somewhat above last year's pace, with most of the increase at the local level.

U.S. Current Account

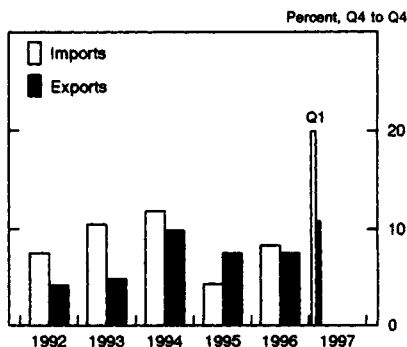


The pace of gross issuance of state and local debt was roughly the same in the first half of the year as in 1996. Net issuance turned up noticeably, however, as retirements of debt that had been pre-refunded in the early 1990s waned.

The External Sector

Trade and the Current Account. The nominal deficit on trade in goods and services was \$116 billion at an annual rate in the first quarter, somewhat larger than the \$105 billion in the fourth quarter of last year. The current account deficit of \$164 billion (annual rate) in the first quarter exceeded the \$148 billion deficit for 1996 as a whole because of the widening of the trade deficit and further declines in net investment income. In April and May, the trade deficit was slightly narrower than in the first quarter.

Change in Real Imports and Exports of Goods and Services



Note. Value for 1997:Q1 is a quarterly percent change at an annual rate.

The quantity of U.S. imports of goods and services surged in the first quarter at an annual rate of about 20 percent. Continued strength in the pace of U.S. economic activity largely accounted for the rapid growth, but a rebound in automotive imports from Canada from their strike-depressed fourth-quarter level boosted imports as well. Preliminary data for April and May suggest that strong real import growth continued. Non-oil import prices fell through the second quarter, extending the generally downward trend that began in mid-1995.

The quantity of U.S. exports of goods and services expanded at an annual rate a bit above 10 percent in the first quarter, about the same rapid pace as during the second half of last year. Growth of output in our major trading partners, particularly the industrial countries, helped to sustain the growth of exports, as did increased deliveries of civilian aircraft. Exports to western Europe and to Canada grew strongly while those to the Asian developing countries declined somewhat. Preliminary data for April and May suggest that real exports rose moderately.

Capital Flows. Large gross capital inflows and outflows continued during the first quarter of 1997, reflecting the continued trend toward globalization of financial and product markets. Both foreign direct investment in the United States and U.S. direct investment abroad were very strong, swelled by mergers and acquisitions.

Private foreign net purchases of U.S. securities amounted to \$85 billion in the first quarter, down somewhat from the very high figure in the previous quarter but still above the record pace for 1996 as a whole. Net purchases of U.S. Treasury securities were particularly robust. Private foreigners also showed increased interest in the U.S. stock market in the first quarter of 1997. U.S. net purchases of foreign securities amounted to \$15 billion in the first quarter, down from the strong pace of 1996. Private foreigners continued to add to their holdings of U.S. paper currency in the first quarter, but at a rate substantially below earlier peaks.

Foreign official assets in the United States, which rose a record \$122 billion in 1996, increased another \$28 billion in the first quarter of 1997. Apart from the oil-producing countries, which benefited from high oil prices, significant increases in holdings were associated with efforts by some emerging-market countries to temper the impact of large private capital inflows on their economies. Information for April and May suggests that official inflows have abated.

Foreign Economies. Economic activity in the major foreign industrial countries has generally strengthened so far this year from the pace in the second half of last year. In Japan, real GDP accelerated to a 6½ percent annual growth rate in the first quarter, boosted by extremely strong growth of consumer spending ahead of an increase in the consumption tax on April 1. Activity appears to have fallen in the second quarter, but continued improvement in business sentiment suggests that the current

weakness is only temporary. In Canada, growth of real output increased to 3½ percent at an annual rate in the first quarter. Final domestic demand more than accounted for this expansion, as business investment, consumption, and residential construction all provided significant contributions. Indicators suggest that output growth remained healthy in the second quarter.

Economic activity has remained vigorous so far this year in the United Kingdom and appears to have strengthened in Germany and France. In the first quarter, U.K. real GDP grew at an annual rate of 3½ percent as domestic demand, particularly investment, accelerated from its already strong pace in the fourth quarter. Strong household consumption spending supported demand in the second quarter. Weak demand for exports, associated with the appreciation of the pound since mid-1996, and some tightening of monetary conditions should moderate growth in the current quarter. In Germany, economic expansion revived in the first quarter and appears to have firmed in the second quarter. After growing very little in the fourth quarter of last year, German real GDP rose at an annual rate of 1¾ percent in the first quarter, led by government consumption, equipment investment, and exports. Manufacturing orders and indicators of business sentiment suggest additional gains in the second quarter. French real GDP grew only three-quarters percent at an annual rate in the first quarter, as declines in investment offset strong export growth, but data on manufacturing output and consumption suggest a pick up in activity during the second quarter.

In most major Latin American countries, real output growth remained vigorous. In Mexico, real economic expansion slowed some in the first quarter from its very rapid pace in the second half of last year but remained robust. The industrial sector continued to be the source of strength, while the service sector lagged. A pickup in import growth has resulted in a narrowing of the trade surplus; through May, the trade balance of \$1¼ billion was about half the size it was in the same period last year. In Argentina, continued healthy economic growth in the first quarter has brought real GDP back to its level before the recession induced by the Mexican crisis of 1995. In Brazil, real output declined in the first quarter after three quarters of strong expansion.

