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Economic Commission for Latin America and the Caribbean

RETAIL PRICES FOR REFINED OIL PRODUCTS IN SELECTED  
LATIN AMERICAN COUNTRIES: 1975-1989

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### Summary and Conclusions

This report presents nominal and real retail prices for the major refined oil products in several Latin American countries, month-by-month from 1975 to the present. The source data, in local currency and U.S. dollars, are taken from ARPEL's monthly publication, "Boletín Informativo".

In order to put these retail price data into perspective, the report begins with some observations on the process of price formation in the world market for crude oil and refined oil products. The record of prices since the early seventies, both nominal and real, is examined for Saudi Arabian light crude oil, on the one hand, and then for international oil tanker freight rates, on the other. Throughout this period, the price of this key crude oil has been far above the long-run cost of its supply, and this difference between its price and its cost constitutes a measure of the benefit that increased competition in the world oil market could deliver in the future to oil consumers throughout the world. In marked contrast with the roller-coaster track of real world oil prices, real oil tanker freight rates exerted consistent and strong downward pressure on the real cost of crude oil and refined oil products delivered to consumers during the seventies and eighties.

The report then focuses on changes in the retail prices of refined oil products in both current and constant U.S. dollars in various Latin American countries. These prices are compared with their counterpart FOB export prices at the Curazao refined oil product export terminal, the idea being to spotlight cases of pronounced subsidy or taxation of those products. The text includes a brief discussion of the pricing of refined oil products in domestic markets, pointing out some of the adverse implications of departing from a policy of relying on the market for generating the prices of these products. Wide disparities are found in the speed with which domestic prices of refined oil products have adjusted to new equilibrium levels given by international parity, on the one hand, and by conditions of demand and supply in the domestic market, on the other.

## INTRODUCTION

### 1. Objective

The purpose of this report is to document the pattern of change in retail prices for a variety of refined oil products in various Latin American countries since the mid-seventies. The data are monthly, from 1975 to 1989, so that their seasonal, cycle, trend, and random components may be isolated by researchers using these time-series in the future. The data will also support extensive cross-sectional econometric research as well. In discussing these retail prices, other time-series are also presented. Hopefully, all these statistical data will be useful to administrators, economists, teachers, researchers, and others working on energy matters in Latin America and the Caribbean.

### 2. Organization

The report is descriptive and statistical in nature. It contains two chapters together with their statistical graphs and appendices.

Chapter I introduces some background material useful for approaching the discussion of retail oil prices. It tables some ideas on crude oil price formation, and it documents the monthly track of world oil prices and oil tanker freight rates since 1973.

Chapter II opens with a brief discussion of the pricing of refined oil products. It presents the nominal and real retail prices for refined oil products in various Latin American countries and their counterpart FOB prices at the Curacao refined product export terminal in the Caribbean. Comparisons are drawn between these two sets of prices.

The appendices present all the source data used in the study.

### 3. Data

It is not an easy task to generate time-series on the monthly prices of refined oil products. In Latin America, this task is all the more difficult. Fortunately, in 1975, ARPEL (Asistencia Recíproca Petrolera Estatal Latinoamericana) began to report monthly the tax-inclusive retail prices of refined oil products in local currency and U.S. dollars for various Latin American countries. Since then, ARPEL

has expanded the country and product scope of its oil price reports. They now cover the leading refined oil products in ten countries.

The retail price data in nominal currency units used in this study were taken from the following monthly publication: ARPEL, "Boletín Informativo", Montevideo, Uruguay. These ARPEL price data constitute the backbone of this study. They have been processed to render them comparable between countries. In so doing, ARPEL's U.S. dollar conversion rates have been accepted in all cases. Departures from the original ARPEL price data were limited to those required by: (1) standardization of reporting units; (2) conversion from ARPEL's price base in current to constant U.S. dollars; and (3) the elimination of some of ARPEL's time-series because they contained too few observations. Explicative notes on the ARPEL retail oil price data are provided at the end of the study.

The month-by-month posted prices of Saudi Arabian light crude oil for the period since 1973 were taken from the IMF's monthly publication, "International Financial Statistics" and from "Oil and Energy Trends", a publication of Energy Economics Research Limited, U.K. The statistics on world tanker freight rates presented in the study were taken from: "Shipping Statistics" of the Institute of Shipping Economics and Logistics (ISL), Bremen, Federal Republic of Germany and from the "Petroleum Economist", U.K. The prices in current U.S. dollars for refined oil products at Curazao were obtained from the "Petroleum Economist", U.K. Conversion from nominal to real U.S. dollars was effected using the U.S. consumer price index, the monthly values for which were taken from the IMF's "International Financial Statistics", Washington, D.C.

The statistics on the consumption of refined oil products in different Latin American countries annually since 1975 were taken from: The United Nations, Department of International and Social Affairs, Statistical Office, Energy Statistics Yearbook, New York.

#### 4. Data Processing

Substantial data processing was required for this study. It was largely accomplished by using specially written software programs and a Digital PDP 41 minicomputer installed in ECLAC's computer center.

## CHAPTER I

## THE PRICE OF WORLD CRUDE OIL IN THE SEVENTIES AND EIGHTIES

1. Competition and World Oil

The demand for crude oil is a refiner's demand. It is derived from the demand for refined oil products in intermediate and final markets. Changes in the demand for these products are generated by changes in a host of variables such as the price of individual refined oil products relative to their substitutes and complements and to other products in general, the level and composition of economic activity, real family income, the capital stock, technology, the level of oil inventories, the weather, the tastes and habits of consumers of refined oil products, and so on, almost endlessly.

Refiners continuously assess their markets for refined oil products, estimating the volume of crude oil that, given expected prices, they will need to satisfy their customers and maintain target inventory levels. Suppliers of crude oil in the world oil market compete intensely with each other for crude oil sales to refiners. If the world crude oil market were perfectly competitive and in equilibrium, which it is not, then individual crude oil sellers would record sales in more-or-less inverse relation to their unit costs of supplying it CIF to refineries throughout the world. In such a competitive environment, the price that would emerge in the world oil market, social costs and benefits aside, would assure a rational allocation of crude oil and refined oil products. Crude oil supplies would flow at least cost to refineries the world over, and refined oil products would flow from these refineries to consumers at least cost. Oil tanker transport services would also be consumed efficiently in a perfectly competitive market in equilibrium for world oil and its transport.

Although the international oil market is highly competitive, it is far from satisfying the requirements of the economist's model of a perfectly competitive market in equilibrium. The rapid and extreme gyrations in world oil prices throughout the postwar period testify to the lack of equilibrium in this market. There are massive distortions on both the demand and supply sides of the world oil market, with the result that prices for world crude oil and refined oil products do not assure an economically efficient allocation of oil resources. On the demand side, consumers of some oil products display considerable brand loyalty, a factor that imparts a degree of price

inelasticity of demand for those products and which, in turn, conditions the price, volume, and profitability of their supply. Governments intervene and corporations operate throughout the world in a variety of ways to shape the demand for oil and other energy products. On the supply side, vast quantities of crude oil are withheld from the market by crude oil sellers in an effort to prop up the price of their oil by restricting its supply. The scale of capital requirements is a big factor limiting competition in the oil business. Often, a few large companies dominate the domestic oil industry, especially in developing countries where capital is scarce. All this explains why the price of oil is far above its supply cost, in both the short-run and in the long-run, and why there is not a perfectly efficient allocation of oil, energy, and other related resources in production and consumption. When account is taken of social costs and benefits, this lack of allocative efficiency is all the greater.

What is the purpose, then, of talking about equilibrium in a perfectly competitive model for world oil in the first place? Despite its lack of relevance as a faithful descriptor of the actual world oil market, the competitive model of that market (or any other) does serve one important purpose: it serves to predict the direction and extent of change in the market price of world oil that would occur if competition increased in it between buyers and sellers. Throughout the entire postwar period, the market price for internationally traded crude oil (and, therefore, of refined oil products) has been far above its long-run supply cost. The competitive model predicts that, as competition in the world crude oil market increases, the market price of oil will fall to its long-run supply cost, and, as simple as it is, this insight is the key contribution of the competitive model as far as the world oil market is concerned.

A few numbers will help to clarify this line of reasoning. One estimate has put the level of long-run supply cost of Saudi Arabian crude oil in the year 2000 in the range of two U.S. dollars of 1975 per barrel and somewhat lower for earlier years.<sup>1</sup> In late 1988, the posted price of this crude oil was in the range of eight U.S. dollars of 1975 per barrel (Graph 1). This difference of six dollars per barrel (1975 prices) is an estimate of the decline in the real price for world crude oil that, if realized, increased competition would deliver to oil consumers throughout the world. The mechanism that would secure this marked decline in price is a simple one: the excess of price over cost triggers increases in the supply of world oil, on the one hand, and decreases in the demand for it, on the other, and these two forces continue operating until increased competition eliminates excess profit in the crude oil supply business, which occurs when price equals the long-run supply cost of world oil.

## 2. The Structure of World Oil Prices

The diversity of crude oils entering world trade is truly impressive. The costs of finding, developing, and producing each of them varies from field to field and through time as does the cost of bringing the surfaced oil to seaboard for shipment to overseas refiners.

Crude oil is not an homogeneous commodity, a fact which conditions its pricing. The chemical characteristics of each crude oil are unique, a point of importance to refiners whose facilities are apt for processing some crude oils but not others. Oil refining and distribution facilities differ in their individual cost structures over time the world over. They output a myriad of refined oil products that are more or less homogeneous, a fact which promotes competition in the market for refined oil products.

Buyers and sellers confront each other in the world oil market. Each calculates the profitability of his anticipated action, crude oil buyers for importing a specific crude oil (or purchasing it domestically), refining it, and selling the refined products; and crude oil sellers for producing more crude oil for a prospective sale to a domestic or foreign refiner.

In evaluating a prospective sale, the crude oil buyer evaluates its attractiveness at the margin as the difference between the expected change in the value of his sales of refined oil products by making the sale and the expected change in all his marginal costs generated by producing for the prospective sale. The refiner's short-run marginal costs typically include cash payments for the crude oil and for the variable costs of refining, marketing, finance, transport, storage, and so on. The greater the difference thus calculated, the greater the expected contribution of the prospective sale to the refiner's fixed costs and, thereafter, to his profit. Adding back to this difference the delivered cost of crude oil, and converting the resulting sum to a per-barrel basis, yields a figure that reports to the refiner the maximum price that he can pay for the crude oil, the purchase of which he is evaluating. If he pays that price, he will cover his marginal cost, including that for the crude oil, but the sale of his crude oil in this case will not make a contribution to his fixed cost. A refiner will reject higher crude oil prices than this out-of-hand. Lower prices will be progressively more attractive, first as they contribute to his fixed costs and, then, progressively to his profit.

A seller of crude oil evaluates the attractiveness of an immediate crude oil sale by initially estimating the increase in his short-run marginal costs that it will require for developing and producing more crude oil, for gathering and storing it, and for moving it to port for shipment abroad. If longer-term crude oil sales are being evaluated, all costs become marginal costs, and so the crude oil seller will also have to include any costs required for finding oil and for expanding other facilities in support of these increased sales in the future. Whether short-run or long-run marginal costs are at

issue, the crude oil seller, when considering a prospective sale, must sum his relevant marginal costs of crude oil supply to satisfy that sale. Converting these marginal costs to a per-barrel basis, the crude oil seller identifies a price below which his marginal costs on the prospective sale will not be covered and above which they will be covered. He will reject this price and all lower ones. Prices above this level are welcome, initially as they contribute to fixed costs and, then, as they generate profits.

The upshot of all this is that, minute by minute, buyers enter the world crude oil market with estimates of the maximum price that they can rationally pay for various crude oils and sellers enter the market with estimates of the minimum price that they can accept for their crude oil from refiners. Given supply and demand conditions, the intensity of competition between buyers and sellers of crude oil will determine the price for it. The more intense that competition, the less the ability of crude oil sellers to restrain from discounting their crude oil and so the lower will be the price of internationally traded crude oil. Likewise, the greater the competition in the world market for refined oil products, the less the ability of refiners and distributors to withhold supplies of these products from it, and, therefore, the lower the price will be for these products.

