

tools, and so forth, which Peru itself will not be able to produce in the near future.

The "bootstrap" run, using the available surplus generated by the means described, produced results that are both theoretically interesting and vitally important to the citizens of Peru (Figures 11 and 12). We showed that *the conditions under which growth would be possible can be reached again*, but under extremely strict assumptions. These assumptions include no increase in wages for most of the workforce, small wage cuts for some of the highest-paid sectors, and a policy of telling the consumer goods and intermediate goods sectors of manufacturing to "get along" on their existing capital investment.

Electricity investment can be maintained, as it must be. Food supplies can increase, and a few modern fishing boats can double the per capita fish intake and thus improve protein consumption, which has dropped so disastrously. Agricultural wages in the areas of increased crop production do rise, although not as rapidly as in the hypothetical run, and agricultural workers drop as a percentage of the total workforce, although not in absolute terms.

### The role of outside investment

These results, however, are achieved at the expense of the development plans for the trans-Andes area, and also at the untenable expense of maintaining a large portion of the rural population on the same tiny plots that now average just

over 1.5 hectares per worker, with the same brutally low incomes, now estimated at less than \$700 per year.

To make the immediate requirements for recovery and future development less harsh will require collaboration with other governments concerned with developing the Andean area. Those governments that do not wish to see a seedbed of human misery and terrorist recruitment continue, must work together to devise the specific investment program that would overcome the limitations imposed by the last few years and return the country to a condition in which full-scale development can occur. The results of the Peru model also indicate what can and must be done to maintain the potential of development until such agreement can be achieved.

The LaRouche-Riemann model is not a magic wand by which the effects of centuries of poverty or years of capitulation to the brutal demands of the international financial system can be reversed by changing one's point of view. In the case of Peru, the damage that has been done will continue to affect the lives of millions, unless effective international action changes the limits that we describe for development without any outside investment. Nevertheless, contrary to those who throw up their hands and say the situation is hopeless, there is a possibility for Peru to survive as a functioning national economy, maintaining the potential for growth and development. It means some difficult decisions, and in the best case, some immediate economic collaboration in the region.

## The LaRouche-Riemann analysis: a glossary

The LaRouche-Riemann model analyzes the following categories and ratios of economic output:

**V:** Variable capital, or the wage costs of households economically engaged in the production of tangible wealth, measured in terms of their consumption of tangible goods.

**C1:** Raw materials costs of capital inputs.

**C2:** Replacement costs of plant and equipment in terms of the physical volume of capital goods required to make such replacements.

**CN:** Net capital investment, or investment of capital goods in excess of replacement costs.

**S:** Tangible profit (surplus), or output of tangible goods in excess of the production costs of tangible goods during a given production cycle (production costs equal tangible wage costs plus raw materials costs plus replacement costs).

**S':** Reinvested tangible profit, or the component of surplus that is returned to production of tangible goods; the components of the reinvested profit are net capital investment and the margin of expansion of the tangible wage bill and of raw materials inputs.

**S - S':** Overhead costs, or the component of surplus that is diverted from production of tangible goods to meet the requirements of private and government services.

**S/V:** Labor productivity, or production of surplus per unit of tangible wage input.

**S/(C1 + C2 + V):** Total economic or thermodynamic productivity, or production of surplus per unit of labor plus capital inputs. It should be noted that this is both a productivity and a productivity-growth measure. This form of analysis weighs current output from the standpoint of its contribution to future growth, and its measure of productivity, therefore, is the extent to which current inputs of tangible wealth into the production process contribute to the economy's capacity for growth.

**S'/(C1 + C2 + V):** The rate of reinvested surplus, or the reinvestment of surplus relative to the production costs of the total tangible output of the economy.