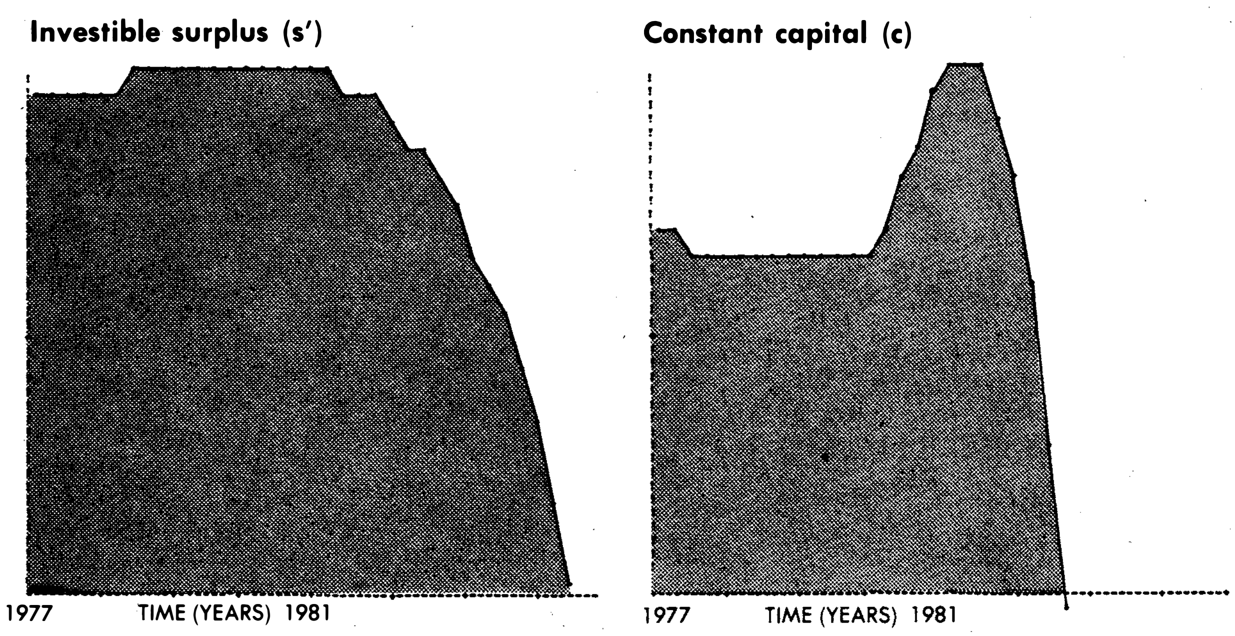
What the IMF program will do to world economy

LaRouche model quantifies the effect of London's oil hoax on world production

Advanced sector: effects of a 48% oil price increase
(average $20 per barrel in 1979)



The following survey, prepared by EIR economics editor David Goldman, is based on a larger study on the world energy situation, "The Impact of Energy Prices on the World Economy," which is available from Executive Intelligence Review *by special order for $100. The full study includes, in addition to the material presented in this issue, a more complete discussion of the inputs used in the study, as well as data for a larger number of national sectors, and the results of alternate scenarios predicated on the recycling of the world's petrodollars for economic development.*

What will be the cost to the world economy if Britain, the Carter administration, the International Monetary Fund, the World Bank, and the Organization for Economic Cooperation and Development succeed in imposing the global regimen of high energy prices and consumption cutbacks they are taking to this week's economic summit in Tokyo?

In the following report, the first of a series, *Executive Intelligence Review*, using Lyndon H. LaRouche's computerized Riemannian economic model, makes the first quantitative evaluation of the program of the IMF et al. The scenario they propose, and which is the basis for our computer study is this:

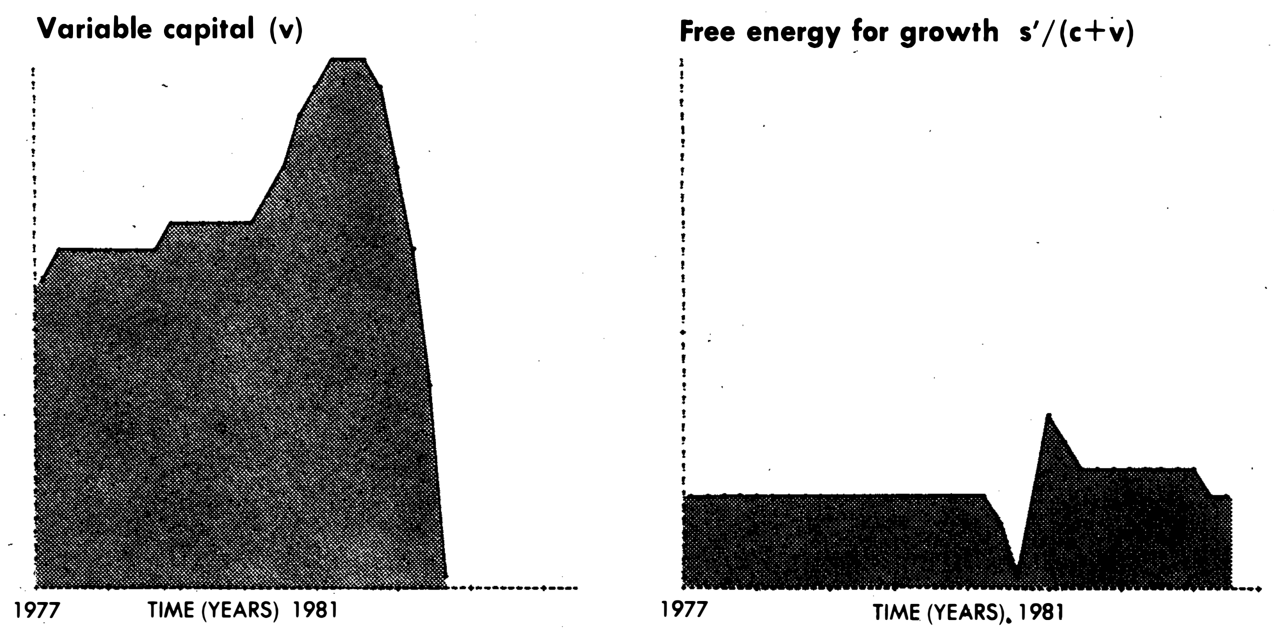
1) Oil prices will reach a new plateau;

