

## Greenspan at the Helm

Revised: July 3, 2007

February 1-2, 2000. As President of the Federal Reserve Bank of New York, you are a voting member of the Federal Open Market Committee, the body that makes decisions about US monetary policy. As you enter the new millennium, the dot-com boom continues, with employment and stock prices at all-time highs. Is this unalloyed good news, or are there signs of trouble lurking in the data? You carefully weigh the evidence, working your way through a series of questions:

- Economic growth and inflation. What does the evidence suggest about economic growth? About inflation?
- Interpretation. Does the evidence point to a shift in aggregate supply or demand? How might you distinguish the two? Why does it make a difference?
- Areas of concern. Are there any sources of immediate concern? Unusual circumstances that demand further thought?
- Policy. On the whole, do you think Greenspan's proposal for a 25 bp increase in the fed funds target is appropriate? If not, what change would you recommend?

The attached material was adapted by Giulio Recchia (MBA 07) from minutes posted by the Federal Reserve Board at:

<http://www.federalreserve.gov/FOMC/>

**Minutes of the Federal Open Market Committee  
February 1-2, 2000**

CHAIRMAN GREENSPAN. Happy New Year everybody! Happy Millennium!  
MS. MINEHAN (President of the Boston Fed). Happy post-Y2K!

*[After renomination of Alan Greenspan as Fed Chairman and William McDonough as Vice-Chairman, the FOMC moved to its regular agenda. The first intervention was made by Peter Fisher, from open market operation desk.]*

MR. FISHER: [...] You can see in the bottom panel [of Chart 1] how quickly the 10- and 30-year spread began to invert after the January 13th announcement. The drama came last Friday with the release of the GDP data. Prior to that date, there really had been two contending camps in the market. One saw the inversion of the yield curve as a temporary phenomenon, expecting the curve to steepen again once this Committee began to tighten over the course of the first quarter. They were thus taking short positions in the long end. A different camp expected the inversion of the yield curve to continue. They expected it to flatten when this Committee began its widely expected tightening. They anticipated a reduction in Treasury supply at the long end but an increasing agency and corporate supply in the short end. And it was also their sense that a late cycle firming by the central bank should slow activity and foster a rally in the bond market. Thus, they took long positions in the long end of the bond market. Last Friday, the initial reaction seemed to favor the first camp as the yield curve backed up, and some in that camp seem to have been tempted to double up their positions. But then the yield curve began to go down rather quickly again, and they were caught scrambling to cover their shorts, which caused a fair bit of see-sawing in the yield curve all day on Friday. [...]

MR. PRELL (Manager, open market operations): [...] The tightness of the labor market and other factors suggest that inflation will generally be tending to move higher, but we're projecting that the price of crude oil will decline and damp the rise in overall consumer inflation this year and next. As you can see [...] (see Chart 2) we have PCE prices rising 2 percent, the same as in 1999, while the CPI rise slows a bit from last year's pace. [...] With that overview, let's turn to the guts of the forecast. [Chart 3] explores the financial backdrop. The top left panel shows the P/E for the S&P 500, but with the index broken into two components: the top 50 by market cap in each period, and the remaining 450. This may be a dubious analytical device in some respects; however, it does illustrate that, while investors' craving for big-cap growth stocks – especially “tech” stocks – has lifted the favored few to very high P/Es, even the rest of the index has enjoyed a considerable valuation boost. The result is that, at this aggregative level, nothing looks especially cheap by historical standards – even when the P/Es are measured, as they are here, in terms of the rosy earnings forecasts of security analysts. We don't have the earnings forecasts for the full set of NASDAQ stocks, but I'm confident that, if we did, the P/E rise for them would be only a little less startling than that shown on the basis of trailing 12-month earnings in the right panel. [...]

The most important element of restraint, as we see it, is the loss of impetus to consumer spending from the stock market. As shown in the top left panel of [Chart 4], consumer sentiment according to the Michigan index has been trending upward since 1994. This has been a period of strong growth in employment and income, and people have become increasingly confident that the good times will continue to roll. The stock market has both reflected and reinforced that sentiment. But, as indicated at the right, our flat stock market path implies that the household wealth income ratio will be falling. The wealth effect on consumption will gradually move from positive to negative, and as may be seen at the middle left, this (along with the dynamics of the accelerator effect for durables) is expected to push consumption growth below that of disposable income by 2001. Soaring consumer confidence and wealth also have played a role in the housing market. As you can see at the right, perceptions of home-buying conditions, as reported in the Michigan survey, have deteriorated as mortgage rates have risen since the end of 1998. [...]

[Chart 5] examines the outlook for business investment. We're projecting that real spending on equipment and software will continue growing rapidly, while the decline in outlays for nonresidential structures seems likely to bottom out at some point in the next two years. [...]

Turning to the final segment of domestic demand, [Chart 6] offers some perspectives on the outlook for the government sector. For the federal government, the question is whether any of the ex ante on-budget surplus will survive. As you can see from the lower black line in the upper left panel, we have the on-budget surplus rising to nearly \$50 billion in fiscal 2001. Our assumption – depicted at the upper right – is that discretionary spending will be held at the higher real level reached in the current fiscal year. In part, we made this assumption on the thought that Congress and the Administration would be constrained by less optimistic official surplus projections, such as that of the CBO shown at the left as the red line. But the risk is that, before a deal has been inked, the budget outlook will shift in our direction and there will be an irresistible temptation to add more spending or cut taxes. If so, the fiscal impetus, which we see as essentially zero next year on our assumption, will turn out to be positive, continuing the pattern of 1999 and 2000. [...]

