The Seven Sisters return to Mexico: the economic collapse of Pemex

by Carlos Cota Meza

Petróleos Mexicanos (Pemex) has long been unique as Mexico's most important state-owned enterprise and a pillar of the national economy because of its high degree of integration of the entire petroleum process from exploration through commercialization. Yet, this is what the political forces behind former President Miguel de la Madrid and current President Carlos Salinas de Gortari now view as the principal obstacle to handing Mexico's substantial oil reserves over to the Seven Sisters oil multinationals, under a "free trade" pact or a North American Common Market.

To carry out their intention, De la Madrid, Salinas, and their group are engaged in an effort to drive Pemex into bankruptcy. After that, it is to be dismantled as an integrated enterprise, for immediate delivery to the Seven Sisters oil cartel. This plan has now been incorporated into Mexico's new "National Program of Energy Modernization 1990-1994" (PNME), unveiled by the Department of Energy, Mines and State Industry in the *Diario Oficial* on May 7.

From the start, the PNME pamphlet admits that "as of 1983, a strategy for the energy sector was posed that was essentially oriented toward qualitative changes. . . [This strategy] opted for reducing the relative weight of the sector." Pemex's importance was magnified only in those areas considered "critical" to the previous De la Madrid administration, namely, "foreign exchange revenues and public finances—especially the latter."

In real terms, this "reduction of relative weight" meant that investment in Pemex in 1988 was a mere 23.5% of that invested in 1981, while the electricity sector received only 41% of its 1981 investment level. This policy had the effect of leaving the energy sector, and Pemex in particular, with "less maneuvering room in terms of its capacity for oil production and the composition of its export mix."

'Restructuring' means destruction

The PNME analysis concludes: "The production of crude shows symptoms of decline; primary refining operations are operating at maximum capacity; insufficient integration of the secondary processes limits production of higher-quality derivatives; and problems exist in areas of transportation and storage of crude and derivatives." The PNME strategy for dealing with these problems is dismemberment, under the guise of "restructuring" Pemex along the lines of a supposed restructuring of oil companies and markets worldwide.

The document continues: "Without requiring large amounts of investment . . . [Pemex's] production could increase with operational adjustments and corrective maintenance. . . . The feasibility of creating instruments of investment which permit adding private national savings to public savings to contribute to the financing of infrastructural works should be studied. . . . In Pemex's case, we must analyze the feasibility of having an integral business line organizational structure. Thus, a unit is proposed which could be responsible for exploration and primary production for the entire national territory, and another to cover industrial production and internal commercialization. In this case, one would have to consider the convenience of separating commercialization of petrochemicals from refining. To the extent that each unit would have its own management in areas such as budget, inventory, etc., a greater efficiency and productivity would be achieved, and the application of plans facilitated."

Regarding Pemex's relations abroad, the PNME proposes "advancing in the strategy of the internationalization of Pemex, selectively evaluating various plans. . . . In this sense, one seeks to strengthen the recently created Pemex subsidiary company, PMI." PNME also proposes "to broaden and deepen bilateral relations that would not only provide for promoting greater trade flows, but also encourage schemes of economic complementarity associated with energy, as well as agreements with such multilateral bodies as the United Nations."

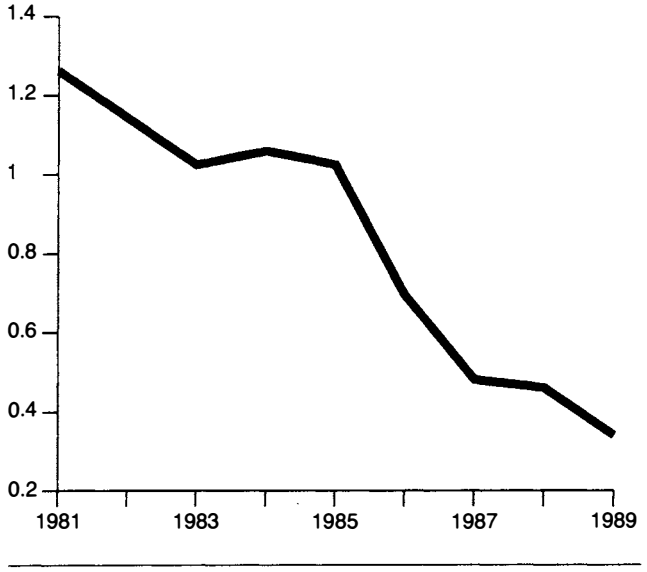
Finally, the PNME cuts through all the "business-speak" and gets to the point: "The entities of the sector, in each case, constitute veritable giants, including on a world scale. . . . [Pemex's] administration, coordination, and control is made difficult by its very size."

