Fuel Pricing Policies in South America and Mexico

Economic and Environmental Implications

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Foreword

The United Nations Environment Programme (UNEP) and the International Energy Agency (IEA), in late 2000 and early 2001 conducted a series of workshops on the theme of energy-subsidy reform. Workshops were held in Paris (November 2000), Durban (December 2000), Bangkok (January 2001) and Santiago (March 2001). Representatives of governments, non-governmental organisations, the academia and various stakeholders attended the workshops.

Realising the need for further research in the area, and as a follow-up to the UNEP-IEA initiative, the UNEP Risø Centre (URC) and the Economic Commission for Latin America and the Caribbean (ECLAC) drew up in October 2002, a collaboration agreement on energy pricing and environmental issues. As a result of the collaboration agreement, a research project aimed at analysing the economic and environmental implications of current fuel pricing policies in Latin America was initiated in November 2002. As part of the project, a regional workshop was held in Santiago at ECLAC's headquarters on December 3 – 4, 2002. One of the main objectives of the workshop was to bring together representatives of oil self-sufficient, oil importing and oil exporting countries to discuss fuel pricing policies applied in the various countries of the region, and their impacts on the economy and the environment. The workshop was attended by representatives of governments, academia and stakeholders from ten countries of the region, namely, Argentina, Bolivia, Brazil, Colombia, Chile, Ecuador, Paraguay, Peru, Uruguay and Venezuela.

The work presented here reflects the outcome of the discussions held during the two-day workshop on the economic and environmental implications of current fuel pricing policies in South America, as well as the result of an extensive data survey of the ten countries mentioned above together with Mexico. The fuel pricing policies being currently implemented in these countries are presented, and their implications for the economy and the environment discussed.

Most of the fuels analysed here are used by the transport sector. Although technical options such as electric and fuel cell vehicles are likely to be the best alternatives for the future in developed countries, these are not affordable for many of the developing countries in the near future. Our belief is that fuel pricing may constitute an effective instrument through which objectives such as increased energy efficiency and energy conservation can be achieved in a relatively short period of time, with the corresponding benefits for both the local and global environment.

Acknowledgments

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1. INTRODUCTION

1.1 Background

Increasing industrialisation and income levels in developing countries are leading to increased demand for energy. A vast majority of this energy is based on fossil fuels, where oil represents the largest share. The burning of fossil fuels gives rise to emissions of gases which have severe impacts on both the local and global environment, and most importantly on human health. In spite of this, oil consumption has been steadily increasing during the last decades, and is expected to continue doing so. According to the Intergovernmental Panel on Climate Change (IPCC) second assessment report, the use of energy, and in particular of fossil fuels, is expected to double by 2020 (IPCC, 1996). According to projections made by the International Energy Agency (IEA) in 2000, total energy demand for oil in Latin America was expected to increase from 6.1 million barrels in 1997, to 10.9 million barrels in 2020, (IEA/OECD, 2001). In the 2004 projections made by the Energy Information Administration (EIA), energy demand for transportation is expected to grow from 26.8 quadrillion Btu[1] in 2002 to 41.2 quadrillion Btu in 2025, (EIA, www.eia.doe.gov). In the absence of energy pricing policies that can discourage the use of energy, and in particular of fossil fuels, this pattern is likely to continue.

In Latin America, fuel prices have historically been well below world market prices. Prior to the energy reforms that took place in the early 1990s, energy prices did not follow conventional marginal cost or opportunity cost pricing rules, but were instead set with particular regard for income distribution goals or with the avowed purpose of promoting industrialisation. For instance, during the 1970s, oil products like diesel (because its use in military transportation) were heavily subsidised. This meant an implicit subsidy, since the export earnings forgone were an alternative cost for the cheap

[1] The Btu /British Thermal Unit) is a unit to measure the amount of energy required to raise the temperature of 1 pound water 1 degree Fahrenheit when the water is near 39.2 degrees Fahrenheit. One barrel of crude oil = 5.8 million Btu.

petrol sold domestically. This policy was carried out mainly by the oil exporting countries, but also by non-oil exporting countries where oil companies have been state owned. This situation started to change in a number of countries at the end of the 1980s as a result of energy reforms, which included changes in pricing policies. These reforms allowed for private sector participation in the exploration, production and distribution of these products, thus leading in most of the countries to the pricing system being decentralised and profitability criteria being incorporated into the state owned companies. In some countries where energy had been heavily subsidised, energy reforms contributed to reducing or dismantling subsidies and thereby to price levels more in line with those of the industrialised countries. Nevertheless, in several countries of the region energy subsidies are still in place. These subsidies are creating market distortions, with prices still well below world market prices being one of the results.

1.2 Objectives and Scope of the Study

The objective of this study is twofold. The first objective is to map current fuel pricing policies in a number of South American countries and Mexico. This information will allow us to compare the pricing policies implemented in the various countries of the region. The second objective is to analyse the implications of these policies with regard to the economy and the environment. The study is intended to facilitate dialogue among governments, decision makers and the various stakeholders in the countries studied here, as well as in other countries of the region.

Although the intention was to include all the countries of the South Cone, for reasons of lack of data availability, countries like Suriname and Guyana had to be omitted. The study focuses on current fuel pricing policies in Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay, Venezuela and Mexico. The fuels studied are gasoline, diesel, kerosene, liquefied petroleum gas (LPG) and fuel oil - products for which data are most easily found. The analysis of the price structure for fuels focuses on the price formation chain of the downstream, including the three main components, namely, pre-refinery, taxes and mark-ups. Price structures for the last two years

(December 2001 and December 2002) are presented and compared. The study also includes a presentation of the monitoring process for fuel pricing applied in the countries studied.