2) The means of recycling the additional oil earnings of the producing countries back to deficit countries will not be available as in 1974-75;

3) Those developing countries who have chosen capital-intensive development on the basis of borrowing to import Western industrial goods will be effectively prevented from doing so, through the virtual centralization of spare world credit resources in the International Monetary Fund or the Bank for International Settlements.

We emphasize that our results are not an "econometric projection" in the sense that the Wharton School or Data Resources economists would offer. The IMF-World Bank scenario may or may not occur. In future issues, we will present similar, hypothetical quantifications of opposing "scenarios"—notably LaRouche's proposal that the newly created supply of petrodollars be recycled into development lending of the type proposed for the European Monetary System. But the indisputable conclusion, based on our computer study, is that the IMF policies will produce an international breakdown crisis, including a reduction of the population of the developing sector on the scale of Cambodia, by the early 1980s. Simultaneously, the advanced sector will cease to function as an economic entity in the sense we know it.

In principle, the contents of the report are contained



in the accompanying graphs, which measure 1) the production of surplus in the studied sectors, 2) the production of means of consumption for the productive population, 3) the production of capital goods and raw materials, and 4) the rate of surplus production (surplus divided by (2) plus (3). The graphs illustrate a reduction of these measures during 1980, followed by an exponential rate of decline at different intervals afterwards. The intervals range from one year in the case of the countries least able to sustain the scenario, to three years in the case of the economy with the highest productivity, Japan.

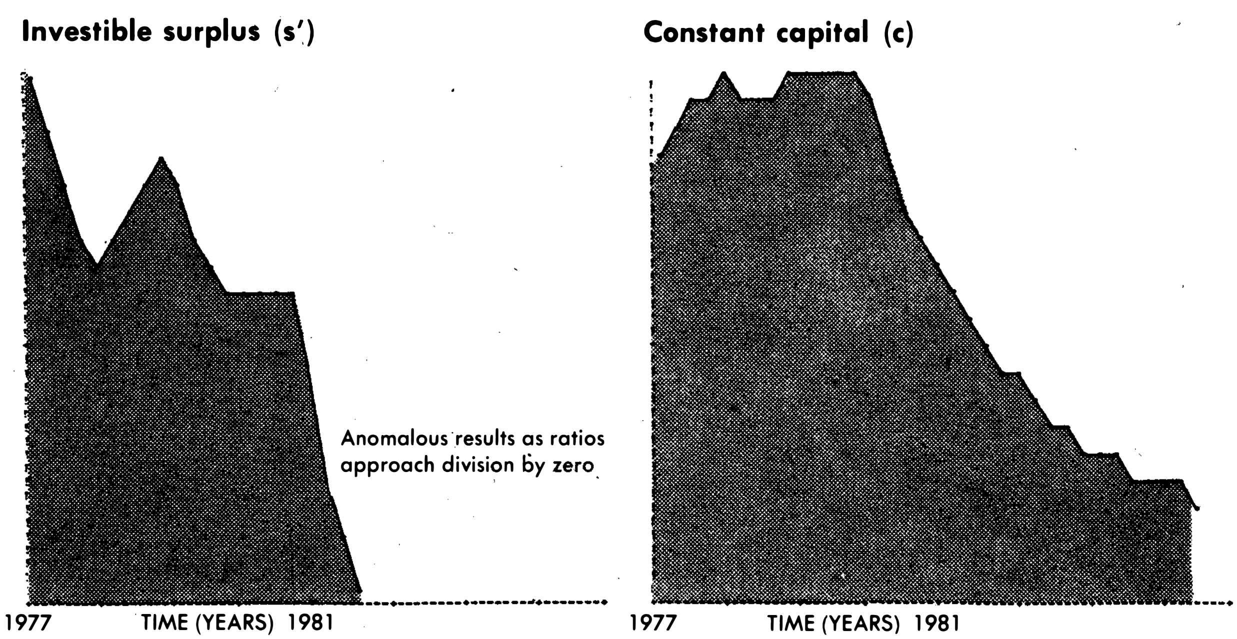
This is emphatically not a measure of gross national product for either the aggregates or the individual economies studied, but a physical measure of those economies' ability to reproduce themselves. The unique feature of the computer-based LaRouche model employed is that it discards the standard method of valuation of economic activity in favor of distinguishing between the productive and non-productive *uses* to which the tangible output of an economy is put. The principles of the new model, which center on the application of Bernhard Rienmann's mathematical discoveries to the "classical" economics of Alexander Hamilton, Henry Carey, and Friedrich List, were published by the Executive Intelligence Review in October 1978 ("The Theory of the European Monetary Fund," by Lyndon H. LaRouche, Jr.).