Economic growth in our major Asian trading partners other than Japan slowed a bit on average in the first quarter but appears to have rebounded in the second quarter. Nationwide labor strikes in Korea

affected many of the country's key export industries and were partly responsible for weakness in first-quarter output and a ballooning of the current account deficit. Data for April and May show recovery in industrial production, and the trade balance improved in the second quarter. Real output growth in Taiwan remains strong so far this year, though not quite so vigorous as during the second half of 1996. In China, real GDP continues to expand at an annual rate of nearly 10 percent, about the same brisk pace as last year.

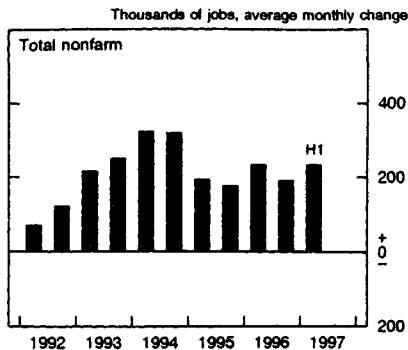
Despite the pickup in growth, considerable excess capacity remains in the major foreign industrial countries. As a consequence, inflation has generally remained quiescent. The increase in the Japanese consumption tax lifted the twelve-month change in the consumer price index to about 1½ percent, but elevation of the inflation rate should be temporary. CPI inflation remains less than 2 percent in Germany, France, Canada, and Italy. Only in the United Kingdom, where output growth has resulted in tight labor markets and consumer prices are rising at an annual rate of more than 2½ percent, are inflation pressures currently a concern.

In most major countries in Latin America, inflation either is falling or is already low. Mexican inflation continues to improve: The monthly inflation rate was below 1 percent in May and June, the lowest monthly rates since the 1994 devaluation. In Argentina, consumer prices were essentially flat through the second quarter after almost no increase last year. Brazilian inflation has declined to historically low rates. In contrast, Venezuelan inflation, though it has come down from its 1996 rate of more than 100 percent per year, remains near 50 percent. Consumer price inflation remains generally low in Asia, including in China, where it fell to less than 3 percent in the twelve months through May.

The Labor Market

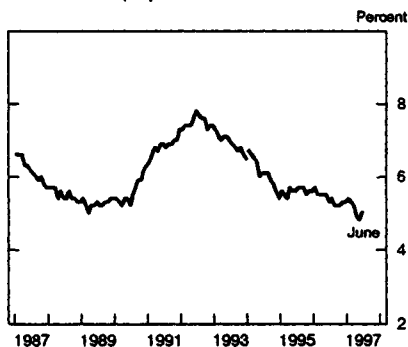
Payroll employment continued to expand solidly during the first half of 1997. The growth in nonfarm payrolls averaged about 230,000 per month; this figure may overstate slightly the underlying rate of employment growth in the first half because technical factors boosted payroll figures in April. The strength in labor demand drew additional people into the job market, raising the labor force participation rate to historical highs during the first half. Nevertheless, the civilian unemployment rate moved down to 4.9 percent, on average, in the second quarter.

Net Change in Payroll Employment



Employment gains in the private service-producing sector, in which nearly two-thirds of all nonfarm workers are employed, accounted for much of the expansion in payrolls through June of this year. Within this sector, higher employment in services, transportation, and retail trade contributed importantly to the gain. After advancing substantially for several years, payrolls in the personnel supply industry—a category that includes temporary help agencies—actually turned down in the second quarter; anecdotal reports suggest that some temporary help firms are having difficulty finding workers, especially for highly skilled and technical positions.

Civilian Unemployment Rate



Note. The break in data at January 1994 marks the introduction of a redesigned survey; the data from that point on are not directly comparable with the data of earlier periods.

Employment gains were also posted in the goods-producing sector. In the construction industry, payrolls increased substantially between December and June. Factory employment moved somewhat higher in the first part of the year after declining a little during 1996, and manufacturing overtime hours remained at a high level. Producers of durable goods increased employment further between December and June, while makers of nondurable goods continued to reduce payrolls. Since the end of 1994, factory employment and total hours worked in manufacturing have changed little. Even so, manufacturers have boosted output considerably over this period, primarily through ongoing improvements in worker productivity.

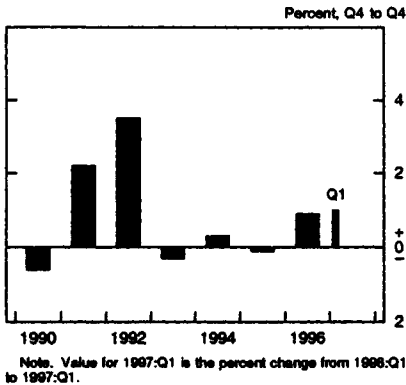
Although productivity for the broader nonfarm business sector rose substantially in the first quarter, it was just 1 percent above its value a year earlier. Moreover, output per hour changed little from the end of 1992 to the last quarter of 1995. The average rate of measured productivity growth in the 1990s is still somewhat below that of the 1980s and is even further below the average gains realized in the twenty-five years after World War II. The slower reported productivity growth during this expansion could partly reflect measurement problems. Productivity is the ratio of real output to hours worked, and official productivity indexes rely on a measure of real output based on expenditures. In theory, a matching measure of real output should be derivable by summing labor and capital inputs on the "income side" of the national accounts. However, the income-side measure

of real output has increased considerably faster than the expenditure-side measure in recent years, raising the possibility that productivity growth has been somewhat better than reported in the official indexes.

