FEDERAL RESERVE'S FIRST MONETARY POLICY REPORT FOR 2000

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BEFORE THE

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

ONE HUNDRED SIXTH CONGRESS

SECOND SESSION

ON

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

FEBRUARY 23, 2000

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FEDERAL RESERVE'S FIRST MONETARY POLICY REPORT FOR 2000

WEDNESDAY, FEBRUARY 23, 2000

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

The Committee met at 10 a.m., in room 216 of the Hart Senate Office Building, Senator Phil Gramm (Chairman of the Committee) presiding.

OPENING STATEMENT OF CHAIRMAN PHIL GRAMM

Chairman GRAMM. Let me call the Committee to order.

I understand that Professor Sue Hedley from American University is here. She has her whole class here, and has been here for 11 years in a row. We are going to give an exam after this tutorial, so everybody be alert out there.

[Laughter.]

Senator SARBANES. They are still trying to figure out what Chairman Greenspan is telling us after 11 years.

[Laughter.]

Chairman GRAMM. Chairman Greenspan, once again, let me welcome you before the Committee. I want to congratulate you on your renomination. I think the overwhelming vote in the Senate shows that there's great confidence in your leadership.

More importantly, I want to congratulate you on your record as Chairman of the Board of Governors of the Federal Reserve System. We now have had price stability for more than a decade. It is built into long-term interest rates. It has become part of the fabric of American contemporary society.

I know it always makes people nervous when interest rates are raised, but it seems to me that, in the end, price stability is one of the foundations of American prosperity.

It's always tempting, when people are trying to second-guess our monetary policy, to try to second-guess what you are doing, but as I told somebody the other day, I am not going to get into the business of trying to second-guess the monetary policy of the most successful central banker in the history of the United States.

I want to thank you for the great job you are doing. It makes me happy when equity values go up because I have my old college teacher retirement program, as I'm sure you do, TIAA–CREF.

But in terms of American interest, what is most important is sustaining our economic growth, preserving price stability, and keeping a recovery that is now reaching every element of American society.

It is an important mission you have. We are proud of how you are performing that mission, and we look forward today to hearing your report on where we are and what you believe we need to do.
Let me now recognize the Ranking Democrat on the Committee, Senator Sarbanes.

OPENING COMMENTS OF SENATOR PAUL S. SARBANES

Senator SARBANES. Thank you very much, Mr. Chairman. I join you in welcoming Chairman Greenspan.
Actually, this is a repeat performance. I know he was before the House Committee last week. I'm presuming that we will continue to hold these hearings every 6 months or so, as we have now over quite a period of time, so that come summer, we will get first crack at him.
Mr. Chairman, I want to underscore how important I believe it is to hold these hearings on a regular basis. I believe they have worked very well, and I think that's Chairman Greenspan's view. I believe they have made a major contribution toward more openness with respect to the development of monetary policy, and I believe it is enormously helpful to have these sessions.
The last time he appeared before the Committee, I thought we referred to Chairman Greenspan as "the greatest central banker in the world." Today, it was "the greatest central banker in the United States." I presume that was just——
Chairman GRAMM. Actually, it was "the greatest central banker in the history of the world."
Senator SARBANES. "The greatest central banker in the history of the world," yes.
[Laughter.]
Chairman GRAMM. It's like saying that a person is the greatest Texan.
[Laughter.]
By definition, Texans are the greatest Americans, the greatest people on the planet, but I didn't want to overdo it. I sometimes worry about our good Chairman getting a big head from coming before this Committee and listening to me going on about him.
Chairman GREENSPAN. Mr. Chairman, I am aware of the fact that, as one of my colleagues said, when you finally climb to the top of the mountain, all roads lead in only one direction.
Senator SARBANES. The Texas reference reminds me of a Bob Strauss story, which I have to tell here this morning. You know that George Washington was actually born in Texas and grew up there as a very young boy. One day he chopped down the tree, and they asked who chopped down the tree.
This is a Strauss story. This is a Texan's story about Texas, I hasten to add, not my story.
Chairman GRAMM. Listen, I know Strauss well.
[Laughter.]
Senator SARBANES. His father asks him, "Who chopped down the tree?" George Washington says, "Well, I cannot tell a lie; I chopped down the tree." His father grabs him by the hand and says, "Come on, son." He says, "We're moving to Virginia. You're never going to make it here in Texas."
[Laughter.]

Mr. Chairman, I am not going to make an opening statement of any consequence. I look forward to asking Chairman Greenspan some questions. I am particularly concerned, if some of our apprehensions are about our future, of the volatility and the overexuberance in the stock market—which there's some reason, I guess, to think, and that's what a lot of the commentators are saying—whether there's some way to get that volatility and overexuberance calmed down without having to take measures that would in effect calm down the entire economy if the balance of the economy is working pretty well. Of course, we are now at low unemployment and low inflation, which is a happy state of affairs, and obviously, we would like to stay there.

I think one of the questions is whether, in order to address what may be perceived as a difficulty in a limited portion of the financial scene, we're taking broad-based measures which may result in restraining general economic activity, which may not need to be restrained. I will try to get at that point in the questioning round.

Thank you, Mr. Chairman.

Chairman GRAMM. Senator Enzi.

OPENING COMMENTS OF SENATOR MICHAEL B. ENZI

Senator ENZI. Thank you, Mr. Chairman.

I want to welcome Chairman Greenspan before the Committee. Chairman Greenspan, for the great work you have done, I would like to add my praise. Thank you for joining us today.

Thank you, Mr. Chairman.

Chairman GRAMM. I'm not sure who was here first.

Senator ALLARD. Mr. Chairman, Senator Bunning was here before me.

Chairman GRAMM. Senator Bunning.

OPENING COMMENTS OF SENATOR JIM BUNNING

Senator BUNNING. Thank you, Mr. Chairman.

I would like to thank Chairman Greenspan for testifying before the Committee today and for giving us an update on the economic outlook, as required by the Humphrey–Hawkins Act.

However, in the spirit of the Humphrey–Hawkins Act, I must mention that I am very concerned with the indications that the Fed continues to pursue a policy that is based on the assumption that higher interest rates are needed at this time. I think this is a misguided policy which, in itself, could become more of a threat to our economy than inflation will ever be.

I have no argument with the central premise that inflation is and should be a serious concern, and that keeping inflation in check must be a top priority of our central bank. However, the signs of renewed inflation are simply not there.

All the indicators, with the exception of low unemployment rates, which I really like to see, show no signs of any resurgence of inflation or of any economy which is overheating. If you look at the basis of our inflation rate, if you take out energy prices—which are inflated in a false sense at present because of the OPEC cartel, which has squeezed to the point where the price per barrel is at $30 one day, or under, or over—there would be almost deflation in this economy.

Chairman Greenspan, please don't try to fix an economy that isn't broken. Don't become so frightened by success that you throw wet blankets on a fire that isn't burning. In large part, our current economic expansion has been built on unprecedented—and I say this as nicely as I can—new technology and better productivity out of our workers that have allowed this continued expansion to go on. I simply don't believe that the Federal Reserve Board's economic models are factoring in the full impact of these new technologies and innovations or the sustained growth in productivity which may have already allowed us to maintain a robust economic expansion for as long as we have. If you become obsessed with looking for signs of blazing inflation behind every door, and if you start slamming these doors shut indiscriminately with higher interest rates, you could easily slam doors shut on economic growth altogether.

I personally believe that we can sustain the kind of productivity increases that have kept our economy growing with very low inflation rates. But I don't believe we can do it if the Fed continues to raise interest rates at every opportunity.

As the interest rate climbs closer to 10 percent—prime rate, I'm speaking about—our economy has to suffer and it has to slow down. I am convinced that higher interest rates right now, or even the threat of higher interest rates, are a much greater danger to our economy than inflation.

I urge Chairman Greenspan and the governors of the Federal Reserve Board to review their policy to make sure that they don't shut down economic growth and productivity growth, trying to put out a fire that isn't even burning right now.

Thank you.

Thank you, Mr. Chairman.

Chairman GRAMM. Thank you.

Senator Allard.

OPENING COMMENTS OF SENATOR WAYNE ALLARD

Senator ALLARD. Thank you, Mr. Chairman.

I'm going to ask that my formal statement be made a part of the record.

Chairman GRAMM. Your statement will be made a part of the record as if read in its entirety.

Senator ALLARD. Along with you, Mr. Chairman, I want to personally welcome Chairman Greenspan to the Committee. I always appreciate hearing what you have to say, Chairman Greenspan, and I look forward to your comments this morning as we move forward. Again, welcome to the Committee.

Thank you, Mr. Chairman.

Chairman GRAMM. Thank you.

Senator Bayh.

OPENING COMMENTS OF SENATOR EVAN BAYH

Senator BAYH. Thank you, Mr. Chairman.

I will reserve my comments for the questioning period, except to say welcome, Chairman Greenspan. Thank you very much for joining us today.

Thank you, Mr. Chairman.

Chairman GRAMM. Senator Johnson.

OPENING COMMENTS OF SENATOR TIM JOHNSON

Senator JOHNSON. I want to welcome Chairman Greenspan. I am looking forward to hearing what he has to say. I will forego any further comments at this time.

Thank you, Mr. Chairman.

Chairman GRAMM. Thank you, Senator Johnson.

Chairman Greenspan, the floor is yours.

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

Chairman GREENSPAN. Thank you very much, Mr. Chairman and Members of the Committee.

I, as always, appreciate this opportunity to present the Federal Reserve's semiannual report on the economy and monetary policy.

There is little evidence that the American economy, which grew more than 4 percent in 1999 and surged forward at an even faster pace in the second half of the year, is slowing appreciably. At the same time, inflation has remained largely contained. An increase in the overall rate of inflation in 1999 was mainly a result of higher energy prices. Importantly, unit labor costs actually declined in the second half of the year. Indeed, still-preliminary data indicate that total unit cost increases last year remained extraordinarily low, even as the business expansion approached a record 9 years.

Underlying this performance, unprecedented in my half-century of observing the American economy, is a continuing acceleration in productivity. Nonfarm business output per workhour increased 3¼ percent during the past year—likely more than 4 percent when measured by nonfarm business income. One result of this remarkable economic performance has been a pronounced increase in living standards for the majority of Americans. Another has been a labor market that has provided job opportunities for large numbers of people previously struggling to get on the first rung of a ladder leading to training, skills, and permanent employment.

Yet those profoundly beneficial forces driving the American economy to competitive excellence are also engendering a set of imbalances that, unless contained, threaten our continuing prosperity. Accelerating productivity entails a matching acceleration in the potential output of goods and services and a corresponding rise in real incomes available to purchase the new output. The problem is that the pickup in productivity tends to create even greater increases in aggregate demand than in potential aggregate supply. This occurs principally because a rise in structural productivity growth has its counterpart in higher expectations for long-term corporate earnings. This, in turn, not only spurs business investment but also increases stock prices and the market value of assets held by households, creating additional purchasing power for which no additional goods or services have yet been produced.

Historical evidence suggests that perhaps 3 to 4 cents out of every additional dollar of stock market wealth eventually is reflected in increased consumer purchases. The sharp rise in the amount of consumer outlays relative to disposable incomes in recent years, and the corresponding fall in the savings rate, has been consistent with this so-called wealth effect on household purchases.

The additional growth in spending of recent years that has accompanied these wealth gains as well as other supporting influences on the economy appears to have been met in about equal measure from increased net imports and from goods and services produced by the net increase in newly hired workers over and above the normal growth of the workforce, including a substantial net inflow of workers from abroad.

But these safety valves that have been supplying goods and services to meet the recent increments to purchasing power largely generated by capital gains cannot be expected to absorb an excess of demand over supply indefinitely.

First, growing net imports and a widening current account deficit require ever larger portfolio and direct foreign investments in the United States, an outcome that cannot continue without limit.

Second, at some point in the continuous reduction in the number of available workers willing to take jobs, short of the repeal of the law of supply and demand, wage increases must rise above even impressive gains in productivity. This would intensify inflationary pressures or squeeze profit margins, with either outcome capable of bringing our growing prosperity to an end.

With the assistance of a monetary policy vigilant against emerging macroeconomic imbalances, real long-term rates will at some point be high enough to finally balance demand with supply at the economy's potential in both the financial and product markets. Other things equal, this condition will involve equity discount factors high enough to bring the rise in asset values into line with that of household incomes, thereby stemming the impetus to consumption relative to income that has come from rising wealth. This doesn't necessarily imply a decline in asset values—although that, of course, can happen at any time for any number of reasons—but rather that these values will increase no faster than household incomes.

With foreign economies strengthening and labor markets already tight, how the current wealth effect is finally contained will determine whether the extraordinary expansion that it has helped foster can slow to a sustainable pace, without destabilizing the economy in the process.

On a broader front, there are few signs to date of slowing in the pace of innovation and the spread of our newer technologies that, as I have indicated in previous testimonies, have been at the root of our extraordinarily impressive productivity improvement.

What is uncertain is the future pace of the application of these innovations, because it is this pace that governs the rate of change in productivity and economic potential.

Monetary policy, of course, did not produce the intellectual insights behind the many technological advances which have been responsible for the recent phenomenal reshaping of our economic landscape. It has, however, been instrumental, we trust, in establishing a stable financial and economic environment with low inflation that is conducive to the investments that have exploited these innovative technologies.

Federal budget policy has also played a pivotal role. The emergence of surpluses in the unified budget and of the associated increase in Government saving over the past few years has been ex-

ceptionally important to the balance of the expansion, because the surpluses have been absorbing a portion of the potential excess of demand over sustainable supply associated partly with the wealth effect. Moreover, because the surpluses are augmenting the pool of domestic saving, they have held interest rates below the levels that otherwise would have been needed to achieve financial and economic balance during this period of exceptional economic growth. They have, in effect, helped to finance and sustain the productive private investment that has been key to capturing the benefits of the newer technologies that, in turn, have boosted the long-term growth potential of the U.S. economy.

The recent good news on the budget suggests that our longer-run prospects for continuing this beneficial process of recycling savings from the public to the private sectors have improved greatly in recent years. Nonetheless, budget outlays are expected to come under mounting pressure as the baby boom generation moves into retirement, a process that gets under way a decade from now. Maintaining the surpluses and using them to repay debt over coming years will continue to be an important way the Federal Government can encourage productivity-enhancing investment and rising standards of living. Thus, we cannot afford to be lulled into letting down our guard on budgetary matters.

Mr. Chairman, although the outlook is clouded by a number of uncertainties, the central tendencies of the projections of the Board members and Reserve Bank presidents imply continued good economic performance in the United States. Most of them expect economic growth to slow somewhat this year, the unemployment rate to remain in the neighborhood of 4 to 4½ percent, and the rate of inflation for total personal consumption expenditures is expected to be 1¾ to 2 percent.

Continued favorable developments in labor productivity are anticipated both to raise the economy's capacity to produce and, through its supporting effects on real incomes and asset values, to boost private domestic demand. Strong growth in foreign economic activity is expected to continue this year, and, other things equal, the effect of the previous appreciation of the dollar should wane, augmenting demand on U.S. resources and lessening one source of downward pressure on our prices.

As a consequence, the necessary alignment of the growth of aggregate demand with the growth of potential aggregate supply may very well depend on restraint on the domestic demand, which continues to be buoyed by the lagged effects of increases in stock market valuations.

Despite the appreciable increases in both the nominal and the real intermediate- and long-term interest rates, to date, interest-sensitive spending has remained robust, and the Federal Open Market Committee will have to stay alert for signs that real interest rates have not yet risen enough to bring the growth of demand into line with that of potential supply, even should the acceleration of productivity continue.

Achieving that alignment seems more pressing today than it did earlier, before the effects of imbalances began to cumulate, lessening the depth of our various buffers against inflationary pressures. Labor markets, for example, have tightened in recent years

as demand has persistently outstripped even accelerating potential supply. As I have previously noted, we cannot be sure in an environment with so little historical precedent what degree of labor market tautness could begin to push unit costs and prices up more rapidly. We know, however, that there is a limit, and we can be sure that the smaller the pool of people without jobs willing to take them, the closer we are to that limit.

As the U.S. economy enters a new century as well as a new year, the time is opportune to reflect on the basic characteristics of our economic system that have brought about our success in recent years. Competitive and open markets, the rule of law, fiscal discipline, and a culture of enterprise and entrepreneurship should continue to undergird rapid innovation and enhanced productivity that in turn should foster a sustained further rise in living standards. It would be imprudent, however, to presume that the business cycle has been purged from market economies so long as human expectations are subject to bouts of euphoria and disillusionment. We can only anticipate that we will readily take such diversions in stride and trust that beneficent fundamentals will provide the framework for continued economic progress well into the new millennium.

Thank you, Mr. Chairman. I request that my full statement be included in the record.

Chairman GRAMM. Chairman Greenspan, thank you for that excellent and sobering presentation. Hearing your presentation on these occasions does bring back the point that economics may not be the dismal science, but it is the science of reality. I appreciate your comments.

I want to try to touch on a couple of things. One thing that worries me a great deal is that nondefense discretionary spending—general Government—in the current budget is growing faster than at any time since Jimmy Carter was President.

We are in the process of seeing a concerted effort—which I believe can be justified on national security grounds—of seeing an increase in defense spending after a decade and a half when defense spending was cut.

As you know, the President proposes in his budget the largest expansion of Medicare in American history, with a provision that would not only provide assistance to the roughly 30 percent of seniors who don't have insurance coverage for pharmaceuticals, but would provide coverage for everybody, even those who do.

I am beginning to become concerned that the Congress and the President—and when you combine the two together, you have the Government—is in the process of beginning a new spending spree.

I would like to get your thoughts on that, Chairman Greenspan, as to whether you share that concern and what the potential impact of that might be.

Chairman GREENSPAN. Mr. Chairman, in my prepared remarks, I try to go into a good bit of detail on the whole question of the budget outlook.

I have concluded that even though we have these significant unified budget surpluses, and indeed the possibility that we might be underestimating them because ~~if, indeed, we are in a period~~ where we are about to get, or in the process of getting, still accelerating

productivity, meaning growth in productivity is still rising, it is very likely that the forecasts that are made both by the OMB and the CBO, are indeed underestimating the surplus.

On the other hand, if you look at the pattern of forecasts, they all include a reasonably significant continuation of what I would call the tax surprise of the 1990's. And that is even after making adjustment for capital gains taxes, for the incomes which are not capital gains but related to the stock market, for what we call bracket creep, you still have a very significant increase in individual tax revenues relative to taxable incomes.

We don't know, nor does anybody else know, where that is coming from, and we will not until we get full details from the individual tax returns, probably through 1999, to get a full sense of what is involved and where it's coming from. Pending that, we cannot be sure that this tax surprise cannot turn around just as readily as it has in the past and go in the other direction in the same magnitude.

It is not very difficult with some reasonable assumptions to take the unified surplus, or most of it, not to mention the on-budget surplus, and chop it down substantially. I conclude from this, that until we have a reasonably good sense of where those revenues are coming from and therefore what is the most likely permanent increase in the surplus based not on guesses on revenues, but on hard numbers—until we get there, I have argued that we should allow the surpluses to run and reduce the debt outstanding.

Indeed, as I point out in my prepared remarks, this is not an irrevocable commitment because you can always borrow back Federal debt after you have paid it off for any programs you want. But I would submit that irrevocable, or almost irrevocable, programs that are put in place now strike me as risking the possibility that we may be wrong in this surplus. All I'm asking, in effect, is just to delay for a while until we have a better grip of what the true balance in our Federal Government accounts is.

I have not and did not get into, in my prepared remarks, the specifics of either the President's program or anybody else's program, and I'm hopefully going to try to stay away from that, as I have over the years.

As you know, my general view is that the first priority is to get the debt down because there are very major positive economic effects, as well as building up the ability to reborrow, if need be. That, essentially, is why the ability to keep those surpluses is important. But if it turns out that it is politically infeasible for all sorts of obvious political reasons, then my choice is that, for long-term fiscal stability, we are far better off cutting taxes than raising spending.

Chairman GRAMM. Well, Chairman Greenspan, I know it's hard for you, when we're talking about congressional spending programs or administration spending programs, to speak up. But I think it's very important that you follow the spending pattern of the Government and that you not hesitate to blow the whistle when you believe there is a potential danger because I think you have great credibility on this issue. I'm always concerned about spending.

You talked about the wealth effect of the run-up in equity values. It is a very natural thing in Congress, when we are running the

first surplus in the political career of anyone who is here, in the old cliche, for the money to burn a hole in your pocket, so I think your comments are very important.

I have a few more questions, but let me stop, since I have run over my time. I will come back at the end if we have time.

Senator Sarbanes.

Senator SARBANES. Thank you, Mr. Chairman.

Chairman Greenspan, before I turn to the subject I mentioned in my opening statement, I just want to ask one quick question on the Federal Government's economic statistics.

Unfortunately, the budget for this fiscal year required the Bureau of Economic Analysis to impose a hiring freeze, and it didn't provide monies to examine new developments in the economy in terms of upgrading our statistical series. It's not a lot of money, but we make a lot of decisions off the basis of those economic statistics, and it seems to me you have emphasized the changes that are taking place in the economy, the new economy, so to speak.

It seems to me we need some new surveys and new measures to try to address these changes in the economy. I wonder what your view is on the need for at least some additional resources to get these economic statistics current.

Chairman GREENSPAN. Senator, as you well know, I am extraordinarily reluctant to advocate any increase in spending, so it has to be either a very small amount or a very formidable argument that is involved. I find in this case that both conditions are met.

As you point out, we are moving into an economy, the structure of which none of us has ever seen before. It looks as though it is emerging in a manner which will set the pace for a goodly part of the first half of the twenty-first century. This means that a lot of the things we are looking at, a lot of the things we examine in the economy, are very poorly represented in our current statistics, whereas some of the detail that we have on what we call the old economy is awesome and unnecessary.

It would strike me that, one, we have to move resources away from some of those measures, but I agree with you that, even having done that, additional funds could probably very effectively be spent to improve the quality of our statistics both for the private sector, which is crucial, and for those of us who have to be involved in governmental economic policy.

Senator SARBANES. Thank you. We will be working on that problem here in the Congress.

I might just note that if we could get some new data, particularly with respect to the dimensions of the new economy, it should bring a lot of happiness into your day because it would give you more data to work with and analyze every day, if I may say so.

Chairman GREENSPAN. Right.

[Laughter.]

Senator SARBANES. Now let me turn to the other subject. I want to preface it with a story.

Earlier in the week, I attended an event in the inner city of Baltimore marking a Department of Labor grant for a comprehensive education and training program aimed at school dropouts. There was a young fellow there who had been a dropout and part of a pilot program that had drawn him in, in effect, off the streets. He

had been counseled, advised, then had finished his GED as part of this program. He had received important training and moved out into a job. He is now holding a technical job in the private sector and doing quite well. He was there as an example of what we are trying to achieve by these programs.

A critical aspect of this program has been the employers who have come in, private employers, to participate, and they hold the promise of a job at the end of the course. They, in effect, say to these young people, "If you follow this program through, there will be a job out there for you."

Of course, one of the reasons they have a job out there for them is because you have a tight labor market. They are searching for qualified employees, and this program is designed to achieve it.

Now, you say in your statement, "Unit labor costs actually declined in the second half of the year. Indeed, still-preliminary data indicate that total unit cost increases last year remained extraordinarily low." You are projecting in the economic outlook that the rate of inflation is expected for total personal consumption expenditures to be 1¾ to 2 percent, or a bit below the rate in 1999, which was elevated by rising energy prices, to which my colleague made reference earlier in his statement.

What is the prospect for these young people? We keep struggling, we seem to get on a pretty good playing field, then all of a sudden we discover the goal posts are being moved on us. We are told to get productivity up. We get productivity up. Unit labor costs are not rising. The inflationary prediction is very good. Yet, the Fed is now moving to tighten monetary policy in order to slow down the economy.

If you slow down the economy, presumably, unemployment will start to rise. The opportunities for people of the sort that I'm describing will diminish.

Now we're told, we have this problem. We have the wealth effect of the running up of equity values. We are hearing this morning how this theory that the increase in productivity, which we had seen as all good, now has a dismal side to it, because it's going to lead to this anticipation on the profit levels, the run-up on the equity assets, and then this additional spending.

Well, this young fellow is far removed from the wealth effect. He is struggling just to try to get into a job situation. What's going to happen here?

There is a whole new theory being laid out here, as I see it, a theory that's going to justify raising the rates, curtailing the economy, when there's no inflation, there's no unit labor cost problem, and it's all being done on the basis of this wealth effect.

Now, I see *The New York Times* yesterday said, "Mr. Greenspan was also blunter than normal in suggesting that one of his primary targets in raising interest rates was the stock market." If the stock market is a problem, if the activity and the volatility is in the stock market, we may need to think of some way to try to address that without slowing down the whole economy and affecting the opportunities for these young people that I talked about in my opening example.