All of the standard Gross National Product models are based on paired equations, often totaling well into the thousands, which measure the correlation over time of various data series. Most of these series of data come from the data base of the National Bureau of Economic Research (now marketed by Citibank). All of them are in the form of rate of inflation, rate of credit extension, profit to inventory ratios, inventory to sales ratios, and so forth. Not one of the data series in the National Bureau's archive relates to the physical side of the economy and the real production of tangible wealth. The models use computers to project the most likely correlations, including a large number of "dummy" factors to paper over cases where correlations are not apparent. In the case of every such model, the variance of the model's predictions from reality over even the short term exceeds the allowable limits. The difference is made up arbitrarily. The technical term for this is "the fudge factor."

However, in the case of either major improvements in productivity or major economic dislocations, the entire series of thousands of paired correlative equations goes down like a set of dominos. Any basic change in the economy invalidates them, as the econometricians will admit under pressure. Any attempt to employ such models to describe the impact of a major oil price increase is astrology or plain lying.

The LaRouche model, by contrasts, starts from the

LDC sector: effects of a 48% oil price increase
(average $20 per barrel in 1979)



physical productivity of the economy. The tangible output of each of the economies and aggregates studied in this report, as derived from industrial, population, and Gross National Product statistics published by the Statistical Office of the United Nations Secretariat, is divided into

c maintenance of the economy's productive facilities, including replacement of machinery or improvements in land, and purchases of raw materials; "constant capital."

v the tangible output of goods required to maintain the productive labor force at its current living standard, productive labor force defined by goods-producing workers plus agricultural labor force; "variable capital."

d the economy's overhead cost, including the volume of tangible goods required to maintain non-goods-producing workers, as well as production that cannot be reinvested in any productive way, e.g., military production and office buildings.

Any output of goods above and beyond maintenance levels is defined as *surplus*, or *s*. s−d, or surplus minus unproductively employed surplus, yields the productively reinvestible surplus, or s′.

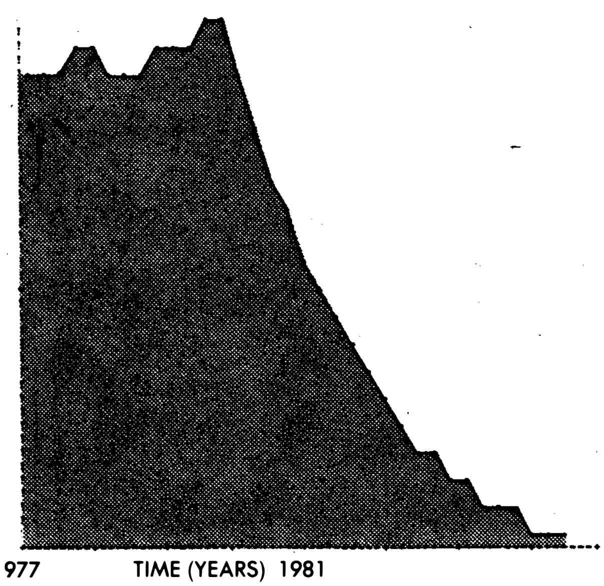
These are *causal* categories within a physical system. A certain amount of v, reflecting a quantity of labor-power, applied through a medium of productive facilities, yields a certain volume of output. Part of that output, d, is deducted from the system as overhead, yielding s′, the economic equivalent of "net free energy."

At each stage in the process of reproduction, the reinvestment of the output into c, v, and d follows *political decisions*. Through empirical studies, each of these political decisions may be translated into different values for c, v, and d in the following productive cycle.

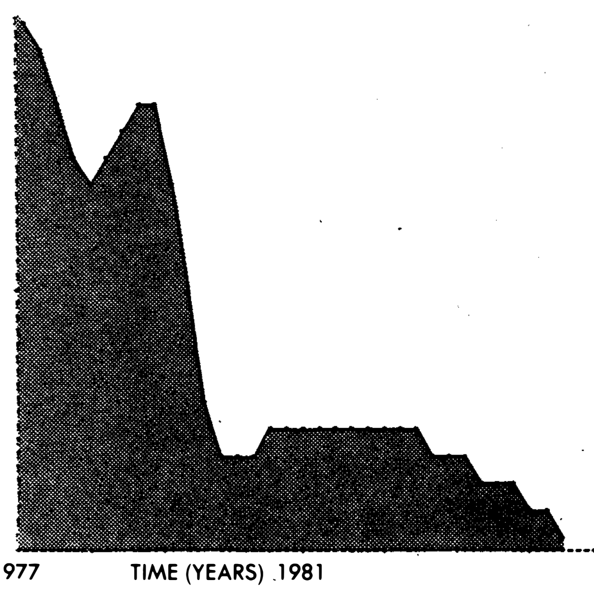
Of course, government statistical agencies, on whom we are for the moment dependent, do not consider how the output of their economies is consumed, but only measure it as an indifferentiated aggregate of different arbitrary categories of goods. To estimate the value of c, v, and d for the economies studied, the industrial and other figures provided by the United Nations were re-aggregated one by one into an *approximation* of c, v, and d. To arrive at a precise estimate, much more detailed studies of national economic statistics—and in the case of developing countries, field-work—would be required.

