

COPING WITH ENERGY SHOCKS IN LATIN AMERICA: THREE RESPONSES

James H. Street
Rutgers University

Economic historians are accustomed to treating 1930 as a landmark date in the development of Latin America. The onset of the Great Depression was an abrupt external shock to every country in the region, cutting off traditional export markets and making it exceedingly difficult to secure consumer goods, replacement parts, and new capital equipment in return. Many countries began experiments in national self-sufficiency, turning to policies that came to be identified, especially after World War II, as import substitution industrialization (ISI). Although these experiments were sometimes disappointing, they represented a watershed in the evolution of national economic systems.

As the possibilities for domestic ISI began to lose their effectiveness in the 1950s, Latin American governments turned increasingly to regional solutions through economic integration. Although wide disparities in rates of economic development and cleavages among political regimes slowed these efforts toward cooperative growth, in the late 1960s there was still hope of forging multilateral institutions that would foster the development of the region as a whole.

In the future, historians will refer to a new landmark date: 1973. This was a year of great international turmoil, in the early part of which the second devaluation of the dollar in fourteen months unstabilized the world monetary system. High levels of industrial activity coincided with acute shortages of foodstuffs and raw materials. Crop failures occurred in several countries and the export prices of wheat doubled. Inflationary pressures were met with conventional monetary policies, and interest rates reached historic highs. The strain began to show in recessionary tendencies in the United States and Europe.

In October 1973, the Organization of Petroleum Exporting Countries (OPEC) unexpectedly began a series of actions that quadrupled the price of oil and laid the basis for further sporadic price jumps. By 1974 the industrial world found itself in the deepest recession since the Great Depression, a condition intensified by the OPEC price increases, and much as in the 1930s, the peripheral countries, including those of Latin America, were severely affected. The initial shock of 1973 has since been

compounded by a succession of petroleum price escalations, culminating in a major increase in 1979. During this period growth rates in most countries were sharply reduced, price inflation spread, and foreign debt mounted spectacularly. Although some countries have shown partial recovery from the 1973 crisis, most experts on energy matters consider it unlikely that there will ever be a return to low-cost petroleum and the economic growth structures that were built upon it.

Once more Latin American governments have turned to efforts to achieve national self-sufficiency, particularly with respect to energy sources, and to resume economic development under drastically altered resource conditions. Each country appears to have struck out on its own path, and the vision of regional economic cooperation so carefully nurtured in the 1960s has retreated before the realities of crisis management and new competitive relationships between countries fortunate enough to have surpluses of oil and those that do not.

Until the 1950s, Latin America had a relatively low rate of energy utilization, in which firewood still played a significant role; but in the 1960–70 growth decade, consumption of energy in all forms reached an annual growth rate of 6.3 percent.¹ About 70 percent of present energy consumption is derived from petroleum. The energy crisis forced a temporary reduction in the use of oil, but by 1979, the region's total consumption of petroleum was nearly one-third greater than in 1973.² It is evident that the economic growth of the region cannot continue without increasing consumption of energy, although shifts in sources must take place.

To illustrate the changes that are occurring, three cases have been selected. One describes the reactions of a large, rapidly developing country very deficient in known petroleum resources, Brazil; another concerns an "old oil" OPEC member, Venezuela; and a third a "new oil," non-OPEC country, Mexico. Each will be seen to have responded during the crisis period in its own way, closely related to its perceived resource situation, in alleviating the short-term effects of the energy shocks, in redefining its longer term economic development strategy, and in adopting new science and technology policies. Brazil's response has been characterized by a strong emphasis on energy substitution and export promotion; Venezuela's by a belated import substitution effort; and Mexico's by an ambitious global development plan still in evolution. In each case, the brunt of the energy crisis has fallen on the poor and the working classes as the effects have worked themselves out.

Not all of the occurrences of the turbulent decade of the 1970s can, of course, be attributed to the energy crisis. Yet no single event has had greater impact on the region as a whole.

THE INITIAL IMPACT ON THE REGION

Latin America as a region is an important contributor to the world supply of petroleum; Mexico has recently displaced Venezuela as fourth among foreign oil suppliers to the United States. Yet only a few countries—Mexico, Venezuela, Trinidad and Tobago, Ecuador, Peru, and Bolivia—produce sufficient oil for net export. For the eighteen countries that were not self-sufficient in petroleum in 1973, the decision by OPEC to raise oil prices initially increased the direct cost of imported petroleum products by about \$5 billion annually.³ Over \$2 billion in additional costs were included in the combined import bill each year as a result of the deterioration in the terms of trade with the industrial countries during the economic recession of 1974–75.

The major effect of the international crisis and its recessionary aftermath was to check the process of economic growth that had been under way in the region. For Latin America as a whole, the real growth rate fell from an annual average of 7.2 percent in the 1968–74 period to 3.1 percent in 1975.⁴ If the oil-exporting countries of Venezuela and Ecuador are excluded, the region's growth rate for 1975 was only 2 percent.⁵ For most countries, this was lower than their rate of population growth, so that per capita consumption for a time declined. Although there has since been some recovery, growth in the region has not reached former levels, and most countries have had acute adjustment problems in conserving energy, coping with inflation, meeting trade deficits, and negotiating increasing debt burdens.