MS. JOHNSON (staff economist): Economic activity in the rest of the world continues to expand, and prospects for this year and next are favorable for most regions. Moderate to vigorous real output growth around the globe poses risks that inflationary pressures could emerge in world commodity markets, and eventually product markets more generally, and that we could be underestimating the upward momentum generated by the interaction of simultaneous expansion. A possible offset to these risks is the extent to which other countries, particularly other industrial countries, may be beginning to experience the kind of acceleration of productivity that we have seen in the past few years in the United States. As yet, the data provide no compelling evidence that this is happening. [...]

Taken together, the financial variables [...] suggest a favorable climate for real economic activity around the globe. High and rising stock prices suggest significant optimism toward earnings by firms as well as a declining cost of capital for equity financing of new

investment. Consumption is likely to be buoyed by the increased wealth implied by the high stock valuations. Short-term interest rates and risk spreads are generally falling in those regions most troubled during the crisis years of 1997 and 1998. Investors appear to have regained some confidence in opportunities in those countries, and the price of risk has moderated. Of course, investor optimism about earnings in one or more regions might prove to be excessive, and equity risk could be underpriced. [...]

One place to look for a signal of global price pressures is in the futures markets for traded commodities, such as agricultural products and metals. The top left panel [of Chart 6] shows soybean prices and the futures quotes at the time of your last chart show and last Friday. Although global demand has recovered significantly since mid-1999, actual and futures prices for soybeans have only partially recovered from recent declines. There is some variance in how futures prices have moved for other grains, but for the most part supply conditions have kept prices for these commodities from moving rapidly. In contrast, copper prices, shown on the right, are now substantially higher than six months or one year ago. Other metals and related commodities show similar increases. Futures prices going forward continue to show a much slower rate of increase, however, than that recorded last year. In light of these market developments, we are projecting that our index of non-oil commodity prices, shown in the middle left, which rebounded sharply at the end of 1999, will rise at about an annual rate of 4 percent this year and a bit less next year. This contrasts with the commodity price deflation that occurred from mid-1997 to mid-1999. Spot oil prices, shown on the right, spiked up in 1999 as world demand recovered and as oil producers were successful in restraining supply. As explained [earlier], we anticipate that some extension of the current agreement among OPEC and other producers will be put in place at the end of March, but that over time additional increases in supply will emerge, putting downward pressure on prices. We project that the U.S. oil import price will move back down to about \$17 per barrel by the end of next year. [...]

*[After a discussion of the economic outlook, regional bank presidents reported on economic conditions in their regions. Finally the Chairman, Alan Greenspan, presented his proposal for a 25bp interest rate increase in the fed funds rate.]*

CHAIRMAN GREENSPAN. Any further questions? If not let me get started. I believe we are entering a period of considerable turbulence in financial markets. Its characteristics are what one would expect, though we may never have experienced them, from being on the upward slope of a general acceleration in technological applications and accelerating output per hour. This is the old "S" curve scenario [of technology adoption], which we have looked at theoretically but have never observed in the past. The current economy has all the S-curve characteristics, and I am not looking only at the macro data. We can see it in companies; we can see it in the multiple applications of a lot of new technologies. Something very different is happening in the way this economy is functioning. It differs from any economy that I have observed in the past, and I have been looking at our economy every day professionally since the summer of 1948. There has been nothing like this in my experience. It is just dramatically different. [...]

Leaving aside the measures that we have for productivity, all we have to ask ourselves is how we can reconcile the behavior of profit margins from domestic business operations in recent years with the price patterns we have seen. Algebraically, what we get from the income side is the same acceleration in profit margins as in productivity. I see no evidence at the moment that the acceleration in productivity has stopped. The second derivative for the latest data is still positive. And I am not aware of any evidence that the expansion is slowing down. The general notion of a significant deceleration in the first quarter is an interesting forecast, but we are one-third into the quarter at this point and I don't know what evidence supports a slower growth forecast. Certainly, initial claims [for unemployment insurance] are down significantly. Orders are quite strong. Retail markets are quite strong. And, indeed, if we were getting some slowing in GDP growth measured either from the income side or the product side, one would presume that it would be evidence of slowing growth in productivity. Alternatively, until the evidence changes I think the most reasonable view is that productivity probably is still accelerating. Indeed, if we examine the earnings estimates of security analysts, including those who look at the earnings outlook company-by-company, the overall estimates through January are still rising in the sense that forecasts of long-term earnings per share are still going up rapidly. [...]

We are not accustomed to seeing motor vehicle sales at these levels, housing starts so high at these interest rates, or business activity so robust in virtually every part of the economy while inflation has not moved an iota. Indeed, total unit costs in the four quarters just ending are about as low as we have seen them in this cycle. Unit labor costs have barely moved.

