Benign deflation?

DJIA 10,000 at the turn of the century

Highlights

- If the U.S. were to experience deflation in coming years, it would be benign deflation, similar to that of the late 19th century, driven by technological progress and accompanied by healthy economic growth.

- Benign deflation is distinct from debt deflation, when prices plunge because debtors are unable to pay their debts, the financial system is damaged, and economic activity declines. The current turmoil in Asia is a prime example of debt deflation.

- The risk of debt deflation in the U.S. is far lower now than in the 1980s, because 1) the U.S. economy has successfully made the transition to low inflation and 2) debt ratios are declining or stabilizing.

- By preventing companies from boosting earnings through price increases, benign deflation encourages cost-cutting via innovation. This occurred in the late 19th century and is occurring today.

- Although moderate deflation may seem abnormal and therefore dangerous to investors accustomed to secular inflation since World War II, short periods of deflation have been common in American history. Therefore, prices have been relatively stable over the long term; they were actually no higher in 1940 than in 1795. It is the secular inflation of the past 50 years that is an aberration. Long term (since 1750), average annual inflation rate is around 1½%.

- Today deflationists warn that the U.S. economy is threatened by “overproduction,” but a decade ago it was supposedly threatened by the precise opposite: “over-consumption” which led to mushrooming debt.

- As the capital markets continue to move towards reflecting the moderate inflation that is the norm of the U.S. economy, bond yields will continue to trend lower and P/Es will move higher. Accordingly we are trimming the normal inflation expectation in our EVM by 25 basis points to 2¼% from 2½%, which has the effect of raising the market’s normal P/E from 21x to 24x. Revised year-end 1999 S&P 500 normal value is 1225, reflecting a P/E of 24x and 1999 normal EPS of $51, which is equivalent to a 10,000 DJIA.
What do these six things have in common?

• Today you can purchase a personal computer for $1,000 that is more powerful than a $3,000 PC was four years ago.

• Over the past year, U.S. producer prices declined 1.9% while GDP growth was surprisingly strong.

• As a result of deregulation and technological innovation, the prices of electricity and telecommunications are headed down in the U.S.

• Between 1929 and 1933, the U.S. economy collapsed, with the price level plunging 31%, real GDP falling 31%, and the unemployment rate soaring to 25%.

• In the 1980s the Texas economy was devastated by falling oil prices; all of the major independent banks in Houston and Dallas were forced to merge or close.

• In Thailand, Indonesia, Malaysia and South Korea, the prices of stocks and real estate have recently plunged while bankruptcies are soaring.

The two deflations

What these things have in common is that they are all examples of deflation, which means simply a “decline in prices.” But if “deflation” describes both declining PC prices and economic turmoil in Asia, clearly there is room for confusion. To understand the true risks from deflation, investors must distinguish between its positive and negative strains—“benign deflation” and “debt deflation.”

Benign deflation is a decline in prices associated with technological progress and productivity improvements, either in selected industries or in the general economy. In order to be benign, generalized deflation must be 1) under control, 2) moderate in pace and 3) associated with continued economic growth. A telltale sign that deflation is benign is that it is not so severe that many economic participants are unable to pay their debts. The best example of benign deflation in the U.S. occurred between 1869 and 1896, when prices declined at a 2.9% annual pace while real GDP expanded at an impressive rate of 4.6%.

By contrast, debt deflation is a decline in prices caused by the inability of debtors to pay their debts. The typical pattern is that a speculative bubble ends, the price of assets (e.g., stocks and real estate) collapses, and lever-aged speculators are unable to pay their debts, which hurts banks and induces them to cut back on lending, which slows the economy and hurts debtors even more. The severity of such a deflationary spiral can vary widely—from a moderate recession to the Great Depression of the 1930s, when the faulty policies of an inexperienced Federal Reserve permitted a series of banking crises that shrunk the money supply by 30%.

How the two deflations are related

What is confusing now is that these two types of deflation—one innocuous or even virtuous, the other dangerous—are occurring simultaneously. Although related in some ways, they are fundamentally distinct:

• In the U.S., producer prices are declining slightly and consumer prices climbed just 1.7% over the past year—which probably overstates the true rate of inflation because the CPI does not fully reflect quality improvements. Why is the U.S. flirting with deflation? Clearly not because of weak demand associated with excessive debt. On the contrary, GDP growth has been surprisingly robust, and over the past year unemployment has declined while capacity utilization has climbed (Charts 1-4). Rather, deflationary pressure in the U.S. stems from the nation’s many economic strengths: deregulation, heavy capital investment, technological innovations such as the Internet, impressive productivity gains, flexible labor markets, cost-conscious, entrepreneurial managements, and spirited competition in most markets.

