

# ***International competitiveness, macroeconomics, technology, energy, and the long sweep of history***

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Back in my past, I did independent research on international competitiveness and how it intertwines with macroeconomics, technology, and history. This prior work was partly covered in an unpublished 1985 economics theory paper and three related articles that appeared in *Barron's* magazine (all appended).

I published key elements of my macroeconomic research in *Barron's* since academic journals were uninterested in certain ideas at that time.

Ideas outlined in the brief 1985 theory paper and *Barron's* articles are as relevant today as they were when they were first published over 20 years ago.

Unlike my recent theoretical research in the physics of low energy nuclear reactions (LENRs), the 1985 economic theory paper is just five pages of text, written in 'plain English,' and does not contain a single mathematical equation (it was originally written as a op-ed piece that was rejected by the *Wall Street Journal's* then op-ed page Editor, Robert Bartley). Thanks to encouragement from *Barron's* Editor-in-Chief Alan Abelson, articles by Jon Laing began in 1986 and ended in 1999. Please try to read them in chronological time sequence, as 'media atmospherics' change significantly from one decade to the next.

Many of my ideas about the intertwined dynamics of macroeconomics and technology are outlined in the 1999 *Barron's* article in which Laing wrote a long story featuring Prof. David's Hackett Fischer's brilliant book, *"The Great Wave: Price Revolutions and the Rhythm of History"* (please see reference below).

Readers will notice at the very end of the 1999 *Barron's* article that I had already become intrigued with the business opportunity potentially offered by LENRs --- then mistakenly called "*cold fusion*". Deciding to do something about it, we formed Lattice in February 2000 and closed on seed funding in May 2001.

Regarding evolving media atmospherics: circa the mid-1980s legions of media pundits were agonizing about the Japanese 'owning the world' over the next 20 years. Under that scenario, Americans were all supposed to become 'hamburger flippers' working for Japanese companies. The pundit-handwringers thought that essentially all US manufacturing was going to be outsourced to Japan (it is true, much manufacturing with high % of labor content was outsourced, but it went to China and other countries that had even lower labor costs than Japan). Worse yet, many on Wall Street along with various academic economists believed that the US economy was then on the verge of total collapse. Some also thought that the US was fast eclipsing in its international role as the 'world leader', just like England after W.W.II.

Please fast forward from 1986 to 2012, 26 years later: today, in many respects Japan's economy has continued to struggle, even before the recent earthquake/tsunami horror; Russia is no longer a full-blown superpower (the USSR having dissolved in the early 1990s); the US is really the last remaining true military and economic superpower; and so forth. We all know that recent history.

As of 2012, Japan is now widely regarded an aging, somewhat sclerotic society ... a resurgent China is the current economic bugbear of geoeconomic and geopolitical pundits. At some point in the next decade or so after China completes the current rapid-growth phase of its economic evolution, India will probably be heralded as the next great economic terror --- and so forth. We have all heard such rhetoric before.



Importantly, none of the 1980s' various apocalyptic visions for the US economy actually came to pass: to the contrary, it was the Japanese economy that sputtered on three cylinders and flirted with depression on-and-off for 20 years. By the mid 1990s, Japanese labor cost advantages had pretty much evaporated and they were forced to compete on a more level playing field with US high technology companies (e.g., Intel, Dell, etc.) and various Asian rivals such as China that had even lower labor costs.

During the Clinton era of the 1990s, the US had one of the longest periods of uninterrupted economic growth and stock market appreciation in its history --- the US high tech sector boomed in an unprecedented burst of innovation --- so much for the doom saying pundits and apocalyptic handwringers of the mid-1980s. Overall, the *Barron's* prognostications back in the 1980s turned-out to be reasonably accurate for the most part.

David Hackett Fischer is a Professor of History at Brandeis University: for further background, please see his book (referenced below). David's historical research intersects my earlier macroeconomic work in that major bursts of technological innovation (we are in one right now; it began just after W.W. II) that I have identified with historical patent issuance data are responsible for triggering what Fischer refers to in his book as global "*periods of equilibrium*."

Both David and I presently believe that a new such period of price equilibrium may well have begun in approximately 1979 -1980. If our speculative conjecture ultimately proves to be correct, its ramifications could have important strategic implications for science and technology, macroeconomics, business, and geopolitics over the next three to five decades.

In addition to Fischer's work, there is one more potentially crucial point that one should be aware of: recent data on total world population growth strongly indicates that it is finally slowing down and perhaps even flattening-out. In fact, the brilliant Russian particle physicist Prof. Sergey P. Kapitza clearly predicted this with a phenomenological model of world population growth that he developed and published in the early 1990s. Significantly, if such apparent trends in recent world population data are correct, the current era would be the first period of equilibrium in over 800 years during which world population growth was decelerating, instead of accelerating (see Lattice SlideShare report dated Aug. 29, 2011, at <http://www.slideshare.net/lewisglarsen/population-growth-decelerating-faster-than-expected-consequences-for-next-50-years-larsen-excerpt-aug-29-2011>).

Potential strategic implications of decelerating world population growth during a Fischer "*period of equilibrium*" could be profound: if this scenario describes what is actually underway today, and if runaway global warming and/or other types of mega-environmental disasters do not somehow befall us, it would mean that during the next 30 - 50 years there could potentially be incredibly large worldwide increases in per capita income accompanied by mostly stable to declining long term interest and inflation rates.

As Mark Twain remarked, "... *history does not really repeat itself, but it does rhyme*." If past history is any guide, such an age would probably be punctuated with very temporary, episodic bouts of moderate supply driven price inflation, coupled with long, comparatively 'quiet' price interludes, as well as occasional episodes of severe price deflation triggered by intense bursts of "*creative [technological] destruction*" *a la* the famous economist Joseph Schumpeter. In other words, much like ~1880s to 1920s.

Is a global 'Golden Age' lurking somewhere out beyond our present near-term economic horizon? People living in such a future era would likely experience unprecedented levels of global economic prosperity, democratized universal education and access to services and data via the Internet, and technologically driven economic growth.

As stated in Lattice's April 2010 "*White Paper*" on SlideShare: (<http://www.slideshare.net/lewisglarsen/cfakepathlattice-energy-llc-white-paper-excerpt-april-12-2010> ); the US-led PC era collapsed the price of computation and democratized human access to computers and powerful software. Analogously, the rise of the Internet has democratized low-cost worldwide access to information, ideas, and human knowledge and is gradually knitting the world together into a vast skein of diverse, electronically intercommunicating humanity.



If LENRs can be successfully commercialized as a clean, low cost, carbon-free energy source, it could help enable ecologically sustainable, global economic growth and democratize universal access to affordable clean, 'green' energy. In doing so, LENR technology could thus help magnify and intensify the most positive economic, political, and human welfare aspects of what could potentially be the current Fischer "*period of equilibrium*."

With the help of commercial versions of on- and off-grid LENR-based distributed power generation technologies, living standards of ~1.6 billion people who are presently living without any form of electricity could finally be brought into the 21st century over the next 20 - 25 years --- a worthy goal, no doubt.

If all of these wonderful possibilities eventually came to pass, LENR technology could potentially become one of many handmaidens for a new, global 'Golden Age of Man.'

**Reference to Fischer's "Great Wave" transnational socioeconomic model:**

*"The Great Wave: Price Revolutions and the Rhythm of History"*

David Hackett Fischer

Oxford University Press (1996) ISBN: 019505377X 536 pp. Paperback edition: June 2000

In his book, Fischer meticulously characterizes and describes the details of what he calls four global "*Great Waves*" that have occurred during the past ~1,000 years from the High Middle Ages up until today. In Fischer's two-stage conceptual model of a "*Great Wave*," the first stage is a relatively noninflationary, so-called "*period of equilibrium*" which typically lasts for 60 to 100 years ('average' duration is ~85 years). A Great Wave's second, longer stage is called a "*price revolution*" whose total duration is much more variable than the first stage. In contrast to periods of equilibrium, price revolutions are characterized by progressively higher rates of inflation and interest on debt obligations. They typically reach their final climax in an inflationary economic cataclysm that is immediately followed by a massive deflationary 'crash' which sets the stage for the beginning of the world's next period of equilibrium (which also marks the starting point and beginning 'seed' for the next global Great Wave).

Over the past ~1,000 years, periods of equilibrium have occurred at one point during four well-known historical epochs commonly known as the High Middle Ages (ca. 1000 - 1200), Renaissance (ca. 1400 - 1600), Enlightenment (ca. 1700 - 1800), and finally the Victorian Era (ca. 1830 - 1900); i.e., at certain times during the eleventh, fifteenth, eighteenth, and nineteenth centuries.

***As noted earlier, as of ca. 1979-80 it appears to that we may have entered the first Fischer period of equilibrium for 600 years in which population growth is decelerating instead of accelerating. That possibility might also have extraordinarily important implications, if correct.***



# ***Inflation, Household Asset Preferences, and Economic Policy---***

## ***A Simplified View***

**Lewis G. Larsen**  
**March 10, 1985**

### ***Model Conclusions and Implications for Economic Policy***

*The model predicts that as long as government policies insure that inflation rates do not exceed 3 - 5%, there will be a continuing shift from tangible into financial assets in household portfolios. This shift will in turn create a secular decline in interest rates and a secular uptrend in the stock market. Oscillations around these trends will be determined by "normal" business cycles and fine-tuning of monetary and fiscal policies. The presence or absence of large federal budget deficits cannot prevent this evolution of events as long as inflation is in check. Deficits are not inflationary as long as they are not monetized. However, deficits can keep interest rates higher than they would otherwise be. This in turn reduces liquidity which slows down the rate of this shift. The model argues that the deficits are not the cause of the high interest rates we are still experiencing. The real cause is a combination of the: long lag in inflationary expectations; illiquidity in household portfolios, banks, and corporations; and a monetary policy that has been too tight during the past year. Outside of printing money and monetizing a debt bail-out, there are no simple, quick solutions to current liquidity problems. Given households' reluctance and inability to either liquidate or further leverage their primary tangible asset --- their houses, the only way they can restructure and re-weight their portfolios is through allocation of a portion of their current and future income. That income can only be provided through economic growth.*

It seems safe to say that reflation is not politically acceptable at this time. Frankly, I am not sure if it is possible to inflate much under current conditions --- short-term interest rates would rise quickly, invert the yield curve, and collapse the economy before inflation could run very far. At this point in time, inflation is much less of a danger than further reductions in liquidity. Guidelines for monetary growth must take into account reduced velocity and added demands as a result of illiquidity. The Federal Reserve Board must supply enough money and credit to the system to avoid a near-term recession so that a combination of time and economic growth allow the asset-shifting process to do its job. Sensible revisions of the current tax codes, especially regarding real estate, will facilitate the shift of capital into financial assets and more productive sectors of the economy. IRAs, Keoghs, and 401-Ks are also a positive step in that direction. Reduction of marginal tax rates will increase the amount of capital available from household income for investment in financial assets and also help speed the asset shifting process. A robust stock market will allow corporations to sell new stock rather than take on more debt. Non-inflationary economic growth will bolster corporate profits, increase capital investment, and allow companies to develop or buy the new technologies that will further increase productivity.

In the long run, as long as the economy grows in a non-inflationary fashion, large budget deficits serve no useful purpose and should be substantially reduced or eliminated. However, although it can never be proven, I am convinced that the fiscal stimulus of the budget deficits in 1981-82 probably prevented the economy from slipping into an abyss that could have equaled the 1930's. For that reason alone, they have temporarily served a useful function. Deficits must now be reduced. However, as long as liquidity remains a problem, it is important that monetary policy help counter-balance the near-term reduction of fiscal stimulus as deficits decrease. Once liquidity is restored to normal levels, the Fed is again free to err on the sided of tightness. Until these liquidity problems are solved, a sharp recession could trigger a real catastrophe --- the abyss is still not all that far away.



## **The Recent Past**

If commodity speculation was an epidemic in the 1970's, speculation in real estate was a world-wide pandemic. This speculative mania in farmland, residential, and commercial real estate resulted in a substantial over-weighting of real estate in household portfolios. It also has the distinction of having been the only speculative excess in 80 years that was financed with a long-term debt instrument --- the 20 to 30 year, fixed-rate conventional mortgage. Financing demands from this massive over-investment and difficulties in rolling-over this debt are maintaining upward pressure on long-term interest rates. With a leveling-off or outright drop in real estate values, many household portfolios are now less liquid than they have been in years. Many U.S. corporations are saddled with excess commodity-related investments from the 1970's, highly leveraged balance sheets, and intense foreign competition arising from a strong dollar. This has reduced corporate liquidity. Because of the world-wide markdown in the value of commodities and collateral, banks are suffering with numerous problem loans and are illiquid themselves. Illiquid banks do not lower credit standards for new borrowers, they raise them! It would not be surprising if a portion of the phenomenal strength in the U.S. dollar is simply the result of a net contraction in international lending and toughened standards for new borrowers. *This current illiquidity is NOT a part of any normal business cycle --- it is the aftermath of a speculative excess and marks a transition in the trend of inflationary expectations.*

## **Assumptions and Construction of the Model**

Many authors, including Warren Buffett, have alluded to the idea that the average rate of return on total corporate capital in the U.S. has been essentially constant for many years and is unaffected by current inflation rates. My own investigation revealed a relatively compressed, non-Normal distribution of corporate pre-tax rates of return on total capital centered on 11 to 13% per year. The results did not change substantially across different time periods. Comprehensive data prior to the mid-1920s was not readily available, however spot-checking of earlier data did not seem to contradict the other results. In all of the data there was no clear correlation between the rate of return on capital and the current rate of inflation. *On this basis, let us make a simplifying assumption that the average annual rate of return on U.S. corporate capital has been relatively constant at around 11 - 13% for the past 80 to 100 years, and that this will probably continue into the future.*

*A second observation is that on a world-wide basis over the past 80 to 100 years, average issued yields on long-term corporate and government bonds have never exceeded 15 - 16% for any appreciable length of time (basis the local currency).* There have been cases where *traded* yields on some government or corporate bonds have surpassed those values for a while, but those were very likely the result of an additional risk premium related to a high probability of default, or because of a hyperinflation in the local currency.