Measurement difficulties may also affect estimates of the longer-term trajectory of productivity growth. In particular, if inflation were overstated by official measures—as a considerable amount of recent research suggests it is—then real output growth would be understated. This understatement would arise because too much inflation would be removed from nominal output growth in the calculation of real output growth. Indeed, productivity growth for nonfinancial corporations—a sector for which output growth arguably is measured more accurately than in broader sectors—has been more rapid than for nonfarm business overall. In particular, productivity for nonfinancial corporations increased at an average annual pace of about 1½ percent between 1990 and 1996, while productivity in the nonfarm business sector rose a little less than 1 percent per year over the same period. This difference—which implies very weak measured productivity growth outside of the nonfinancial corporate sector—raises the possibility that overall productivity growth is stronger than indicated by official indexes for nonfarm business.¹ Of course, a critical—and still unanswered—question is the extent to which any understatement of productivity growth has become larger over time. If productivity growth were more rapid than indicated by official statistics, then the economy's capacity to produce goods and services would be increasing faster than indicated by current official statistics. But if the amount of mismeasurement has not increased over time, then the economy's productive capacity also increased more rapidly in earlier years than shown by published measures. In this case, the official statistics on productivity growth—though perhaps understated—would not give a misleading impression about changes in productivity trends.

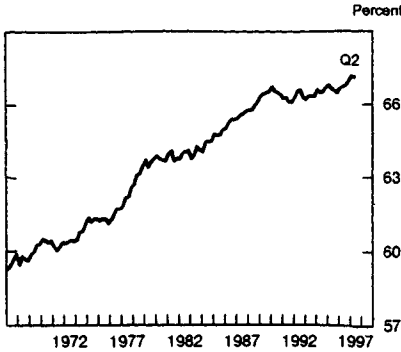
After changing little, on net, since the late 1980s, the labor force participation rate turned up early last year; it reached a record high 67.3 percent in March of this year and remained at an elevated 67.1 percent in the second quarter. Better employment opportunities have drawn additional people into the workforce. Although the recent welfare reform

Change in Output per Hour, Nonfarm Business Sector



1. More detail is provided in a paper by Lawrence Slifman and Carol Corrado, "Decomposition of Productivity and Unit Costs," Board of Governors of the Federal Reserve System, November 16, 1996.

Labor Force Participation Rate

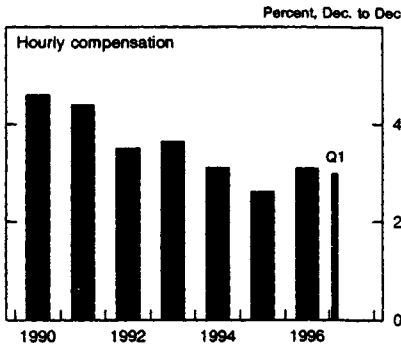


Note. Data before 1994 have been adjusted for the redesign of the household survey.

legislation probably has not yet had a large effect on aggregate labor force dynamics, it may generate an additional, albeit small, boost to labor force participation rates over the next few years. Since the beginning of 1996, the increases in the labor force associated with a higher participation rate have eased pressures on labor markets, as additional workers have stepped in to satisfy continuing strong demand for labor. Nevertheless, hiring was sufficiently brisk during the first half of this year to pull the unemployment rate down about one-quarter percentage point between December and June.

Just as the low unemployment rate points to tightness in labor markets, anecdotal reports from many

Change in Employment Cost Index



Note. Data are for private industry, excluding farm and household workers. The value for 1997:Q1 is measured from March 1996 to March 1997.

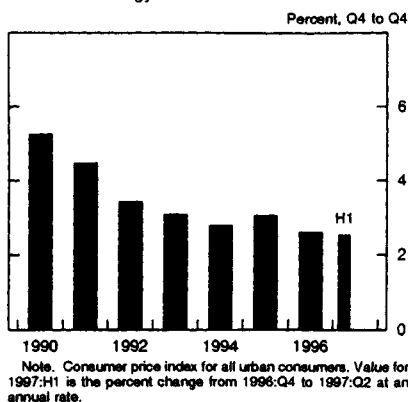
regions and industries mention the difficulties firms are having hiring workers, especially workers with specialized skills. With this tightness, labor compensation costs have accelerated slightly. Although hourly labor costs, as measured by the employment cost index (ECI), increased only 2.5 percent at an annual rate during the first three months of this year, they were up 3.0 percent over the twelve months ended in March, compared with 2.7 percent over the preceding twelve months. These increases are smaller than might have been expected based on historical relationships, perhaps partly reflecting persistent worker concerns about job security. In addition, modest increases in employer-paid benefits have partly offset faster increases in wages and salaries in the past couple of years. With smaller increases in health care costs than earlier in the decade, shifts of employees into managed care plans, and requirements that employees assume a greater share of health care costs, employer costs for health-related benefits have been well contained. However, growth in employer health care costs may be in the process of bottoming out, as reports of rising premiums for health insurance have become more common. Moreover, the wages and salaries component of the ECI has continued to accelerate, rising 3.4 percent during the twelve months ending in March 1997, about one-quarter percentage point faster than during the previous twelve months and roughly half a percentage point faster than in 1994 and 1995.