I note that *Reuters* said, "Buying on margin, the Street's version of charging stock purchases on a credit card, went up a heart-

pounding pace in January, climbing to a record $243.5 billion, from $228 billion in December. A decade ago, the debt load amounted to just $35 billion." Of course, this is something that Senator Schumer and I spoke with you about during your confirmation hearing.

Where are we going? We have an economy of low inflation. Unit labor costs are stable. In fact, you anticipate they are going to drop. We are finally drawing people into the workforce who were never there before, giving them a chance to share in an opportunity. Now, all of a sudden, we have this theory, "Well, you are getting this run-up in the equity assets. That creates a wealth effect. That's going to stimulate a demand without a supply to respond to it, so now we have to curtail the economy." The people that will be first to drop off the table when you curtail the economy are these young people we are talking about that we are trying to draw into the labor force.

Chairman GREENSPAN. Senator, implicit in your remarks is the notion that you are endeavoring to slow the economy to a point at which you begin to get the significant lay-offs and significant inability of people to move up the ladder of success that I mentioned in my prepared remarks.

Senator SARBANES. Let me develop it on that point. The economy doesn't reach this young fellow and people like him until you get it down to these levels of unemployment.

Chairman GREENSPAN. I agree with that. Our basic purpose is to keep that process going. The type of economy that we are looking at, the type that we are dealing with at this particular stage, is, I would suspect, one that none of us has ever seen before and, indeed, it may be unprecedented in our history. It is characterized by a really phenomenal change in technologies which are inducing not only a high rate of growth in productivity, but also an accelerating productivity.

What this has done is to very sensibly increase the market value of assets in this economy. It has, accordingly, created what we call the wealth effect. It is firmly documented that when people have significant capital gains, a small part of them do induce an increase in consumption. It is in the nature of a capital gain not to increase supply correspondingly.

The difference between the demand and supply has been, over the last several years, as I put it in my prepared remarks, met by goods from abroad and goods produced by people who were previously seeking a job and not having found one, are now coming into the workforce. If either of those two so-called safety valves could be projected indefinitely into the future, then there is no inhibition here in growth accelerating fully with the productivity numbers without any imbalances.

But the fact of the matter is we just do not have an unlimited amount of labor. We have capped our immigration, and having done so, we are delimited in our workforce largely to those who are of working-age in the population, and that number continuously shrinks.

The only point I'm making is that that cannot go on indefinitely, nor can the other safety valve—imports from abroad—continue indefinitely because the stock of assets owned by foreigners in the United States becomes increasingly large and the debt servicing of

those assets cannot go on indefinitely. What I'm saying is, it's not a theory, it's merely an analysis of what in fact is happening.

The question I raise is that if the buffers toward imbalances are shrinking, as they have for the last number of years, and they continue to shrink, then we are like the boat heading toward the dock. Instead of turning so that we don't go slamming into the dock, we go straight into the dock and find that we should have turned, at least partially, in order to come in—to create the triple metaphor, I guess—for a soft landing.

The issue here is basically the issue of, one, as Senator Bunning says, there is no evidence right now of inflation. I cannot find it, no matter where I look, with the exception of oil prices and some commodity prices rising. But the major part of costs, unit labor cost, is, if anything, improving, going down.

The problem is that we are caught with a conceptual evaluation of this economy, which is not a theory, it's an evaluation of facts. Even though our data is not as good as we would like, there is enough to make this an unequivocal explanation of what's going on. If that is indeed the case, it is essentially saying that so long as immigration is capped, the wealth effect cannot persist indefinitely because it relies on two safety valves, both of which are limited.

That is the basis of our analysis. I grant you that we do not know exactly when we reach these triggering points. But it has been the judgment of the Federal Open Market Committee that it is far better to have buffers there adequate to ensure that this prosperity we are going through can continue at a pace somewhat below that of the second half of last year, because that cannot be sustained because the safety valves won't allow it.

But we are in no way arguing that the growth in this economy should not continue robust, that unemployment should not continue very low, and that prosperity should not continue as far out as we can manage to induce it.

Senator SARBANES. Mr. Chairman, I see my time has expired.

Thank you.

Chairman GRAMM. Senator Bunning.

Senator BUNNING. Thank you, Mr. Chairman.

I would like to follow up on this just a bit. Chairman Greenspan, are you telling me and this Committee that we can't sustain a 4- to 5-percent economic growth rate?

Chairman GREENSPAN. No, I'm not, Senator, because——

Senator BUNNING. It seems to me that's what I'm hearing.

Chairman GREENSPAN. No, let me explain to you why not. I don't know what the potential growth rate of this economy is. It depends wholly on the trend in productivity growth. As I pointed out in my testimony earlier——

Senator BUNNING. But your monetary policy would indicate to us, or at least to me, that you don't believe a 4- to 5-percent economic growth rate in this country is sustainable without inflation, without what you call the wealth effect being contained.

I didn't know the Federal Open Market Committee had a job of—this is on your own testimony—making sure the current wealth effect is finally contained.

Why do we want to contain the growth and wealth effect in this country?

Chairman GREENSPAN. The point at issue is that we don't want to contain the growth. The problem that I and my colleagues have is that you cannot continue to get accelerating productivity and the wealth effect with the safety valves limited.

What I'm saying——

Senator BUNNING. Well——

Chairman GREENSPAN. Senator, I do understand where you are coming from because I have been in the same place and I think I have convinced myself. Let me see if I can try to indicate to you why I believe as I do on this issue.

The question of how fast this economy grows is not something the central bank should be involved in.

Senator BUNNING. I'm convinced of that, yes.

Chairman GREENSPAN. So am I. The issue really relates to inflationary imbalances. What we are looking at is basically the indications that demand chronically exceeds supply for an intermediate period. The best way to measure that is to look at what is happening to the total number of people who, one, are unemployed or, two, are not in the labor force but want a job, from which we are getting increased production.

Senator BUNNING. But you brought up in your testimony the unbelievable increase in productivity due to the many technological advances that we have had. And you have no idea how to measure that yet.

Chairman GREENSPAN. No, I disagree with that. We do know how to measure it well enough to know that what it is that we are concerned about is not the rate of increase in demand or the rate of increase in supply, but only the difference between the two. The difference between the two is measurable by the extent to which net imports of goods and services are rising as a share of the gross domestic product and the amount of goods that are produced as a consequence of the unemployment rate falling or a decline in the general pool of workers.

In other words, we don't need to know whether the growth rate is 4, 5, 6, 8 percent. What we need to focus on as the central bank is solely the difference between the two, without reference to where they are. That's where our problem lies.

Senator BUNNING. Then you believe, by setting monetary policy, you will be able to dictate the difference of those two things to the point that by raising interest rates from the central bank, it will allow you to regulate or to dictate the amount of people that are employed and the amount of wealth that's being created, no matter where it's being created—particularly on the stock market.

My problem is if we get prime interest rates at double digits, we are going to stop this economy in its tracks. I don't want to see that happen on your watch, and I surely don't want to see it happen on my watch.

Chairman GREENSPAN. I appreciate that, Senator. I have the same view.

First of all, let me just say that the crucial element in here is not what the central bank is doing, it's what the market is doing.

Senator BUNNING. It's how the market reacts to the central bank.

Chairman GREENSPAN. Well, the market is far bigger than the central bank. For example, what the market has been doing in the

last year, recognizing the excess demand for funds relative to savings in the system—exactly these imbalances I'm talking about—is to move average corporate long-term interest rates up by more than a full percentage point in real terms. That is a significant change.

Senator BUNNING. May I ask you what the 30-year bond is at today? Is it at 6.2 percent?

Chairman GREENSPAN. No, the 30-year bond—you are referring to Government bonds. I'm talking about corporate bonds.

Senator BUNNING. Are you telling me that corporate borrowing is at 7.5, 7.2, or what? What is it?

Chairman GREENSPAN. The BBB corporate rate is, in essence, the Standard & Poor's BBB that is essentially the average cost; that is, it's a good proxy for the average cost of corporate borrowing. That number at this stage in real terms is about 5¾ percent and has about a 2¼ percent inflation expectation. In total, we are basically talking about close to 8 percent nominal rates.

Senator BUNNING. My time has expired. I will wait for the second round. I have some more questions to ask.

Chairman GREENSPAN. Let me make one quick statement. When the rate on the U.S. Treasury 30-year bond went down sharply, the rate on corporate bonds did not.

Senator BUNNING. The rate on corporate bonds did not go down.

Chairman GRAMM. Senator Allard.

Senator ALLARD. Chairman Greenspan, I was heartened in your testimony when you noted that there was some difficulty with the fiscal discipline last year because I felt like I had made the same observation.

I'm wondering if perhaps you have some suggestions on how we can shore up our fiscal discipline so that we don't fall over the cliff with some of our spending patterns. I have thought at times about a biennial budget. It may bring forth a little more fiscal discipline. I would like to have you comment on that idea, too.

Chairman GREENSPAN. Senator, the most important fiscal action that has been taken in the last couple of years, or maybe the last year, is the quite remarkable agreement between the Administration and the Congress that the Social Security surplus is off-budget and out of bounds for being employed to finance any Government expenditure. That is an exceptionally wise decision, and it's gotten very little publicity, largely because it occurred with remarkably little contention. That in and of itself is a crucial issue.

On the issue of creating a biennial budget, I agree with you. I think it is probably a good idea considering the process that has been evident and the complexity of the budgets that we go through. I think that in itself is useful.

I do think that even though the caps have been so effective for so many years, surprisingly, because, as you know, they can be challenged very easily by a majority, the notion of fiscal discipline so captured the Congress that it became very difficult to break the caps, except very recently when the pressures became exceptional and the problems that we are aware of in the last year or so became evident.

I'm not arguing for sustaining the old caps, although I would like to see them there, if it were possible. I recognize that it is not.

What I think would be important would basically be to reestablish caps because they do turn out to be effective, or at least have in the past, and there's no reason to believe they would not be in the future, but to be sure that they are set at realistic levels and are adhered to. That, in my judgment, would be crucial.

I also argue in my prepared remarks that moving toward the on-budget balance as the crucial determinant of budget policy is moving us toward accrual accounting, which is the private sector norm. That, of course, is a change, were we to go in that direction. And I don't perceive it as feasible in the immediate short run. But were we to go toward that in the short run, it would be a very important move toward having Government focus on its longer-term commitments, as well as shorter-term commitments.

Senator ALLARD. We also have had some debate about extension of the research and experimentation tax credit on a permanent basis. Do you think this would help prolong increased productivity?

Chairman GREENSPAN. Senator, I have no real judgment on that because it depends on the very specific cases.

Senator ALLARD. Let's take the high-tech side of the economy and maybe apply that because they seem most concerned about it.

Chairman GREENSPAN. What has been really quite remarkable in this country is our ability to create a level of technology which is the envy of the rest of the world. We have done it basically not so much from tax subsidies or other subsidies from Government, but essentially from having an entrepreneur-based system in which people could see very large rewards from successful endeavors.

I can't say I know very much about the impact of a tax credit on what is going on in Silicon Valley as such, but I am reasonably certain that the vast proportion of the success that our high-tech industry has created has nothing to do with Government.

Senator ALLARD. Chairman Greenspan, with your indulgence, I would like to ask one more question. It has to do with the natural resource area. In our economy, even though we have had unprecedented sustained growth over the years, the one area that has been particularly down has been farm prices and that's been unusual. Not only has it been grain prices, but also livestock prices. Usually, they are countercyclical. In addition, a lot of our other natural resources, oil and gas, for example, and minerals, have had unusually low prices.

Would you comment on what you see as the impact of what's happening with energy prices right now? In my part of the country, it's a welcome sign because oil and gas prices have been unprecedentedly low and a lot of people have been suffering with no jobs. Now we have some parts of the country complaining about the high price of energy. I wondered if you would comment about that.

Chairman GREENSPAN. Well, it is no big secret why crude oil prices are up. The inventories at refineries in the United States and, indeed, pretty much throughout the rest of the world, have been drawn down very significantly. Indeed, in some areas of our petroleum industry, we are running almost on fumes.

The crucial importance of this, as with all commodities, is when inventories reach exceptionally low levels, there is no buffer. If you get an unexpected surge in demand, you don't get an incremental price increase—you get a huge surge.

One of the things we have seen in the United States, even as we have experienced a very dramatic reduction in the importance of oil in our economic production, is that it's still a large enough and pervasive enough force within our economy that should we get one of these very severe spikes, it would have a major negative impact on economic growth. As a consequence of that, an endeavor to set prices, as indeed the cartel endeavors to do—and cartels are not my favorite type of institution—but even from their point of view, for the longer-run viability of the crude oil reserves, numbers significantly under $30 a barrel for West Texas Intermediate is clearly in their interest and, needless to say, for consumers as well.

In the agriculture area, the problem we have had clearly is twofold. First, we have had an extraordinary rise in productivity. We talk about the awesome increases in productivity in the nonfarm area. In the agriculture area, they are even more impressive. Since we in the United States consume a good deal less than half of a number of the products we produce, we depend on export markets to keep production up.

Second, clearly the Asian crisis in 1998 had a major negative effect on agricultural supplies and it's had an obvious major impact on crop prices.

The longer-term outlook for agriculture, in my judgment, is export markets. The more we can open up markets abroad—and there's a lot of room to do that on a lot of different continents—it strikes me as the most important thing we can do to keep a viable, very productive agricultural sector, which we have experienced for so many generations.

Senator ALLARD. Thank you.

Chairman GRAMM. Senator Bayh.

Senator BAYH. Thank you, Mr. Chairman.

Chairman Greenspan, you have a difficult job and you do it well. I thank you for that and for your appearance today.

I sensed in your opening remarks a greater sense of urgency about the waning of some of the buffers that ameliorate the adverse consequences of the imbalances between supply and demand that you outlined. You mentioned, in particular, immigration. You also mentioned the need for continued fiscal constraint here on the Hill in terms of Government spending. We haven't mentioned yet today free trade, but I know you believe very strongly that that's another buffer.

My first two questions to you are: It seems to me implicit in your remarks that reasonable immigration policies, policies promoting both free trade and fiscal discipline, will allow our economy to grow faster with lower inflation, maybe maintaining some of the buffers that put pressure on monetary policy. First, is that correct?

Second, are there other buffers that I didn't mention here that we should be aware of that have also deteriorated recently?

Chairman GREENSPAN. As best we can judge, there are really two fundamental buffers, meaning the two safety valves which have met the excess of demand over supply—in other words, filled the gap—basically imports and people coming out of the pool of available workers seeking jobs in the workforce and producing goods. Those are the two major elements which have absorbed the gap between supply and demand.

To reiterate, the gap has been engendered by a major wealth effect. It was not a problem 3 or 4 years ago, basically because the size of the safety valves, or I should say the buffers in the safety valves—I want to be sure that's the correct way to phrase it—were quite large. Year after year, those buffers continued to shrink. Even so, we have seen no evidence of inflation accelerating as that happened.

The question we have to confront is: Is it remotely conceivable that both of those buffers can continue on down to zero without pressures on the general price level?

I know of no way that can happen unless we get into a centrally-planned economy, price controls, or a variety of other things. It would be wholly alien to human nature, and, at the root, a denial of the law of supply and demand.

The problem that we have is that, having not experienced this type of phenomenon previously, we are not able to judge how big these buffers are relative to the ultimate pressure valve. What we do know is that if we misjudge this particular period and inadvertently, as I used the analogy before, instead of turning before we hit the dock, go straight into the dock, then I think we do very severe damage to this economy.

The basic purpose of what we are trying to do is to sustain this extraordinary recovery, this extraordinary acceleration in growth, and a vibrant labor market in a manner which continues to absorb the new people coming into the workforce seeking and getting jobs and training on the job.

Senator BAYH. Chairman Greenspan, let me follow up on that and ask you about our efforts to sustain this remarkable economic growth that we have been experiencing and the human nature you mentioned. Specifically, I would like to ask about the wealth effect and human psychology.

There was an interesting piece in *The Wall Street Journal* yesterday pointing out that the psychology of markets can move in both directions. Accepting, for the sake of argument, that the wealth effect does have some potential problems at this point in the economic cycle that we have to deal with, how do we deal with that without running the risk of, I guess in a nutshell, irrational exuberance which might be followed by irrational pessimism?

How do we deal with the potential harmful effects without perhaps tipping over in the other direction?

Chairman GREENSPAN. Senator, let me emphasize that I am not making any judgments as to whether in fact the wealth effect is overdone or whether the values are overdone or not. It's just not relevant to the argument that I'm making very specifically. It has secondary effects.

I am essentially saying that if you are getting accelerating productivity in an economy, the value of your capital assets should be going up. They are actually worth more. The prospective earnings they can generate are indeed greater. I'm not commenting on the secondary question as to whether the rise that has occurred is more than it should have been. As I have argued previously, it is very difficult to make a judgment on whether we have a bubble, which is really what that would be, except after the fact.

I am not raising the issue in this context of there being an irrational surge in stock prices or a speculative imbalance which is threatening the economy. That's a different type of argument. It is not the one I am making.

Senator BAYH. Thank you very much.

Chairman GRAMM. Senator Mack.

OPENING COMMENTS OF SENATOR CONNIE MACK

Senator MACK. Thank you very much, Mr. Chairman. I want to continue with this line of discussion.

If there is a sense of frustration on the part of some of the Members of the Committee, I think it's that for the first time, we are hearing about possibly another gauge of evaluating or controlling money supply. I was really surprised when I read your comments of last week about, as I recall, tying asset values to household income or income levels.

My first reaction to that was that there was a new component. Fifteen or 20 years ago, we used to talk about M–1 and M–2 and try to observe a range in which this M–1 and M–2 grew. It almost seems like, with your discussion, you have added a new component now to saying that one of the things you are looking at is the growth in asset values, and it needs to be within a certain range. Am I wrong to draw that conclusion?

Chairman GREENSPAN. Yes and no, Senator.

First of all, let me emphasize that the issue of the relationship between household net worth and household income is only a measure of the extent of the wealth effect. Household income has nothing whatsoever to do with the determination of what the proper values of stocks are or the general wealth. That is determined by earnings expectations and so-called discount factors.

Senator MACK. Yes, but didn't you tie those two?

Chairman GREENSPAN. I did, but in a different context. It is a statistical way of evaluating whether you have a wealth effect. It is not an issue of what is causing the wealth effect. It is merely a diagnostic tool to make a judgment as to whether a wealth effect is indeed functioning in the economy.

Senator MACK. May I ask you one other question in the middle of your thought there? We went back and compared asset growth to income growth to see if you had a situation where asset growth was growing significantly compared to income growth, whether there was any relationship to inflation. We couldn't find any.

Chairman GREENSPAN. There is none.

Senator MACK. This raises the question if the objective, which I have said for years that the Fed should be engaged in, is price stability, why then would there be this focus on asset growth?

Chairman GREENSPAN. First of all, let me go back and indicate the role of wealth or net assets in the household sector, very specifically, on the economy. If you take the ratio of net worth to household income back as far as we can get reasonably good data, which is to the early 1920's, the ratio is reasonably low and did not materially break out of the range that it had until well into the 1990's. In short, the wealth effect, to the extent that it worked—and it did on the margin—was a relatively minor factor in the economy and, therefore, in any inflation expectations.

What has happened in the last several years is a very major acceleration in the ratio of household net assets to income. All of the evaluations we have made of that huge increase in wealth is that even though its relationship to consumption expenditures is about what it's been in the years past, because wealth was so low and its changes were so small, it never had any real relevance to what was happening in either investment or in consumption.

It is a new world we are dealing with. The characteristic of this dramatic acceleration in productivity and the extraordinary behavior of our economy in the last 5 years is wholly novel, in my experience. And one of the key characteristics of this type of economy is the wealth effect. The only reason I tie the wealth effect to household income is it is a measure of trying to relate it to consumption because consumption comes out of income and wealth.

Senator MACK. Right. Let me see; you have indicated that asset values may not be out of line as a result of the dramatic acceleration in productivity.

Chairman GREENSPAN. That's correct.

Senator MACK. But it also sounds like what you are saying is you want to restrain asset growth because of your interpretation now that the wealth effect has a greater impact on our economy than it has had in the past.

Chairman GREENSPAN. I believe that would be a view that is generally held by the economics profession. Let me give you an example of when the wealth effect would not have an impact. I was looking at a chart which had the ratio of wealth to income, and what that chart shows very dramatically is that from 1922, which is the earliest data we have, it's relatively flat, and then all of a sudden it spikes.

The reason I raise the immigration question is basically because it gives an insight into where the safety valves are or are not. This type of economy, which is creating a huge surge in wealth, could create a huge surge in consumption and growth if there were the people to produce the goods to meet the demand. The point at issue is there is not.

It is even credible to argue that as large as our current account deficit is, as large as our net debt to foreigners has become, the rates of return off the new technologies are high enough to create an inflow of capital into the United States, in both direct investment and in portfolio investment, to finance these net imports or current account deficits indefinitely in the future, so that there is nothing implicit in the issue of wealth per se creating a problem. There is a problem if the safety valves, meaning those sources of goods and services which satisfy the excess of demand over supply, the excess being caused by the wealth effect, are limited.

If in fact the wealth effect had no impact on consumption, if all that happened when stock prices went up was that the market value of assets in households went up and the market value of the assets on the books of corporations went up, but it had no effect on consumption, if all consumption was related to income and not wealth, then the wealth effect would not exist. The problem of imbalances would not exist. And they wouldn't exist if we had the ability to expand output indefinitely.

The argument that I am making is we don't have that capability and we are blocked essentially because we have limits on how the demand created by the wealth effect can be supplied. I'm arguing that, as a consequence of this, the market forces, not the Federal Reserve, are driving up interest rates to close the gap between the supply and demand for funds, which is a counterpart to goods and services.

We at the Federal Reserve are acting in conjunction with the market and responding to it. The best I can say to you is that it is certainly true that we have a new economy. It is different. It is behaving differently. It requires a different type of monetary policy to maintain its stability and growth than we have had in the past. That is the essential issue that we are confronted with, as best we can see it.

Senator MACK. Thank you, Mr. Chairman.

Chairman GRAMM. Senator Grams.

OPENING COMMENTS OF SENATOR ROD GRAMS

Senator GRAMS. Thank you, Mr. Chairman.

Chairman Greenspan, thank you for being here.

I would like to ask you to focus on another area. I think Senator Allard touched on it slightly. That is the impact of current monetary and fiscal policies on our agricultural sector of the economy. As you know, the sector is very important, not only in Minnesota, but nationwide. Agriculture and agricultural commodities are very important.

There is a growing concern, I believe, in the ag sector that the very robust national economy that so many have enjoyed, has in fact been bypassing rural parts of our country. While we all support efforts in monetary policy which would squeeze out the inflationary expectations from the current expansion, I think there are many of us that are also concerned that these anti-inflationary efforts may in fact exacerbate what is already a difficult economic scenario for our Nation's farmers.

As we know, the ag sector is very capital-intensive. The need to replace and maintain some very expensive machinery is an important aspect of farm management. The acquisition of additional land is also very expensive. Should borrowing costs increase by even 25 to 50 basis points, I think the impact on the average farmer would be significant.

On the sell side of the economic equation, there is little evidence of improving market conditions or any inflationary premiums in the future markets. The current increase in fuel costs, I think, only adds to an already bleak picture for many of our farmers. I have a couple of questions relating to that.

Earlier, you mentioned that cartels were not your favorite——

Chairman GREENSPAN. Cartels are not my favorite institutions.

Senator GRAMS. Cartels are not your favorite institutions. When looking at agriculture and dairy, would you say that the dairy cartel known as the Northeast Dairy Compact would be one of your supportive institutions?

Chairman GREENSPAN. Senator, I have been in Government long enough to know that's the type of question you don't answer.

[Laughter.]

Senator GRAMS. OK. I appreciate that.

But first, Chairman Greenspan, in your analysis, how is the Nation's agricultural sector faring relative to other segments of the economy? In sum, is agriculture sharing in the current boom economy that we are having?

Chairman GREENSPAN. Yes and no. Some parts are; most are not.

The problem, as I indicated to your colleague, is that productivity has become really quite extraordinary. Yields on crops are moving up in an awesome manner. The ability to produce is multiples of what it was 30, 40 years ago.

Let's take spring wheat, which you have a great interest in. My recollection is only about a third of hard spring wheat is consumed in the United States, and it is essentially inelastic. In other words, the demand for bread and bread products, which essentially is what the hard wheat goes to, is not sensitive to what is going on in the economy, so that what you have is a third of your markets which don't really get impacted by the huge increase in incomes in the United States.

We are left essentially with the rest of the world market. The weakening of export demand, especially as a consequence of the Asian crisis, has clearly created subnormal incomes for agriculture generally, and for wheat farmers particularly, as prices went down. It wasn't that many months ago that wheat, soybeans, corn, were all flat on the bottom of any chart that you could imagine.

Indeed, I agree with you that the agricultural area is lagging. The only beneficent part of it is the productivity has really been impressive. If we can get the huge part of demand opened up—that is, the export markets—I think we will find that that extraordinary productivity will finally flow down to the bottom line in a much more impressive way than we have seen to date.