The rise in inflation in the fourth quarter shows up wholly in profit margins. Actual unit costs, granted the rough nature of the data, apparently declined in the fourth quarter. This is not an inflationary price environment or an inflationary cost environment. If we look at inflation expectations, the best measure that we have in my view is one derived by subtracting the yield on an inflation-protected 10-year Treasury security from a so-called synthetic 10-year nominal rate to get the best estimate of expected 10-year CPI inflation. That number is barely different today than it was in December 1997. The implicit inflation expectation in that calculation declined with the Asian crisis. It had recovered by the spring of last year and has been absolutely flat since then. To be sure, the actual nominal 10-year rate has gone up compared with the real 10-year rate. But that is merely a reflection of the fact that the adjustment for “on-the-run” and “off-the-run” rates, appropriately made, has raised the nominal rate by about 1/2 percentage point since November of last year. [...] It seems to me that what we have here is an acceleration of a process that would not create a problem were it not for the wealth effect. The problem, as we have discussed in the past, is that while potential supply increases *pari passu* with the rise in trend productivity, which I believe is still accelerating, it has a more pronounced effect on demand. Obviously, rising productivity creates higher real incomes from which expenditures can be made. But, leaving aside the issue of whether or not the stock market is appropriately priced, rising productivity also creates a rational upward adjustment in long-term earnings expectations which, all else equal, will result in an increase in the value of stock market assets. Unless there is no wealth effect, and there

are some who argue that case though, frankly, I think the evidence is overwhelming in the other direction, there will be an increase in purchasing power over and above the increase in supply. That has been the case in recent years. The resulting excess demand basically has been met by an increase in our net trade deficit and by drawing on new sources of labor. The latter have been found by draining the pool of the currently unemployed, through increases in the participation rate, and through immigration. Both increasing net imports and drawing in new workers obviously are safety valves that can for a time fill the gap created by excess demand; but they cannot be drawn upon indefinitely for reasons we have discussed previously. The high rates of return that are driving our technological boom are also attracting dollars from abroad – or I should say increasing claims against the United States – and that has held the dollar essentially unchanged. That process can go on for a while, but the question is how long. [...]

But ultimately, if we do not solve the problem of the gap, meaning that if the acceleration in productivity leads to continued expectations of accelerating earnings per share, the only way to eliminate the wealth effect, which has to be eliminated, is for the discount rate – the market interest rate used by investors to calculate the present value of expected earnings – to rise. I think that is in the process of occurring. [...]

In short, what the markets basically are saying, right or wrong, is that long-term rates are going to rise eventually to close the gap. They may also be arguing that the current rates are the right rates. I personally do not believe that, but that is what one has to assume is the prevailing opinion in these markets. The question that confronts us here is what we should do in the context of this phenomenon. If the rate used by investors to discount future earnings has to rise as a necessary condition for stability, the question is how we can facilitate that rise. [...] At this point I don't know whether we eventually will need an increase of 50 basis points, 75 basis points, 100 basis points, or 125 basis points. My guess is that the increase is likely to be toward the upper end of that range. [...] What is the argument against 50 basis points today? I would say the argument is basically twofold. One is that, as a general rule in an environment like this, the last tightening move that we make is going to be a mistake. We will not know that at that time, but it is almost invariably a mistake. If we tighten in small incremental doses, the size of a mistake is smaller by definition. Secondly and far more importantly, I think that our latest evaluation of the equity premium in the stock market is that it is downright scary! I haven't seen anything like this before. In fact, if we use the inflated earnings expectations of the security analysts and the P/E ratios that we have now, we get an extremely impressive equity premium. Back in 1987, you will recall, long-term rates were going up as the stock market went up, and the market just ran out of steam. We are in a far worse situation now than we were then. I am concerned that, if we are too aggressive in this process of tightening, we could crack the market and end up with a very severe problem of instability. I don't know how far we will have to go. Indeed, I don't know how long we can continue tightening by 25 basis points. As a sort of working hypothesis, I would argue that we should think in terms of moving at every meeting and that we move by 25 basis point increments. We would continue on that course unless and until it appears that we are getting behind the curve on inflation or inflation expectations, in which case we would raise the size of the adjustment. On the other hand, we could

continue to implement our strategy if we began to see the wealth effect stabilizing and/or the gap between supply and demand beginning to close. Unless and until that happens, we will remain in a very unusual period that we have never experienced before. What I am arguing is not something that is coming out of a particular simulation. All that is needed for my argument to be valid, as best I can judge, is that there is a wealth effect, that the market is at extremely high valuation levels, and that we have to take action to close the supply-demand gap. I would propose, therefore, that we move the funds rate up by 25 basis points today and that we include in our press release the equivalent of what we used to call asymmetry [...].

*[After Greenspan's speech, each Governor expressed his/her opinion of the proposal. A few proposed a rate increase of 50 bp.]*

MR. POOLE (President of the St Louis Fed): I think a move of 25 basis points and a statement that the balance of risks is toward inflation is exactly the right way to go. The market is our friend. The market, after all, has anticipated this move. We saw interest rates rise. This federal funds futures prediction has been in the market for four weeks or more, and we should not do anything that leaves the market wondering what we are up to. [...]

CHAIRMAN GREENSPAN. The Board has voted to approve a quarter-point increase in the discount rate to a level of 5 percent. The floor is open for comments or suggestions on the draft press release circulated to you.

VICE CHAIRMAN MCDONOUGH. Perfect!

SEVERAL. Perfect!