A brief history

Since 1938, oil has been considered the center of gravity of the Mexican economy. Its development as the national patrimony was zealously protected by all sovereign and nationalist governments. But it has also been the target of all those who have sought to "de-nationalize" the economy, so that it could be turned back into a typical banana republic sweatshop.

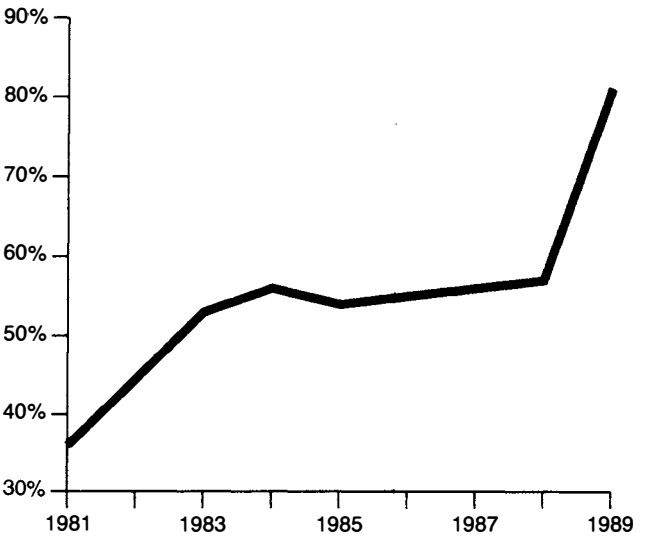
In 1952, after 12 years of minimal exploratory activity, Mexico's known oil reserves reached the figure of 2 billion barrels. During 1964-70, reserves grew to 5.6 billion barrels,

FIGURE 1
Total depth of wells drilled collapses
(millions of meters)



Source: Pemex

FIGURE 2
Drilling equipment increasingly concentrated in Chiapas-Tabasco
(percentage of all equipment nationwide)



Source: Pemex

suggesting very slow growth. By 1976, reserves were officially estimated at 6.3 billion barrels, an increase of only 700 million barrels over six years. The College of Petroleum Engineers at the time issued a study which warned that, based on reserve levels and production of that year, reserves would diminish so severely that it would be necessary to import crude petroleum and its derivatives by 1979.

But in December 1976, combination of the new nationalist administration of José López Portillo along with the undeniable bounty offered by the 1974 oil price hike, led to a new development program and a reevaluation of reserves, along with a plan to double production, refining, and petrochemical output. In 1977, proven reserves (i.e., crude oil and natural and liquid gas in known deposits, calculated as economically exploitable with known technologies of petroleum engineering) were 11.16 billion barrels—not including the continental platform of Campeche or fields no longer under production.

By December 1977, proven reserves were already at 16 billion barrels, with a productive life of 30 years. Probable reserves (that is, in the process of being proven) were 31 billion barrels, while potential reserves (proven and probable combined) were estimated at 120 billion barrels.

Based on the rudimentary knowledge garnered in 1932, which posed the likelihood that there would be oil in the Gulf of Campeche, geological and seismological studies were modernized and expanded. With the discovery of the new deposits at Campeche, added to the oil found in Chiapas-Tabasco, a new chapter in the economic history of the country was opened. Since that time, maritime petroleum production has been the backbone of the new production.

By 1980, proven reserves had risen to 60.1 billion barrels, reaching 72 billion barrels in 1981. Production was up to 2.75 million barrels of crude a day. The relation of reserves to production was 60 years. Probable reserves were placed at 58.65 billion barrels, and potential reserves at 250 billion barrels.

