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#26

WEEKLY ECONOMIC ANALYSIS

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GREENSPAN'S STOCK VALUATION MODEL

Irrational Exuberance At The Fed. On September 5, in a speech about monetary policy at Stanford University, Fed Chairman Alan Greenspan never mentioned his infamous phrase "irrational exuberance." But he did say that the Fed must make a choice between targeting asset prices (i.e., stock prices) or prices of goods and services (e.g., the CPI), unless they are both moving together. "We have chosen product prices as our primary focus on the grounds that stability in the average level of these prices is likely to be consistent with financial stability as well as maximum sustainable growth."

In other words, the Fed won't tighten credit conditions even if stock investors are irrationally exuberant as long as inflation remains stable! When Mr. Greenspan first

made his "irrational exuberance" comments on December 5, 1996, investors concluded that he believed that the market was overvalued and that the Fed might raise interest rates if stock prices rose even further ahead of the fundamentals.

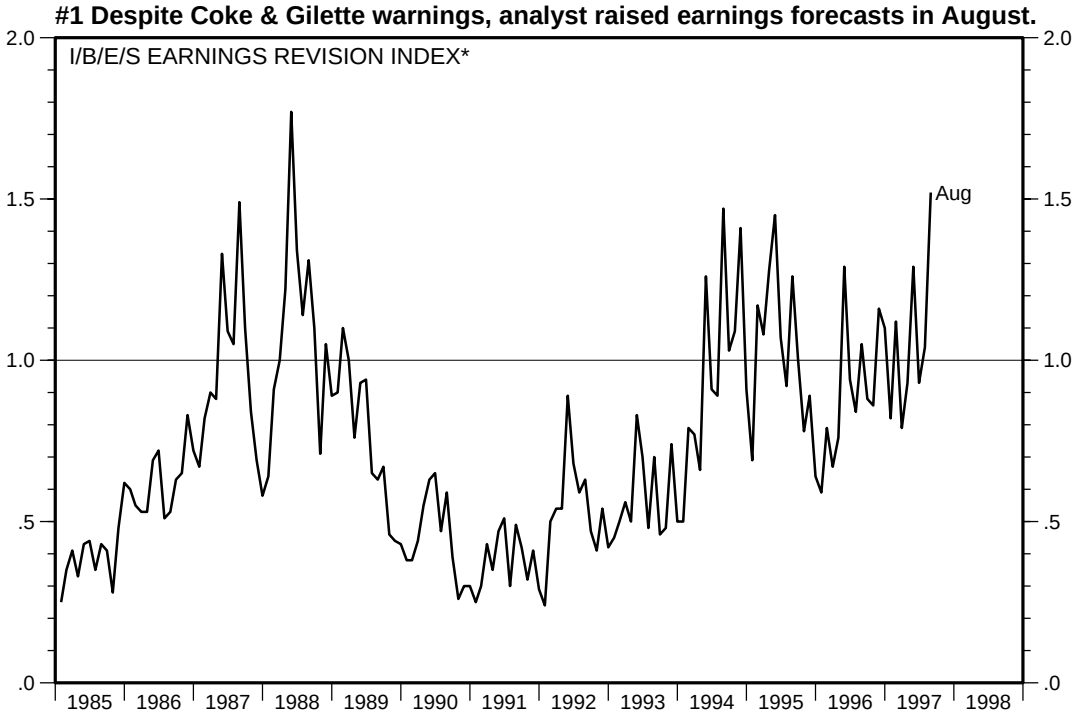
In his Stanford University speech, the Fed Chairman noted:

> And the equity market itself has been the subject of analysis as we attempt to assess the implications for financial and economic stability of the extraordinary rise in equity prices—a rise based apparently on continuing upward revisions in estimates of our corporations' already robust long-term earning prospects.

This confirms my view that the Fed staff was assigned the task of choosing a stock valuation model earlier this year. The Fed's July 22, 1997 Monetary Policy Report to the Congress briefly hinted that such a model exists. From the few DNA samples provided in this report, I cloned the entire model in my Topical Study #38, "Fed's Stock Market Model Finds Overvaluation," dated August 25, 1997. (I now track the model as a regularly updated feature on my web site, http://www.yardeni.com.)

Do Upward Earnings Revisions Reduce Overvaluation Problem? The Fed's model simply divides 12-month forward consensus earnings by the 10-year bond yield. It uses a "bottoms-up" average of Wall Street analysts' earnings forecasts for the S&P 500 companies compiled monthly by I/B/E/S International. Ironically, the model shows that the market was fairly valued last December when the Fed Chairman worried out loud about irrational exuberance. Now that he seems less worried, the market is 20% overvalued according to the Fed staff's model! However, in the portion of his speech quoted above, Mr. Greenspan seems to be adding two more variables to the model to eliminate the overvaluation problem, namely, upward earnings revisions and strong earnings growth projections.

The nice thing about models is that you can always add whatever variables you want until you get the conclusion you like. I'm not convinced that either earnings revisions or earnings growth need to be added to the simple two-variable version of the stock valuation model. Expected earnings growth has been hovering between 10% and15% since 1993. I/B/E/S International also compiles a monthly ratio of the number of analysts raising their earnings estimates divided by the number lowering them. Earnings revisions tend to correlate with earnings growth. The earnings revision index can be quite volatile. It averaged 0.98 during the first half of the year. It rose to 1.04 in July and 1.52 in August, the highest reading since May 1988 (Exhibit 1 on page 3 and Exhibits 2 and 3). The sharp increase in the earnings revisions index in August is very impressive, considering that Coke and Gillette both warned analysts to lower their expectations in early August. It is also impressive to see upward revisions when industrial prices remain so moderate (Exhibits 4 and 5). This recent dramatic increase in the revisions index suggests that perhaps the stock market isn't as overvalued as shown by the two-variable valuation model. It may not be 20% overvalued. But it isn't undervalued or even fairly valued, in my opinion. Let's compromise on 10% overvalued.



* Number of analysts' estimates raised divided by number lowered for S&P 500 composite.

Rooting For A Pause. This isn't a serious overvaluation problem. The market is already fixing the problem, with a correction in the blue chip stocks while small-cap and medium-cap stocks continue to rally. I'm rooting for a pause in the bull market. The S&P 500 index is up 40% over the past 52 weeks, the best such gain since 1983 (Exhibit 6). In other words, investors believe that Corporate America is worth 40% more than they thought a year ago! The S&P 500 is up 66% and 100% over the past two and three years, respectively (Exhibit 7). Let's give it a rest.