"Imported inflation," as some economists have called it, was transmitted to Latin America both directly through higher costs for imported fuels and indirectly through rising prices of other imports. In addition, most countries sustained a sharp deterioration in the terms of trade as the 1974 recession set in. The demand for most primary products other than oil, and for a time sugar, alumina, and bauxite, fell off, while increased fuel costs in the industrial countries were passed through in the prices of manufactured goods. This was particularly harmful to the slower growing countries that had previously managed to avoid inflation.

From 1966 until 1970 fifteen Latin American countries enjoyed relative price stability (below 5 percent annual increase in the consumer price index), and only four experienced price increases in excess of 15 percent per year.⁶ By 1973, all of the Latin American countries with the exception of Venezuela and Honduras recorded increases in excess of 5 percent. The following year, eighteen countries exceeded the 15 percent annual rate, and prices in Venezuela rose more than 8 percent. Several countries that had experienced chronic inflation in earlier years suffered hyperinflation during this period. Uruguay's cost of living index rose 97

percent in 1973, Chile's 506 percent in 1974, and Argentina's 443 percent in 1976. These occurrences were, however, associated with major political crises, and dependence on foreign oil was merely a complicating factor.

After 1975 a few countries succeeded in bringing down the rate of inflation, but in general the new pattern has persisted. In 1979 no country had a rate of inflation below 5 percent, and thirteen countries had rates ranging from 16 percent in El Salvador to 160 percent in Argentina.⁷

Deficits in the balance-of-payments positions of nations that did not export oil reached unprecedented levels in 1974 and 1975. The combined current-account deficits for eighteen Latin American countries in this group tripled from about \$4 billion in 1973 to \$13 billion in 1974 and quadrupled to \$16 billion in 1975.⁸ By 1977, even oil-exporting Venezuela sustained a current-account deficit of over \$3 billion.⁹

Largely because of emergency needs, the external debt of Latin America as a whole climbed steeply by 23 percent in 1973 to \$36 billion, and by another 28 percent in 1974 to over \$46 billion, the sharpest increases ever recorded for the region.¹⁰ The external public debt continued to grow, exceeding \$109 billion in 1978, when debt service payments as a proportion of the value of exports of goods and services attained an all-time high.¹¹ For Argentina, Brazil, Chile, Colombia, Mexico and Peru, current debt charges were particularly severe.

THE CASE OF BRAZIL

While the effects of the world economic crisis and subsequent recession were felt throughout the region, they varied in intensity according to the circumstances of individual countries. Brazil, which in 1973 produced only 22 percent of its domestic consumption of petroleum (a ratio which has since declined to about 15 percent), was drastically affected. The annual real growth rate, which had averaged an exceptionally high 11.2 percent during the period of the "Brazilian miracle" from 1968 to 1974, dropped to 5.7 percent in 1975 and to 4.7 percent in 1977, with partial recovery in the intervening year.¹² Although cyclical fluctuations have been common in Brazilian experience, the country has had difficulty in returning to its former accelerated growth rate.

Both because of higher prices and because of the increased need for energy, Brazilian petroleum imports doubled in cost in 1973 over the previous year (from \$.5 billion to \$1 billion), and again tripled in 1974, reaching \$2.9 billion.¹³ In the eight years from 1972 to 1979, Brazil's cost of imported petroleum rose more than twelvefold, and in the most recent year, consumed 42 percent of the country's earnings from exports.¹⁴

Partly as a consequence of these fuel costs, Brazil's current-

account deficit in the balance of trade, totaling \$2.2 billion in 1973, ascended dramatically to \$7.6 billion in 1974, and was followed by another staggering deficit of \$7.0 billion in 1975.¹⁵ Only a fortuitous rise in coffee prices and extensive borrowing from commercial banks enabled the country to cope, for a time, with these enormous drains of foreign exchange.

The cumulative effect of repeated balance-of-payments deficits was to increase Brazil's external public debt until it was estimated to reach \$56 billion at the end of 1980.¹⁶ At this level, Brazil ranked first among developing countries and third in the world (after Great Britain and the Soviet Union with its Comecon satellites) in the size of its external debt. Charges to service the debt consumed virtually all of the foreign exchange that was not allocated to petroleum payments.

In order to contend with the acute foreign trade problem, the Brazilian government was initially obliged to reduce its emphasis on the stimulation of nontraditional exports as an aid to the established import substitution industrialization policy, and to return to an earlier reliance on agricultural and raw materials exports to provide maximum foreign exchange earnings. Coffee, cocoa, and edible oils were important export earners, and by 1976 Brazil became the world's second largest producer and exporter of soybeans, after the United States.