1.3 Data Sources and Terminology

1.3.1 Data Sources

Data limitations are substantial in some of the countries of the region. As mentioned earlier, for that not all the South American countries could be included in the study. There have also been problems of data availability for some of the countries included here, so that the degree of detail may vary from country to country. The data used for this study have been collected from the following sources:

Argentina
- Fundación Bariloche, www.bariloche.com.ar
- Argentinean Energy Institute (IAE), www.iae.org.ar
- Organisation Jorge Lapeña & Associates
  contact: Ing. Gerardo Rabinovich gerardoa@speedy.com.ar
- Secretariat of Energy and Mines, www.energia.miv.gov.ar
  contact: Roberto Fanesi rfanes@miv.gov.ar

Bolivia
- Central Bank of Bolivia, http://www.bcb.gov.bo/
- Bolivian Chamber of Hydrocarbons, www.cbh.org,bo
- National Chamber of Industry, http://www.bolivia-industry.com/index2.htm
- National Institute of Statistics, http://www.ine.gov.bo/
- Internal Revenue Service, http://www.si.gov.bo/
- Sectoral Regulation System, www.sirese.gov.bo
- Office of the Superintendent of Hydrocarbons of Bolivia, http://www.superhid.gov.bo/
  contact: Javier Rivero Zuazo jrivero@superhid.gov.bo
  contact: Roland Ponce rponce@superhid.gov.bo

Brazil
- National Petroleum Agency of Brazil www.anp.gov.br
  contact: Luiz Horta Nogueira; Julio Colombi Neto horta@anp.gov.br
- Ministry of Mines and Energy www.mme.gov.br
  contact: Joao Antonio Patusco joao.patusco@mme.gov.br
- Petrobras. www.petrobras.com.br
  contact: produtos@petrobras.com.br

Colombia
- Bank of the Republic of Colombia, www.banrep.gov.co
- Energy and Gas Regulatory Commission, www.creg.gov.co
- Colombian Petroleum Company, www.ecopetrol.com
- Ministry of Mines and Energy, www.minminas.gov.co
  contact: Hector Moreno hectormoreno@uol.com.co
- Mining and Energy Planning Unit of Colombia, www.upme.gov.co
  contact: Jaime Guerra jaime.guerra@upme.gov.co

Chile
- National Energy Commission, www.cne.cl
  contact: Yamal Soto Morales ysoto@cne.cl
- National Petroleum Company, (ENAP), www.enap.cl
- National Institute of Statistics, (INE), http://www.ine.cl
- Internal Revenue Service, www.sii.cl

Ecuador
- Central Bank of Ecuador, www.bce.fin.ec
- Ministry of Energy and Mines, www.menergia.gov.ec
  contact: Angela Sojos asojos@menergia.gov.ec
- PetroEcuador, www.petroecuador.com.ec
- Petrocomercial de PetroEcuador, www.petrocomercial.com.ec
- Internal Revenue Service of Ecuador, http://www.sri.gov.ec/

Mexico
- Energy Regulatory Commission, www.cre.gob.mx
  contact: Alejandro Escandón dadminis@cre.gob.mx
  contact: Efrain Tellez etellez@cre.gob.mx
- National Organisation of Petroleum Expenders, www.onexpo.com.mx
- Petróleos Mexicanos, http://www.pemex.com/
  Contact: Francisco Javier Quezada Sánchez fquesada@ref.pemex.com
- Ministry of Finance and Public Credit, http://www.shcp.gob.mx/
  contact: Asistencia Técnica asisnet@sat.gob.mx

Paraguay
- General Fuels Office
  contact:Luis Villalba combustible@mic.gov.py
- Ministry of Industry and Commerce, www.mic.gov.py,
- Petróleos Paraguayos, Petropar
  contact: Doris Sanabria petropar@conexion.com.py
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Peru
- Central Reserve Bank of Peru, www.bcrp.gob.pe
- Ministry of Energy and Mines, www.mem.gob.pe
- Petróleos del Perú, www.petroperu.com

Uruguay
- National Fuel, Alcohol and Portland Administration(ANCAP), www.ancap.com.uy
- National Energy Office, www.dne.gub.uy
  contact: Cristina Mattos cristina.mattos@dne.miem.gub.uy
- Ministry of Economy and Finances, Dirección General Impositiva,
  http://www.dgi.gub.uy/
- Ministry of Industry, Energy and Mining, www.miem.gub.uy

Venezuela
- Latin American Commission of Fuel Companies, www.claec.org
- Ministry of Energy and Mines, http://www.mem.gov.ve/
  contact: Ingrim Tositti itossitti@mem.gov.ve
- Petróleos de Venezuela Sociedad Anónima. PDVSA, www.pdvsa.com

Other Organisations
- Economic Commission for Latin America and the Caribbean (ECLAC), www.eclac.cl
- Latin American Energy Organisation (OLADE) www.olade.org.ec
  contact: Gabriel Hernandez ghernand@olade.org.ec
  contact: Byron Chiliquinga bchiliq@olade.org.ec
- United States Department of Energy (US-DOE),
  http://www.energy.gov/engine/content.do

1.3.2 Terminology

Downstream: Includes the stages of refining, marketing, transport and storage of petroleum-based products.

Price alignment index: Corresponds to the ratio of the variation in the ex-refinery price of an oil product with respect to the benchmark value and the international cost of refining the same product for the same period.

Oil self-sufficient country: A country whose oil production is sufficient to satisfy its domestic market and which may be a marginal exporter or importer of energy.

Oil exporting country: A country whose oil production is sufficient to satisfy its own domestic needs and which has a surplus for marketing and supplying other countries.

Oil importing country: A country whose oil-producing capacity is not sufficient to satisfy its domestic market.