GREENSPAN'S NEW ERA MODEL

"Nonsense." The latest issue of *Business Week* includes a very interesting commentary by one of the magazine's senior editors, Seymour Zucker, about the Fed's annual conference in Jackson Hole, Wyoming, August 28-30. It included several very bullish direct and indirect quotes particularly from the Fed Chairman himself, Alan Greenspan, as well as Vice-Chairman Alice Rivlin.

Most significant, Mr. Greenspan said in an interview, "The nonfarm productivity data are nonsense." According to Mr. Zucker, the Fed Chairman believes that the government statisticians have failed to measure productivity gains in the service sector. I totally agree. I have been arguing that all the following statistics strongly support the notion that nonfarm productivity must be growing much faster than measured:

1) the more accurate manufacturing productivity numbers,
2) S&P 500 real sales per employee,
3) real manufacturing and trade sales per employee,
4) real per capita personal income, and
5) real wages.

Of course, the best evidence that productivity is growing much faster than measured is the fact that inflation continues to fall (Exhibits 8 and 9). On September 5 at Stanford University, Mr. Greenspan reiterated his view that the productivity numbers are nonsense. He observed that only better-than-measured productivity growth can explain the coexistence of stable or falling inflation with rising profit margins and rising hourly compensation growth. He also noted that excluding corporate business productivity—which is "reasonably accurate"—from total productivity results in a measure of the level of noncorporate productivity which "has been falling continuously since 1973 despite reasonable earnings margins for proprietorships and partnerships" (Exhibit 10). He added, "Presumably this reflects the significant upward bias in our measurement of services prices, which dominate our noncorporate sector."

In his Stanford University speech, Mr. Greenspan repeated his oft-stated concern about the difficulty of measuring prices in our economy where the fastest growing industries are in the high-tech sector. "What is the price of a unit of software or of a medical procedure?" Indeed, the ratio of real consumption of health care services per health care worker has been falling since the 1960s (Exhibit 11). This makes no sense at all suggesting that we are overstating prices and underestimating output in this vital industry.

Higher Potential. If productivity is growing faster than measured and faster than during the previous two decades, then the noninflationary growth potential of the economy is higher than in the past. Fed officials are starting to embrace this concept. In an interview with Mr. Zucker, Alice Rivlin said that the Fed is puzzled by the strength of the economy and the weakness of inflation. She said, "We didn't raise rates [since March 25, 1997] because we didn't understand what was happening in the economy." She added that the upward revision in the second quarter GDP did <u>not</u> increase the probability of a Fed tightening.

In other words, the Fed won't tighten unless the hard data show a pickup in inflation. What a change from earlier this year! On March 25, the Fed launched a preemptive attack against an inflation enemy that was in retreat. There have been no attacks since then. Back then, the Fed ignored the actual inflation news—which was good—and instead hiked the federal funds rate by 25 basis points because the Fed staff's NAIRU and Phillips Curve models erroneously predicted an inflation upturn. Now the models have much less weight in the setting of monetary policy. The actual inflation statistics matter much more at the Fed now than at the beginning of the year.

New Era Model. Mr. Zucker suggests that Fed officials, who are very disillusioned with their old models of the economy, are coming around to believe that instead of strong

growth leading to higher inflation, it is low inflation that is causing strong growth. Again, I totally agree. In recent speeches, Fed officials have noted that while the labor markets may be tight, there is plenty of capacity and slack in global product markets. Global competition is keeping a lid on prices. In this competitive market environment, companies can maintain high profit margins only by boosting productivity and sales per employee. Downward pressure on prices put pressure on businesses to produce and sell more units per employee.

The best way to sell more is to cut prices. For example, the auto industry is giving buyers better quality without higher prices. The computer industry is stimulating sales with new models selling for under $1,000. At least once a year, someone on Wall Street scares investors with the notion that the computer market is saturated, so sales are likely to slow. Such predictions are likely to be wrong because the industry can make its own magic by cutting prices.

The recent currency devaluations among emerging Asian countries means cheaper US imports from the region, which accounts for 14.4% of total US merchandise imports. These countries tied their currencies to the dollar until the recent depreciations because the US was their biggest customer in the 1980s. But since then, non-US customers have become more important to the emerging Asian exporters. So the strong rebound in the foreign-exchange value of the dollar relative to the yen and deutsche mark since 1995 depressed Asian exports. They had to devalue to improve their competitive position (Exhibits 12 and 13).

What about tight labor markets? Fed officials have been surprised that wages haven't risen at a faster pace with the jobless rate so low. They may be warming up to my notion that low price inflation may be the cause not only of strong growth, but also of relatively modest wage pressures (Exhibits 14 and 15). As the August 18, 1997 issue of *The Wall Street Journal* noted in The Outlook column, inflation is low because inflation remains so low! Even if labor costs start rising more rapidly, I doubt that they can be passed through to prices because product markets are so competitive. If business managers can't pass costs through to prices, they will have to accept a narrowing of their profit margins or they will have to boost sales per employee. So far, they've been successfully increasing sales per employee. I believe they will continue to do so.

Mr. Greenspan is still not ready to totally embrace the New Era. In his Stanford University speech, he said:

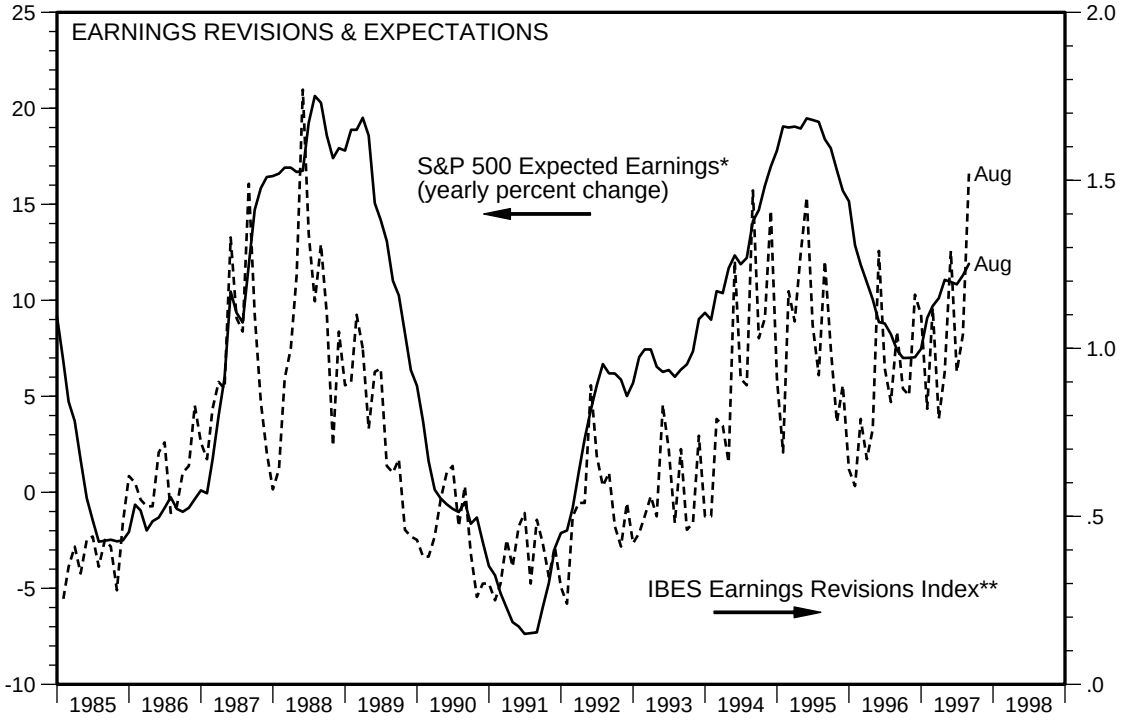
> Nonetheless, the still open question is whether productivity growth is in the process of *picking up*. For it is the answer to this question that is material to the current debate between those who argue that the economy is entering a "new era" of greatly enhanced sustainable growth and unusually high levels of resource utilization, and those who do not.

You know where I stand.

- S&P Earnings -

Earnings Revision Index is volatile, but it jumped in August to highest reading since May 1988, despite disappointing "pre-announcements" from Coke and Gillette. Suggests strong earnings growth ahead.

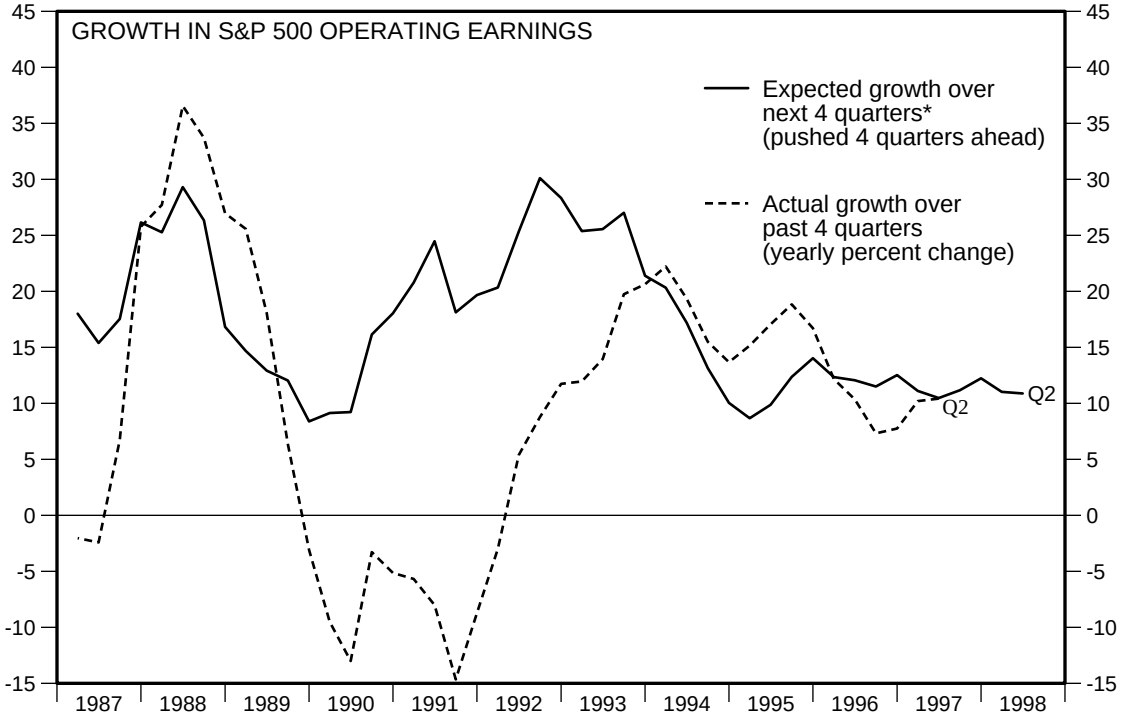
#2



* I/B/E/S consensus estimates of earnings over the coming 12 months.
** Number of analysts' estimates raised divided by number lowered for S&P 500 composite.

Growth of expected earnings remains around 10%.