MR. BOEHNE. Absolutely perfect, Mr. Chairman.

CHAIRMAN GREENSPAN. Including the run-on sentence? [Laughter]

MR. FERGUSON. It couldn't run on any better!

CHAIRMAN GREENSPAN. If there are no comments, then this press statement will be released on schedule. Our next meeting is March 21, as President Parry mentioned earlier. It's 8 minutes and 10 seconds to noon. What's the status of lunch?

Chart 1

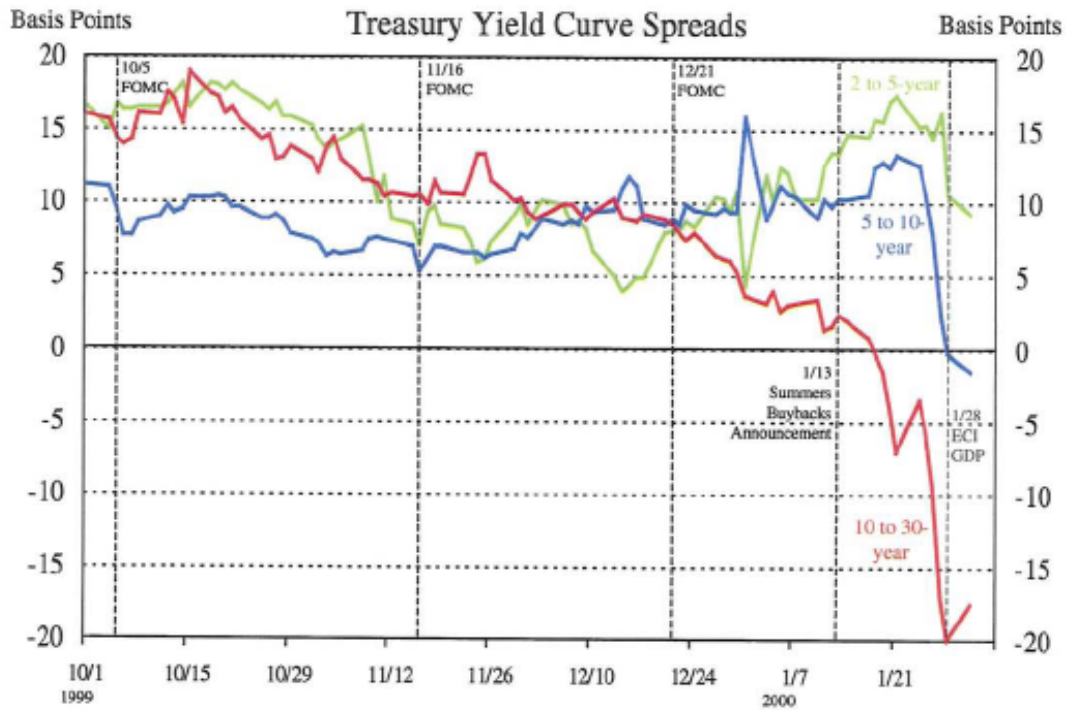