Prices

The underlying trend of price inflation has remained favorable this year. In particular, the CPI excluding food and energy—often referred to as the “core” CPI—increased at an annual rate of 2½ percent over the first two quarters of the year, about the same pace as in 1996. The overall CPI registered a smaller increase than the core CPI during the first half of this year. Both the overall CPI and the core CPI have been affected by a series of technical changes implemented by the Bureau of Labor Statistics over the past two and one-half years to obtain a more accurate measure of price changes. If not for these changes, increases in the CPI since 1994 would be marginally larger.

Other measures of prices also suggest that favorable inflation trends continued into 1997. Measured from the first quarter of last year to the first quarter of this year, the chain price index for personal consumption expenditures excluding food and energy rose

Change in Consumer Prices Excluding Food and Energy



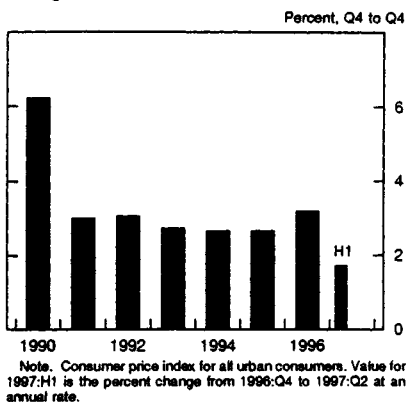
2 percent, the same as in the four-quarter period a year earlier.² Similarly, the chain price index for overall GDP—which covers prices of all goods and services produced in the United States—and the chain measure for gross domestic purchases—which covers prices of all goods purchased in the United States—increased the same amount over the year ending in the first quarter of 1997 as during the previous four quarters.

All of these price measures indicate that inflation remains muted, despite high levels of resource utilization. Several factors have contributed to the recent favorable performance of price inflation. Energy prices have declined this year. Non-oil import prices also have fallen significantly, reducing input costs for some domestic companies and likely restraining the prices charged by domestic businesses that compete with foreign producers. Besides being restrained by some price competition from imported materials and supplies, prices of manufactured goods at earlier stages of processing have been held in check by an expansion of industrial capacity that has been rapid enough to restrain increases in utilization rates over the past year. Also, to the extent that firms have succeeded in their efforts to realize large efficiency gains

2. The price measure for personal consumption expenditures (PCE) is closely related to the CPI because components of the CPI are key inputs in the construction of the PCE price measure. Nevertheless, the PCE price measure has the advantage that by using chain weighting rather than fixed weights it avoids some of the substitution bias that affects the CPI.

and reduce unit costs, upward pressure on prices may be reduced. Finally, an extended period of relatively low and steady inflation has reinforced a belief among households and businesses that the trend of inflation should remain muted, and consequently helped to hold down inflation expectations.

Change in Consumer Prices



Developments in the food and energy sectors were favorable to consumers in the first half of 1997. Consumer energy prices declined in the first half of the year as the price of crude oil dropped back following last year's run-up. In 1996, the price of crude oil was boosted by refinery disruptions, uncertainty about the timing of Iraqi oil sales, and unusual weather patterns that increased energy demand for heating and cooling. As these factors receded this year, crude oil prices fell. Although the downward trend was interrupted by some transitory spikes in prices—as in May when tensions in the Middle East flared up—the price of crude is now roughly back to the range that prevailed before last year's run-up. Since December, gasoline prices have tumbled more than 16 percent at an annual rate, and heating oil prices have fallen significantly. Natural gas prices also fell as stocks, which had dwindled over the winter, were replenished. Reflecting the declines in fuel prices, the CPI for energy fell about 9 percent at an annual rate between December 1996 and June 1997.

Consumer food prices increased at an annual rate of only about 1 percent in the first half of the year.

Alternative Measures of Price Change

Percent

Price measure	1995:Q1 to 1996:Q1	1996:Q1 to 1997:Q1
<i>Fixed weight</i>		
Consumer price index	2.7	2.9
Excluding food and energy	2.9	2.5
<i>Chain type</i>		
Personal consumption expenditures	2.0	2.5
Excluding food and energy	2.0	2.0
Gross domestic purchases	2.2	2.2
Gross domestic product	2.2	2.2
<i>Deflator</i>		
Gross domestic product	2.1	1.8

Note. Changes are based on quarterly averages.

Although coffee prices jumped, the prices of many other food items were flat or edged lower. Most notably, declines in grain prices that began in mid-1996 have been working their way to the retail level and have held down prices for a variety of grain-dependent foods, such as beef, poultry, and dairy products. Prices of foods that depend more heavily on labor costs have been rising modestly this year.

Consumer prices for goods other than food and energy rose a restrained three-quarters percent at an annual rate between December and June of this year, a touch below last year's pace. Declining prices for non-oil imports helped contain prices of goods in the CPI in the first half of the year, in part by constraining U.S. businesses in competition with importers. For example, prices of new and used passenger cars declined in the first six months of the year, and prices of light trucks were essentially flat. Also, prices of house furnishings were about unchanged, on balance, in the first half of the year, although apparel prices moved up after declining in recent years.

The CPI for non-energy services rose about 3 percent at an annual rate between December and June, a touch below last year's pace. After rising markedly last year, airfares declined, on net, in the first half of this year. Fares fell substantially early in the year when the excise tax on tickets expired, and even with the reimposition of the tax in March, ticket

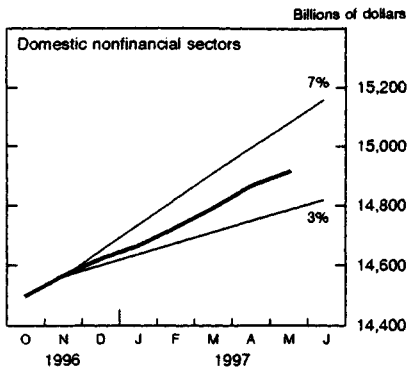
prices were still lower in June than in December. Increases in prices of medical services also continued to slow somewhat this year.³ In addition, the CPI for auto finance fell in May and June as automakers sweetened incentives. In contrast, price increases in the first half of the year picked up in some other areas; shelter prices rose a bit more rapidly than last year, as did tuition and prices for personal care services.