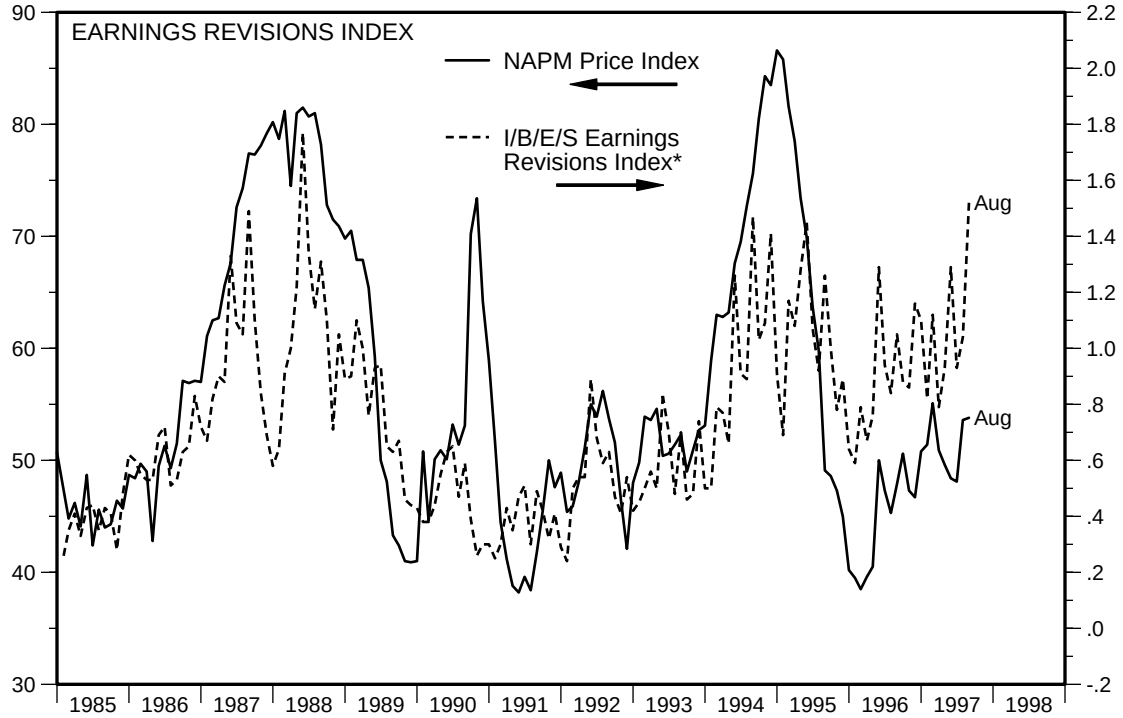
#3



* I/B/E/S consensus estimates of earnings over the coming 12 months as a percent of 4-quarter trailing operating earnings.

- S&P Earnings -

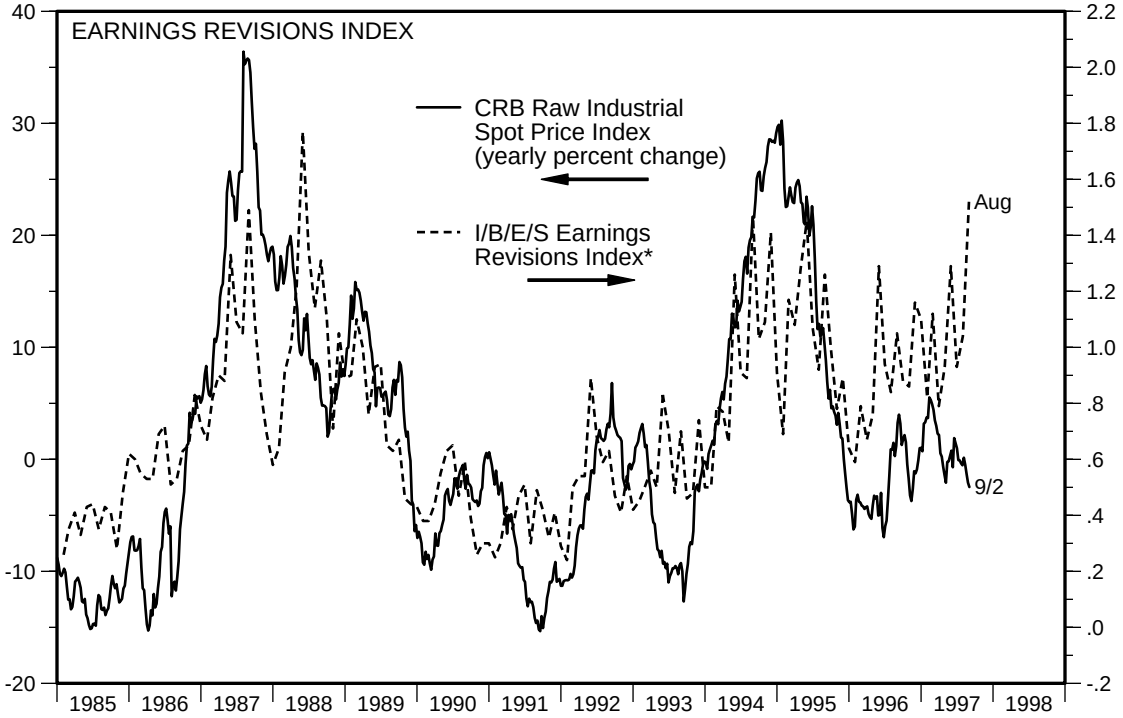
#4



* Number of analysts' estimates raised divided by number lowered for S&P 500 composite.

In the past, Earnings Revision Index was highly correlated with industrial commodity prices. Recent jump in index is impressive given that pricing remains weak.