Chart 2

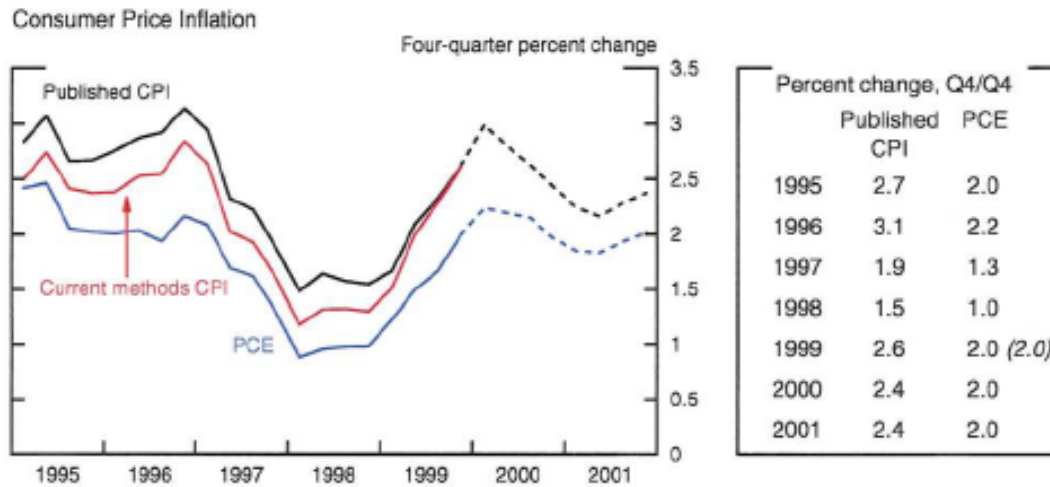




Chart 3

### Financial Conditions

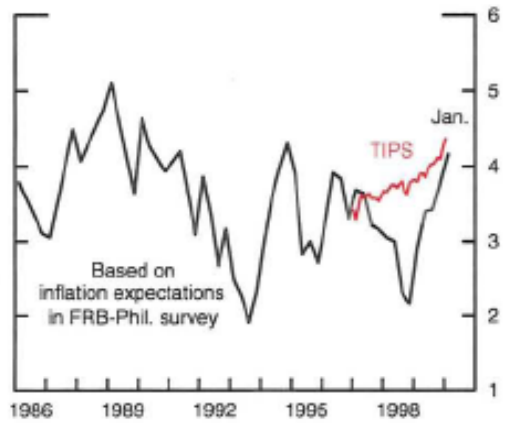
S&P 500 P/E



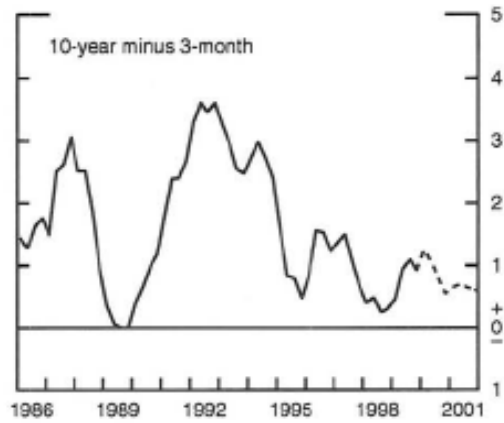
NASDAQ P/E



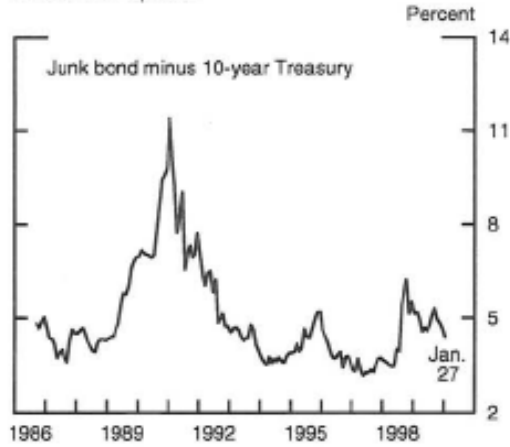
Real Ten-Year Treasury Yields



Treasury Term Structure Slope



Junk Bond Spread



Bank Business Lending Standards

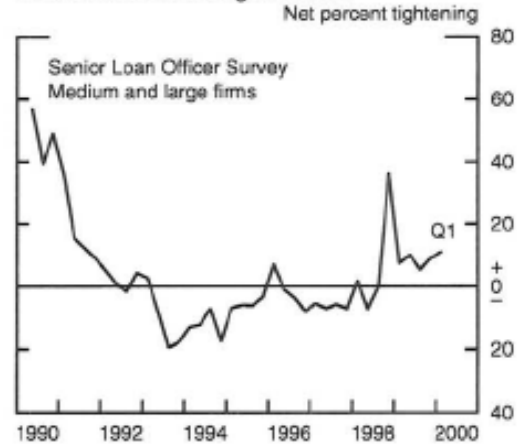
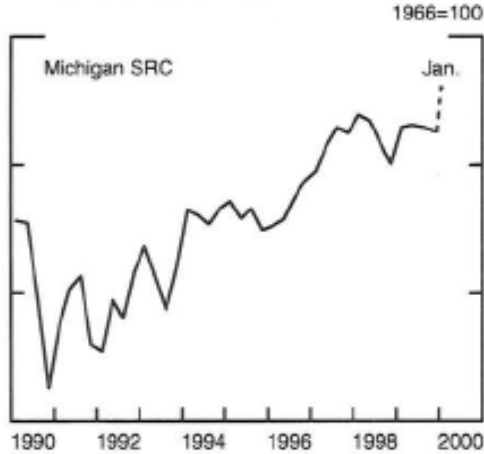