Import parity price (IPP): This is a pricing mechanism. Conceptually, it is the price determined by the most economic cost for importing fuels from the most competitive market, which has the size, the depth, the stability and the liquidity necessary for a reliable and constant supply. Generally speaking, the countries or companies that use this pricing system base their prices on an external competitive market over which they have no capacity for control (United States Gulf Coast). The IPP is calculated by taking the **FOB price**, free on board ship with all expenses, duties, taxes (for example, the point of origin in this case may be considered to be the United States Gulf Coast) adding an amount for freight, which represents the cost of transport from the Gulf Coast to the port of importation in the country of destination, another amount for insurance (insurance for the product shipped) in order to obtain the **CIF** price. Other variables are added to this price, namely, losses, customs duties, credit card expenses, storage costs, among others, to obtain the Plant Import Parity (parity price at the exit of the storage tank).

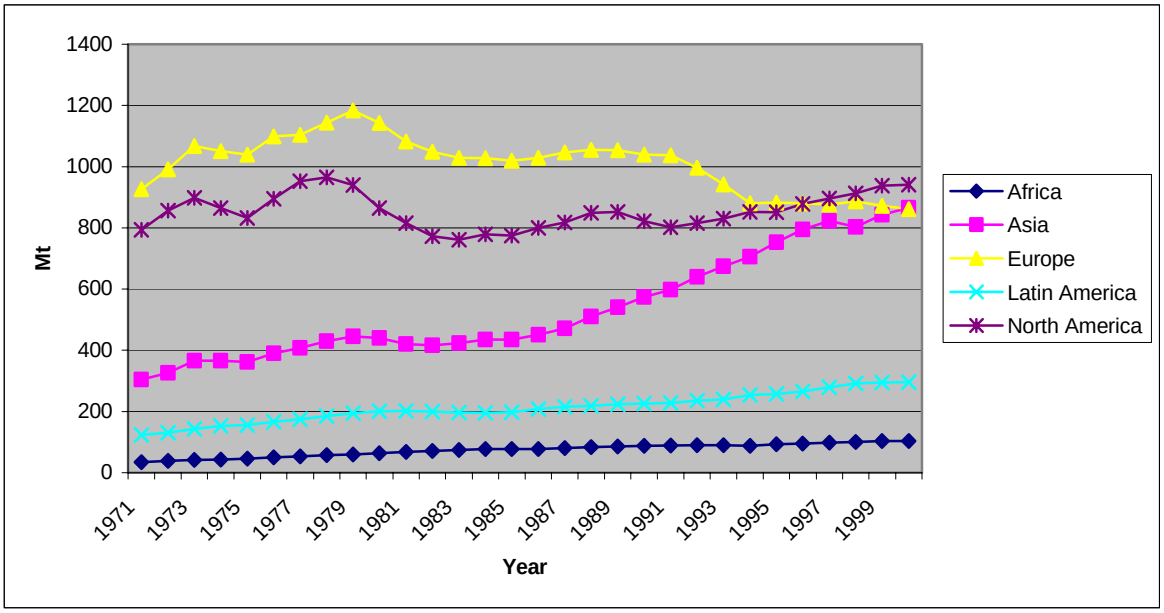
Reference price: The average value of daily prices for a petroleum-based product published in Platt's Oilgram US Marketscan, taking the maximum and minimum values to determine the monthly arithmetical average price. Also referred to as market indices of refined products for New York and the United States Gulf Coast, widely used in Latin America as the basis for pricing formulae.

Ex-refinery price: The transfer price for petroleum-based products from the refinery gate to a point of sale, whether a distributor or service station. Also referred to as producer income.

1.4 Energy Prices and Consumption

Right energy pricing is fundamental to an efficient allocation and use of energy resources, and also to ensuring that the economic, social and environmental costs, including the costs of the externalities associated with its use, are reflected in the price. Low energy prices lead not only to an excessive demand for it, but also contribute to discouraging research and investment in cleaner and renewable energy. The inverse relationship between energy use and energy prices was reflected in the 1973/74-and 1979/80 oil-price shocks. The increases in oil prices that took place in those two periods were clearly reflected in decreased oil consumption worldwide. After the two oil-price shocks, prices fell to previous levels, with increased oil consumption as one result. The response to these oil-price shocks, in terms of oil products domestic consumption in five of the regions of the world, is shown in Figure 1.1.

Figure 1.1 Oil products domestic consumption 1971 – 2000



Source: World Energy Database, 2003

Oil products domestic consumption decreased considerably in Europe and North America during the two oil-price shocks. The decrease in consumption was much less during these periods in Asia, Latin America and Africa were almost unaffected. In the case of Asia, the less marked decrease during the two periods may have been because of the expanding

economies of the new industrialised countries. Most notably, a significant increase was experienced in Asia during the oil-price shocks. In Latin America, except for the slight decrease in oil consumption observed after the second oil-price shock, a constant increase is observed throughout the period. One reasonable explanation is that income effects mitigated the price effect: in countries like Ecuador, Venezuela and Mexico, all oil exporting countries, increased oil prices meant increased income, which left total domestic oil consumption less affected. Domestic oil consumption has been quite low and flat in Africa, probably already at levels that did not leave any room for decreases.

Increasing demand for energy, accompanied by low energy prices, is most likely to strengthen the current pattern. One of the reasons for low energy prices in developing countries has been the presence of subsidies. A subsidy normally implies a market distortion, which is both economically inefficient, and detrimental to the environment. In order to come to grip with this problem, and to curb increased consumption, the existing pricing policies in developing countries need to be revised.