Credit and the Monetary Aggregates

Credit and Depository Intermediation. The total debt of domestic nonfinancial sectors increased at an annual rate of about 4¼ percent from the fourth quarter of 1996 through May of this year, placing the aggregate near the middle of the range for 1997 established by the FOMC. This pace is more than half a percentage point below that for 1996, reflecting significantly slower growth of borrowing by the federal government. The total debt of the other sectors has risen at a roughly constant pace over the past few years, even though the growth rate of nominal output has been increasing.

3. In January 1997, the Bureau of Labor Statistics introduced a new measure of the prices of hospital services—which account for roughly one-third of the CPI for medical services—and this new measure should, over time, provide a more accurate gauge of price movements in this area.

Debt: Annual Range and Actual Level

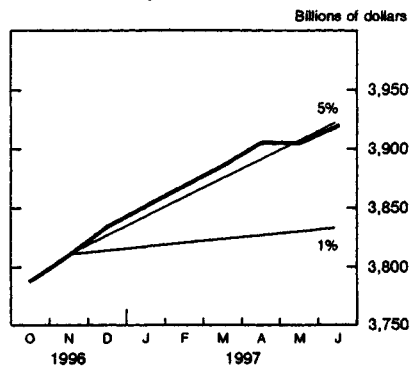


Credit on the books of depository institutions rose more rapidly than total debt in the first half of 1997, indicating that their share of total debt outstanding increased. Credit growth at thrift institutions eased late last year and early this year after increasing moderately in the first three quarters of 1996. However, commercial bank credit grew at a brisk pace in the first half of the year, with both securities and loans increasing more rapidly than they did last year. Real estate lending at banks rose about 9 percent at an annual rate between the fourth quarter of 1996 and June of this year, compared with 4 percent in 1996. In contrast, outstanding home mortgages at thrift institutions grew little in the first part of the year after a large run-up in 1996. Home equity credit lines from banks expanded especially rapidly in the spring, as some banks promoted these loans as a substitute for consumer loans. The growth of consumer loans at banks (including loans that were securitized as well as loans still on banks' books) fell from about 11 percent in 1996 to 3¼ percent at an annual rate between the fourth quarter of 1996 and June of this year.

The Monetary Aggregates. Growth of the monetary aggregates during the first half of 1997 was similar to growth in 1996. Between the fourth quarter of last year and June, M2 expanded at an annual rate of almost 5 percent; as the Committee had anticipated, the aggregate was running close to the upper bound of its growth cone, which had been chosen to be consistent with price stability. The behavior of M2 over this period can be reasonably well explained by changes in nominal GDP and interest rates, using historical velocity relationships. In the first quarter,

the velocity of M2 (defined as the ratio of nominal GDP to M2) increased a little more than might have been anticipated from its recent relationship to the opportunity cost of holding M2—the interest earnings forgone by owning M2 assets rather than market instruments such as Treasury bills. M2 may have been held down a bit by savers' preferences for equity market funds, for which inflows were quite strong. Growth of M2 was much slower in the second quarter than in the first quarter (4¼ percent compared with 6 percent at an annual rate), consistent with the slowing of the economy and almost unchanged M2 opportunity cost. The monthly pattern of M2 growth in the second quarter was heavily influenced by unusually high individual non-withheld tax payments. M2 surged in April, as households apparently accumulated additional liquid balances in order to make the larger tax payments, and was about unchanged on a seasonally adjusted basis in May as payments cleared and balances returned to normal.

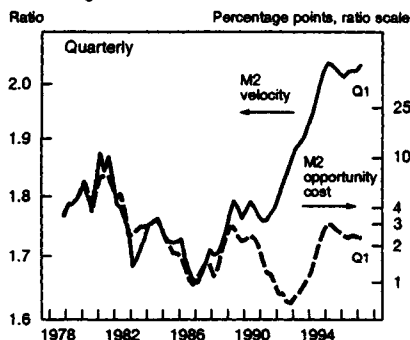
M2: Annual Range and Actual Level



The correspondence between changes in M2 velocity and in opportunity cost during recent years may represent a return to the roughly stable relationship observed for several decades until 1990—albeit at a higher level of velocity. The relationship was disturbed in the early 1990s by households' apparent decisions to shift funds out of lower-yielding deposits into higher-yielding stock and bond mutual funds. On one hand, the "credit crunch" at banks and the resolution of troubled thrifts curbed the eagerness of these institutions to attract retail deposits, holding down the rates of return offered on brokered deposits and similar accounts relative to the average

deposit rates used in constructing measures of opportunity cost. At the same time, the appeal of longer-term assets was enhanced temporarily by the steeply sloped yield curve and more permanently by the greater variety and lower cost of mutual fund products available to investors. More recently, robust inflows into stock funds apparently have substituted to only a limited extent for holdings of M2 assets, and M2 velocity and opportunity cost have again been moving roughly together since mid-1994, although velocity has continued to drift up slightly. However, the period of renewed stability in the behavior of M2—three years—is still fairly short, and whether the stability will persist is unclear. Variations in opportunity cost and income growth during this period have been rather small, leaving considerable doubt about how M2 would respond to more significant changes in the financial and economic environment.

