Riemannian analysis shows how Volcker's policy will bring down economy

A "spectral analysis" computer-profile of the U.S.

economy this week has shown precisely who has been targetted for bankruptcy by Fed chairman Paul Volcker and his collaborators in the New York and London banking community. The analysis goes sector by industrial sector, examining their performance capabilities under the conditions defined by continuation of the Fed chairman's interest-rate regime.

Aggregately, Volcker's action will rip the guts out of the U.S. industrial economy. Specifically, the computer projection demonstrates the "selective" effects of Volcker's policy, as a matter of sabotage directed at those leading industries essential to the economy's overall economic performance.

Last week, *Executive Intelligence Review's* computer-based econometric model of the United States economy projected an aggregate 15 percent loss in real output over an eight-quarter, continuous downturn through the end of 1981. Now, that technique has produced results for the different sectors of the economy, based on the 20 Standard Industrial Categories employed by the United States Department of Commerce, plus five additional categories, agriculture, construction, utilities, mining, and transportation.

The first victims of economic murder, the analysis shows, will be auto, construction, and agriculture.

How it was done

To conduct a disaggregated analysis of the United States economy, the model draws on Bernhard Riemann's

mathematical discovery, "spectral analysis." Spectral analysis compares the differential behavior of a group of physical sectors with varying susceptibility to a given factor or group of factors. In this case, the factor chosen to measure the effects on the different economic sectors of Volcker's liquidity squeeze was the corporate liquidity ratios as reported by the Federal Trade Commission.

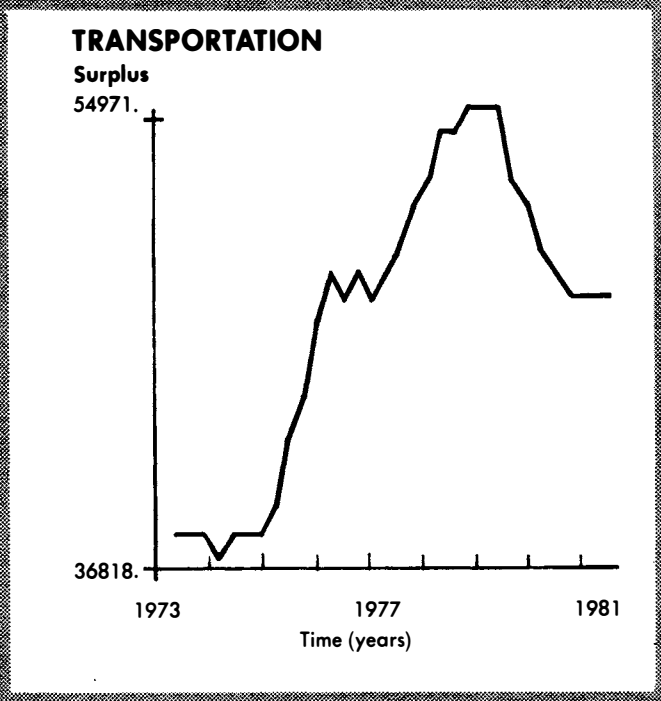
In effect, the 25 sectors of the economy were each assigned a "frequency" on the basis of their relative liquidities; the efficiency of that approach touches upon the fact that Volcker's "anti-inflation" measures are actually *hyperinflationary* in a special way. The measures force industrial corporations to refinance held-over debt burdens at even higher carrying costs, which will force them to inflate prices to the consumer in order to recoup some portion of the added costs of new money. Because the consumer market is itself contracted by the Fed actions, higher prices lead straight to market collapse. The relative liquidities of industrial sectors, therefore, determine which sectors go bankrupt sooner, and which later, as force-fed price inflation collapses their markets.

