EIR Special Report

*The U.S. recession*

# Why the EIR model beat Wall Street's 1980 predictions

by David Goldman

With one exception, the entire range of computer economic forecasts completely missed the steepest fall in industrial production since World War II, predicting either a mild recession or no recession at all. The single correct computer forecast was made by the *Executive Intelligence Review,* employing the LaRouche-Riemann econometric model.

On Nov. 6, 1979, *EIR* projected a 15 percent drop in industrial production during the first eight quarters of a recession beginning in the first quarter of 1980, with most of the fall concentrated into the first year of recession. So far this year, industrial output has fallen by 7.9 percent. This puts our forecast almost exactly on target.

Figure1 shows the *EIR* forecast compared to the projections of Data Resources Inc., Wharton Econometric Associates, Chase Econometrics, and the University of California at Los Angeles models. Without exception, these forecasts made in April 1980 were six percentage points or more off the mark. EIR was within 1½ percentage points of the correct figures for the decline in the industrial production index.

*EIR*'s econometric model was first brought on line in February 1979. Elaborated by physicists Uwe Parpart and Steven Bardwell of the Fusion Energy Foundation on the basis of Riemann's mathematical physics, the model was designed by economist Lyndon LaRouche, contributing editor to *EIR*. LaRouche had proposed the application of Riemann's mathematics to deterministic economic models in the early 1950s, and used this method in an extraordinary series of long-range predictions which correctly foresaw the late 1960s and early 1970s monetary crisis in 1957.

The computer realization of the LaRouche model created a predictive tool of unparalleled power, as indicated by the success of the November forecast. *EIR* clients had available to them accurate estimates of the behavior of the tangible economy, and related correct forecasts of the behavior of securities, foreign exchange, and commodities markets throughout the first half of 1980.

Immediately after Paul Volcker shifted monetary policy into an austerity mode on Oct. 7, 1979, *EIR* predicted a major economic downturn, and followed this prediction in early November with a multi-sector forecast for the American economy.

During the same period:

- Data Resources Inc., the nation's largest computer consulting firm, foresaw a mere 2.5 percent drop in output during the second quarter of 1980, followed by a rapid improvement during the third quarter. In an April update forecast, DRI reduced the predicted drop to a mere 0.5 percent!
- Chase Econometrics predicted a 3.7 percent drop for the second quarter of 1980 as of November 1980. In March, Chase Econometrics threw out its old forecast and predicted that the second quarter would be virtually unchanged, with a slight decline during the third quarter.
- Michael K. Evans of Evans Econometrics, who founded Chase Econometrics, announced in March 1980, "I've called off the recession," just as the downslide got underway. He gave the no-recession scenario a "better than 50 percent chance."
- The Wharton School predicted a 2.5 percent GNP drop during the first quarter of 1980, 1.2 percent growth during the disastrous second quarter, and a faster growth rate for the rest of 1980. In April, Wharton threw out its first forecast, and projected a mere 0.2 percent drop during the second quarter.
- Townsend-Greenspan, which projected a recession less than half the size of what has already occurred during 1980 in a late 1979 forecast, told its clients during the first week in March that a mild recession would appear during the end of 1980.

The largest computer-based consulting firms in the country were all dead wrong.

*EIR* not only produced an accurate forecast in November 1979, but stuck to its guns, asserting on Feb. 18, 1980 that unless a drastic policy switch took place, the recession would sharply intensify.

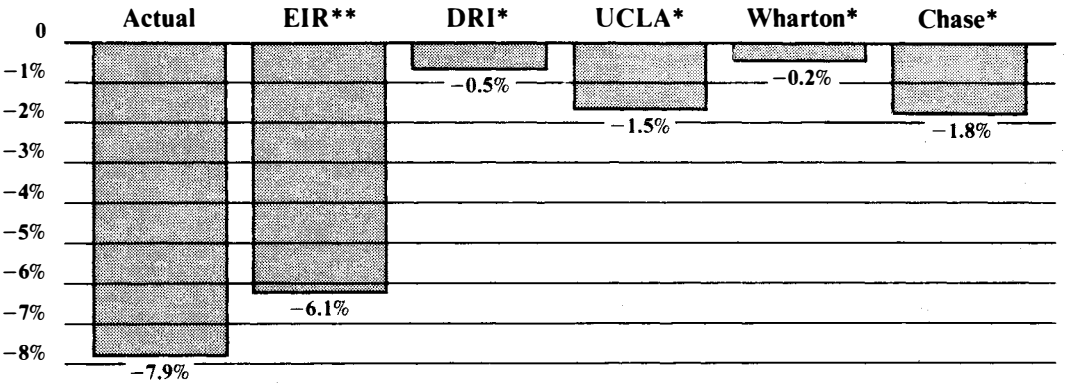
Embarrassed by DRI's dismal results, a spokesman for the firm told *EIR*, "Well, people don't buy us for our track record." Any company or investor making decisions on the basis of DRI predictions would have lost money on a grand scale, and many did.