For example, simple capital investment numbers do not show whether the capital investment is mere maintenance of capacity, or whether it reflects a real addition to capacity. Normal measures of depreciation, such as the American Capital Consumption Allowance, are meaningless in such cases. For example, although American and Japanese steel companies invested the same amount during the past 25 years, the Japanese

Variable capital (v)



Free energy for growth s′/(c+v)



added 900 percent to their capacity, and the Americans added only 20 percent. A certain portion of American capital investment in steel must be considered unproductive expenditure, or d, rather than either constant capital (maintenance) or reinvestible surplus (expansion).

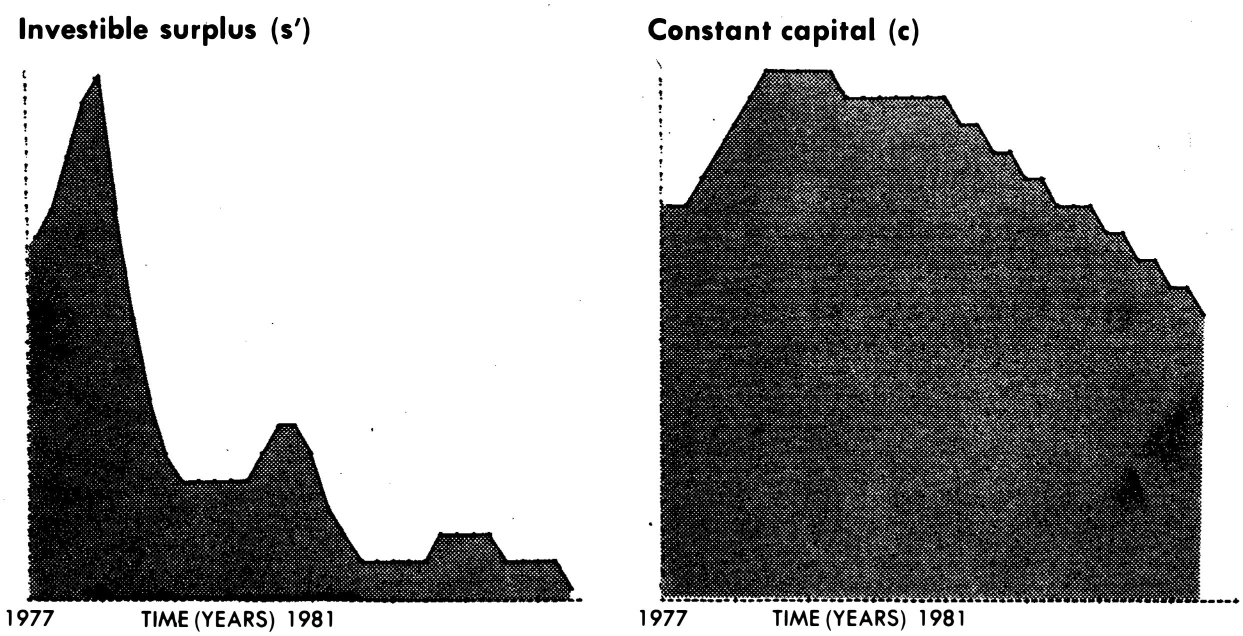
The numbers employed in the world aggregate model are only an approximation on this count alone. Furthermore, other types of approximation were employed. First, in the case of several of the developing countries, up-to-date data were not available. In these cases, the projective features of the model were employed to approximate the year 1978 and in some cases the year 1977. Secondly, all the major world sectors could not be studied in order to prepare this survey. Instead, this method of estimating was employed: the four largest Western economies, namely the United States, Japan, West Germany, and France, were studied in detail. The results of these studies were projected, on the basis of a proportionality to total output, for the entire industrialized sector. In the case of the developing sector, the economies of six developing countries ranging from newly industrialized to backward were profiled, and the results of the study used to project, on a pro rated basis, the behavior of the entire developing sector.

This method is more than adequate to determine the behavior of the aggregates. What was required for the study was not absolute numbers, but typical rates of reinvestment into c, v, and d; typical productivity; and typical exchange between the advanced and developing sector. The range of variance of the absolute numbers is extremely small compared to the size of the oil price increase, so that the trend lines remain within an acceptable range of accuracy.

The computer converts these data into the following ratios: *alpha*, the rate of investment into c or v of s', measured by the change in v divided by the change in v plus c; *delta*, or the economy's productivity, measured by gross surplus divided by v; and *gamma*, the rate of non-productive investment, measured by d divided by v. For projections, these ratios are input into future years, as well as absolute values for the change in either c, v, or d.

To model the impact of the oil price increase, the method adopted was as follows: the increase in the oil bill of each sector studied was treated as as increase in the non-productive expenditures, or d. This, in the form of an input into the computer's projective program, is an increase of the gamma ratio. In addition, productivity in each case was reduced over time to the level reflected in the drop in productivity following the 1974 oil crisis, prior to the recovery in productivity in 1976 and 1977. (The model's measure of productivity is

West Germany: effects of a 48% oil price increase
(average $20 per barrel in 1979)



different from the standard output-per-manhour measurement, although theoretically compatible; it measures the total volume of consumption goods destined for the goods-producing population relative to the production of total surplus.)