The world oil market is constantly generating new prices for crude oil and refined oil products. For several reasons, different crude oils do not sell at the same price per barrel CIF in the same market. First, crude oils differ in their inherent yield of refined products, the percentage composition of refined oil products produced jointly by moving a specific crude oil through a standard distillation process. Crude oils with a relatively high inherent yield of motorgasoline, for example, will command a price premium in markets with relatively high motorgasoline demand, such as in the U.S. and West European energy markets. They will command this premium, which will fluctuate seasonally, because, by using these kinds of crude oil, it will be possible to avoid investing in costly catalytic cracking and other refining facilities to generate higher gasoline yields. Second, crude oils also vary in the sulphur and other contaminants that they inherently contain, and, again, depending on the market, this physical difference will generate a premium in their price. A low contaminant content implies less need for a business to invest in pollution control equipment and, in markets where this is an important consideration, crude oils low in pollutants will command a premium in price.

These differences in crude oil price owing to physical differences in them can be significant. In September 1989, for example, the CIF price for eleven crude oils delivered to the Rotterdam market ranged from \$15.46 to \$18.05 per barrel.<sup>2/</sup> Each of these prices was different. The lowest of them, \$15.46 per barrel, was for Saudi Arabian heavy crude oil, which has a relatively low motorgasoline content and a relatively high sulphur content. The highest price, \$18.05 per barrel, was for Nigerian light crude oil, which has a high motorgasoline content and a low sulphur content.<sup>3/</sup>

Aside from the effect on price of differences in inherent yield and contaminant content, different crude oils will also have different prices in the same market when that market is in the process of a competitive adjustment towards a new structure of prices or, more generally, when that market has serious competitive failings.

The world crude oil market also generates different CIF prices for the same crude oil in different consuming centers. In September 1989, for example, the delivered price for a barrel of Saudi Arabian light crude oil was \$16.89 at the U.S. Gulf Coast and \$16.67 at Rotterdam.<sup>4</sup> Price differences such as this reflect differences in transport cost, but they also result when crude oil sellers in imperfect markets lower their prices either to penetrate new markets or to retain old ones. Until such initially localized price cuts are passed on to all crude oil buyers, the new, lower price will be recorded in the seller's turbulent market and the higher price will prevail in his other markets. In such cases, there will also be differences in the implicit FOB export-country price of the same crude oil for sale to different prospective purchasers, but arbitrage and competition in general will work to narrow such price gaps. Hidden discounts are often extended to crude oil buyers in soft markets with the result that published prices may constitute erroneous reports on the extent of the real differences in the price of a crude oil in the same market and between markets as well. Finally, the same crude oil may sell for different prices in the same market, and in different markets as well, when different volumes of sales over time are involved. Thus, the same crude oil may have a different price in the spot, term, and long-term markets for oil and, in each case, there may be different prices for different volumes of sales.

A basic implication of these considerations is that it is really not very illuminating to speak of 'the' price for world crude oil. In fact, there is no one price for it, but, rather, there is a worldwide structure, or network, of crude oil prices. This network is in continuous motion, upward and downward, buffeted minute-by-minute by a myriad of systematic and random forces. It is an ordered, coherent structure, the level of which moves toward the long-run supply cost of world oil as competition for it increases and away from it as competition wanes. One may, for illustrative purposes, single out a single, volumetrically dominant crude oil for discussion in the sense that the changes that are occurring in the price of that crude oil will be taken as representative of the pattern of change that is occurring in the overall structure of world crude oil prices. This is the idea when the price of Saudi Arabian light crude oil is selected to represent the average of world oil prices.

### 3. The Price of Saudi Arabian Light Crude Oil

Graph (1) shows the pattern of what must be the two most cited time-series in economic history: the nominal and real prices for Saudi Arabian light crude oil. The time-series are for the 'posted' price of this key internationally traded crude oil. Economically, a 'posted' price for oil is not a price at all because it does not

report the payment actually made by a seller to a buyer for a sale of oil. A 'posted' price is a bookkeeping notation, a referent figure, corresponding, very roughly, to what a seller wants, or hopes, to establish at some point in time as the FOB price of his crude oil in the market. As wishes rarely correspond to reality, posted prices rarely correspond to market prices. Posted prices may also serve as a computational referent for a variety of business dealings between a host producing country and oil companies operating in it or between buyers and sellers of oil in general.

Despite the continual difference between posted and market prices, it was decided to report the record of posted prices for Saudi Arabian light crude oil in this report. These prices are introduced here for illustrative purposes and not as the basis for detailed economic analysis. It was simply not possible to construct a long-term month-by-month time-series on actual market prices for Saudi Arabian light crude oil, but a monthly time-series on its posted prices could be constructed. Generally speaking, posted prices tend over time to adapt to market prices or their reporting will be ignored and eventually discontinued. Given the broad purpose at hand, and the need to discuss the historical pattern of change in the world crude oil prices, it was decided to accept whatever distortion there is in referring to the track of posted prices for this purpose.

Graph (1) shows vividly the two sharp increases that have occurred in the real posted price of Saudi Arabian light crude oil since 1970, one in 1973-1974 and the other in 1979-1980. After each increase, the real price of the crude oil declined, slowly after the first one and sharply after the second. By December, 1988, the real posted price of Saudi Arabian crude oil, at \$6.2 dollars of 1973 per barrel, was declining towards its level prior to the first price increase in late 1973. As suggested earlier, throughout this entire period, the real price of Saudi Arabian light crude oil was several times a multiple of its long-run supply cost. Although competition in the world oil market has acted continuously to bring down its price to its cost, non-competitive factors have been dominant throughout the postwar era, and this explains the continual and substantial excess of the price over the cost of this key crude oil.

Graphs (2-4) present the monthly track of international oil tanker freight rates since the seventies. For large oil tankers (Graph 2), nominal freight rates declined after 1973, and they remained at low levels until their mild revival in the late eighties. The same overall pattern of declining and low levels of nominal freight rates is evidenced in the course of the Mullion index (Graph 3), which reports changes in freight rates for single voyages of a composite oil tanker. By way of comparison, nominal freight rates for medium sized oil tankers (Graph 4) moved more or less sympathetically with changes in real oil prices, accentuating pressure on the delivered cost of world in the upswings in freight rates but reducing them in the downswings. When the declining value of the dollar over time is accounted for, as reflected inversely in changes

in the U.S. consumer price index, it is clear that, in real terms, international oil tanker freight rates have declined both steadily and markedly during the past two decades (Exhibits 2-4).

In summary, then, although there are anomalies in these patterns, changes in international oil tanker freight rates contributed to a trend reduction in the delivered real cost of crude oil in international markets during the last two decades. The data presented in Graphs (2-4) show that world oil tanker freight rates declined in both nominal and real terms during this period. Thus, the major force behind the changing pattern of real world oil prices CIF since 1973 has been the underlying changes in the real FOB price of the crude oil itself and not in the real cost of transporting it internationally.

## CHAPTER II

## RETAIL PRICES FOR REFINED OIL PRODUCTS IN LATIN AMERICA

1. Oil Pricing in Domestic Markets

The delivered price of crude oil is a major component of the retail price of refined oil products. Graph (5) compares the posted FOB price of Saudi Arabian crude oil and the FOB export price at Curacao of three major refined oil products: motorgasoline, diesel oil, and heavy fuel oil. In Latin America, these three products account for about four-fifths of refined product consumption. The graph shows clearly the close correlation between changes in the prices for crude oil and the prices for these three key refined oil products. It also shows the high ratio of the share of crude oil cost in the price of refined oil products.

Two basic approaches are open to the pricing of refined oil products in domestic markets. First, the market may be used to establish these prices. Second, the State may fix them. In a perfectly competitive domestic oil market in equilibrium, domestic oil prices will bear a parity relationship with international oil prices, the two being linked by transport and other minor costs. In this case, the cost of consuming a refined oil product domestically will be given by its opportunity cost: the higher of (a) the net revenue foregone by not exporting a domestically refined oil product but, rather, by consuming it domestically; or (b) the net revenue foregone by importing and then consuming that refined oil product. In this context, if oil refiners in imperfect markets are enjoying surpluses above both their real costs of supply and their opportunity costs, then they will not reallocate supplies of oil between consumers. However, if these surpluses, while above real costs, are less than the opportunity costs of refiners, then they will reallocate oil supplies among consumers to increase their surpluses.

Competitive markets for refined oil products generate prices which equilibrate supply and demand and, in general, avoid gluts and shortages. When domestic prices for refined oil products are competitively determined, economically efficient decisions will be made by domestic consumers on how much oil to consume; and economically efficient decisions will also be made by domestic crude oil producers on how much crude oil to find, develop, and produce over time. If the domestic oil market is less than perfectly competitive, then the decisions of domestic oil consumers and producers will be, to

that extent, less efficient economically. If competition is increasing in the market for refined oil products, then the old, disequibrated set of market prices will be attracted toward a new set of economically more efficient prices for these products. The reverse occurs as the market for refined oil products passes from being less to more controlled.

By way of contrast, when the State fixes the price of refined oil products (or of any other energy source) at any other price than that consistent with international parity and domestic equilibrium, it will generate either a deficit or an excess of these products at the State's fiat price. The costs of maintaining such artificial prices will vary with the difference between them and their equilibrium analogues. Typically, the economic costs of administered prices for energy sources are substantial, and pressures mount rapidly to abandon them in favour of letting supply and demand determine energy prices naturally in the market.

If the State fixes the prices of refined oil products below levels consistent with international parity and domestic equilibrium, then consumers will demand more of them at these lower prices than they would at the previously higher prices, the degree depending fundamentally on the price elasticities of demand for each of these products over time. In this case, the demand for refined oil products will outstrip the supply of them. Oil will be substituted for other fuels, putting suppliers of these fuels under financial strain and probably provoking their pressure for State protection. The lower prices for oil and other fuels will promote their substitution for diverse inputs and outputs in the economy, triggering an economy-wide restructuring of demand. Oil imports must be blocked or subsidies extended to domestic oil suppliers to induce them to import oil and channel it to consumers at the fictitiously low prices set by the State. Pressure will increase for subsidizing indigenous crude oil production and new refining and distribution facilities to meet the rising demand for refined oil products induced by the State's price maintenance programme. Private sector oil suppliers will introduce devious pricing schemes to avoid selling oil at the low State prices. They will foment the creation of black markets in which they can sell their refined oil products at higher prices, and they will also try to divert refined oil products and locally produced crude oil to the higher priced, and more profitable, export market. State controls over the oil and other domestic energy industries will inevitably increase as the low prices initially mandated for the oil industry are rapidly transmitted to the energy sector as a whole. Rising imports of oil and oil-related capital equipment will increase balance of payments pressure on current oil account, and this pressure will be evidenced on capital account as well if capital outflows from the oil industry are ultimately provoked by the government's actions in the energy area. Distorted prices and government controls will promote inefficient investments in the domestic oil and energy industries. Waste and shortages of oil and energy resources will be in increasing evidence in the economy. On an economy-wide basis, the consequent misallocation of resources in general will be substantial. The

financial strength of domestic energy companies will deteriorate. The energy sector will become a major source of inflation as the State covers the deficits of domestic energy companies (and its own as well) to ensure a flow of cheap energy to domestic consumers. Typically, these deficits will be financed by increasing the money supply, not by raising taxes or reducing other State expenditures. Macroeconomic, microeconomic, and social costs will increase until the State is eventually forced to free energy prices.