Senator GRAMS. I think a lot of the problem is the research that we have done and the technologies we have improved, that we have shared with the rest of the world. We are not the only country seeing much larger harvests from the same, so the competition is even heavier out there.

Just quickly, and finally, do monetary policy adjustments, such as changes in the discount or the Fed fund rates themselves, reflect the economic realities for the agricultural communities, knowing the pressures that they are up against?

To follow up on that, would monetary policy adjustments aimed at assuring that our current expansion not overheat, have unintended consequences on the agricultural community?

Chairman GREENSPAN. Well, first of all, we have problems in the United States in that there are many different segments of industry and areas, but we have a central financial system, unlike what existed 50, 60 years ago when you had different financial systems in different parts of the country and different interest rates. Early on in the Fed's history, we had different discount rates at different Reserve Banks. But we now have a very effective central monetary system in which interest rates are the same everywhere in the economy.

The consequence of that is there is only one interest rate, and it must be, in a sense, the average of all aspects of our economy, so there can't be a special interest rate for agricultural loans in the

sense that it is not affected by the supply and demand for money since money will basically flow to wherever the demand is. In that regard, it's very difficult to envisage how monetary policy can adjust to the facts of agriculture, which are indeed as you portray them, Senator.

Senator GRAMS. Thank you, Mr. Chairman.

Chairman GRAMM. Senator Reed.

OPENING COMMENTS OF SENATOR JACK REED

Senator REED. Thank you, Mr. Chairman.

Chairman Greenspan, the Treasury Department is embarking on a very aggressive policy of reducing the publicly-held debt, which is causing some concerns, at least thoughts in the debt markets. Does this in any way complicate your ability to implement monetary policy through the raising and lowering of interest rates?

Chairman GREENSPAN. Not really. There has been a lot of commentary that the gradual elimination of the Treasury debt, to the extent that that happens, would create major problems for the Federal Reserve. The reason it would not is that our policy is essentially based on accumulating assets on the balance sheet of the Federal Reserve Banks or reducing them, and accordingly, creating reserves for the banks.

At the moment, we are restricted essentially to a relatively few Government-related and Government issues. But should the decline in available U.S. Treasury securities get to be so substantial that it affects our ability to have adequate securities, Government securities, in our portfolio, should that happen, we could very readily find many other ways to implement policy by certain types of other assets we could hold.

The crucial issue is that if you are going to reduce the debt outstanding, which we believe is very important to this country, then you either have to take the excess of receipts over outlays and cumulate assets for the Government, or use the funds to pay down debt. I much prefer the second. In so doing, you create avenues for the private sector to create new instruments which substitute themselves as so-called benchmarks for the Treasury securities. You will find that if these riskless instruments become extremely scarce, there will be very strong incentives in the marketplace to create AAA-plus private credits to substitute for these types of instruments.

I think the complexity and flexibility of the private financial system is such that the elements of particular benchmark securities that are created through Government issues are very readily, in my judgment, replaced by comparable private sector issues.

Senator REED. Many proponents of this policy, Chairman Greenspan, have suggested that by retiring publicly-held debt, you will effectively pull down interest rates because there will be less Government intrusion into the private debt markets. If your policy, as it is now, and for the foreseeable future, is to raise interest rates, will you have to, in effect, overcompensate for this other effect?

Chairman GREENSPAN. Well, first of all, remember that to the extent that Government debt goes down, over the long run, long-term interest rates will be lower than they otherwise would be. We are not talking about huge changes and we are certainly not talking

about the notion of cyclical or countercyclical monetary policy because we are talking about a broad trend.

If you are asking me in a strictly technical sense, are there a few basis points which probably have to be overcome because of this, probably, but they are very few and, really, of no real relevance to the development of what is going on in the economy.

Senator REED. Finally, Chairman Greenspan, you point out that we are in a new economy. I wonder if there is any, to your mind, other historical periods in which a new economy emerged that you can draw lessons from or look to for insights as to what is happening now, or is this so new, so novel, that it's sui generis?

Chairman GREENSPAN. Senator, a lot of people look back to the major technological changes at the latter part of the 19th century as a clue to the type of things that are going on. I used to think that could fully explain what's happening today. In the last year or so, I have concluded that we appear to be moving beyond that.

I know of nothing that even remotely looks like what we are experiencing today. The relationships are different. A fundamental root of this extraordinarily successful economy that we have is, one, the synergies of a number of new technologies that have come together, coupled with a financial system and an economic system which has enabled those particular new technologies to be developed in a manner to very markedly enhance standards of living of the American people. This is new.

The type of policy that we have to devise has to reflect the nature of how the new economy is working. A number of the old tools which we relied upon don't have relevance to this.

It may be that we are going through a short-term period and it will be back to where we were in a few years, in which case this will be a novel period. It will be a period in which monetary policy is novel, and then we go back to the old techniques in a few years. That may very well be the case. All I know at the moment is the endeavor to apply the usual policies that we have employed over the years to what is going on today is misunderstanding the nature of the forces that are at play here.

Senator REED. Thank you, Mr. Chairman.

Chairman GRAMM. Senator Bennett.

OPENING COMMENTS OF SENATOR ROBERT F. BENNETT

Senator BENNETT. Thank you, Mr. Chairman.

Chairman Greenspan, I apologize for being late. I was presiding over a hearing of the Joint Economic Committee on the issue of critical infrastructure protection, and out of that hearing came a line that I want to apply here. One of the witnesses likened the Internet to a neighborhood where all of the houses are in a circle and all of the backyards are the same backyard. He said if any one of the householders doesn't lock his front door, every one of the householders is at risk because the individual can go through that one house and through the backyard, gaining availability to every house simultaneously. This is the line he used, he said, "A national solution is no solution. It must be an international solution to the question of Internet vulnerability and security."

I think I'm hearing you say that the same thing is applying to the economy. Not to the exact same extent here, because you don't

have the technological connection that you have on the Internet, but we are in an interdependent economy and a purely national solution ultimately becomes no solution.

I associate with my friend from Florida on thinking that the primary function of the Fed should be to maintain price stability, but you have raised this issue of inadequate labor to provide us with the kind of productivity increases that we need to meet the demand that we are getting, and that raises the whole question of H–1B visas, for example. In this room we had testimony, Chairman Mack was presiding, of a witness who said, "This work will get done," speaking of particular high-tech work. He said, "This work will be done and it will be done by these people, because they are the only people available to do it." The question is, will it be done in the United States or will it be done in their countries of origin?

If you don't give us H–1B visas to bring these people to the United States, the work will be done by these people overseas. America will be the loser in terms of not having those people live here, not having them pay taxes here, not having them raise their families here and provide the kind of workforce that you referred to. It is not just immigration at the lower level, it is immigration generally, in terms of an internationally mobile labor force.

Now, could you comment on what you see in that general area about labor, labor availability across national lines?

Chairman GREENSPAN. It is not an accident that I present the safety valves as being goods from abroad or people from abroad. What that is suggestive of is exactly the point you are making, Senator, namely that there is an internationalization taking place here.

It's a very difficult problem because, while I can hold forth on the economic benefits of immigration or visas or what are implicit in an economic argument, that's not the only relevance that immigration raises. There are many issues, cultural questions, issues that have bedeviled the United States for 100 years in this area.

But speaking as an economist and evaluating the type of economy which we are currently experiencing, the benefits of bringing in those people to do the work here, rather than doing the work elsewhere, to me, should be pretty much self-evident.

Senator BENNETT. We are talking about a form of protectionist mentality. I find the same people that do not like international trade, at least to the degree that I do—people who have opposed NAFTA, have opposed GATT, who have opposed Fast Track—are the same people who are opposing the H–1B visas and other forms of immigration reform to allow the transfer not only of individuals, but also of goods and services across international lines.

Could this wave of protectionism mentality, wherever it is applied, ultimately bring down the economy, or at least significantly slow the kind of growth we are all luxuriating in right now?

Chairman GREENSPAN. I have always worried about that. And I have become increasingly concerned about it as the rate of growth and productivity rises. It seems like an unrelated issue, but as we are creating an ever more complex, sophisticated, accelerating economy, the necessity to have the ability to bring in resources and people from abroad to keep it functioning in the most effective manner increasingly strikes me as relevant elements of policy.

Senator BENNETT. So the mentality we saw in Seattle could in fact, in a variety of areas, ultimately kill this current golden goose?

Chairman GREENSPAN. There is a certain sadness involved in this because one of the characteristics of very rapidly changing technology is it creates a real deep-seated fear of job skill obsolescence. People no longer have the sense that, once they graduate from high school or college, they have the tools for the rest of their working lives. There is a general rising sense of uncertainty which is manifested, incidentally, in the very dramatic increase in community college enrollment—people going back essentially for refurbishing skills they had not received in their original education.

My own judgment, as indeed, I suspect is yours, is that they are mistaken. But I do understand where it is coming from. It would be a mistake for us not to recognize what that is, where it's coming from, and to try to find a way to remove the uncertainty and the fear which is deep in many people. That is why the whole educational issue interfaces with the economic outlook. Unless we can resolve this issue, I do think the forces against globalization can significantly undercut this remarkable surge in prosperity that we are observing.

Senator BENNETT. Thank you.

Chairman GRAMM. Senator Edwards.

OPENING COMMENTS OF SENATOR JOHN EDWARDS

Senator EDWARDS. Thank you, Mr. Chairman.

Good morning, Chairman Greenspan.

Can you tell us on a scale from one to ten, with one being no concern at all, to ten being a great deal of concern, how concerned the American people should be about the possibility that this year, inflation could rise to 6 or 7 percent?

Chairman GREENSPAN. Can I go below one?

[Laughter.]

My own judgment is that inflation, at this stage, is very well contained. If the markets function properly and the central bank functions properly, it should stay that way.

Senator EDWARDS. Good. That's very encouraging.

Senator Bennett, in his questioning, talked about the Internet and Internet security. I wonder about all of this hacking we have seen recently reported in the news, particularly on some of the major Web sites. I'm curious as to whether you have any feelings about the potential impact that hacking, if it's not brought under control by law enforcement, could have on the economy.

Chairman GREENSPAN. Do you mean encryption generally?

Senator EDWARDS. Yes.

Chairman GREENSPAN. One of the most alluring problems that mathematicians have these days is whether somebody can create an encryption which another mathematician cannot break. The result of this is that we are getting ever more complex mechanisms to secure various different transactions and transmissions. With the major acceleration in capacity that we are getting in our systems for data crunching, one would think that you could create an encryption which just cannot be broken in a finite period of time.

My impression basically is that the technology hopefully should be able to resolve this. But I cannot say to you that I know enough

about it to feel comfortable as to how that will work out. I do know that if we struggle a great deal and try to find governmental mechanisms, such as restricting exports of encrypted types of materials and the like, we cannot be sure it's going to work.

What we have to do is look to the private sector to find the most effective means of encryption, recognizing that the life expectancy of any particular complex encryption is limited, and ultimately it will be overwhelmed by the capacity to unwind the code. It is a continuous process where you never get the ultimate solution, but you are constantly trying to keep ahead of those who want to pirate the systems.

Senator EDWARDS. Let me change gears. I know you are aware of the fact that a House committee passed out last week legislation that would eliminate the Social Security earnings test.

I'm curious what effect, if that legislation actually became law, it would have, if any, on the labor markets.

Chairman GREENSPAN. Well, it has two effects. One, clearly it has an effect on the Social Security trust funds and the whole Social Security system. The effects there, I might add, are to create a reduction in the receipts of Social Security, or I should say to increase benefits actually.

The presumption, of course, is that you will get an increase in the number of retired people coming back into the workforce. I don't know what the orders of magnitude are, but clearly, to the extent that happens, that is a positive effect.

How one balances the increased issue of benefits and strain on the Social Security system, on the one hand, and increased labor force availability, on the other, is something I can't make a judgment on. But it does strike me that the general notion of looking at the average age of retirement and the average age at which one obtains full benefits has always been one that I thought appropriate in any discussion on Social Security.

Senator EDWARDS. Let me ask you a two-part question.

In this period of extraordinary prosperity that we are enjoying, can you define for us as clearly as you can your view of what demographic group is benefiting most from this prosperity?

Second, I noticed you commented last week in your testimony about raising the minimum wage. I wondered if you had any views about what, if anything, we could do to address the income disparity that we are facing in this country today?

Chairman GREENSPAN. As best I can judge, Senator, everybody is benefiting to a greater or lesser extent from this extraordinary prosperity. In a relative sense, when compared to recent history, it's clearly those at the lower income levels which are benefiting the most.

But let me characterize that in a somewhat different sense. The lower 20 percent of households characterized by income had a flat real average household income for about 15 years, from 1980 to 1995, whereas most of the rest of the households were showing significant gains.

Starting in the last 4 or 5 years, that group has all of a sudden taken off. It's growing about the same as everybody else, so that it is not as though it is improving faster.

Senator EDWARDS. Why is that happening?

Chairman GREENSPAN. It's happening because the labor markets are getting ever tighter and the demand for every type of skill, low skill to high skill, has gone up very dramatically. The demand for labor has gone up to a point where the spectrum across income groups has now been pretty much obliterated. The so-called college premium, the extent to which people with college educations have been able to increase their income relative to high school graduates, the gap that had been opening up mainly because of the technological nature of the economy we have, that increase has stopped. The prosperity seems spread evenly everywhere. The distribution of income which had become increasingly skewed to the upper income groups through most of the 1980's and 1990's stopped in the middle of the decade, and everyone's income has been growing roughly about the same amount, meaning that the concentration of income hasn't changed much in the last 5 years. It is not that the lower income groups have improved. It's that they stopped losing ground.

When you look at the distribution of wealth, clearly with the heavy concentration of stock holdings in upper income groups, in the last 4 or 5 years it has been materially shifting upward toward upper income groups.

Senator EDWARDS. I thank you, Chairman Greenspan.

Thank you, Mr. Chairman.

Chairman GRAMM. Senator Schumer.

OPENING COMMENTS OF SENATOR CHARLES E. SCHUMER

Senator SCHUMER. Thank you, Mr. Chairman.

Chairman Greenspan, I would like to return to the subject we talked about a couple of weeks ago in this room, which is margin requirements.

First, let me say the economy is in great shape, as you know and deserve much of the credit for. Productivity continues to grow at a rate almost unforeseen. Inflation is extremely low. You almost couldn't ask for more.

The one real concern that you brought up and mentioned today, of course, is the wealth effect, which is that more spending will come about because people have more wealth. I think you noted last week that about 80 percent of the wealth effect comes from the equity markets. Even within those equity markets, it comes from a certain group of stocks—I believe the Dow Jones has gone up about 15 percent over the last year. I don't own any stock, so I might be off, at little peril to myself, at least financially. The Nasdaq has also gone up rather dramatically.

All of that leads me to wonder, and you have talked about raising interest rates, the possibility of raising interest rates to deal with this wealth effect, if not immediately, perhaps down the road. All of this leads me to ask the question that jumps out, at least at me, which is: Given the relative stability of our economy overall, isn't raising interest rates too blunt an instrument, a meat cleaver rather than a scalpel, whereas dealing with margin requirements or some other alternative that focuses on this dramatic rise in the equity markets that some, at least, feel in certain instances, not in every instance, is a little overheated or overstated, wouldn't that be a better way to go?

That's the first question.

The second is, in general, related to that. That is, if this wealth effect continues, do you mean to say that, as the stock market goes up, you will continue to raise interest rates—of course, depending on how much it goes up?

Chairman GREENSPAN. Let me just emphasize, Senator, that we are not focusing monetary policy on the stock market. We are focusing it on the economy. To the extent that the stock market affects the economy, we respond to that. But it doesn't necessarily follow that as stock prices go up or go down, it will have an effect on the economy which requires us to respond, so that we don't look at stock prices and say, stock prices are rising; we have to raise interest rates.

Senator SCHUMER. But you look at the wealth effect, which is basically——

Chairman GREENSPAN. We do look at the wealth effect, but the wealth effect is not that closely tied to the stock market. It is a broad thing, but we cannot argue that there is a direct relationship between what's happening in the stock market and what's happening to monetary policy. That is not our interest.

Leaving that aside, I am going to go back to the question of if it were our interest, which is what you are implying in the first question.

Senator SCHUMER. Correct.

Chairman GREENSPAN. Would not increasing margins be better? If the evidence indicated that raising margins would affect stock prices, then the answer to that hypothetical question would be yes. But the evidence that we have, going back a long period of time, is that margin requirements, per se, do not affect stock prices. They do affect borrowing patterns, and they affect the prudential safety of brokers and dealers and banks and others, but they don't affect stock prices.

Senator SCHUMER. Is the trend the type of jump trend we saw in November and December, with margin borrowing continuing as we move into the new year?

Chairman GREENSPAN. It moved up in January.

Senator SCHUMER. It did?

Chairman GREENSPAN. It did.

Senator SCHUMER. Did it move a similar amount?

Chairman GREENSPAN. My recollection is that it was somewhat smaller, but yes, it is still rising to a significant extent.

As a consequence of that, however, there have been at least some anecdotal discussions on Wall Street which suggest that a number of broker–dealers are looking at their extensions of credit to be sure that they are not overextending themselves. And there have almost surely been some marked increases in maintenance margins on the part of individual broker–dealers who are looking at what some of their customers are buying, and they don't like it because they are trying to protect themselves.

That, in our judgment, is the major use of margins, not our margin authority, which is strictly the minimums, but what individual firms do to protect themselves, as they should. My impression is that, having looked at the dramatic surge in margins and the fact that it's become a public issue—and, Senator, you have been very

instrumental in putting it on the table—is itself beginning to have some effect in creating a bit more sensibility in that process.

Senator SCHUMER. Thank you, Chairman Greenspan.

Mr. Chairman, may I ask one more question, or are we going to have a second round?

Chairman GRAMM. We are going to have a second round.

Senator SCHUMER. Thank you, Mr. Chairman.

Chairman GRAMM. Chairman Greenspan, there are a couple of things I want to touch on, and I will try to be brief.

First of all, I would like to throw out that my guess is that 20 years from now, when we have a much better fix on contemporary history than we do now, the progress of the people in the bottom quartile of income will have been produced not only by the strong recovery, but also by the dramatic reform in welfare.

I would argue that for the previous 15 years, they have been largely detached from the economy and its performance by the fact that welfare was the dominant Government program, not just welfare as we narrowly define it, but basically payments that are made based on income, that that has been the dominant factor in any income measure in that quartile, and that reforming welfare produced the push and the economic growth produced the pull that have generated what is obviously a wonderful thing. I wanted to throw that out.

We have an H–1B proposal now before the Congress. As you know, the allowable level of immigration of high-tech workers is in decline under current law, down over the next 2 years to 65,000. We have a bill to raise it to 195,000 for the next 3 years, and also to exempt—with a focus on people who are educated in America, the logic being, as you are probably aware, about half of all the graduate students in America today are foreign-born. That is even more pronounced in technical areas, and they are among our best students. The idea is to give them a preference in staying here, and, in fact, we exempt from the 195,000 those with advanced degrees in technical areas.

I wanted to give you an opportunity, given what you have said about immigration, to comment on whether or not you think that passage of such a bill—I'm not claiming you have knowledge of the details—but whether the basic thrust of such a bill would be a good thing for the economy today or not.

Chairman GREENSPAN. Mr. Chairman, as you point out, I am not familiar with the details of the bill, but certainly the principle that you are putting on the table is something which I could and would fully support.

Chairman GRAMM. Let me go back to equity values, because I think people hear what you are saying and conclude that you believe that equities are overvalued. I have tried to look at the stock market today and have tried to reach my own internal conclusion. A little like Senator Schumer, I invest in groceries and tuition, and I'm doing well on the groceries.

[Laughter.]

I'm hoping to do much better on the tuition in the relatively near future.

[Laughter.]

I guess if somebody forced me to bet good money, I would bet that equity values, given what's going on, are not only not overvalued, but may still be undervalued. I don't know that.

But the wealth effect that you are talking about is easy for me to understand. When I came to Congress, I had taught for 12 years, and my little TIAA–CREF investment, after you paid taxes on it, might have bought a tractor. Today, it would buy a farm. People can't help but be affected by that kind of change. I think when you have a change in equity values in a year, 20 percent or 25 percent, that has to create a wealth effect.

Some of our colleagues are concerned about consumer debt. Well, if you are a white-collar worker and the value of your financial wealth is rising by more than your income, when you take into account your 401(k) and your IRA's, you have to be affected or you are irrational.

The wealth effect is easy for me to understand, and it seems to me that it is a very relevant factor because financial wealth is so widely dispersed. It is my understanding that we have passed the point where the average family now has more financial wealth than the equity value of their home. When equity values go up by 20 percent in a year, it has to effect the economy.

I wanted to run back over that trail one more time and give you a chance to comment on it.

Chairman GREENSPAN. Mr. Chairman, to reiterate what I said earlier, the issue of stock prices and equity values generally going up as a consequence of the accelerating productivity is a perfectly understandable and appropriate thing to happen. That is, the real value of assets has indeed increased. And remember that all value is future value. It's an endeavor to infer what capabilities there are in the future essentially discounted to a present value.

That that has happened is, in my judgment, unquestioned. That alone is enough to raise a wealth effect and the related type of demand/supply imbalance without any advertence to the question as to whether or not stock prices are undervalued, appropriately valued, or overvalued. All you need to know is that they went up.

The issue of whether they are undervalued or not depends, as I just indicated, on how one views the future. It is a crucial question as to what the future will look like, which is, in the deepest sense, not forecastable.

The problem that we therefore have is when we look back in retrospect, we will know whether we had a bubble in there which was essentially that part of the increase in stock prices—not all of it, but part of it—which was not appropriately valuating what the technologies could truly do. We will know that only in retrospect because we cannot project the future.

As I have said previously before this Committee, bubbles are visible only in retrospect. If we could actually identify a stock market bubble in advance, we would have to be willing to say that there is a very high probability that in the very near term, values will fall by, say, 40 percent.

We also have to be able to say that all of the pension funds, all of the sophisticated people who are involved in pricing stocks, don't know what they are doing. Now, that may well be the case. I'm merely saying that the hurdle to argue that there is a bubble is an

important hurdle. There are lots of people who have very strong views on this, one way or the other, and the basis of the evidence which they adduce I do not find persuasive in one way or the other.

I have my own views and they are just as valid as everybody else's, which isn't very much.

Chairman GRAMM. Senator Sarbanes.

Senator SARBANES. Thank you, Mr. Chairman.

I have two subjects I want to cover, Chairman Greenspan. Before I turn to the first, I want to make this observation. I don't think the example of bringing the ship into the dock is an apt example because you never dock the economy. One of your challenges is to keep sailing the ship, as it were, on course. But the notion that somehow, at some point, it comes to a terminus and the voyage is over——

Chairman GREENSPAN. All analogies are awful, Senator.

Senator SARBANES. All right. Now, I have heard you speak in the past with some feeling about this problem of income and wealth disparity in this country and its significance. The top 1 percent of Americans, which is 2.7 million people, take home as much after-tax income as the lowest 38 percent, which is 100 million people combined. The trend has worsened over the years. In 1977, the top 1 percent of Americans received 7.3 percent of all national after-tax income. In 1999, it is expected to be just under 13 percent. It is not too far from having doubled in that 22-year period, and that is for the top 1 percent.

I set that out because I'm very concerned about this wealth effect notion that has come forth now as a basis for raising interest rates. Because you have a wealth effect, you get, as I understand it, additional consumption which outstrips the available supply. You feel that there will be an inflationary problem and, therefore, you need to start raising the interest rates in order to dampen the economy.

I want to go back to the example that I used at the outset of this education and training program which is drawing these at-risk youth, school dropouts, into the labor force. I talked to a couple of employers, as I said, about this program because the employers are important. They promise a job at the end of the line. They said to me, "Well, we are doing this because we think we are performing a service and doing some good, but the fact of the matter is, we also have an economic interest in doing this because, with the tightening labor market, we are looking for ways to bring people in, develop their skills, make them part of the trained workforce, and therefore, it serves our economic interest to participate in this program, to hold out a job at the end of the day."

One reason they are in it is because we have had this rapidly-growing economy. These additional strains have, in effect, made it to their interest to participate and help to develop this workforce. Now we hear about this wealth effect. Well, if you slow down the economy, they are not going to be so interested in participating.

In effect, the wealth effect, which I am struggling still to understand, I perceive would affect really a minority of our population. About half of our population have no stocks at all. The other half, a large portion of them have only very small holdings. Others are counted because they participate through pension activities, so they are setting it aside for their retirement.

If you talk about who gets this wealth effect that leads them to consume, which gets you worried about overheating the economy, it is going to be a relatively small part of the population. Yet, to deal with the situation that they are creating, we, in effect, are going to curtail the movement of the economy that's going to have a dramatic impact on our efforts to bring people into the workforce. I have a very deep concern about that circle.