1.5 Oil Price Formation: an overview

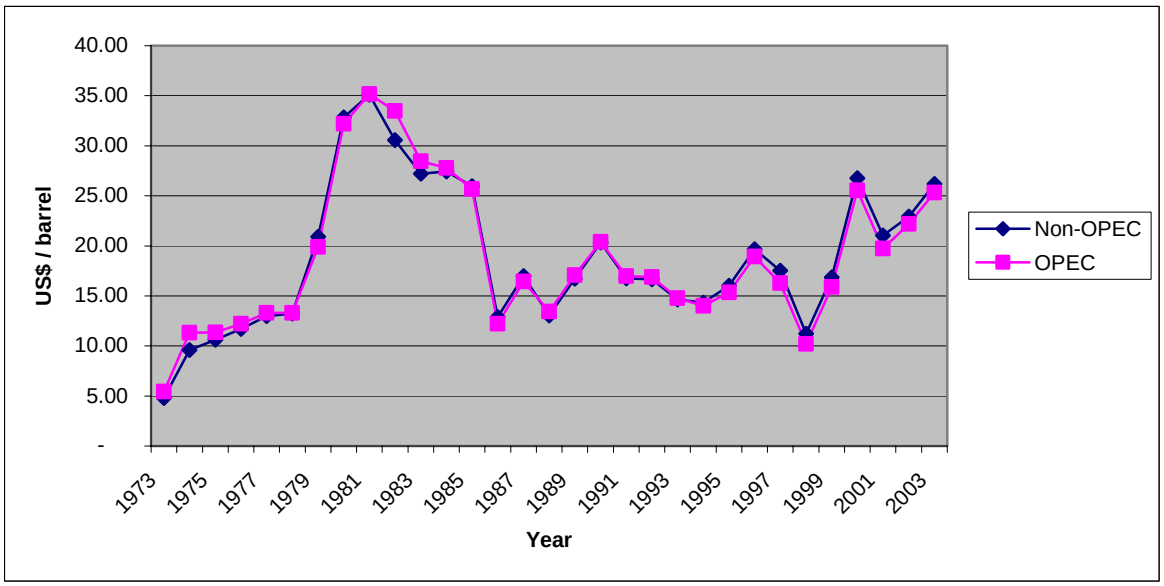
Crude oil varies according to specific gravity and sulphur content, so that a marker is normally used in the pricing process. Due to its importance in terms of both production and reserves, Arabian light has been widely used, but its role started to decline in the middle of the 1980s, with other markers having an increasing role. Different oil producers use different markers for their pricing. For instance, OPEC[2] collects pricing data on a basket of seven crude oils, which are used as markers: Algeria's Saharan Blend, Indonesia Minas, Nigeria Bonny Light, Saudi Arabia, Arab Dubai Fateth, Venezuela Tia Juana, and Mexico Isthmus, a non-OPEC oil. This price mechanism was introduced in 1987, and is an average of the seven crude oils (EIA, www.eia.doe.gov). Non-OPEC oil producing countries, on the other hand, use other major crude oils as markers, which are traded on international exchanges. West Texas Intermediate (WTI) is for instance, the

[2] OPEC was founded in 1960 and member countries are: Algeria, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, the United Arab Emirates and Venezuela.

main crude oil marker for the United States. In a similar way, Dubai's Fateth is used as a major marker for oil in Asian markets. North Sea Brent crude is used as a marker for a considerable share of the world's traded oil.

OPEC has played an important role in oil price determination. Although its role has decreased during the last years, mainly due to non-adhesion to its pricing policies from the part of non-OPEC countries, its role and leadership in price determination is still significant. This can be clearly observed in Figure 1.2, which shows how OPEC and non-OPEC prices closely follow each other.

Figure 1.2 Crude oil import FOB Non-OPEC and OPEC prices 1973 – 2000



Source: International Energy Agency (IEA), www.eia.doe.gov

The price mechanism implemented by OPEC has not been always used, however, and there have been other factors such as political events and international conflicts that have considerably influenced its pricing decisions. For instance, the oil-price shocks of 1973/74 and 1979/80 were more the result of a voluntary reduction in supply caused by its member countries than a decision based on the average of the seven used markers. These reductions were in turn influenced by the two international conflicts that took place in 1973 and 1979, namely the Arab-Israeli war and the Khomeini revolution respectively. Other factors influencing OPEC's price decisions are government policies aimed at

reconciling profitability interests with the political and social interests of the country. This is clearly reflected in OPEC's principal aims, which are to coordinate and unify petroleum policies among member countries and to safeguard the interest of its members, and also to stabilise oil prices in international markets, thus avoiding fluctuations which may jeopardise a steady income for the member countries.