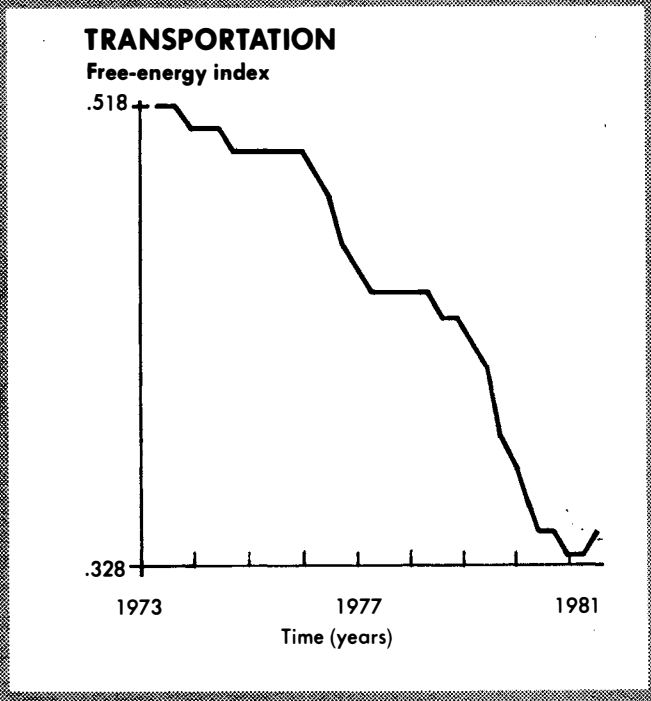
The conclusions

The conclusions of the study are as follows: the industrial core of the economy, particularly the automotive industry, will suffer the most, along with agriculture and construction. Some sectors, particularly consumer sectors subject to relatively inflexible demand, will suffer relatively less, including SIC 21, tobacco and related products, and SIC 22, textiles. Overall, the total economy will drop about 15 percent into the negative by the end of 1981.

These estimates parallel closely the documentary evidence now available. In broad terms, we are speaking of an industrial downturn twice as bad as that of 1974-1975, worse than 1957-1958, and in fact, on the scale of 1929-1931. The projections end with 1981, and show

U.S. economy: The effects of Volcker's credit policy





absolutely no sign of recovery. Therefore, it is entirely possible that the potential downturn is on the order of 1929-1933.

Thus far, there is one critical piece of documentation that these results are highly accurate: a "Blue Letter" circulating among Ford Motor Co. top management, announcing an 18 percent cutback in operations by Dec. 15, and warning that the total volume of auto layoffs will reach about 300,000 by the end of 1979, in a downturn much worse than that of 1957-1958.

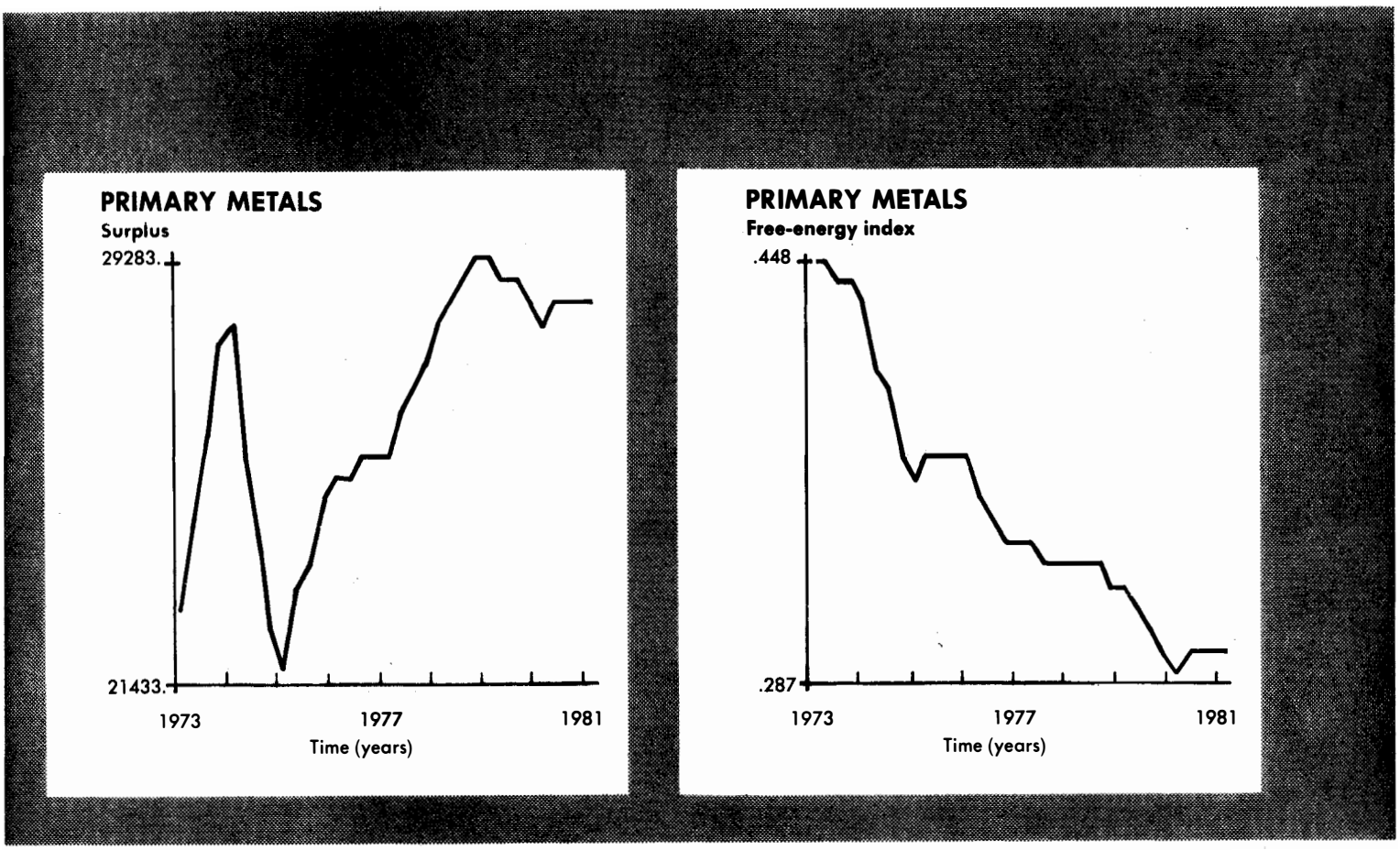
Again, in broad terms, this internal projection from top auto management coincides with the computer-generated prediction that the downturn will be twice as bad as that of 1974-1945.