*Third is a behavioral assumption that households will shift capital between different categories of assets in their portfolios in an attempt to maximize their after-tax, after-inflation rates of return. This behavior is subject to the constraints of diversification and adequate liquidity.* In this context, diversification implies that households in the aggregate will always have some none-zero level of holdings in most or all categories of assets, regardless of relative rates of return. As a result, asset shifts are never an all-or-nothing phenomenon. Liquidity with regard to asset conversion has a marked effect on the rate at which any asset shift can occur. Reduced liquidity slows the rate of the shifting process. In a series of articles in the *Wall Street Journal*, John Rutledge has eloquently discussed the economic importance and impact of shifts in asset preferences in household portfolios. He clearly demonstrates that the magnitude of these asset shifts is more than large enough to swamp the impact of budget deficits in terms of raising or lowering the level of interest rates.



### ***Assumptions and Construction of the Model (continued)***

How do households make the decisions that trigger these shifts? *A major input to these decisions is their expectations regarding the future inflation rate.*

Friedman and Schwartz empirically reconfirmed some early work by Fisher that expectations concerning price changes, inflation expectations, incorporate 20 - 30 years of experience/data and exhibit substantial response lags relative to the currently measured rate and direction of inflation. Inflation expectations in this context reflect an average value that in turn represents the mean of a statistical distribution of household expectations. A change in inflation expectations is a shift in this mean with time. The rate at which this occurs is a function of the intensity and duration of the stimulus, which is the spread between inflation expectations and *current measured* rate of inflation. The behavior of households in the “tails” of the distribution can be quite different from those near the “norm” and is the other reason why portfolio shifts are not “all or nothing”. *Slow incorporation of current inflation “information” into average household expectations produces decision patterns that change slowly and exhibit consistency over long time periods. For this reason, large-scale asset shifts can require 5 - 15 years to complete.*

The last assumption is that inflation is an exogenous economic variable with political roots. Inflation originates in government monetary and fiscal policies that are consciously tolerated by the participants in the economy --- households, business, and government. Not that external price shocks, such as oil in 1973-74 and 1979, cannot worsen inflation --- they do, but such events in and of themselves are not the root cause of it. *History shows that inflation can be controlled whenever the national political will to do so exists.*

### ***Capital Allocation among Alternative Assets***

Let us examine household asset allocation in the light of these considerations.

Over the past 80 - 100 years, households could choose between the following asset categories --- financial assets such as stock, bonds, money market instruments, life insurance, annuities, fixed-rate passbook savings and cash; tangible assets such as real estate, personal possessions, antiques, art, other collectibles and commodities such as gold and silver.

Inflation has a major impact on asset preference shifts, mainly in terms of relative weighting of tangible versus financial assets in the portfolio. Government tax policies that incorporate capital gains and/or income sheltering can have a powerful impact upon relative asset preferences. Relatively favorable tax treatment of real estate investments and lack of widely available money-market type instruments were probably the principal factors making real estate the preeminent tangible asset and inflation hedge in household portfolios from the late 1960's to the present.

Given an empirical limitation on the rate of return on corporate capital, as inflation rises and the spread narrows between the expected inflation rate and the corporate return, households start shifting out of stocks and into tangibles or (with financial deregulation) money market instruments. Since there is not necessarily any upper limit to the rate of inflation (Germany in the 1920's and Brazil and Argentina today), why own shares of a corporation whose intrinsic rate of return on capital is 11 - 13% during a period of high inflation? One reason why the rate of return on corporate capital is not strongly correlated with the inflation rate is that a company priced at any premium to net asset value is not a “pure” tangible asset. Its price contains considerable goodwill and claims on future earnings potential. Another reason is that a corporation can also be looked upon as an input/output device with labor, capital, technology, and



### ***Capital Allocation among Alternative Assets (continued)***

materials as inputs and goods and services as outputs. Inflation being a generalized phenomenon, inputs and outputs are affected about equally and the net result is a pass-through.

The situation for households in regard to bonds is that they tend to hold bonds to maturity and in an inflationary climate it is risky to fix an interest yield for a long period of time. With no risk of default, a household's inflation expectations should be the primary criterion for judging the relative attractiveness of bond yields. Data developed by Ibbotson and Sinquefeld indicates to me that the average household will buy bonds at yields that are only 1 - 2% premium to their inflation expectations. Since supplies of bonds must "clear" each year and if the above were true, long-term bond yields must be in short-term equilibrium with inflation expectations at all points in time. This implies that inflation expectations can be approximated by subtracting the 1 - 2% risk premium from long-term bond yields. From all of this, one would expect that both the secular trend and level of bond yields should lag inflation as it accelerates and substantially exceed it as it declines, especially if the decline is rapid. That is exactly what history shows. The secular uptrend in long-term bond yields has been broken within the past few years. Since bond supplies must "clear" each year, this model would indicate that household inflation expectations have finally begun a downtrend after an uptrend lasting many years. Current measured inflation rates must continue to stay low for this to be lasting --- this relates back to the intensity and duration of the stimulus described earlier.

Corporations issuing bonds have a situation complementary to that of the household. Why issue bonds at a yield equal to or higher than the average rate of return on total corporate capital? As long-term yields rise and the spread narrows between the market yield and their return on capital, corporations reduce their new bond offerings and shift their borrowing into the short end of the debt markets. Corporate borrowing in bonds is very elastic with respect to yields. Because of this, the supply of new corporate bonds becomes negligible as issued yields exceed 15 - 16%. This ties in directly with the historical observation mentioned earlier. Governments with taxing powers do not necessarily have to be elastic suppliers of bonds. Long-term yields might have been slightly lower over the past few years if the U.S. government had been more flexible in terms of the percentage of its financing in the long end of the debt markets.

Given that both stocks and bonds are favorable choices relative to inflation expectations, how do households allocate capital between them? Bonds should be favored at taxable yields over 13%. At taxable yields of 11 - 13%, bonds and stocks should be in rough competitive equilibrium. As taxable bond yields drop below 11%, stocks should be increasingly favored. Households always hold some bonds regardless of these relationships. I think that the close entrainment of the stock and bond markets over the past two years reflects the operation of these trade-offs.

Ibbotson and Sinquefeld have shown that over the long-run, short-term interest rates keep up with inflation. One can assume that households have always "known" this. Prior to financial deregulation in the U.S. in the late 1970's, passbook savings accounts at fixed rates of interest were the only short-term savings instrument readily available to many households. This exacerbated the shift out of financial assets in the early to mid-1970's when households shifted their "savings" from passbook accounts into higher mortgage payments. Unlike the case in bonds, household behavior either as a creditor (saver) or borrower (debtor) in the short end of the debt markets is quite complicated. Their decisions in this area reflect a complex interplay between inflation, personal consumption, trend in personal income, confidence, liquidity, lifestyle, price of credit and other factors. This shorter-term behavior can be volatile and change rapidly with events and is a classic element in "normal" business cycles.



### ***Capital Allocation among Alternative Assets (continued)***

Tangible assets do not earn interest nor do they represent any claims on future earning power. In a sense, tangible assets have no “futuraity”, only “here and now”. In a paper money economy, the price of a tangible asset is a relatively arbitrary function of the amount of paper money willing to chase it. In an inflationary environment, there is not necessarily any upper limit to the price of a tangible asset or commodity denominated in that currency. That is why households begin shifting into tangible assets as inflation rises. The shifting process continues to favor tangible assets as long as inflation expectations remain in an uptrend. Subject to the availability of liquid resale markets, tangible holdings are slowly liquidated and reinvested in financial assets as inflation expectations decline. As was said earlier, it appears that the uptrend in inflationary expectations has ended during the past several years. Current illiquidity is dangerous because it is impeding the shift from tangible into financial assets and keeping interest rates higher than they might otherwise be.





Thomas Hart Benton



Lewis  
Larsen

David Barnes

## Shining Prophecy

### The Coming Renaissance of U.S. Industry

By JONATHAN R. LAING

**B**ARRINGTON, Ill. — One would think that the recent stock-market surge and ebb in inflation would have dispelled much of the gloom overhanging the U.S. economy.

Yet the opposite seems true. These days the agonies of the oil patch and rust and farm belts are almost daily grist for the media mills. Much is made of the U.S.'s loss of competitive edge and eroding industrial base. Social commentators and others depict the U.S. consumer as a yuppie hedonist hopelessly addicted to feckless spending on foreign-made VCRs, autos and the like. In the meantime, debt spirals while the savings rate and all-important capital investment languish.

To many observers the U.S. is fast abdicating its role as the world's economic superpower just as surely as Great Britain did after World War I. The U.S. has supposedly become part of the Japanese Co-prosperity Sphere, a mere neo-colonial supplier of raw materials and consumer of finished products of Japan Inc. Ironically, though, the conquest was accomplished by smiling, deferential Japanese businessmen rather than Tojo's hordes.

A certain apocalypse chic has even developed in some quarters of Wall Street, even though fees and trading profits (both licit and otherwise) have never been fatter. No less a personage than Barton Biggs, a respected managing director of Morgan Stanley, has pointed out a number of menacing par-

allels between the late 'Twenties and today—a growing farm depression, rising bank failures, plummeting commodity prices, serious credit overextension and excessive speculation on Wall Street.

And Edward Yardeni, the Prudential-Bache economist, in a recent market letter compared 1986 to 1930, the first year of the Great Depression. He contended that now, like then, monetary ease and discount-rate cuts are proving unavailing in resuscitating a sick economy.

Not to be outdone, James Rogers, one of Wall Street's most successful money managers in the 'Seventies, recently forecast an impending stock-market debacle and worldwide economic depression. He maintained that the crash likely will be triggered by a collapse in the U.S. dollar—the very foundation of the Free World monetary system. According to Rogers, the greenback's future is exceedingly bleak indeed because of the U.S.'s spiraling domestic and foreign debt.

The long-term economic cycle theories of such economists as the late Soviet economist Nikolai Kondratieff are enjoying a new vogue, too. According to some, a deflationary Kondratieff wave has engulfed the U.S. and the rest of the world. In its wake will come soaring unemployment, collapsing corporate profits and widespread economic chaos.

Finally, Forbes magazine in August saw fit to "unretire" its longtime prophet of doom, col-

umnist Ashby Bladen. He gloatingly likened his return from political exile to that of Winston Churchill in the late 'Thirties, when the Nazi war machine that Churchill had ceaselessly warned England of finally rolled into action. To make the comparison complete, Bladen contended that the world economic crash is already upon us, though that knowledge has been vouchsafed to only a few observers so far.

Certainly a measure of concern about the U.S. economy seems justified. Indeed, government, corporate and consumer debt have soared ominously in recent years and stand at record levels. By next year, the U.S.'s external debt will surpass the total indebtedness of all the banana republics and other regimes of South America combined. This country had been a net creditor nation for some 70 years before 1985.

Moreover, economic growth has turned sluggish with large pockets of distress in the fourth year of the so-called Reagan Economic Miracle. The anemic growth in the second quarter merely underscored concern by many economists that the U.S. may be slipping into recession.

But just possibly, the future of the U.S. economy may not be as bleak as is widely perceived. After all, recession is a far cry from depression. And the U.S. isn't even at that point yet. Besides, media economic coverage, which so influences business

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## Shining Prophecy

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and consumer attitudes, invariably accents the negative side of economic trends. As in all other areas of coverage, it is, at best, a lagging rather than leading indicator of reality. And finally, one wonders whether the ever more strident cries of alarm aren't, in part, attempts to grandstand a bit and perhaps even win a place in the history books. Boston money manager Roger Babson succeeded spectacularly on both counts by predicting the 1929 stock market crash just weeks before its onset. (Barron's earned a different kind of distinction at the time by ridiculing Babson's forecast and insisting that both the stock market and general economy were sound.)

And in fact, there are some boosters of the U.S.'s economic prospects around in addition to U.S. Commerce Secretary Malcolm Baldrige and the other Sunshine Boys of the Reagan Administration. One is Lewis Larsen, an obscure 39-year-old manager of a tiny Heinold Securities Inc. branch in the Chicago suburb of Barrington. Larsen, you see, is a self-styled futurist. As such, he combs newspapers, periodicals and economic tracts. Dozens of boxes of clippings, back issues and economic data litter the basement of the suburban tract home where he lives placidly with his wife and two infant children.