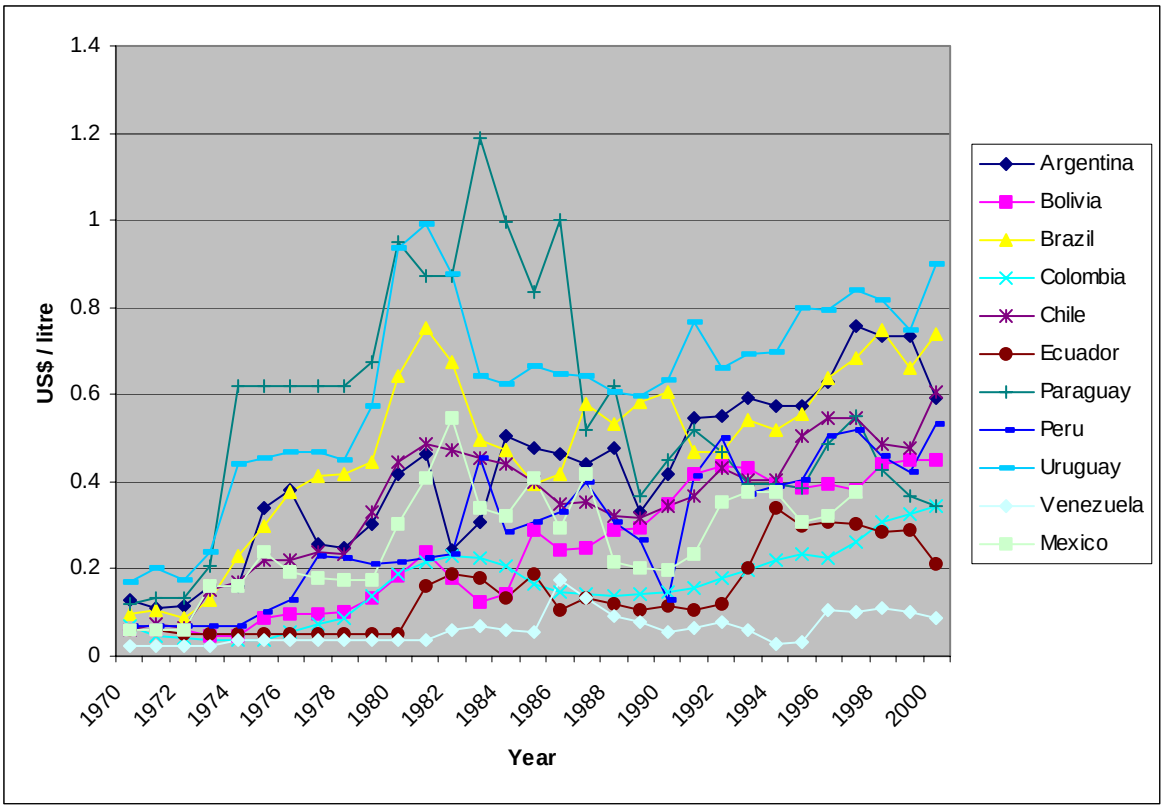
OPEC's large contribution to world oil production is likely to be the most important reason for its influence on oil price determination. It accounted for nearly 40% of the world's oil production in 2002 and its share is expected to increase. According to some estimations, of the total proven crude oil reserves of the world's 1.21 trillion barrels, 759 billion barrels (66%) are held by OPEC (EIA, www.eia.doe.gov). Another factor that has influenced the development of the oil market, in terms of both produced quantity and prices, is the fact that some of the non-OPEC oil producing countries have on a number of occasions coordinated production with OPEC. For instance, Mexico, one of the major non-OPEC oil-producing countries, played a key role in the decision to cut oil production in 1998. Similarly other non-OPEC oil producing countries like Norway, Russia, Oman and Angola coordinated output cuts between late 2000 and early 2001.

At the retail level, crude oil represents a significant share of the retail prices of petroleum products. Its share varies considerably between countries, however, depending on, among other things, the tax level. In developing countries, crude oil normally represents around 40% of petroleum product prices, while in OECD countries this share is much less, mainly because taxes represent a much higher share of the total price. Other factors affecting the retail price of petroleum products are inventories, which in turn are affected by the demand and supply balances, and local production structures of energy industries.

1.6 The Pricing of Oil Products in South America and Mexico: an overview

In the South American region, petroleum product prices have historically been set without following conventional marginal cost or opportunity cost pricing, but rather with regard to political considerations, income distribution goals and promoting industrialisation. In most of the countries of the region, particularly during the 1970s, petroleum product domestic prices were well below world market prices. This particularly applied to the oil exporting countries Ecuador, Venezuela and Mexico, which had (and still have) very low prices compared not only to the rest of the world but also to other countries of the region. As a rule, oil products such as kerosene (because its use by the poor) or diesel (because its role in agriculture and transportation) and fuel oil (because its use in industry), have been heavily subsidised. By contrast, in most of the industrialised countries, these products are priced in a similar way and their prices generally follow world market prices closely. The existence of subsidies, and hence of low prices, applies also to gasoline for transportation. Since data on gasoline prices are most easily found among the fuels studied here, Figure 1.3 shows the development of gasoline prices in the ten South American countries and Mexico during the last three decades.

Figure 1.3 Gasoline prices 1970 – 2000



Source: World Energy Database, 2002

In spite of the fact that countries like Argentina and Brazil have relatively large oil production, they have the highest gasoline prices in the region, maybe because taxation levels are more in line with those of the industrialised countries. The lowest gasoline prices can be found, as expected, in the oil exporting countries Ecuador, Venezuela and Mexico. In the case of Ecuador and Venezuela, oil prices were flat through out the 1970s, despite the oil-price shocks of 1973/74 and 1979/1980, probably mainly because of low production costs, but also as a result of subsidies.

In Ecuador, where the Ministry of Energy and Mines (MEM) has been in control of prices, energy has been heavily subsidised, even into the early 1990s. The amount of energy subsidies was estimated to exceed US$600 million or 6% of the GDP in 1991. Of these, US$400 million, or 4% of the GDP, corresponded to subsidies to petroleum products (World Bank, 1994). However, in 1992, the government started to eliminate part

of the subsidies to oil products which led to substantial price increases as can be observed from the gasoline price shown in Figure 1.3.

In Venezuela, prices are similarly entirely controlled by the government. Oil product prices are very low compared even to other countries of the region, partly because of low production costs, but also because they are heavily subsidised.

Gasoline prices have fluctuated more in Mexico throughout the period, and in particular were higher than those of Ecuador and Venezuela during the 1980s and 90s. This may be the result of measures by the government aimed at easing the entrance of new actors into the oil sector, but also because it intended to promote price levels more in line with international ones.

In spite of the liberalisation process that took place in the region, a number of countries continued to apply energy pricing policies that counteracted it. For instance, Chile adopted a pricing policy that indirectly meant the incorporation of a subsidy. In 1991, as a consequence of the oil crisis prompted by the Gulf war, the Chilean government decided to protect domestic oil prices from international fluctuations by creating a fund aimed at stabilising them through protecting them from international price fluctuations. Under the fund, the government intervenes, either by granting a loan or by taxing the fund, depending on the difference between a pre-determined parity price and a reference price. The parity price, which is an average price of the current week, is calculated every week based on the import oil prices from the previous week and the expected import prices for the coming week. The reference price is an average of the international oil prices for the last two years, and of the expected medium- and long-term prices. Upper and lower bands of 12.5%, for the difference between parity and reference price, are allowed. Thus, if the difference between parity price and reference price is more than 12.5%, the government gives a loan corresponding to 100% of the difference. If this difference is less than 12.5%, the government levies a 60% tax on it.

