

The evident conclusion to be drawn is that, despite moderate growth during the 1970s, Mexico's situation in 1980 was not good by international standards. But this by no means precluded successful industrialization in the years ahead, since sufficient potential was available. In fact, countries like South Korea and Taiwan also had physical economic parameters in 1970 in the same order of magnitude as Mexico's. But in these countries, a gigantic leap did occur over the next two decades, whereas Mexico went in the opposite direction: down.

The reasons for this are entirely political. In the late 1970s, Mexican President José López Portillo made policy decisions that were correct. He announced that the country's large oil reserves would be traded for modern technologies;

that International Monetary Fund (IMF) austerity policies would be rejected; that 20 nuclear energy plants would be built, four entirely new port cities would be constructed, and an aggressive drive was undertaken to construct new public and private steel complexes and to build greatly increased refinery and petrochemical capacity. Moreover, a climate of intense national optimism began to prevail.

But the financial oligarchy would have none of this. Through their mouthpieces such as Henry Kissinger and Zbigniew Brzezinski—the latter at that time the national security adviser to President Carter—they announced bluntly: "We will not tolerate another Japan south of the border," meaning that Mexico would not be permitted to industrialize.

LaRouche's method of physical economy

The following excerpt from a May 8, 1994 memorandum by Lyndon LaRouche develops the core concepts of basic economics.

Let us describe a successful economy, one in which the per-capita physical productive powers of agricultural and industrial labor are increasing, and in which the per-capita physical standard of living is increasing. Let us consider only those inputs which affect the production of those elements representing that per-capita standard of physical consumption, and physical consumption which is necessary for that level of per-capita productivity of physical output.

Express this relationship as a *changing* one, in which that per-capita consumption and that per-capita physical productivity are both increasing.

This must be expressed in terms of relative rates of change. Thus, in the first approximation, the functional description is set up in the following terms. This makes clear the general nature of the required distinction between "productive" and "non-productive" activities. All measurements are made in terms of both the changes in the whole, and per-capita values of changes in the whole. It is relations among these changes, rather than relations among objects, which are to be studied.

Changing Rate of Output, in respect to Changing Rate of Input. Call the first $F(y)$ and the second $F(x)$. Hence, $F(y)/F(x)$. All three functions are measured in terms of rates of change of whole magnitudes and rates of change in per-capita values of these whole magnitudes.

$F(x)$ treats all of those physical elements of consump-

tion necessary to sustain per-capita physical productivity at a given technological and related level. This includes households' (physical) goods, producers' goods, and basic (physical) economic infrastructure. To this must be added three essential components of maintenance and increase of the potential per-capita productive powers of labor: science and technology, education, and health care.

$F(y)$ treats all of those classifications of physical and service products which are listed in $F(x)$.

We next define growth as contingent upon some function of F [$F(y) > F(x)$]. This includes two principal terms:

1) $F(y_1)/F(x_1) < F(y_2)/F(x_2)$.

2) Let r signify per-capita value of population-density.

Then $|F(x_2)/r| > |F(x_1)/r|$.

Let us name $F(x)$ the "energy of the system," and $|F(y_i) - F(x_i)|$ the "free energy" of the process. Thus, we have the ratio of "free energy" to "energy of the system" as the first term, and per-capita-per-kilometer energy of the system as the second. We have a function in which $F(y_i)/F(x_i)$ is now a function of $[F(x)/r]_i$.

According to the generally accepted principles of current classroom mathematics, these constraints are impossible; yet, they occur in every successful economic process. This signifies to the competent mathematician that the formal representation of such processes has a higher cardinality than is provided by any presently generally accepted variety of classroom mathematics instruction. This was the core of the first phase of my original discovery, back during 1948-49.

This result, which is apparently anomalous from the viewpoint of today's generally accepted classroom mathematics, is the inevitable result of the nature, the characteristic feature, of the process considered: that the changes described by the sets of constraints come about as a result of fundamental scientific and related forms of discoveries, discoveries which appear in the functions as absolute discontinuities. This occurs to such an effect, that the func-

The oligarchy delivered on this pledge. In early to mid-1982, they launched a full-scale financial destabilization of Mexico, including capital flight and other forms of economic warfare. Ultimately, because of lack of support from other Ibero-American leaders, President López Portillo was destabilized and defeated. His successor, Miguel de la Madrid, took office in December 1982, and immediately began implementing the policies of the IMF and the bankers: austerity, free trade, and unquestioning servicing of the foreign debt.

The country has never since recovered.

The decade of disaster

Beginning with the economic warfare of 1982, there is

tions so defined bound externally, as higher cardinalities, all possible transcendental functions. My later work, during 1952, showed me that these are functions located within the higher domain of alephs.

We restrict the term "productive" to that general definition. We may add terms to the functional listing of products or services only insofar as they satisfy those same restrictions. This means that subtracting from an existing category of listing to add a new term, requires that the replacement itself increase the physical productivity of labor per capita for that society as a whole.

The other restrictions required are subsidiary to those given here. These definitions are supplied for a physical-economic process described without any consideration of the existence of money. The study of money and monetary systems should be conducted to show how different rules of the money game produce different modes of human economic behavior, either relatively sane ones, or, in the extreme, the kind of ever-worsening lunacy shown by governments and financial institutions generally during the recent decades.

The meaning of the term 'physical economy'

The following is excerpted from a memorandum by Mr. LaRouche, presented at a May 26, 1994 Washington press briefing:

The characteristic feature of successful physical economies is the increase of the potential population-density of society, in per capita, per household, and per square kilometer terms. The cause of this increase is predominantly those changes in the productive powers of labor which are typified by investment in improved technologies, as the possibility of such (physical) investment is conditioned by requirements for use of sources of power and improvements in the development of the environment used for this purpose.

first stagnation and then decline in most of Mexico's principal physical economic indicators. Then, with the implementation of neo-liberal economic policies in the late 1980s, under President Carlos Salinas de Gortari, leading up to the adoption of the North American Free Trade Agreement in the early 1990s, the decay turned into outright collapse. One of the clearest reflections of this is the shocking drop between 1980 and 1992 in the total number of workers employed in the manufacturing sector, which is a parameter that is of decisive overall importance, as explained above.

In Figure 1 we show both the total number employed in manufacturing (including the *maquiladora* sector of assembly plants along the border with the United States, which,

This measurement defines individual productive labor in terms of biophysical and cultural demographic functions of households, and defines existence of households, of individual productive labor, and of output of productive and other labor in terms of per household, per capita, and per square kilometer terms. What is measured in the production of the per capita productive powers of labor by means of the process of production so defined.

The measurement to be made chooses any instant of a continuing process of production of the productive powers of labor through the medium of the reproduction of those products which are the essential inputs for the households and productive processes represented. The adequate parameter for measurement of these products and services is the total of physical products consumed by households and production entities, plus only three categories of services essentially (demographical and otherwise) to maintaining the rising productive powers of labor: science, health care, and education.

The input at any instant is a magnitude corresponding to "energy of the system." At that same instant, the net of output less input corresponds to estimated "free energy."

In these terms, the characteristic inequality, is:

That the continuing increase of the ratio of "free energy" to "energy of the system" is contingent upon a continuing increase of the intensity of "energy of the system" per capita, per household, and per square kilometer.

The increase in the productive powers of labor in this way, correlates with required increases in power- and water-density, with a shift from a primarily rural production, a continuing increase in basic physical infrastructure of production, and with a shift within the composition of the urban labor-force increasing relatively the ration of producers' goods over households', of machine-tool component of producers' goods, and with an increase in the ration of employment in "pure science and technology."