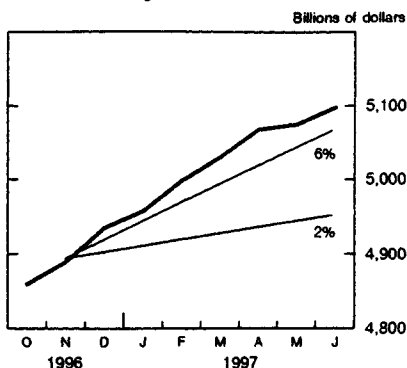
M2 Velocity and the Opportunity Cost of Holding M2



Note. M2 opportunity cost is a two-quarter moving average of the three-month Treasury bill rate less the weighted average rate paid on M2 components.

M3 rose about 7 percent at an annual rate between the fourth quarter of 1996 and June of this year. This pace is a little faster than last year's and again left M3 above the upper end of its growth cone, which, like the growth cone for M2, was set to be consistent with price stability. Large time deposits, which are not included in M2, continued to increase much more rapidly than other deposits. Banks have been funding their asset growth disproportionately through wholesale deposits, leaving interest rates on retail deposits further below market rates than they have

M3: Annual Range and Actual Level



been historically. Growth of institution-only money market funds eased just a little from last year's torrid pace, as the role of these funds in corporate cash management continued to increase.

M1 contracted at a 2½ percent annual rate between the fourth quarter of 1996 and June of this year. Growth of this aggregate was again depressed by the spread of so-called sweep programs, whereby balances in transactions accounts, which are subject to reserve requirements, are "swept" into savings accounts, which are not. Sweep programs benefit depositories by reducing their required holdings of reserves, which earn no interest. At the same time, they do not restrict depositors' access to their funds for transactions purposes, because the funds are swept back into transactions accounts when needed. Until late last year, most retail sweep programs were limited to NOW accounts, but demand-deposit sweeps have expanded markedly since then. Adjusted for the estimated total of balances swept owing to the introduction of new sweep programs, M1 expanded at a 4½ percent annual rate between the fourth quarter of 1996 and June 1997, a little below its sweep-adjusted growth rate in 1996.

The drop in the amount of deposits held in transactions accounts in the first half of 1997 caused required reserves to fall about 10 percent at an annual rate, close to the rate of decline last year. Nonetheless, the monetary base has expanded at a moderate pace so far in 1997, because the runoff in required reserves has been more than offset—as it was also last year—by an increase in the demand for currency. Currency growth has been a little higher this year than last, as the effects of strong domestic spending more than

Growth of Money and Debt
Percent

Period	M1	M2	M3	Domestic nonfinancial debt	
<i>Annual</i> ¹					
1987	6.3	4.2	5.8	10.0	
1988	4.3	5.7	6.3	9.0	
1989	0.5	5.2	4.0	7.9	
1990	4.1	4.1	1.8	6.9	
1991	7.9	3.1	1.2	4.6	
1992	14.4	1.8	0.6	4.7	
1993	10.6	1.3	1.1	5.2	
1994	2.5	0.6	1.7	5.2	
1995	-1.6	4.0	6.2	5.5	
1996	-4.6	4.7	6.8	5.4	
<i>Quarterly (annual rate)</i> ²					
1997	Q1	-0.7	6.1	8.2	4.5
	Q2	-5.4	4.3	6.8	n.a.
<i>Year-to-date</i> ³					
1997		-2.6	4.9	7.1	4.8

1. From average for fourth quarter of preceding year to average for fourth quarter of year indicated.

2. From average for preceding quarter to average for quarter indicated.

3. From average for fourth quarter of 1996 to average for June (May in the case of domestic nonfinancial debt).

offset a slight drop in net shipments of U.S. currency abroad in the first four months of the year.

Further reductions in required reserves have the potential to diminish the Federal Reserve's ability to control the federal funds rate closely on a day-to-day basis. Traditionally, the daily demand for balances at the Federal Reserve largely reflected banks' needs for required reserves, which are fairly predictable. As a result, the Federal Reserve has generally been able to supply the quantity of balances that satisfies this demand at the intended funds rate. Moreover, reserve requirements are specified in terms of an average level of balances over a two-week period, so if the funds rate on a particular day moves above the level expected to prevail on ensuing days, banks can trim their balances and thereby relieve some of the upward pressure on the funds rate. If required reserves were to fall quite low, the demand for bal-

ances would become more linked to banks' desire to avoid overnight overdrafts when conducting transactions through their accounts at Reserve Banks. Demand from this source is more variable than is requirement-related demand, and it also cannot be substituted across days; both factors would tend, all else equal, to increase the volatility of the federal funds rate.

The decline in required reserves over the past several years has not created serious problems in the federal funds market, but funds-rate volatility has risen a little, and the risk of much greater volatility would increase if required reserves were to fall substantially further. One factor mitigating an increase in funds-rate volatility has been an increase in required clearing balances. These balances, which banks can precommit to hold on a two-week average basis, earn credits that banks use to pay for Fed-

eral Reserve priced services. Like required reserve balances, required clearing balances are predictable by the Federal Reserve and can be substituted across days within the two-week maintenance period. Funds-rate volatility has also been damped by banks' improved management of their balances at Reserve Banks, which in part reflects the improved real-time access to account information now provided by the Federal Reserve. Whether these factors could continue to restrain funds-rate volatility if required reserve balances were to become much smaller is as yet unclear. Also unclear is whether a moderate increase in funds-rate volatility would have any serious adverse consequences for interest rates farther out on the yield curve or for the macroeconomy. The Federal Reserve continues to monitor the situation closely.