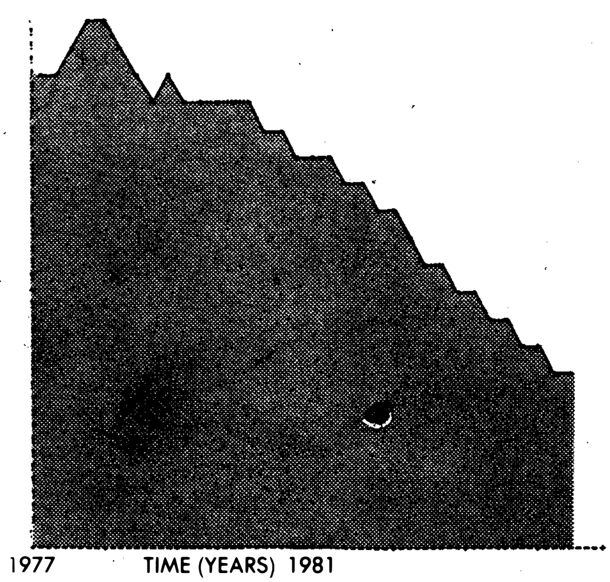
In other words, the basic assumptions programmed into the computer correspond to the political scenario described at the outset. In 1973, even though oil prices quadrupled, international credit was readily available to countries to keep consuming oil. Most of the increased oil price, in other words, was "recycled" back into constant and variable capital. To the extent that this did not occur, and the increased cost was held unproductively, e.g., in the form of money market investments in the Euro-dollar market, the result was a reduction of c and v.

Treating the entire value of the oil price rise as a deduction from surplus into "d" is, therefore, a type of "worst case scenario," resulting in the plunging trend lines registered on almost all the accompanying graphs. However, the modeling of a "worst case scenario" is justified by taking the pronouncements of the International Monetary Fund and senior Carter administration officials at face value. The proposal from these agencies is to compel affected countries to "adjust," rather than to "postpone adjustment" through deficit financing, which was broadly the rule after 1973-1974. For hypothetical reasons, a smaller deduction from surplus in the form of increased "d" could be modeled. It would have the effect of stretching the curve along the x axis. However, the effect would be the same, if over a longer period of time.

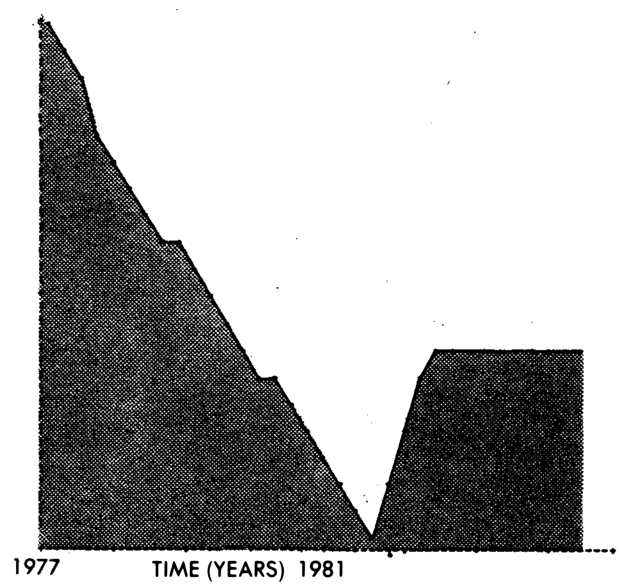
Under an entirely different political scenario, e.g., in which the entire oil surplus was concentrated through the European Monetary System, and reinvested in productive activity in the developing sector, the result would be an increase in economic activity following the oil price increase.

In the profiles of the two aggregated sectors, advanced and developing, a two-sector linked model was employed. The model takes into account *transfer* of surplus between the two sectors in calculating the future behavior of each individual sector. Under the scenario noted above, the transfer of surplus was reduced from a rate based on an historical study of advanced sector exports to the developing sector, to zero in 1980, at the point that the surplus of the advanced sector reached zero. This method of stating the surplus transfer is, again, only an approximation. In international trade, not only surplus, but all the four economic categories, are transferred. However, the underlying relationship is a surplus transfer from the advanced to the developing sector, which is fairly closely reflected in the export numbers. The above procedure reflects the assumption

Variable capital (v)



Free energy for growth s'/(c+v)



that under conditions of depression, the advanced sector will not be in position to maintain its contributions of surplus to the developing sector—assuming, of course, that borrowers are "forced to adjust."

Before examining the results in detail, one central point must be made strongly. In numerical terms, the values projected after 1981 in most cases are meaningless. The collapse of the trend lines cannot show the absolute value of an economy's output under such circumstances, because the economy itself has altered in a fundamental way. It has undergone a breakdown crisis. Under such circumstances economic behavior is chaotic and unpredictable. For all sectors, it means that production, below the breakeven level since 1979, has fallen sharply through a process of auto-cannibalization, to the point that the economy has ceased to function in the previous mode. For developing countries, it clearly means mass starvation, breakdown of essential services, and national disintegration, on the scale of Cambodia. For the advanced sector, it means a breakdown crisis of the type Germany underwent in the post 1937 period. It is important to reiterate that the alpha, delta, and gamma ratios for reinvestment of surplus reflect political decisions, which least of all, may be predicted under such circumstances. What the model can do is to demonstrate where the world is headed and over what time period. Past that, there are no predictions.