Bolivia and Peru have had prices somewhere in between the rest of the countries for most of the period. Paraguay had one of the highest gasoline prices until the end of the 1980s, but prices went done in the early 1990s and have been relatively low since then.

Taxation of petroleum products also varies considerably within South America. As with prices, the differences relate to whether the country is an oil exporting country or importing country, the exporters generally having much lower taxes on petroleum products. The behaviour of the oil sector in the South American countries and Mexico is highly dependent on whether the countries are self-sufficient in oil, oil importers or oil exporters, so that a thorough analysis of the countries included here requires dividing them into these three different groups.

2. COMPARATIVE ANALYSIS OF FUEL PRICES IN OIL SELF-SUFFICIENT, OIL IMPORTING AND OIL EXPORTING COUNTRIES

2.1 Analysis of the price chain in oil self-sufficient countries

2.1.1 Ex-refinery prices

Table 2.1 gives a summary of average ex-refinery prices (without marketing costs, free of taxes, but incorporating the refiner's mark-up) observed in December 2001 and December 2002 in oil self-sufficient countries (Argentina, Bolivia and Colombia), as well as the ex-refinery international market benchmark price (IMBP).

Table 2.1 Comparison of ex-refinery prices in oil self-sufficient countries

	December 2001 US$ / litre				December 2002 US$ / litre			
	Argentine	Bolivia	Colombia	IMBP	Argentine	Bolivia	Colombia	IMBP
Exchange rate	1.000	6.814	2305.3	-	3.446	7.454	2813.28	-
Regular gasoline	0.199	0.170	0.166	0.144	0.201	0.228	0.150	0.220
Premium gasoline	0.276	0.205	0.183	0.156	0.238	0.264	0.202	0.231
Diesel oil	0.211	0.213	0.129	0.143	0.170	0.287	0.117	0.227
Fuel oil	0.132	0.216	0.074	0.104	-	0.275	0.145	0.163
Kerosene	-	0.193	0.146	0.146	-	0.234	0.195	0.229
LPG (kg)	0.250	0.133	0.202	0.165	0.102	0.101	0.195	0.288

Notes:
- The CIF price was estimated by adding 7% freight and 0.02% insurance to the international market benchmark price (IMBP)) of regular and premium gasoline, diesel oil and kerosene in the Gulf Coast of the United States.
- The IMBP of fuel oil in the Gulf Coast States of the United States is the CIF price.
- The IMBP of the liquefied petroleum gas is for Mont Belvieu reference market, FOB Spot Price for propane, to which was added 15% freight and 0.02% insurance to estimate the CIF price.
Source: Economic Commission for Latin America and the Caribbean (ECLAC), with data from the the Argentinean Energy Institute (IAE), Office of the Superintendent of Hydrocarbons of Bolivia and the Mining and Energy Planning Unit of Colombia (UPME).

In December 2001, the ex-plant prices of all oil self-sufficient countries were higher than international prices (IMBP), a situation which changed drastically in December 2002, when they fell below international market prices, except in the case of Bolivia.

Argentina is the country which showed the greatest distortion in December 2001 inasmuch as the ex-refinery price for regular gasoline exceeded the IMBP by 38%; the price for premium gasoline was 77% higher, LPG and diesel were 51% and 48% higher respectively; and even fuel oil, which is supposedly an intensively used fuel in the industrial sector or in the generation of electricity, was 27% higher. This situation changed radically in December 2002 following the loss of convertibility and subsequent devaluation of the currency. Only premium gasoline was 31% higher. Despite this short-term situation and since Argentina is an oil self-sufficient country, the market was strongly concentrated in the leading multinationals (Repsol, YPF, ESSO, Shell), so that the fuel market still does not show competitive conditions that reflect international market trends.

Bolivia is expected to deregulate its domestic fuel market, but during the period covered by this study, it maintained a State pricing policy. Thus, although its prices have tended to be similar to the international ones, they are not strictly governed by the variations observed in the international market. Discrepancies are not as marked as in the case of Argentina, except in the case of fuel oil, which presented values 110% and 69% higher, and to a lesser extent for diesel oil with 49% and 26% higher for 2001 and 2002 respectively. On the other hand, one can suspect the presence of a subsidy for LPG, since the domestic price is only 35% of the international price.

Since deregulation of the fuel market in December 1998, Colombia has brought its ex-refinery prices for regular and premium gasoline and LPG more in line with international prices. Although an effort has been made to eliminate most of the subsidies by Ecopetrol, prices, which were 15% higher in 2001, diminished in December 2002 to show quite a considerable gap: 13% lower in premium gasoline, 32% for regular gasoline and LPG; and a very sharp difference in the case of diesel oil: 48%.

2.1.2 Taxes

The second component of the price structure of petroleum-based fuels is tax, which varies from country to country according to the laws of each one (Methodological annex, 1.1, 1.2 and 1.3). In addition, almost all countries charge a fixed or specific tax per litre or per gallon of gasoline sold.

Table 2.2 Comparison of taxes associated with petroleum-based fuels in oil self-sufficient countries

	December 2001 US$ / litre			December 2002 US$ / litre		
	Argentine	Bolivia	Colombia	Argentine	Bolivia	Colombia
Regular gasoline	0.580	0.276	0.146	0.239	0.170	0.127
Premium gasoline	0.605	0.418	0.178	0.250	0.395	0.155
Diesel oil	0.279	0.209	0.073	0.156	0.091	0.064
Fuel oil	0.037	0.081	0.012	-	0.086	0.023
Kerosene	0.288	0.035	0.023	0.113	0.041	0.031
LPG (kg)	0.238	0.039	n.a.	0.125	0.034	n.a.

Note:
n.a.: not applicable
Source: ECLAC, with data from the IAE, Office of the Superintendent of Hydrocarbons of Bolivia and the UPME of Colombia.