Since the yellow light is on, let me put my other concern to you. You spoke about the waning of the buffers that would enable us to continue this fast-paced economy, and you mentioned immigration and imports. I take it, on the import side, since the current account deficit has risen by a tremendous amount—it's at record highs—that the growth in the current account deficit is a problem that we need to look at.

Now, you have said, conceivably, the return on investment in the high-tech sector would be sufficient to continue to draw in capital which would cover the gap created by the trade deficit.

Chairman GREENSPAN. I think I said it might be.

Senator SARBANES. It might be. So we are getting closer to those parameters. In other words, I take it that that's a statistic about which we should have some concern—a very large run-up in the current account deficit. Would you agree with that?

Chairman GREENSPAN. I agree with that, Senator.

Senator SARBANES. Now if we could address the first issue.

Chairman GREENSPAN. Yes. Senator——

Senator SARBANES. And I assume we agree about the boat and its voyage and so forth. I have you on a perpetual voyage, trying to sail this economic ship of state around. I don't think it's going to come in to dock yet.

Chairman GRAMM. Well, maybe the wind blowing the ship into a rock is a better analogy.

[Laughter.]

Senator SARBANES. All right.

Chairman GRAMM. He has to tack around the rock.

[Laughter.]

Chairman GREENSPAN. The problem with analogies is that they are always subject to qualifications which, if you keep working at them, have no value whatsoever.

Senator SCHUMER. Welcome to the Merchant Marine Committee, Chairman Greenspan.

[Laughter.]

Senator SARBANES. The advantage, though, is you don't really have to explain anything.

Chairman GRAMM. People know what you are talking about.

Chairman GREENSPAN. Let me put it this way. You cannot substitute an anecdote for a syllogism.

[Laughter.]

Senator SARBANES. All right.

Chairman GREENSPAN. Senator, first of all, as I envisage what is essentially the policy of the Federal Reserve, it is to recognize that the rate of growth of the economy has to phase down to a level which is capable of being continued essentially indefinitely.

That particular trend still envisages a major inflow of workers from those with high school educations or less into the market.

I do not perceive that what we are talking about is some form of monetary policy which squeezes the economy down into a subnormal rate of growth. My own view is that the economy should and will grow at the rate of increase in productivity plus, over the long run, the rate of increase in the working-age population. Nothing that I envisage as far as monetary policy is concerned in any way suggests that what the Federal Reserve has in the back of its mind is some form of putting brakes on the system which brings the economy to a roaring halt.

That is not what the overall markets are doing or what we perceive to be our function. Our function is to create stability and to maintain a noninflationary financial system. It is not consistent with the view that says that what we wish to do is to slow the economy down in a dramatic fashion because I do not believe that that is what our overall policy has been over the years, nor is it, as best I can judge, in the future.

I indicated before the House Banking Committee last week that we perceive that the optimum monetary policy, if it is feasible, is to move incrementally. Incremental does not imply slamming on the brakes. You slam on the brakes only when there are no other alternatives to restore stability in our economy.

We needed to do that back in 1979, when inflation was running into a dangerous loop. We needed it on occasion in the past where things looked to be on the edge of instability.

What I have tried to argue today is not that we are on the edge of instability, but that we have an extraordinary economy which is growing at a pace which is somewhat above the level which is sustainable over the long term. That does not mean the productivity growth cannot continue to grow and, indeed, create a long-term level of growth higher than what we experience now.

But what we consider to be important is not to allow the safety buffers to shrink to a point where they are no longer capable of absorbing an excess of demand over supply, which invariably occurs in the normal state of affairs.

Senator SARBANES. Well, let me just make this observation. We have needed the economy to move at this pace in order to finally reach the point where we are drawing this heretofore, in a sense, neglected population into the labor market and into the economic mainstream. For the first time, unemployment amongst African–Americans and unemployment amongst Hispanics is the lowest on record, and I regard that as a very important and a very significant development.

If we needed the economy moving this way to get to that point, and then we start slowing the economy down, it carries with it the real risk of receding from the advances that we have been making in this regard.

I'm not arguing that you should push the economy even more or intensify it, but I am concerned about trying to pull it back and what impact that's going to have.

Chairman GREENSPAN. Senator, it certainly is not my expectation. But clearly, we are confronted with a situation which cannot continue to exist indefinitely in the future. It is on a track, whether or not we talk in terms of running into the dock or whether we talk in other types of analogies. The underlying fact at this point is that

we have a system which is creating continuous reductions in the safety buffers which cannot continue indefinitely at the pace that it is going and maintain the degree of prosperity that we have.

That is not to say that if we get to balance, that that in any way is going to create a retardation of the tremendous benefits that have occurred which you have cited. I think there's no question, I agree with you, they have been very formidable, positive factors in our economy and in our society.

Senator SARBANES. Thank you, Mr. Chairman.

Chairman GRAMM. Senator Schumer.

Senator SCHUMER. Thank you, Mr. Chairman.

I have three questions. First, following up on the recent discussion we had, I think, again, I share your view. You have always stated, over your years, that you want to avoid slamming on the brakes, and sometimes incremental changes are made in order to avoid doing that. I think you have always said, once the genie of inflation is out of the bottle, you can't get it back in, and I think that has served us well for a long time.

On the other hand—and this relates both to what we were talking about before and what has been discussed here today—if productivity should be even higher than what we think it is today, and continue to grow that way—productivity is almost the magic and core number here—it seems to me it may well mean that we could continue to grow at the same level that we are growing without much change.

In addition, I think my constituents in New York were very glad to hear what you said in answer to the question before, that you are not going to base monetary policy on the stock market. Obviously, there is an intermediary factor, which is the wealth effect, which may or may not be directly related. But if an accurate guess of increased productivity accounts for both an increase in the stock market—and, as you mentioned, we can't predict bubbles—but at the same time accounts for the relatively good shape that the economy is in, and keeps us on keel that way, then, again, we may be in such good shape that neither a tightening in a narrower way, in a small way, in an incremental way, or a tightening in a larger interest rate way may be necessary. Is that fair to say?

Chairman GREENSPAN. It depends. It depends on whether the acceleration in productivity carries with it further increase in stock prices. If it does not, then what you said is accurate.

The problem has to be an evaluation of whether in fact the acceleration in productivity does or does not create a wealth effect which opens up the gap between demand and supply. If it does not, then——

Senator SCHUMER. We could keep going.

Chairman GREENSPAN. —what we will experience is just an acceleration of economic growth and no increases in imbalances from that source.

Senator SCHUMER. Right. I agree with that. We just don't know, I guess, is the answer to that.

Chairman GREENSPAN. No.

Senator SCHUMER. I have two other questions. Now that we have had a good deal of success in reigning in the deficit, there is a lot of talk that the good old benchmark of the 30-year Government

bond is not going to be there if we keep going on the track we are—I guess it's 2013 now, which is 13 years away, not 30—and that something has to come and take its place. Who knows what it will be?

We are already seeing the effect of that. Could you comment on the problems, or the transition of the benchmark?

Chairman GREENSPAN. Senator, benchmarks are made by the markets themselves.

Senator SCHUMER. Correct.

Chairman GREENSPAN. It's not something which is promulgated by Government.

Senator SCHUMER. Right.

Chairman GREENSPAN. The U.S. Treasury 30-year bond has been an extraordinary instrument in that it's the longest-term, risk free instrument that we have, and all sorts of transactions have been posited against that particular base.

Should it disappear, and it certainly will if we eliminate the debt by 2013 or any time, something else will substitute because it is necessary. At the moment, there is talk in the marketplace that so-called swap spreads are becoming enticing.

But what will happen is that something else will end up as the benchmark. It may very well be that some financial institution or a group of them would get together and create AAA-plus private instruments, and that would serve as a benchmark.

I'm not concerned about the problem. The financial market and the sophistication of the system is such that if there is a demand for a benchmark, it will be created.

Senator SCHUMER. Right. And it doesn't affect the economy much if that benchmark is either shorter-term or private, rather than a public instrument.

Chairman GREENSPAN. It does not. It will certainly affect a number of people on Wall Street and how they function, but as far as the economy is concerned, it will have no effect that I can see.

Senator SCHUMER. Just one final question, if I might, Chairman Greenspan. Today, I believe the SEC is going to issue a concept release on fragmentation of the markets. There are all of these new ways to trade stocks, and they are all being practiced in different corners of the financial markets. There's good news to that. That creates competition and probably a more efficient system.

But there are many people who worry that fragmentation of the markets is not only producing competition, but also inefficiencies and disparities in prices. The depth and the transparency of our markets might not inspire the same level of confidence that it does today.

Would you comment on fragmentation? Are you worried about it? Is there any guidance in the debate that will partially involve this Committee?

Chairman Gramm, in his wisdom, has arranged for us to hold a hearing in New York on this. I guess it will be held next week.

Chairman GRAMM. It will be held next Monday and Tuesday.

Senator SCHUMER. Just some thoughts on this issue, which is an issue that I find nobody has a really good paradigm or role model for at this point.

Chairman GREENSPAN. Well, I think, in principle, what we know about auction markets or any type of market in which there is bid and ask system determining prices is that there tends to be a natural monopoly in the sense that the institution, the trading institution, whether it be a floor or ECN or what have you, tends to have a competitive edge if the bid–ask spread in volume is narrower than any competition.

Senator SCHUMER. Right.

Chairman GREENSPAN. To the extent that occurs, the trading will automatically flow toward the institution with the smaller spread. The competitive capability of everyone else will decline, and all of the business will converge, other things equal, to a central market.

We saw that happen, for example, with the New York Cotton Exchange and the New Orleans Cotton Exchange, which I believe I may have mentioned to you at one time.

Senator SCHUMER. You did.

Chairman GREENSPAN. That is what is happening here. With the huge advances in technology and communication, the capacity to have all trades of a specific type struck in a central marketplace in real time has increased vastly. Back 20, 30 years ago, you could not do that, and we did have disparate markets and we did have trading of the same stock and the same commodity in a lot of different places.

The question really occurs here as to what extent Government has a role here, or should we just let the private sector create what it needs to create? My judgment is, definitely, let's do that because the technologies are not going to be easily forecastable and the self-interest of the traders is going to largely create that sort of instrument, that sort of exchange, that sort of entity which they find gives them the lowest cost and the greatest liquidity.

Senator SCHUMER. I have one followup question. Would certain values that the Government has, through the SEC, instilled in the market—transparency, the availability of the "price" of the buy and sell—which some are arguing shouldn't happen now—I guess Schwab is one of those that has argued against it as a barrier to competition—should that be a value that we should continue to pursue as we let the private sector choose the most efficient?

Chairman GREENSPAN. Senator, it is a value. The question, I believe, that has to be focused on as far as governmental policy is concerned, is will the market create it by itself? In other words, if it is a value, will it happen automatically or is there anything that Government should or could do?

Clearly, the one thing that Government has to do is to prevent fraud. The issue of adherence to law and law of contracts and all various different types of governmental-associated characteristics of markets can only be done by Government. It is crucially important that the issue of the sanctity of contracts and fraud be emphasized in governmental policy.

But I think it is important to try to distinguish which types of values will get created because they are of value to the marketplace by themselves, and in which Government should not have a role. That's where I think the debate has to be.

Senator SCHUMER. Thank you, Chairman Greenspan.

Thank you, Mr. Chairman.

Chairman GRAMM. Well, Chairman Greenspan, let me say this has been a very good hearing. I envy your ability to sit here for such long periods of time.

We have covered a lot of subjects today. I don't know whether this will be the last Humphrey–Hawkins hearing we ever have, but if it is, it was good one. There are many things that end without ever reaching a high point.

I want to thank you for your testimony.

The Committee stands in adjournment.

[Whereupon, at 12:38 p.m., Wednesday, February 23, 2000, the hearing was adjourned.]

[Prepared statements and additional material supplied for the record follow:]

PREPARED STATEMENT OF SENATOR WAYNE ALLARD

I would like to join Chairman Gramm and my colleagues in welcoming Federal Reserve Board Chairman Alan Greenspan to this hearing. I always look forward to the opportunity to hear from Chairman Greenspan concerning monetary policy and other economic issues. It is a particular pleasure to have you, Mr. Chairman, before this Committee knowing that we will continue to have the benefit of your service as Chairman for 4 more years.

Our Nation continues to enjoy unprecedented growth, with remarkable productivity increases fueling much of the growth. As a result, we are experiencing low unemployment, increased real wages, and remarkable price stability. The members of the Board of Governors and the Federal Reserve Bank presidents see good prospects for sustained economic expansion through the year.

Congress must take advantage of these times of prosperity to plan for the future. I share the belief that the wisest use of our current surpluses is to pay down the debt. Only through fiscal discipline can Congress ensure that future generations will enjoy the same opportunities that we now have.

During the previous two decades, the United States has pursued a policy of low taxation, limited Federal regulation, free trade, and sound monetary policy. This has resulted in a tremendous economic expansion. The expansion which began in 1983 has been interrupted by only a very modest downturn in 1991. Obviously, we should continue these policies of limited Government.

In contrast to the United States, many of our competitors in Europe and Asia have resorted to greater Government intervention. With the benefit of hindsight, it is clear that the American model has produced the greatest benefits.

Certainly, Alan Greenspan deserves much of the credit for the current strong economy. His watchful eye and careful policies have created economic opportunities for all Americans.

Chairman Greenspan, I look forward to your testimony.

PREPARED STATEMENT OF ALAN GREENSPAN

CHAIRMAN, BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM

FEBRUARY 23, 2000

Introduction

I appreciate this opportunity to present the Federal Reserve's semiannual report on the economy and monetary policy.

There is little evidence that the American economy, which grew more than 4 percent in 1999 and surged forward at an even faster pace in the second half of the year, is slowing appreciably. At the same time, inflation has remained largely contained. An increase in the overall rate of inflation in 1999 was mainly a result of higher energy prices. Importantly, unit labor costs actually declined in the second half of the year. Indeed, still-preliminary data indicate that total unit cost increases last year remained extraordinarily low, even as the business expansion approached a record 9 years. Domestic operating profit margins, after sagging for 18 months, apparently turned up again in the fourth quarter, and profit expectations for major corporations for the first quarter have been undergoing upward revisions since the beginning of the year—scarcely an indication of imminent economic weakness.

The Economic Forces at Work

Underlying this performance, unprecedented in my half-century of observing the American economy, is a continuing acceleration in productivity. Nonfarm business output per workhour increased 3¼ percent during the past year—likely more than 4 percent when measured by nonfarm business income. Security analysts' projections of long-term earnings, an indicator of expectations of company productivity, continued to be revised upward in January, extending a string of upward revisions that began in early 1995. One result of this remarkable economic performance has been a pronounced increase in living standards for the majority of Americans. Another has been a labor market that has provided job opportunities for large numbers of people previously struggling to get on the first rung of a ladder leading to training, skills, and permanent employment.

Yet those profoundly beneficial forces driving the American economy to competitive excellence are also engendering a set of imbalances that, unless contained, threaten our continuing prosperity. Accelerating productivity entails a matching acceleration in the potential output of goods and services and a corresponding rise in real incomes available to purchase the new output. The problem is that the pickup

in productivity tends to create even greater increases in aggregate demand than in potential aggregate supply. This occurs principally because a rise in structural productivity growth has its counterpart in higher expectations for long-term corporate earnings. This, in turn, not only spurs business investment but also increases stock prices and the market value of assets held by households, creating additional purchasing power for which no additional goods or services have yet been produced.

Historical evidence suggests that perhaps 3 to 4 cents out of every additional dollar of stock market wealth eventually is reflected in increased consumer purchases. The sharp rise in the amount of consumer outlays relative to disposable incomes in recent years, and the corresponding fall in the saving rate, has been consistent with this so-called wealth effect on household purchases. Moreover, higher stock prices, by lowering the cost of equity capital, have helped to support the boom in capital spending.

Outlays prompted by capital gains in excess of increases in income, as best we can judge, have added about 1 percentage point to annual growth of gross domestic purchases, on average, over the past 5 years. The additional growth in spending of recent years that has accompanied these wealth gains as well as other supporting influences on the economy appears to have been met in about equal measure from increased net imports and from goods and services produced by the net increase in newly hired workers over and above the normal growth of the workforce, including a substantial net inflow of workers from abroad.

But these safety valves that have been supplying goods and services to meet the recent increments to purchasing power largely generated by capital gains cannot be expected to absorb an excess of demand over supply indefinitely. First, growing net imports and a widening current account deficit require ever larger portfolio and direct foreign investments in the United States, an outcome that cannot continue without limit.

Imbalances in the labor markets perhaps may have even more serious implications for inflation pressures. While the pool of officially unemployed and those otherwise willing to work may continue to shrink, as it has persistently over the past 7 years, there is an effective limit to new hiring, unless immigration is uncapped. At some point in the continuous reduction in the number of available workers willing to take jobs, short of the repeal of the law of supply and demand, wage increases must rise above even impressive gains in productivity. This would intensify inflationary pressures or squeeze profit margins, with either outcome capable of bringing our growing prosperity to an end.

As would be expected, imbalances between demand and potential supply in markets for goods and services are being mirrored in the financial markets by an excess in the demand for funds. As a consequence, market interest rates are already moving in the direction of containing the excess of demand in financial markets and therefore in product markets as well. For example, BBB corporate bond rates adjusted for inflation expectations have risen by more than 1 percentage point during the past 2 years. However, to date, rising business earnings expectations and declining compensation for risk have more than offset the effects of this increase, propelling equity prices and the wealth effect even higher. Should this process continue, however, with the assistance of a monetary policy vigilant against emerging macroeconomic imbalances, real long-term rates will at some point be high enough to finally balance demand with supply at the economy's potential in both the financial and product markets. Other things equal, this condition will involve equity discount factors high enough to bring the rise in asset values into line with that of household incomes, thereby stemming the impetus to consumption relative to income that has come from rising wealth. This does not necessarily imply a decline in asset values—although that, of course, can happen at any time for any number of reasons—but rather that these values will increase no faster than household incomes.

Because there are limits to the amount of goods and services that can be supplied from increasing net imports and by drawing on a limited pool of persons willing to work, it necessarily follows that consumption cannot keep rising faster than income. Moreover, outsized increases in wealth cannot persist indefinitely either. For so long as the levels of consumption and investment are sensitive to asset values, equity values increasing at a pace faster than income, other things equal, will induce a rise in overall demand in excess of potential supply. But that situation cannot persist without limit because the supply safety valves are themselves limited.

With foreign economies strengthening and labor markets already tight, how the current wealth effect is finally contained will determine whether the extraordinary expansion that it has helped foster can slow to a sustainable pace, without destabilizing the economy in the process.

Technological Change Continues Apace

On a broader front, there are few signs to date of slowing in the pace of innovation and the spread of our newer technologies that, as I have indicated in previous testimonies, have been at the root of our extraordinary productivity improvement. Indeed, some analysts conjecture that we still may be in the earlier stages of the rapid adoption of new technologies and not yet in sight of the stage when this wave of innovation will crest. With so few examples in our history, there is very little basis for determining the particular stage of development through which we are currently passing.

Without doubt, the synergies of the microprocessor, laser, fiber-optic glass, and satellite technologies have brought quantum advances in information availability. These advances, in turn, have dramatically decreased business operational uncertainties and risk premiums and, thereby, have engendered major cost reductions and productivity advances. There seems little question that further major advances lie ahead. What is uncertain is the future pace of the application of these innovations, *because it is this pace that governs the rate of change in productivity and* economic potential.

Monetary policy, of course, did not produce the intellectual insights behind the technological advances that have been responsible for the recent phenomenal reshaping of our economic landscape. It has, however, been instrumental, we trust, in establishing a stable financial and economic environment with low inflation that is conducive to the investments that have exploited these innovative technologies.

Federal budget policy has also played a pivotal role. The emergence of surpluses in the unified budget and of the associated increase in Government saving over the past few years has been exceptionally important to the balance of the expansion, because the surpluses have been absorbing a portion of the potential excess of demand over sustainable supply associated partly with the wealth effect. Moreover, because the surpluses are augmenting the pool of domestic saving, they have held interest rates below the levels that otherwise would have been needed to achieve financial and economic balance during this period of exceptional economic growth. They have, in effect, helped to finance and sustain the productive private investment that has been key to capturing the benefits of the newer technologies that, in turn, have boosted the long-term growth potential of the U.S. economy.

The recent good news on the budget suggests that our longer-run prospects for continuing this beneficial process of recycling savings from the public to the private sectors have improved greatly in recent years. Nonetheless, budget outlays are expected to come under mounting pressure as the baby boom generation moves into retirement, a process that will get under way a decade from now. Maintaining the surpluses and using them to repay debt over coming years will continue to be an important way the Federal Government can encourage productivity-enhancing investment and rising standards of living. Thus, we cannot afford to be lulled into letting down our guard on budgetary matters, an issue to which I shall return later in this testimony.

The Economic Outlook

Although the outlook is clouded by a number of uncertainties, the central tendencies of the projections of the Board members and Reserve Bank presidents imply continued good economic performance in the United States. Most of them expect economic growth to slow somewhat this year, easing into the 3½ to 3¾ percent area. The unemployment rate would remain in the neighborhood of 4 to 4¼ percent. The rate of inflation for total personal consumption expenditures is expected to be 1¾ to 2 percent, at or a bit below the rate in 1999, which was elevated by rising energy prices.

In preparing the forecasts, the Federal Open Market Committee members had to consider several of the crucial demand- and supply-side forces I referred to earlier. Continued favorable developments in labor productivity are anticipated both to raise the economy's capacity to produce and, through its supporting effects on real incomes and asset values, to boost private domestic demand. When productivity-driven wealth increases were spurring demand a few years ago, the effects on resource utilization and inflation pressures were offset in part by the effects of weakening foreign economies and a rising foreign exchange value of the dollar, which depressed exports and encouraged imports. Last year, with the welcome recovery of foreign economies and with the leveling out of the dollar, these factors holding down demand and prices in the United States started to unwind. Strong growth in foreign economic activity is expected to continue this year, and, other things equal, the effect of the previous appreciation of the dollar should wane, augmenting demand on U.S. resources and lessening one source of downward pressure on our prices.

As a consequence, the necessary alignment of the growth of aggregate demand with the growth of potential aggregate supply may well depend on restraint on domestic demand, which continues to be buoyed by the lagged effects of increases in stock market valuations. Accordingly, the appreciable increases in both nominal and real intermediate- and long-term interest rates over the last 2 years should act as a needed restraining influence in the period ahead. However, to date, interest-sensitive spending has remained robust, and the FOMC will have to stay alert for signs that real interest rates have not yet risen enough to bring the growth of demand into line with that of potential supply, even should the acceleration of productivity continue.

Achieving that alignment seems more pressing today than it did earlier, before the effects of imbalances began to cumulate, lessening the depth of our various buffers against inflationary pressures. Labor markets, for example, have tightened in recent years as demand has persistently outstripped even accelerating potential supply. As I have previously noted, we cannot be sure in an environment with so little historical precedent what degree of labor market tautness could begin to push unit costs and prices up more rapidly. We know, however, that there is a limit, and we can be sure that the smaller the pool of people without jobs willing to take them, the closer we are to that limit. As the FOMC indicated after its last meeting, the risks still seem to be weighted on the side of building inflation pressures.

A central bank can best contribute to economic growth and rising standards of living by fostering a financial environment that promotes overall balance in the economy and price stability. Maintaining an environment of effective price stability is essential, because the experience in the United States and abroad has underscored that low and stable inflation is a prerequisite for healthy, balanced, economic expansion. Both sustained expansion and price stability provide a backdrop against which workers and businesses can respond to signals from the marketplace in ways that make most efficient use of the evolving technologies.

Federal Budget Policy Issues

Before closing, I should like to revisit some issues of Federal budget policy that I have addressed in previous congressional testimony. Some modest erosion in fiscal discipline resulted last year through the use of the "emergency" spending initiatives and some "creative accounting." Although somewhat disappointing, that erosion was small relative to the influence of the wise choice of the Administration and the Congress to allow the bulk of the unified budget surpluses projected for the next several years to build and retire debt to the public. The idea that we should stop borrowing from the Social Security trust fund to finance other outlays has gained surprising—and welcome—traction, and it establishes, in effect, a new budgetary framework that is centered on the on-budget surplus and how it should be used.

This new framework is extremely useful because it offers a very clear objective that should strengthen budgetary discipline. It moves the budget process closer to accrual accounting, the private sector norm, and—I would hope—the ultimate objective of Federal budget accounting.

The new budget projections from the Congressional Budget Office and the Administration generally look reasonable. But, as many analysts have stressed, these estimates represent a midrange of possible outcomes for the economy and the budget, and actual budgetary results could deviate quite significantly from current expectations. Some of the uncertainty centers on the likelihood that the recent spectacular growth of labor productivity will persist over the years ahead. Like many private forecasters, the CBO and the Office of Management and Budget assume that productivity growth will drop back somewhat from the recent stepped-up pace. But a distinct possibility, as I pointed out earlier, is that the development and diffusion of new technologies in the current wave of innovation may still be at a relatively early stage and that the scope for further acceleration of productivity is thus greater than is embodied in these budget projections. If so, the outlook for budget surpluses would be even brighter than is now anticipated.