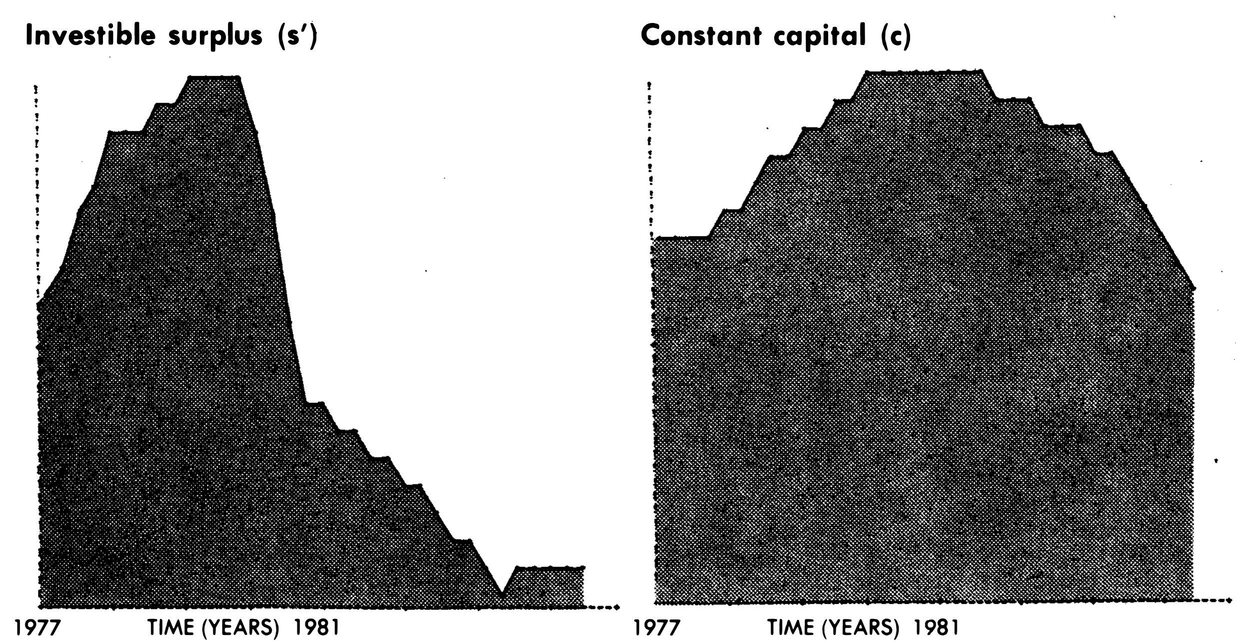
That is the strict sense in which the model is "Riemannian." The model employs a computer to produce a simultaneous solution for six differential equations per sector which measure predicted increments or reductions in the productive categories. As such, it will "flag" a point of major economic dislocation (or takeoff) through a major change in the projected trend lines. What the model tells us at this point is that the mathematical equations describing an economy have reached a point of singularity, or discontinuity, in which the function itself must change in a basic way; in other words, that past such a point, we are viewing a different economy. That is the precise, scientific meaning of the post-1981 or post-1982 collapse of the projected trend lines. The conclusion, well within the range of accuracy of the data, is that the economy will enter a breakdown crisis after two years of the policies programmed into the model.

Sector analysis

Each sector shown below includes the following data:
1) a graph for S′
2) a graph for v
3) a graph for c
4) a graph for S′/(c+v).

In each case, the uniform assumption is a 48 percent rise in the price of oil from 1978 to 1979, affecting each

Japan: effects of a 48% oil price increase
(average $20 per barrel in 1979)



economy or aggregate of economies in proportion to the imported oil bill

Leser developed countries. The first graph, showing investible surplus in the LDC sector, shows the fallout and then correction upwards of surplus during 1977 and 1978, as the LDC's begin to recover from the 1973-74 oil crisis. In 1979, they are hit by the combined effect of the oil crisis and International Monetary Fund policies. Since the total amount of surplus was marginal—its revival during 1978 mainly reflects surplus transfers from the advanced countries due to the 1977-1978 revival of world trade—it plunges sharply into the negative, plateaus into 1980, and then collapses during 1981. The level of negative surplus shown for 1981 means a reduction of productive activity to Cambodia levels.