New conditions prevailing after the international crisis played havoc with the Brazilian government's internal stabilization program, which had brought the annual increase in the cost of living as low as 13 percent in 1973.¹⁷ In 1974 and 1975, inflation averaged 28 percent, and by 1980 rose to 110 percent.¹⁸ The government took stiff measures to reduce the domestic consumption of gasoline by the public, allowing the retail price to rise by 63 percent in 1976.¹⁹ This resulted in a decline of about 4 percent in gasoline consumption the following year, but the use of industrial fuel continued to increase. When the cost of imported oil rose from \$17 to \$29 a barrel in 1980, the government raised fuel prices so high that for the first time since 1945 domestic oil consumption actually declined, by 2.3 percent.²⁰

Inflationary pressures on the economy since the energy crisis have twice compelled the administration to reduce the growth rate by adopting deliberate policies of deceleration, first under the regime of President Ernesto Geisel in mid-1976, and again under President João Batista Figueiredo after August 1979. In the first instance, the growth objectives of the Second National Development Plan (II PND) for the period 1975–79 were severely modified. Rigorous control of monetary expansion was accompanied by reduced capital expenditures in the public sector in an effort to bring down the rate of aggregate national investment. The reductions were concentrated in postponements of planned construction of highways, railways, and communications.

At the same time, the government, under the direction of PETROBRAS, the national petroleum enterprise, undertook a vigorous program of exploration for oil, particularly in offshore locations. It also utilized a subsidiary, BRASPETRO, which launched explorations in seven foreign countries, chiefly in the Middle East. In 1976, BRASPETRO made an important oil discovery in the Majnoon field of Iraq, which entitled Brazil, under the terms of its contract, to import a portion of the new production at a discount from world prices. BRASPETRO also had some success in finding oil in Iran, Colombia, and Egypt. Domestic geological indications, however, offered little prospect that Brazil would significantly increase its production of petroleum from domestic sources in relation to its growth needs.

The Brazilian government's efforts to obtain a secure source of imported petroleum from Iraq did not prove entirely satisfactory. After the major discovery in the Majnoon field, the Iraqi government unilaterally changed the terms of the contract with BRASPETRO to Brazil's disadvantage. The Brazilian government then agreed to become a major supplier of weapons and light armor to Iraq, and in January 1980 signed an agreement providing for the delivery of natural and lightly enriched uranium for use in Iraq's nuclear installations. In return, Brazil was assured for at least thirteen years of about half of its petroleum import needs, amounting to four hundred thousand barrels a day. However, when hostilities broke out between Iraq and Iran in September 1980, the Brazilian economy, which was by this time heavily dependent on Iraqi oil, sustained a severe shock. The Figueiredo administration was obliged to accelerate and fully integrate a program to find substitutes for petroleum as sources of energy.

In the early period after the 1973 crisis, the government concentrated its strategy for petroleum substitution on heavy investments in the development of hydroelectric and nuclear power for the production of electricity, as well as in increased exploration for coal deposits. Hydro-power now provides about 30 percent of Brazil's energy consumption, and there remains a large untapped potential in the nation's river systems, although some of them are remote from developed industrial zones. The world's largest hydroelectric plant, which is under construction at Itaipú on the Alto Paraná River between Brazil and Paraguay, is scheduled to begin operation in 1983 in its initial stage. When fully completed in 1989, it is projected to produce three times the electrical output of the Grand Coulee Dam in the United States and will nearly double Brazil's power supply.²¹

Because of a dispute with the government of Paraguay over the form of generation of alternating current for Paraguay, much of which is to be resold to Brazil, the Brazilian power authority will use newly developed means to deliver electricity nearly one thousand kilometers

to the major industrial zone near São Paulo. The extended power lines will utilize high voltage direct current transmission (HVDC). Brazilian engineers have expressed confidence that HVDC technology, when it is fully expanded, will render feasible the transmission of power from the upper reaches of the Amazon at distances up to three thousand kilometers from present industrial sites. Abundant hydropower would permit electrification of railways and local transit systems, relieving current reliance on fossil fuels.

In its nuclear development program, Brazil has had some setbacks in the form of a disastrous fire and the theft of critical components at Angra dos Reis, where three reactors have been under construction. The first, originally scheduled to come into operation in 1978, was delayed in completion until 1981. The government also entered into an agreement with West German firms to supply the necessary technology and construct eight more nuclear power stations at scattered locations, in exchange for uranium. Brazilian reserves of uranium are extensive and were estimated in 1981 at upwards of 219,000 tons.²²

Questions have arisen about the effectiveness of the nuclear development program because of rapidly escalating costs. The program is estimated to require an investment of \$37 billion by the early 1990s, by which time another substitute energy program, the production of alcohol, is expected to contribute as much to the total energy supply at one-third the cost of nuclear power.²³

When it became apparent that the energy crisis would have long-term consequences for Brazil, the government in November 1975 launched a program known as Proálcool to increase the production of ethanol, or fuel alcohol, to blend with gasoline for use in automobiles, buses, and motor trucks. The technology for making alcohol from sugarcane was already well developed, and the initial program authorized the construction of 170 distilleries in commercial sugarcane areas. Alcohol production grew rapidly from 660 million liters in the 1976–77 crop year to 2.3 billion liters two years later.²⁴ In June 1979 the Figueiredo administration announced an expanded program to invest \$5 billion in alcohol production by 1985, with an ultimate goal of 10.2 billion liters a year. This would represent 2 percent of the nation's primary energy consumption and replace oil imports of about 170,000 barrels per day. A significant incidental effect is expected to be the creation of 1.5 million new jobs in rural areas by 1985.