#5



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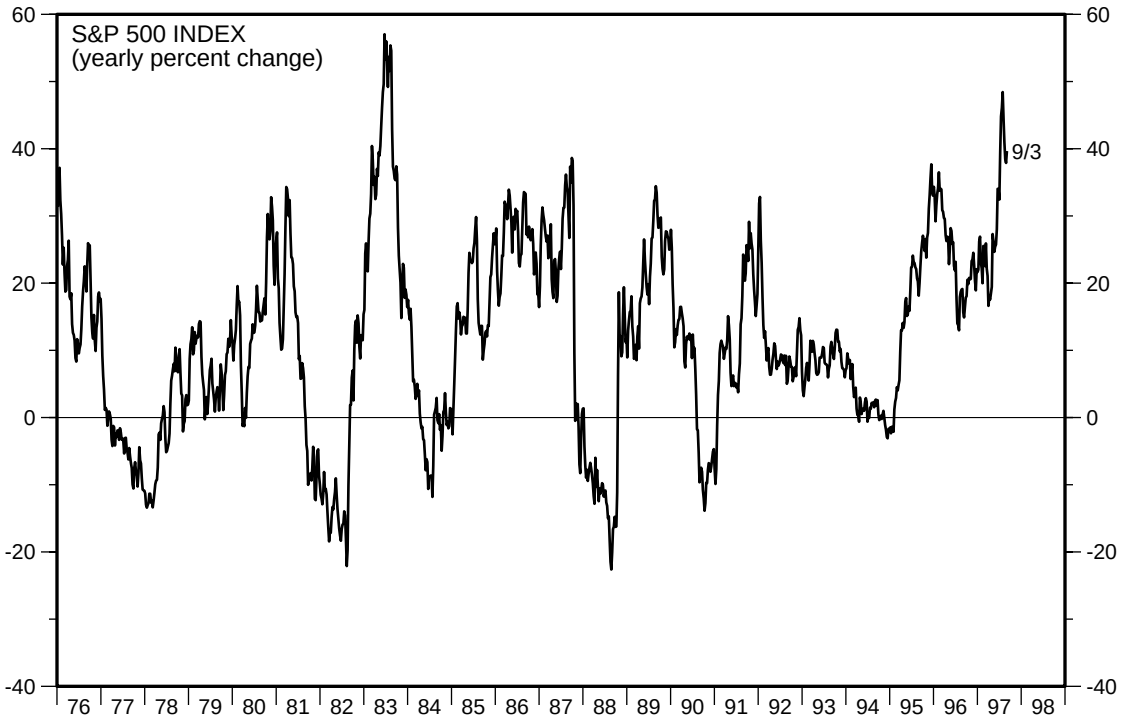
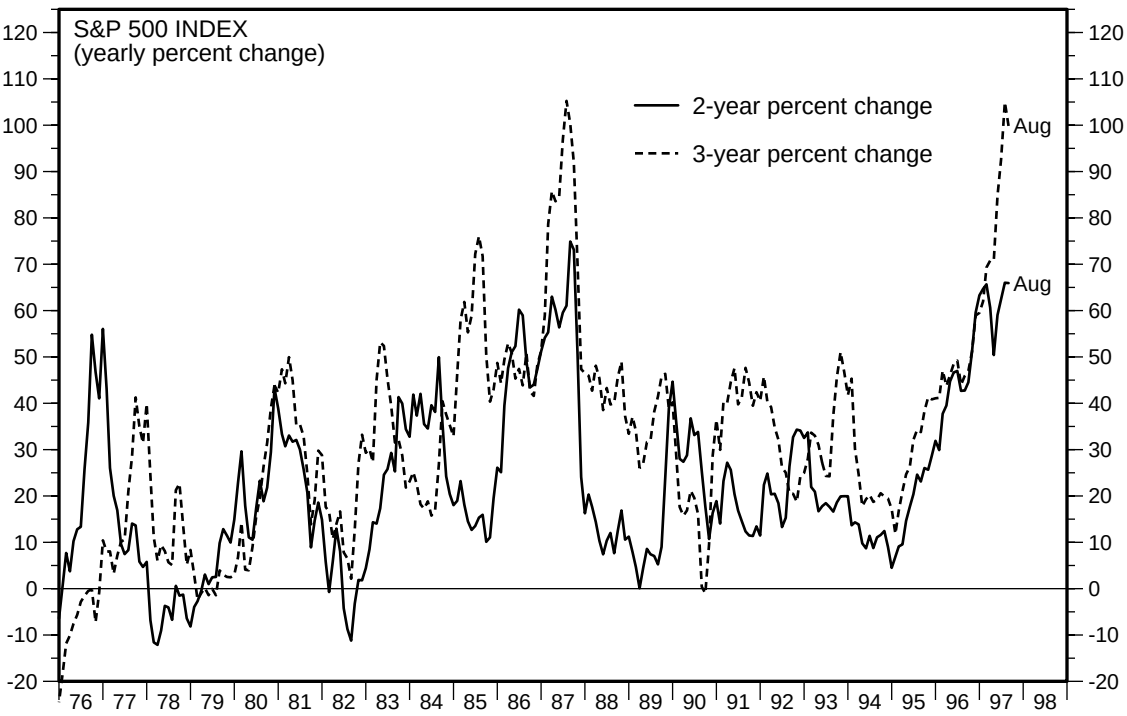
- S&P Index -

#6



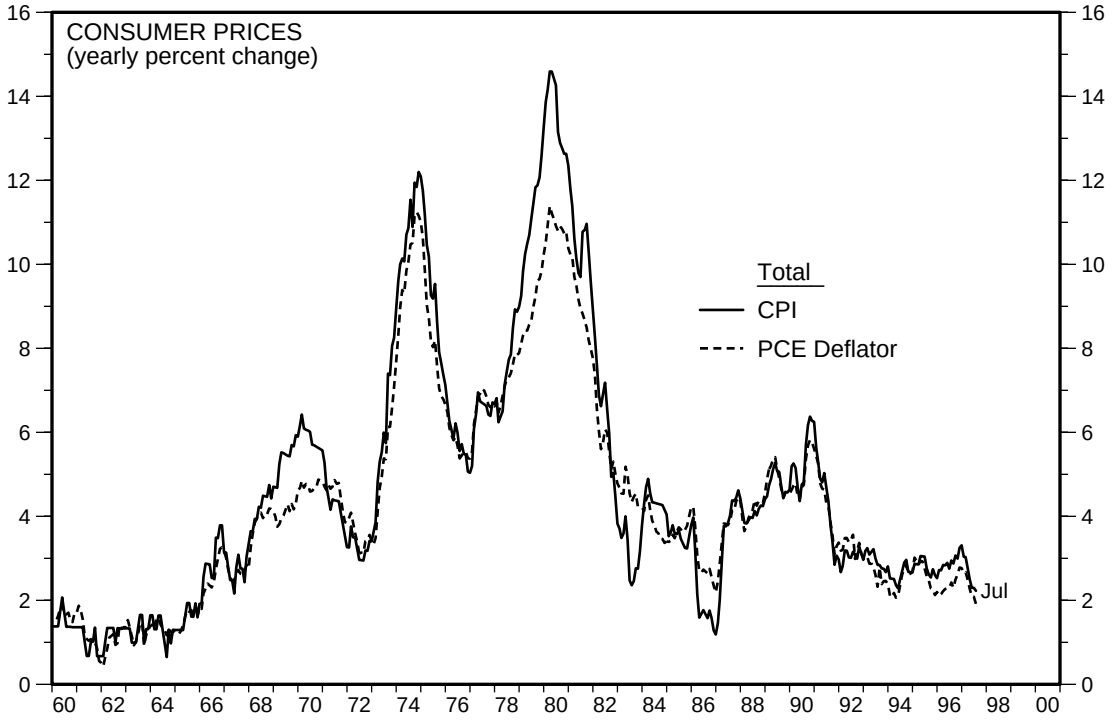
The S&P 500 index is up 40%, 66%, and 100% over the past 1,2, and 3 years, respectively.