The LaRouche-Riemann model is the first to reject the conventional method of attempting to project past economic performance and interrelationships into the future. A model of the DRI or Wharton type assumes that the relationship between different sectors of the economy, and between different categories of the national income accounts, will remain essentially static in future periods. Qualitatively new features of the economy which may affect productivity in a fundamental way cannot be interpreted through conventional models. The LaRouche-Riemann model was designed to take such basic changes into account through simulating the underlying causal relationships in the economy, rather than merely crunching out correlations of past behavior. *EIR*'s clients have been able to employ our econometric service to make sophisticated and accurate judgments concerning

Figure 1

## Comparison of econometric forecasts

(economic behavior for first half of 1980)




Source: Federal Reserve Board, *EIR*, Robert Eggart

* April 1980 forecast
** November forecast restated in April

both economic trends and financial market behavior throughout the sharp swings of the last two quarters.

### The basis of our forecast

Two elements made up the November forecast of rapidly declining tangible output during 1980:

1) That the economy was running at a loss after the costs of real depreciation and living standards, relative to growth needs, were taken into account.

2) That the deficit in the real economy's investment in capital and labor also showed up as a financial deficit of households and corporations.

What threw most of the forecasters is that the events of late 1979 were entirely unique in postwar economic history. The underlying physical structure of the economy had undergone a "phase change," a change in state which the conventional models have no means at all to consider, let alone measure in any accurate way.

An economy, after all, is a machine producing a certain amount of tangible output. Most of its output is spent in the following ways:

- Maintaining existing capital plant, i.e. replacement cost.
- Maintaining the existing goods-producing labor force, at a living standard specified by a certain level of culture and a corresponding level of productivity
- Paying society's overhead costs, including education, health, national security, entertainment, and so forth.

What is left over from a given period's output when these costs are met is *net social surplus*. This corresponds to the *net work* accomplished by a thermodynamic engine. If an engine deteriorates physically to the point that it produces a net loss of work, all the normal parameters used to describe the workings of that engine will cease to apply.

### Real flows and financial flows

In physical terms, the American economy has been operating at or below breakeven since the 1975 recession, and went deeply into net deficit at the end of 1979. In a May 6 survey, *EIR* presented a new depreciation index and related measures of the "breakeven" for the post-1979 economy.

However—as *EIR* contributing editor Lyndon LaRouche pointed out in a 1958 long-range forecast that caught the timing of the late-1960s monetary crisis—the economy's underlying problems will show up first in the monetary system.

A set of financial flows is attached to the real flows of tangible goods identified above. The corollary of gross economic surplus—everything in excess of maintenance payments to labor and capital—is gross household and corporate savings.

If the majority of savings are invested in either non-goods-producing or less productive areas of the economy, the economy will suffer inflation. The nominal rate of profit on invested capital will be in excess of the real rate of profit in terms of new tangible output arising from the total investment. This requires a markup of the prices of the existing tangible output to balance the economy's collective books.

The opposite applies as well. In the American computer industry, for example, investment in new technologies has cut the cost of data processing by 50 percent per year for the past 10 years. There is no reason why comparable technological advances in, say, steel, auto and machine tools would not produce similar results over the medium term. Indeed, falling prices for industrial goods were the norm during the American economy's great 1865-1914 expansion period.