The Proálcool program entails a shift from the production of anhydrous alcohol, which can be mixed with gasoline to form gasohol, to hydrous alcohol, which must be used in its pure form. This requires new technology and extensive conversion of vehicles to alcohol-powered engines. In early 1981, the Ford, General Motors and Volkswagen motor

companies announced plans to produce more than 360,000 vehicles burning pure alcohol.

Initial expansion of alcohol production began in the sugarcane areas but experiments were also conducted in producing alcohol from the roots of the manioc plant and the small coconut of the babaçu palm tree. The latter yields both a vegetable oil and starch for the distillation of alcohol and promises to become an important resource, as it is estimated that there are more than one hundred million hectares of natural stands of these wild palms in northeastern Brazil. Large commercial forests of eucalyptus trees are also being planted for charcoal to distill alcohol, to fuel the iron and steel industry, and for other industrial and household uses.

There are implicit social costs in the direction that the Proálcool program takes. If it results in the cultivation of vast acreages of sugarcane for fuel production, it may conflict with the need for Brazil to produce more food for its growing population. William S. Saint, a rural sociologist with the Ford Foundation in Rio de Janeiro, has commented: "In a country where an advantaged 20 percent of the population owns almost 90 percent of the automobiles and a disadvantaged 50 percent spends at least half their income on food, the policy decision—stated somewhat too simply—comes perilously close to choosing between allocating calories to cars or to people."²⁵

Notwithstanding the longer range plans of the Brazilian government to find energy substitutes for petroleum, which form a major part of the Third National Development Plan (III PND) for 1980–85, the short-term drain on the balance of payments of increased costs for oil imports continued to place a heavy immediate burden on the economy. Petroleum products from foreign sources cost Brazil approximately \$6.4 billion in 1979, a figure which rose to about \$10 billion in 1980.²⁶

In an abrupt shift in economic policy, the new administration headed by João Baptista Figueiredo in August 1979 replaced Mário Henrique Simonsen, the Planning Minister identified with a severe austerity program, with Antônio Delfim Netto, who had become known as the architect of the "Brazilian Miracle" during the 1969–74 accelerated growth period. In an aggressive effort to promote exports and to provide more incentives for agricultural production to reduce dependency on food imports, the government in December 1979 devalued the cruzeiro by 30 percent. This "maxi-devaluation" followed a long series of monthly "mini-devaluations" that were later resumed. Delfim Netto's program raised the growth rate to 8.5 percent, but at the cost of a resumption of accelerated inflation, which reached 77 percent in 1979 and 110 percent in 1980.

The inflation was particularly felt in the cost of basic foodstuffs,

such as rice and beans, which rose as much as 200 percent in 1979. Riots by construction workers in Belo Horizonte were followed by several successful strikes by industrial workers. When the authorities raised the cost of diesel fuel by 50 percent, there were work stoppages by truck drivers. The government responded to these expressions of unrest by providing automatic semiannual wage increases for low-paid workers.

Eventually, in April 1981, Delfim Netto reversed course and returned to an austerity program. Business was subjected to severe credit restraints, and the economy once more began to slow down. Throughout the energy crisis period, Brazilian leaders have shown remarkable resilience in seeking alternatives, but the economy remains vulnerable to further shocks until it can marshal its considerable resources for a long-term accommodation to permanently higher energy costs.

THE CASE OF VENEZUELA

The chief beneficiary of the OPEC pricing decisions of 1973 and 1974 was Venezuela, a founding member of the cartel and a country long dependent on oil as its major export. By 1975, it was the only country in Latin America enjoying a surplus in the current account, and there was some resentment expressed that Venezuela's good fortune had come largely at the expense of neighboring countries less well endowed with energy resources. Only a short period later, however, Venezuela had joined the other Latin American nations in a deficit position in the balance of payments, where it has since remained.

The initial impact of the OPEC decision in October 1973 was to turn Venezuela's current account from a deficit of \$101 million in 1972 into a surplus of \$859 million, to be followed the next year by a sixfold increase to \$5.8 billion.²⁷ This placed the oil-based income alone at over \$3,000 per capita.

Anticipating powerful inflationary forces, the government, under the administration of President Carlos Andrés Pérez, took the precaution to immobilize half the country's oil income by creating an investment fund, the Fondo de Inversiones de Venezuela (FIV). The fund was to be the instrument for promoting an extensive public investment and import substitution industrialization program. In part it was used to finance internal development projects, including an industrial complex in the Guayana region, the nationalized petroleum industry, a new petrochemicals industry, and an extensive shipbuilding program. A portion of the fund was reserved for an assistance program to enable other developing countries, particularly in Central America and the Caribbean, to meet the increased cost of oil imports while maintaining their own development plans. In 1977 alone, disbursements of such financial aid amounted to \$480 million.²⁸

As time went on, however, the Venezuelan government lost its resolve to use the FIV as an anti-inflationary mechanism as well as a source of industrial development, and a larger portion of the nation's oil revenue was diverted into supporting ordinary budgetary expenditures. This resulted in a period of extremely wasteful spending. By early 1981, the successor government of President Luis Herrera Campins resolved to restore an allocation of 30 percent of the oil revenues to the FIV and devote no more than 70 percent to meeting the demands of the budget.