Origin of the model

The Riemannian economic model was proposed by economist Lyndon H. LaRouche, Jr., and realized by Fusion Energy Foundation scientists Uwe Parpart and Steven Bardwell. Data base for the model was developed by EIR's economics staff. Mr. LaRouche is currently a Democratic candidate for the U.S. Presidency, and has employed the model's results in his campaign statements.

The Riemannian model is fundamentally different from "conventional" econometric models of the Wharton type in two ways.

First, it analyzes the causal relations among the sectors of tangible production, instead of trying to establish correlations between different components of "Gross National Product." Such correlations are notoriously inaccurate even during periods of economic stability, and wholly useless during periods of basic economic change. The Riemannian model eliminates Gross National Product entirely as a measure of economic activity. Instead, the model divides the tangible output of the economy (or economic subsectors) into



variable capital (factor cost), constant capital (user cost), overhead or non-productive costs, and reinvestible surplus. The rates of change of these categories are established by differential equations expressing the ratios among them.

The ratios are the rate of production of surplus, or "free energy" index; the division of investible surplus between factor and user cost, or c and v; and productivity, or the rate of new factor cost inputs required to produce a given volume of surplus.

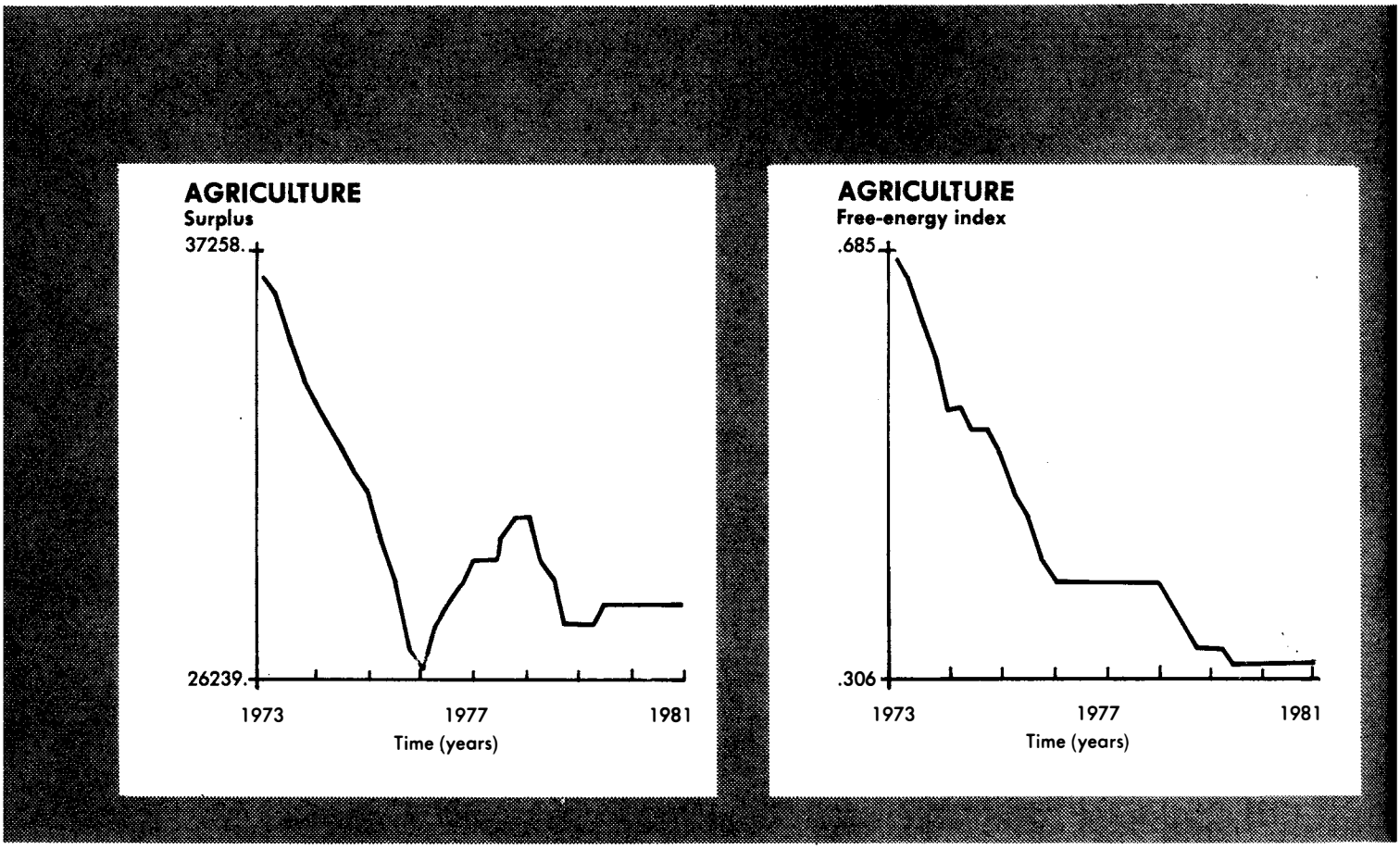
Nonlinear mathematics

Secondly, the Riemannian model's mathematics—named after Bernhard Riemann—are on an entirely different plane than the glorified arithmetic of the conventional models. The Wharton-type model uses a long series of linear equations to relate constituent parts of GNP to each other; the computer performs a great deal of simple addition through highly-complex formulae. However, the statistical error present in data, when added up, produces a gross possible error range larger than the tolerable range of meaningful forecast results. Statistically, the conventional projections are meaningless.