Interest Rates, Equity Prices, and Exchange Rates

Interest Rates. Interest rates on Treasury securities were little changed or declined a bit, on balance, between the end of 1996 and mid-July. Yields rose substantially in the first quarter as evidence mounted that the robust economic activity observed in the closing months of 1996 had continued into 1997. By the time of the March FOMC meeting, most participants in financial markets were anticipating some tightening of monetary policy, and rates moved little when the increase in the intended federal funds rate was announced. Beginning in late April, key data pointed to continued low inflation and a slowing of

economic growth in the second quarter, and interest rates retraced their earlier advance.

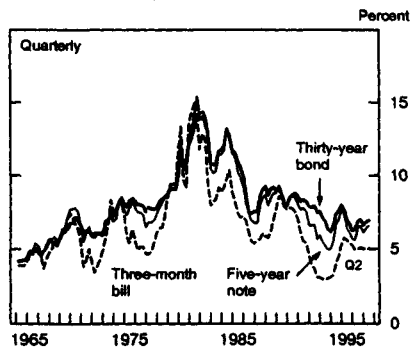
The yield on the inflation-indexed ten-year Treasury note was little changed between mid-April and mid-July, suggesting that at least part of the roughly 60-basis-point drop in the nominal ten-year yield over that period reflected a reduction in expected inflation or in uncertainty about future inflation, or both. Yet, relative movements in these two yields should be interpreted carefully, as the market's experience in trading indexed debt is relatively brief, making its prices potentially vulnerable to small shifts in market sentiment. Moreover, the Treasury announced this spring a reduction in the frequency of nominal ten-year note auctions, perhaps putting downward pressure on their nominal yields, and some investors may have paid renewed attention to upcoming technical adjustments to the CPI, which will reduce measured inflation. Survey-based measures of expected inflation showed little change in the second quarter.

The interest rate on the three-month Treasury bill was held down in recent months by the reduced supply of bills associated with the smaller federal deficit. Between mid-March and mid-July, the spread between the federal funds rate and the three-month yield averaged about 15 basis points above the average spread in 1996. Interest rates on private short-term instruments increased a little in the second quarter after the small System tightening in March.

Equity Prices. Equity markets have advanced dramatically again this year. Through mid-July, most broad measures of U.S. stock prices had climbed between 20 percent and 25 percent since year-end. Stocks began the year strongly, with the major indexes reaching then-record levels in late January or February. Significant selloffs ensued, partly occasioned by the backup in interest rates, and by early April the NASDAQ index was well below its year-end mark and the S&P 500 composite index was barely above its. Equity prices began rebounding in late April, however, soon pushing these indexes to new highs. Stock prices have been somewhat more volatile this year than last.

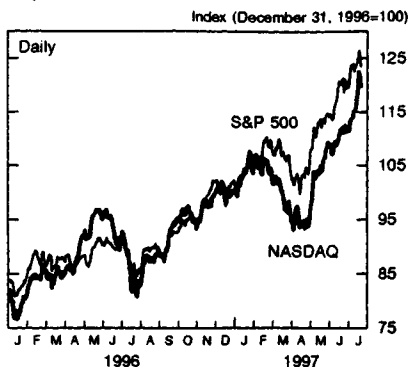
The run-up in stock prices in the spring was bolstered by unexpectedly strong corporate profits for the first quarter. Still, the ratio of prices in the S&P 500 to consensus estimates of earnings over the coming twelve months has risen further from levels that were already unusually high. Changes in this ratio have often been inversely related to changes in long-term Treasury yields, but this year's stock price

Selected Treasury Rates



Note. The twenty-year Treasury bond rate is shown until the first issuance of the thirty-year Treasury bond, in the first quarter of 1977.

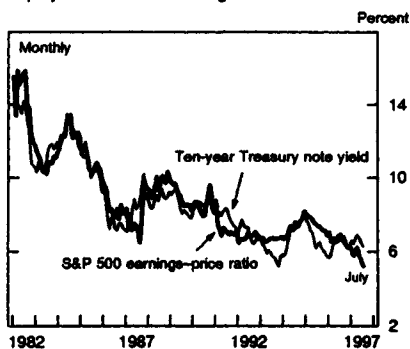
Major Stock Price Indexes



Note. Last observations are for July 18, 1997.

gains were not matched by a significant net decline in interest rates. As a result, the yield on ten-year Treasury notes now exceeds the ratio of twelve-month-ahead earnings to prices by the largest amount since 1991, when earnings were depressed by the economic slowdown. One important factor behind the increase in stock prices this year appears to be a further rise in analysts' reported expectations of earnings growth over the next three to five years. The average of these expectations has risen fairly steadily since early 1995 and currently stands at a level not seen since the steep recession of the early 1980s, when earnings were expected to bounce back from levels that were quite low.