But there are significant downside risks to the budget outlook as well. One is our limited knowledge of the forces driving the surge in tax revenues in recent years. Of course, a good part of that surge is due to the extraordinary rise in the market value of assets which, as I noted earlier, cannot be sustained at the pace of recent years. But that is not the entire story. These relationships are complex, and until we have detailed tabulations compiled from actual tax returns, we shall not really know why individual tax revenues, relative to income, have been even higher than would have been predicted from rising asset values and bracket creep. Thus, we cannot rule out the possibility that this so-called "tax surprise," which has figured so prominently in the improved budget picture of recent years, will dissipate or reverse. If this were to happen, the projected surpluses, even with current economic

assumptions, would shrink appreciably and perhaps disappear. Such an outcome would be especially likely if adverse developments occurred in other parts of the budget as well—for example, if the recent slowdown in health care spending were to be followed by a sharper pickup than is assumed in current budget projections.

Another consideration that argues for letting the unified surpluses build is that the budget is still significantly short of balance when measured on an accrual basis. If Social Security, for example, were measured on such a basis, counting benefits when they are earned by workers rather than when they are paid out, that program would have shown a substantial deficit last year. The deficit would have been large enough to push the total Federal budget into the red, and an accrual-based budget measure could conceivably record noticeable deficits over the next few years, rather than the surpluses now indicated by the official projections for either the total unified budget or the on-budget accounts. Such accruals take account of still growing contingent liabilities that, under most reasonable sets of actuarial assumptions, currently amount to many trillions of dollars for Social Security benefits alone.

Even if accrual accounting is set aside, it might still be prudent to eschew new longer-term, potentially irreversible commitments until we are assured that the on-budget surplus projections are less conjectural than they are, of necessity, today.

Allowing surpluses to reduce the debt to the public, rather than for all practical purposes irrevocably committing to their disposition in advance, can be viewed as a holding action pending the clarification of the true underlying budget outcomes of the next few years. Debt repaid can very readily be reborrowed to fund delayed initiatives.

More fundamentally, the growth potential of our economy under current circumstances is best served, in my judgment, by allowing the unified budget surpluses presently in train to materialize and thereby reduce the Treasury debt held by the public.

Yet I recognize that growing budget surpluses may be politically infeasible to defend. If this proves to be the case, as I have also testified previously, the likelihood of maintaining a still satisfactory overall budget position over the longer run is greater, I believe, if surpluses are used to lower tax rates rather than to embark on new spending programs. History illustrates the difficulties of keeping spending in check, especially in programs that are open-ended commitments, which too often have led to larger outlays than initially envisioned. Decisions to reduce taxes, however, are more likely to be contained by the need to maintain an adequate revenue base to finance necessary Government services. Moreover, especially if designed to lower marginal rates, tax reductions can offer very favorable incentives for economic performance.

Conclusion

As the U.S. economy enters a new century as well as a new year, the time is opportune to reflect on the basic characteristics of our economic system that have brought about our success in recent years. Competitive and open markets, the rule of law, fiscal discipline, and a culture of enterprise and entrepreneurship should continue to undergird rapid innovation and enhanced productivity that in turn should foster a sustained further rise in living standards. It would be imprudent, however, to presume that the business cycle has been purged from market economies so long as human expectations are subject to bouts of euphoria and disillusionment. We can only anticipate that we will readily take such diversions in stride and trust that beneficent fundamentals will provide the framework for continued economic progress well into the new millennium.

For use at 10:00 a.m., EST
Thursday
February 17, 2000

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

February 17, 2000

Letter of Transmittal

BOARD OF GOVERNORS OF THE
FEDERAL RESERVE SYSTEM
Washington, D.C., February 17, 2000

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,

Alan Greenspan, Chairman

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Monetary Policy Report to the Congress

Report submitted to the Congress on February 17, 2000, pursuant to the Full Employment and Balanced Growth Act of 1978

MONETARY POLICY AND THE ECONOMIC OUTLOOK

The U.S. economy posted another exceptional performance in 1999. The ongoing expansion appears to have maintained strength into early 2000 as it set a record for longevity, and—aside from the direct effects of higher crude oil prices—inflation has remained subdued, in marked contrast to the typical experience during previous expansions. The past year brought additional evidence that productivity growth has improved substantially since the mid-1990s, boosting living standards while helping to hold down increases in costs and prices despite very tight labor markets.

The Federal Open Market Committee's pursuit of financial conditions consistent with sustained expansion and low inflation has required some adjustments to the settings of monetary policy instruments over the past two years. In late 1998, to cushion the U.S. economy from the effects of disruptions in world financial markets and to ameliorate some of the resulting strains, money market conditions were eased. By the middle of last year, however, with financial markets resuming normal functioning, foreign economies recovering, and domestic demand continuing to outpace increases in productive potential, the Committee began to reverse that easing.

As the year progressed, foreign economies, in general, recovered more quickly and displayed greater vigor than had seemed likely at the start of the year. Domestically, the rapid productivity growth raised expectations of future incomes and profits and thereby helped keep spending moving up at a faster clip than current productive capacity. Meanwhile, prices of most internationally traded materials rebounded from their earlier declines; this turnaround, together with a flattening of the exchange value of the dollar after its earlier appreciation, translated into an easing of downward pressure on the prices of imports in general. Core inflation measures generally remained low, but with the labor market at its tightest in three decades and becoming tighter, the risk that pressures on costs and prices would eventually emerge mounted over the course of the year. To maintain the low-inflation environment that has been so important to the sustained health of the current expansion, the FOMC ultimately implemented four quarter-point increases in the intended federal funds rate, the most recent of which came at the beginning of this month. In total, the federal funds rate has been raised 1 percentage point, although, at 5¾ percent, it stands only ¼ point above its level just before the autumn-1998 financial market turmoil. At its most recent meeting, the FOMC indicated that risks appear to remain on the side of heightened inflation pressures, so it will need to remain especially attentive to developments in this regard.

Monetary Policy, Financial Markets, and the Economy over 1999 and Early 2000

The first quarter of 1999 saw a further unwinding of the heightened levels of perceived risk and risk aversion that had afflicted financial markets in the autumn of 1998; investors became much more willing to advance funds, securities issuance picked up, and risk spreads fell further—though not back to the unusually low levels of the first half of 1998. At the same time, domestic demand remained quite strong, and foreign economies showed signs of rebounding. The FOMC concluded at its February and March meetings that, if these trends were to persist, the risks of the eventual emergence of somewhat greater inflation pressures would increase, and it noted that a case could be made for unwinding part of the easing actions of the preceding fall. However, the Committee hesitated to adjust policy before having greater assurance that the recoveries in domestic financial markets and foreign economies were on firm footing.

By the May meeting, these recoveries were solidifying, and the pace of domestic spending appeared to be outstripping the growth of the economy's potential, even allowing for an appreciable acceleration in productivity. The Committee still expected some slowing in the expansion of aggregate demand, but the timing and extent of any moderation remained uncertain. Against this backdrop, the FOMC main-

tained an unchanged policy stance but announced immediately after the meeting that it had chosen a directive tilted toward the possibility of a firming of rates. This announcement implemented the disclosure policy adopted in December 1998, whereby major shifts in the Committee's views about the balance of risks or the likely direction of future policy would be made public immediately. Members expected that, by making the FOMC's concerns public earlier, such announcements would encourage financial market reactions to subsequent information that would help stabilize the economy. In practice, however, those reactions seemed to be exaggerated and to focus even more than usual on possible near-term Committee action.

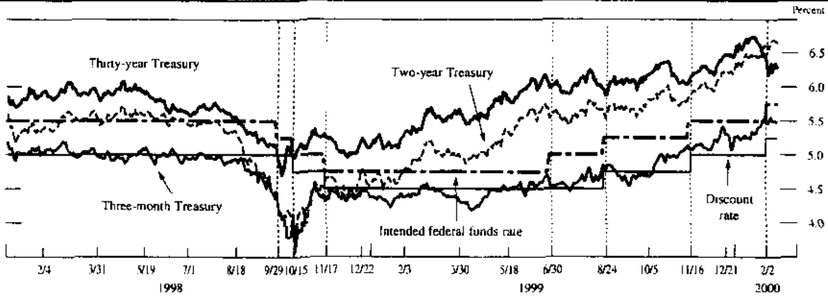
Over subsequent weeks, economic activity continued to expand vigorously, labor markets remained very tight, and oil and other commodity prices rose further. In this environment, the FOMC saw an updrift in inflation as a significant risk in the absence of some policy firming, and at the June meeting it raised the intended level of the federal funds rate ¼ percentage point. The Committee also announced a symmetric directive, noting that the marked degree of uncertainty about the extent and timing of prospective inflationary pressures meant that further firming of policy might not be undertaken in the near term, but that the Committee would need to be especially alert to emerging inflation pressures. Markets rallied on the symmetric-directive announcement, and the strength of this response together with market commentary suggested uncertainty about the interpretation of the language used to characterize possible future developments and about the time period to which the directive applied.

In the period between the June and August meetings, the ongoing strength of domestic demand and further expansion abroad suggested that at least part of the remaining easing put in place the previous fall to deal with financial market stresses was no longer needed. Consequently, at the August meeting the FOMC raised the intended level of the federal funds rate a further ¼ percentage point, to 5¼ percent. The Committee agreed that this action, along with that taken in June, would substantially reduce inflation risks and again announced a symmetric directive. In a related action, the Board of Governors approved an increase in the discount rate to 4¾ percent. At this meeting the Committee also established a working group to assess the FOMC's approach to disclosing its view about prospective developments and to propose procedural modifications.

At its August meeting, the FOMC took a number of actions that were aimed at enhancing the ability of the Manager of the System Open Market Account to counter potential liquidity strains in the period around the century date change and that would also help ensure the effective implementation of the Committee's monetary policy objectives. Although members believed that efforts to prepare computer systems for the century date change had made the probability of significant disruptions quite small, some aversion to Y2K risk exposure was already evident in the markets, and the costs that might stem from a dysfunctional financing market at year-end were deemed to be unacceptably high. The FOMC agreed to authorize, temporarily, (1) a widening of the pool of collateral that could be accepted in System open market transactions, (2) the use of reverse repurchase agreement accounting in addition to the currently available matched sale–purchase transactions to absorb reserves temporarily, and (3) the auction of options on repurchase agreements, reverse repurchase agreements, and matched sale–purchase transactions that could be exercised in the period around year-end. The Committee also authorized a permanent extension of the maximum maturity on regular repurchase and matched sale–purchase transactions from sixty to ninety days.

The broader range of collateral approved for repurchase transactions—mainly pass-through mortgage securities of government-sponsored enterprises and STRIP securities of the U.S. Treasury—would facilitate the Manager's task of addressing what could be very large needs to supply reserves in the succeeding months, primarily in response to rapid increases in the demand for currency, at a time of potentially heightened demand in various markets for U.S. government securities. The standby financing facility, authorizing the Federal Reserve Bank of New York to auction the above-mentioned options to the government securities dealers that are regular counterparties in the System's open market operations, would encourage marketmaking and the maintenance of liquid financing markets essential to effective open market operations. The standby facility was also viewed as a useful complement to the special liquidity facility, which was to provide sound depository institutions with unrestricted access to the discount window, at a penalty rate, between October 1999 and April 2000. Finally, the decision to extend the maximum maturity on repurchase and matched sale–purchase transactions was intended to bring the terms of such transactions into conformance with market practice and to enhance the Manager's ability over the following months to implement the unusually large reserve operations expected to be required around the turn of the year.

Selected interest rates



NOTE. The data are daily. Vertical lines indicate the days on which the Federal Reserve announced a monetary policy action. The dates on the horizontal axis are those on which either the FOMC held a scheduled meeting or a policy action was announced. Last observations are for February 11, 2000.

Incoming information during the period leading up to the FOMC's October meeting suggested that the growth of domestic economic activity had picked up from the second quarter's pace, and foreign economies appeared to be strengthening more than had been anticipated, potentially adding pressure to already-taut labor markets and possibly creating inflationary imbalances that would undermine economic performance. But the FOMC viewed the risk of a significant increase in inflation in the near term as small and decided to await more evidence on how the economy was responding to its previous tightenings before changing its policy stance. However, the Committee anticipated that the evidence might well signal the need for additional tightening, and it again announced a directive that was biased toward restraint.

Information available through mid-November pointed toward robust growth in overall economic activity and a further depletion of the pool of unemployed workers willing to take a job. Although higher real interest rates appeared to have induced some softening in interest-sensitive sectors of the economy, the anticipated moderation in the growth of aggregate demand did not appear sufficient to avoid added pressures on resources, predominantly labor. These conditions, along with further increases in oil and other commodity prices, suggested a significant risk that inflation would pick up over time, given prevailing financial conditions. Against this backdrop, the FOMC raised the target for the federal funds rate an additional ¼ percentage point in November. At that time, a symmetric directive was adopted, consistent with the Committee's expectation that no further policy move was likely to be considered before the February meeting. In a related action, the Board of Governors approved an increase in the discount rate of ¼ percentage point, to 5 percent.

At the December meeting, FOMC members held the stance of policy unchanged and, to avoid any misinterpretation of policy intentions that might unsettle financial markets around the century date change, announced a symmetric directive. But the statement issued after the meeting also highlighted members' continuing concern about inflation risks going forward and indicated the Committee's intention to evaluate, as soon as its next meeting, whether those risks suggested that further tightening was appropriate.

The FOMC also decided on some modifications to its disclosure procedures at the December meeting, at which the working group mentioned above transmitted its final report and proposals. These modifications, announced in January 2000, consisted primarily of a plan to issue a statement after every FOMC meeting that not only would convey the current stance of policy but also would categorize risks to the outlook as either weighted mainly toward conditions that may generate heightened inflation pressures, weighted mainly toward conditions that may generate economic weakness, or balanced with respect to the goals of maximum employment and stable prices over the foreseeable future. The changes eliminated uncertainty about the circumstances under which an announcement would be made; they clarified that the Committee's statement about future prospects extended beyond the intermeeting period; and they characterized the Committee's views about future developments in a way that reflected policy discussions and that members hoped would be more helpful to the public and to financial markets.

Financial markets and the economy came through the century date change smoothly. By the February 2000 meeting, there was little evidence that demand was coming into line with potential supply, and the risks of inflationary imbalances appeared to have risen. At the meeting, the FOMC raised its target for the federal funds rate ¼ percentage point to 5¾ percent, and characterized the risks as remaining on the side of higher inflation pressures. In a related action, the Board of Governors approved a ¼ percentage point increase in the discount rate, to 5¼ percent.

Economic Projections for 2000

The members of the Board of Governors and the Federal Reserve Bank presidents, all of whom participate in the deliberations of the FOMC, expect to see another year of favorable economic performance in 2000, although the risk of higher inflation will need to be watched especially carefully. The central tendency of the FOMC participants' forecasts of real GDP growth from the fourth quarter of 1999 to the fourth quarter of 2000 is 3½ percent to 3¾ percent. A substantial part of the gain in output will likely come from further increases in productivity. Nonetheless, economic expansion at the pace that is anticipated should create enough new jobs to keep the unemployment rate in a range of 4 percent to 4¼ percent, close to its recent average. The central tendency of the FOMC participants' inflation forecasts for 2000—as measured by the chain-type price index for personal consumption expenditures—is 1¾ percent to 2 percent, a range that runs a little to the low side of the energy-led 2 percent rise posted in 1999.[1] Even though futures markets suggest that energy prices may turn down later this year, prices elsewhere in the economy could be pushed upward

. Economic projections for 2000

Percent

Indicator	Memo: 1999 actual	Federal Reserve governors and Reserve Bank presidents	
		Range	Central tendency
Change, fourth quarter to fourth quarter[1]			
Nominal GDP	5.9	5–6	5¼–5½
Real GDP[2]	4.2	3¼–4¼	3½–3¾
PCE chain-type price index	2.0	1½–2½	1¾–2
Average level, fourth quarter			
Civilian unemployment rate	4.1	4–4¼	4–4¼

1. Change from average for fourth quarter of 1999 to average for fourth quarter of 2000.

2. Chain-weighted.

by a combination of factors, including reduced restraint from non-oil import prices, wage and price pressures associated with lagged effects of the past year's oil price rise, and larger increases in costs that might be forthcoming in another year of tight labor markets.

The performance of the economy—both the rate of real growth and the rate of inflation—will depend importantly on the course of productivity. Typically, in past business expansions, gains in labor productivity eventually slowed as rising demand placed increased pressure on plant capacity and on the workforce, and a similar slowdown from the recent rapid pace of productivity gain cannot be ruled out. But with many firms still in the process of implementing technologies that have proved effective in reorganizing internal operations or in gaining speedier access to outside resources and markets, and with the technologies themselves still advancing rapidly, a further rise in productivity growth from the average pace of recent years also is possible. To the extent that rapid productivity growth can be maintained, aggregate supply can grow faster than would otherwise be possible.

However, the economic processes that are giving rise to faster productivity growth not only are lifting aggregate supply but also are influencing the growth of aggregate spending. With firms perceiving abundant profit opportunities in productivity-enhancing high-tech applications, investment in new equipment has been surging and could well continue to rise rapidly for some time. Moreover, expectations that the investment in new technologies will generate high returns have been lifting the stock market and, in turn, helping to maintain consumer spending at a pace in excess of the current growth of real disposable income. Impetus to demand from this source also could persist for a while longer, given the current

1. In past Monetary Policy Reports to the Congress, the FOMC has framed its inflation forecasts in terms of the consumer price index. The chain-type price index for PCE draws extensively on data from the consumer price index but, while not entirely free of measurement problems, has several advantages relative to the CPI. The PCE chain-type index is constructed from a formula that reflects the changing composition of spending and thereby avoids some of the upward bias associated with the fixed-weight nature of the CPI. In addition, the weights are based on a more comprehensive measure of expenditures. Finally, historical data used in the PCE price index can be revised to account for newly available information and for improvements in measurement techniques, including those that affect source data from the CPI; the result is a more consistent series over time. This switch in presentation notwithstanding, the FOMC will continue to rely on a variety of aggregate price measures, as well as other information on prices and costs, in assessing the path of inflation.

high levels of consumer confidence and the likely lagged effects of the large increments to household wealth registered to date. The boost to aggregate demand from the marked pickup in productivity growth implies that the level of interest rates needed to align demand with potential supply may have increased substantially. Although the recent rise in interest rates may lead to some slowing of spending, aggregate demand may well continue to outpace gains in potential output over the near term, an imbalance that contains the seeds of rising inflationary and financial pressures that could undermine the expansion.

In recent years, domestic spending has been able to grow faster than production without engendering inflation partly because the external sector has provided a safety valve, helping to relieve the pressures on domestic resources. In particular, the rapid growth of demand has been met in part by huge increases in imports of goods and services, and sluggishness in foreign economies has restrained the growth of exports. However, foreign economies have been firming, and if recovery of these economies stays on course, U.S. exports should increase faster than they have in the past couple of years. Moreover, the rapid rise of the real exchange value of the dollar through mid-1998 has since given way to greater stability, on average, and the tendency of the earlier appreciation to limit export growth and boost import growth is now diminishing. From one perspective, these external adjustments are welcome because they will help slow the recent rapid rates of decline in net exports and the current account. They also should give a boost to industries that have been hurt by the export slump, such as agriculture and some parts of manufacturing. At the same time, however, the adjustments are likely to add to the risk of an upturn in the inflation trend, because a strengthening of exports will add to the pressures on U.S. resources and a firming of the prices of non-oil imports will raise costs directly and also reduce to some degree the competitive restraints on the prices of U.S. producers.

Domestically, substantial plant capacity is still available in some manufacturing industries and could continue to exert restraint on firms' pricing decisions, even with a diminution of competitive pressures from abroad. However, an already tight domestic labor market has tightened still further in recent months, and bidding for workers, together with further increases in health insurance costs that appear to be coming, seems likely to keep nominal hourly compensation costs moving up at a relatively brisk pace. To date, the increases in compensation have not had serious inflationary consequences because they have been offset by the advances in labor productivity, which have held unit labor costs in check. But the pool of available workers cannot continue to shrink without at some point touching off cost pressures that even a favorable productivity trend might not be able to counter. Although the governors and Reserve Bank presidents expect productivity gains to be substantial again this year, incoming data on costs, prices, and price expectations will be examined carefully to make sure a pickup of inflation does not start to become embedded in the economy.

The FOMC forecasts are more optimistic than the economic predictions that the Administration recently released, but the Administration has noted that it is being conservative in regard to its assumptions about productivity growth and the potential expansion of the economy. Relative to the Administration's forecast, the FOMC is predicting a somewhat larger rise in real GDP in 2000 and a slightly lower unemployment rate. The inflation forecasts are fairly similar, once account is taken of the tendency for the consumer price index to rise more rapidly than the chain-type price index for personal consumption expenditures.

Money and Debt Ranges for 2000

At its most recent meeting, the FOMC reaffirmed the monetary growth ranges for 2000 that were chosen on a provisional basis last July: 1 percent to 5 percent for M2, and 2 percent to 6 percent for M3. As has been the case for some time, these ranges were chosen to encompass money growth under conditions of price stability and historical velocity relationships, rather than to center on the expected growth of money over the coming year or serve as guides to policy.

Given continued uncertainty about movements in the velocities of M2 and M3 (the ratios of nominal GDP to the aggregates), the Committee still has little confidence that money growth within any particular range selected for the year would be associated with the economic performance it expected or desired.

2. Ranges for growth of monetary and debt aggregates

Percent

Aggregate	1998	1999	2000
M2	1–5	1–5	1–5
M3	2–6	2–6	2–6
Debt	3–7	3–7	3–7

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

Nonetheless, the Committee believes that money growth has some value as an economic indicator, and it will continue to monitor the monetary aggregates among a wide variety of economic and financial data to inform its policy deliberations.

M2 increased 6¼ percent last year. With nominal GDP rising 6 percent, M2 velocity fell a bit overall, although it rose in the final two quarters of the year as market interest rates climbed relative to yields on M2 assets. Further increases in market interest rates early this year could continue to elevate M2 velocity. Nevertheless, given the Committee's expectations for nominal GDP growth, M2 could still be above the upper end of its range in 2000.

M3 expanded 7½ percent last year, and its velocity fell about 1¾ percent, a much smaller drop than in the previous year. Non-M2 components again exhibited double-digit growth, with some of the strength attributable to long-term trends and some to precautionary buildups of liquidity in advance of the century date change. One important trend is the shift by nonfinancial businesses from direct holdings of money market instruments to indirect holdings through institution-only money funds; such shifts boost M3 at the same time they enhance liquidity for businesses. Money market funds and large certificates of deposit also ballooned late in the year as a result of a substantial demand for liquidity around the century date change. Adjustments from the temporarily elevated level of M3 at the end of 1999 are likely to trim that aggregate's fourth-quarter-to-fourth-quarter growth this year, but not sufficiently to offset the downward trend in velocity. That trend, together with the Committee's expectation for nominal GDP growth, will probably keep M3 above the top end of its range again this year.

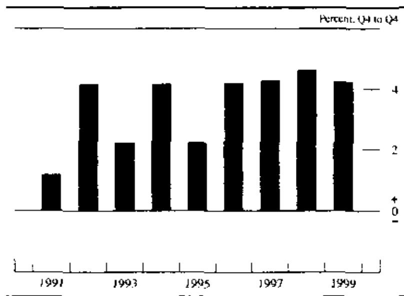
Domestic nonfinancial debt grew 6½ percent in 1999, near the upper end of the 3 percent to 7 percent growth range the Committee established last February. This robust growth reflected large increases in the debt of businesses and households that were due to substantial advances in spending as well as to debt-financed mergers and acquisitions. However, the increase in private-sector debt was partly offset by a substantial decline in federal debt. The Committee left the range for debt growth in 2000 unchanged at 3 percent to 7 percent. After an aberrant period in the 1980s during which debt expanded much more rapidly than nominal GDP, the growth of debt has returned to its historical pattern of about matching the growth of nominal GDP over the past decade, and the Committee members expect debt to remain within its range again this year.