His lonely intellectual odyssey over the past five years through these often gloomy archives has given birth to a born-again faith in the U.S.'s future economic vitality.

For according to Larsen, this country stands on the verge of a leap in productivity that may be as profound as the Industrial Revolution was to 19th century Europe. A stock-market bull since the early 'Eighties, he sees the Dow Jones Industrial Average reaching at least 3000 by 1990 and soaring far higher in the ensuing decade.

"What I'm talking about is a

### Corrections & Amplifications

The Stock Exchange Volume Trends table on page 122 of last week's issue should have listed +.41 and +.10, respectively, under the Aug. 22 "QCHA" headings for the New York and American exchanges. QCHA is the average percentage movement for all exchange listed stocks each day on an unweighted basis.

\* \* \*

Allegheny Corp. has accumulated nearly a 5% stake in Beneficial Corp. Last week's Trader column misidentified the buyer as Allegheny International.

reindustrialization of America that will propel many of our basic industries such as autos, chemicals and general manufacturing back into the undisputed world leadership that our computer, aerospace and biotechnology industries presently enjoy," he says with the intensity of a zealot. "All the building blocks for the great leap forward are in place—technological breakthroughs, a well-developed capital market, a huge domestic market and ample natural resources. Strangely enough, most Americans don't see what's coming because of their current mood of self-flagellation, but the Japanese certainly do. They aren't building plants

in the U.S., rushing into joint ventures with major U.S. companies and stepping to the plate to buy big chunks of U.S. government debt at each refunding just to circumvent a protectionist backlash. The fact is the Japanese are bullish on America."

For one thing, the gap between U.S. and Japanese labor costs has begun to narrow dramatically, not only because of the decline of the dollar but also an ebbing in union strength, worker give-backs, improved productivity, a growth in group profit-incentive systems and new, less confrontational labor-management relationships, says Larsen. The new paradigm for labor relations is fast becoming

the high-tech industry in which hierarchy gives way to collegiality and everyone shares the same parking area and dining room.

The new pattern is spreading even to tradition-bound Big Industry, says Larsen. He points to such disparate developments as the growing popularity of quality circles, the United Auto Worker representation on the Chrysler board, flexible wage systems in the telephone and steel mini-mill industries and the NUMMI joint venture in Fremont, Calif., between General Motors and Toyota, where Japanese-style worker production teams are enjoying signal success. Asserts Larsen: "The

U.S.'s labor cost differentials won't disappear overnight, but what's important is the direction and speed of the trend downward. Big Labor and the wage stickiness it has spawned during the post-World War II era is finally passing from the scene. This has important implications both for the competitiveness of American industry and underlying inflation."

Sure, U.S. productivity gains have come grudgingly of late, in particular because of the economy's large service sector. But Larsen sees tremendous promise here. He contends that the U.S. has a significant edge

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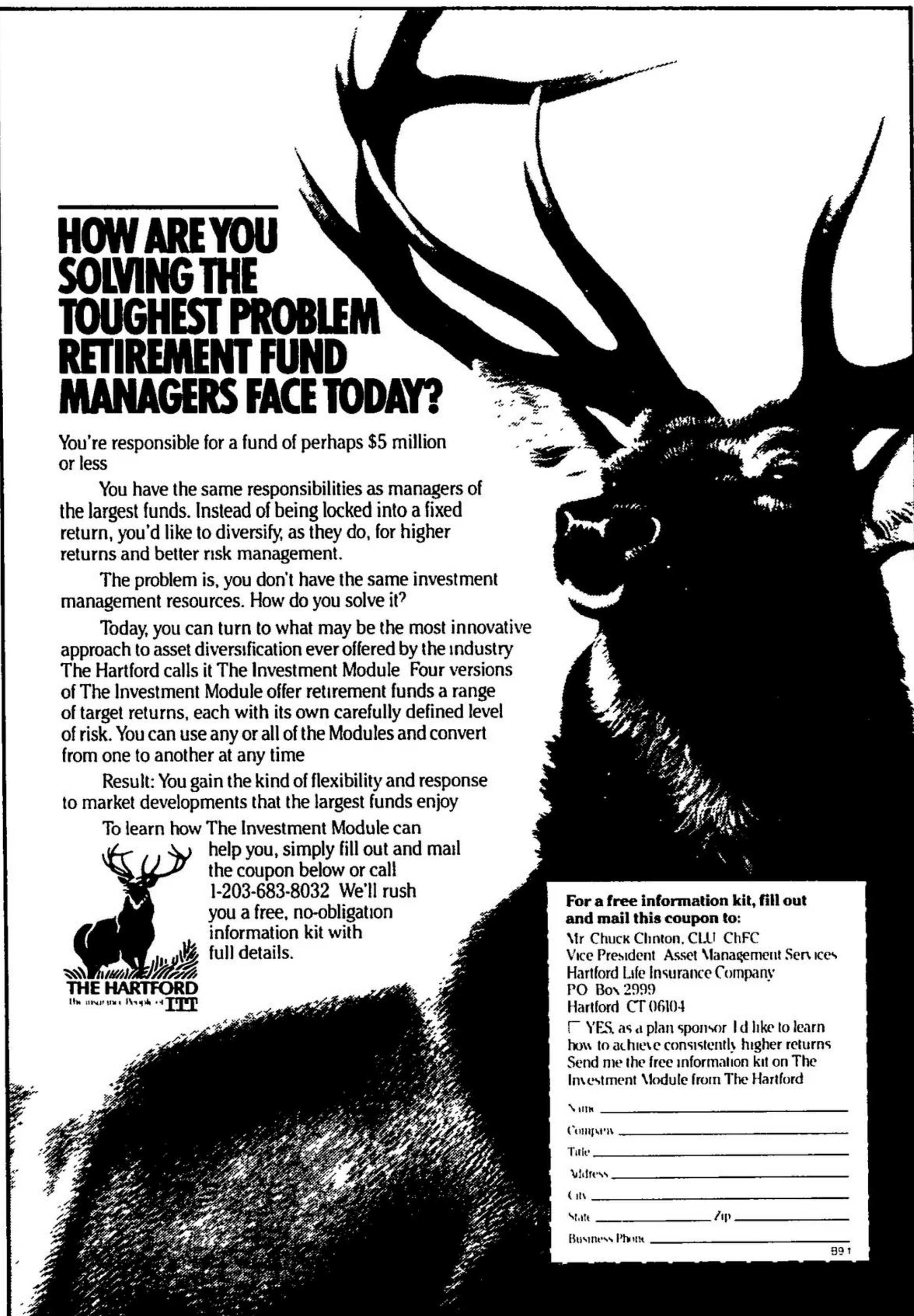
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## Shining Prophecy

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in technological innovation to not only more than match Japanese manufacturers but also leapfrog cheap labor competition in such areas as Korea and Brazil.

For example, flexible manufacturing and other computerized systems with powers of independent decision making and rudimentary hand-eye coordination are beginning to make their way to the plant floor. Though Japan enjoys a lead in robotic manufacturing, Larsen claims that the U.S. will overtake it because of the U.S.'s lead

in "machine vision," artificial intelligence and developing software to link hierarchies of computers.

Likewise, Star Wars research has made the U.S. pre-eminent in research into optical computer. This will dramatically enhance the speed and power of computers by using beams of light rather electric current to operate the logic gates on semiconductor chips.

Finally, breakthroughs in biotechnology will soon move it from the university laboratory into industry, too, he declares. Drug manufacturing is only the most obvious application. Potentially as revolutionary are its uses in agriculture and the chemical industry. He foresees, for example, genetically engi-

neered "designer enzymes" replacing standard catalysts and drastically dropping the costs of producing most chemicals and plastics. These enzymes, in addition, will produce whole new families of complex molecular substances.

"These various technological advances aren't pie in the sky stuff—they are happening," Larsen claims. "The resulting automation and jump in productivity could nearly drop labor content out of the production-cost equations and spawn whole new industries and products in the 'Nineties."

Already, "outsourcing" by U.S. industry is starting to slow and even reverse in some industries, Larsen observes. For example, some semiconductor

companies have moved board-assembly operations from Singapore back to highly automated plants in the U.S., he points out.

Larsen believes that the doom and gloom crowd also tends to give short shrift to other enormous strides U.S. companies have made in pruning costs and lowering break-even points while improving product quality. Whole layers of redundant white-collar workers have been chopped. A number of American companies have adopted the Japanese parts inventory system of "just-in-time" delivery to lower drastically inventory carrying costs. Finally, though inflation-adjusted interest rates are still high, U.S. capital costs have

dropped markedly in recent years and, in Larsen's opinion, are headed even lower. Thus the playing field, which has been so skewed in favor of overseas companies with their lower cost of capital, is leveling out somewhat.

"In short," Larsen contends, "a process of natural selection has taken place in corporate America since the late 'Sixties as a result of all the calamities that were visited on U.S. companies. For much of the period they were subjected to murderous foreign price competition, double-digit interest rates, intense union pressure and, finally, stifling and costly government regulation. Many of the survivors deserve the designation given Xerox in a recent book—Samurai corporations."

All of this is pretty heady stuff. Particularly so when it comes from someone like Lew Larsen. Over some 16 years of employment, he has held eight jobs. Even he concedes that his record smacks of dilettantism. Moreover, he has mostly operated in the penumbra of the financial big time. He has never managed much more than \$1 million in the commodity or securities world. His theories are largely spelled out in client investment letters. He is unpublished, though not for lack of trying.

Yet in a curious way this unconventional background has its strengths. Being out of the economic mainstream, he sees things in a frequently idiosyncratic but original way. Also, he has been exposed to a variety of academic disciplines and sides of American business.

A case in point: Larsen holds both a B.A. degree in biology and an MBA from the University of Chicago. In addition, he did two years of graduate work in biophysics. He says that his science background helps him to assess technological developments. Science analogies frequently crop up in his investment analysis. To wit, he labels the blowoff stage of bull markets as "non-linear, self-exciting" phenomena. The latter term, borrowed from biophysics, refers to random excesses in nature such as inexplicable explosions in predator populations in excess of increases in prey.

His closest brush with Corporate America came during stints in the 'Seventies as a computer systems planner for several corporations. "Let us just say that I'm happier looking at companies from a distance these days," he says. "I was lousy at office politics and too impatient for corporate life."

It was as a cash sorghum grain trader for Louis Dreyfus Corp. in the late 'Seventies that he first encountered the Japanese, close up and personal. He still recalls the Mitsui trader who used to telephone him on purpose at 3 a.m. to negotiate grain deals while Larsen's mind was still fogged by sleepiness. Lapsing into Nippon English, Larsen mimics, "Herro Mr. Rarsun . . . Ah . . . Ah

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Fascinated by their trading tenacity and subtle strategies, Larsen began a close study of Japanese business. Among other things, he corresponded actively with several Japanese friends from business school who were making their slow ascent up the corporate ladder at major Japanese companies. Larsen brandishes a copy of a slim hardcover book by an America firm, the Boston Consulting Group, simply entitled *Perspectives on Experience*. "It's all here," he exclaims, "the whole blueprint the Japanese used during the 'Seventies to capture the world auto, television, VCR, compact-disk-player markets and memory-chip markets. The BCG office in Tokyo had a absolutely tremendous influence on Japanese corporate strategies."

The book, written in the 'Sixties, contends that accumulated experience (cumulative volume) in a product or product line is the crucial determinant of competitive success. For it's only through experience that cost reductions can be made continually, thus opening the way for price cutting. The study even found that precise mathematical relationships exist between accumulated experience and cost no matter what the industry or what the product.

Nothing particularly startling in the thesis—just a variant of the old learning-curve theory. But the BCG study goes further. It points out that in a dynamic market, market share is unstable until "one producer clearly dominates the market and his prices are low enough to inhibit growth in relative market share of any significant competitor."

According to Larsen, this explains the aggressive thrusts and seemingly suicidal pricing of Japanese companies into important new markets. Ultimately, Japanese concerns carry the day not so much because of any technology edge but because of cumulative experience and the cost edge it confers.

Yet Larsen holds that such strategies will be less successful in the 'Nineties as a result of the quickening pace of technological change. "All the hoary clichés about the Japanese being great product elaborators and refiners but ordinary at technological innovation are really true," he contends. "In the environment I see coming, of shorter product cycles, and explosive technological change, they won't have the same luxury of time to accumulate production experience. Moving targets give them fits."

By way of example, he cites the computer industry. Though Japanese companies have come to dominate the printer field, where technology has been relatively static for a decade, they all but missed the personal com-

puter revolution and still lag in most mainframe areas.

Perhaps the biggest influence on his economic thinking came in the early 'Eighties during a stint at Commodities Corp. in Princeton, N.J. As one of the speculative firm's young, green-beret commodity-fund managers, Larsen was caught heavily long in the deflationary vortex that gripped commodity prices then. He suffered a heavy 40% drop in the net asset value of his funds. He was temporarily benched by the firm and ordered to reexamine his trading philosophy, a standard Commodities Corp. procedure.