• In Asia, by contrast, we have classic debt deflation. Following the speculative mania of the 1980s, Japan has been stuck in a deflationary miasma. More recently, booms supported by excessive bank lending and inflows of foreign capital have collapsed in several nations.

Naturally, these two deflations are related to some extent. One reason for flat-to-down prices in the U.S. has been the strong dollar and price competition from Asia. But this is only one factor among many. After all, producer prices were trending lower in the U.S. in the first half of 1997, when economic activity in Asia was booming rather than collapsing.
Benign deflation:
The PPI is falling but economic growth is strong

Chart 1
PPI, Year to year percent change, 1960-97*

Chart 2
Real GDP, Year-to-year percent change, 1960-97*

Chart 3
Manufacturing capacity utilization rate, 1960-97*

Chart 4
Unemployment rate, 1960-97*

Leverage ratios are flat to down*

Chart 5
Household liabilities as a % of total assets

Chart 6
Nonfinancial corporate liabilities as % of total assets

Chart 7
Gov't debt (federal, state, local) as % of GDP

Chart 8
Total debt as % of GDP

*Source: Labor Department

*Source: Commerce Department

*Source: Federal Reserve

*Source: Federal Reserve
The risk of imported deflation: cyclical, not structural

Gloomy deflationists warn that the collapse of Asian currencies and the contraction of Asian economies will cause a huge increase in the U.S. trade deficit with Asia, which will tend to depress economic activity in the U.S. This is true to some degree, but given the rapid GDP growth and tight labor market in the U.S., a deflationary draught from Asia that cooled down the U.S. economy would be positive, not negative, for the United States.

But the more fundamental point is that financial turmoil in Asia will, in a year or two, reduce, rather than increase, the deflationary threat. Asia’s fundamental problem is an excessive emphasis on saving and production, which has led to a willingness of banks and investors to finance production that is not profitable. A wave of bankruptcies will correct that tendency; blueprints for many grandiose projects, ranging from Bangkok office complexes to Korean semiconductor fabs, have already been torn up. For example, Samsung is cutting back on investment and may reverse its plans to enter the glutted worldwide auto market. And Korean investment in semiconductor capacity is expected to decline 73% this year. In addition to providing some salutary financial discipline to Asia’s investment process, the current turmoil may also bring valuable financial, economic and political reforms to Asia—much as the clean-up of America’s S&L crisis in the early 1990s ushered in beneficial reforms that strengthened the U.S. financial system.

The risk of debt deflation in the U.S. is declining

Thanks to the forces of “benign deflation,” we are closer to having flat or declining prices in the U.S. than at any time since the early 1960s. In this sense, a mild form of “deflation” could well occur. Paradoxically, however, the risk of “debt deflation”—the type of deflation that keeps investors awake at night—is actually far lower than it was between 1982 and 1993. Having successfully negotiated the disinflation of the 1980s and the real estate/LBO/banking crisis of 1990-92, debt levels are trending down:

- The ratio of household debt to total assets has declined for the past three years (Chart 5).
- The ratio of corporate debt to total assets has trended down since 1993 (Chart 6).
- The ratio of government debt to GDP has been declining since 1993 (Chart 7). With the federal deficit near balance and GDP still growing, this trend should continue.
- The ratio of total financial debt to GDP, which soared in the 1980s, has leveled off since 1993 (Chart 8).

The long view: price stability is normal . . .

Embedded in warnings that the U.S. may experience deflation is the implication that inflation is normal while deflation is abnormal and therefore dangerous. This is not the case. Since 1750, the average annual change in wholesale prices is 1.59% (Chart 10). For most of U.S. economic history, deflation was as common as inflation and consequently the price level was actually no higher in 1940 than it had been in 1795 (Chart 9).

The typical pattern was for the price level to rise during wars and during certain economic expansions (particularly the 1790s, 1830s and 1896-1907) but then to decline during short financial panics. The result was a jagged sawtooth pattern with no secular trend toward either higher or lower prices. As Chart 10 and Table 1 show, America has gone through six periods when the ten-year compound growth rate of wholesale prices exceeded 5% and four periods when the ten-year compound change in prices was less than -5%. The deflationary episodes were shorter than the periods of inflation.