On the other hand, if the State sets domestic prices for refined oil products above levels consistent with international parity and domestic equilibrium, as part of, say, a phase in an overall programme of macroeconomic stabilization, then the demand for these products will be less than their supply at the new prices, the extent of this difference depending basically on their price elasticities of demand over time. The increase in the price of refined oil products will promote the substitution of other fuels and resources for them, driving their price upward and, if their unit supply costs are declining, then, their unit profit upward as well. In this way, the increased prices for refined oil products will trigger changes in the prices, unit costs, and the unit profit of supplying fuels and other products in the economy. The pattern of relative prices will change throughout the economy, with a consequent reordering of the structure of overall product supply and demand nationally over time. Pressure will mount to export oil. The State will be pressed to block the import of cheaper oil or face the end of its programme of artificially high domestic oil prices. Reduced levels of domestic oil consumption will trigger lower imports of oil industry equipment which, together with higher net oil exports, could generate a favourable balance of payments on current oil account. Against this would have to be weighed any capital flight from the domestic oil (and energy) industry provoked by the State's disruptive energy policies. Domestically, the increased price of oil and other energy supplies will generate higher production costs throughout the economy, and especially in the energy-intensive industries, and this will promote inflation and threaten the growth of total real output and employment. Higher prices for refined oil products and other energy sources will reduce the real income of consumers, who will, in turn, pressure for imports of cheaper oil and an end of the State's oil price maintenance programme. The total profits of domestic crude oil producers, refiners, and marketers of refined oil products as well as of other energy suppliers could be threatened, and, contemplating their shrunken domestic markets, they will pressure for protection by the State and for subsidies from it in one form or another. Unused productive capacity will appear, not only in the oil industry but in the other sectors of the economy as well, owing to the increased price of energy supplies, on the one hand, and higher production costs throughout the economy, on the other. Increasingly, and on a variety of fronts, the State will be compelled to free domestic oil prices.

The domestic oil industry is so important in economies that mismanagement of it by the State will exact a heavy economic toll. Mismanagement of oil (and other energy) prices by the State will

quickly blunt the confidence of both domestic and foreign investors. If mismanagement of domestic oil prices becomes severe and enduring, then a high price will be paid in terms of fiscal deficits, inflation, balance of payments deterioration, reduced productivity, lost production, rising unemployment, and increasing state controls.

The ability of a State to postpone the elimination of subsidized oil prices depends on a multitude of factors, but those countries that have large resources of domestic crude oil can, generally speaking, postpone corrective action longer than can the oil-poor country. The latter is virtually forced into economically remedial action and rather rapidly, while the oil-rich country can continue, for some time, to subsidize domestic oil consumers by expending its wealth in indigenous crude oil. The more rich this endowment in crude oil, the longer the state can delay the day of economic reckoning. Even for the oil-rich state, however, that day, while postponable, is inevitable.

## 2. International Comparisons

The previous discussion provides a brief introduction to ARPEL's monthly price data. When domestic retail prices for oil are compared with their counterpart FOB prices at Curazao, they reveal cases of extreme subsidy of consumers of these products. The case is not clear, however, if the tax-inclusive domestic price for a refined oil product is above its Curazao FOB counterpart price. In this case, it is not possible to state categorically from the data if the excess in price is sufficient or not to cover all the other relevant, but excluded, costs, such as those for international freight and insurance, for example. Cases of extreme taxation of refined oil products will be more or less evident from the price data. In short, a comparison of domestic retail and Curazao prices can spotlight cases of flagrant subsidy, but, generally speaking, it will not provide an unequivocal report when the subsidy is mild or non-existent.

Graphs (6-8) show the ratio of domestic retail to Curazao FOB prices for motorgasoline, diesel oil, and fuel oil for three countries: Uruguay, which is wholly dependent on imported oil; and for Chile and Brazil, countries which, while oil producers, nevertheless rely heavily on imported oil for supplying their domestic markets. How have retail oil prices changed in these three oil-deficit countries since the mid-seventies in the light of changes in the international prices for refined oil products?

The data show that, in Uruguay, domestic retail prices were, as early as 1975, several times a multiple of their counterpart FOB prices in Curazao, and they remained so through 1989. The data also show that this was achieved by strong increases in the real retail prices for refined oil products, which had the effect over time of restricting domestic oil consumption.

Comparison of the Uruguayan price ratios with those for Chile and Brazil show that, while the two latter countries also increased their real retail prices toward international parity, the pace of doing this was slower than in the case of Uruguay. The data indicate that glaring subsidies of the major products were reduced sharply in Chile and that increases in real retail prices were used effectively in both Chile and Brazil to restrain oil demand, although achievement in this regard was not as dramatic as it was in the case of Uruguay. Increases in oil prices do not automatically translate into reduced volumes of oil consumption because changes in other variables may more than offset the negative effect on oil consumption of increases in retail oil prices. For example, strong gains in real output in Brazil in the seventies and eighties and strong growth in automobile use and real output in Chile in the eighties more than offset the effect on domestic oil consumption of increasing real oil prices in these two countries at those times. Still, increased oil prices were used in both cases to restrain the rate of growth in domestic oil consumption in both cases to levels lower than would otherwise have been the case.

Changes in the ratio of domestic to Curazao prices in the cases of Mexico, Bolivia, and Colombia present an interesting contrast with those just discussed (Graphs 9-11). While the ratio of domestic retail to Curazao FOB prices did increase for the key refined products in these three oil-producing countries, the rate at which they rose was generally slower than in the cases of Uruguay, Chile, and Brazil. The price of refined oil products was increased progressively, not abruptly across all refined oil products, in Mexico, Bolivia and Colombia. This tended to constrict the demand for refined oil products and to stimulate crude oil production for the domestic market in these countries.

By way of comparison, the figures in Graphs 12 and 13 report the relative lack of adjustment in domestic oil prices in Venezuela and Ecuador to changing levels of international parity during the seventies and eighties. The price mechanism was not used in any significant way to restrain domestic oil consumption in these two oil-rich countries, and oil consumption continued to grow in them as if world oil prices were not changing at all. Effectively, consumers were stimulated to consume refined oil products which, in turn, required subsidies to domestic producers to supply the required volumes of crude oil. The result has been inflation, balance of payments and other macroeconomic problems, and misallocation of energy and other resources in the domestic economy. This pattern of pronounced subsidy was facilitated, in part, by the wealth in crude oil resources of both countries. It continues at the cost of consuming that wealth, on the one hand, and by incurring significant economic and social costs, on the other.

In summary, these three sets of countries evidenced different patterns of response in adjusting their domestic retail prices for refined oil products to changing levels of international parity. Uruguay, Chile, and Brazil made the adjustment relatively quickly and

used the price mechanism to restrain the consumption of refined oil products. Mexico, Bolivia, and Colombia also adjusted retail oil product prices upward toward international parity, but at slower rates, reflecting the operation of important causal forces other than oil prices and the ability of these countries to delay adjustment, on the other, given their wealth in crude oil resources. Venezuela and Ecuador kept the domestic price of refined oil products far below Curacao FOB export parity levels throughout the seventies and eighties, despite the changes that were occurring in the cost of internationally traded crude oil. They stimulated consumers to consume more, not less, refined oil products at a time when the increased cost of oil in the international market was calling for less, not more, consumption of these products domestically.

#### Footnotes

1/ See: J.W. Mullen, World Oil Prices: Prospects and Implications for Latin America's Oil-Deficit Countries, CEPAL, Santiago, Chile, 1978, p. 36. For the year 1988, this two dollar (1975 prices) figure would be lower because the world oil long-run supply cost function is positively sloped.

2/ "Petroleum Intelligence Weekly", Vol. XXVIII, N°42 dated October 16, 1989, PIW Special Supplement Issue, p.1, Petroleum and Energy Intelligence Weekly Inc. N.Y.C., N.Y.

3/ "Petroleum Intelligence Weekly", Vol. XXVII, N°36 dated September 1988, PIW Special Supplement Issue, p.11, Petroleum and Energy Intelligence Weekly Inc, N.Y.C., N.Y.

4/ "Petroleum Intelligence Weekly", Vol. XXVIII, N°42 dated October 16, 1989, PIW Special Supplement Issue, p.1, Petroleum and Energy Intelligence Weekly Inc., N.Y.C., N.Y.

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3. The Mullion Index of Tanker Freight Rates and the U.S. Consumer Price Index, January 1973-December 1987.
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5. Comparison of the Nominal (FOB) Posted Price of the Saudi Arabian Light Crude Oil and the Nominal (FOB) Prices for Motorgasoline (95 octane), Diesel Oil and Heavy Fuel Oil at the Curazao Product Export Terminal, January 1975-December 1988.
6. Uruguay: 1975-1989 - Motorgasoline, Diesel Oil and Fuel-Oil: Monthly Real Prices, Annual Volumes of Consumption, and the Ratio of Domestic Retail to Curazao Export (FOB) Prices.
7. Chile: 1975-1989 - Motorgasoline, Diesel Oil and Fuel-Oil: Monthly Real Prices, Annual Volumes of Consumption, and the Ratio of Domestic Retail to Curazao Export (FOB) Prices.
8. Brasil: 1975-1989 - Motorgasoline, Diesel Oil and Fuel-Oil: Monthly Real Prices, Annual Volumes of Consumption, and the Ratio of Domestic Retail to Curazao Export (FOB) Prices.
9. Mexico: 1975-1989 - Motorgasoline, Diesel Oil and Fuel-Oil: Monthly Real Prices, Annual Volumes of Consumption, and the Ratio of Domestic Retail to Curazao Export (FOB) Prices.
10. Bolivia: 1975-1989 - Motorgasoline, Diesel Oil and Fuel-Oil: Monthly Real Prices, Annual Volumes of Consumption, and the Ratio of Domestic Retail to Curazao Export (FOB) Prices.
11. Colombia: 1975-1989 - Motorgasoline, Diesel Oil and Fuel-Oil: Monthly Real Prices, Annual Volumes of Consumption, and the Ratio of Domestic Retail to Curazao Export (FOB) Prices.
12. Venezuela: 1975-1989 - Motorgasoline, Diesel Oil and Fuel-Oil: Monthly Real Prices, Annual Volumes of Consumption, and the Ratio of Domestic Retail to Curazao Export (FOB) Prices.
13. Ecuador: 1975-1989 - Motorgasoline, Diesel Oil and Fuel-Oil: Monthly Real Prices, Annual Volumes of Consumption, and the Ratio of Domestic Retail to Curazao Export (FOB) Prices.

B. Appendices

1. Retail Prices of Selected Refined Oil Products, Monthly, 1975-1989, for Ten Latin American Countries. (In current U.S. cents per litre).
2. Real Retail Prices of Selected Refined Oil Products, Monthly, 1975-1989, for Ten Latin American Countries. (In U.S. cents of 1975 per litre).
3. Retail Prices in Selected Latin American Countries and FOB Export Price at Curazao, Monthly, 1975-1989, for Twelve Refined Oil Products. (In current U.S. cents per litre).
4. Real Retail Prices in Selected Latin American Countries and FOB Export Price at Curazao, Monthly, 1975-1989 for Twelve Refined Oil Products (In U.S. cents of 1975 per litre).
5. Curazao: Export Prices (FOB) for Selected Refined Oil Products, Monthly, 1975-1989, (in current U.S. cents per litre).
6. Curazao: Export Prices (FOB) for Selected Refined Oil Products, Monthly, 1975-1989, (in U.S. cents of 1975 per litre).
7. Rates of Conversion from Local Currency to U.S. Dollars used by ARPEL in its Monthly Reports on the Retail Prices for Refined Oil Products in Selected Latin American Countries.
8. Motorgasoline, Diesel Oil, and Fuel Oil Consumption in Selected Latin American Countries, (in 000 metric tons).