In December 2001, Argentina levied the highest taxes on derivatives compared with other oil self-sufficient countries, while Colombia had the lowest. In December 2002, as a result of the devaluation of the Argentine currency and the end of convertibility, taxes on petroleum-based products in Argentina were reduced sharply, but they remained high in comparison with Colombia and Bolivia. In all cases, gasolines were the fuels that brought in the most revenue to the government treasury, with taxation per litre equivalent to almost twice the average tax applied to other fuels (Table 2.2).

In the case of Bolivia, the taxes on special gasoline and diesel were cut back sharply, in particular the Special Tax on Hydrocarbons and their derivatives which fell from US$0.605 per litre to US$0.25 per litre, that is 142% on special gasoline, while that of diesel fell from US$0.279 to US$0.156 per litre, that is 78%.

2.1.3 Mark-ups

The third component of the price structure for petroleum-based fuels is the mark-up; this includes the cost of storage of the product, transport (pipelines), costs of transporting the product to the service stations and mark-ups for wholesale and retail distributors.

Table 2.3 Comparison of gross mark-ups associated with petroleum-based fuels in oil self-sufficient countries

	December 2001 US$ / litre			December 2002 US$ / litre		
	Argentine	Bolivia	Colombia	Argentine	Bolivia	Colombia
Regular gasoline	0.105	0.039	0.060	0.048	0.039	0.055
Premium gasoline	0.127	0.050	0.081	0.056	0.049	0.084
Diesel oil	0.080	0.035	0.056	0.058	0.035	0.048
Fuel oil	0.014	0.026	-	-	0.026	-
Kerosene	-	0.031	0.033	-	0.030	0.027
LPG (kg)	0.512	0.135	0.095	0.296	0.135	0.083

Source: ECLAC, with data from the IAE, Office of the Superintendent of Hydrocarbons of Bolivia and the UPME of Colombia.

Table 2.3 shows that in December 2001, as in December 2002, Argentina had the highest average mark-ups of the oil self-sufficient countries; in the case of LPG, it was four and three times higher respectively than in Bolivia and Colombia, ratios which fell to half those values towards the middle of 2002. Wholesale and retail margins in Bolivia present a similar value in December 2001 as well as December 2002, reflecting full control of this component.

2.1.4 Full price

Lastly, the sum of the three components - that is, the ex-refinery price plus taxes plus gross mark-up - gives the full price.

Table 2.4 Comparison of full prices of petroleum-based fuels in oil self-sufficient countries

	December 2001 US$ / litre			December 2002 US$ / litre		
	Argentine	Bolivia	Colombia	Argentine	Bolivia	Colombia
Regular gasoline	0.884	0.485	0.372	0.487	0.438	0.332
Premium gasoline	1.008	0.672	0.442	0.544	0.709	0.440
Diesel oil	0.570	0.458	0.257	0.384	0.414	0.230
Fuel oil	0.183	0.322	0.086	-	0.387	0.168
Kerosene	0.612	0.258	0.202	0.390	0.305	0.253
LPG	1.000	0.306	0.297	0.522	0.269	0.278

Source: ECLAC, with data from the IAE, Office of the Superintendent of Hydrocarbons of Bolivia and the UPME of Colombia.

Table 2.4 shows a decline in the full price in December 2002 compared with December 2001. The full price for regular gasoline in Argentina is almost double those of Bolivia and Colombia for December 2001, while the differences are much slighter a year later.

In premium gasoline and diesel oil, the same occurred for December 2001; however, in December 2002, Bolivia had the highest prices in both fuels. Meanwhile, Argentina had the highest full price for domestic kerosene and Colombia, the lowest. Lastly, Argentina's full price for LPG was higher than the rest, while the country with the lowest full price was Colombia in 2001 and Bolivia in 2002.

It can also be seen that Argentina was the only country to have recorded a considerable decline in the consumer price for all fuels under consideration as a result of the increase in the exchange rate or the devaluation of the local currency. One point to note is that the producer income of the multinationals Repsol-YPF, Esso and Shell from gasolines remained constant, with taxes and mark-ups affected by the devaluation in the local currency. The tax on gasoline declined from 65% to 49% in the case of regular gasoline and from 60% to 46% in the case of premium; the decline in the tax on gas oil was slighter: from 49% to 41% (Figure 2.1).

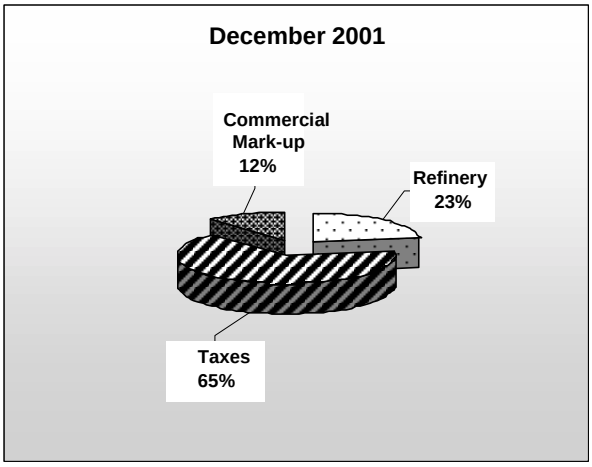
As noted in section 2.1.2, some taxes in Bolivia suffered a sharp decline. However, to avoid modifying the ex-refinery price, the percentage composition of the final price to the consumer of regular and special gasoline changed. In the case of premium gasoline, for example, given that the mark-up was maintained at 7%, the changes between 2001 and 2002 resulted in an increase from 30% to 37% in the ex-refinery price, a consequence of the decline in taxes from 63% to 56% (Figure 2.2).