#7



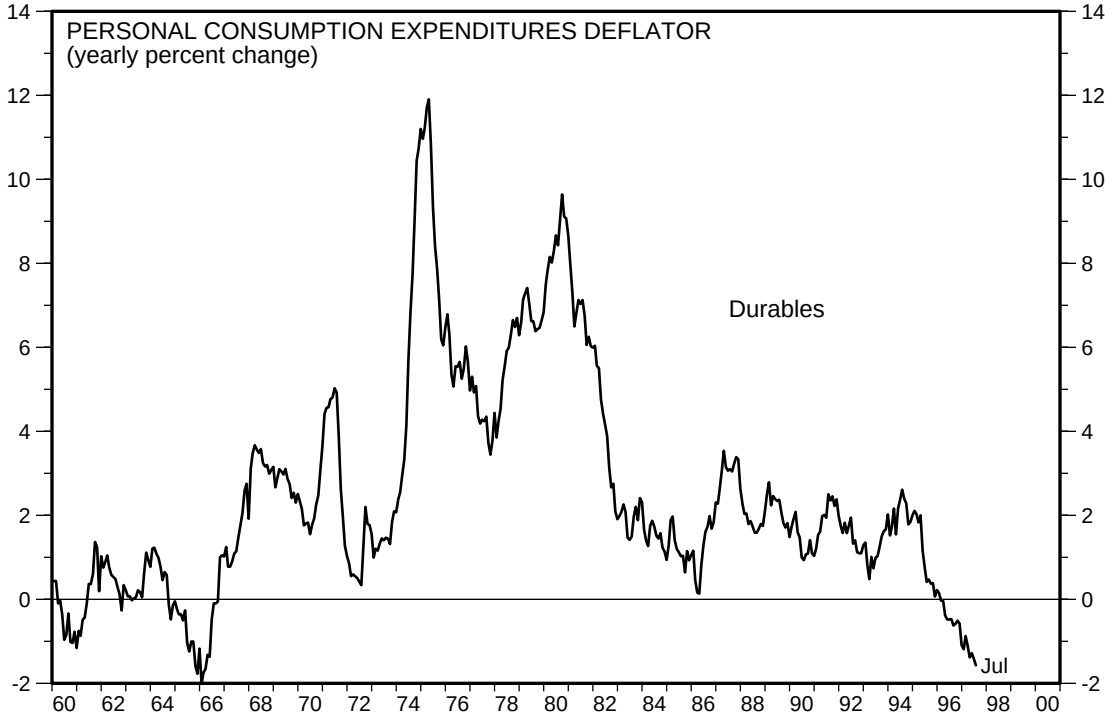
- Inflation -

#8



The best proof that productivity is growing faster than officially measured is near-zero inflation.

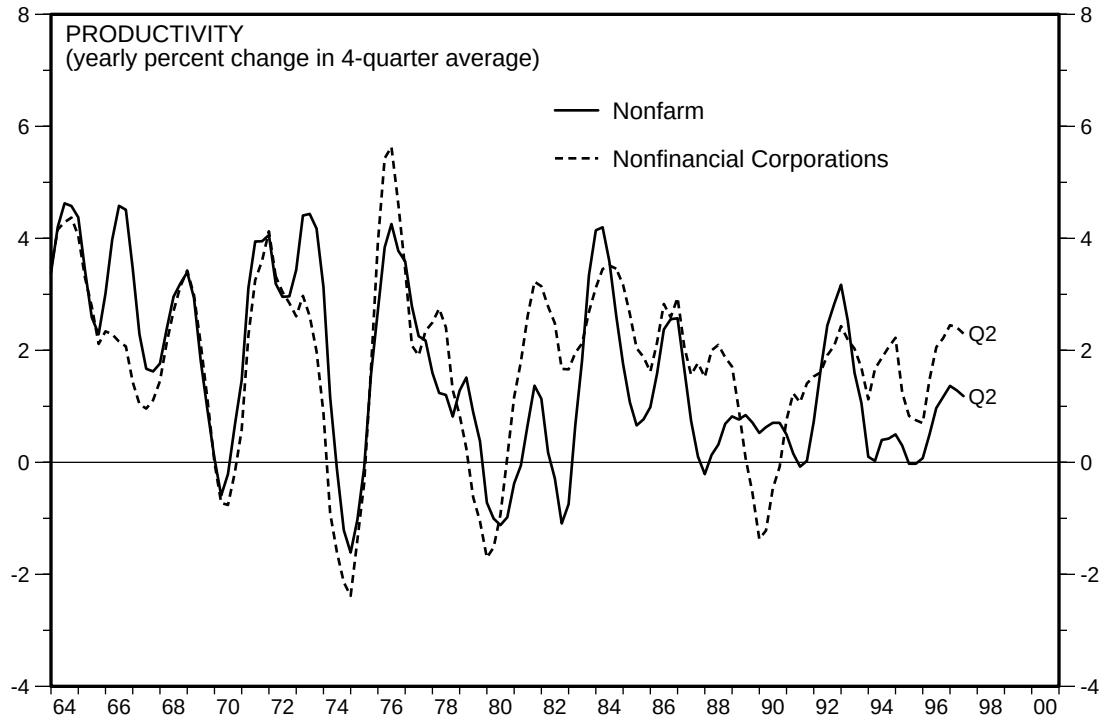
#9



- Productivity -

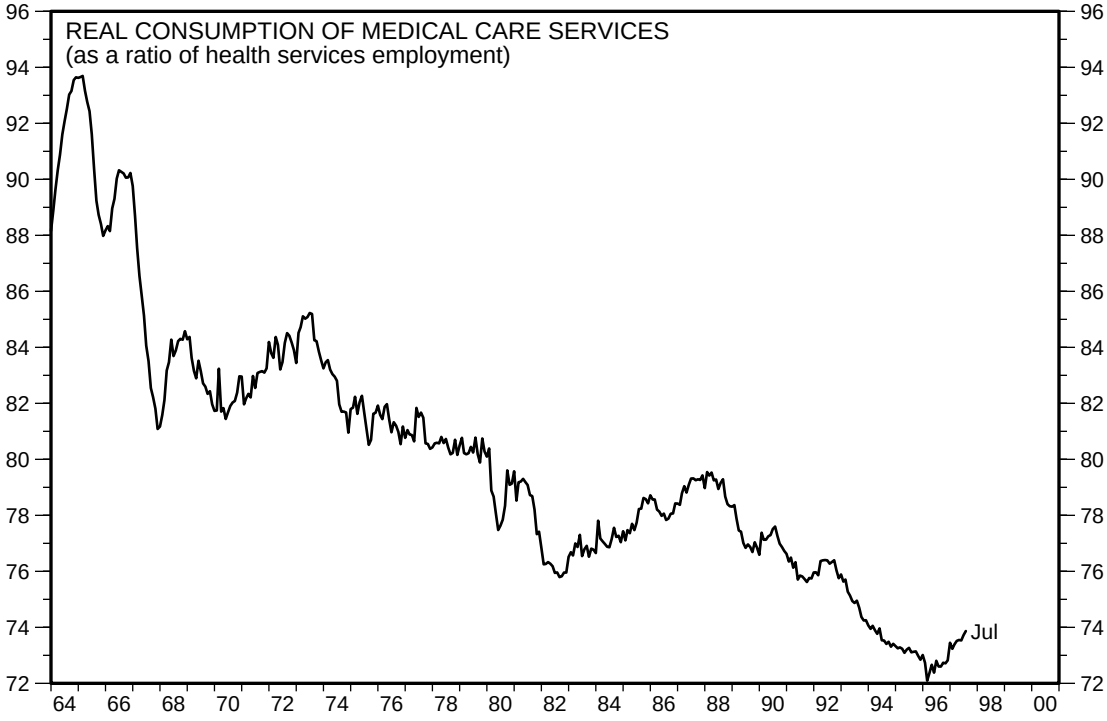
Over the past 10 years, since the second quarter of 1987, nonfinancial corporate productivity has risen 1.3% per year on average versus 0.7% for total nonfarm productivity.