He ruefully recalls the period: "It was clear that I had

missed something fundamental and was out of step with the times. That something, of course, was the appointment of Paul Volcker to the Federal Reserve in 1979 and the Fed's actions to kill off inflation by tightening money supply, regardless of the consequences. The entire culture of inflation that had dominated the U.S. economy since the late 'Sixties was being swept away."

According to Larsen, the Volcker policy change has triggered a "gigantic and ongoing shift" from tangible, hard assets like precious metals, commodities, farmland and oil and gas to financial assets such as stocks and bonds. In this context, the

recent tax bill, by gutting various tax shelters such as commercial real estate, is just the latest stimulus to this trend.

The reason for the shift isn't hard to divine, he declares. His studies of nearly 100 years of U.S. corporate data show that the nominal pre-tax corporate returns on total capital have rarely varied much from an average of 11%-13%, whatever the economic environment.

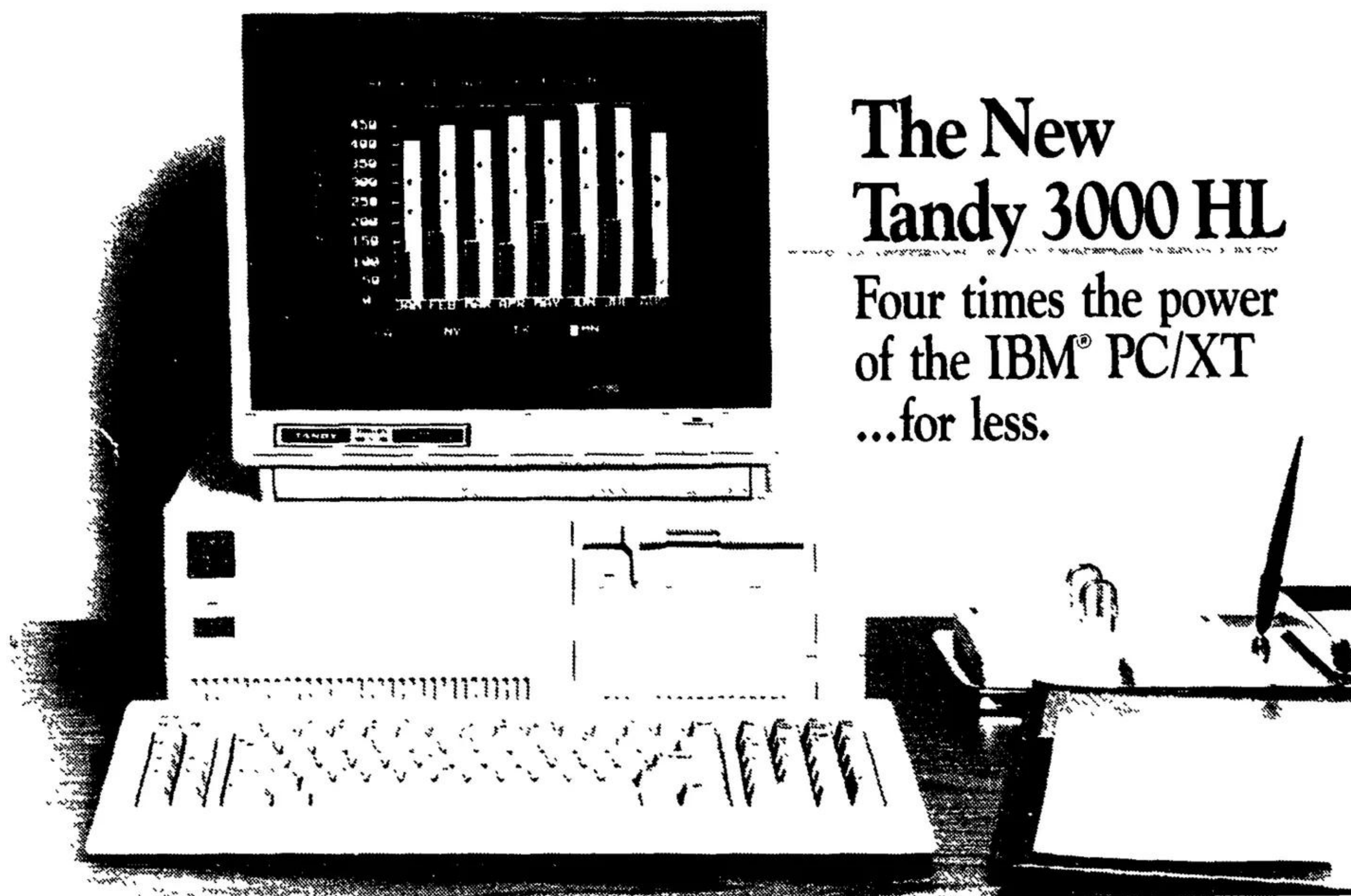
In inflationary periods such as the 'Seventies, tangibles are infinitely more attractive to both individuals and corporations because their returns from price appreciation at least track inflation. By contrast, nominal corporate returns have limits.

So high inflation exacts a heavy toll on the real returns even of stocks. History shows that stocks are, in fact, a poor inflation hedge.

Yet the implications of this massive asset switch are misunderstood, Larsen says. For one thing, it is occurring in what economist and fund manager John Rutledge calls the portfolio economy rather than in the workaday general economy captured in gross national product statistics. This so-called portfolio economy is mostly ignored by economists and even Wall Street types, though it dwarfs in size the \$4 trillion

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## Shining Prophecy

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gross national product and at times can have an overwhelming impact on inflation, interest rates and economic activity, says Larsen. "Asset holdings can't be easily tracked, so economists take the path of least resistance by leaving them out of their vaunted macro-economic computer models," he adds. "That's one reason their interest-rate forecasts have been so poor in recent years."

According to Larsen, the flight from hard assets during

the 'Eighties has been sharply deflationary. Tangible goods such as commodities, farmland and, more recently, commercial real estate are being dumped on a glutted market, frequently at substantial losses. Thus, much wealth has been extinguished for individuals and corporations alike. Even more damaging, these sales depress the collateral value of unliquidated hard-asset holdings, causing consumers to pull in their horns, banks and other financial intermediaries to become more reluctant lenders, and businesses to scale back expansion plans. Economic activity is thus chilled.

The good news, however, is

that investment is finally flowing into the productive channel of financial assets, a necessary first step for the reindustrialization of America that Larsen sees beginning. Financing costs have dropped dramatically for companies. Equity capital is being raised with increasingly greater ease. And soon will come the capital investment and productivity increases necessary to boost incomes and relieve consumers, banks and corporations alike, Larsen says. In addition, he maintains, tax revenues will burgeon with the result that government spending deficits will disappear.

In the meantime, both U.S.

fiscal and monetary policy must remain expansive, according to Larsen. It buys time until the long, painful switch from hard goods to financial investment runs its course. Foreign-payment deficits will continue for a time, but that's all to the good, too, he insists: "All this foreign capital that's being sucked into the U.S. is helping insure that disinflation doesn't turn into deflation. Also, I regard the Japanese and German investment as a sort of Marshall Plan in reverse, helping us rebuild an economy shattered by inflation. Both countries have aging populations, so it makes investment sense for them to recycle their trade surpluses here."

Larsen puts little credence in fears that the loosening of Fed monetary policy in recent years threatens to reignite inflation and cause a surge in interest rates. First, the U.S. banking system is so illiquid and has turned so conservative that funds wouldn't make it out the spigot even if the Fed were to hyperinflate. Likewise, he sees no reprise of the 'Seventies, when the flight to tangibles fanned inflation. "Too many people have recent memories of being burned," he explains. "Besides, we now, for the first time, have money-market funds as inflation-hedge alternatives. They would serve as a classic Keynesian liquidity trap, sterilizing much of any excessive money creation."

He's more concerned about deflationary forces propelling the U.S. into a serious recession or even depression. He sees several potential tripwires of such a crisis, including a U.S. banking crisis, a protracted tightening of monetary policy and passage of major protectionist legislation. These possibilities are becoming more remote with the passage of time, he feels. "The chances of a major calamity are less than one in 10 now, which are a lot better odds than during the 1981-82 recession," he con-

tends. "We're muddling through nicely."

There's nothing esoteric about Larsen's investment recommendations. He likes bonds because he expects interest rates to work lower. "Real rates will give ground once the investor portfolio switch from tangibles winds down and the premiums aren't needed to encourage bond investment," he explains. He also favors electric-utility stocks, both as an interest-rate play and growth vehicles. For reindustrialization should boost demand for electricity.

He is recommending such major drug companies as SmithKline Beckman and Pfizer, not only because of their basic businesses but also because they offer a "coward's way" to play biotech. Larsen not without courage, shows some guts, however. He is long such semiconductor stocks as Intel, Motorola and Advanced Micro Devices. On his buy list is Brush Wellman, "an interesting play in engineered materials," and Musto Exploration Ltd., a Canadian producer of gallium, which is a key ingredient of gallium arsenide chips. These will replace silicon chips in many computer applications. "In the interest of truth in packaging, I should warn investors that I first recommended Musto when it was selling at \$4 a share, and it's now \$2.50 bid," he concedes.

Finally, he is pushing a number of "industrial renaissance" stocks such as GM, Ford, Nantucket Industries and Monarch Machine Tools.

In short, it's a fairly conservative, mainstream portfolio. Just what one would expect from someone as upbeat about U.S. industry as Larsen.

"The main difficulty in the years ahead will be to stay long in the face of all the caterwauling going on about how bad things are," he says. "Maybe the long-awaited crash will occur one day, but remember, you've got to have a boom first."

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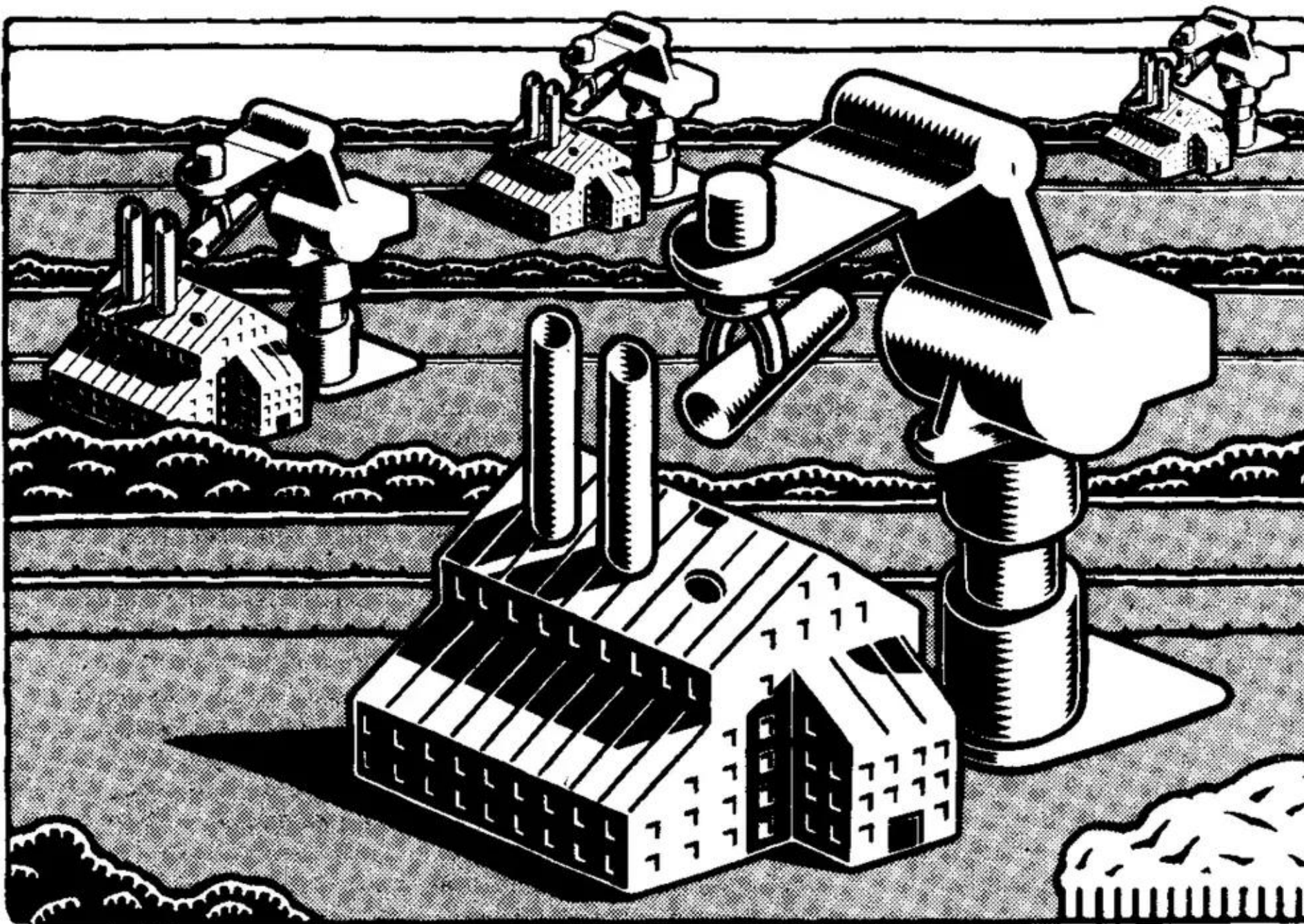
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## Back to the Futurist

### Lewis Larsen Says We Ain't Seen Nothin' Yet

By JONATHAN R. LAING

IT WAS back in the summer of 1986 that we first talked to the self-styled futurist Lewis Larsen. At the time, much gloom hung over the U.S. economy. For while inflation had declined and the Dow had reached the seemingly vertiginous height of near 2000, the Reagan economic boom seemed to be losing steam. Moreover, business publications abounded in stories of the U.S.'s eroding industrial might and loss of competitive edge. Mammoth trade deficits changed the U.S. from international creditor to debtor.