ECONOMIC AND FINANCIAL DEVELOPMENTS IN 1999 AND EARLY 2000

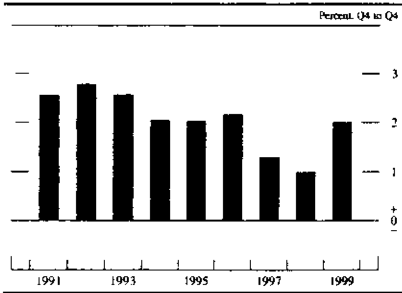
The U.S. economy retained considerable strength in 1999. According to the Commerce Department's advance estimate, the rise in real gross domestic product over the four quarters of the year exceeded 4 percent for the fourth consecutive year. The growth of household expenditures was bolstered by further substantial gains in real income, favorable borrowing terms, and a soaring stock market. Businesses seeking to maintain their competitiveness and profitability continued to invest heavily in high-tech equipment; external financing conditions in both debt and equity markets were quite supportive. In the public sector, further strong growth of revenues was accompanied by a step-up in the growth of government consumption and investment expenditures, the part of government spending that enters directly into real GDP. The rapid growth of domestic demand gave rise to a further huge increase in real imports of goods and services in 1999. Exports picked up as foreign economies strengthened, but the gain fell short of that for imports by a large margin. Available economic indicators for January of this year show the U.S. economy continuing to expand, with labor demand robust and the unemployment rate edging down to its lowest level in thirty years.

The combination of a strong U.S. economy and improving economic conditions abroad led to firmer prices in some markets this past year. Industrial commodity prices turned up—sharply in some cases—after having dropped appreciably in 1998. Oil prices, responding both to OPEC production restraint and to the growth of world demand, more than doubled over the course of the year, and the prices of non-oil imports declined less rapidly than in previous years.

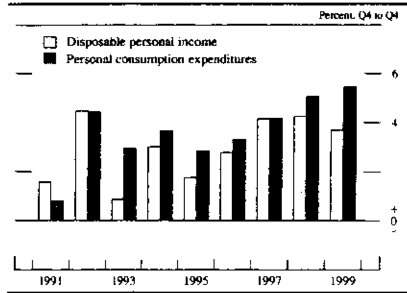
Change in real GDP



Change in PCE chain-type price index



Change in real income and consumption



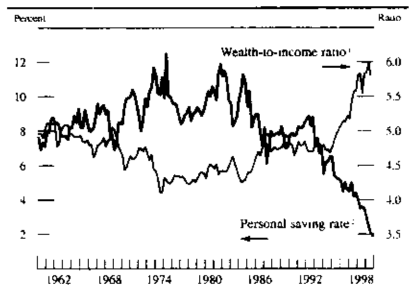
when a rising dollar, as well as sluggish conditions abroad, had pulled them lower. The higher oil prices of 1999 translated into sharp increases in retail energy prices and gave a noticeable boost to consumer prices overall; the chain-type price index for personal consumption expenditures rose 2 percent, double the increase of 1998. Outside the energy sector, however, consumer prices increased at about the same low rate as in the previous year, even as the unemployment rate continued to edge down. Rapid gains in productivity enabled businesses to offset a substantial portion of the increases in nominal compensation, thereby holding the rise of unit labor costs in check, and business pricing policies continued to be driven to a large extent by the desire to maintain or increase market share at the expense of some slippage in unit profits, albeit from a high level.

The Household Sector

Personal consumption expenditures increased about 5½ percent in real terms in 1999, a second year of exceptionally rapid advance. As in other recent years, the strength of consumption in 1999 reflected sustained increases in employment and real hourly pay, which bolstered the growth of real disposable personal income. Added impetus came from another year of rapid growth in net worth, which, coming on top of the big gains of previous years, led households in the aggregate to spend a larger portion of their current income than they would have otherwise. The personal saving rate, as measured in the national income and product accounts, dropped further, to an average of about 2 percent in the final quarter of 1999; it has fallen about 4½ percentage points over the past five years, a period during which yearly gains in household net worth have averaged more than 10 percent in nominal terms and the ratio of household wealth to disposable personal income has moved up sharply.

The strength of consumer spending this past year extended across a broad front. Appreciable gains were reported for most types of durable goods. Spending on motor vehicles, which had surged about 13½ percent in 1998, moved up another 5½ percent in 1999. The inflation-adjusted increases for furniture, appliances, electronic equipment, and other household durables also were quite large, supported in part by a strong housing market. Spending on services advanced about 4½ percent in real terms, led by sizable increases for recreation and personal business services. Outlays for nondurables, such as food and clothing, also rose rapidly. Exceptional strength in

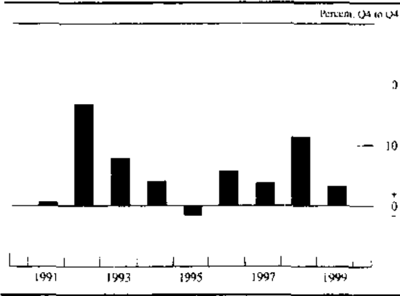
Wealth and saving



1. Ratio of net worth of households to disposable personal income. The data extend through 1999:Q3.

2. The data extend through 1999:Q4.

Change in real residential investment



the purchases of some nondurables toward the end of the year may have reflected precautionary buying by consumers in anticipation of the century date change; it is notable in this regard that grocery store sales were up sharply in December and then fell back in January, according to the latest report on retail sales.

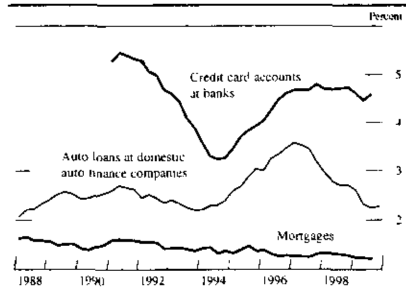
Households also continued to boost their expenditures on residential structures. After having surged 11 percent in 1998, residential investment rose about 3¼ percent over the four quarters of 1999, according to the advance estimate from the Commerce Department. Moderate declines in investment in the second half of the year offset only part of the increases recorded in the first half. As with consumption expenditures, investment in housing was supported by the sizable advances in real income and household net worth, but this spending category was also tempered a little by a rise in mortgage interest rates, which likely was an important factor in the second-half downturn.

Nearly all the indicators of housing activity showed upbeat results for the year. Annual sales of new and existing homes reached new peaks in 1999, surpassing the previous highs set in 1998. Although sales dropped back a touch in the second half of the year, their level through year-end remained quite high by historical standards. Builders' backlogs also were at high levels and helped support new construction activity even as sales eased. Late in the year, reports that shortages of skilled workers were delaying construction became less frequent as building activity wound down seasonally, but builders also continued to express concern about potential worker shortages in 2000. For 1999 in total, construction began on more than 1.3 million single-family dwellings, the most since the late 1970s; approximately 330,000 multifamily units also were started, about the same number as in each of the two previous years. House prices rose appreciably and, together with the new investment, further boosted household net worth in residential real estate.

The increases in consumption and residential investment in 1999 were, in part, financed by an expansion of household debt estimated at 9½ percent, the largest increase in more than a decade. Mortgage debt, which includes the borrowing against owner equity that may be used for purposes other than residential investment, grew a whopping 10¼ percent. Higher interest rates led to a sharp drop in refinancing activity and prompted a shift toward the use of adjustable-rate mortgages, which over the year rose from 10 percent to 30 percent of originations. Consumer credit advanced 7¼ percent, boosted by heavy demand for consumer durables and other big-ticket purchases. Credit supply conditions were also favorable; commercial banks reported in Federal Reserve surveys that they were more willing than in the previous year or two to make consumer installment loans and that they remained quite willing to make mortgage loans.

The household sector's debt-service burden edged up to its highest level since the late 1980s; however, with employment rising rapidly and asset values escalating, measures of credit quality for household debt generally improved in 1999. Delinquency rates on home mortgages and credit cards declined a bit, and those on auto loans fell more noticeably. Personal bankruptcy filings fell sharply after having risen for several years to 1997 and remaining elevated in 1998.

Delinquency rates on household loans



NOTE. The data are quarterly. Data on credit-card delinquencies are from bank Call Reports; data on auto loan delinquencies are from the Big Three automakers; data on mortgage delinquencies are from the Mortgage Bankers Association.

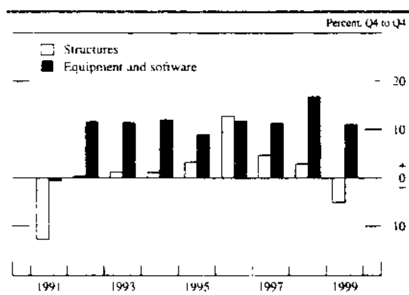
The Business Sector

Private nonresidential fixed investment increased 7 percent during 1999, extending by another year a long run of rapid growth in real investment outlays. Strength in capital investment has been underpinned in recent years by the vigor of the business expansion, by the advance and spread of computer technologies, and by the ability of most businesses to readily obtain funding through the credit and equity markets.

Investment in high-tech equipment continued to soar in 1999. Outlays for communications equipment rose about 25 percent over the course of the year, boosted by a number of factors, including the expansion of wireless communications, competition in telephone markets, the continued spread of the Internet, and the demand of Internet users for faster access to it. Computer outlays rose nearly 40 percent in real terms, and the purchases of computer software, which in the national accounts are now counted as part of private fixed investment, rose about 13 percent; for both computers and software the increases were roughly in line with the annual average gains during previous years of the expansion.

The timing of investment in high-tech equipment over the past couple of years was likely affected to some degree by business preparations for the century date change. Many large businesses reportedly invested most heavily in new computer equipment before the start of 1999 to leave sufficient time for their systems to be tested well before the start of 2000; a very steep rise in computer investment in 1998—roughly 60 percent in real terms—is consistent with those reports. Some of the purchases in preparation for Y2K most likely spilled over into 1999, but the past year also brought numerous reports of businesses wanting to stand pat with existing systems until after the turn of the year. Growth in computer investment in the final quarter of 1999, just before the century rollover, was the smallest in several quarters.

Change in real nonresidential fixed investment



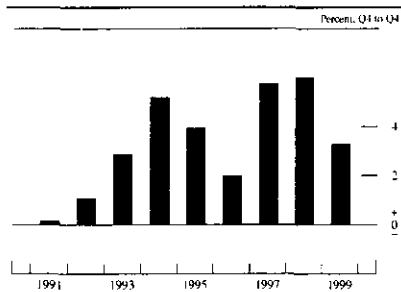
Spending on other types of equipment rose moderately, on balance, in 1999. Outlays for transportation equipment increased substantially, led by advances in business purchases of motor vehicles and aircraft. By contrast, a sharp decline in spending on industrial machinery early in the year held the yearly gain for that category to about 2 percent; over the final three quarters of the year, however, outlays picked up sharply as industrial production strengthened.

Private investment in nonresidential structures fell 5 percent in 1999 according to the advance estimate from the Commerce Department. Spending on structures had increased in each of the previous seven years, rather briskly at times, and the level of investment, though down this past year, remained relatively high and likely raised the real stock of capital invested in structures appreciably further. Real expenditures on office buildings, which have been climbing rapidly for several years, moved up further in 1999, to the highest level since the peak of the building boom of the 1980s. In contrast, investment in other types of commercial structures, which had already regained its earlier peak, slipped back a little, on net, this past year. Spending on industrial structures, which accounts for roughly 10 percent of total real outlays on structures, fell for a third consecutive year. Outlays for the main types of institutional structures also were down, according to the initial estimates. Revisions to the data on nonresidential structures often are sizable, and the estimates for each of the three years preceding 1999 have eventually shown a good bit more strength than was initially reported.

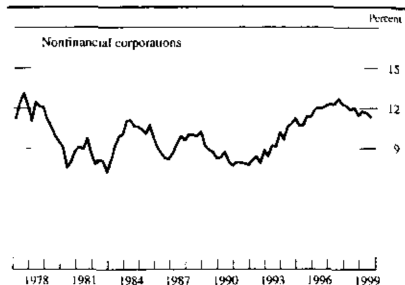
After increasing for two years at a rate of about 6 percent, nonfarm business inventories expanded more slowly this past year—about 3¼ percent according to the advance GDP report. During the year, some businesses indicated that they planned to carry heavier stocks toward year-end to protect themselves against possible Y2K disruptions, and the rate of accumulation did in fact pick up appreciably in the fall. But business final sales remained strong, and the ratio of nonfarm stocks to final sales changed little, holding toward the lower end of the range of the past decade. With the ratio so low, businesses likely did not enter the new year with excess stocks.

After slowing to a 1 percent rise in 1998, the economic profits of U.S. corporations—that is, book profits with inventory valuation and capital consumption adjustments—picked up in 1999. Economic profits over the first three quarters of the year averaged

Change in real private nonfarm inventories



Before-tax profits as a share of GDP

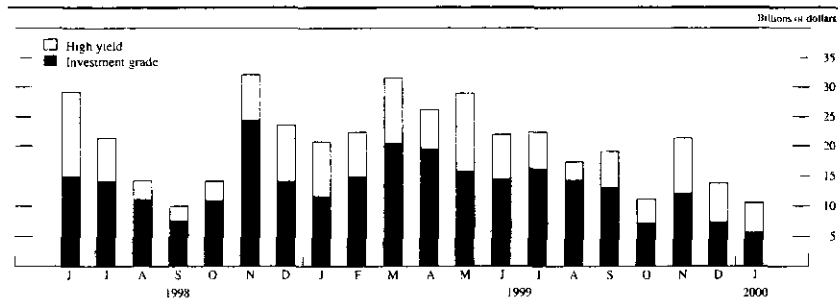


NOTE. Profits from domestic operations, with inventory valuation and capital consumption adjustments, divided by gross domestic product of nonfinancial corporate sector. The data extend through 1999:Q3.

about 3½ percent above the level of a year earlier. The earnings of corporations from their operations outside the United States rebounded in 1999 from a brief but steep decline in the second half of 1998, when financial market disruptions were affecting the world economy. The profits earned by financial corporations on their domestic operations also picked up after having been slowed in 1998 by the financial turmoil; growth of these profits in 1999 would have been greater but for a large payout by insurance companies to cover damage from Hurricane Floyd. The profits that nonfinancial corporations earned on their domestic operations in the first three quarters of 1999 were about 2½ percent above the level of a year earlier; growth of these earnings, which account for about two-thirds of all economic profits, had slowed to just over 2 percent in 1998 after averaging 13 percent at a compound annual rate in the previous six years. Nonfinancial corporations have boosted volume substantially further over the past two years, but profits per unit of output have dropped back somewhat from their 1997 peak. As of the third quarter of last year, economic profits of nonfinancial corporations amounted to slightly less than 11½ percent of the nominal output of these companies, compared with a quarterly peak of about 12¾ percent two years earlier.

The borrowing needs of nonfinancial corporations remained sizable in 1999. Capital spending outstripped internal cash flow, and equity retirements that resulted from stock repurchases and a blockbuster pace of merger activity more than offset record volumes of both seasoned and initial public equity offerings. Overall, the debt of nonfinancial businesses grew 10½ percent, down only a touch from its decade-high 1998 pace.

Gross corporate bond issuance



NOTE. Excludes unrated issues and issues sold abroad.

The strength in business borrowing was widespread across funding sources. Corporate bond issuance was robust, particularly in the first half of the year, though the markets' increased preference for liquidity and quality, amid an appreciable rise in defaults on junk bonds, left issuance of below-investment-grade securities down more than a quarter from their record pace in 1998. The receptiveness of the capital markets helped firms to pay down loans at banks—which had been boosted to an 11¾ percent gain in 1998 by the financial market turmoil that year—and growth in these loans slowed to a more moderate 5¼ percent pace in 1999. The commercial paper market continued to expand rapidly, with domestic nonfinancial outstandings rising 18 percent on top of the 14 percent gain in 1998.

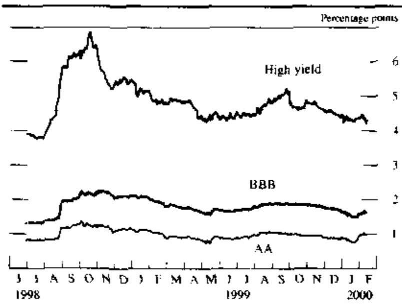
Commercial mortgage borrowing was strong again as well, as real estate prices generally continued to rise, albeit at a slower pace than in 1998, and vacancy rates generally remained near historical lows. The mix of lending shifted back to banks and life insurance companies from commercial mortgage-backed securities, as conditions in the CMBS market, especially investor appetites for lower-rated tranches, remained less favorable than they had been before the credit market disruptions in the fall of 1998.

Risk spreads on corporate bonds seesawed during 1999. Over the early part of the year, spreads reversed part of the 1998 run-up as markets recovered. During the summer, they rose again in response to concerns about market liquidity, expectations of a surge in financing before the century date change, and anticipated firming of monetary policy. Swap spreads, in particular, exhibited upward pressure at this time. The likelihood of year-end difficulties seemed to diminish in the fall, and spreads again retreated, ending the year down on balance but generally above the levels that had prevailed over the several years up to mid-1998.

Federal Reserve surveys indicated that banks firmed terms and standards for commercial and industrial loans a bit further, on balance, in 1999. In the syndicated loan market, spreads for lower-rated borrowers also ended the year higher, on balance, after rising substantially in 1998. Spreads for higher-rated borrowers were fairly steady through 1998 and early 1999, widened a bit around midyear, and then fell back to end the year about where they had started.

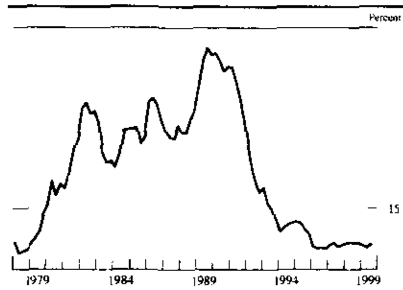
The ratio of net interest payments to cash flow for nonfinancial firms remained in the low range it has occupied for the past few years, but many measures of credit quality nonetheless deteriorated in 1999. Moody's Investors Service downgraded more nonfinancial debt issuers than it upgraded over the year, affecting a net $78 billion of debt. The problems that emerged in the bond market were concentrated mostly among borrowers in the junk sector, and partly reflected a fallout from the large volume of issuance and the generous terms available in 1997 and early 1998; default rates on junk bonds rose to levels not seen since the recession of 1990–91. Delinquency rates on C&I loans at commercial banks ticked up in 1999, albeit from very low levels, while the charge-off rate for those loans continued on its upward trend of the past several years. Business failures edged up last year but remained in a historically low range.

Spreads of corporate bond yields over Treasury security yields



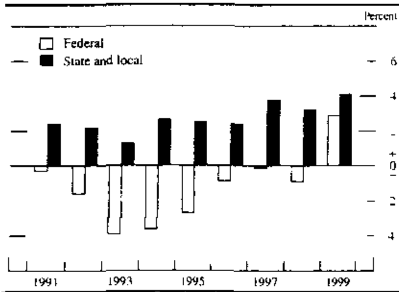
NOTE. The data are daily. The spread of high-yield bonds compares the yield on the Merrill Lynch 175 index with that on a seven-year Treasury; the other two spreads compare yields on the appropriate Merrill Lynch indexes with that on a ten-year Treasury. Last observations are for February 11, 2000.

Net interest payments of nonfinancial corporations relative to cash flow



NOTE. The data are quarterly and extend through 1999:Q3.

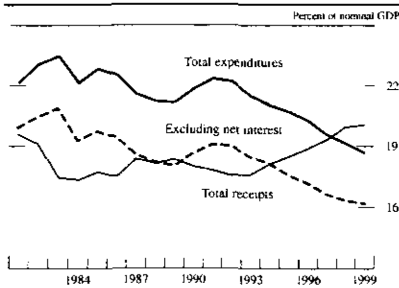
Annual change in real government expenditures on consumption and investment



The Government Sector

Buoyed by rapid increases in receipts and favorable budget balances, the combined real expenditures of federal, state, and local governments on consumption and investment rose about 4¼ percent from the fourth quarter of 1998 to the fourth quarter of 1999. Annual data, which smooth through some of the quarterly noise that is often evident in government outlays, showed a gain in real spending of more than 3½ percent this past year, the largest increase of the expansion. Federal expenditures on consumption and investment were up nearly 3 percent in annual terms; real defense expenditures, which had trended lower through most of the 1990s, rose moderately, and outlays for nondefense consumption and investment increased sharply. Meanwhile, the consumption and investment expenditures of state and local governments rose more than 4 percent in annual terms; growth of these outlays has picked up appreciably as the expansion has lengthened.

Federal receipts and expenditures



NOTE. The data are from the unified budget and are for the fiscal year ended in September.

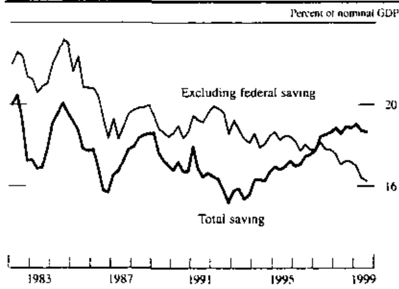
At the federal level, expenditures in the unified budget rose 3 percent in fiscal 1999, just a touch less than the 3¼ percent rise of the preceding fiscal year. Faster growth of nominal spending on items that are included in consumption and investment was offset in the most recent fiscal year by a deceleration in other categories. Net interest outlays fell more than 5 percent—enough to trim total spending growth about ¼ percentage point—and only small increases were recorded in expenditures for social insurance and income security, categories that together account for nearly half of total federal outlays. In contrast, federal expenditures on Medicaid, after having slowed in 1996 and 1997, picked up again in the past two fiscal years. Spending on agriculture doubled in fiscal 1999; the increase resulted both from a step-up in payments under farm safety net programs that were retained in the "freedom to farm" legislation of 1996 and from more recent emergency farm legislation.

Federal receipts grew 6 percent in fiscal 1999 after increases that averaged close to 9 percent in the two previous fiscal years. Net receipts from taxes on individuals continued to outpace the growth of personal income, but by less than in other recent years, and receipts from corporate income taxes fell moderately. Nonetheless, with total receipts growing faster than spending, the surplus in the unified budget continued to rise, moving from $69 billion in fiscal 1998 to $124 billion this past fiscal year. Excluding net interest payments—a charge resulting from past deficits—the federal government recorded a surplus of more than $350 billion in fiscal 1999.

Federal saving, a measure that results from a translation of the federal budget surplus into terms consistent with the national income and product accounts, amounted to 2¼ percent of nominal GDP in the first three quarters of 1999, up from 1½ percent in 1998 and ½ percent in 1997. Before 1997, federal saving had been negative for seventeen consecutive years, by amounts exceeding 3 percent of nominal GDP in several years—most recently in 1992. The change in the federal government's saving position from 1992 to 1999 more than offset the sharp drop in the personal saving rate and helped lift national saving from less than 16 percent of nominal GDP in 1992 and 1993 to a range of about 18½ percent to 19 percent over the past several quarters.

Federal debt growth has mirrored the turnabout in the government's saving position. In the 1980s and early 1990s, borrowing resulted in large additions to the volume of outstanding government debt. In contrast, with the budget in surplus the past two

National saving

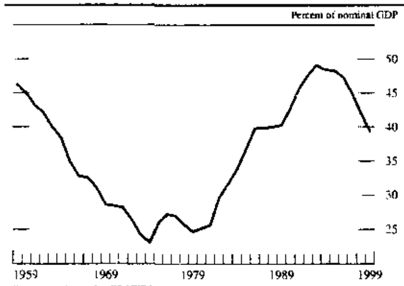


NOTE. National saving includes the gross saving of households, businesses, and governments. The data extend through 1999:Q3

years, the Treasury has been paying down debt. Without the rise in federal saving and the reversal in borrowing, interest rates in recent years likely would have been higher than they have been, and private capital formation, a key element in the vigorous economic expansion, would have been lower, perhaps appreciably.

The Treasury responded to its lower borrowing requirements in 1999 primarily by reducing the number of auctions of thirty-year bonds from three to two and by trimming auction sizes for notes and Treasury inflation-indexed securities (TIIS). Weekly bill volumes were increased from 1998 levels, however, to help build up cash holdings as a Y2K precaution. For 2000, the Treasury plans major changes in debt management in an attempt to keep down the average maturity of the debt and maintain sufficient auction sizes to support the liquidity and benchmark status of its most recently issued securities, while still retiring large volumes of debt. Alternate quarterly refunding auctions of five- and ten-year notes and semiannual auctions of thirty-year bonds will now be smaller *reopenings of existing issues rather than new issues.* Thirty-year TIIS will now be auctioned once a year rather than twice, and the two auctions of ten-year TIIS will be modestly reduced. Auctions of one-year Treasury bills will drop from thirteen a year to four, while weekly bill volumes will rise somewhat. Finally, the Treasury plans to enter the market to buy back in "reverse auctions" as much as $30 billion of outstanding securities this year, beginning in March or April.

Federal government debt held by the public



NOTE. The data are annual.

State and local government debt expanded 4¼ percent in 1999, well off last year's elevated pace. Borrowing for new capital investment edged up, but the roughly full-percentage-point rise in municipal bond yields over the year led to a sharp drop in advance refundings, which in turn pulled gross issuance below last year's level. Tax revenues continued to grow at a robust rate, improving the financial condition of states and localities, as reflected in a ratio of debt rating upgrades to downgrades of more than three to one over the year. The surplus in the current account of state and local governments in the first three quarters of 1999 amounted to about ½ percent of nominal GDP, about the same as in 1998 but otherwise the largest of the past several years.