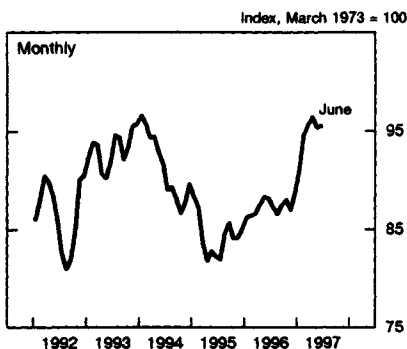
Equity Valuation and Long-Term Interest Rate



Note. Earnings-price ratio is based on the I/B/E/S International, Inc., consensus estimate of earnings over the coming twelve months. All observations reflect prices at mid-month.

Exchange Rates. The weighted average foreign exchange value of the dollar in terms of the other G-10 currencies rose sharply in the first quarter from its level in December and has moved up somewhat further since then. On balance, the nominal dollar is more than 10 percent above its level at the end of December. A broader measure of the dollar that includes currencies from additional U.S. trading partners and adjusts for changes in relative consumer prices shows appreciation of about 7 percent. After rising nearly 10 percent in terms of the Japanese yen to a recent peak in late April, the dollar retreated; it is currently about unchanged from its value in terms of yen at the end of December. In contrast, the dollar has risen about 17 percent in terms of the German mark since the end of last year.

Weighted Average Exchange Value of the U.S. Dollar



Note. Nominal value in terms of the currencies of the other G-10 countries. Weights are based on the 1972-76 global trade of each of the ten countries.

Early in the year, data showing continued strengthening of U.S. economic activity surprised market participants, raised their expectations of some tightening of U.S. monetary policy, and contributed to upward pressure on the dollar. In light of the FOMC action in late March and the tendency for subsequent economic indicators to suggest a slowing of the growth of U.S. real output, pressure for dollar appreciation abated. While robust economic activity in the United States generated a rise in U.S. long-term interest rates through April, market uncertainty about the strength of output growth in several foreign industrial countries led to little change, on balance, in aver-

age long-term (ten-year) rates in other G-10 countries. Since then, U.S. rates have returned to near year-end levels, while rates abroad have moved down. Accordingly, the long-term interest differential, on balance, has shifted further in favor of dollar assets since December, consistent with the net appreciation of the dollar this year.

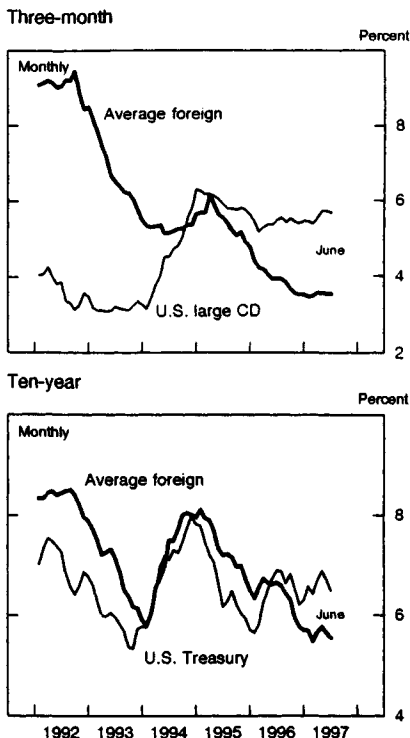
Despite indications of further recovery of output in Japan, the dollar rose against the yen early in the year as planned fiscal policy in Japan appeared to be more restrictive than had been expected, and Japanese long-term interest rates declined in response. Statements by G-7 officials at their meeting in Berlin in February and on subsequent occasions suggested some concern that the dollar's strength and the yen's weakness not become excessive. The dollar moved back down in terms of the yen in May and has since fluctuated narrowly. The yen has been supported by data showing a widening of Japanese external surpluses and by a partial retracing by Japanese long-term rates of their earlier decline, as indicators have suggested that the fiscal measures may not be as contractionary as previously expected.

The dollar also rose sharply early in the year in terms of the German mark and other continental European currencies. Market participants have been disappointed that the pace of economic activity has not strengthened further in continental European countries. In addition, uncertainties about the prospects for European Monetary Union, including the possibility of delay and the question of which countries will be in the first group proceeding to Stage Three, have resulted in fluctuations in the mark and, on balance, appear to have strengthened the dollar. German long-term interest rates have declined somewhat on balance this year.

Short-term market interest rates in most of the major foreign industrial countries have changed little on average since the end of last year. Rates in the United Kingdom have risen somewhat as the new government increased the official lending rate one-quarter percentage point in May and the Bank of England raised it by the same amount in June and again in July. Short-term rates in Italy and Switzerland have eased. Stock prices have risen sharply so far this year in the major foreign industrial countries, particularly in continental Europe.

The dollar has changed little on balance in terms of the Mexican peso since December, as improved investor sentiment toward Mexico, reflected in narrowing yield spreads between Mexican and U.S. dollar-denominated bonds, has supported the peso.

U.S. and Foreign Interest Rates



Note. Average foreign rates are the global trade-weighted average, for the other G-10 countries, of yields on instruments comparable to the U.S. instruments shown.

The trend in Mexican inflation has declined this year; nevertheless, the excess of Mexican inflation over U.S. inflation implies about a 7 percent real appreciation of the peso since December.

Since mid-May, financial pressures in Thailand, which caused authorities there to raise interest rates and have led to depreciation of the currency, have spilled over to influence financial markets in some of our Asian trading partners, particularly the Philippines and Malaysia. Interest rates in both of these countries rose sharply. Philippine officials relaxed their informal peg of the peso in terms of the dollar, and the currency declined significantly; the Malaysian ringgit and Indonesian rupiah have also depreciated.

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