In a Labor Day weekend cover story on Larsen, *Barron's* painted a decidedly different picture. Larsen asserted in the piece that far from sinking into senescence, the American economy had a bright future. For, according to Larsen, the country was on the verge of a productivity leap as dramatic as the gains experienced during the Industrial Revolution. Indeed, the resurgence would propel even such laggard basic industries as steel and machine tools into a position of price and quality competitiveness with overseas rivals.

He ascribed the coming revival to various factors that he contended the doomsayers were overlooking. First, of course, was the adaptive response that had been forced on many major American corporations by fierce foreign price competition, double-digit inflation and interest rates, intense union pressures and the damaging 1981-1982 recession.

As a result, U.S. companies had worked to ruthlessly prune

costs and lower break-even points by automating, closing obsolete plant and eliminating redundant layers of white-collar workers. Many companies had also adopted the Japanese material and parts systems of "just-in-time" delivery to lower inventory costs.

Larsen also pointed to a revolution in labor-management relations that had been under way for several years. Union strength was ebbing and, with it, the cost-push inflationary wage pressures of the 'Seventies and early 'Eighties. Also, U.S. companies were discovering that collegial, Japanese-style treatment of workers with its less regimented organization of the factory floor and "gain-sharing" could produce huge improvements in product quality and output.

Finally, Larsen argued that prowess in such high-technology fields as computing, office automation, biotechnology, electronics and aerospace would confer on the U.S. an imposing advantage over Japan and other foreign competitors. Not only would technological innovation give America a leg up in the emerging marriage of the computer and machine in factories, but it also promised to spawn whole new technologies such as the use of bio-engineered "designer enzymes" for the production of plastics and chemicals.

Moreover, such technologies would prove more difficult for Taiwan, Korea and other newly industrialized countries to copy than traditional mass production techniques. Likewise, Larsen declared that the quickening pace of technological inno-

vation would prove difficult for Japanese manufacturers, whose forte rests on high-volume production and ceaseless product refinement and elaboration. Cheaper foreign labor costs would pale in importance, too, because the new technologies promised, in the words of Larsen, to drop labor content "right out of the production-cost equation."

Visionary notions, perhaps. But at least some of Larsen's rosy scenario has come to pass. Indeed, the latest Federal Reserve figures show that the U.S. factory-utilization rate rose to 82% of capacity, the highest such reading in some seven years. Employment has been rising smartly and profits in many smokestack industries such as paper, copper, and chemicals are surging.

Of course, a major contributor to this industrial revival has been the falling dollar, a factor that Larsen mentioned only in passing. The decline in the greenback against the Japanese yen and many European currencies has served to both stifle imports somewhat and make U.S. exports cheaper in foreign markets. And, it's no surprise, U.S. manufactured exports rose some \$26 billion in the first three quarters of 1987 over the year-earlier period.

But productivity gains have played a major role, too, just as Larsen predicted they would. Since 1982, U.S. factory productivity has increased 4.8% a year, compared with a compounded annual growth rate of just 2.4% between 1960 and 1982. The gains in output per man hour have been even more

impressive in production of durable goods. Here the 7.1% compounded annual increases since 1982 were more than three times greater than the 2% annual gains from 1960 to 1982.

Larsen had also predicted a reversal in out-sourcing by U.S. companies and a concomitant rush by Japanese and other foreign manufacturers to switch production to their own U.S. facilities. This, too, has happened. For example, in recent months Tandy announced plans to shift some computer production from Korea to the U.S. More startling, some 20 Japanese companies, including Honda, Mazda, Sony and Toshiba, are exporting everything from motorcycles to microwave ovens from American factories to Japan and other countries.

In light of his prescience, *Barron's* decided to revisit Larsen to glean his views on the economic future in the wake of the October stock market crash.

These days, the talkative Larsen is running some \$10 million in accounts from a Chicago office of Geldermann Securities. "I'm in the process of becoming a registered investment adviser with the SEC so that I can start charging annual management fees," he related. "That's the only way I can make an adequate living, since I keep my clients' portfolio turnover so low. I believe in long-term investing." He is a man of his word: his accounts have remained fully invested since the crash.

On the side, Larsen serves as a consultant to the Chicago investment banking firm Hayes

  
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On the other hand, excessive monetary restraint could plunge the U.S. into a serious recession, or worse, he contends. And recession must be avoided at all costs over the next couple of years because of the fragility of the financial system. Otherwise, Larsen worries, the banking system could "seize up" as a torrent of Third World and leveraged buyout loans went sour. Likewise, a U.S. recession would probably trigger a severe contraction in world trade.

Massive debt defaults are by no means inevitable, Larsen insists, despite the continued build-up of U.S. borrowing at the government, corporate and household level. "The fact that the doomsayers chose to ignore is that much of the U.S. debt isn't financing feckless consumption of fancy foreign cars and compact-disc players or wasteful weapons systems that just rust away on the ground," Larsen argues. "Instead, it's paying for the revolution in factory automation that will ensure our continued economic dominance."

Indeed, capital spending as a percentage of total economic activity has been rising lustily in the U.S. in the past several years while it has been falling in Europe and Japan. Research and development spending is humming, particularly in the all-important high-tech areas of computers, biotechnology and telecommunications. And, according to Larsen, officially reported R&D is understated because much of it is buried in the budgets of the Defense Department and the National Aeronautics and Space Administration. He expects the Star Wars program, for example, to yield major commercial payoffs in supercomputing, laser technology and artificial intelligence.

A number of aerospace plants, such as LTV's B-1B bomber facility in Dallas, are on the cutting edge of the computer-integrated manufacturing (CIM) techniques that are helping revitalize U.S. industry. The operations of many of these defense plants are shrouded in secrecy. But reports keep filtering out in such authoritative publications as *Aviation Week & Space Technology* magazine of enormous productivity gains—as much as 10-to-1 at the facilities, according to Larsen.

All of this excites Larsen mightily. He scoffs at the many self-appointed pundits who are now predicting a replay of the Great Depression. If anything, he thinks the present era resembles closely the 1880s and 1890s, when the U.S.'s agrarian society gave way to the Industrial Revolution.

He cites numerous parallels. Both periods saw significant bursts in technological innovation. He points excitedly to two tidal waves in his chart of new patents issued almost exactly 100 years apart. The breakthroughs in the late 19th cen-

tury in electricity, telegraphy, automobiles, the diesel engine, frame construction, radio and steam-powered shipping laid the basis for modern industrial society, he declares.

Both periods also have witnessed major pulses in net immigration, which drew in not only cheap labor but also scientific and technical talent from outside the U.S. Likewise, the U.S. incurred heavy foreign debts during both eras in building up its productive capacity and infrastructure, according to Larsen.

Then as now economic instability reigned. The last quarter of the 19th century was punctuated by financial panics and severe economic contractions. The economic downturns of the mid-1870s and mid-1890s and stagnation in between have their analogues in the post-1973 era, according to Larsen. "Huge labor displacement occurred in both eras, which caused naggingly high unemployment and crimped purchasing power despite the enormous increases in worldwide productive capacity," Larsen asserts.

Yet the chaos of the late 19th century spawned arguably the greatest period of economic growth in U.S. history—the first two decades of the 20th century. This period saw the birth of many of today's industrial behemoths. The Rockefellers, Du Ponts and Mellons, for example,

made the bulk of their family fortunes during these times.

Larsen believes that just such a golden era may lie ahead for the U.S., though the economy has a way to go before reaching its "pull-out" phase.

His bullishness rests on his conviction that just as the U.S. dominated the era of the mass production assembly line, so will it stand astride the next stage of industrial evolution, an age that will see an explosion in computer control of all aspects of production from product design and fabrication to inventory handling, machine and labor scheduling, quality control and shipping. Already the lineaments of "flexible manufacturing" are manifesting themselves. Product engineers are abandoning pencils and T-squares for light pens and computer-aided design and manufacturing (CAD-CAM) work stations. They can manipulate and alter in seconds three-dimensional designs that once took weeks of drafting to construct. The computer is also becoming a powerful tool in slashing obdurate indirect overhead, that 70% or so of total manufacturing costs arising from the handling of material and semi-finished parts, scrap, the reworking of botched production runs and the retooling of machines. Robots are increasingly handling the dull, repetitive jobs of spot welding, painting and assembly.

Despite giant strides in automation, U.S. industry hasn't established undisputed superiority over Japanese manufacturers yet, Larsen concedes. On the one hand, there have been signal successes like IBM's Lexington, Ky., plant that turns out its Proprinter line of dot-matrix printers. Yet General Motors' moon-shot approach to automation at showcase plants in Hamtramck and Flint, Mich., has been disappointing.

Larsen insists, though, that the U.S. will have a decided edge in the crucial next step in automation—computer-integrated manufacturing. In this brave new world, the data and instructions flowing smoothly from production stage to production stage will permit an infinite variety of goods to be made efficiently, and an implosion in product life cycles. An engineer could conceivably design a new product at his work station and quickly transmit the new specifications to other computers that would command machines to fabricate and ship the product. Computer networks will link customer and supplier symbiotically.

"The key to coming computerized integration is that innovation and production will merge together into a single act," Larsen contends. "Technological content will become paramount with production efficiency and quality mere givens. That has to be a big boost to the U.S., which has always led the rest of the world in innovation if not commercial applications."

Such computer integration depends on elaborate software and systems integration, though. In other words, computers of disparate size, manufacture and function must be made to talk and work together. And here again, the U.S. has an advantage, according to Larsen. "The Japanese may study harder and turn out more engineers per capita than we do, but they can't touch us in the creativity or profusion of our software," he asserts. "Our system seems to breed inventive hackers who turn into brilliant programmers and software writers. And these days, software is power because it embeds knowledge into programs and vastly expands the reach of expertise."

Curiously, Larsen's current favorites are mostly low-tech companies in unfashionable industries. He reasons, though, that it will be such companies on the margin—shoots poking through the cracked pavement of Rust Belt America—that promise to flower most spectacularly in the emerging industrial renaissance. The companies are all reasonable values and blessed with strong balance sheets and efficient operations.

Acme Steel Co. of South Chicago, Ill., is one. The company is the low-tech orphan of a spin-off several years ago. It's the U.S.'s smallest integrated steelmaker and lacks even the continuous-casting capability of its bigger rivals here and abroad. Yet, according to Larsen, Acme can produce steel strip and sheet coils of first-class quality and gauge because of unique heat treating and coil-rolling technology. The company is also blessed with a turned-on, "incentivized" work force. Increasingly, Acme's steel is going downstream to supply its strapping and auto-jack operations where more value can be added. Larsen estimates 1988 earnings of around \$1.80 a share.

The explosion in just-in-time delivery is a big boon to the U.S. trucking industry because of the necessity of same-day delivery. One beneficiary of this trend, says Larsen, is Kysor Industries, which makes heating and refrigerating units for trucks and landing gears for truck trailers. "Kysor is the quality manufacturer in its field, supplying an industry that must turnover its aging fleet," he claims. He looks for the company to make about \$2.15 a share this year. The stock sells for \$20 a share.

Finally, Larsen likes Monarch Machine Tools, a tightly managed, quality producer in an industry that has been slaughtered by imports. "Machine tools are about to turn because of the slide in the dollar and pickup in capital spending," he insists. "These trends should have a powerful impact on Monarch's bottom line. I'll concede that buying Monarch is an act of faith, though."

Faith is surely one trait that Larsen has in abundance. ■



Lewis Larsen

David Barnes

& Griffith Inc. ("they don't know quite what to make of me, and I can't say that I blame them"), helping ferret out merger and acquisition opportunities in Smokestack America. Tours of machine-tool, autopart and steel plants in the heartland have only bolstered his belief in the shimmering reality of a new Industrial Revolution. "You're seeing improvements in efficiency and employee morale that are breathtaking," he reports. "Why, at one fence-post plant we toured recently, the workers were actually slapping the owner-manager on the back and hustling like all get out. All it took was a new worker incentive plan and a computerized control system to transform this dying operation into a thriving concern."

To Larsen, the ferocity of the October crash was grossly out of proportion to the events triggering it and underlying trends in the U.S. economy. "In my estimation, the major cause was the Federal Reserve's monetary tightening, which became apparent to most everybody by August," he contends.

Larsen sees a less than one-in-three chance of any economic calamity akin to the Great Depression occurring in the next few years. To avoid problems, however, the Fed must follow a neutral-to-expansive monetary policy, whatever its effect of the dollar, he says, and because disinflationary pressures still abound, he sees little danger in a relaxed Fed monetary policy reigniting inflation and causing a rise in interest rates.