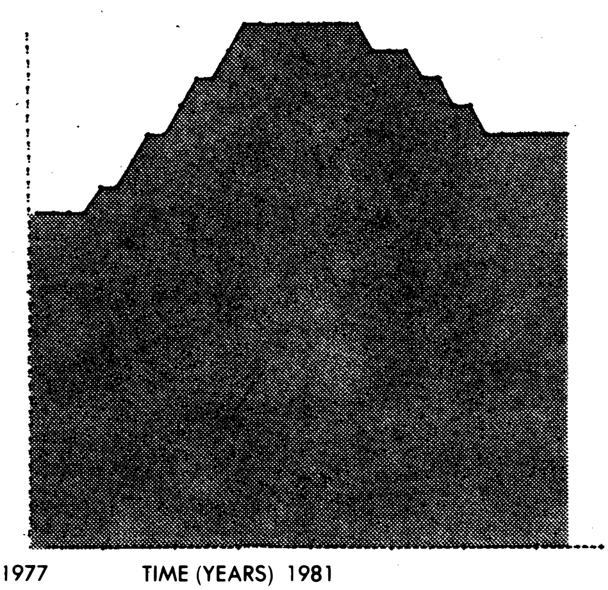
The second and third graphs, of variable and constant capital, show an immediate collapse of constant capital and a one-year-delayed collapse of variable capital. This means, simply, that the labor-intensive Third World economies would, during the first year after the oil disaster, eliminate energy-dependent raw materials and maintenance of productive facilities. One such year of this would wipe out the future basis for production of means of consumption, or variable capital. Once this transformation occurs, the poulation is subject to mass starvation, and the numbers cease to be meaningful.

The final graph, the "free energy" (s'/[c+v]) ratio for the developing sector, shows an extremely low level of growth potential to start with at 1977 and 1978, and an elimination of growth potential immediately upon the rise in oil prices and related effects.

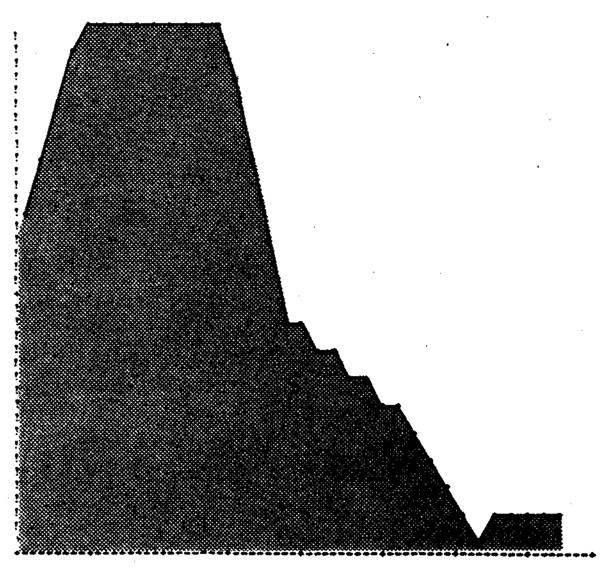
Advanced sector. The first graph, advanced sector surplus, shows a virtually unchanged level of surplus output, or reinvestable product, for the post-1975 years, indicating that the advanced sector economies never really recovered from the 1973 oil price increase. It is true that v and c rise sharply in those years in absolute terms, as capacity is brought back into use following the 1975-1976 collapse of capacity utilization. However, the fourth graph, the "free energy" ratio, which remains at about zero for those years, indicates how fragile the industrial countries' economies really are. Despite the temporary boom in capacity utilization during the so-called recovery, the economy is not producing *surplus*. In other words, the current production of these economies during 1975-1978 only pays its own costs. The free energy is zero, indicated by the fourth graph.

That conclusion is extremely important, and belies the normal method of Gross National Product accounting employed in standard models. If an economy is barely paying its own costs without adding to its fund for expansion, the mere rise in tangible output, based on the use of spare capacity, has an illusory value. Any major increase in the *costs of production* will force that

Variable capital (v)



Free energy for growth s'/(c+v)



economy to contract immediately. A major deduction from investable surplus in the form of a rise in non-productive expenditures—the rise in "d"—will produce a disaster. Since the total advanced sector oil bill will rise by $90 billion in 1979 based on an average oil price increase to $20 per barrel, and the level of surplus to start with is barely over $100 billion, as shown on the first graph, the economy cannot sustain itself. That is why surplus collapses so quickly after 1979; it is also why variable and constant capital plummet, after a period of seemingly impressive increase.

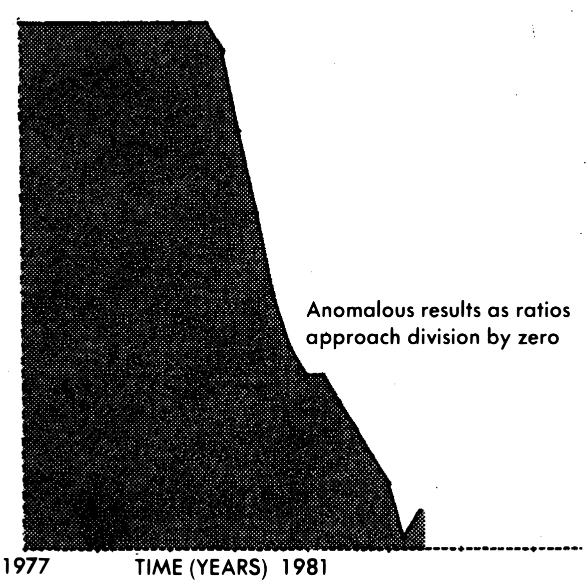
The break in the "free energy" curve during 1981 is a singularity, indicating when the numbers cease to be meaningful.