. . . deflation is compatible with growth . . .

Even though the price level was declining, the decades after the Civil War were a period of explosive economic growth and creativity. The completion of a continental railroad network, and the concomitant telegraph system, created a national market that encouraged a spate of technological innovations. The number of patents issued doubled between the 1860s and 1880s. Among the specific innovations introduced were:

- use of electricity in factories
- the electric streetcar
- refrigerated cars for meat-packing
- the telephone
- the typewriter
- the roller mill to process oatmeal and flour
- major advances in making steel, which replaced iron for many uses.
In the last four decades of the 19th century, value added by U.S. manufacturers grew at a pace of 5-7% annually. From the 1870s to the 1890s—a period of rapid population growth driven by heavy immigration from Europe—national income per capita expanded by a remarkable 88% (Chart 11). It is quite possible that the deflation of the late 19th century to some degree caused this spate of technological innovations. Unable to raise prices in order to boost profits, businesses had no choice but to cut costs via innovation—whether that involved using electricity in a factory, replacing clerks’ pens with typewriters, installing labor-saving manufacturing equipment, or using railroads to distribute products more efficiently. And plenty of capital was available to finance such innovations, because interest rates were declining.

The parallels between the 1880s and the 1990s are clear. Lacking pricing power in an intensely competitive global economy, companies are today using technology to cut costs. Every week one or two major companies announce plans to reduce headcount substantially. Sales per employee have been growing about 6% annually for a large representative group of S&P 500 companies.
Increasingly, technological innovation will involve creative use of the Internet, which is doing for information what the railroads did for physical products—dramatically increasing the ease and speed with which information can be moved and manipulated. This is not only saving labor but also reducing inventory costs and raising the productivity of physical plant. By reducing inventory levels and minimizing inventory swings, better information technology is tending to mute the business cycle. And, as in the 1880s, interest rates are declining and plenty of capital is available to finance technological innovation.

Federal Reserve Chairman Alan Greenspan, as he informs financial markets on a regular basis, desires price stability. When prices are stable, money can most effectively serve its classical functions as a unit of account, medium of exchange and store of value. But, assuming that perfect price stability is unattainable, it is not clear that slight inflation is better or worse than slight deflation. The main difference is that deflation favors lenders (who get paid back in more valuable dollars) while inflation favors debtors. During the benign deflation of the 1870s and 1880s, America’s farmers were incensed by the decline in prices, which made their mortgage debt more onerous. Management of the money supply—specifically, how much silver would be included—was America’s central political issue in the late 19th century, until the discovery of new supplies of gold in Alaska, Colorado and South Africa in the 1890s ushered in a period of moderate inflation.

... and it is the secular inflation since World War II that is not normal

Although price stability over the long run has characterized most of American economic history, this pattern was disrupted by the Great Depression of the 1930s, which convinced Americans that “moderate inflation” was an insurance against depression. Prices crept up in the 1950s and early 1960s, but inflation did not stay moderate for very long. By the late 1970s, befuddled bureaucrats were vainly trying to restrain accelerating prices. For consumers and investors, virtually the only game in town was to borrow and buy a hard asset—borrow to buy a car before its price went up, or a bigger house, or a bar of gold, or an oil well, or an office building, or 1,000 acres to plant in beans and corn, or (if you ran a large corporation) a natural resource company—DuPont, for example, bought Conoco and Fluor bought St. Joe Minerals.

Two risky flirtations with debt deflation

Then Paul Volcker abruptly changed the rules. Inflation went from 13.5% in 1980 to 4.5% in 1982. Mexico went bankrupt in 1982, as did many farmers, energy producers and commodity speculators over the next few years. Latin America spent the entire 1980s in de facto receivership. Clearly, this was a period when the risk of debt deflation was quite high, because debts contracted when prices were soaring had to be paid when commodity prices were falling and overall inflation was modest (Figure 1).