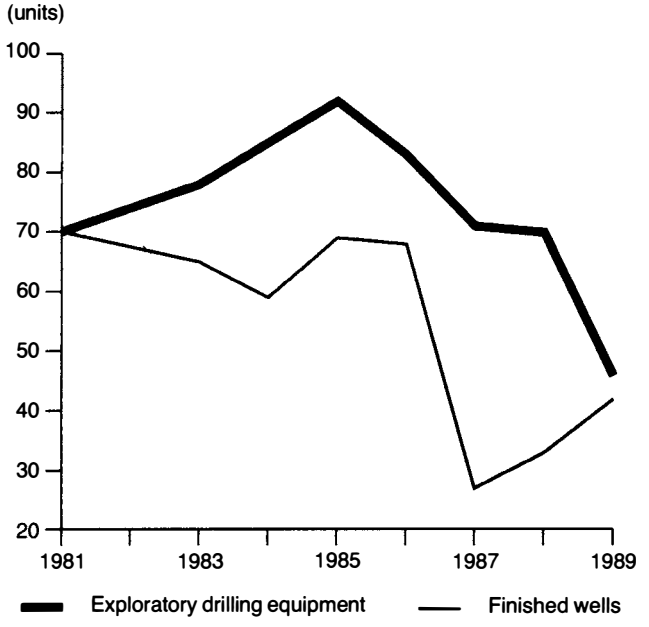
Enter the 'Harvard barbarians'

At the end of 1982, with the departure of López Portillo and the inauguration of the international bankers' friend Miguel de la Madrid, the decision was made to halt all new investment and to loot the economy in favor of giving the bankrupt international monetary system a few more years' lease on life. Pemex's growth came to an abrupt halt, and the industry suffered severe regression on all fronts, especially in exploration and quantification of reserves. Probable reserves were abandoned altogether. By 1988-89, reserves, exploration, and exploitation fell.

In 1987, after five years of coasting along on previously built-up wealth, the cannibalization of Pemex began to accelerate markedly. In that year, the depth of wells drilled was 30.3% less than in 1986, due in large measure to lost time in dismantling oil rigs in specific areas, transporting and remounting them in the areas of greatest drilling activity, as well as in the dismantling of rigs to use their parts in major repairs and in maintenance of other rigs (see **Figure 1**).

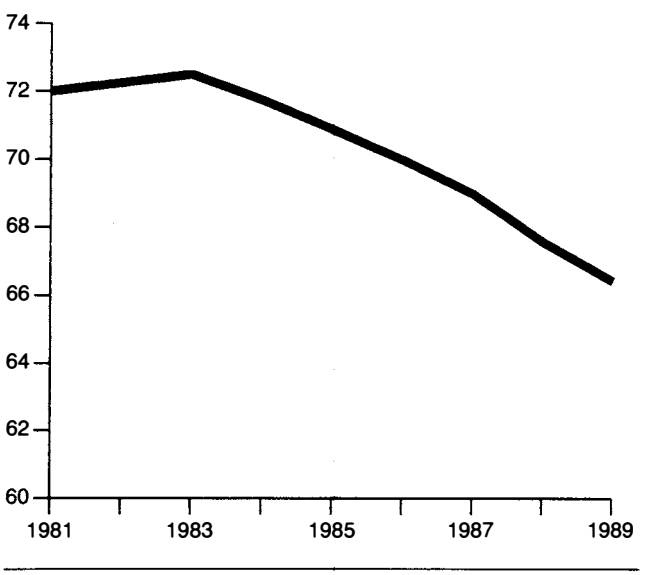
As of 1987, the only exploitation going on was what could turn a profit based on the new depressed prices, and

FIGURE 3
Finished wells cannibalized at expense of new exploration



Source: Pemex

FIGURE 4
Reserves of crude oil are dropping



Source: Pemex

this only involved the fields at Campeche and Chiapas-Tabasco. The concentration of land rigs in the Chiapas-Tabasco area increased from 56% of the national figure in 1987, to 81% in 1989 (see **Figure 2**).

In 1989, the depth drilled of both exploratory wells and wells under development was 25.9% less than in 1988, primarily due to the reduced availability of drilling rigs, which went from 115 to 99—a reduction of 36.1%—from 1988 to 1989 (see **Figure 3**). The result has been a drastic reduction in the number of finished wells, with the aggravating factor that no new fields have been discovered and only existing deposits are being exploited. As a result, proven reserves figures have fallen at an accelerating rate (**Figure 4**).

