EIR Special Report

Energy conservation: building inflation into the economy

by Uwe Parpart and David Goldman

With the rate of inflation and interest rates at or near 20 percent, there is now little doubt in anyone's mind that the United States economy is out of control. Expert opinion as published on the front page of the *New York Times* of March 13, states that inflation itself is the principal cause of more inflation.

That is not likely to dispel the perception that things are out of control, as if the problem would go away if only everybody simultaneously could agree to stop charging higher prices. More to the point is an observation in the same *New York Times* article that "after fifteen years of blunders, there's no basis for having any confidence in the system (of fine-tuning through monetary policy measures)."

In fact, economists and economic policy makers who, without exception, applauded Paul Volcker's restrictive interest rate measures of last October as a "bitter but necessary medicine" to get inflation under control must now feel like someone whose automobile brakes overnight became attached to the gas pedal. At the time of Volcker's decision, *EIR* alone firmly predicted that the Fed's measures would rapidly exaccerbate rather than attenuate the inflation problem since indiscriminate drastic boosting of the interest rate would cut still further into already too-low productive investment, while leaving virtually untouched politically protected or higher-yield unproductive or speculative short-term spending.

The data assembled below in the discussions by David Goldman, Dr. John Schoonover, and Lydia Schulman are intended to shed further light on the more long-term problems of structural inflation, which we have focused on consistently. This direction of inquiry has allowed us to make accurate assessments of the state of the U.S. economy when other analytic approaches have demonstrably failed.

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We pay attention here in particular to the crucial role of energy consumption in the economic process, concluding that attempts to reduce total energy throughput of the U.S. economy—either in response to higher energy prices or to regulatory policies—at a time of grossly inadequate levels of capital formation in virtually all manufacturing sectors have played a critical role in bringing about inflation and continue to play such a role in intensifying the present inflation crisis.

President Carter's "anti-inflation" address of March 14, whose most outstanding feature is the imposition of a $4 per barrel tax on oil imports, along with a shotgun blast of budget cuts and credit controls which will damage the productive sectors of the economy more than the unproductive, is a further step in this crisis. The idea that government-mandated increases in the energy price will prove counter-inflationary may appear absurd. Nonetheless, exactly this was dictated to the Carter administration by the Council on Foreign Relations, whose view was presented by Harvard Business School economists Robert Stobaugh and Daniel Yergin in the *Foreign Affairs* magazine's annual review of 1979:

"Can this be done? We think it can, with substantial investments in conservation measures encouraged by federal financing—and the removal of institutional barriers. The result will not only be a higher GNP but much less inflation than if we send these dollars abroad to pay for oil at ever-increasing prices...At the very least, our aim should be zero growth for the 1980s—not just because our supplies might be limited to that, but because meeting this goal through productive conservation is the best way to promote positive economic growth. Conventional economic analysis would dismiss this notion as fanciful. Our reply is that such conventional analysis is increasingly and distressingly distant from reality."

This statement has, through the life of the Carter administration, been elevated to national policy, and the economy has been attempting to do precisely what the Council on Foreign Relations has demanded. The question is whether these results have borne out as predicted: has greater energy efficiency led to greater GNP growth and less inflation? In fact, our analysis demonstrates that the past five years of shift away from energy-intensivity in the American economy has created the present, apparently uncontrollable, inflationary crisis.

The apparent combined outcome of higher prices for energy and federal encouragement or regulation in favor of conservation has been—graph 1 shows—more output with less energy. This fact is used to argue that conservation works, more or less as stated above. There has, in fact, been greater output with less energy throughput. The extreme fallacies of this two-dimensional (energy vs. output) presentation become apparent when that two-dimensional correlation is embedded in a four-dimen-

sional phase space, including not only output and energy throughput, but also capital formation and a free energy measure. That free energy measure, the equivalent of Helmholtz's free energy (or useable surplus energy) in thermodynamics, has been defined in *EIR*'s computer econometric model of the economy as the rate of production of investible tangible surplus versus current tangible costs of maintenance of the productive eocnomy, or S'/(C+V). This measures the efficiency of the joint action of a given quality and quantity of labor and capital.