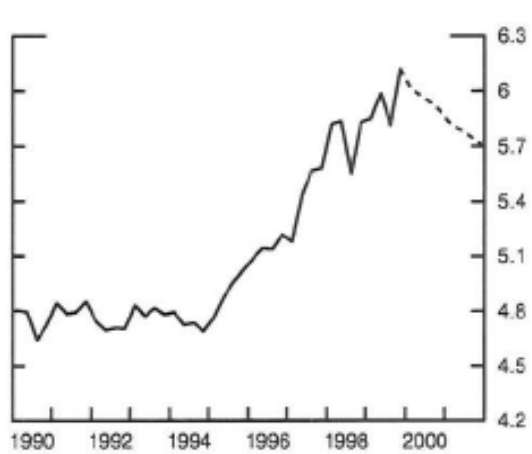
Chart 4

## Household Spending

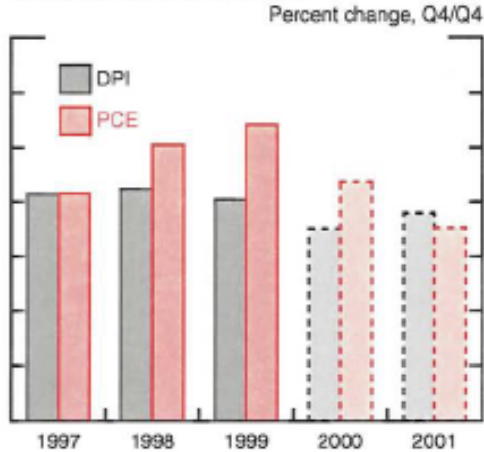
Consumer Sentiment Index



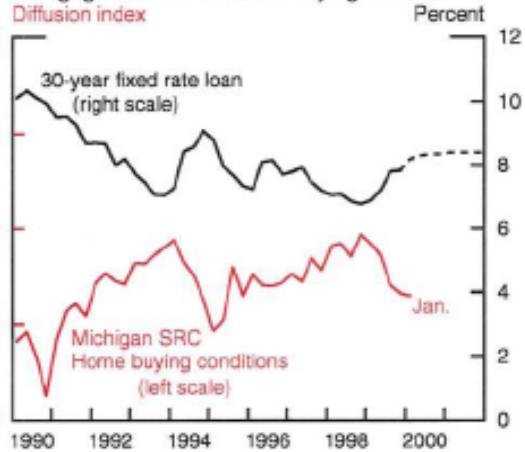
Household Wealth-to-Income Ratio



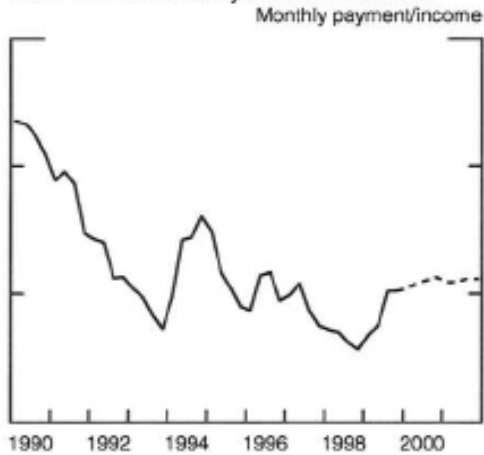
Growth of Real PCE and DPI



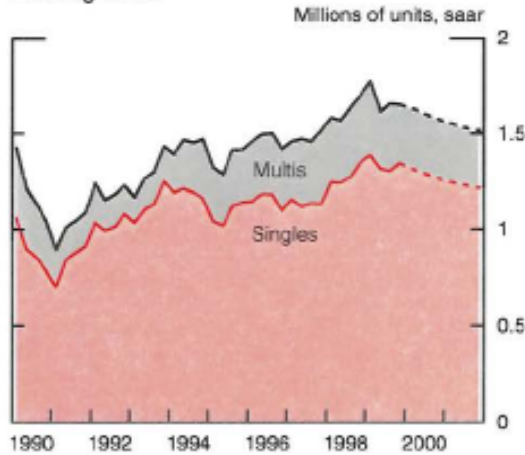
Mortgage Rates and Home Buying Conditions



Cash Flow Affordability of Home Purchase\*



Housing Starts

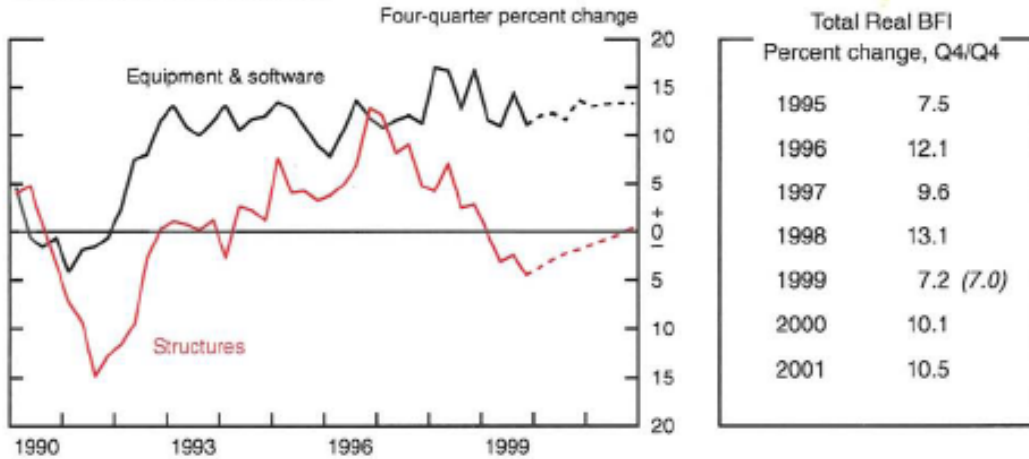


\* Based on new home, 30-year FRM.