# Are We Headed For a New Age?

*Stable prices in the past have heralded prosperous and astounding eras*

BY JONATHAN R. LAING • Are we about to enter a decades-long period of rising purchasing power, mind-boggling technological breakthroughs and increasing social harmony? Numerous signs suggest that we are, much as the world did during the Industrial Revolution in the 1800s, the Renaissance in the 1400s and the Enlightenment in the 1700s.

The frequent precursor of such eras of good feeling has been the end of a period in which consumer prices have been rapidly climbing and the beginning of a period in which consumer prices fall or at least stabilize. Recent evidence of slowing inflation, however, has been greeted with some alarm by some Wall Street economists. They worry that falling commodity prices and a flood of cheap Asian imports will push America into a deflationary spiral in which ever-lower prices will roil the world's economies.

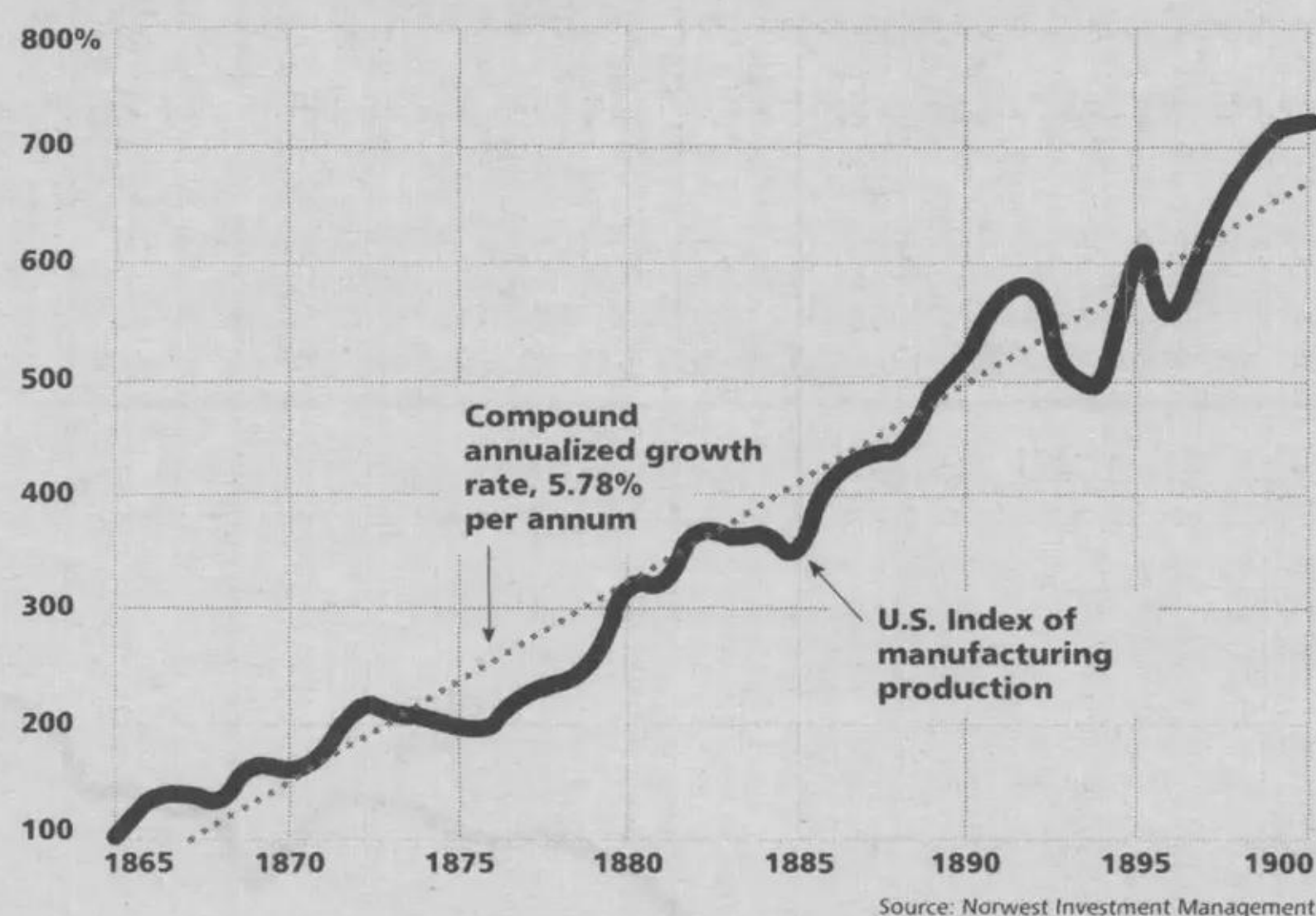
But declining prices aren't necessarily bad. History tells us that protracted periods of falling and stable prices can be beneficial for consumers and for businesses alike. It should be pointed out, of course, that prices of all goods and services aren't declining right now, nor can they be said to be absolutely stable. Today, the Consumer Price Index is still showing an annual gain of about 1.5% here in the U.S. Still, prices are far more tame than they were in the 1970s, 1980s and early 1990s. And the prices of key commodities such as crude oil, copper and hogs are sinking to their lowest levels in decades. To many experts, the trend toward deflation seems inexorable.

The great fear, of course, is that if prices in general slide over the next year or two, they could trigger an economic depression of the sort the U.S. experienced in the 1930s. Such fears have been heightened by Asia's moribund economies. Indonesia, for one, is now facing famine, pestilence and anarchy.

Investors' hysteria over deflation is somewhat amusing to economist and forecaster A. Gary Shilling, Ph.D. Since the late 1970s, he has been pounding the table to warn of a major slowdown in inflation. About five years ago, he first began forecasting a sustained decline in consumer prices. Shilling earned much media attention in 1989 when he created a board game based on Monopoly, called *The Deflation Game*. And earlier this year, he published a 372-page monograph called *Deflation*, which laid out the business, economic and investment implications of mild annual declines in

## Manufacturing Explosion

► A huge increase in manufacturing in the late 1800s increased the supply of goods and, in effect, decreased prices. This era proved that America can prosper in deflationary times.



the prices Americans pay for goods and services.

Perhaps of greater moment, he maintains that there is little to fear from deflation. In fact, his studies of economic history show deflation to be a largely benign phenomenon that has accompanied some of the most glorious periods of economic growth in America. One such era was the final four decades of the 1800s. Another was the 1920s.

"It's only because of the Great Depression, with its nightmarish images of soup lines, shantytowns and 25% unemployment that deflation inspires such hysteria among Americans," he observed in a recent interview in his memento-filled office in the New Jersey suburb of Springfield. "More often than not, though, deflationary periods have proved to be wonderful times to be alive for the average American in terms of productivity-enhancing technological innovation, rising real wages and, of course, strong economic expansion."

Such benign deflation occurs because supplies of goods and services are growing faster than demand. This leads to lower prices as vendors try to clear their shelves. So, even though the average American's wages may flatten or even fall during such a period of deflation, his purchasing power, his real wealth, rises because prices are falling faster than his income. Likewise, in Shilling's ideal scenario, jobs remain plentiful because low prices drive up sales volumes, revenues and profits, particularly in industries that benefit from technological advances.

Between 1860 and 1896, for example, the number of U.S. workers employed in manufacturing and construction tripled, and manufacturing output measured in units rose sixfold. Because of this cornucopia of supply, the wholesale price index fell some 50%, or 2.6% annually, during the period. Yet real economic growth rose an average of 4.3% a year as a result of soaring volumes, huge productivity gains and immigration-fed population

growth. Workers' purchasing power rose nearly 30% despite a 14% drop in wages.

The major wellspring of this bounty, of course, was America's Industrial Revolution. Production costs were driven relentlessly lower by new technologies such as the Bessemer steel process, the power loom, the steam turbine, the linotype, the acetylene torch, roller grinder flour mills, arc welding and electric motors. Agricultural and metal prices plummeted as the rapid build-out of the intercontinental railway system opened the land and mining resources of the West to exploitation. The mechanical reaper, followed in 1890 by invention of the combine, dramatically boosted America's agrarian productivity.

Although falling grain prices drove some American farmers into bankruptcy, the plummeting cost of farm machinery and transportation during the era helped cushion hard times for many efficient operators. And the U.S. farmer in the Western states fared far better in the global market than his less-productive counterparts in Britain, France or Prussia.

Likewise, Shilling points out, Americans during the 1920s benefited from surging production of automobiles, electric appliances, home furnishings and radios. This consumer bonanza resulted in large part from the rapid electrification of factory equipment and the revolutionary production techniques perfected by the likes of Henry Ford. Wholesale prices dropped some 5% for the decade, while industrial production doubled and real incomes rose some 40%.

According to Shilling, a similar golden era of deflationary growth is upon us. The reasons are diverse. For one, the end of the Cold War has allowed governments, particularly in developed nations, to cut wasteful, inflation-inducing spending on defense. This, combined with voter disgust with inflationary spending by politicians, is causing government spending growth and budget deficits to shrink and, in the case of the U.S., budget deficits are turning into surpluses.

At the same time, government deregulation in the U.S. and in other developed nations has removed all manner of price floors that previously served to institutionalize inflation by creating what economist Robert Heilbroner once described as "floors without ceilings." As Shilling explains, "Beginning some 20 years ago, the U.S. government has al-



lowed the bracing winds of competition to lower airline fares, trucking rates, natural-gas prices, electrical rates and long-distance and local telephone charges. And that doesn't even take into account the new cost efficiencies being achieved in financial services as a result of the removal of state restrictions on bank branches and traditional strictures that kept banks, brokerage houses and insurance companies from poaching on one another's markets."

Then, too, there is the aging of the populations in the U.S. and other developed nations. This implies some slowdown in consumption spending after years of torrid growth during the time when the postwar Baby Boomers were forming families, buying houses and so forth. These Baby Boomers will have little choice but to cut back their spending in the years ahead if they want a secure retirement. In September and October, the U.S. had a negative savings rate, the latest evidence that consumers have maxed out on their credit cards, drained off much of their remaining home equity and created a dangerous dependence on stock-market gains, which could prove evanescent.

Yet another deflationary factor is the surge in corporate restructuring. Kicked off by the U.S. in the 1980s, the restructuring trend now seems a permanent feature for businesses in both the U.S. and Europe. Flattening organization structures, cost-saving, outsourcing, pay-for-performance and the refining of work processes are never-ending activities that continuously cut costs and spur enhanced productivity. "Gone are the days when companies could make temporary cuts in travel, entertainment and advertising during a recession and reverse them all when times got better," Shilling contends. "Nowadays companies have to be in a permanent cost-cutting mode."

Technological advances are also fueling deflation by cutting costs and boosting productivity. High-tech spending on its face still appears to be a trivial part of the total U.S. economy, accounting for perhaps 7% of annual economic output. But Shilling claims that high-tech's share of the economy is dramatically understated. The 7% doesn't include such items as semiconductors in cars, appliances or industrial control systems, nor does it embrace genetically enhanced seeds or all the spending devoted to software. The latter is considered an operating cost rather than a capital investment.

The deflationary impact of technology extends far beyond the constant declines in computer prices, memory chips and microprocessors. Technology enhances the efficiency and reduces the operating costs of almost any activity, from telecommunications to electricity generation to oil prospecting to financial services to retailing.

Most obvious, perhaps, is the deflationary impact the Internet is having on business. First, the 'Net just about eliminates the cost of comparing the prices of cars, life insurance, airline tickets, books or new winter coats. Whole layers of middlemen and showrooms disappear in this virtual marketplace. The resulting savings can mean lower prices for consumers at the same time that they mean higher profits for manufacturers.



GARY SHILLING

The shift of U.S. manufacturing operations to low-cost countries has been a more important byproduct of globalization than the oft-touted expansion of foreign markets for U.S. goods, says Shilling.



DAVID HACKETT FISCHER

Consumer prices were either stable or declining in the Renaissance, the Enlightenment and the Victorian era. Author Hackett Fischer argues that this important economic factor helped foster greater social harmony.



ED YARDENI

Yardeni expects the stock market to slide 30% or more. Then comes a recession sometime in 1999. After that, he predicts, the U.S. will reach the Promised Land of economic growth with no inflation.



MAUREEN ALLYN

Unflustered by the "jobless recovery" of the early 1990s, Allyn pointed out the advantages of falling prices and a rising stock market. She's still an optimist, but she does worry about financial excesses here in the U.S.

jobs as possible. In fact, many developing nations have some incentive to operate at a loss and boost commodity production all the more as prices fall, Shilling maintains. Their need for foreign currency has become that dire.

Yet Shilling isn't overly worried that the economic woes of Asia, Russia and Latin America will unduly threaten the U.S. and other advanced nations with a descent into the vortex of 'Thirties-style depression. Deflation turned lethal in the Great Depression only because of a confluence of unusual circumstances. Then a financial collapse in stocks and, subsequently, in the banking system happened to coincide perversely with the normal forces that trigger deflation: excess capacity and a slowdown in technological advancement. Together, these factors caused an implosion in demand and heavy job losses. A collapse in consumers' purchasing power ensued.