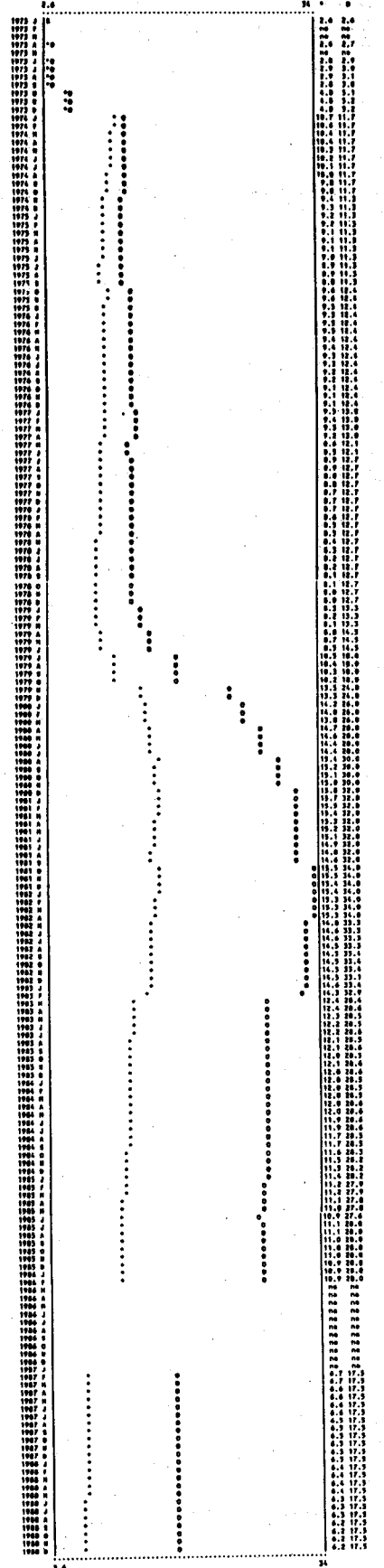
GRAPHS \*/

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\*/ See Explicative Notes on the ARPEL Price Data.

GRAPH (1)

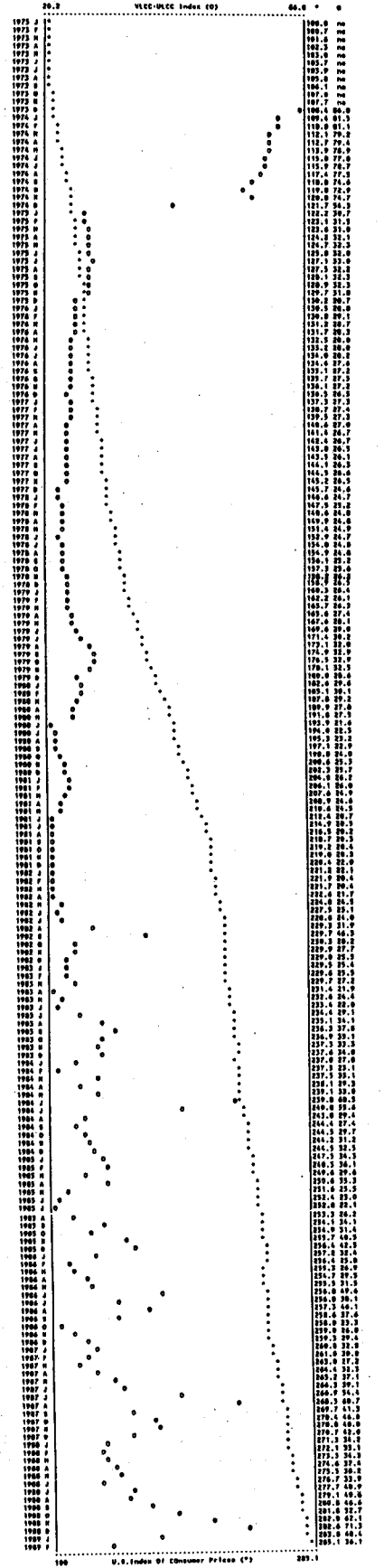
Posted prices, FOB Persian Gulf, for (Grade) Arabian Light-Crude Oil, January 1972 to December 1989. (In current and constant 1972 US Dollars per barrel)



LEGEND: \* = Prices of 1972; 0 = Nominal Prices. NOTES: \* Definition to constant dollars of 1972 used effected using the monthly value of the U.S. Index of Consumer Prices as reported in the 1972 price deflation "International Financial Statistics", various monthly issues. SOURCES: "International Financial Statistics", I.M.F., various monthly issues; and "Energy Trends", Energy Economic Research Limited, U.K., various monthly issues.

GRAPH (2)

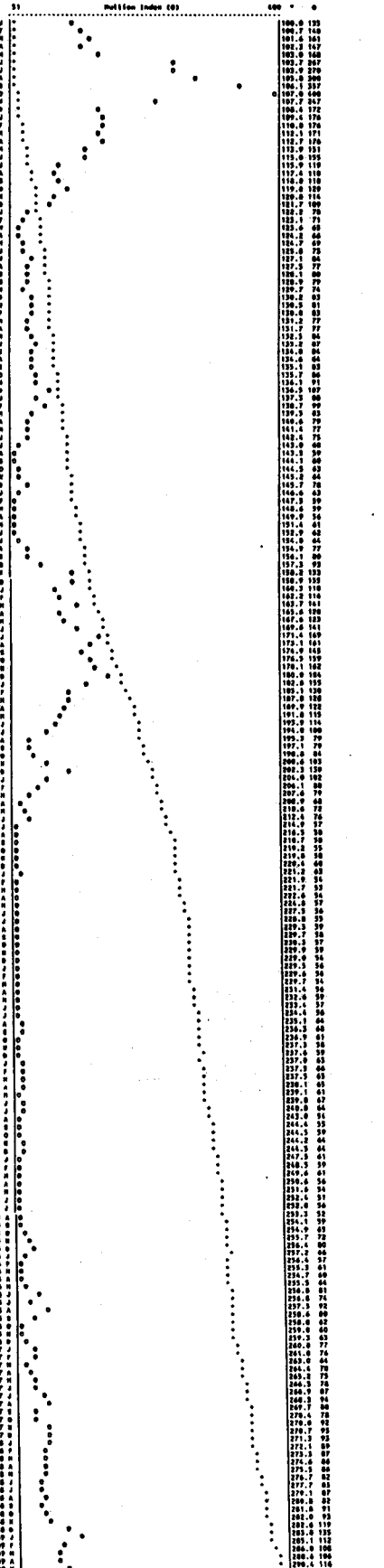
Freight Rates for Ultra Large (ULCC) and Very Large (VLEC) Crude Oil Carriers and the U.S. Consumer Price Index (1972=100), January 1972-February 1989. (Percent of World-Tonnels and Percent)



LEGEND: 0 = VLEC-ULCC Freight Rate Index; \* = U.S. Index of Consumer Prices. NOTES: \* The joint classification VLEC and ULCC includes crude oil carriers 150000 Dwt and above. \* The U.S. Consumer Price Index is presented here as a rough (inverse) proxy for changes in the value of the U.S. dollar over time. SOURCE: "Petroleum Economist", U.K., various monthly issues; and "International Financial Statistics", I.M.F., various issues.

GRAPH (3)

The Mullin Index of Tanker Freight Rates and the U.S. Index of Consumer Prices (1972=100), January 1972-December 1989. (Percent of World-Tonnels and Percent)

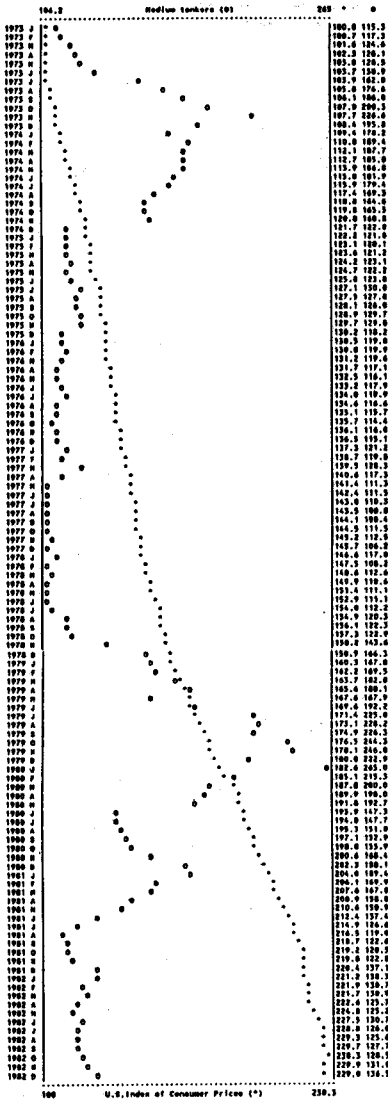


LEGEND: 0 = Mullin Index; \* = U.S. Index of Consumer Prices. NOTES: \* This index is for a provisional composite average of dirty (incl. dim heavy fuel oil) single voyage rates as calculated by Barley Mullin Ltd. \* The U.S. Consumer Price Index is presented here as a rough (inverse) proxy for changes in the value of the U.S. dollar over time. SOURCE: "Petroleum Economist", U.K., various monthly issues and "International Financial Statistics", I.M.F., various issues.

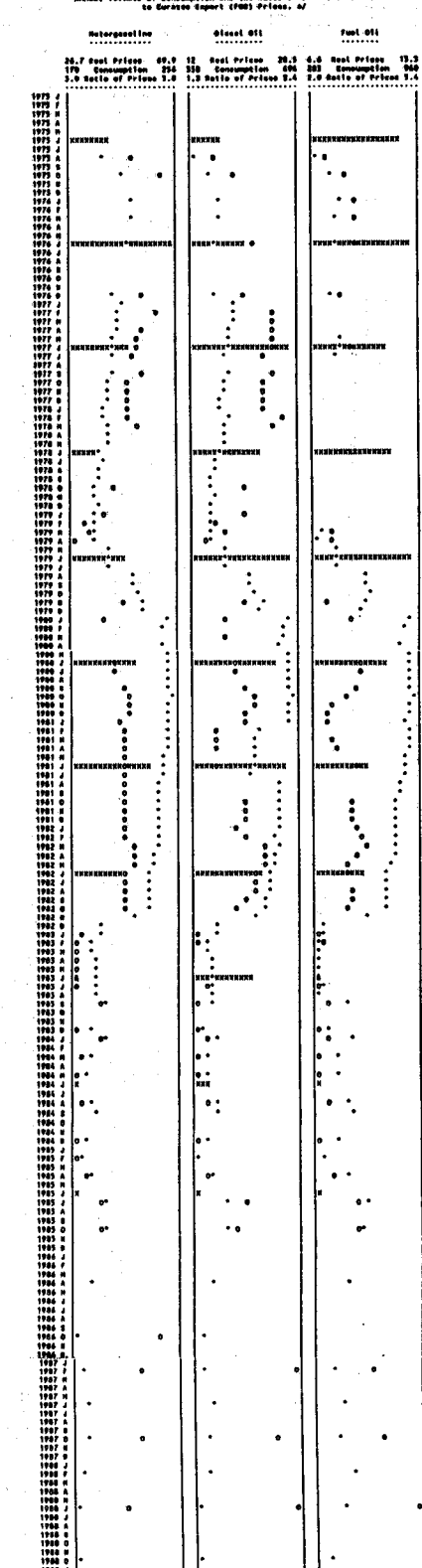
Freight Rates for Medium Sized Crude Oil Tankers and the U.S. Index of Consumer Prices (1972=100), January 1973-December 1982. (Percent of Worldwide and Persons)

Comparison of the Annual (1973) Posted Price of the Small Arabion Light Crude Oil and the Annual (1982) Prices for Motorgasoline (95 octane), Diesel Oil and Heavy Fuel Oil at the Caracas Chamber of Commerce, January 1973-December 1982. (In U.S. dollars of 1975 per barrel)

January 1973 = 100. Motorgasoline, Diesel Oil and Fuel Oil: Monthly Real Prices, Annual Volume of Consumption and the Ratio of Domestic Retail to Caracas Chamber's (1982) Prices. (U.S. dollars of 1975 per barrel)



Year	Motorgasoline	Diesel Oil	Heavy Fuel Oil
1973	27.0	7.3	1.9
1974	27.5	7.5	2.0
1975	28.0	7.8	2.1
1976	28.5	8.1	2.2
1977	29.0	8.4	2.3
1978	29.5	8.7	2.4
1979	30.0	9.0	2.5
1980	30.5	9.3	2.6
1981	31.0	9.6	2.7
1982	31.5	9.9	2.8



Legend: ● = Medium Freight Rate Tanker Index.  
 ○ = U.S. Index of Consumer Prices.

NOTE: The classification medium sized crude oil tankers includes vessels in the range of 8000-13000 dwt. The reporting of this series was discontinued by the Petroleum Economist after 1982.