The government's decision early in the oil-boom period to launch an import substitution industrialization program was hampered by insufficient managerial and technical manpower. Consequently the Pérez administration undertook to alleviate the dearth of trained technicians by an extensive educational program. This program included an investment of 300 million bolívares in the Gran Mariscal de Ayacucho scholarship fund to provide vocational training for ten thousand students a year, at home and abroad, in subjects related to agricultural industries. Because of the low literacy level from which the program had to begin, it was slow to render developmental results.

Before the benefits of the new industrial investment program could be felt, Venezuela began to experience the feedback of inflation from the supplier countries which were passing on the higher cost of fuel and petrochemical feedstocks in the form of increased export prices. Until 1973, the annual rise in the Venezuelan cost of living had not exceeded 4 percent; in 1975 it reached 10 percent, a rate that was again doubled by 1979.²⁹ In order to reduce the visible inflation and sustain a rising level of consumption, the administration increasingly admitted a flow of imported goods made possible by the readily available foreign exchange. Although oil exports alone brought in more than \$9 billion in 1977, the trade surplus rapidly disappeared and by that year became a deficit that exceeded \$3 billion.³⁰ By the end of the year, Venezuela's external public debt rose to \$4.7 billion, and in 1978 the government and Siderúgica del Orinoco (Sidor), its state-owned steel company, began to borrow large sums abroad to sustain the national development program which they could no longer finance from current earnings.³¹ At the end of 1978, the current-account deficit in the balance of payments reached \$5.8 billion.³²

It is normal for a developing country to go into debt to promote its internal development, but in the case of Venezuela the trade deficits of the oil boom period arose not primarily from the imports of capital goods but increasingly from imports of luxury consumer goods. Because of increased competition from imports, the formal policy of import substitution industrialization was virtually counteracted in many consumer goods lines.

While commercial and industrial activity were stimulated by pet-

roleum activity, the agricultural sector lagged. Agrarian reforms carried out after President Rómulo Betancourt came to office in 1959 had had a limited effect and left the greater portion of the agricultural land in the hands of a minority of rural landowners, many of whom were unprogressive. Although the Pérez government invested \$6 billion in the national agricultural program from 1974 until 1978, the country did not recover the agricultural self-sufficiency that had prevailed until the 1950s.³³ Venezuela, with its extensive llanos, occupies territory equal to half that of Mexico, and its population is only one-fifth as large; yet the country imports about half its foodstuffs, including more than 300,000 head of cattle each year, many of which arrive clandestinely on the hoof from neighboring Colombia. Some food products come in by air at extremely high cost because of the congested condition of the Caribbean ports.

The poor performance of the agricultural sector was attributed in part to an excessive bureaucracy and to corruption within the Ministry of Agriculture. A congressional committee during the Pérez regime charged that up to 40 percent of the loans administered by the Agricultural Development Fund had been misapplied and had reached nonagricultural recipients or been transferred out of the country. Considering the composition of Venezuela's basic resources and the prospect that at current rates of production the country's proven fluid oil reserves were expected to continue to dwindle, the failure to achieve higher agricultural productivity represented a major deficiency in the national development plan.

As it became aware of its shrinking resource base, the Venezuelan government adopted conservation measures that set a limit on the production of *Petroleos de Venezuela* (PETROVEN), the national petroleum enterprise, and exports sharply declined after 1974. Since two-thirds of the government's tax revenue was derived from petroleum revenue, the budget began to show increasing deficits beginning in 1976, and this was a factor leading Venezuela's representatives to support repeated price increases in the councils of OPEC. PETROVEN also increased its investments in oil exploration and sought foreign technical assistance in exchange for petroleum. The company hoped to capitalize on the vast untapped potential of the Orinoco tar belt, which is now estimated to contain reserves equivalent to 700 billion barrels of oil. A pilot plant for the extraction of ten thousand barrels a day of extra-heavy crude oil by steam injection was inaugurated in March 1981, but even at relatively high prices for fluid oil, technical problems in exploiting these reserves were formidable.

While the country will no doubt reap substantial benefits over the course of time as a result of the government's forceful investment program, the petroleum bonanza has had unfavorable social effects. As a

statistical average, Venezuela continues to enjoy the highest per capita income among the larger countries in Latin America; yet when the disparities in employment opportunities, differences in levels of consumption, and differential effects of inflation are taken into account, it is entirely possible that the majority of Venezuelans experienced a decline in real income during the boom period. No adequate measures for the population as a whole are available to test this hypothesis.