## Projecting inflation

The actual rate of inflation is different from the "structural inflation" identified above. Once started, the inflationary cycle takes on a life of its own. A small inflationary margin due to an adverse structural shift away from high-technology capital formation produces a couple of percentage points of inflation. But this inflation level is added to interest rates, which raise costs and further raise inflation. At a certain point capital investment favors a shift into short-term quick-buck speculation, raising land and raw materials costs, and so forth. For this reason, the actual rate of inflation is volatile and difficult to predict.

However, after the fact, certain patterns are obvious. During the first nine months of 1979, the following conditions prevailed:

1) Total industrial and related tangible output had changed by no more than a percentage point since the beginning of the year.

2) The rate of inflation, measured by the Consumer Price and Wholesale Price Indices, stood at 12 percent.

3) The volume of credit expansion, measured by total lending to the non-financial sector including consumers, was rising at a 20 percent annual rate.

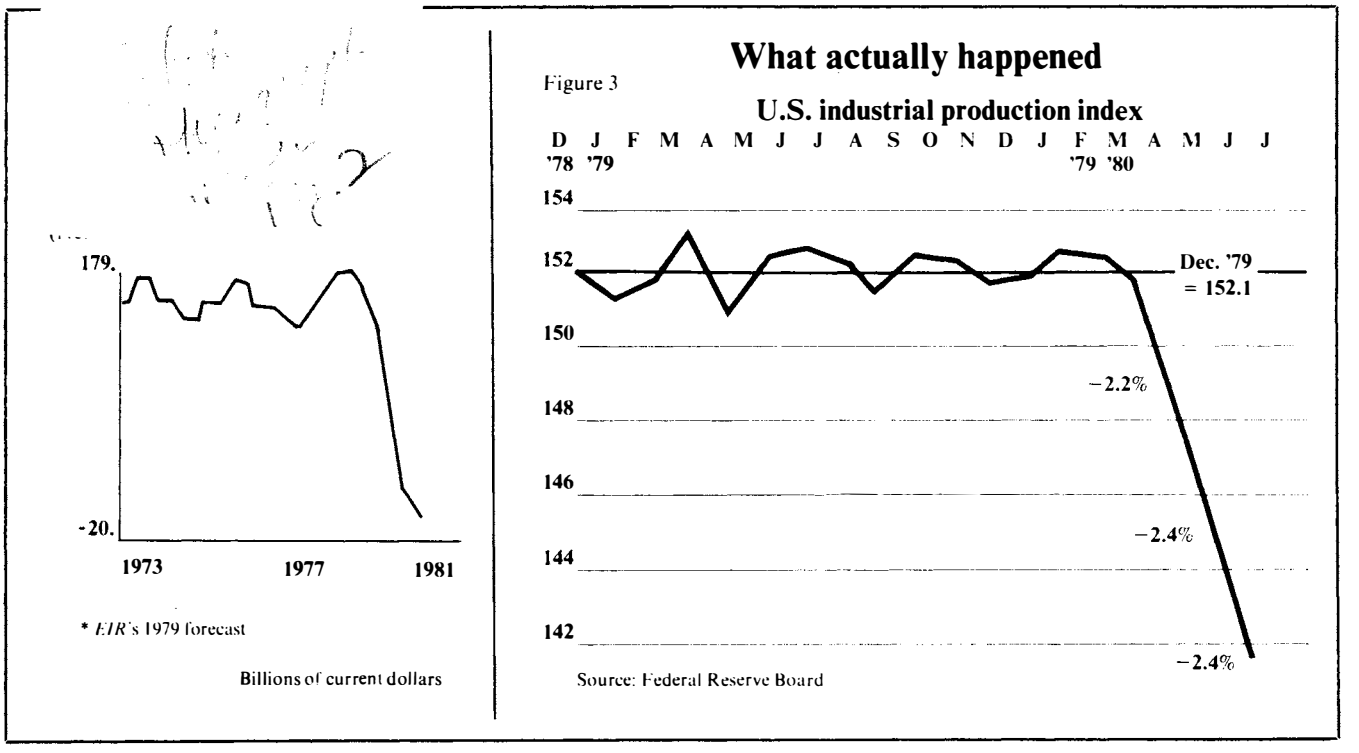
An analysis of the Federal Reserve's Flow of Funds tables for the first half of 1979, and of comparable data for the third quarter, indicated that the reason for credit expansion in excess of the inflation rate was that households and corporations were running in *net deficit*, by about 8 percent. In other words, the marginal inflationary cost of the last 8 percent of output could only be financed through borrowing, not through existing income levels.