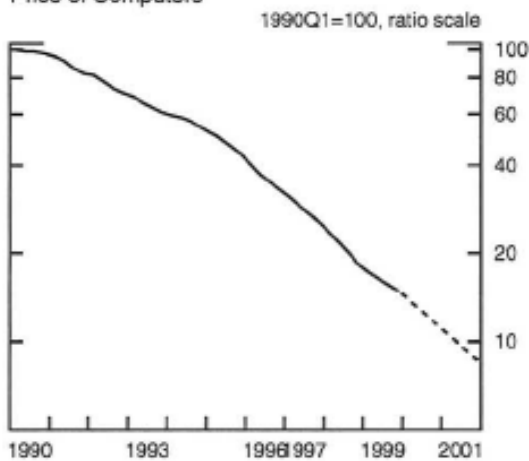
Chart 5

## Business Spending

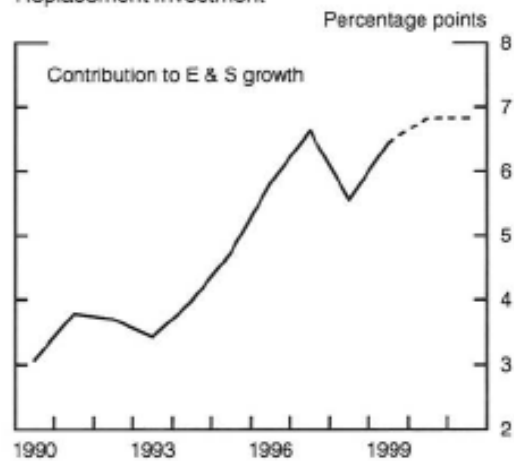
Real Business Fixed Investment



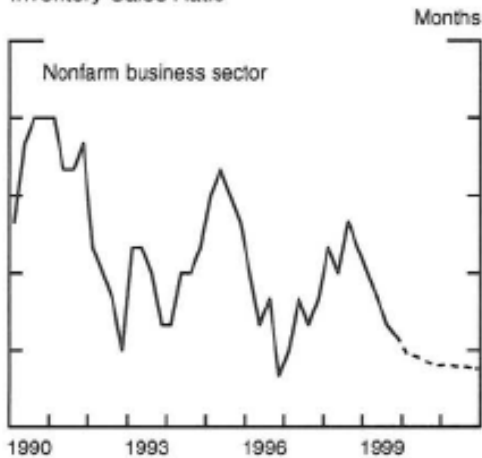
Price of Computers



Replacement Investment



Inventory-Sales Ratio



Growth of Nonfarm Inventories

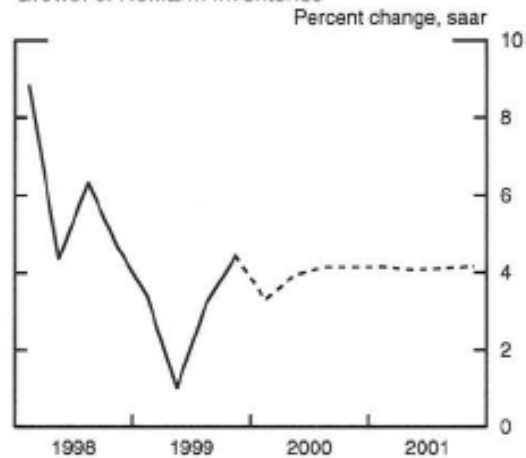
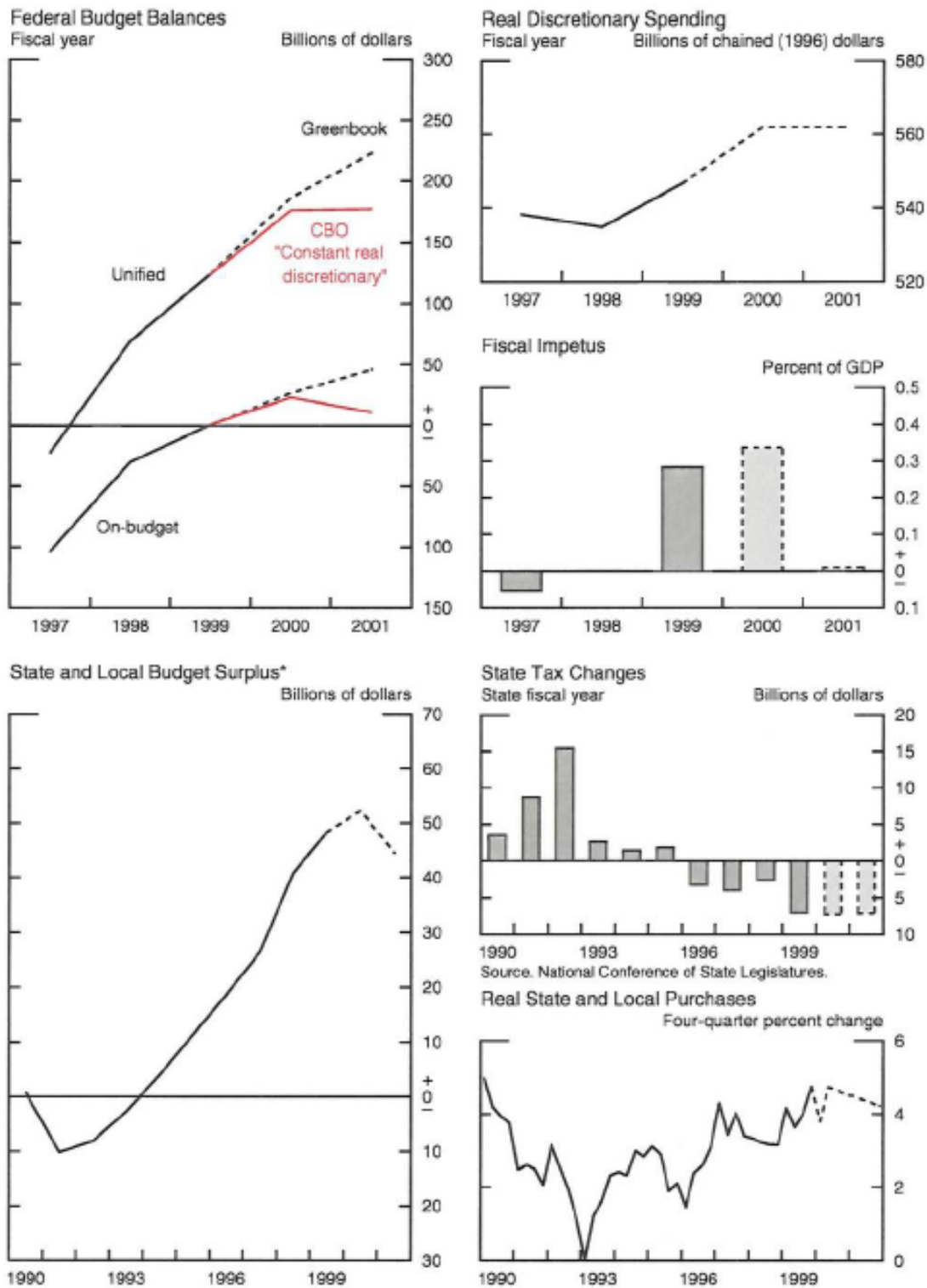


