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decline for the past three months 34.2 percent. Total commercial and industrial loans and nonfinancial company paper fell by 23.1 percent, yielding a loss of 3.9 percent over the preceding three-month period.

- The nation's exports of capital goods have continued the precipitous plunge that began in the end of 1980. At its peak, capital-goods exports earned slightly more than $21 billion at an annual rate. By the end of the first quarter of 1982, they had sunk to $11 billion, a loss of almost half. Compare the high ratio of U.S. industrial exports to imports during the first great depression with the near-breakeven ratio in the current depression (see Figure 1).
- The nation's gross unemployment rate is now just under 23 percent, or 25 million jobless Americans. Nearly the entire rise in unemployment over 1982 came from the industrial sector, which lost almost 10 percent of its workers.

The labor shift

Since World War II, the ratio of productive workers to non-productive workers has gone from two productive to one non-productive worker, to the reverse. In other words, forty years ago, when one worker in what we now call service or administrative tasks was supported by two manufacturing, farming, mining, or transport and utility workers, today those two manufacturing workers must support four non-productive workers. The unemployed are necessarily in the non-productive category since they must be maintained by those workers still producing goods.

In the short span of Paul Volcker's regime, the ratio of productive to non-productive workers fell from 5:10 to 4:10, since virtually all the joblessness of the present year originates with the manufacturing sector while service occupation employment remains steady.

Figure 2 shows the dramatically low levels of steel workers as a proportion of the total population compared to the 1930s. While productivity in such industries has increased, the figures mainly indicate the incredible shrinkage in the proportion of the population engaged in learning and using industrial skills. These figures are a subset of the totals in Figure 3, showing the relative proportions of the working population engaged in productive and non-productive work.

"Shift to the service economy" is thus a euphemism for economic depression. The result is to destroy both the knowledge of the real economy and the work skills of the population.

Misallocating the labor force produces chronic impoverishment of the population both culturally and physically. It necessarily creates a large pool of permanent—if disguised—unemployment, which has now reached, as we have indicated, nearly one in four of the potential workforce in the United States. Massive prolonged withdrawal of a major section of the population from the creative tasks of their own economy, whether this comes in the form of extended unemployment or employment in non-productive bureacratic functions, is a pre-condition for the birth of modern irrationalist movements, or fascism.

Econometrics

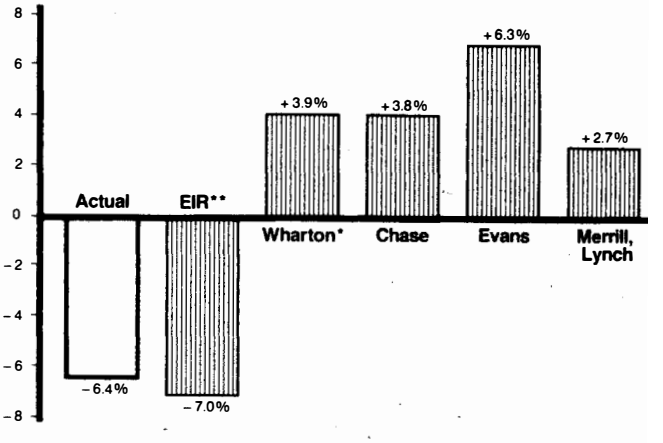
LaRouche-Riemann model's forecasts and analyses in 1982

by Mary McCourt

In 1982, predictions on the course of the devolution of the U.S. economy made by application of the LaRouche-Riemann econometric model to the actual measures of economic health—the technological level at which productive labor functions, rate of reinvestment of capital, investment in energy production rather than so-called energy saving—have been as precise as predictions made by other models have been inaccurate. The model has established, moreover, that without the degree of technological innovation and capital investment that would be achieved by a national program to develop anti-missile beam weapons, U.S. economic collapse has become irreversible. A second generation of the model

Comparison of Econometric Forecasts

Changes in Industrial Production Index, January-March 1982 (annualized)



* Forecast Sept., 1981
** Forecast Nov., 1981

Source: *EIR*, Forecasts of various econometric firms

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capable of predicting the effects on the economy of such "shock waves" as a beam-weapons development program, or the current 20 percent collapse of world trade, is now being developed.