The general election in December 1978, in which the candidate of the ruling Democratic Action party was defeated, reflected widespread popular dissatisfaction with the fruits of the oil boom. The administration of President Luis Herrera Campins was expected to return the country to a more equitable distribution of real income, but measures to restore stability by applying price controls and controlling credit brought about a recession. In 1980 the growth rate dropped to a negative figure of -1.5 percent, although the current account returned to a surplus after three years of deficit.³⁴ By the end of the year, the public debt was estimated to have reached nearly \$25 billion.³⁵ After a long spending spree, with meager developmental results, it was not clear what Venezuela's future growth strategy would be.

THE CASE OF MEXICO

Mexico occupies a unique place among the Latin American nations, since recent oil discoveries transformed it from a net oil importing country at the onset of the international energy crisis in 1973 into a burgeoning oil exporter within less than three years. Initially, the Mexican economy was gravely undermined by the effects of the energy crisis, yet by 1979, it had embarked on an ambitious industrial expansion plan that was to be integrated into a global program for general economic and social development.

Promising oil discoveries along the southeast coast of Mexico on and near the Yucatan peninsula were known to Mexican officials as early as 1973, but were not revealed immediately because of internal political conflicts. Each year the projections of potential reserves were raised dramatically, and by 1981 proven oil reserves were estimated to exceed 60 billion barrels.³⁶ Production gains by Petroleos Mexicanos (PEMEX), the national oil company, were achieved with surprising rapidity, and Mexico soon became the fourth largest producer of petroleum in the world. Output nearly tripled within five years, and by mid-1981 production reached 2.55 million barrels per day.³⁷

At prices based on those of OPEC (of which Mexico is not a member), the country earned over \$10 billion in 1980 from oil exports, while retaining half its output for domestic use. This represented a major reversal of the conditions which Mexico faced immediately after

the crisis of 1973. The most pronounced effect of the crisis on Mexico was an interruption in real growth, which dropped from an average annual rate of 6.1 percent in the period 1971–74 to 2.1 percent in 1976, and 3.3 percent in 1977.³⁸ Measured in per capita terms, gross domestic product actually declined during the latter two years. The international crisis also stimulated inflation in Mexico, although domestic factors contributed to the economic disorganization that ensued. The average annual variation in consumer prices before 1973 had been less than 5 percent, but in that year it rose to 11 percent and during a severe financial crisis, in the last four months of 1976, reached a runaway pace of some 60 percent.³⁹

The effect of the curtailment of growth on unemployment was drastic. No wholly reliable estimates are available, but the massive loss of jobs and the continuation of substantial underemployment, especially in rural areas, were widely believed to have affected at least half the population and were major factors in the accelerated migration of undocumented Mexican workers to the United States.

The recession in economic activity, combined with rising inflation, probably intensified a trend toward disparities in income distribution that was already well established during the previous period of growth. Using data from population censuses and Banco de México household sample surveys, David Felix concluded that income concentration in Mexico rose in each successive period from 1940 until 1975.⁴⁰ All of the absolute gain in income went to the upper 60 percent of households; and most to the upper 40 percent. The lowest 40 percent had no real income gain and suffered a severe drop in income share. Unlike other studies comparing current money incomes, Felix's analysis sought to take into account the differential effects of inflation on real incomes of major social classes by comparing their respective consumption patterns.

The recession had a devastating effect on Mexico's current account in the balance of payments, in which the deficit more than quadrupled from less than \$1 billion in 1972 to \$4 billion in 1975.⁴¹ In response to the economic uncertainties, a very heavy flight of capital from Mexico took place, which was compounded by the "dollarization" of private domestic savings when \$1.5 billion of peso-denominated financial assets was converted into U.S. dollar deposits in Mexican banks during the first eight months of 1976.⁴²

By August of that year, the Mexican authorities could no longer maintain the stability of the peso that had prevailed since 1954 and were obliged to permit a de facto devaluation in two stages totalling 43 percent. At the close of 1978, Mexico ranked second among the developing nations of the world (after Brazil) in the size of its external debt, which

by then totaled \$27 billion.⁴³ Nearly 60 percent of the country's current export earnings was required to service this debt.⁴⁴

The Mexican development problem is complicated by what Víctor L. Urquidi, president of El Colegio de México, has called the "brutal" growth of population and the frenetic rate of urbanization that is under way. Even before the oil money began to flow heavily, the 1978 population of about 67 million (many of whose members had departed to find work in the United States) was estimated to have reached 72 million by mid-1980, or 5 million more mouths to feed.⁴⁵ By the end of the century, only two decades later, the national population will, by the most conservative estimate, exceed 120 million and may reach 132 million.⁴⁶ The population of metropolitan Mexico City is now estimated at about 13.6 million people and that of Guadalajara at 2.3 million.⁴⁷ Projections to the year 2000 point to a merged population for Mexico City, Cuernavaca, and Toluca of 34 million, or twice the population of the New York metropolitan zone (16.6 million in 1970), if such a population can indeed be sustained in so congested an area.⁴⁸