#10



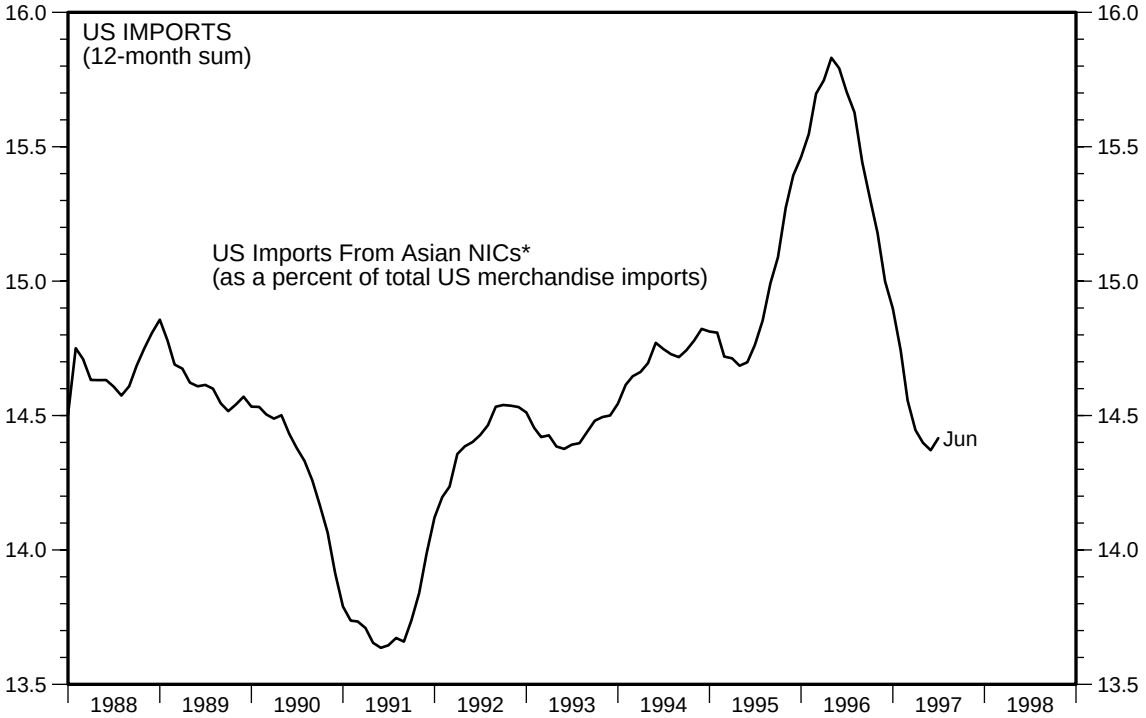
This can't be right! Output per worker in health care services has been on downtrend since mid-1960s? Must be more output and less inflation in this sector.

#11



- Emerging Asia -

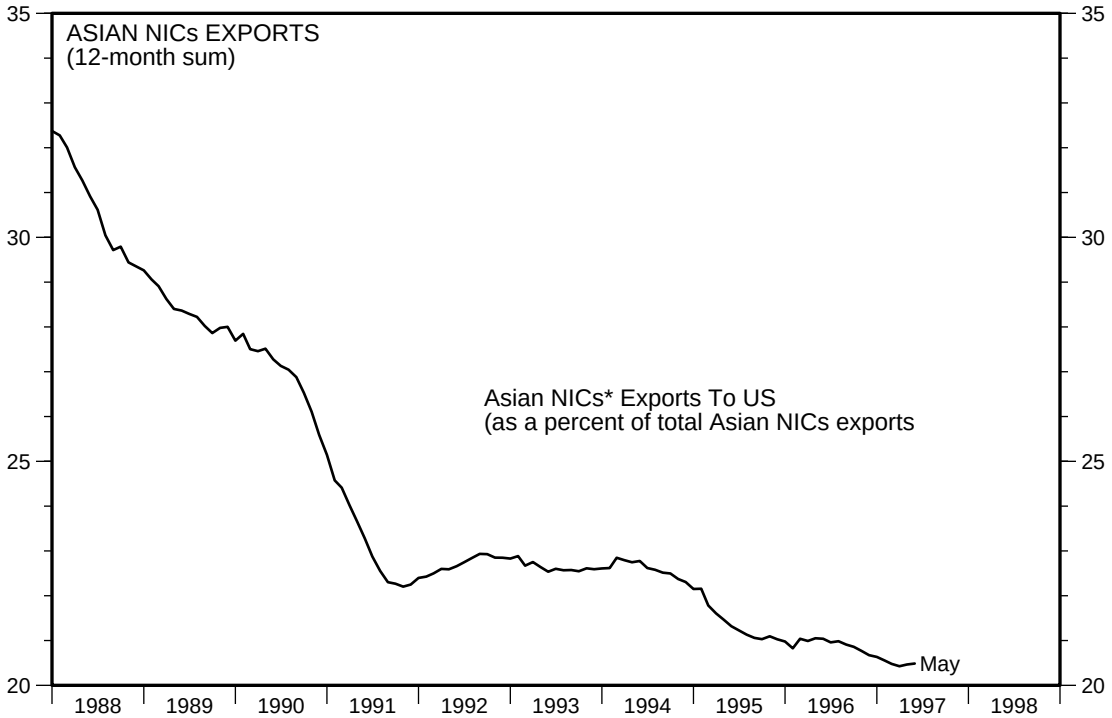
#12



About 14.5% of US imported goods are from Asian NICs. Recent devaluations in that region are disinflationary for US.