Counterintuitively, U.S. business increased its financial leverage in the mid-1980s—even though real interest rates were high and newspapers were littered with stories about the financial demise of farmers, oil drillers, banks and entire nations. One reason for this increase in debt was deregulation of financial services, notably the S&L industry, which was permitted to accept government-guaranteed deposits and make risky, sometimes corrupt, commercial real estate loans. Another was that the bull market in stocks unleashed the “animal spirits” of financiers, who could borrow heavily and buy companies whose stock prices valued the enterprise below the replacement value of its assets. So during the 1980s the overall debt load of American business soared (Chart 6).
### Inflation periods

<table>
<thead>
<tr>
<th>Year of peak 10-year inflation CAGR</th>
<th>Cause of inflation</th>
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<tbody>
<tr>
<td>1779</td>
<td>American Revolution financed by issuance of paper money by the 13 states and the Continental Congress, which had virtually no power to tax. This, in conjunction with curtailment of productive economic activity, leads to hyperinflation.</td>
</tr>
<tr>
<td>1796</td>
<td>Boom caused by commercial prosperity during the Wars of the French Revolution, and also by the founding of many new banks in the U.S., which expands money supply.</td>
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<tr>
<td>1864</td>
<td>Civil War, financed partly through the issuance by the federal government of “greenbacks,” paper money not redeemable in gold or silver.</td>
</tr>
<tr>
<td>1920</td>
<td>World War I, which followed two-decade period of rising prices around the world as a result of gold discoveries in South Africa, Alaska, Colorado.</td>
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<tr>
<td>1948</td>
<td>World War II.</td>
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<tr>
<td>1981</td>
<td>Legacy of Vietnam War and Great Society social programs—“Guns and Butter,” combined with OPEC oil embargoes; faltering productivity growth; increasing government regulation of private sector; and refusal of Fed and other government officials to permit a severe recession that would kill inflation.</td>
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### Deflation periods

<table>
<thead>
<tr>
<th>Year of trough 10-year deflation CAGR</th>
<th>Cause of deflation</th>
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<tr>
<td>1789</td>
<td>Hyperinflation of Revolutionary War ends with the abandonment, in 1781, of paper money issued by Continental Congress. Prices dip further during commercial recession in mid-1780s.</td>
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<tr>
<td>1824</td>
<td>After peaking in 1814, prices decline sharply when War of 1812 ends; they decline further in the panic of 1819 and the recession that followed.</td>
</tr>
<tr>
<td>1878</td>
<td>With the ending of the Civil War, prices decline sharply in late 1860s; they fall further in 1870s during a recession started by the panic of 1873.</td>
</tr>
<tr>
<td>1930</td>
<td>Moderate deflation in late 1920s; then prices collapse in Great Depression of 1930-32. Key cause of Depression is contraction of money supply as a result of repeated banking crises, which Federal Reserve fails to contain.</td>
</tr>
</tbody>
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Figure 1
The U.S. flirted with debt deflation in the 1980s, when inflation slowed but commodity prices collapsed.

**The New York Times**
February 10, 1985
Despair Wrenches Farmers' Lives As Debts Mount and Land Is Lost

August 19, 1982
Crisis in Mexican Economy Is Triggering A Major International Rescue Operation

**The Wall Street Journal**
September 2, 1982
Hunts' Empire May Unravel In U.S. Court Billionaire Brothers' Business Yields Mighty Big Problems, 23 Banks Find

**The New York Times**
February 4, 1985
Some Fear the Deficit May Bring Recession

**The Wall Street Journal**
June 11, 1985
Revised Senate Panel Staff Projections Show a Trend Toward Wider Deficit

**The Wall Street Journal**
June 28, 1985
Oil Outlook
OPEC Will Try Again To Prop World Prices, But New Fall Is Likely

A Sizable Decline or Collapse Of Cartel Would Benefit Global Economic Upturn

Will Saudi Arabia Bail Out?
The U.S. experienced a mild but frightening bout of debt deflation in the 1990-91 recession, when many banks and highly leveraged businesses had severe financial difficulties.