SOURCE: "Shipping Statistics", Institute of Shipping Economics and Logistics, (1-1-1), Bremen, West Germany, various monthly and annual issues; "Petroleum Economist", U.S., various monthly issues; and "International Financial Statistics", I.M.F., various issues.

Legend: ● indicates Small Arabion Light.  
 ○ indicates the respective refined oil products.

NOTE: Comparison of the price of refined oil products to U.S. dollars of 1975 per barrel (FOB, Caracas) was effected using the factor of 42 gallons per barrel.

SOURCE: Appendix (6) and Graph (1).

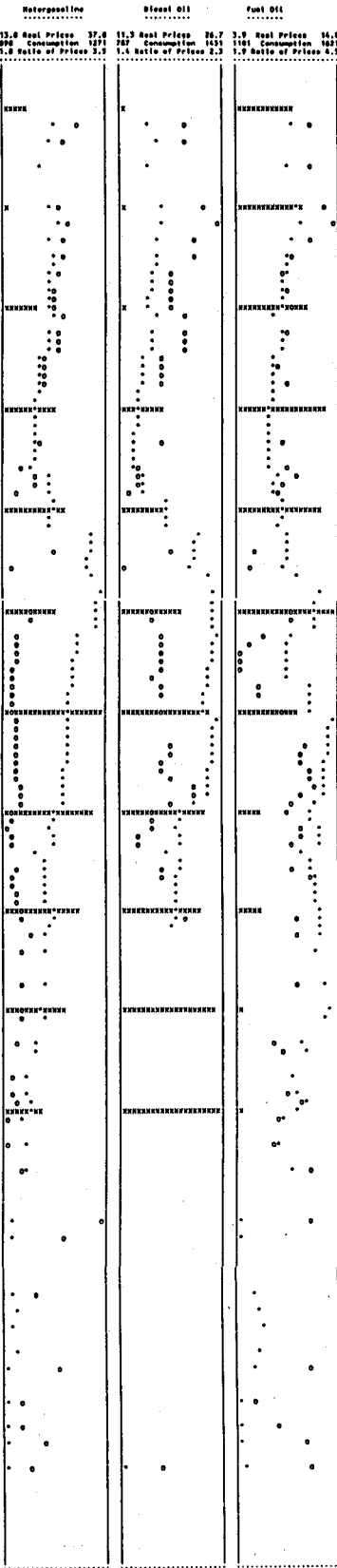
NOTE: The series shown cryptically in the graph refer to the following minimum and maximum bounding values of each variable:

Motorgasoline	Diesel Oil	Fuel Oil
26.7	6.9	1.9
31.0	9.3	2.8

Legend: ● = Real prices (in US cents of 1975 per litre).  
 ○ = Apparent consumption (in 10<sup>3</sup> metric tons).  
 □ = Ratio of retail prices to counterpart (FOB) report prices at Caracas (ratio of real prices).

Motorgasoline	Diesel Oil	Fuel Oil
26.7	6.9	1.9
31.0	9.3	2.8

OMEGA 1975 - 1999  
Motor gasoline, Diesel Oil and Fuel Oil : Monthly Real Prices,  
Annual Volumes of Consumption and the Ratio of Domestic Retail  
to Counterpart (FOB) Prices. %



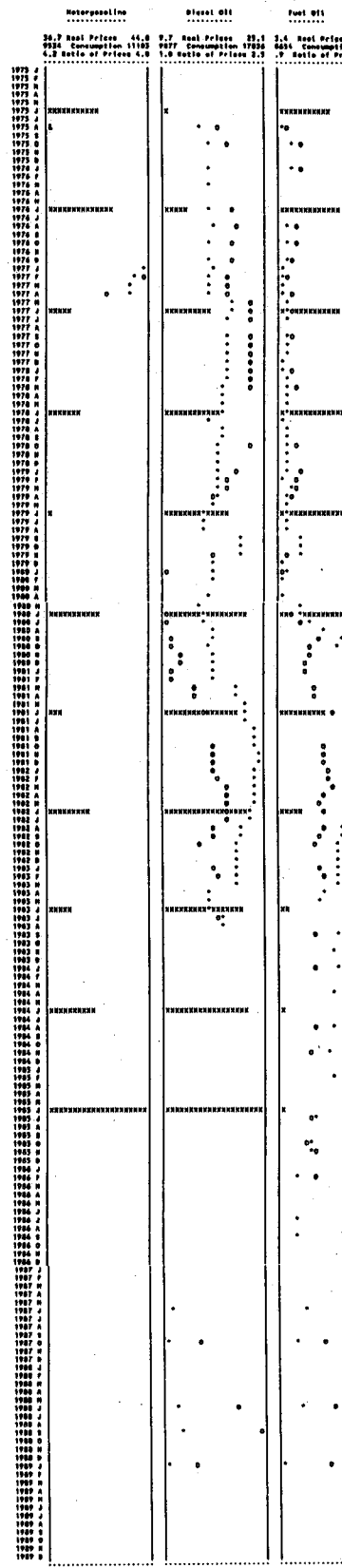
NOTES : The scales shown cryptically in the graph refer to the following minimum and maximum bounding values of each variable.

Motor gasoline	Diesel Oil	Fuel Oil
13.0	37.0	26.7
37.0	11.3	3.0
1611	1621	1621
1.0	3.0	1.0
4.5	2.3	1.0
4.5	2.3	1.0

LEGEND : \* Real prices (in US cents of 1975 per litre).  
 X Apparent consumption (in 10<sup>3</sup> metric tons).  
 O Ratio of retail prices to counterpart (FOB) export prices at Curacao (ratio of real prices).

SOURCES : \* Appendix (4).  
 X Appendix (5).

BASIS 1975 - 1999  
Motor gasoline, Diesel Oil and Fuel Oil : Monthly Real Prices,  
Annual Volumes of Consumption and the Ratio of Domestic Retail  
to Counterpart (FOB) Prices. %



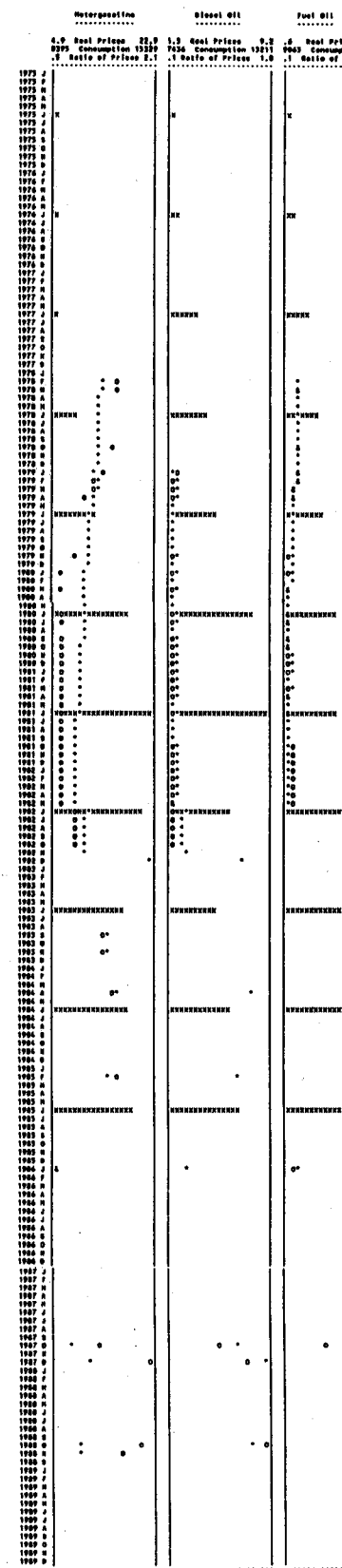
NOTES : The scales shown cryptically in the graph refer to the following minimum and maximum bounding values of each variable.

Motor gasoline	Diesel Oil	Fuel Oil
36.7	44.0	25.1
44.0	9.7	3.4
1724	1724	1724
4.2	4.0	2.0
5.3	1.0	1.0
5.3	1.0	1.0

LEGEND : \* Real prices (in US cents of 1975 per litre).  
 X Apparent consumption (in 10<sup>3</sup> metric tons).  
 O Ratio of retail prices to counterpart (FOB) export prices at Curacao (ratio of real prices).

SOURCES : \* Appendix (4).  
 X Appendix (5).

HEXICO 1975 - 1999  
Motor gasoline, Diesel Oil and Fuel Oil : Monthly Real Prices,  
Annual Volumes of Consumption and the Ratio of Domestic Retail  
to Counterpart (FOB) Prices. %



NOTES : The scales shown cryptically in the graph refer to the following minimum and maximum bounding values of each variable.

Motor gasoline	Diesel Oil	Fuel Oil
4.0	22.0	9.0
22.0	1.0	0.0
2100	1665	2100
3	1.0	1.0
1.0	1.0	1.0
1.0	1.0	1.0

LEGEND : \* Real prices (in US cents of 1975 per litre).  
 X Apparent consumption (in 10<sup>3</sup> metric tons).  
 O Ratio of retail prices to counterpart (FOB) export prices at Curacao (ratio of real prices).

SOURCES : \* Appendix (4).  
 X Appendix (5).

OLYMPIA 1975 - 1999  
Motorgasoline, Diesel Oil and Fuel Oil - Monthly Real Prices,  
Annual Volume of Consumption and the Ratio of Domestic Retail  
to Counterpart (FOB) Prices, %

COLUMBIA 1975 - 1999  
Motorgasoline, Diesel Oil and Fuel Oil - Monthly Real Prices,  
Annual Volume of Consumption and the Ratio of Domestic Retail  
to Counterpart (FOB) Prices, %

VENEZUELA 1975 - 1999  
Motorgasoline, Diesel Oil and Fuel Oil - Monthly Real Prices,  
Annual Volume of Consumption and the Ratio of Domestic Retail  
to Counterpart (FOB) Prices, %

Table with 4 columns: Motorgasoline, Diesel Oil, Fuel Oil, and Fuel Oil. Rows represent years from 1975 to 1999. Data points are represented by dots and lines, showing price fluctuations and consumption trends over time.

Table with 4 columns: Motorgasoline, Diesel Oil, Fuel Oil, and Fuel Oil. Rows represent years from 1975 to 1999. Data points are represented by dots and lines, showing price fluctuations and consumption trends over time.

Table with 4 columns: Motorgasoline, Diesel Oil, Fuel Oil, and Fuel Oil. Rows represent years from 1975 to 1999. Data points are represented by dots and lines, showing price fluctuations and consumption trends over time.

NOTES: The scales shown cryptically in the graph refer to the following minimum and maximum bounding values of each variable:  
Motorgasoline Diesel Oil Fuel Oil  
9.3 17.7 3.6 32.0 2.4 17.3  
326 492 159 287 90 230  
Apparent Consumption (in 10<sup>3</sup> metric tons/year)  
2.6 3.0 3.0 1.2 4.0  
Ratio of Retail Prices to Counterpart (FOB) Prices.

NOTES: The scales shown cryptically in the graph refer to the following minimum and maximum bounding values of each variable:  
Motorgasoline Diesel Oil Fuel Oil  
7.1 16.1 3.6 13.0 2.3 5.7  
2518 3722 846 1696 365 1301  
Apparent Consumption (in 10<sup>3</sup> metric tons/year)  
6.3 3 1.9 2.0 2.2  
Ratio of Retail Prices to Counterpart (FOB) Prices.

NOTES: The scales shown cryptically in the graph refer to the following minimum and maximum bounding values of each variable:  
Motorgasoline Diesel Oil Fuel Oil  
1.2 12.4 4 2.7 9 1.3  
454 724 198 507 92 444  
Apparent Consumption (in 10<sup>3</sup> metric tons/year)  
5 1 1 1 1  
Ratio of Retail Prices to Counterpart (FOB) Prices.

LEGEND: \* Real prices (in US cents of 1975 per liter).  
# Apparent consumption (in 10<sup>3</sup> metric tons).  
@ Ratio of retail prices to counterpart (FOB) export prices at Curacao (ratio of real prices).  
SOURCE: \* Appendix (5).  
# Appendix (6).  
@ Appendix (4) and (8).