For purposes of our November forecast, we assumed that Federal Reserve Chairman Volcker would endeavor to hold borrowing down to the rate of inflation, or about 12 percent, rather than the 20 percent that prevailed until February 1980. We then assumed that the difference between the rate of borrowing and the rate of inflation at 1979's unchanged production levels measured the operating deficit of the U.S. economy as a whole. We distributed this operating deficit differentially through 25 sectors of our multi-sector economic model of the American economy, using the standard liquidity measures as a guide.

We next used these financial criteria to predict the 1980 to 1981 path of the tangible economy.

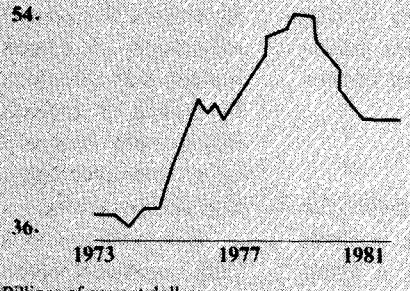
## The physical system model

From an engineering standpoint, the economy operates according to the same laws that apply to an engine: a given force, i.e. employed productive labor,



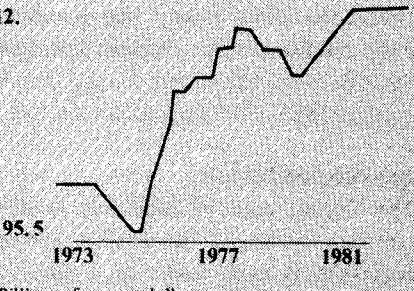
**From EIR's multi-sector forecast in November 1979**

Figure 4
**Transportation**
Surplus




Billions of current dollars

Figure 5
**Textiles**
Surplus




Billions of current dollars

moves through a given volume, i.e. the capital stock, at a given productivity level. The result is work done, in the form of investible surplus product, plus "heat loss," or overhead expenses. The model measures these criteria through six equations (comparable to the basic thermodynamic equations) for each sector, or 150 equations for a 25-sector model.

Programmed to show the impact of an unevenly-distributed operating deficit, the computer model produced new quarterly output levels for each sector, new productivity levels after each cycle, and new investment patterns in each sector in the economy and for the economy as a whole.

The result, as we have seen, was strictly accurate.

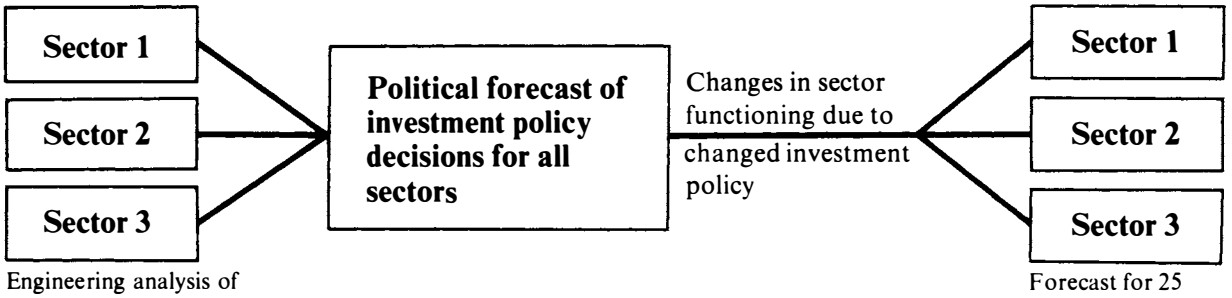
Figure 2 is reprinted from *EIR*, Nov. 6-12, 1979. It shows the actual volume of surplus production in current dollar terms, without deduction of actual depreciation costs. It is the closest equivalent to the industrial production index of the Riemann-LaRouche model. It shows a fall to zero net surplus through 1981. In matter of fact, when real depreciation costs are taken into account, the U.S. economy would be in net deficit by 60 billion constant 1972 dollars. For purposes of the forecast, however, we left the data in undepreciated, current-dollar terms, since unmet depreciaton costs have only a longer-term effect on productivity; the purpose of this forecast was to show the short-term developments.