The Riemannian model employs partial differential equations relating "geometric features" of the economy to each other, and, in the case of the 25-sector model, simultaneously solves 75 differential equations.

Therefore, the model can examine the behavior of linked differential equations under different conditions, and is designed specifically to indicate major points of economic discontinuity—the subject of Riemann's research into "shock waves" and other physical phenomena.

The "spectral analysis" feature of the multi-sector model permits the user to see the differential impact on each of 25 (or more) sectors of a given global change or group of local changes in economic conditions.



For purposes of the projection, whose results appear in part below, non-deflated Commerce Department data were employed (a projection with deflated data is currently in preparation). As in the earlier-published projection using aggregate data for the U.S. economy, it was assumed that Volcker's credit-tightening measures would result in an 8 percent reduction in surplus available for reinvestment.

The 8 percent reduction was arrived at by examining the current liquidity position of corporations and households, noting that the rate of short-term credit creation during the second and third quarters exceeded the rate of inflation (and the rate of nominal GNP growth) by that amount, indicating a liquidity deficit of 8 percent.

The surplus reduction was then spectrally assigned to 25 sub-sectors of the economy on a proportional basis, using FTC liquidity data. Using the FTC's ratios relating (by standard industrial category) short-term assets to short-term liabilities of corporations, the program assigned greater or lesser shares of the surplus reduction to each sector in proportion to the sector's deviation from the mean liquidity ratio.