During 1982, LaRouche-Riemann model studies of the economies of Colombia, West Germany, Mexico, and Japan, as well as the United States, have been made available to political and business leaders in those nations. A summary of their findings:

Two studies of the United States published in the July 27 and Nov. 2 issues of *EIR* both confirmed the accuracy of predictions of productive collapse made by the model at the end of December 1981, and debunked all predictions of a "consumer-led" or any other recovery originating in the "magic of the marketplace." In the Nov. 2 report the analysis of the primary factor the present generation of the model can predict—how current production will affect future production—was made under two possible conditions. The first was a continuation of the present trajectory, with amounts of credit available to the economy remaining on the levels of August 1982; the second, taking into account the actual tendencies of economies to either develop or collapse at exponential rates, forecasts the effects of the atrophy of available credit on the economy. Under these conditions, the economy will suffer $80 billion (in constant 1972 dollars) of lost production, a production loss greater by one-third than if present credit availability continues.

Two important studies of the effects of new investment on the U.S. economy were carried out during 1982. The April 6 study showed, using historical data, that the productivity of a national economy is not the sum of individual sectors' productivity, but a global characteristic which closely correlates with investment in infrastructure. The study both identified the lack of such infrastructure investment as a cause of the current economic disaster, and concluded that renewed infrastructure investment on a broad scale would be the *most efficient* means of effecting economic recovery.

The second study was generated by Lyndon LaRouche's assertion in his recent statement on economic shock waves, that "from one standpoint in analysis, economic recovery is theoretically an impossibility . . . [the development of anti-missile beam weapons is proposed in the interests of the total national security of the United States, both military and] the need for a shock-effect revival of economic growth. . . ." The study, published Dec. 28, demonstrated that the beam-weapons development program proposed by LaRouche would immediately improve productivity to such a degree that the economy could recover and grow.

The LaRouche-Riemann study of the West German economy, after the August bankruptcy of that nation's seventh-largest firm, AEG, demonstrated that the post-1950 *Wunderwirtschaft* was ended, and fully established for the first time that the failure to make essential technological and educational investments in industry and labor had rendered the German economy terribly vulnerable to the effects of the collapse of world trade. Two decades of high export levels totally out of proportion to the rate of domestic investment, actually set up the German economy for its current precipitous collapse.

A study of Colombia's economy demonstrated that the failure to move rapidly from an early 1970s boom of light industrial production into heavy industry and high-technology capital-goods production, was the root of the past decade's stagnation in that nation. The study published Aug. 10, projected the effect of creating a "Ruhr" region, or highly concentrated area of heavy industry in Colombia. Combined with infrastructure investment, heavy industry development would cause the productivity of the Colombian economy to rise continually, to reach a level equal to that of developed nations by the turn of this century.

In late October, analysts in the United States and Mexico used the LaRouche-Riemann model to project an optimal path for industrialization in Mexico. Mexico's ability to resist IMF pressure and secure the future of its population depended upon correcting serious errors in investment policy, and bringing forward its "hidden economic potential." Despite boom-level growth of the economy, the vital development of future capacity to grow, embodied in machine-tool as opposed to durable-goods production, declined over the past decade. Oil revenues were used for importing high levels of finished goods rather than technology. But the model analysis demonstrated that backward agriculture, transportation, and construction methods are economic constraints that can—and must—be corrected to remove the drag on the economy. Mexico must convert its industrial base from consumer goods to broader industrial capacity in order to develop.

A research team is now working to complete the essential mathematical breakthrough outlined by Lyndon LaRouche, the model's author, to create a second-generation model capable of analyzing the effects of non-linear "shock waves" on the economy.

The crucial concept of this second-generation model is the direct application to economics of 19th-century physicist Bernhard Riemann's equations for physical shock waves.

Shock waves can only be produced in a medium in which some dimension of motion "beyond time" exists, and in which there is an increase in the rate of motion in response to the amplitude of some disturbance of the medium. In economic terms, technology is the dimension beyond time in which motion can occur. This explains the apparently "anomalous" growth rates in developing economies, such as Japan's, when new technologies come on line. The "disturbance" of the economy is created by new capital investment; applied to critical areas at sufficient levels, capital investment can create a "shock wave" of technological and economic progress. The research team is now determining what data will most appropriately reflect the technology dimension of the model, and how to precisely map the motion of an economy within one set of technological constraints by the *same* set of equations which show the generation of "shock waves."