West Germany. West Germany's graphs behave in a fashion similar to that of the advanced sector as a whole, with several significant exceptions—which indicate the sensitivity of the model. Instead of remaining stagnant during the years prior to the 1979 oil price increase, West Germany's surplus rises sharply into the positive (the top figure on the y-axis represents $46.2 billion). After a sharp drop during 1979, total surplus stabilizes momentarily at roughly zero, before dropping into the negative. These patterns reflect that country's greater productivity and hence greater resiliency. Nonetheless, it is clear from the trend line that much of the 1979 growth in constant and variable capital during 1979 in West Germany occurred at the expense of production of surplus. In other words, five years after the first major oil price increase, West Germany was still unable to sustain a major economic expansion, except by using existing capacity to the maximum. That corresponds closely to the reported data for West Germany available for the current year, even though it is based on projections of 1978 data.

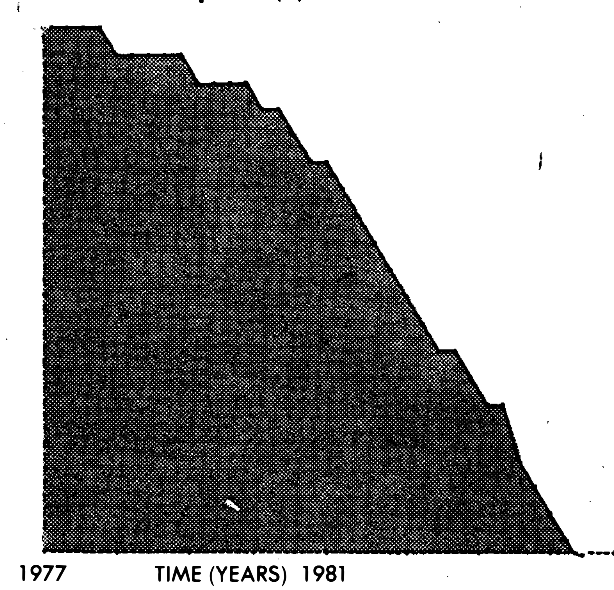
The real vulnerability of the West German economy is shown in the "free energy" ratio, measured by the fourth graph in the series. What is especially significant is the relatively continuous fall of the negentropy ratio from 1977 to 1981-1982. The strong indication is that the pattern of higher current output with less investible surplus prior to the oil price increase represented a totally unacceptable type of economic activity. The result of the oil crisis, shown in the variable and

France: effects of a 48% oil price increase
(average $20 per barrel in 1979)

Investible surplus (s')



Constant capital (c)

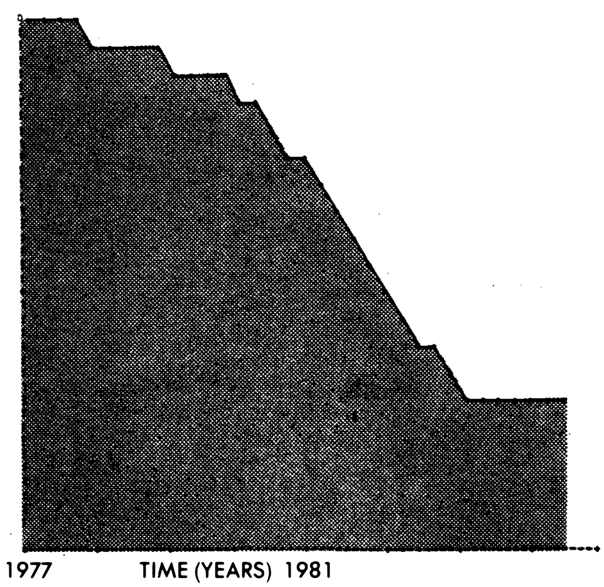


constant capital graphs, is a large net reduction in the total size of the West German economy by the early 1980s, of proportions comparable to the late 1940s.

Japan. The first graph in the series, showing investable surplus, shows both how productive and how vulnerable the Japanese economy is. Following the collapse of surplus during the previous oil price increase period, surplus recovers sharply from roughly zero in 1977 to over $60 billion at the outset of 1979. After a stabilization for most of 1979, when the pattern of rising surplus break down, the rate of surplus production collapses to zero during 1980, and deeply into the negative during 1981. Even so, Japan, the most productive of the advanced sector economies, manages to sustain the level of current economic activity much longer than any other sector under these projections. Both constant and variable capital collapse (graphs 2 and 3 in the series), but not until 1982. Japan's "free energy" ratio is the only one among the advanced sector countries that does not break immediately during the 1979 oil price rise and related developments; that is because Japan showed the only authentic growth in economic growth potential during the 1977-1979 period. Nonetheless, the Japanese advantage is not much more than the delay of one or two years in the worst consequences of the oil price rise and IMF policy implementation.

France. As the first graph, reinvestable surplus, indicates, France's pattern is typical of the advanced sector as a whole: stagnating growth during 1977-1979, followed by a plunge after the 1979 oil price increase and related problems. France's economy is clearly in worse shape than either West Germany or Japan's. It has not had sufficient levels of surplus production following the oil price increase even to increase current levels of manufacturing employment, reflected in the variable capital graph. Its surplus has been marginally negative since the 1973 oil price increase. That is why the "free energy" ratio, shown in Graph 4, remains constant during the entire period relevant to this study: it is dead flat at zero. What the charts show is that France, even more than Germany or Japan, faces the virtual shutdown of its economy under the scenario stated at the outset.

Variable capital (v)



Free energy for growth s'/(c+v)