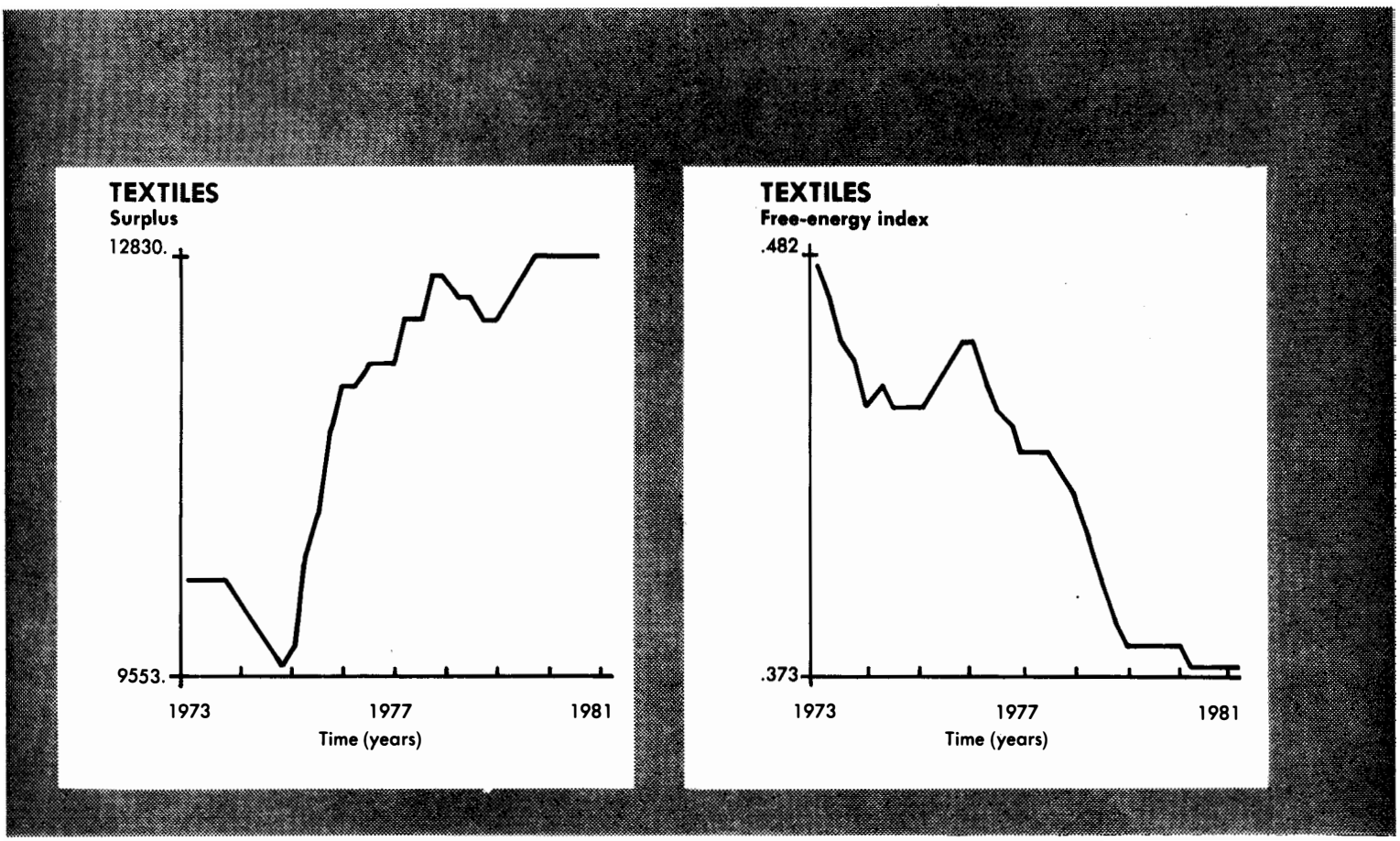
The printout

The graph labelled S', or reinvestible total economic surplus, shows a dropoff from a high of $179 billion in 1978 to a negative surplus (or net contraction in output) of $21 billion by the end of 1981. Recalling that these are non-deflated numbers, the total reduction is approximately 15 percent, in terms of real output.

The next graph for the total economy, showing the rate of total surplus creation or s'/(c+v), also drops sharply into the negative. Using a slightly different data base, these results are identical to the aggregate results published in EIR's last issue.

Auto

The graphs for the Transportation Equipment sector, which includes the auto industry, show spectacular



dropoff in both total volume of sectoral analysis and, more importantly, rate of surplus creation. (Sectoral surplus for an individual sector will never drop off as quickly as the S′, or total economic surplus, because the sectoral surplus is calculated before total economic overhead is calculated. Economic overhead costs are assigned to the aggregate economy and not to individual sectors, for obvious reasons.

Agriculture

Agriculture shows a period of decline through the 1973 recession; a modest improvement in total surplus production (and stabilization of the rate of decline of the free energy ratio) through 1976 to 1978; and a negative growth rate during 1979-1981. This corresponds to agriculture's notoriously poor liquidity position and access to credit in a period of crunch (short of expansion of the Farm Credit System and similar facilities).

Metals

The graph for metals production shows a drop in the rate of surplus creation
barely .2 at the end of 1980. However, the metals sector indicates a hint of recovery potential, or at least of stabilization at a very low level of activity, by the end of 1981.

Textiles

Textiles go through a recession, in terms of rate of surplus creation, albeit a relatively mild one. In nominal terms, output remains steady, which means a fairly small dropoff in real output. 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.

—David Goldman