Although Mexico made great achievements in the 1960s in feeding its growing population, utilizing the techniques of the Green Revolution, the country has once more become a net importer of food, and the trend is toward increased dependence on outside sources of breadstuffs. Food imports totalled \$400 million in 1976 and rose to \$700 million in 1977.⁴⁹ In 1980, because of poor crops the previous year, the Mexican Department of Agriculture placed orders for eleven million metric tons of corn, wheat and soybeans in the United States, at a cost of about \$2 billion.⁵⁰

Under the administration of President José López Portillo, who took office in December 1976, there were significant changes in national policy. The government undertook an economic recovery program that modified restrictions imposed earlier by the International Monetary Fund and permitted some wage increases and deficit spending to relieve acute unemployment. At the same time, fiscal restraint was applied to reduce the rate of inflation and stimulate a resumption of growth. In 1978 the rise in consumer prices was reduced from 29 percent the previous year to 18 percent, and the rate of growth of the real gross domestic product increased from 3.3 to 8.0 percent.⁵¹ The recovery was assisted by an increased flow of oil exports and renewed borrowing from abroad. However, by 1980, inflation was again on the rise.

The major decision made by the López Portillo administration during the crisis period was to abandon the previous policy of strict conservation of oil resources in favor of massive investment in exploration and development, and to utilize the resulting export capacity to alleviate the recession and return Mexico to the growth path. A new

emphasis was placed on industrial efficiency and Sidermex, the national steel industry, was reorganized in an effort to establish a more efficient foundation for industrial recovery.

In March 1979, the Mexican government announced that it would put into effect a National Industrial Development Plan placing priority on the growth of basic industries, rather than on labor-intensive industries, which would create more employment but were regarded as economically inefficient.⁵² Although President López Portillo's term expires in December 1982, the new development plan covers the period from 1979 until 1990, since a shorter period was considered insufficient to carry out projects of the magnitude contemplated.

The basic development strategy of the plan was projected in three stages. The first objective was to overcome the financial and commercial disorganization arising from the devaluation of the peso in 1976 and to restore confidence in the productive capacity of the country. The second stage, which overlaps the third, was intended to consolidate the resource base and provide the revenue for a process of self-sustained development. A major objective within this stage was to reach a "platform" in petroleum production of 2.25 million barrels a day (later raised to 2.8 million barrels), which was projected in the original plan to be reached by the end of 1980.⁵³ PEMEX consistently overfulfilled the early goals for production and exports. The third stage of the plan was described as the phase of autonomous accelerated growth, in which an ultimate objective (by 1990) is to eliminate the unemployment and underemployment associated with a rapidly growing labor force. This stage was scheduled to begin during the last two years of the present administration and continue throughout the decade of the 1990s. Accelerated growth is expected to be largely internally financed, initially with the proceeds of petroleum, but increasingly with those of other exports.

The plan is exceedingly ambitious, especially in the third phase, and promises growth rates never before enjoyed by Mexico and rarely reached in other countries. The aggregate growth target was set to raise the annual increase in the gross domestic product from about 7 percent in 1979 to 10 percent in 1982 and continuously thereafter. Industry was expected to expand by 12 percent a year, and key sectors, such as petrochemicals and capital goods, by 18 to 20 percent. (Iran and Venezuela set similar growth goals for development programs after 1973, but were unable to achieve them.)

In an effort to decentralize industry and reduce bottlenecks to foreign trade, the plan designated eleven scattered development zones. Four of these will be new "industrial ports" under construction at Tampico and Coatzacoalcos on the Gulf of Mexico and at Lázaro Cárdenas and Salina Cruz on the Pacific Coast. In order to provide regional em-

ployment and insure the diversification of industry, tax credits are allowed to new investors in the development zones, and discounts are granted by government suppliers to new industrial users of electricity, natural gas, fuel oil, and basic petrochemicals. The government thus hopes to diversify industrial exports to alleviate over time the dependence on oil revenue. A fundamental objective of the development plan is to turn the nation's nonrenewable oil resources into renewable industrial production. For this reason, and to avoid the "economic indigestion" that President López Portillo feared would result from an excessively rapid increase in income from petroleum, his administration insisted on placing limits on the rate of exploitation of the available oil reserves.

As part of a Global Development Plan, announced in March 1979 and elaborated more fully a year later, President López Portillo put forward in March 1980 a program to increase domestic food production which he called the Sistema Alimentario Mexicano (SAM).⁵⁴ The program set targets to achieve self-sufficiency in corn and bean production by 1982 and in rice, wheat, soybeans, and sorghum by 1985. In his announcement, the president described over 40 percent of the Mexican people as undernourished. In order to achieve self-sufficiency by 1982 in the staples of consumption, annual production of corn would have to be increased from 9.6 to 13 million tons, and the bean harvest doubled to reach 1.5 million tons within a period of three years. Since the success of the program would depend on voluntary effort by masses of uneducated peasants accustomed chiefly to producing for local consumption, the difficulties were recognized to be enormous.