Chart 6

## Government Sector



\* Excludes social insurance funds.

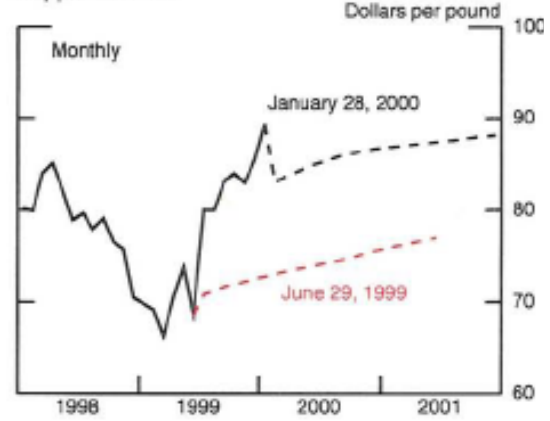
Chart 7

## Global Prices

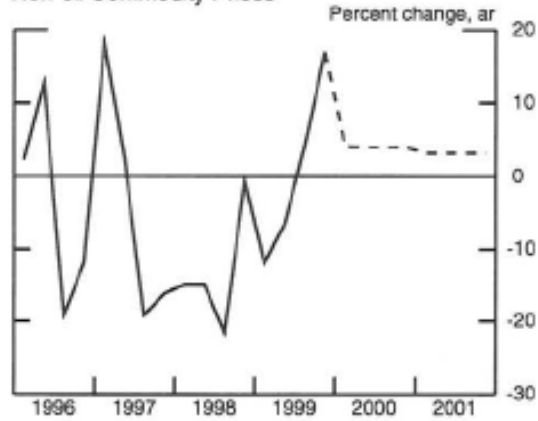
Soybeans Futures



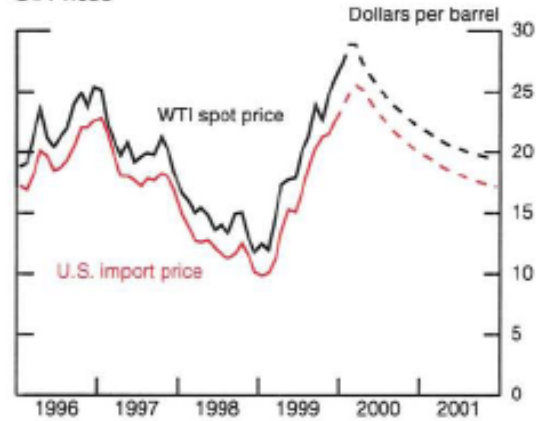
Copper Futures



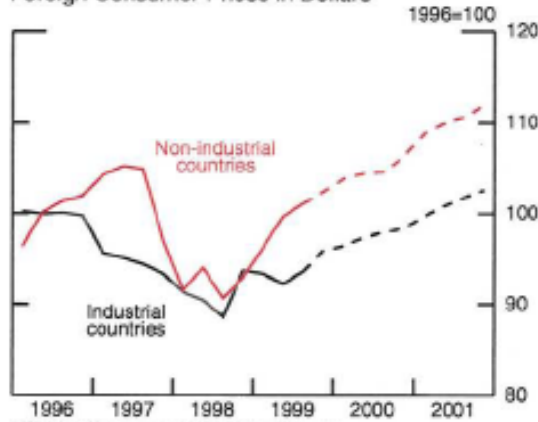
Non-oil Commodity Prices



Oil Prices



Foreign Consumer Prices in Dollars\*



\* Weighted by shares of U.S. bilateral imports.

Core Import Prices

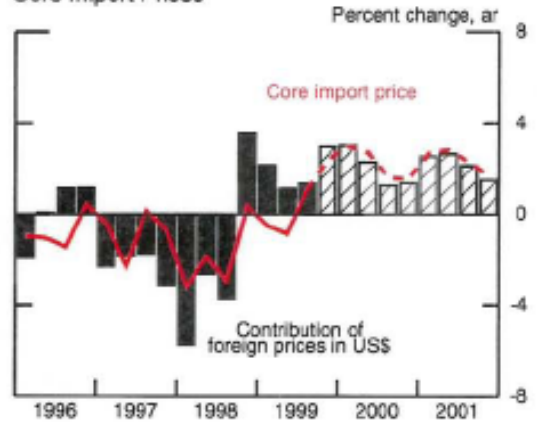


Chart 8