Figure 3 shows the actual behavior of the industrial production index through June 1980. The shape of the curve is strikingly similar to that in Figure 2. Superimposed on Figure 3 is the projection, transformed into industrial-production index equivalent. Our projection was somewhat conservative. However, since the speed of industrial shrinkage will taper off during the third and fourth quarters, our projection will probably be precisely on the mark by the end of the third quarter.

Figure 1 compares the first-half 1980 projections by

Figure 6

## Why EIR's model succeeds




Engineering analysis of 25 U.S. economic sectors.

Forecast for 25 economic sectors

different econometric services. The actual fall in industrial production of 7.9 percent is compared to forecasts by *EIR*, Data Resources Incorporated, UCLA, Wharton Econometric Associates, and Chase Econometrics. *EIR* stuck by its November predictions even though economic output failed to drop off during the first quarter. As the chart shows, *EIR* was extremely close to the actual numbers, while none of the other services was even remotely close.

## Catching the turning point

What confused the other econometric models is a new set of circumstances their computers had never seen before. Between October, when Paul Volcker instituted tight credit, and March, the industrial production index as a whole did not drop. However, it changed composition radically. Although consumer durables, such as auto, dropped off drastically, capital goods did not—until Volcker imposed an absolute limit of 9 percent on bank credit expansion on March 17 (confirming *EIR*'s earlier *political* estimate that Volcker would attempt to limit credit expansion to approximately the rate of inflation).

*EIR*'s multi-sector analysis caught this process with great precision in the November forecast.

Figure 4 shows the analysis for the transportation sector, originally published last November. Since this sector includes automobiles and airplanes, the dropoff is mitigated by the relatively buoyant performance of aircraft manufacturers. The sector as a whole does, in fact, stabilize in the second half of 1980 and plateau during 1981. That corresponds to what now appears to be the trend in the auto sector.

Figure 5 shows our projection published in November for textiles, which shows no dropoff in current dollar terms. (As noted above, all results were shown in current dollars for analytical reasons). We wrote at the time, "Textiles go through a recession, in terms of the rate of surplus creation, albeit a relatively mild one. In nominal terms, output remains steady, which means a fairly small dropoff in output in real terms. The same pattern applies for most of the consumer non-durables sector, including food processing, tobacco, and apparel, which are the last items to be eliminated from the household budget."

This estimate, of course, was entirely correct; consumer non-durables have fallen marginally, compared to the 25 percent year-on-year drop in auto sales as of July and the more than 50 percent drop in home construction over the same period.

## GNP and input-output

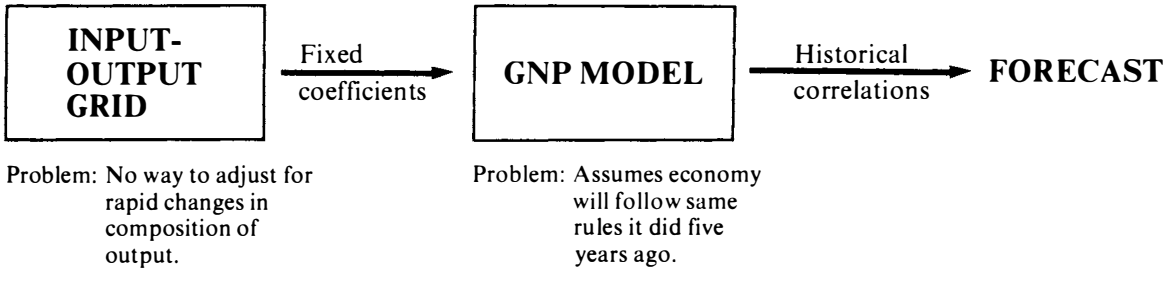
The changed composition of industrial production threw the other forecasters for a loop. These models rely on two devices which are entirely unreliable during a period of economic transformation. One is the Gross National Product accounting system. The other is the conventional form of input-output model.