This technique of embedding the simpler, and misleading, correlation between energy consumption and output in a four-dimensional phase space brings out what we consider to be the principal causal connection in the economy between 1) the quality of capital formation, 2) energy throughput, and 3) productivity, which a mere two-dimensional analysis must ignore. The technique is suggested by the past year's successful application of *EIR*'s computer econometric model of the economy, known generally as the Riemann-LaRouche model, whose first results measuring the result of oil price increases were presented in this publication a year ago.

Analyzing the surface of the four-dimensional phase space defined by the four parameters mentioned above gives rise to the general conclusion that over the past decade, but specifically since 1974-1975, the U.S. economy has been deteriorating in the following fashion: considered as a heat engine in the sense of physical thermodynamics, it has in fact been on a path toward dramatically lowered overall thermodynamic efficiency. This process has accelerated sharply since the summer of 1979. (A detailed quantitative analysis employing our computer simulation of the economy is now in progress and will be published shortly as part of this series.)

The qualitative measures of this process may be described as follows: While in the two-dimensional phase space spanned by energy throughput and output, an actual growth in output has been realized with less energy, this nonetheless leaves open the question of how this was accomplished. Such a result could be due to significant investment in capital formation of the high-technology sector of the U.S. economy, raising the actual efficiency of energy throughput of the economy as a whole, or through a change in the internal composition of output toward a regime favoring output in low-energy-intensive production categories and, more broadly, pushing the economy toward a less capital-intensive mode.

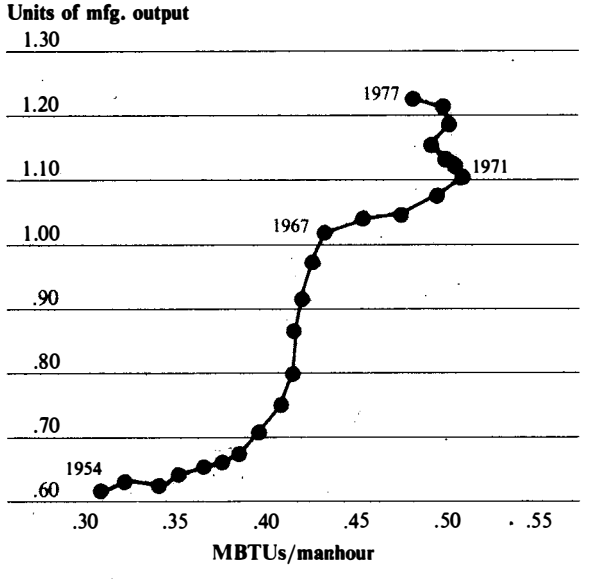
The evidence presented below leaves no doubt as to the correct answer. Capital formation in all sectors has been flat in the past period. Much of what did occur flowed into pollution-abatement equipment, etc., which in fact lowered the efficiency of energy throughput in the relevant sectors. As for the remainder of the small volume of capital formation, most was absorbed in the "friction costs" of significant shifts from capital-intensive to labor-intensive production, dictated by higher energy prices.

Useful evidence on the substitution of labor for energy has been presented by Harvard economists Dale Jorgenson and Edward Hudson, in their October 1978 study, "Energy Prices and the U.S. Economy, 1972-1976." They calculate a 3.2 percent drop in GNP and a 2.64 percent rise in demand for labor over the period as a result of higher energy prices. However, these figures, significant as they are, grossly understate the actual problem incurred.

As S', or Helmholtz free energy, declines along a surface defined by the cited conditions, the deductions into various forms of waste reduce the useable free energy to zero. That is, aggregating the demands of "energy-saving" investment, military spending, synthetic fuels plants, chimney scrubbers, and the other investment costs of the low-energy program, these costs have already exceeded the economic free energy available for investment in productive capital formation. As S' declines below zero, the other costs become an absolute deduction from the productive sector.