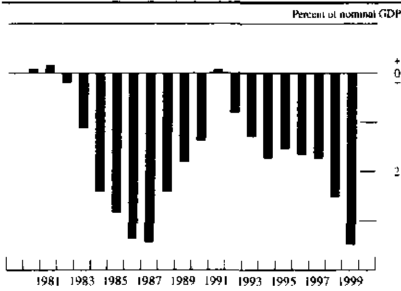
The External Sector

Trade and the Current Account

U.S. external balances deteriorated in 1999 largely because of continued declines in net exports of goods and services and some further weakening of net investment income. The nominal trade deficit for goods and services widened more than $100 billion in 1999, to an estimated $270 billion, as imports expanded faster than exports. For the first three quarters of the year, the current account deficit increased more than one-third, reaching $320 billion at an annual rate, or 3½ percent of GDP. In 1998, the current account deficit was 2½ percent of GDP.

Real imports of goods and services expanded strongly in 1999—about 13 percent according to preliminary estimates—as the rapid import growth during the first half of the year was extended through the second half. The expansion of real imports was fueled by the continued strong growth of U.S. domestic expenditures. Declines in non-oil import prices through most of the year, partly reflecting previous dollar appreciation, contributed as well. All major

U.S. current account

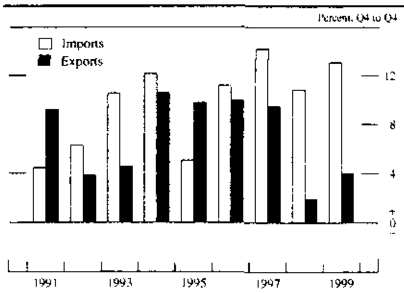


NOTE. The observation for 1999 is the average for the first three quarters of the year.

import categories other than aircraft and oil recorded strong increases. While U.S. consumption of oil rose about 4 percent in 1999, the quantity of oil imported was about unchanged, and inventories were drawn down.

Real exports of goods and services rose an estimated 4 percent in 1999, a somewhat faster pace than in 1998. Economic activity abroad picked up, particularly in Canada, Mexico, and Asian developing economies. However, the lagged effects of relative prices owing to past dollar appreciation held down exports. An upturn in U.S. exports to Canada, Mexico, and key Asian emerging markets contrasted with a much flatter pace of exports to Europe, Japan, and South America. Capital equipment composed about 45 percent of U.S. goods exports, industrial supplies were 20 percent, and agricultural, automotive, and consumer goods were each roughly 10 percent.

Change in real imports and exports of goods and services



Capital Account

U.S. capital flows in 1999 reflected the relatively strong cyclical position of the U.S. economy and the global wave of corporate mergers. Foreign purchases of U.S. securities remained brisk—near the level of the previous two years, in which they had been elevated by the global financial unrest. The composition of foreign securities purchases in 1999 showed a continued shift away from Treasuries, in part because of the U.S. budget surplus and the decline in the supply of Treasuries relative to other securities and, perhaps, to a general increased tolerance of foreign investors for risk as markets calmed after their turmoil of late 1998. Available data indicate that private foreigners sold on net about $20 billion in Treasuries, compared with net purchases of $50 billion in 1998 and $150 billion in 1997. These sales of Treasuries were more than offset by a pickup in foreign purchases of their nearest substitute—government agency bonds—as well as corporate bonds and equities.

Foreign direct investment flows into the United States were also robust in 1999, with the pace of inflows in the first three quarters only slightly below the record inflow set in 1998. As in 1998, direct investment inflows last year were elevated by several large mergers, which left their imprint on other parts of the capital account as well. In the past two years, many of the largest mergers have been financed by a swap of equity in the foreign acquiring firm for equity in the U.S. firm being acquired. The Bureau of Economic Analysis estimates that U.S. residents acquired more than $100 billion of foreign equity through this mechanism in the first three quarters of 1999. Separate data on market transactions indicate that U.S. residents made net purchases of Japanese equities. They also sold European equities, probably in an attempt to rebalance portfolios in light of the equity acquired through stock swaps. U.S. residents on net purchased a small volume of foreign bonds in 1999. U.S. direct investment in foreign economies also reflected the global wave of merger activity in 1999 and will likely total something near its record level of 1998.

Available data indicate a return to sizable capital inflows from foreign official sources in 1999, following a modest outflow in 1998. The decline in foreign official assets in the United States in 1998 was fairly widespread, as many countries found their currencies under unwanted downward pressure during the turmoil. By contrast, the increase in foreign official reserves in the United States in 1999 was fairly concentrated in a relatively few countries that experi-

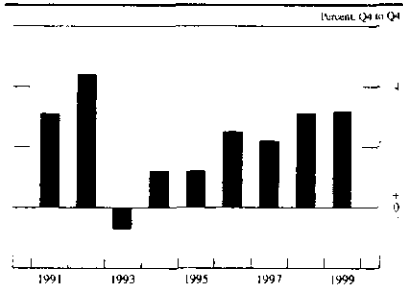
enced unwanted upward pressure on their currencies vis-à-vis the U.S. dollar.

The Labor Market

As in other recent years, the rapid growth of aggregate output in 1999 was associated with both strong growth of productivity and brisk gains in employment. According to the initial estimate for 1999, output per hour in the nonfarm business sector rose 3¼ percent over the four quarters of the year, and historical data were revised this past year to show stronger gains than previously reported in the years preceding 1999. As the data stand currently, the average rate of rise in output per hour over the past four years is about 2¾ percent—up from an average of 1½ percent from the mid-1970s to the end of 1995. Some of the step-up in productivity growth since 1995 can be traced to high levels of capital spending and an accompanying faster rate of increase in the amount of capital per worker. Beyond that, the causes are more difficult to pin down quantitatively but are apparently related to increased technological and organizational efficiencies. Firms are not only expanding the stock of capital but are also discovering many new uses for the technologies embodied in that capital, and workers are becoming more skilled at employing the new technologies.

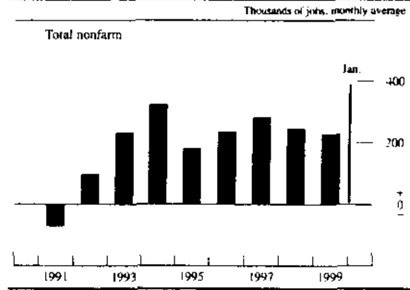
The number of jobs on nonfarm payrolls rose slightly more than 2 percent from the end of 1998 to the end of 1999, a net increase of 2.7 million. Annual job gains had ranged between 2¼ percent and 2¾ percent over the 1996–98 period. Once again in 1999, the private service-producing sector accounted for most of the total rise in payroll employment, led

Change in output per hour



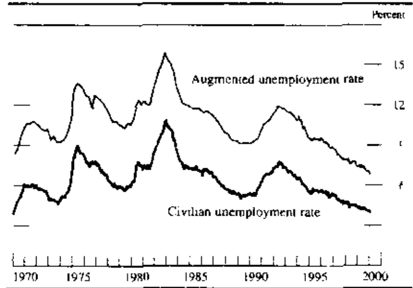
NOTE. Nonfarm business sector

Change in payroll employment



by many of the same categories that had been strong in previous years—transportation and communications, computer services, engineering and management, recreation, and personnel supply. In the construction sector, employment growth remained quite brisk—more than 4 percent from the final quarter of 1998 to the final quarter of 1999. Manufacturing employment, influenced by spillover from the disruptions in foreign economies, continued to decline sharply in the first half of the year, but losses thereafter were small as factory production strengthened. Since the start of the expansion in 1991, the job count in manufacturing has changed little, on net, but with factory productivity rising rapidly, manufacturing output has trended up at a brisk pace.

Measures of labor utilization

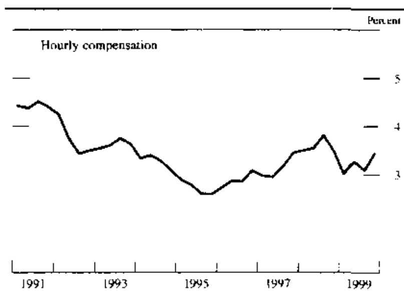


NOTE. The augmented unemployment rate is the number of unemployed plus those who are not in the labor force and want a job, divided by the civilian labor force plus those who are not in the labor force and want a job. The break in data at January 1994 marks the introduction of a redesigned survey; data from that point on are not directly comparable with those of earlier periods. The data extend through January 2000

In 1999, employers continued to face a tight labor market. Some increase in the workforce came from the pool of the unemployed, and the jobless rate declined to an average of 4.1 percent in the fourth quarter. In January 2000, the rate edged down to 4.0 percent, the lowest monthly reading since the start of the 1970s. Because the unemployment rate is a reflection only of the number of persons who are available for work and actively looking, it does not capture potential labor supply that is one step removed—namely those individuals who are interested in working but are not actively seeking work at the current time. However, like the unemployment rate itself, an augmented rate that includes these interested nonparticipants also has declined to a low level, as more individuals have taken advantage of expanding opportunities to work.

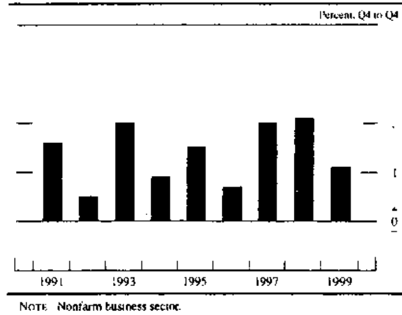
Although the supply–demand balance in the labor market tightened further in 1999, the added pressure did not translate into bigger increases in nominal hourly compensation. The employment cost index for hourly compensation of workers in private nonfarm industries rose 3.4 percent in nominal terms during 1999, little changed from the increase of the previous year, and an alternative measure of hourly compensation from the nonfarm productivity and cost data slowed from a 5¼ percent increase in 1998 to a 4½ percent rise this past year. Compensation gains in 1999 probably were influenced, in part, by the very low inflation rate of 1998, which resulted in unexpectedly large increases in inflation-adjusted pay in that year and probably damped wage increments last year. According to the employment cost index, the hourly wages of workers in private industry rose 3½ percent in nominal terms after having increased

Change in employment cost index



NOTE. Change from one year earlier. Private industry, excluding farm and household workers. Data extend through December 1999.

Change in unit labor costs



NOTE. Nonfarm business sector.

about 4 percent in each of the two previous years. The hourly cost to employers of the nonwage benefits provided to employees also rose 3½ percent in 1999, but this increase was considerably larger than those of the past few years. Much of the pickup in benefit costs came from a faster rate of rise in the costs of health insurance, which were reportedly driven up by several factors: a moderate acceleration in the price of medical care, the efforts of some insurers to rebuild profit margins, and the recognition by employers that an attractive health benefits package was helpful in hiring and retaining workers in a tight labor market.

Because the employment cost index does not capture some forms of compensation that employers have been using more extensively—for example, stock options, signing bonuses, and employee price discounts on in-store purchases—it has likely been understating the true size of workers' gains. The productivity and cost measure of hourly compensation captures at least some of the labor costs that the employment cost index omits, and this broader coverage may explain why the productivity and cost measure has been rising faster. However, it, too, is affected by problems of measurement, some of which would lead to overstatement of the rate of rise in hourly compensation.

With the rise in output per hour in the nonfarm business sector in 1999 offsetting about three-fourths of the rise in the productivity and cost measure of nominal hourly compensation, nonfarm unit labor costs were up just a shade more than 1 percent. Unit labor costs had increased slightly more than 2 percent in both 1997 and 1998 and less than 1 percent in 1996. Because labor costs are by far the most important item in total unit costs, these small increases have been crucial to keeping inflation low.

3. Alternative measures of price change

Percent

Price measure	1998	1999
Chain-type		
Gross domestic product	1.1	1.6
Gross domestic purchases	.7	1.9
Personal consumption expenditures	1.0	2.0
Excluding food and energy	1.4	1.5
Fixed-weight		
Consumer price index	1.5	2.6
Excluding food and energy	2.3	2.0

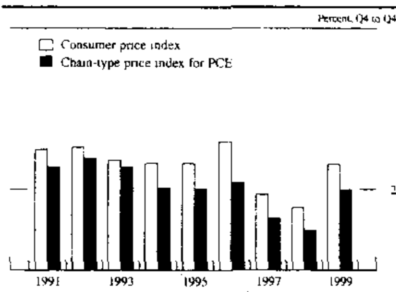
NOTE. Changes are based on quarterly averages and are measured to the fourth quarter of the year indicated from the fourth quarter of the preceding year.

Prices

Rates of increase in the broader measures of aggregate prices in 1999 were somewhat larger than those of 1998. The chain-type price index for GDP—which measures inflation for goods and services *produced* domestically—moved up about 1½ percent, a pickup of ½ percentage point from the increase of 1998. In comparison, acceleration in various price measures for goods and services *purchased* amounted to 1 percentage point or more: The chain-type price index for personal consumption expenditures increased 2 percent, twice as much as in the previous year, and the chain-type price index for gross domestic purchases, which measures prices of the aggregate purchases of consumers, businesses, and governments, moved up close to 2 percent after an increase of just ¾ percent in 1998. The consumer price index rose more than 2½ percent over the four quarters of the year after having increased 1½ percent in 1998.

The acceleration in the prices of goods and services purchased was driven in part by a reversal in import prices. In 1998, the chain-type price index for imports of goods and services had fallen 5 percent, but it rose 3 percent in 1999. A big swing in oil prices—down in 1998 but up sharply in 1999—accounted for a large part of this turnaround. Excluding oil, the prices of imported goods continued to fall in 1999 but, according to the initial estimate, less rapidly than over the three previous years, when downward pressure from appreciation of the dollar had been considerable. The prices of imported materials and supplies rebounded, but the prices of imported capital goods fell sharply further. Meanwhile, the chain-type price index for exports increased 1 percent in the latest year, reversing a portion of the 2½ percent drop of 1998, when the sluggishness of foreign economies and the strength of the dollar had pressured U.S. producers to mark down the prices charged to foreign buyers.

Change in consumer prices



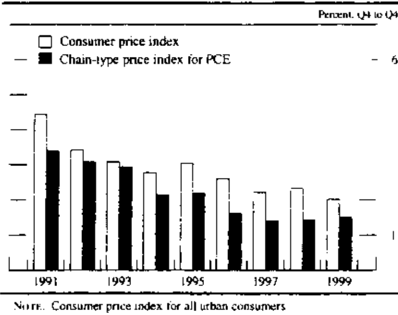
NOTE. Consumer price index for all urban consumers.

Prices of domestically produced primary materials, which tend to be especially sensitive to developments in world markets, rebounded sharply in 1999. The producer price index for crude materials excluding food and energy advanced about 10 percent after having fallen about 15 percent in 1998, and the PPI for intermediate materials excluding food and energy increased about 1½ percent, reversing a 1998 decline of about that same size. But further along in the chain of processing and distribution, the effects of these increases were not very visible. The producer price index for finished goods excluding food and energy rose slightly less rapidly in 1999 than in 1998, and the consumer price index for goods excluding food and energy rose at about the same low rate that it had in 1998. Large gains in productivity and a margin of excess capacity in the industrial sector helped keep prices of goods in check, even as growth of domestic demand remained exceptionally strong.

"Core" inflation at the consumer level—which takes account of the prices of services as well as the prices of goods and excludes food and energy prices—changed little in 1999. The increase in the core index for personal consumption expenditures, 1½ percent over the four quarters of the year, was about the same as the increase in 1998. As measured by the CPI, core inflation was 2 percent this past year, about ¼ percentage point lower than in 1998, but the deceleration was a reflection of a change in CPI methodology that had taken place at the start of last year; on a methodologically consistent basis, the rise in the core CPI was about the same in both years.

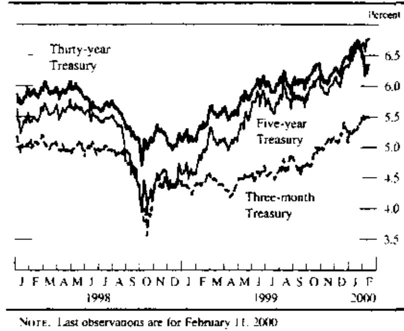
In the national accounts, the chain-type price index for private fixed investment edged up ¼ percent in 1999 after having fallen about ¾ percent in 1998. With construction costs rising, the index for residential investment increased 3¾ percent, its largest advance in several years. By contrast, the price index

Change in consumer prices excluding food and energy



NOTE. Consumer price index for all urban consumers.

Selected Treasury rates, daily data



NOTE. Last observations are for February 11, 2000.

for nonresidential investment declined moderately, as a result of another drop in the index for equipment and software. Falling equipment prices are one channel through which faster productivity gains have been reshaping the economy in recent years; the drop in prices has contributed to high levels of investment, rapid expansion of the capital stock, and a step-up in the growth of potential output.

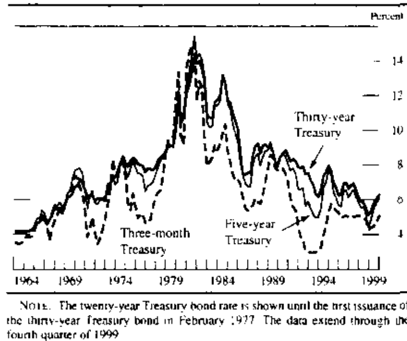
U.S. Financial Markets

Financial markets were somewhat unsettled as 1999 began, with the disruptions of the previous autumn still unwinding and the devaluation of the Brazilian *real* causing some jitters around mid-January. However, market conditions improved into the spring, evidenced in part by increased trading volumes and narrowed bid–asked and credit spreads, as it became increasingly evident that strong growth was continuing in the United States, and that economies abroad were rebounding. In this environment, market participants began to anticipate that the Federal Reserve would reverse the policy easings of the preceding fall, and interest rates rose. Nevertheless, improved profit expectations apparently more than offset the interest rate increases, and equity prices continued to climb until late spring. From May into the fall, both equity prices and longer-term interest rates moved in a choppy fashion, while short-term interest rates moved up with monetary policy tightenings in June, August, and November. Worries about Y2K became pronounced after midyear, and expectations of an acceleration of borrowing ahead of the fourth quarter prompted a resurgence in liquidity and credit premiums. In the closing months of the year, however, the likelihood of outsized demands for credit and liquidity over the year-end subsided, causing spreads to narrow, and stock prices surged once again. After the century date change passed without disruptions, liquidity improved and trading volumes grew, although both bond and equity prices have remained quite volatile so far this year.

Interest Rates

Over the first few months of 1999, short-term Treasury rates moved in a narrow range, anchored by an unchanged stance of monetary policy. Yields on intermediate- and long-term Treasury securities rose, however, as the flight to quality and liquidity of the preceding fall unwound, and incoming data pointed

Selected Treasury rates, quarterly data



NOTE. The twenty-year Treasury bond rate is shown until the first issuance of the thirty-year Treasury bond in February 1977. The data extend through the fourth quarter of 1999.

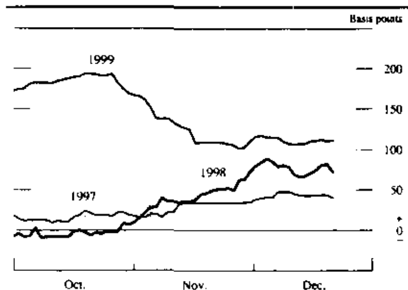
to continued robust economic growth and likely Federal Reserve tightening. Over most of the rest of the year, short-term Treasury rates moved broadly in line with the three quarter-point increases in the target federal funds rate; longer-term yields rose less, as markets had already anticipated some of those policy actions.

Bond and note yields moved sharply higher from early November 1999 to mid-January 2000, as Y2K fears diminished, incoming data indicated surprising economic vitality, and the century date change was negotiated without significant technical problems. In recent weeks, long-term Treasury yields have retraced a good portion of that rise on expectations of reduced supply stemming from the Treasury's new buyback program and reductions in the amount of bonds to be auctioned. This rally has been mostly confined to the long end of the Treasury market; long-term corporate bond yields have fallen only slightly, and yields are largely unchanged or have risen a little further at maturities of ten years or less, where most private borrowing is concentrated.

Concerns about liquidity and credit risk around the century date change led to large premiums in private money market rates in the second half of 1999. During the summer, this "safe haven" demand held down rates on Treasury bills maturing early in the new year, until the announcement in August that the Treasury was targeting an unusually large year-end cash balance, implying that it would issue a substantial volume of January-dated cash management bills. Year-end premiums in eurodollar, commercial paper, term federal funds, and other money markets—measured as the implied forward rate for a monthlong period spanning the turn relative to the rate for a neighboring period—rose earlier and reached much higher levels than in recent years.

Those year-end premiums peaked in late October and then declined substantially, as markets reflected increased confidence in technical readiness and special assurances from central banks that sufficient liquidity would be available around the century date change. Important among these assurances were several of the Federal Reserve initiatives described in the first section of this report. Securities dealers took particular advantage of the widened pools of acceptable collateral for open market operations and used large volumes of federal agency debt and mortgage-backed securities in repurchase agreements with the Open Market Desk in the closing weeks of the year, which helped to relieve a potential scarcity of Treasury collateral over the turn. Market participants also purchased options on nearly $500 billion worth of repurchase agreements under the standby financing facility and pledged more than $650 billion of collateral for borrowing at the discount window. With the smooth rollover, however, none of the RP options were exercised, and borrowing at the discount window turned out to be fairly light.

Eurodollar deposit forward premium over year-end

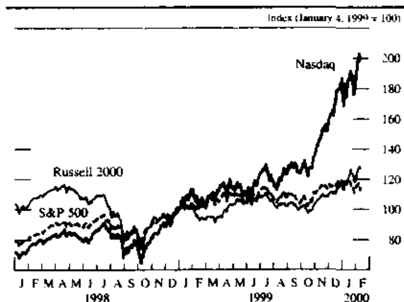


NOTE. The data are daily. For October the forward premiums are one-month forward rates two months ahead less one-month forward rates one month ahead; for November they are one-month forward rates one month ahead less one-month deposit rates; and for December they are three-week forward rates one week ahead less one-week deposit rates. The December forward premiums extend into the third week of December.

Equity Prices

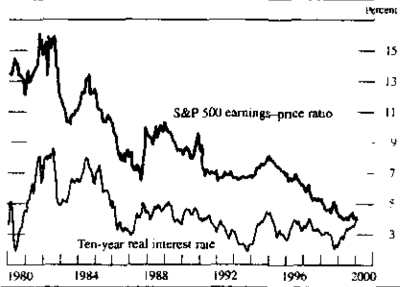
Nearly all major stock indexes ended 1999 in record territory. The Nasdaq composite index paced the advance by soaring 86 percent over the year, and the S&P 500 and Dow Jones Industrial Average posted still-impressive gains of 20 percent and 25 percent.

Major stock price indexes



NOTE. The data are daily. Last observations are for February 11, 2000.

Equity valuation and long-term real interest rate



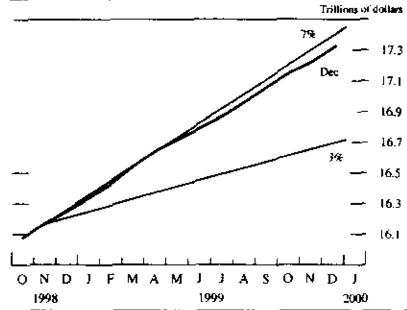
NOTE. The data are monthly and extend through January 2000. The earnings–price ratio is based on the I/B/E/S International, Inc., consensus estimate of earnings over the coming twelve months. The real interest rate is the yield on the ten-year Treasury note less the ten-year inflation expectations from the Federal Reserve Bank of Philadelphia Survey of Professional Forecasters.

Last year was the fifth consecutive year that all three indexes posted double-digit returns. Most stock indexes moved up sharply over the first few months of the year and were about flat on net from May through August; they then declined into October before surging in the final months of the year. The Nasdaq index, in particular, achieved most of its annual gains in November and December. Stock price advances in 1999 were not very broad-based, however: More than half of the S&P 500 issues lost value over the year. So far in 2000, stock prices have been volatile and mixed; major indexes currently span a range from the Dow's nearly 10 percent drop to the Nasdaq's 8 percent advance.

Almost all key industry groups performed well. One exception was shares of financial firms, which were flat, on balance. Investor perceptions that rising interest rates would hurt earnings and, possibly, concern over loan quality apparently offset the boost resulting from passage in the fall of legislation reforming the depression-era Glass–Steagall constraints on combining commercial banking with insurance and investment banking. Small-cap stocks, which had lagged in 1998, also performed well; the Russell 2000 index climbed 20 percent over the year and finally surpassed its April 1998 peak in late December.