The new system called for the government to assume all of the risks of modernizing techniques of production, while farmers were promised that they would retain any gains in income resulting from higher output through guaranteed price subsidies. Under the SAM, there was to be coordination of all aspects of the food cycle, from supplying credit for seed, fertilizer, and machinery, to technical assistance with planting and harvesting. In addition, improved storage facilities and nationwide marketing would be provided by the state food distribution agency, CONASUPO.

In September 1980, the SAM was supplemented by a rural assistance plan to be carried out by an umbrella agency known as COPLAMAR. The aim of this organization was to reduce the social and geographic isolation of the rural poor by giving them increased access to health clinics, regular food supplies, and drinking water, as well as by building fifteen thousand miles of feeder roads. Financing of these projects by COPLAMAR was provided in an allocation of \$4 billion over the last three years of the *sexenio*. An injection of this quantity of money into the rural economy of Mexico was unparalleled and, because of the op-

portunity it presented for corrupt misapplication, it was certain to have disruptive as well as beneficial effects.

Despite the confidence that President López Portillo expressed in his rural development program, his concern about the continuing gravity of the national food problem was revealed in a meeting with President Ronald Reagan of the United States in Washington in June 1981. At that time he initialed an agreement under which the United States would continue to supply Mexico with massive food shipments, including from six to eight million tons of grain and oilseed in 1982.⁵⁵

Since the López Portillo administration was obliged to spend half its term in office in improvising responses to the financial crisis of 1976, a number of critical questions related to the Global Development Plan remained to be answered late in the sexenio. One concern was how to prevent the large and rapidly expanding inflow of petroleum earnings from having effects similar to those experienced by Iran and Venezuela a few years earlier. Even if a substantial share of the increased income was to be applied to a reduction of the large external debt, the possibility persisted that the remainder would generate an uncontrollable domestic inflation before the industrial development program could provide an offset in the form of increased production. Various methods of "sterilizing," or immobilizing, the excess funds were under consideration, but the example of Venezuela's experience with the FIV was not propitious.

Another dilemma was how to alleviate the high rates of unemployment and underemployment within the country, since the expansion of the petroleum industry was likely to create relatively few jobs and the population continued to grow. The Industrial Development Plan was projected to create only six hundred thousand new jobs by 1982, while an estimated eight hundred thousand workers were expected to enter the labor market each year. One of the aims of the rural development program was to render the farming areas more attractive and to foster the creation of many new agroindustries that would retain a larger number of campesinos in their native villages.

Finally, it was not clear whether the Global Development Plan would continue to foster Mexico's established program of import substitution industrialization and national autonomy over investment, or whether its full evolution would compel increasingly complementary relations with the United States and the world of multinational business. Recent history in Venezuela and Iran demonstrated that a process of rapid industrial growth, especially under inflationary circumstances, is difficult to carry out without significant access to outside technology, managerial direction, intermediate-term financing, and provisional supply of consumer goods. Both countries sought to alleviate inflationary pressure by admitting a large inflow of foodstuffs and other consumer goods from abroad; the effect was to place a heavy burden on both their

high-cost import substitution industries and their programs for stimulating domestic food production. One of the consequences was to reduce employment in the manufacturing sector and to speed the flow of migrants from the countryside to the marginal districts of the cities. Such dislocations have been characteristic of the recent period in Mexico, but the decision to base future development on oil revenue has made it virtually impossible to operate the nation as a quasi-closed economy.

Some Mexican intellectuals believe that the nation could increase its latitude over future development by adopting a comprehensive program for scientific and technological development that would provide a larger pool of technical leadership and increase the flow of useful knowledge from indigenous sources. Such a proposal was made late in the administration of President Luis Echeverría in November 1976 in the form of a National Indicative Plan for Science and Technology promulgated by the Mexican National Council for Science and Technology (CONACYT).⁵⁶ The plan was based on a survey of existing scientific and technical resources and proposed a major, long-term investment in manpower development and research that would be related to the projected growth needs of the country. However, the López Portillo administration adopted a program for science and technology of much more limited scope, and this remains a significant gap in the global development plan.⁵⁷

CONCLUSION

The international energy crisis of 1973 and its recessionary aftermath confronted the nations of Latin America with a diversity of acute problems and threw nearly all of them on their own resources for emergency remedies. Because of the general spread of inflation before offsetting sources of productivity and energy alternatives could be organized, the short-term impact during the early years fell heavily on the working classes, the poor, and the unemployed. An unplanned adjustment for some countries was a considerable migration of displaced workers from Mexico to the United States, from the Caribbean to Venezuela, and from Uruguay and Argentina to Brazil.

However, each country still faces a need for internal development in which an earlier trend toward regional integration has provided relatively little help.⁵⁸ Shifting factor costs for fuel keep the oil-importing and even the oil-surplus countries under constant tension. A major source of uncertainty is whether the continuation of a price escalation policy by the OPEC cartel, even with temporary remissions, will so unstabilize the prospects for growth and mutual trade expansion of the industrially advanced countries that the less developed regions can no longer depend on them for renewed export markets and access to finan-

cial resources. In that case, the Latin American nations will truly be on their own, international cooperation will be even more difficult, and we may continue to see a variety of makeshift solutions, and at times, acute political crises.

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