In any thermodynamic system—and the U.S. economy is such a system—a reduction of Helmholtz free energy to below zero will lead its path through a singularity, i.e. a threshold point past which the system no longer behaves in the normal predictable fashion. This

Graph 1
Manufacturing output vs. energy flux density, 1954-1977



makes foolish the statement of Hudson and Jorgenson, for example, that the cited effects of energy price increases "are one-time effects rather than permanent trends. Once the economy has adjusted to the new labor and productivity conditions, there will be no further energy-induced pressures for further changes. Continued changes will occur only if there is a secondary wave of induced price responses." The two economists build in this entirely unjustifiable assumption in predicting that, by the year 2000, the trends they describe will produce only a 3 percent total drop in GNP growth despite a 16 percent reduction in energy consumption.

In fact, the inflation crisis shows that we are well into such a singularity. The simple fact that the rate of commercial bank lending is still at 30 percent per year, despite a massive dropoff in consumer lending, the virtual cessation of loans for commodity speculation, corporate acquisitions, and various other forms of short-term operations, proves this. The joke in President Carter's proposed credit controls against consumers and "speculators" that that the banks have already squeezed most speculation out of the economy—witnessed by the collapse last week of all the hottest commodities markets—while the demands of structural inflation have kept credit demand booming.

This is now an Alice-in-Wonderland world, in which the real investible surplus of the economy—minus the "friction cost" of reducing energy consumption and various other forms of waste—is negative, but the economy keeps reinvesting as if such investments actually could have a productive effect on the economy! None of these conventional policies, even the most brutal of them, work. The crisis is identical in most respects to that faced by the Nazi economy in 1937-1938. *EIR* will present the detailed comparison between that crisis and the present one shortly.

Conservation kills

Some hidden costs of "energy conservation" were revealed last week as statistics were released showing that traffic fatalities continued to rise again during 1979, exceeding 50,000 for the second year in a row. According to news reports, the rise in traffic deaths is attributed by a number of safety experts to the growing number of smaller cars on the highways.

The truth is that long before present legislation which mandates smaller, "fuel efficient" automobiles was passed by Congress, it was well-known among automotive engineers and traffic safety experts that small cars are inherently more dangerous than larger cars. It was also well-known that an increase in the number of light-weight, and cheaply made, small cars on the road would inevitably lead to thousands of additional deaths per year. Yet nary a word was heard from the liberals, Naderites, and conservations buffs who forced energy austerity on the American motorist and the automobile manufacturers.

As early as 1965, a National Safety Council study reported that studies on five states showed that "in accidents that do happen, the rates of serious injury and death are sharply higher among small car occupants than they are among occupants of larger cars." In the early 1970's, the ratio of fatalities in small-car occupants versus large-car occupants was 8:1, according to a report to a Society of Automotive Engineers safety conference.

Because the danger of small cars was so well established, Chrysler's chief engineer for auto safety warned in 1973: "We believe that government officials, while extolling the virtues of the small car in relationship to the need for conserving the nation's fuel supply, should also call attention to the findings of this study in the interest of conserving human lives. The safety differences shown to be related to vehicle weight are far greater than any other factors involving the vehicle."

Nonetheless, following the contrived oil shortages of 1973-74, the Congress passed legislation which forced manufacturers to produce smaller—and more dangerous—cars. In fact, fatalities among passenger car occupants had risen already in 1972 due to the number of compacts and subcompacts on the road after falling since 1969. Death rates fell in 1973 and 1974 with the decrease in miles driven due to the gas shortages, but have risen now for the past two years and will undoubtedly continue to increase. Even if the liberal's dream of eliminating the inequality in all large cars were to become reality, so that the inequality in collisions between large cars and small cars were eliminated, safety would be only minimally affected, since small cars are still more dangerous in collisions with fixed objects and trucks, as well as being incompatible with highway design such as banking and median barriers designed for larger vehicles.