The problem with Gross National Product is fairly straightforward. It merely adds up every sale in the economy, using tax data. If we invest every crumb of our output one year in baseball stadiums, for example, it is obvious that we will be short of machine tools, raw materials, and so forth next year. From an engineering or thermodynamic viewpoint, the impressive GNP growth of the American economy since 1966 was mainly fluff that did nothing to contribute to our future growth potential.

Nonetheless, the Wharton, DRI, Chase and other models all use the GNP accounting system, misleading as it is. They take correlations based on past experience, which go more or less this way: "Each $1 of GNP during the past five years has contained 50¢ of personal consumption, 25¢ of capital formation, and 25¢ of

Figure 7

**Why conventional forecasts failed**



government spending. We do not worry whether this was capital formation in baseball stadiums or machine tools. We will assume that each $1 of next year's GNP will contain 50¢ of personal consumption, 25¢ of capital spending, and 25¢ of government spending." There is no reason whatsoever why any forecast based on such criteria should turn out correctly.

The second problem is the standard input-output grid. This tells us how much steel output goes to auto, and how much auto output (e.g. forklift trucks) goes to steel, and so on for scores of industries. The "coefficients" which show, on the big grid, how much of the others' products each industry consumes are very useful for telling us what happened in the past. They tell us very little about what will happen in the future. For example, during October 1979 to March 1980, the share of production to consumer durables dropped by 15 percent, while the share of production to capital goods rose by 6 percent. This was a drastic shift in the input-output grid. Merely having such a grid tells us nothing about how fast, and with what impact on productivity, it may change. All the conventional models assume either fixed or very slowly changing coefficients.

So, when the conventional models saw that first-quarter 1980 GNP had not fallen, and that industrial production as a whole had not fallen, they assumed things would be stable for some time to come.

## The political dimension

Flow charts 6 and 7 illustrate why the conventional models fail on two major grounds, and why *EIR*'s model is at least as good as the quality of the political intelligence that is used to program it.

At bottom, we do not claim the sort of miracles for our computer in forecasting future economic developments that many of the other forecasting services did, before events found them out. We can state authoritatively that our model accurately describes the functioning of the economy in physical terms, in a way that other econometric models do not even try to do. We believe that without this physical-systems approach as a starting point, no useful results can be obtained. The LaRouche-Riemann model, as we showed *EIR* subscribers in the case of India, is unparalleled for planning applications.

In the case of forecasting, *EIR* relies on a broad network of information and an economic-political analysis team that has been working together for six years to make reliable political forecasts. In the short run, at least, political decisions can have tremendous sway over the physical processes of the economy. Therefore, our political track record is as important to subscribers who require sound economic forecasts as the quality of our model itself.

**BOOK REVIEW**

# The wrong way to achieve high capital formation

*Capital, Efficiency, and Growth,* George M. von Furstenberg, editor. Cambridge, Massachusetts: Ballinger Publishing Company, 1980.

The American Council of Life Insurance has sponsored a series of volumes entitled *Capital Investment and Saving*, of which this is the third. Within the limits of conventional econometrics, contributors including Dale Jorgenson, the Harvard econometrician, state some unassailable truths and provide important and useful information. However, the conclusions as stated by the book's editor, University of Indiana professor George von Furstenberg, are wrongheaded and dangerous.

Furstenberg represents a reduction in consumption as the basic solution to America's longstanding economic problems. He is not alone in this view. Federal Reserve Chairman Paul Volcker, who has more to do with the present 13 percent annual rate of decline in personal income than any man alive, stated in hearings before the Senate Banking Committee last October that the American living standard had to fall. What is important about Furstenberg's conclusions is that they are supported by one of the most impressive arrays of econometric research recently assembled.

The terribly misguided nature of the conclusions compels us to set aside our enthusiasm for the quality of some of the research and zero in on the flaws which make these erroneous conclusions possible.

## 'Disquieting consumption'

"Over the period 1948-1976, the capital stock grew at an average annual rate of 3.68 percent per year for households, 2.80 percent for corporate business, and 1.42 percent for noncorporate business," Furstenburg summarizes the study's results. The formula devised for measuring the capital stock is, compared to *EIR*'s depreciation index (see Survey May 6), fairly generous, but that is a secondary point. Furstenberg continues:

"It is disquieting that household capital (primarily residences) has grown almost twice as rapidly as busi-