**THE WALL STREET JOURNAL**

**Trade Deficit Widens to $10.77 Billion, Adding to Tension in Financial Markets**

Oct. 18, 1989

**THE WALL STREET JOURNAL**

**Bad Hangover**

Many Firms Find Debt They Piled On in 1980s Is a Cruel Taskmaster

They Now Yearn for Equity
As They Slash Expenses, Plead With Bondholders

Little Sympathy From Banks

October 9, 1990

**BusinessWeek**

WHERE’S THE GROWTH?
SO FAR, RECOVERY HASN’T MEANT EXPANSION

November 18, 1991

**BusinessWeek**

HOW DEEP IS THE HOLE?
SAVING THE BANKS AND BOLSTERING THE FDIC MAY COST HUNDREDS OF BILLIONS

December 9, 1991

**THE WALL STREET JOURNAL**

**Growing Gloom**

A Severe Recession May Be Developing, More Economists Say

They Cite Debt and Deficits; But Majority Still Think Slump Will Be Moderate

Oil Prices Increase Confusion

October 10, 1990

**THE WALL STREET JOURNAL**

**Trump Forced To Restructure More Bank Debt**

October 11, 1990

**THE WALL STREET JOURNAL**

**Chemical Bank Trims Dividend And Posts Loss**

Stock Falls After Reporting Of Third-Period Results; Other Payout Cuts Seen

October 12, 1990

**THE WALL STREET JOURNAL**

**Citicorp Forced To Boost Rate On Share Issue**

Higher Yield of 9.4% Shows Investors’ Nervousness About Firm’s Securities

October 23, 1990
Figure 3
It seemed during the 1980s that Japan was defeating an inefficient, debt-laded U.S. economy and buying up many of its most valuable assets.

**The Hollow Corporation**
The decline of manufacturing threatens the entire U.S. economy
March 3, 1986

**The New York Times**
October 31, 1989
Japanese Buy New York Cachet
With Deal for Rockefeller Center
Mitsubishi Gets Control of Landmark Real Estate

**The New York Times**
October 1, 1989
Japan’s Giant Banks
on the March
Americans get the jitters as Tokyo’s big players raise their U.S. stakes

**The New York Times**
November 8, 1989
New Tokyo Seats,
But Price Is Steep
The cost to foreign securities firms: nearly $10 million, or 20 times a Big Board seat.

The surge in corporate debt, as well as lingering problems in loans to less developed countries, made the U.S. vulnerable to debt deflation once again during the recession of 1990-91. Hammered by huge loan losses in real estate and by tougher regulatory standards, bank earnings collapsed, leading to a “credit crunch” as banks became excessively cautious in making loans (Figure 2). Consequently, the economic recovery of 1991-93 was anemic, which probably cost President George Bush reelection in 1992. The bank crisis and credit crunch of 1990-92 was an authentic example of debt deflation; the financial problems of debtors hurt the financial system which in turn retarded the growth of the real economy.

**From over-consumption to over-production**
With most parts of the U.S. economy now either deleveraging or holding debt ratios stable, while economic growth continues, the risk of debt deflation is far lower than it was in either the early 1980s disinflation or the 1990-92 credit crunch. Nevertheless, some observers—with one eye on Asia and one eye on weak prices in the U.S.—are fearful that we are threatened by over-production, leading to gluts and deflation.

One good reason not to take the threat of over-production too seriously is that in the 1980s the great fear of bearish observers was the precise opposite—the U.S. was consuming too much and producing too little! With the nation’s industrial base being “hollowed out” by Asian
competition, the argument ran, American shopping malls were full of goods made in Japan, Korea, Taiwan, and Malaysia (Figure 3). While Americans made potato chips, Asians made computer chips. The financial analogy of faltering industrial competitiveness was said to be mushrooming debt. Whether it was the government debt created by Ronald Reagan's tax cuts, debt to foreigners created by persistent trade deficits, or the debt heaped on corporate America by greedy Wall Street financiers, debt was both a reflection and cause of America's shrinking stature. The proliferation of debt was deemed a profound moral issue: We were “mortgaging our future,” “eating our seed corn” and “reducing the living standards of future generations.” By engineering leveraged buyouts and takeovers, arbs and analysts were compelling companies to manage for the next quarterly earnings report, instead of investing for the long term. The nation faced a “day of reckoning”—the title of a gloomy 1988 book written by the Harvard economist Benjamin Friedman. America was doomed to spend the 1990s cleaning up the financial mess created during the 1980s.

Apparent confirmation of these warnings came in the late 1980s, when Japan seemed to seize global economic leadership (Figure 3). Japan's competitive superiority (as evidenced by its vast trade surpluses) was said to be the result of a high savings rate, a low cost of capital, close cooperation between business and government, and thoughtful corporate executives who invested for the long term instead of worrying about quarterly earnings. Japan's economic hegemony was epitomized by its purchase of Sony Pictures and a majority stake in Rockefeller Center, not to mention a large chunk of downtown Los Angeles and most of the golf courses in Hawaii.