Any such repeat of the 'Thirties experience is unlikely today, Shilling claims. Rolling recessions and adjustments over the past 10 to 15 years have purged the U.S. of many of the financial excesses that plagued the nation in the 1980s. Federal bailouts a decade ago helped the farm sector and oil patch survive the collapse in commodity prices. The savings-and-loan industry was likewise rescued at great taxpayer expense. Subsequently, the Fed engineered a dramatic drop in short-term interest rates in the early 1990s to help the U.S. banking system rebuild its capital base following a bust in loans for real-estate development and leveraged buy-outs. And in recent months, central banks in the U.S. and Europe engaged in a series of coordinated interest-rate cuts to calm international financial markets following a crisis triggered by Russia's debt default last August.

Lastly, the U.S. is running a budget surplus, corporate balance sheets remain strong, and developed countries' exposure to troubled Asian markets is manageable, if not inconsequential. All in all, Shilling figures, we are not dealing with the fodder for a full-bore depression.

Yet Shilling isn't an unabashed bull over the short term. That would be asking a lot from the 61-year-old economist, who has spent much of his three-decade career on Wall Street with stops at Merrill Lynch and White Weld before founding his own firm in 1978. He has forecast recessions every few years, and more than a few of these calls have been wrong. He clearly is a card-carrying member of the "no pain-no gain" school — literally. He has spent much of his free time since 1990 tending honeybees and suffers hundreds of bee-stings a year in pursuit of that hobby.

Shilling expects a tough transition period to occur before the deflationary Golden Age ensues. This could include an imminent slide in stock prices of 40%-50%, followed by a consumer savings spree and a nasty recession. "Such a scenario wouldn't be the end of the world, but given the current psychosis over deflation and depression, a lot of folks will see a repeat of the 'Thirties coming," he avers.

His near-term bearishness reflects his concern about current market prices. He claims that stock ratios, whether they measure price-to-earnings, price-to-book

Another profoundly deflationary factor at work today has been the opening of the world to the free flow of capital as a result of the triumph of free market principles, the advent of modern telecommunications, deep tariff cuts and relaxation in capital controls. As a result, U.S. corporations and other multinationals are relatively free to search out the cheapest labor, real estate, productive capacity and support services, whether that means computer programmers in India, insurance-claims processors in Ireland or *maquiladora* manufacturing plants in Mexico.

In the end, this shift to low-cost providers has proved to be a more important byproduct of globalization than the

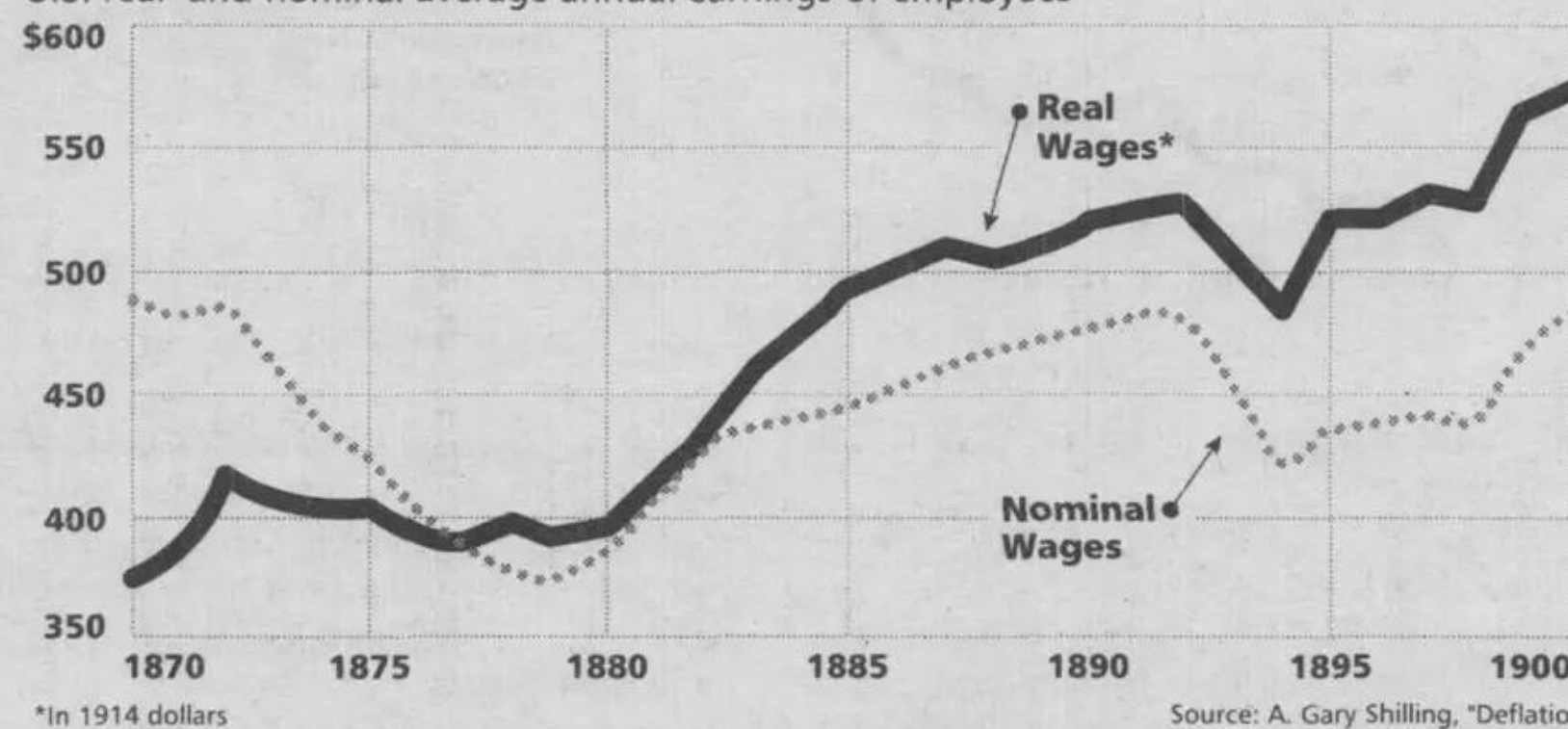
oft-touted expansion of markets for U.S. goods, according to Shilling. The real news here is that the U.S. and other advanced nations have been able to export the Industrial and Information Revolutions to the less-developed world, while importing the low-cost fruit of these efforts.

The Asian economic crisis is intensifying this gathering force of deflation by creating a glut of unused industrial capacity, raw materials and manufactured products. Indeed, commodity prices like those for oil and copper have crashed not only because of reduced worldwide demand but also because developing nations are hard pressed to boost their exports so they can pay for their imports and keep as many

## Living Larger

► Though wages actually fell in the late 1800s, declining prices for consumer goods allowed workers to live better. In other words, their real wages surged.

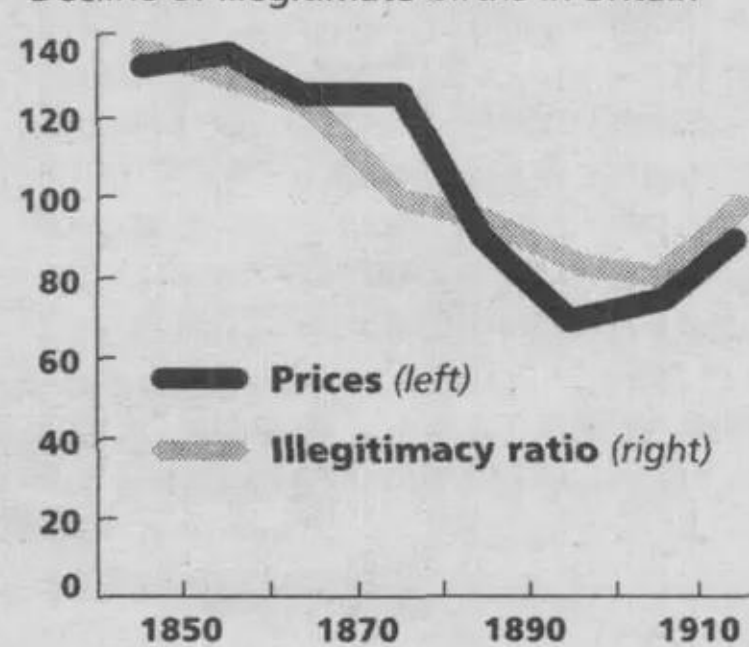
U.S. real and nominal average annual earnings of employees



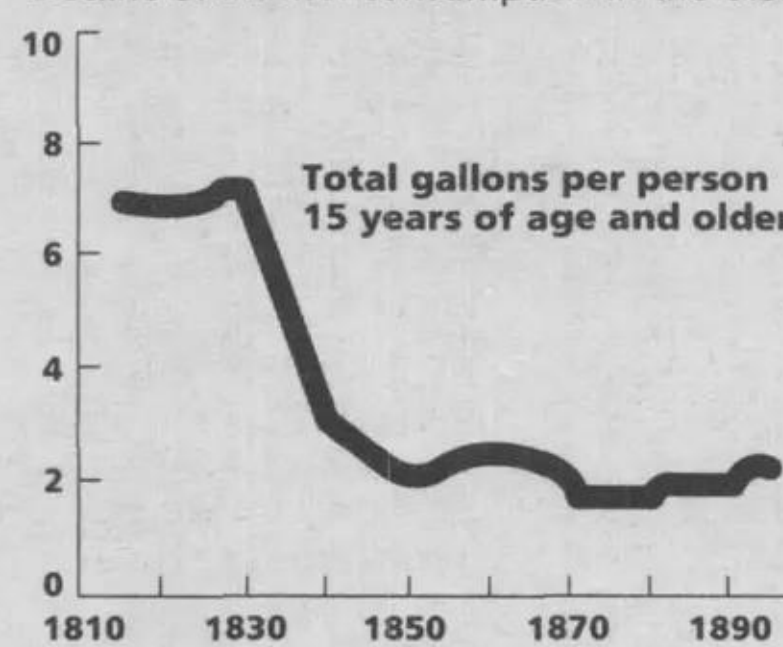
## An Earlier Era of Prosperity

► Falling prices increased purchasing power in Britain in the late 1800s and may have also helped decrease illegitimate births. At about the same time, alcohol consumption in the U.S. plummeted.

Decline of illegitimate births in Britain



Decline of alcohol consumption in the U.S.





*What distinguishes these equilibrium periods is the sharp improvement in the economic fortunes of a broad range of the population that benefited from steep declines in the costs of food, shelter, land rents and interest rates.*

or price-to-cash flow levels, are at unsustainable heights. Moreover, Shilling worries about investors' wildly inflated expectations of stock-market returns. He points out that U.S. corporate profits are likely to suffer over the near term from weakening exports, savage competition from Asian imports, unfavorable foreign-currency translations and tight labor markets.

He expects U.S. shareholders to cut and run before long, dumping stocks at the first sign of serious trouble in the stock market. "The bulk of retirement money in the market today is in defined-contribution plans, which investors control themselves. This will prove to be hot money that will head for the exits during the first sustained stock-market downturn, because the Baby Boomers are so invested in the market and have saved so little for their retirement," he maintains.

Shilling, of course, isn't the only deflationist on Wall Street these days. Back in 1995 when doom and gloom over America's tepid "jobless recovery" held sway, economist Maureen F. Allyn of Scudder Kemper penned a prophetic report on a brave new world she saw emerging that would be characterized by falling price levels, healthy growth, more and better U.S. jobs, sharply rising living standards and strong financial-asset markets.

Even she has been astonished at how quickly these roseate forecasts have come to pass. Nowadays, she shares some of Shilling's concerns. Benevolent deflation comes, of course, from growth-enhancing characteristics like innovation, deregulation, efficient capital flows and expansion of supply. Yet deflation's evil twin can destroy growth by blighting the very demand that lower prices are supposed to stimulate. Such a scenario has unfolded in Asia, where imprudent lending and excessive money growth have led to skyrocketing loan losses, collapsing asset values, wealth extinguishment, an obdurate credit crunch and a deflationary recession, perhaps even a depression.

While Allyn thinks it unlikely that such bad times will reach U.S. shores, she doesn't totally dismiss the possibility. The Fed's easy money policies of late may have helped create an unsustainable stock-market bubble. Despite the basic soundness of the U.S. banking system, she worries about excesses cropping up in other credit arenas such as the asset-backed lending and junk-bond markets. "I'm most likely overreacting and arguing with myself, but I don't like the build-up I'm seeing in household debt leverage," she said in a telephone interview. "Yet over the long haul, my money is still on the good deflationary scenario."

Deutsche Bank Securities economist Edward Yardeni has been a deflationist and New Era bull since the 'Eighties. But now he, too, has begun to sound notes of caution about the near-term outlook for the U.S. stock market and economy. He expects a market slide of 30% or more, followed by a recession sometime in 1999. Af-

ter that, he predicts, the U.S. will reach the Promised Land of non-inflationary growth.

Deflation has its risks, according to Yardeni. For example, it doesn't take much for a deflationary psychology to develop that can turn lethal. Consumers can get accustomed to delaying purchases of goods and services in anticipation of even lower prices, and that does serious damage to producers as inventories swell and revenues fall. Such a cycle tends to feed on itself, forcing companies to react by laying off workers and chopping capital spending. This, of course, crimps purchasing power and ultimately lays waste to demand.