LEGEND: \* Real prices (in US cents of 1975 per liter).  
# Apparent consumption (in 10<sup>3</sup> metric tons).  
@ Ratio of retail prices to counterpart (FOB) export prices at Curacao (ratio of real prices).  
SOURCE: \* Appendix (5).  
# Appendix (8).  
@ Appendix (4) and (8).

LEGEND: \* Real prices (in US cents of 1975 per liter).  
# Apparent consumption (in 10<sup>3</sup> metric tons).  
@ Ratio of retail prices to counterpart (FOB) export prices at Curacao (ratio of real prices).  
SOURCE: \* Appendix (5).  
# Appendix (4).  
@ Appendix (4) and (8).

GRAPH (12)

PERIOD: 1975 - 1989  
 Motor gasoline, Diesel Oil and Fuel Oil - Monthly Real Prices,  
 Annual Volume of Consumption and the Ratio of Domestic Retail  
 to Counterpart Foreign (FOB) Prices, 47

Year	Motor gasoline		Diesel Oil		Fuel Oil	
	Real Price 1975 = 100	Ratio of Retail to Counterpart Foreign (FOB) Prices	Real Price 1975 = 100	Ratio of Retail to Counterpart Foreign (FOB) Prices	Real Price 1975 = 100	Ratio of Retail to Counterpart Foreign (FOB) Prices
1975 J						
1975 F						
1975 M						
1975 A						
1975 M						
1975 J						
1975 J						
1975 S						
1975 O						
1975 N						
1975 D						
1976 J						
1976 M						
1976 A						
1976 M						
1976 J						
1976 J						
1976 S						
1976 O						
1976 N						
1976 D						
1977 J						
1977 M						
1977 A						
1977 M						
1977 J						
1977 J						
1977 S						
1977 O						
1977 N						
1977 D						
1978 J						
1978 M						
1978 A						
1978 M						
1978 J						
1978 J						
1978 S						
1978 O						
1978 N						
1978 D						
1979 J						
1979 M						
1979 A						
1979 M						
1979 J						
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1979 S						
1979 O						
1979 N						
1979 D						
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1980 J						
1980 J						
1980 S						
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1993 O						
1993 N						
1993 D						
1994 J						
1994 M						
1994 A						
1994 M						
1994 J						
1994 J						
1994 S						
1994 O						
1994 N						
1994 D						
1995 J						
1995 M						
1995 A						
1995 M						
1995 J						
1995 J						
1995 S						
1995 O						
1995 N						
1995 D						

NOTE: The prices shown graphically in the graph refer to the following minimum and maximum bounding values of each variable:

Motor gasoline	Diesel Oil	Fuel Oil
4.8	10.0	3.0
675	1200	416
1.0	1.0	1.0

Real Prices per liter (1975 US cents per liter).  
 Represents Consumption (in 10<sup>3</sup> metric tons/year).  
 Ratio of Retail Prices to Counterpart Foreign (FOB) Prices.

1975 = Real prices (in US cents of 1975 per liter).  
 475 = Reported consumption (in 10<sup>3</sup> metric tons).  
 1.0 = Ratio of retail prices to counterpart (FOB) export prices at Chinese (rate of real prices).

SOURCE: Appendix (4),  
 Appendix (4),  
 Appendix (4) and (5).

APPENDICES \*/

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\*/ See Explicative Notes on the ARPEL Price Data.

APPENDIX (1)

Retail Prices of Selected Refined Oil Products, Monthly, 1975-1989  
for Ten Latin American Countries  
(In current US cents per litre)

ASAP:Wholesale Retail Price of Selected Refined Oil Products, Monthly, 1975-1989. (in US current cents per liter)

BOLIVIA:Wholesale Retail Price of Selected Refined Oil Products, Monthly, 1975-1989. (in US current cents per liter)

BRASIL:Wholesale Retail Price of Selected Refined Oil Products, Monthly, 1975-1989. (in US current cents per liter)

Table with columns for Year/Month (Y/M) and various oil product codes (e.g., 8.65, 8.84, 8.95, 8.4V, etc.). The table contains monthly price data for each product from 1975 to 1989.

Table with columns for Year/Month (Y/M) and various oil product codes (e.g., 8.65, 8.84, 8.95, 8.4V, etc.). The table contains monthly price data for each product from 1975 to 1989.

Table with columns for Year/Month (Y/M) and various oil product codes (e.g., 8.65, 8.84, 8.95, 8.4V, etc.). The table contains monthly price data for each product from 1975 to 1989.

U.S. current cents per liter of LPG.
8.65 = Motor gasoline (65 octane); 8.84 = Motor gasoline (80 octane)
8.95 = Motor gasoline (85 octane); 8.4V = Jet fuel, JP8 (Paraffinic)
K.P.1 = Kerosene; K.P.2 = Kerosene; K.O.M. = Kerosene; G.O.L. = Gas oil
D.O.I. = Diesel oil; F.O.P. = Fuel oil; F.H.V. = Fuel oil

U.S. current cents per liter of LPG.
8.65 = Motor gasoline (65 octane); 8.84 = Motor gasoline (80 octane)
8.95 = Motor gasoline (85 octane); 8.4V = Jet fuel, JP8 (Paraffinic)
K.P.1 = Kerosene; K.P.2 = Kerosene; K.O.M. = Kerosene; G.O.L. = Gas oil
D.O.I. = Diesel oil; F.O.P. = Fuel oil; F.H.V. = Fuel oil

U.S. current cents per liter of LPG.
8.65 = Motor gasoline (65 octane); 8.84 = Motor gasoline (80 octane)
8.95 = Motor gasoline (85 octane); 8.4V = Jet fuel, JP8 (Paraffinic)
K.P.1 = Kerosene; K.P.2 = Kerosene; K.O.M. = Kerosene; G.O.L. = Gas oil
D.O.I. = Diesel oil; F.O.P. = Fuel oil; F.H.V. = Fuel oil

SOURCE: ASAP (Antecedentes de la Situación Económica de los Países Andinos), Petrolero (Monthly Reports), Petrolero (Monthly Reports), Uruguay, various months/years.

SOURCE: ASAP (Antecedentes de la Situación Económica de los Países Andinos), Petrolero (Monthly Reports), Petrolero (Monthly Reports), Uruguay, various months/years.

SOURCE: ASAP (Antecedentes de la Situación Económica de los Países Andinos), Petrolero (Monthly Reports), Petrolero (Monthly Reports), Uruguay, various months/years.

CRUDE OIL Retail Price of Selected Refined Oil Products, Monthly, 1975-1980. (in US current cents per liter)

Table with columns for Year/Month (Y/M) and various oil products (e.g., 0.61, 0.64, 0.69, 0.4v, etc.). The table contains monthly price data for each product from 1975 to 1980.

CRUDE OIL Retail Price of Selected Refined Oil Products, Monthly, 1975-1980. (in US current cents per liter)

Table with columns for Year/Month (Y/M) and various oil products (e.g., 0.63, 0.64, 0.69, 0.4v, etc.). The table contains monthly price data for each product from 1975 to 1980.

CRUDE OIL Retail Price of Selected Refined Oil Products, Monthly, 1975-1980. (in US current cents per liter)

Table with columns for Year/Month (Y/M) and various oil products (e.g., 0.65, 0.64, 0.69, 0.4v, etc.). The table contains monthly price data for each product from 1975 to 1980.

Note: For nomenclature see "ARGENTINA" above.

Note: For nomenclature see "ARGENTINA" above.

Note: For nomenclature see "ARGENTINA" above.

MEXICAN Retail Price of Selected Refined Oil Products, Monthly, 1973-1989. (In US current cents per litre)

Table with columns for Year (1973-1989) and various oil products (Gasoline, Diesel, etc.) showing monthly retail prices in US cents per litre.

MEXICAN Retail Price of Selected Refined Oil Products, Monthly, 1973-1989. (In US current cents per litre)

Table with columns for Year (1973-1989) and various oil products (Gasoline, Diesel, etc.) showing monthly retail prices in US cents per litre.

MEXICAN Retail Price of Selected Refined Oil Products, Monthly, 1973-1989. (In US current cents per litre)

Table with columns for Year (1973-1989) and various oil products (Gasoline, Diesel, etc.) showing monthly retail prices in US cents per litre.

Note: For nomenclature see "ABBREVIATIONS" above.

Note: For nomenclature see "ABBREVIATIONS" above.

Note: For nomenclature see "ABBREVIATIONS" above.



APPENDIX (2)

Retail Prices of Selected Refined Oil Products, Monthly, 1975-1989  
for Ten Latin American Countries  
(In US cents of 1975 per litre)



CRUDE: The Retail Price of Selected Refined Oil Products, Monthly, 1975-1989. (In US cents of 1975 per liter)

Table with columns for Year (1975-1989), Grade (6.83, 6.84, 6.95, etc.), and Price (in US cents of 1975 per liter).

COLOMBIA: The Retail Price of Selected Refined Oil Products, Monthly, 1975-1989. (In US cents of 1975 per liter)

Table with columns for Year (1975-1989), Grade (6.83, 6.84, 6.95, etc.), and Price (in US cents of 1975 per liter).

CHAD: The Retail Price of Selected Refined Oil Products, Monthly, 1975-1989. (In US cents of 1975 per liter)

Table with columns for Year (1975-1989), Grade (6.83, 6.84, 6.95, etc.), and Price (in US cents of 1975 per liter).

Note: For nomenclature see "ABBREVIATIONS" above.

Note: For nomenclature see "ABBREVIATIONS" above.

Note: For nomenclature see "ABBREVIATIONS" above.

MEXICO: The Retail Price of Selected Refined Oil Products, Monthly, 1975-1989. (in US cents per litre)

Table with columns for Year, 0.63, 0.84, 0.95, 0.4V, K.P1, K.P2, K.6m, 0.611, 0.611, F.5pp, F.5pp, F.5pp, F.5pp. Rows represent years from 1975 J to 1989 D.

PERU: The Retail Price of Selected Refined Oil Products, Monthly, 1975-1989. (in US cents per litre)

Table with columns for Year, 0.63, 0.84, 0.95, 0.4V, K.P1, K.P2, K.6m, 0.611, 0.611, F.5pp, F.5pp, F.5pp, F.5pp. Rows represent years from 1975 J to 1989 D.

VIETNAM: The Retail Price of Selected Refined Oil Products, Monthly, 1975-1989. (in US cents per litre)

Table with columns for Year, 0.63, 0.84, 0.95, 0.4V, K.P1, K.P2, K.6m, 0.611, 0.611, F.5pp, F.5pp, F.5pp, F.5pp. Rows represent years from 1975 J to 1989 D.

Note: For nomenclature see "ABBREVIATIONS" above.

Note: For nomenclature see "ABBREVIATIONS" above.

Note: For nomenclature see "ABBREVIATIONS" above.

VENEZUELA: The Retail Price of Selected Refined Oil Products, Monthly, 1973-1989.  
(in US cents of 1975 per liter)

Year	0.63	0.84	0.75	0.4v	K.0P1	K.0P2	K.Dm	S.oil	F.exp	F.avy	Lea*
1973	na	na	na	na	na	na	na	na	na	na	na
1974	na	na	na	na	na	na	na	na	na	na	na
1975	na	na	na	na	na	na	na	na	na	na	na
1976	na	na	na	na	na	na	na	na	na	na	na
1977	na	na	na	na	na	na	na	na	na	na	na
1978	na	na	na	na	na	na	na	na	na	na	na
1979	na	na	na	na	na	na	na	na	na	na	na
1980	na	na	na	na	na	na	na	na	na	na	na
1981	na	na	na	na	na	na	na	na	na	na	na
1982	na	na	na	na	na	na	na	na	na	na	na
1983	na	na	na	na	na	na	na	na	na	na	na
1984	na	na	na	na	na	na	na	na	na	na	na
1985	na	na	na	na	na	na	na	na	na	na	na
1986	na	na	na	na	na	na	na	na	na	na	na
1987	na	na	na	na	na	na	na	na	na	na	na
1988	na	na	na	na	na	na	na	na	na	na	na
1989	na	na	na	na	na	na	na	na	na	na	na

Note: For nomenclature see "ARGENTINA" above.