Investing in a period of benign deflation

Of course, those warnings that a debt-laden U.S. was being bypassed by a thrifty, superbly managed Japan proved spectacularly wrong. Similarly, today's warnings that economic growth will be dragged down by deflationary forces created by Asian over-production is even less likely. The financial crisis in Asia will reduce funding of new productive capacity there, and the deleveraging of the U.S. economy makes the nation less vulnerable to deflation than it was in the 1980s. Nevertheless, it is possible that we will experience a period of benign deflation similar to the late nineteenth century. Which types of companies should be able to generate relatively good earnings growth in a period of benign inflation?

Look to companies with one or more of the following characteristics. We also indicate which of PaineWebber's Highlighted Stocks best fit each criterion:

- Strong brands that reduce vulnerability to price competition. Almost by definition, the companies with the strongest brands also have the largest market share, giving them a competitive advantage via economies of scale—America Online, Coca-Cola, Walt Disney, Kimberly-Clark, Microsoft, PepsiCo, Procter & Gamble.
- Rapid unit growth that is sustainable because the company has a large market share and is gaining market share, which enhances competitiveness by providing economies of scale—Coca-Cola, Compaq, Medtronic, Microsoft, Staples.
- Sells proprietary products such as patented drugs, standard-setting software, etc.—Abbott, Medtronic, Microsoft, Schering-Plough, Sofamor-Danek Group, Warner-Lambert.
- Firms that can successfully grow through acquisition because they generate free cash flow or can do stock-for-stock deals effectively—Bank of New York, Cendant, Procter & Gamble.
- Companies whose prices are declining more slowly than their costs, in part because competition in the industry is not too heavily based on price. Banks are a good example. Technology costs are plunging and the price of money is moving down, but banks are still able to boost prices subtly by raising fees, late charges, etc. Customers usually will not go to the hassle of changing banks to get cheaper service, so long as their current bank is providing decent service—Bank of New York, Chase Manhattan, Compaq, Gannett, New York Times.
- In a deflationary environment, firms have to cut costs to survive, which boosts demand for productivity-enhancing high-technology equipment and services—Compaq, Microsoft.

On the negative side, commodity producers are poorly positioned in a deflationary environment. To a lesser degree, so are companies whose sales growth is partly a function of the rate of inflation; for example, when food...
inflation is low the sales growth of supermarkets slows down. Similarly, apparel deflation has hit the top-line growth of apparel retailers over the past few years, though this problem is abating.

One might suppose that heavy users of commodities—such as packaging companies, auto makers, or tire manufacturers—would benefit from deflation because of declining costs. In many industries these cost declines will not, in fact, significantly fatten profit margins because they will be "competed away." However, it is true that nimble computer makers have benefited from the plunging cost of semiconductors, because they can slash prices, rapidly expand unit sales, and capture scale economies.

A truly “normal” normal P/E

Recent valuation parameters have been abnormally punitive, reflecting the extraordinary inflation of the 1970s and early 1980s. As the capital markets continue to move towards reflecting the moderate inflation that is the norm of the U.S. economy, bond yields should continue to trend lower (see “Five at the Turn,” March 31, 1993; “Fours Before Long,” February 5, 1996). The ultimate beneficiary of very low inflation is the longest duration asset—equities. P/E's should move higher. However, given that market perceptions change very slowly, we are reluctant to fully price in what seems to be the true "normal" normal 1½-1¾% inflation rate. (Nor should one conclude that the normal P/E would go up continually with lower inflation, as the sustainable normal growth rate would probably be lower in a 1½-1¾% inflation environment than a 2-2½% environment.)

Accordingly we are (again) trimming the normal inflation expectation by 25 basis points to 2½% from 2¾%, which has the effect of raising the normal P/E in our Equity Valuation Model from 21x to 24x. (This is the ninth cut in the normal inflation input in the past nine years.)

With the stock and bond markets in equilibrium, and liquidity and earnings momentum neutral, at current levels the market—at 94% of normal P/E valuation—is still close to being fairly valued. Our revised year-end 1999 S&P 500 normal value is 1225, reflecting a P/E of 24x and 1999 normal EPS of $51, which is equivalent to a 10,000 DJIA.

Prices of companies mentioned as of 2/18/98:
- Abbott
- America Online
- Bank of New York
- Cendant
- Chase Manhattan
- Coca-Cola
- Compaq
- DuPont
- Fluor
- Gannett
- Kimberly-Clark
- Medtronic
- Microsoft
- Procter & Gamble
- Samsung
- Schering-Plough
- Sofamor-Danek
- Staples
- Walt Disney
- Warner-Lambert

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