* Indonesia, Malaysia, Philippines, Singapore, South Korea, Taiwan, and Thailand

#13



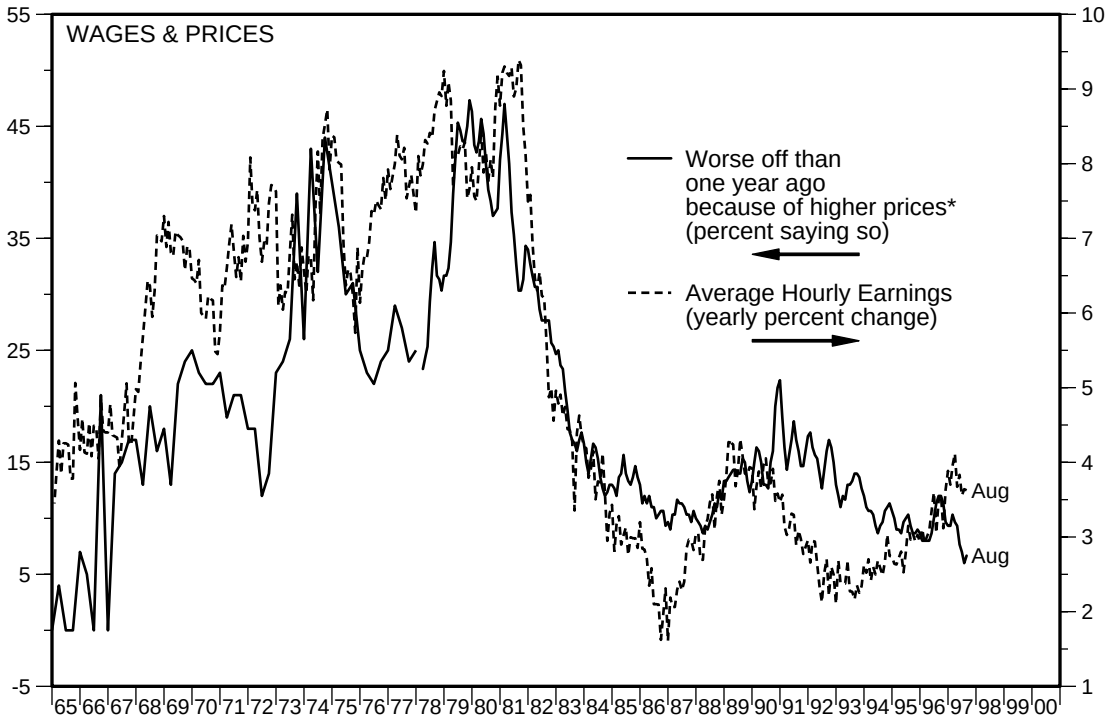
The US has become less of an important export market for Asian NICs, down from 1/3 to 1/5. That's why they had to devalue relative to the dollar when the dollar rose against the yen.

* Indonesia, Malaysia, Philippines, Singapore, South Korea, Taiwan, and Thailand

- Wages -

Despite low jobless rate, wage gains remain very moderate. Workers are not demanding bigger gains because prices aren't harming their financial position.

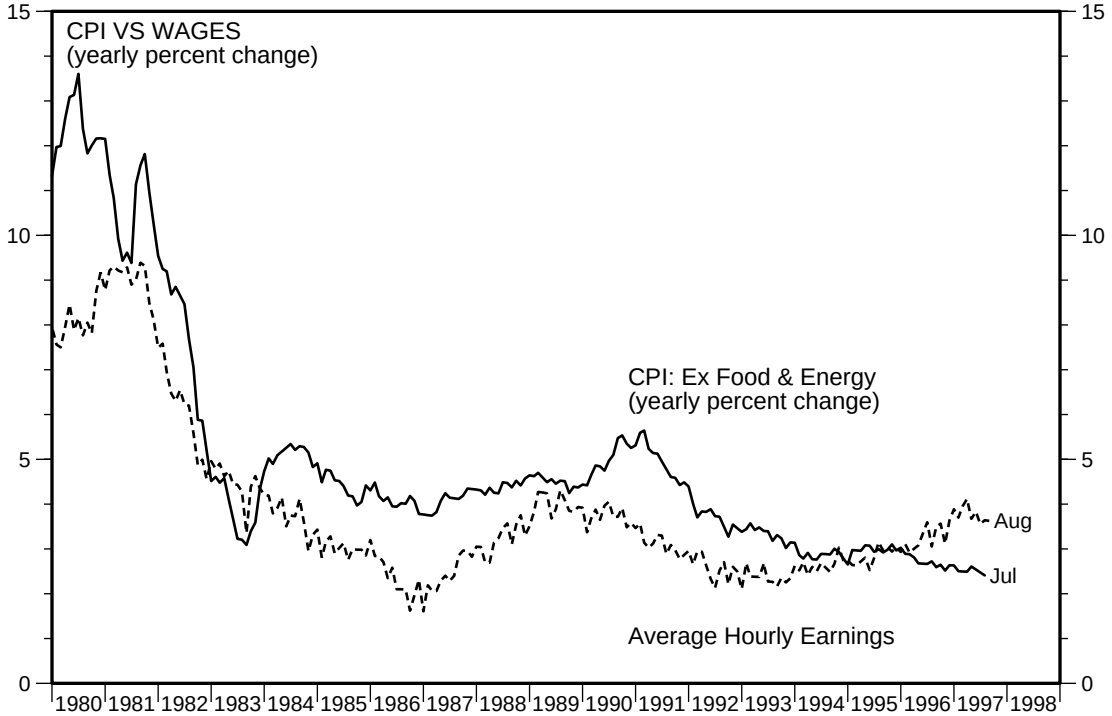
#14



* Quarterly data from 1965 to 1977 and monthly after.
Source: University of Michigan, Survey Research Center.

Low price inflation explains why wage gains remain so moderate even in tight labor markets.

#15



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