APPENDIX (3)

Retail Prices in Selected Latin American Countries and FOB Export  
Prices at Curacao, Monthly, 1975-1989, for Twelve  
Refined Oil Products  
(In current US cents per litre)

Table 1: Retail Prices for Motorgasoline (85 octane) in Selected Latin American Countries and Curacao, Monthly, 1973-1989. (In current US cents per liter)

Table with columns: Yr/Mo, ARG, BOL, BRA, CHI, COL, ECU, PER, URU, VEN, CUR. Rows list months from 1973 J to 1989 D.

Table 2: Retail Prices for Motorgasoline (89/94 octane) in Selected Latin American Countries and Curacao, Monthly, 1973-1989. (In current US cents per liter)

Table with columns: Yr/Mo, ARG, BOL, BRA, CHI, COL, ECU, PER, URU, VEN, CUR. Rows list months from 1973 J to 1989 D.

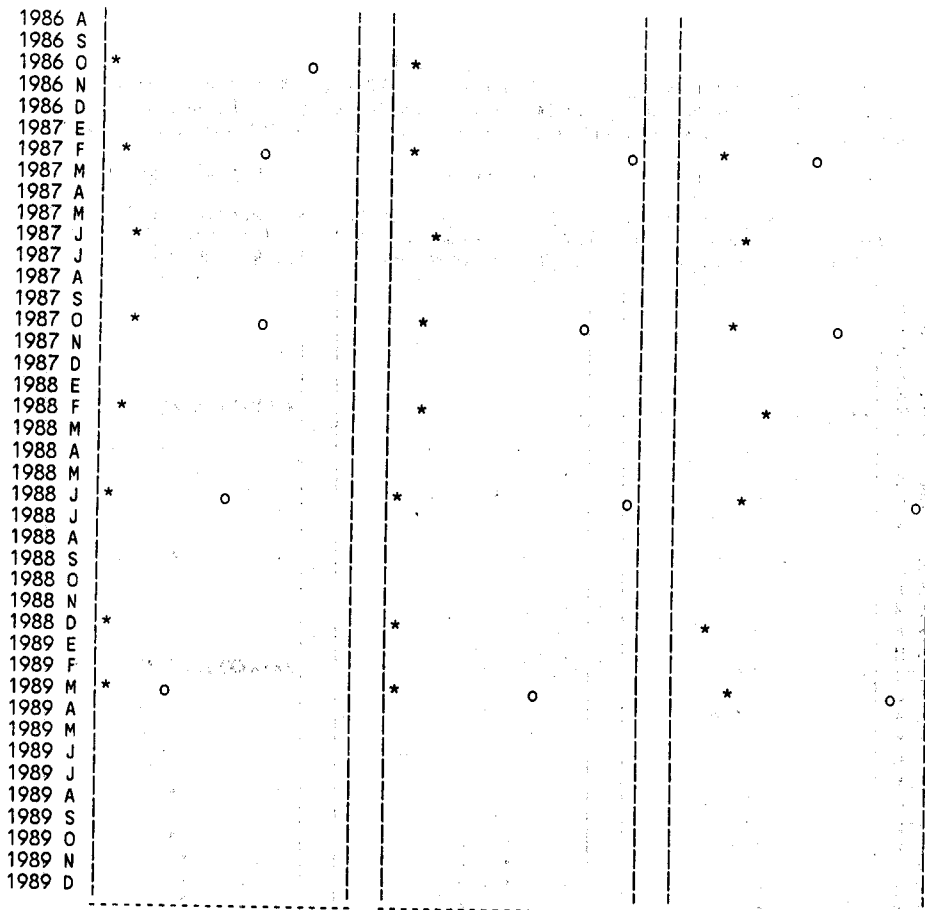
Table 3: Retail Prices for Motorgasoline (90/94 octane) in Selected Latin American Countries and Curacao, Monthly, 1973-1989. (In current US cents per liter)

Table with columns: Yr/Mo, ARG, BOL, BRA, CHI, COL, ECU, PER, URU, VEN, CUR. Rows list months from 1973 J to 1989 D.

SOURCE: "Boletín Informativo", ABPEL (Asociación Reciproc Petrolera Estatal Latinoamericana), Montevideo, Uruguay, various monthly issues.

SOURCE: "Boletín Informativo", ABPEL (Asociación Reciproc Petrolera Estatal Latinoamericana), Montevideo, Uruguay, various monthly issues.

SOURCE: "Boletín Informativo", ABPEL (Asociación Reciproc Petrolera Estatal Latinoamericana), Montevideo, Uruguay, various monthly issues.



Nota: Las escalas presentadas crípticamente en el gráfico se refieren a los siguientes valores mínimos y máximos de cada variable:

Gasolina para motores		Petróleo Diesel		Petróleo pesado	
26.7	69.9	12	28.5	6.6	13.3

Precios reales por litro (centavos de dólar de 1975 por litro).

170	256	358	494	283	960
-----	-----	-----	-----	-----	-----

Consumo aparente (en miles de toneladas métricas).

3.0	5.8	1.3	2.4	2.0	5.4
-----	-----	-----	-----	-----	-----

Relación entre los precios al detalle y los correspondientes precios (FOB) de Curazao.

Leyenda: \* = Precios reales (centavos de dólar de 1975 por litro).  
 x = Consumo aparente (en miles de toneladas métricas).  
 o = Relación entre los precios al detalle y los precios de exportación (FOB) correspondientes en Curazao (relación de precios reales).

Fuente: \* - ARPEL (Asistencia Recíproca Petrolera Estatal Latinoamericana), Boletín Informativo, varios números mensuales, Montevideo, Uruguay;  
 x - Naciones Unidas, Energy Statistics Yearbook, varios números, Nueva York.  
 o - ARPEL (Asistencia Recíproca Petrolera Estatal Latinoamericana), Boletín Informativo, varios números mensuales, Montevideo, Uruguay; Petroleum Economist, varios números, Londres.

Retail Prices for Domestic Crude Oil in Selected Latin American Countries and Currencies, Monthly, 1973-1989.

Table with columns for Year, Country (ARG, BOL, BRA, CHI, COL, CUB, ECU, HON, PER, VEN, YVE, CUR), and Price (in current US cents per litre). Rows list monthly data from 1973 to 1989 for each country.

Retail Prices for Gas Oil in Selected Latin American Countries and Currencies, Monthly, 1973-1989.

Table with columns for Year, Country (ARG, BOL, BRA, CHI, COL, CUB, ECU, HON, PER, URU, VEN, CUR), and Price (in current US cents per litre). Rows list monthly data from 1973 to 1989 for each country.

Retail Prices for Diesel Oil in Selected Latin American Countries and Currencies, Monthly, 1973-1989.

Table with columns for Year, Country (ARG, BOL, BRA, CHI, COL, CUB, ECU, HON, PER, URU, VEN, CUR), and Price (in current US cents per litre). Rows list monthly data from 1973 to 1989 for each country.

SOURCE: "Balcin Informativo", ARPEL (Asistencia Reciproca Petrolera Estatal Latinoamericana), Montevideo, Uruguay, various monthly issues.

SOURCE: "Balcin Informativo", ARPEL (Asistencia Reciproca Petrolera Estatal Latinoamericana), Montevideo, Uruguay, various monthly issues.

SOURCE: "Balcin Informativo", ARPEL (Asistencia Reciproca Petrolera Estatal Latinoamericana), Montevideo, Uruguay, various monthly issues.

Retail Prices for Fuel Oil (Special) in Selected Latin American Countries and Curacao, Monthly, 1975-1989.

Table with columns for Year (Yr/mo), Country (ARG, BOL, BRA, CHI, COL, ECU, HON, PER, URU, VEN, CUR), and Price (in current US cents per litre). Rows list monthly data from 1975 to 1989 for each country.

Retail Prices for Fuel Oil (Heavy) in Selected Latin American Countries and Curacao, Monthly, 1975-1989.

Table with columns for Year (Yr/mo), Country (ARG, BOL, BRA, CHI, COL, ECU, HON, PER, URU, VEN, CUR), and Price (in current US cents per litre). Rows list monthly data from 1975 to 1989 for each country.

Retail Prices for Liquefied Petroleum Gas in Selected Latin American Countries and Curacao, Monthly, 1975-1989.

Table with columns for Year (Yr/mo), Country (ARG, BOL, BRA, CHI, COL, ECU, HON, PER, URU, VEN, CUR), and Price (in current US cents per litre). Rows list monthly data from 1975 to 1989 for each country.

SOURCE: "Balcin Informativo", APPEL (Asistencia Estadística Petrolera Estatal Latinoamericana), Montevideo, Uruguay, various monthly issues. "Petroleum Economist", U.K., various monthly issues.

SOURCE: "Balcin Informativo", APPEL (Asistencia Estadística Petrolera Estatal Latinoamericana), Montevideo, Uruguay, various monthly issues. "Petroleum Economist", U.K., various monthly issues.

SOURCE: "Balcin Informativo", APPEL (Asistencia Estadística Petrolera Estatal Latinoamericana), Montevideo, Uruguay, various monthly issues. "Petroleum Economist", U.K., various monthly issues.

## APPENDIX (4)

Real Retail Prices in Selected Latin American Countries and FOB Export  
Prices at Curacao, Monthly, 1975-1989, for Twelve  
Refined Oil Products  
(In US cents of 1975 per litre)

Retail Prices for Motor gasoline (43 octane) in Selected Latin American Countries and Curacao, Monthly, 1975-1989.

Table with columns: Yr/mo, ARG, BOL, BRA, CRI, COL, ECU, HON, PER, URU, VEN, CUB. Rows list months from 1975 J to 1989 D.

Retail Prices for Motor gasoline (80/80 octane) in Selected Latin American Countries and Curacao, Monthly, 1975-1989.

Table with columns: Yr/mo, ARG, BOL, BRA, CRI, COL, ECU, HON, PER, URU, VEN, CUB. Rows list months from 1975 J to 1989 D.

Retail Prices for Motor gasoline (90/90 octane) in Selected Latin American Countries and Curacao, Monthly, 1975-1989.

Table with columns: Yr/mo, ARG, BOL, BRA, CRI, COL, ECU, HON, PER, URU, VEN, CUB. Rows list months from 1975 J to 1989 D.

SOURCE: "Bolsin Informative", ABPEL (Asociacion Reciprocadora Petrolera Estatal Latinoamericana), Montevideo, Uruguay, various monthly issues.

SOURCE: "Bolsin Informative", ABPEL (Asociacion Reciprocadora Petrolera Estatal Latinoamericana), Montevideo, Uruguay, various monthly issues.

SOURCE: "Bolsin Informative", ABPEL (Asociacion Reciprocadora Petrolera Estatal Latinoamericana), Montevideo, Uruguay, various monthly issues.

Retail Prices for Aviation Gasoline in Selected Latin American Countries: Monthly, 1975-1989. (US cents of 1975 per liter)

Table with columns for Year (Yr), Country (ARO, BOL, BRA, CRI, COL, ECU, HON, HND, VEN, VEN, VEN, VEN), and Price (C). Rows list years from 1975 to 1989 for each country.

Retail Prices for Jet Fuel (JP1) in Selected Latin American Countries: Monthly, 1975-1989. (US cents of 1975 per liter)

Table with columns for Year (Yr), Country (ARO, BOL, BRA, CRI, COL, ECU, HON, HND, VEN, VEN, VEN, VEN), and Price (C). Rows list years from 1975 to 1989 for each country.

Retail Prices for Jet Fuel (JP2) in Selected Latin American Countries: Monthly, 1975-1989. (US cents of 1975 per liter)

Table with columns for Year (Yr), Country (ARO, BOL, BRA, CRI, COL, ECU, HON, HND, VEN, VEN, VEN, VEN), and Price (C). Rows list years from 1975 to 1989 for each country.

SOURCE: "Bolsita Informativa", AEREL (Asociacion Republicas Petroleras Estatal Latinoamericanas), Montevideo, Uruguay, various monthly issues. "Petroleum Economist", U.K., various monthly issues.