Most prone to such a meltdown are older, low-tech industries like metals, paper, steel and even automobiles. Unlike the computer and telecommunications outfits, these traditional industries have little experience with constant price-cutting over a product cycle. Nor are traditional industries as experienced at making constant innovations in their product lines to force obsolescence, drive unit sales and boost revenues and earnings.

Yardeni, a confirmed cybernaut, sees a possible menace in the Internet and online commerce. He ruminates in a recent report that the 'Net might be so successful in forcing producers of goods and providers of services to pare their profit margins that employment and capital spending might suffer in the process. "While consumers win as consumers [on the 'Net], they could lose as employees of companies that cannot compete in cyberspace," he concluded gloomily.

Poppycock, says James Paulsen, an economist at Norwest Investment Management, in Minneapolis. He insists the U.S. is in the early stages of what he has taken to calling a "deflationary boom," fueled by a technology leap comparable to the Industrial Revolution. He also points to the salubrious effect of falling interest rates and sliding commodity prices. To keep the party going, though, consumers' purchasing power and corporate profits must keep growing. Paulsen is quite optimistic on that score, however.

As a result, he's an ardent bull on both bond and stock prices, even given the latter's sharp rebound since last fall and today's sky-high levels. By his reckoning, the bear market washout in stocks already occurred in October, and the investment theme is now onward and upward.

In fact, Paulsen claims that stocks suffered their worst postwar decline relative to bonds between June and November of last year. Though blue-chip stocks fell by only a bit more than 15% during the period, they effectively declined around 40% relative to bonds. In contrast, stocks fell only about 20% relative to bonds during the bloody 1973-74 bear market, he says.

Rarely do scholarly works shed much light on burning contemporary issues like deflation and its likely impact on the global economy. Many academics are loath to make predictions. They likewise have a tendency to get buried in empirical minutiae. ▶

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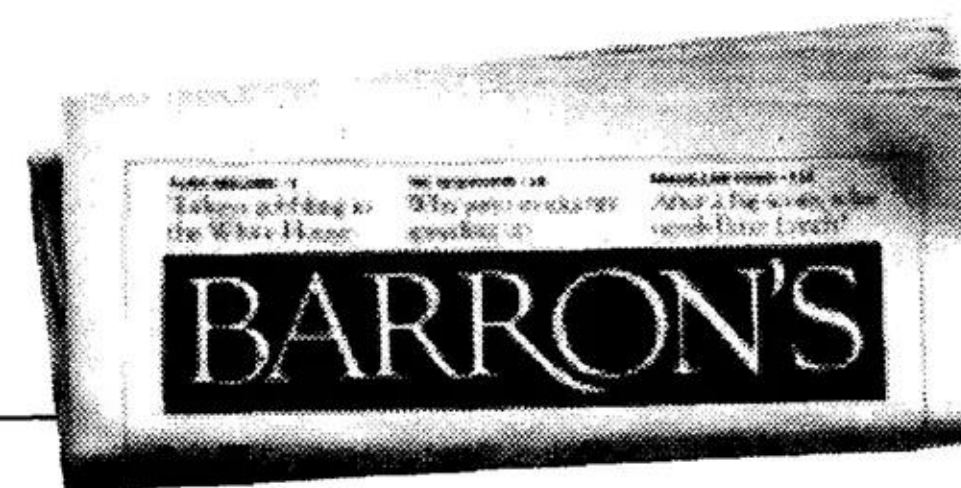
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## Main Event

Wall Street's heavyweights give their picks and pans on stocks and their best investing ideas for '99 in Barron's *Roundtable* issues.

January 18	Part 1
January 25	Part 2
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Happily, this isn't the case with the weighty 1996 book *The Great Wave*, by Brandeis historian David Hackett Fischer. The tome seeks nothing less than to trace the waxing and waning of inflation in Western history from the 12th century to the present. It's a work of prodigious scholarship with more than 200 pages of footnotes and appendices and chart data on everything from land rents in 15th-century Normandy to two centuries of rye prices in Frankfurt to illegitimate-birth trends in Victorian England.

What gives the book particular relevance today is its description of the structure of periods of relative price stability, or what Fischer calls eras of "price equilibrium," which inevitably follow the long spasms of inflation that punctuate some 800 years of Western history. So far, there have been three such equilibrium periods, according to Fischer, averaging some 70-80 years in length. The first ran from 1400 to 1480, the Renaissance; the second from 1660 to 1730, the Enlightenment Era, and the third from 1830 to nearly 1900, the Victorian Age.

What distinguishes these equilibrium periods from the hyper-inflationary eras that immediately preceded them was the sharp improvement in the economic fortunes of a broad range of the population that benefited from sharp declines in the costs of food, shelter, land rents and interest rates. Manufactured goods typically decline in price, too, but for the most part that occurs late in the equilibrium periods. About the only groups that fare worse during equilibrium periods are producers of commodities and basic materials and the upper-crust rentier class. Rents and interest rates typically fall during periods of price stability.

These deflationary eras were also times of rising real income and positive increases in real economic output. Moreover, income inequality tended to diminish as the periods wore on. Nations became less prone to engage in bloody foreign wars. An amelioration in social mood led to falling rates of illegitimacy, alcohol and drug consumption and crime. Lastly, according to Fischer, these periods were marked by increased faith in harmony, order, progress and reason. This came in sharp contrast to the cynicism and nihilism that typically obtained at the end of long inflationary waves.

Even though prices have been disinflating for more than a decade in the U.S. and other Western nations, and crime rates have been in sharp decline, Fischer insists in the book that the great 20th century inflation wave had still not run its course. Of course, a certain pessimist chic still reigned a few years ago when he wrote the book. Fischer also claimed not to have yet seen a cataclysmic event comparable to the Black Death in the 14th century or the Napoleonic Wars in the early 1800s, which marked an end to those two prior inflationary waves.

But Fischer appeared to have changed his point of view on that score when we recently reached him by telephone at his home in Wayland, Massachusetts. "As much as I've always avoided prophecy, indications like falling crime rates and recent rises in real income seem to indicate that we may be on the cusp of yet another equilibrium period," he opined. He concedes that, among other things, he may have misread the import of the "collapse of the totalitarian system of the left [meaning Eastern Europe and the Soviet

Union] and the right [Latin America]" as events that could herald the end of this century's inflationary wave events.

What exactly triggers deflation and then sustains the long periods of price equilibrium remains something of a mystery to Fischer. Declines in population growth seem to play a role, along with a muting of standard-of-living expectations. Obviously, governments, after decades of traumatic inflation, are more inclined to exercise a modicum of fiscal and monetary discipline. Lucky occurrences like a string of strong harvests seem to have played a role historically. Or maybe there have been random factors at work unique to each period.

Another explanation comes from Chicago-based consultant and futurist Lewis Larsen, who graced the pages of *Barron's* more than a decade ago with a dead-on prediction that a coming technology revolution would vault the U.S. decisively ahead of the Japanese in international economic competitiveness. In Larsen's view, bursts in technological innovation, with all their attendant productivity gains, are the crucial factors these days in bringing on periods of price equilibrium.

He describes the process: Inflationary waves, particularly in their late virulent stages, force economic substitutions through technological change. But only when disinflation begins and interest rates come down can many of these ideas attract the financing necessary to achieve critical mass. Then a self-reinforcing process sets in. Innovation brings down prices and interest rates, allowing more investment which, in turn, lowers costs and increases efficiency even more. And so on.

Larsen cites statistics on some 200 years of U.S. patent grants to bolster his argument. Patent activity skyrocketed after 1820 to double the level of the first two decades of the century. Later on, that era of equilibrium benefited from quantum leaps in patent activity in the 1860s and again in the 1880s after the effects of the 1873 bank panic wore off. And today, we're in the early stages of yet another burst in patent activity, according to Larsen, which augurs well for increased productivity gains. Last year, some 112,000 patents were granted, compared with 66,000 in 1981, when inflation was cresting.

On top of that, recent technological changes have played a major if unpublicized role in the collapse in crude oil prices, says Larsen. Among the key developments are recent advances in the direct conversion of cheap natural gas to synthetic crude oil, plus the use of embedded microprocessors and software to control the energy consumption in large buildings, plants and equipment. An example of the latter are new chips that will cut the power used by electronic components and computers in the "standby" mode by more than 95%. And this doesn't even take into account huge energy-saving breakthroughs that Larsen expects in the realm of automobiles powered by hydrogen fuel cells and the possible commercialization of power-generation techniques such as cold fusion.

Of course, much of this lies in the future. But that's the point. The future may well be brighter than most commentators believe. In fact, with the slaying of inflation, history suggests we are on the verge of a new Golden Age that will last many decades.

# TAXING SUBJECT

New and overlooked corners of the revenue code • by Joseph F. Gelband

## A Matter of Policy Who should own your life insurance?

INTELLIGENT HANDLING OF YOUR life insurance can be the key to an effective, two-pronged estate-planning program — reducing your taxable estate and putting your heirs into funds to pay the tax. Certain features that are unique to life insurance, together with the very favorable rules under which the insurance is taxed, offer an ideal approach to providing more for your heirs at little or no cost in gift taxes and your own financial security.

Here, in a nutshell, are the tax rules: First, life-insurance proceeds are not treated as part of your estate unless (a) you own the policy or retain some control over it at the time of your death, or (b) the proceeds are payable to your estate, or (c) you gave the policy away within the last three years of your life. Further, the proceeds paid out on the death of the insured are not subject to income taxes.

It can be like a Roth IRA for your beneficiary, without the restrictions on contributions or limits tied to your adjusted gross income — your premiums accumulate tax-free, building up the value of the policy, with no tax on the payout. In the context of our tax system, it's almost too simple — and too generous — to believe.

As long as your spouse is the beneficiary under your policy, the proceeds will be insulated from tax by the marital deduction. But circumstances change. Suppose you took out the policy when you were married or had a child; you designated your wife as beneficiary, and when the insurance agent asked you to name an alternate, you said either "my children" or "my estate." Flash-forward to the present — you're single again, whether through divorce or death of your spouse; the policy may be paid up, so you're not reminded of it by premium notices. If it's now payable to your children or your estate, as much as 55% of the payout on your death may be lost to the estate tax — you are carrying life insurance for Uncle Sam.

A timely gift of the policy could avoid estate taxes on the proceeds. But how about the gift tax? As a practical matter, the tax on a gift of life insurance is a very minor consideration, and will seldom be incurred. The tax is figured on the value of the policy at the date of the transfer, less the usual exclusion of \$10,000 per year for each assignee. The value of the particular policy is roughly its cash-surrender, or loan, value plus the unexpired portion of your last premium. On a paid-up policy, value is what the insurance company would charge for a policy with comparable coverage. You can get the exact figure from the company.

The gift tax is obviously not a problem if you're dealing with a term policy with little or no cash value. But if the policy is worth more than the annual exclusion (\$10,000 times the number of assignees), you could reduce the amount of the gift by making the transfer after borrowing

against the policy's loan value; you might make up the difference by gifts to the beneficiaries in future years. And by transferring the policy just before the premium falls due, you can keep the pre-paid premium out of its gift-tax value.

The much promoted "second to die" type of insurance policy pays off when it is most needed — on the death of the surviving spouse, when the marital deduction is not available and the reality of the estate tax must finally be confronted. As to the cost of such policies, it's one of the mysteries of the science of probability why it is that (under the IRS's tables) at age 65, for example, either spouse has a life expectancy of 20 years, while the survivor, whichever it may be, is expected to last 25 years, to age 90. It's that "joint and survivor" expectancy, with its longer period of premium payments and investment earnings, that makes this insurance relatively cheap even at post-retirement ages. The same rules apply here — a full and timely transfer of the policy to the ultimate beneficiary will keep the proceeds free of taxes.

Make sure your transfer, or assignment, of the policy is complete. Any power you retain is enough to get the proceeds included and taxed in your estate. Examples of such power: to change the beneficiary, to cancel or surrender the policy or to borrow against its surrender value, or even the seemingly minor power to select the manner of paying out the proceeds (as between payment in a lump sum or in installments, for example).

And don't forget the three-year rule — the proceeds will be taxed in your estate if you own the policy, or if you retain any control over it, within the last three years of your life. You may be able to avoid this possibility by having the beneficiary arrange for the issuance of the policy to himself directly, so that you will never have owned it and no transfer will be necessary. You can, however, pay the premiums; or, better still, make annual gifts to the beneficiary and let him make the payments.

The leverage in life insurance — its guaranteed, tax-free explosion from the relatively inconsequential present value of the policy — makes it a natural choice as a gift. If you're interested in lightening your estate, why, for example, pass over a \$200,000 insurance policy with a negligible cash value, while giving away \$200,000 in bonds? Apart from the gift tax cost of unloading the securities, when you compare the gifts in terms of their effect on your own net worth and income, the advantage of disposing of the insurance before other assets becomes starkly clear.

And for your children or other heirs, a gift of the policy will be worth much more than naming them to receive the proceeds on your death. Give it outright to those who are competent to handle it, or to a trust for the benefit of those who aren't. But whatever you do, don't be caught dead with the policy. ■

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