At large firms, stock price gains about kept pace with expected earnings growth in 1999, and the S&P 500 one-year-ahead earnings–price ratio fluctuated around the historically low level of 4 percent even as real interest rates rose. Meanwhile, the Nasdaq composite index's earnings–price ratio (using actual twelve-month trailing earnings) plummeted

Domestic nonfinancial debt: Annual range and actual level



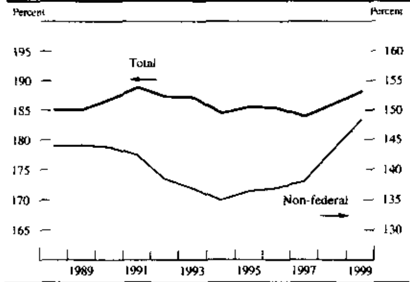
from an already-slim 1¼ percent to ½ percent, suggesting that investors are pricing in expectations of tremendous earnings growth at technology firms relative to historical norms.

Debt and the Monetary Aggregates

Debt and Depository Intermediation

The debt of domestic nonfinancial sectors is estimated to have grown 6½ percent in 1999 on a fourth-quarter-to-fourth-quarter basis, near the upper end of the FOMC's 3 percent to 7 percent range and about a percentage point faster than nominal GDP. As was the case in 1998, robust outlays on consumer durable goods, housing, and business investment, as well as substantial net equity retirements, helped sustain nonfederal sector debt growth at rates above

Domestic nonfinancial debt as a percentage of nominal GDP

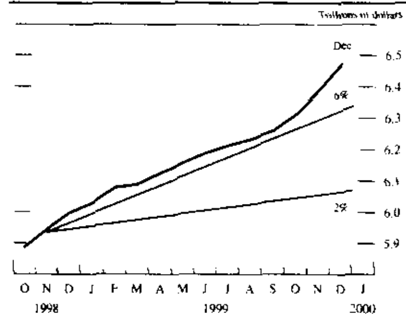


NOTE. The data are annual.

9 percent. Meanwhile, the dramatically increased federal budget surplus allowed the Treasury to reduce its outstanding debt about 2 percent. These movements follow the pattern of recent years whereby increases in the debt of households, businesses, and state and local governments relative to GDP have come close to matching declines in the federal government share, consistent with reduced pressure on available savings from the federal sector facilitating private borrowing.

After increasing for several years, the share of total credit accounted for by depository institutions leveled out in 1999. Growth in credit extended by those institutions edged down to 6½ percent from 6¾ percent in 1998. Adjusted for mark-to-market accounting rules, bank credit growth retreated from 10¼ percent in 1998 to 5½ percent last year, with a considerable portion of the slowdown attributable to an unwinding of the surge in holdings of non-U.S. government securities, business loans, and security loans that had been built up during the market disruptions in the fall of 1998. Real estate loans constituted one of the few categories of bank credit that accelerated in 1999. By contrast, thrift credit swelled 9 percent, up from a 4½ percent gain in 1998, as rising mortgage interest rates led borrowers to opt more frequently for adjustable-rate mortgages, which thrifts tend to keep on their books. The trend toward securitization of consumer loans continued in 1999: Bank originations of consumer loans were up about 5 percent, while holdings ran off at a 1¾ percent pace.

M3: Annual range and actual level



The Monetary Aggregates

Growth of the broad monetary aggregates moderated significantly last year. Nevertheless, as was expected by the FOMC last February and July, both M2 and M3 finished the year above their annual price-stability ranges. M3 rose 7½ percent in 1999, somewhat outside the Committee's range of 2 percent to 6 percent but far below the nearly 11 percent pace of 1998. M3 growth retreated early in 1999, as the surge in depository credit in the final quarter of 1998 unwound and depository institutions curbed their issuance of the managed liabilities included in that aggregate. At that time, the expansion of

4. Growth of money and debt

Percent

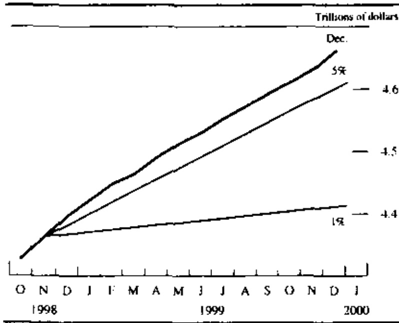
Period	M1	M2	M3	Domestic nonfinancial debt
Annual[1]				
1989	.6	5.2	4.1	7.4
1990	4.2	4.2	1.9	6.7
1991	7.9	3.1	1.1	4.5
1992	14.4	1.8	.6	4.5
1993	10.6	1.4	1.0	4.9
1994	2.5	.6	1.7	4.9
1995	−1.5	3.9	6.1	5.5
1996	−4.5	4.5	6.8	5.4
1997	−1.2	5.6	8.9	5.2
1998	2.2	8.5	10.9	6.7
1999	1.9	6.2	7.5	6.6
Quarterly (annual rate)[2]				
1999:1	1.9	7.5	8.2	6.7
2	2.2	6.0	6.0	6.9
3	−2.0	5.5	5.1	6.0
4	5.3	5.4	10.0	6.2

NOTE. M1 consists of currency, travelers checks, demand deposits, and other checkable deposits. M2 consists of M1 plus savings deposits (including money market deposit accounts), small-denomination time deposits, and balances in retail money market funds. M3 consists of M2 plus large-denomination time deposits, balances in institutional money market funds, RP liabilities (overnight and term), and eurodollars (overnight and term). Debt consists of the outstanding credit market debt of the U.S. government, state and local governments, households and nonprofit organizations, nonfinancial businesses, and farms.

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

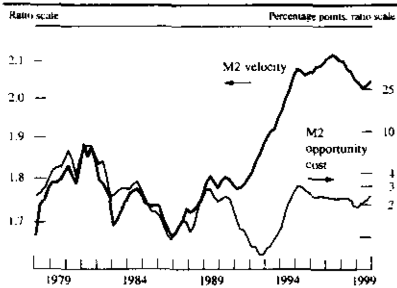
2. From average for preceding quarter to average for quarter indicated.

M2: Annual range and actual level



institution-only money funds also slowed with the ebbing of heightened preferences for liquid assets. However, M3 bulged again in the fourth quarter of 1999, as loan growth picked up and banks funded the increase mainly with large time deposits and other managed liabilities in M3. U.S. branches and agencies of foreign banks stepped up issuance of large certificates of deposit, in part to augment the liquidity of their head offices over the century date change, apparently because it was cheaper to fund in U.S. markets. Domestic banks needed the additional funding because of strong loan growth and a buildup in vault cash for Y2K contingencies. Corporations apparently built up year-end precautionary liquidity in institution-only money funds, which provided a further boost to M3 late

M2 velocity and the opportunity cost of holding M2



NOTE. The data are quarterly and extend through 1999:Q4. The velocity of M2 is the ratio of nominal gross domestic product to the stock of M2. The opportunity cost of M2 is a two-quarter moving average of the difference between the three-month Treasury bill rate and the weighted average return on assets included in M2.

in the year. Early in 2000, these effects began to unwind.

M2 increased 6¼ percent in 1999, somewhat above the FOMC's range of 1 percent to 5 percent. Both the easing of elevated demands for liquid assets that had boosted M2 in the fourth quarter of 1998 and a rise in its opportunity cost (the difference between interest rates on short-term market instruments and the rates available on M2 assets) tended to bring down M2 growth in 1999. That rise in opportunity cost also helped to halt the decline in M2 velocity that had begun in mid-1997, although the 1¾ percent (annual rate) rise in velocity over the second half of 1999 was not enough to offset the drop in the first half of the year. Within M2, currency demand grew briskly over the year as a whole, reflecting booming retail sales and, late in the year, some precautionary buildup for Y2K. Money stock currency grew at an annualized rate of 28 percent in December and then ran off in the weeks after the turn of the year.

In anticipation of a surge in the public's demand for currency, depository institutions vastly expanded their holdings of vault cash, beginning in the fall to avoid potential constraints in the ability of the armored car industry to accommodate large currency shipments late in the year. Depositories' cash drawings reduced their Federal Reserve balances and drained substantial volumes of reserves, and, in mid-December, large precautionary increases in the Treasury's cash balance and in foreign central banks' liquid investments at the Federal Reserve did as well. The magnitude of these flows was largely anticipated by the System, and, to replace the lost reserves, during the fourth quarter the Desk entered into a number of longer-maturity repurchase agreements timed to mature early in 2000. The Desk also executed a large number of short-term repurchase transactions for over the turn of the year, including some in the forward market, to provide sufficient reserves and support market liquidity.

The public's demand for currency through year-end, though appreciable, remained well below the level for which the banking system was prepared, and vault cash at the beginning of January stood about $38 billion above its year-ago level. This excess vault cash, and other century date change effects in money and reserve markets, unwound quickly after the smooth transition into the new year.

International Developments

Global economic conditions improved in 1999 after a year of depressed growth and heightened financial

market instability. Financial markets in developing countries, which had been hit hard by crises in Asia and Russia in recent years, recovered last year. The pace of activity in developing countries increased, with Asian emerging-market economies in particular bouncing back strongly from the output declines of the preceding year. Real growth improved in almost all the major industrial economies as well. This strengthening of activity contributed to a general rise in equity prices and a widespread increase in interest rates. Despite stronger activity and higher prices for oil and other commodities, average foreign inflation was lower in 1999 than in 1998, as output remained below potential in most countries.

Although the general theme in emerging financial markets in 1999 was a return to stability, the year began with heightened tension as a result of a financial crisis in Brazil. With the effects of the August 1998 collapse of the ruble and the default on Russian government debt still reverberating, Brazil was forced to abandon its exchange-rate-based stabilization program in January 1999. The *real*, allowed to float, soon fell nearly 50 percent against the dollar, generating fears of a depreciation–inflation spiral that could return Brazil to its high-inflation past. In addition, there were concerns that the government might default on its domestic-currency and dollar-indexed debt, the latter totaling more than $50 billion. In the event, these fears proved unfounded. The turning point appears to have come in March when a new central bank governor announced that fighting inflation was a top priority and interest rates were substantially raised to support the *real*. Over the remainder of the year, Brazilian financial markets stabilized on balance, despite continuing concerns about the government's ability to reduce the fiscal deficit. Inflation, although accelerating from the previous year, remained under 10 percent. Brazilian economic activity also recovered somewhat in 1999, after declining in 1998, as the return of confidence allowed officials to lower short-term interest rates substantially from their crisis-related peak levels of early in the year.

The Brazilian crisis triggered some renewed financial stress in other Latin American economies, and domestic interest rates and Brady bond yield spreads increased sharply from levels already elevated by the Russian crisis. However, as the situation in Brazil improved, financial conditions in the rest of the region stabilized relatively rapidly. Even so, the combination of elevated risk premiums and diminished access to international credit markets tended to depress activity in much of the region in the first half of 1999. Probably the most strongly affected was Argentina, where the exchange rate peg to the dollar was maintained only at the cost of continued high real interest rates that contributed to the decline in real GDP in 1999. In contrast, real GDP in Mexico rose an estimated 6 percent in 1999, aided by higher oil prices and strong export growth to the United States. The peso appreciated against the dollar for the year as a whole, despite a Mexican inflation rate about 10 percentage points higher than in the United States.

The recovery of activity last year in Asian developing countries was earlier, more widespread, and sharper than in Latin America, just as the downturn had been the previous year. After a steep drop in activity in the immediate wake of the financial crises that hit several Asian emerging-market economies in late 1997, the preconditions for a revival in activity were set by measures initiated to stabilize shaky financial markets and banking sectors, often in conjunction with International Monetary Fund programs that provided financial support. Once financial conditions had been stabilized, monetary policies turned accommodative in 1998, and this stimulus, along with the shift toward fiscal deficits and an ongoing boost to net exports provided by the sharp depreciations of their currencies, laid the foundation for last year's strong revival in activity. Korea's recovery was the most robust, with real GDP estimated to have increased more than 10 percent in 1999 after falling 5 percent the previous year. The government continued to make progress toward needed financial and corporate sector reform. However, significant weaknesses remained, as evidenced by the near collapse of Daewoo, Korea's second largest conglomerate. Other Asian developing countries that experienced financial difficulties in late 1997 (Thailand, Malaysia, Indonesia, and the Philippines) also recorded increases in real GDP in 1999 after declines the previous year. Indonesian financial markets were buffeted severely at times during 1999 by concerns about political instability, but the rupiah ended the year with a modest net appreciation against the dollar. The other former crisis countries also saw their currencies stabilize or slightly appreciate against the dollar. Inflation rates in these countries generally declined, despite the pickup in activity and higher prices for oil and other commodities. Inflation was held down by the elevated, if diminishing, levels of excess capacity and unemployment and by a waning of the inflationary impact of previous exchange rate depreciations.

In China, real growth slowed moderately in 1999. Given China's exchange rate peg to the dollar, the sizable depreciations elsewhere in Asia in 1997 and 1998 led to a sharp appreciation of China's real effective exchange rate, and there was speculation

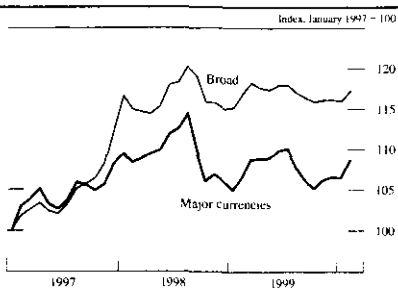
last year that the renminbi might be devalued. However, with China's trade balance continuing in substantial, though reduced, surplus, Chinese officials maintained the exchange rate peg to the dollar last year and stated their intention of extending it through at least this year. After the onset of the Asian financial crisis, continuance of Hong Kong's currency-board-maintained peg to the U.S. dollar was also questioned. In the event, the tie to the dollar was sustained, but only at the cost of high real interest rates, which contributed to a decrease in output in Hong Kong in 1998 and early 1999 and a decline of consumer prices over this period. However, real GDP started to move up again later in the year, reflecting in part the strong revival of activity in the rest of Asia.

In Russia, economic activity increased last year despite persistent and severe structural problems. Real GDP, which had dropped nearly 10 percent in 1998 as a result of the domestic financial crisis, recovered about half the loss last year. Net exports rose strongly, boosted by the lagged effect of the substantial real depreciation of the ruble in late 1998 and by higher oil prices. The inflation rate moderated to about 50 percent, somewhat greater than the depreciation of the ruble over the course of the year.

The dollar's average foreign exchange value, measured on a trade-weighted basis against the currencies of a broad group of important U.S. trading partners, ended 1999 little changed from its level at the beginning of the year. There appeared to be two main, roughly offsetting, pressures on the dollar last year. On the one hand, the continued very strong growth of the U.S. economy relative to foreign economies tended to support the dollar. On the other hand, the further rise in U.S. external deficits—with the U.S. current account deficit moving up toward 4 percent of GDP by the end of the year—may have tended to hold down the dollar because of investor concerns that the associated strong net demand for dollar assets might prove unsustainable. So far this year, the dollar's average exchange value has increased slightly, boosted by new evidence of strong U.S. growth. Against the currencies of the major foreign industrial countries, the dollar's most notable movements in 1999 were a substantial depreciation against the Japanese yen and a significant appreciation relative to the euro.

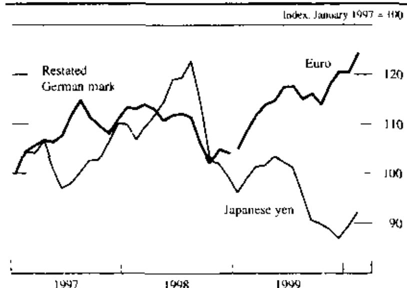
The dollar depreciated 10 percent on balance against the yen over the course of 1999. In the first half of the year, the dollar strengthened slightly relative to the yen, as growth in Japan appeared to remain sluggish and Japanese monetary authorities reduced short-term interest rates to near zero in an effort to jumpstart the economy. However, around mid-year, several signs of a revival of activity—particularly the announcement of unanticipated strong growth in real GDP in the first quarter—triggered a depreciation of the dollar relative to the yen amid reports of large inflows of foreign capital into the Japanese stock market. Data releases showing that the U.S. current account deficit had reached record levels in both the second and third quarters of the year also appeared to be associated with depreciations of the dollar against the yen. Concerned that a stronger yen could harm the fledgling recovery, Japanese monetary authorities intervened heavily to weaken the yen on numerous occasions. So far this year, the dollar has firmed

Nominal dollar exchange rate indexes



NOTE. The data are monthly. Indexes are trade-weighted averages of the exchange value of the dollar against major currencies and against the currencies of a broad group of important U.S. trading partners. Last observations are for the first two weeks of February 2000.

U.S. dollar exchange rate against the Japanese yen and the euro



NOTE. The data are monthly. Restated German mark is the dollar–mark exchange rate rescaled by the official conversion factor between the mark and the euro, 1.95583, through December 1998. Euro exchange rate as of January 1999. Last observations are for the first two weeks of February 2000.

about 7 percent against the yen. Japanese real GDP increased somewhat in 1999, following two consecutive years of decline. Growth was concentrated in the first half of the year, when domestic demand surged, led by fiscal stimulus. Later in the year, domestic demand slumped, as the pace of fiscal expansion flagged. Net exports made virtually no contribution to growth for the year as a whole. Japanese consumer prices declined slightly on balance over the course of the year.

The new European currency, the euro, came into operation at the start of 1999, marking the beginning of stage three of European economic and monetary union. The rates of exchange between the euro and the currencies of the eleven countries adopting the new currency were set at the end of 1998; based on these rates, the value of the euro at its creation was just under $1.17. From a technical perspective, the introduction of the euro went smoothly, and on its first day of trading its value moved higher. However, the euro soon started to weaken against the dollar, influenced by indications that euro-area growth would remain very slow. After approaching parity with the dollar in early July, the euro rebounded, partly on gathering signs of European recovery. However, the currency weakened again in the fall, and in early December it reached parity with the dollar, about where it closed the year. The euro's weakness late in the year was attributed in part to concerns about the pace of market-oriented structural reforms in continental Europe and to a political wrangle over the proposed imposition of a withholding tax on investment income. On balance, the dollar appreciated 16 percent relative to the euro over 1999. So far this year, the dollar has strengthened 2 percent further against the euro. Although the euro's foreign exchange value weakened in its first year of operation, the volume of euro-denominated transactions—particularly the issuance of debt securities—expanded rapidly.

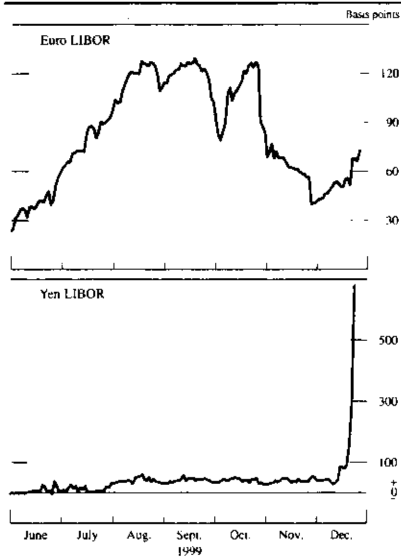
In the eleven European countries that now fix their currencies to the euro, real GDP growth remained weak early in 1999 but strengthened subsequently and averaged an estimated 3 percent rate for the year as a whole. Net exports made a significant positive contribution to growth, supported by a revival of demand in Asia and Eastern Europe and by the effects of the euro's depreciation. The areawide unemployment rate declined, albeit to a still-high rate of nearly 10 percent. In the spring, the European central bank lowered its policy rate 50 basis points, to 2½ percent. This decline was reversed later in the year in reaction to accumulating evidence of a pickup in activity, and the rate was raised an additional 25 basis points earlier this month. The euro-area inflation rate edged up in 1999, boosted by higher oil prices, but still remained below the 2 percent target ceiling.

Growth in the United Kingdom also moved higher on balance in 1999, with growth picking up over the course of the year. Along with the strengthening of global demand, the recovery was stimulated by a series of official interest rate reductions, totaling 250 basis points, undertaken by the Bank of England over the last half of 1998 and the first half of 1999. Later in 1999 and early this year, the policy rate was raised four times for a total of 100 basis points, with officials citing the need to keep inflation below its 2½ percent target level in light of the strength of consumption and the housing market and continuing tight conditions in the labor market. On balance, the dollar appreciated slightly against the pound over the course of 1999.

In Canada, real growth recovered in 1999 after slumping the previous year in response to the global slowdown and the related drop in the prices of Canadian commodity exports. Last year, strong demand from the United States spurred Canadian exports while rising consumer and business confidence supported domestic demand. In the spring, the Bank of Canada lowered its official interest rate twice for a total of 50 basis points in an effort to stimulate activity in the context of a rising Canadian dollar. This decline was reversed by 25-basis-point increases near the end of the year and earlier this month, as Canadian inflation moved above the midpoint of its target range, the pace of output growth increased, and U.S. interest rates moved higher. Over the course of 1999, the U.S. dollar depreciated 6 percent on balance against the Canadian dollar.

Concerns about liquidity and credit risk related to the century date change generated a temporary bulge in year-end premiums in money market rates in the second half of the year in some countries. For the euro, borrowing costs for short-term interbank funding over the year changeover—as measured by the interest rate implied by the forward market for a one-month loan spanning the year-end relative to the rates for neighboring months—started to rise in late summer but then reversed nearly all of this increase in late October and early November before moving up more moderately in December. The sharp October-November decline in the year-changeover funding premium came in response to a series of announcements by major central banks that outlined and clarified the measures these institutions were prepared to undertake to alleviate potential liquidity problems related to the century date change. For yen

Forward premium for deposits over year-end

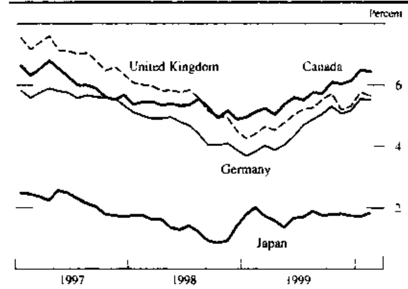


NOTE. The data are daily. Year-end premium measured by the interest rate on a one-month instrument spanning the year-end relative to the rates for neighboring months. Last observation is for December 29, 1999.

funding, the century date change premium moved in a different pattern, fluctuating around a relatively low level before spiking sharply for several days just before the year-end. The late-December jump in the yen funding premium was partly in response to date change-related illiquidity in the Japanese government bond repo market that emerged in early December and persisted into early January. To counter these conditions, toward the end of the year the Bank of Japan infused huge amounts of liquidity into its domestic banking system, which soon brought short-term yen funding costs back down to near zero.

Bond yields in the major foreign industrial countries generally moved higher on balance in 1999. Long-term interest rates were boosted by mounting evidence that economic recovery was taking hold abroad and by rising expectations of monetary tightening in the United States and, later, in other industrial countries. Over the course of the year, long-term interest rates increased on balance by more than 100 basis points in nearly all the major industrial countries. The notable exception was Japan, where long-term rates were little changed.

Foreign ten-year interest rates

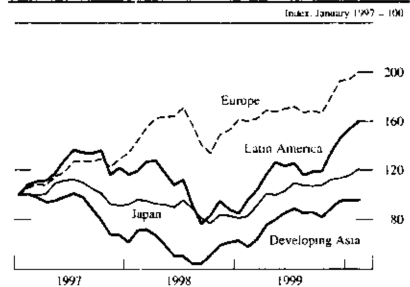


NOTE. The data are monthly. Last observation is for the first two weeks of February 2000.

Equity prices showed strong and widespread increases in 1999, as the pace of global activity quickened and the threat from emerging-market financial crises appeared to recede. In the industrial countries equity prices on average rose sharply, extending the general upward trend of recent years. The average percentage increase of equity prices in developing countries was even larger, as prices recovered from their crisis-related declines of the previous year. The fact that emerging Latin American and Asian equity markets outperformed those in industrial countries lends some support to the view that global investors increased their risk tolerance, especially during the last months of the year.

Oil prices increased dramatically during 1999, fully reversing the declines in the previous two years. The average spot price for West Texas intermediate, the

Foreign equity indexes



NOTE. The data are monthly. Last observation is for the first two weeks of February 2000.

U.S. benchmark crude, more than doubled, from around $12 per barrel at the beginning of the year to more than $26 per barrel in December. This rebound in oil prices was driven by a combination of strengthening world demand and constrained world supply. The strong U.S. economy, combined with a recovery of economic activity abroad and a somewhat more normal weather pattern, led to a 2 percent increase in world oil consumption. Oil production, on the other hand, declined 2 percent, primarily because of reduced supplies from OPEC and other key producers. Starting last spring, OPEC consistently held production near targeted levels, in marked contrast to the widespread lack of compliance that characterized earlier agreements. So far this year, oil prices have risen further on speculation over a possible extension of current OPEC production targets and the onset of unexpectedly cold weather in key consuming regions.

The price of gold fluctuated substantially in 1999. The price declined to near a twenty-year low of about $250 per ounce at mid-year as several central banks, including the Bank of England and the Swiss National Bank, announced plans to sell a sizable portion of their reserves. The September announcement that fifteen European central banks, including the two just mentioned, would limit their aggregate sales of bullion and curtail leasing activities, saw the price of gold briefly rise above $320 per ounce before turning down later in the year. Recently, the price has moved back up, to above $300 per ounce.