Cannibalization of secondary recovery

In identifying a deposit, the first action taken is to determine the volume of oil it contains, and then the volume of recoverable oil in its first phase, i.e., what can be extracted with the natural energy of the deposit itself. The volume of secondary recovery is also determined. Secondary recovery reestablishes the natural pressure lost through drilling, by the injection of water, steam, or through mechanical suction. Tertiary recovery is accomplished through injection of chemical solvents into the deposit, to loosen the oil adhering to the rocks and force it to the surface.

Between 10-15% of the crude oil in any deposit is recovered through primary recovery methods, while another 45% is usually obtained through secondary recovery, which begins during the first year of exploitation. Tertiary recovery usually offers small returns. In 1976, some 337,000 barrels of water were injected daily in secondary recovery efforts. By 1981, the volume of water injected had increased to 1.45 million barrels a day. The increase was in response to a policy of optimizing exploitation of the deposits.

In 1983, secondary recovery represented 19.6% of national production of crude oil, a percentage which slowly diminished through 1989, when it reached 8.4%. Not only has the volume of water injected fallen, but also the number of rigs and drilling systems subject to recovery went from 19 in 1981, to 11 in 1989 (see **Figure 5**).

The result of all this has been the accelerated exhaustion of reserves, with exploitation reduced for all practical purposes to primary production at the camps.

The damage is long term

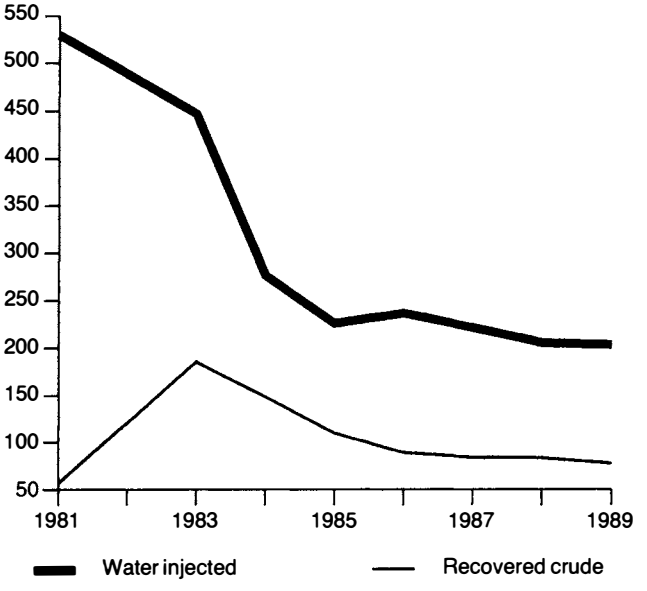
Can the decapitalization of Pemex be quantified? It is one thing to quantify technical inventory, and quite another to quantify the maturation time of investments no longer being made, or "deferred" production lost and unlikely to be regained. Exploratory work takes five to ten years to yield results. Refineries take four years to build, petrochemical plants even longer.

Yet another aspect to be considered is the critical role that has been given to Pemex as a "regulator" of public finances. This practice, in effect, establishes the price of a barrel of petroleum at below the market price, for purposes of determin-

FIGURE 5

Secondary recovery through water injection slackens

(millions of barrels)



Source: Pemex

ing the federal budget. The result was a "savings" based on the difference between the "budget price" and the real price; that savings, during the De la Madrid administration (1982-88), fluctuated from year to year between $2 and 5 billion. These savings, of course, were never recorded in the budget, but have nonetheless given discretionary powers to the Executive Branch to monetize international reserves for the purpose of creating resources to service the internal debt.

Adding together the reduction of real investment, lost time, "deferred" production, and the "savings" looted from Pemex, decapitalization of the firm could easily reach $50 billion. Given the government policy of budget "adjustments" applied from 1983 through the present, and of shrinking Mexico's foreign debt by any means, it is very possible that any sort of recovery, expansion, or development of Pemex in the future will be handed over to what is euphemistically called "private national savings," or to private national or foreign investors.

In the PNME, the Salinas government assumes the existence of a worldwide restructuring of the petroleum industry, from which Mexico "cannot exclude itself." The supposed restructurings vary widely throughout the world, but the only country where there is actually talk of preparing for an "oil shock" happens to be the United States, whose government wants to gobble up Pemex.