SOURCE: "Bolsita Informativa", AEREL (Asociacion Republicas Petroleras Estatal Latinoamericanas), Montevideo, Uruguay, various monthly issues. "Petroleum Economist", U.K., various monthly issues.

SOURCE: "Bolsita Informativa", AEREL (Asociacion Republicas Petroleras Estatal Latinoamericanas), Montevideo, Uruguay, various monthly issues. "Petroleum Economist", U.K., various monthly issues.

Table 1. Retail Prices for Domestic Crude Oil in Selected Latin American Countries and Mexico, 1973-1989. (US cents of 1975 per litre)

Table with columns: Tr/Mo, ARG, BOL, BRA, CHI, COL, ECU, HON, PER, URU, VEN, CUB. Rows represent monthly data from 1973 to 1989 for each country.

Table 2. Retail Prices for Domestic Crude Oil in Selected Latin American Countries and Mexico, 1973-1989. (US cents of 1975 per litre)

Table with columns: Tr/Mo, ARG, BOL, BRA, CHI, COL, ECU, HON, PER, URU, VEN, CUB. Rows represent monthly data from 1973 to 1989 for each country.

Table 3. Retail Prices for Diesel Oil in Selected Latin American Countries and Mexico, 1973-1989. (US cents of 1975 per litre)

Table with columns: Tr/Mo, ARG, BOL, BRA, CHI, COL, ECU, HON, PER, URU, VEN, CUB. Rows represent monthly data from 1973 to 1989 for each country.

SOURCE: "Boletín Informativo", ARPEL (Asistencia Recíproca Petrolera Estatal Latinoamericana), Montevideo, Uruguay, various monthly issues, "Petroleum Economist", U.K., various monthly issues.

SOURCE: "Boletín Informativo", ARPEL (Asistencia Recíproca Petrolera Estatal Latinoamericana), Montevideo, Uruguay, various monthly issues, "Petroleum Economist", U.K., various monthly issues.

SOURCE: "Boletín Informativo", ARPEL (Asistencia Recíproca Petrolera Estatal Latinoamericana), Montevideo, Uruguay, various monthly issues, "Petroleum Economist", U.K., various monthly issues.

Retail Prices for Fuel Oil (special) in Selected Latin American Countries and Curacao, Monthly, 1975-1989.

Table with columns: Yr/mo, ARB, BOL, BRA, CRI, COL, ECU, HON, PER, URU, VEN, CUR. Rows represent monthly data from 1975 to 1989.

Retail Prices for Fuel Oil (heavy) in Selected Latin American Countries and Curacao, Monthly, 1975-1989.

Table with columns: Yr/mo, ARB, BOL, BRA, CRI, COL, ECU, HON, PER, URU, VEN, CUR. Rows represent monthly data from 1975 to 1989.

Retail Prices for Liquefied Petroleum Gas in Selected Latin American Countries and Curacao, Monthly, 1975-1989.

Table with columns: Yr/mo, ARB, BOL, BRA, CRI, COL, ECU, HON, PER, URU, VEN, CUR. Rows represent monthly data from 1975 to 1989.

SOURCE: "Boletín Informativo", APRIL (Asistencia Técnica Petrolera Estatal Latinoamericana), Venezuela, various monthly issues, "Petroleum Economist", U.K., various monthly issues.

SOURCE: "Boletín Informativo", APRIL (Asistencia Técnica Petrolera Estatal Latinoamericana), Venezuela, various monthly issues, "Petroleum Economist", U.K., various monthly issues.

SOURCE: "Boletín Informativo", APRIL (Asistencia Técnica Petrolera Estatal Latinoamericana), Venezuela, various monthly issues, "Petroleum Economist", U.K., various monthly issues.

APPENDIX 5  
CURAZAO 1 Export Prices (FOB) for Selected Refined Oil Products,  
Monthly, 1975-1989.  
(in US current cents per litre)

Table with columns: Yr/mo, G.85, G.95, G.130, K.OVA, DIE.45, FOLL.VEV. Rows from 1975 J to 1989 D.

APPENDIX 6  
CURAZAO 1 Export Prices (FOB) for Selected Refined Oil Products,  
Monthly, 1975-1989.  
(in US cents of 1975 per litre)

Table with columns: Yr/mo, G.85, G.95, G.130, K.OVA, DIE.45, FOLL.VEV, MEND. Rows from 1975 J to 1989 D.

APPENDIX 7  
Rates of Conversion of Local Currency into U.S. Dollars used by APREL in  
its Monthly Reports on the Retail Prices for Refined Oil Products in  
Selected Latin American Countries.  
(in units of local currency per US dollar)

Table with columns: Yr/mo, ARG, BOL, BRA, CHI, COL, ECU, HON, PER, URU, VEN. Rows from 1975 E to 1989 D.

G.85 1 Motor gasoline (85 octane) ; G.95 1 Motor gasoline (95 octane);  
G.130 1 Motor gasoline (130 octane) ; K.OVA 1 Fuel oil (heavy grade 40)  
DIE.45 Diesel Oil, grade 45 ; FOLL.VEV Fuel oil

SOURCE 2 "Boletín Informativo" APREL (Asistencia Reciproca Petrolera Estatal)  
Latinamericana), Montevideo, Uruguay, various monthly issues.

\* The monthly values of the U.S. Consumer Price Index were taken from the  
I.M.F., "International Financial Statistics", various monthly issues.  
Source dates were converted to a base, January, 1975 = 100.

SOURCE 3 "Petroleum Economist", U.K., various monthly issues.

APPENDIX B

Motorgasoline, Diesel Oil and Fuel Oil Consumption  
in Selected Latin American Countries.  
(in thousand of metric tons)

Year	ARG	BOL	BRB	CHI	COL	ECU	HON	PER	URU	VEN
<b>Motorgasoline</b>										
1975	3969	413	10426	994	2518	472	8395	1552	205	4594
1976	4024	375	10810	898	2678	750	8625	1284	258	5115
1977	4511	478	9932	1029	2814	775	8451	1303	250	5721
1978	4396	492	10297	1109	3006	813	9220	1157	700	4650
1979	4978	425	9524	1144	3064	1124	11948	1161	217	4643
1980	5639	351	10258	1188	3171	1268	12835	1269	225	4982
1981	5470	355	9690	1271	3300	1268	12329	1323	237	7249
1982	5295	349	10271	1240	3355	1212	14880	1413	211	7024
1983	5204	341	9935	1186	3165	1114	13650	1159	174	7121
1984	5184	327	10301	1138	3197	1175	13794	1227	171	6793
1985	4958	326	11103	1073	3125	1092	14018	1248	170	6793
<b>Diesel Oil</b>										
1975	9928	139	8877	887	816	444	7434	1130	403	1988
1976	4417	189	11845	787	877	484	8202	1201	448	2189
1977	4732	232	13334	891	978	454	9100	1221	489	2181
1978	4935	255	14447	1087	1037	641	9405	1327	458	3784
1979	7287	255	13134	1131	1129	781	10556	1386	484	3152
1980	7237	261	14825	1193	1227	953	12117	1510	476	3675
1981	6725	287	13735	1403	1278	960	13211	1593	488	3687
1982	7143	235	14718	1378	1319	1082	13112	1551	637	4876
1983	7474	214	13927	1536	1400	953	10262	1765	439	3620
1984	7542	230	14198	1408	1406	919	11073	1755	383	4135
1985	6824	210	17836	1431	1494	848	11619	1800	358	4100
<b>Fuel Oil</b>										
1975	7485	191	13688	1412	1150	430	9063	1770	864	1282
1976	7621	204	14439	1470	1207	470	10526	1776	960	1242
1977	8104	226	14941	1504	1301	408	11941	1908	795	882
1978	7273	230	16413	1618	1803	421	13540	1986	828	1321
1979	7544	210	16374	1581	1725	351	14041	2093	640	2054
1980	6488	145	17767	1621	844	992	15466	2159	812	3104
1981	5502	147	13748	1444	495	1232	15979	2183	660	3390
1982	4978	139	13245	1241	472	1292	17140	1914	425	3316
1983	4775	136	9424	1231	568	1244	18842	1787	310	3230
1984	4421	110	8264	1145	392	1144	19662	1825	312	4444
1985	3293	90	8654	1101	365	1155	21000	1660	283	3900

SOURCE: "Energy Statistics Yearbook", United Nations, various issues.

## EXPLICATIVE NOTES ON THE ARPEL PRICE DATA

<u>Product</u>	<u>Country</u>	<u>Period</u>	<u>Note</u>
Gasoline (63 octane)	Brazil	08/78-02/79	73 Octane
		08/81-10/81	Excluding taxes
Gasoline (80/84 octane)	Brazil	08/81-11/81	Excluding taxes
		Chile	02/79-08/79
	Colombia	12/81-01/85	Price at the pump
		03/83-06/83	Average price to distributor
	Peru	07/83-08/83	Excluding taxes
		10/81-07/82	Retail price
		08/82-09/83	Price at the pump
		04/84-12/84	Retail price
Gasoline (94/96 octane)	Chile	02/79-08/79	Price at the pump
		12/81-01/85	Price at the pump
	Peru	10/81-07/82	Retail price
		08/82-09/83	Price at the pump
		04/84-12/84	Retail price
Aviation gasoline	Brazil	08/78-08/83	Excluding taxes
		01/85	Excluding taxes
	Chile	10/75	For national flights
		01/85	Retail price
	Colombia	08/80-02/83	Average price to distributor
	Peru	10/81-07/83	Excluding taxes
	Uruguay	01/76-06/76	National consumption
JP-1	General	08/75-07/78	Price at airport
		Brazil	10/75
	Brazil	08/78-10/79	Excluding taxes
		09/79-10/79	Price at airport
		05/80-02/81	Price at airport
	Chile	11/81-08/83	Excluding taxes
		10/75	For national flights
		02/79-04/79	Price at airport
		09/79-11/82	Price at airport
	Colombia	02/83-08/83	Price at airport
		01/85	Retail price
		08/80-02/83	Average price to distributor
	Mexico	01/85	Price to distributor
		08/83	Plus 10% value added tax
	Peru	11/82-06/83	Price at airport
Venezuela	08/75	Price for customers with contract	

<u>Product</u>	<u>Country</u>	<u>Period</u>	<u>Note</u>
JP-4	Brazil	08/82-03/83	Excluding taxes
	Peru	04/84-05/84	Retail price
Household kerosene	Chile	02/79-08/79	Price at the pump
		12/81-01/85	Price at the pump
	Peru	10/81-07/83	Retail price
		08/83	Price at place of sale
		09/83	Price at the pump
	04/84-12/84	Retail price	
Diesel and Gas Oil	Chile	02/80-01/85	Price at the pump
		10/81-07/83	Retail price
	Peru	08/83	Price at place of sale
		04/84-07/84	Retail price
		08/84-12/84	Price at refineries or distributor's plants
Fuel oil No. 5	Brazil	02/78-05/78	Excluding tax
		07/78-04/79	Price at the port base
	Chile	01/82-09/83	Price at the port
		10/83-01/85	Price at the refinery or distributor's plant
		Peru	08/83
		09/83	Price at the pump
		07/84	Price at the refinery or distributor's plant
Fuel oil No. 6	Brazil	02/78-05/78	Excluding tax
		08/78-08/83	Excluding tax
	Chile	01/85	Excluding tax
		01/82-09/83	Price at the port
		10/83-01/85	Price at the refinery or distributor's plant
	Colombia	03/83-01/85	Average price to distributor
	Peru	08/83	Price at place of sale
09/83		Price at the pump	
07/84		Price at refinery or distributor's plant	

<u>Product</u>	<u>Country</u>	<u>Period</u>	<u>Note</u>
Liquified gas	Bolivia	04/79-04/80	Average price to distributor
	Chile	02/79-09/83	Price at place of sale
		10/83-01/85	Price at the pump
	Peru	11/78-04/79	Price for 24 lb cylinder
		10/79-09/81	Price for 24 lb cylinder
		10/81-07/83	Price at the port
		08/83-09/83	Retail price
		07/84-12/84	For cylinder of 24 lbs
		02/86-03/88	For cylinder of 24 lbs