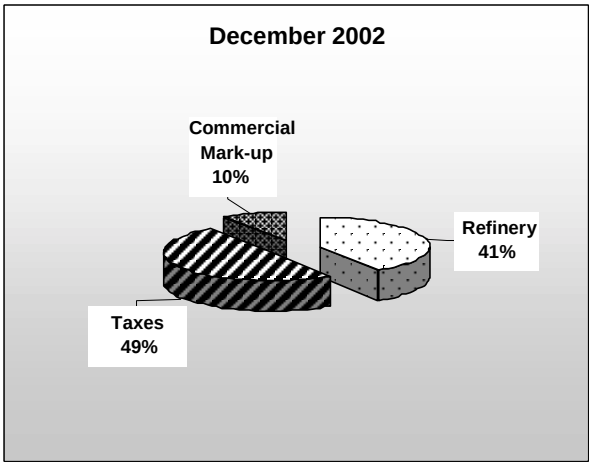
In the case of Colombia, the prices for gasolines, LPG and diesel oil (ACPM) declined in absolute terms, as a result of a fall in producer income and because no intervention was

made via fiscal policies. On the other hand, kerosene and fuel oil increased in price as a result of a higher ex-refinery price; taxes and mark-ups did not change; so that the percentage composition of the price to the consumer in December 2002 did not change considerably in relation to the 2001 price structure (Figure 2.3).

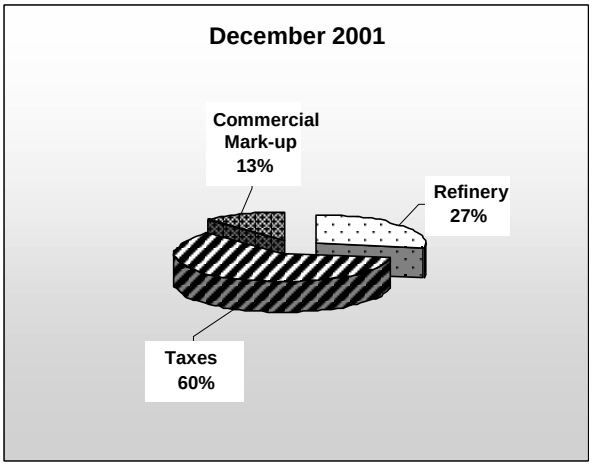
Figure 2.1 Composition of consumer prices in Argentina

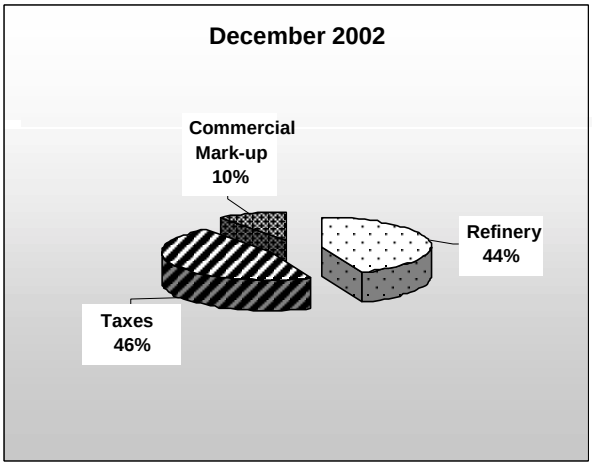
(a) Regular gasoline



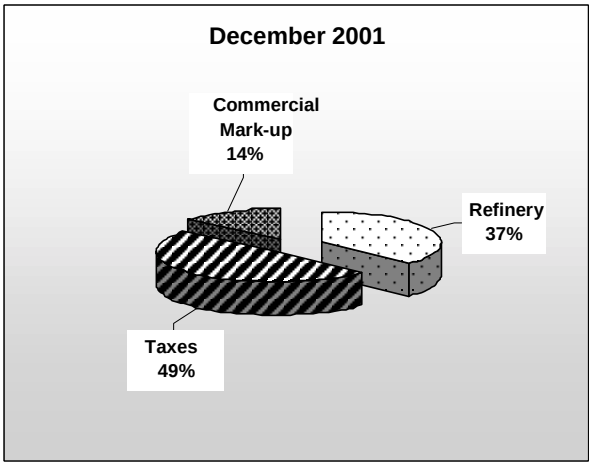


(b) Premium gasoline





(c) Diesel oil



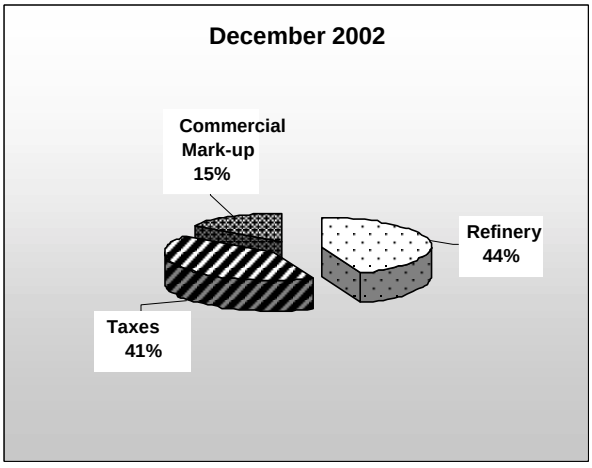
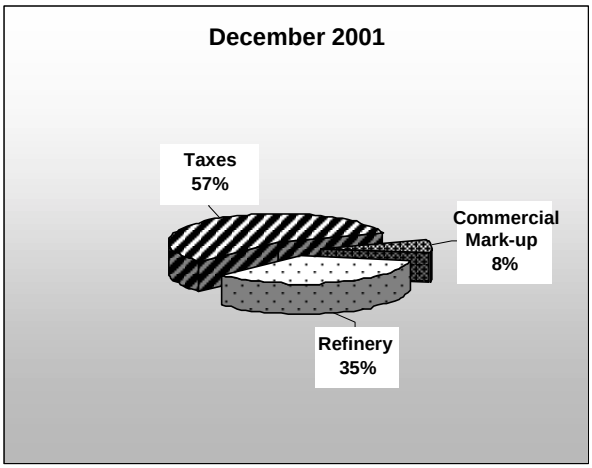
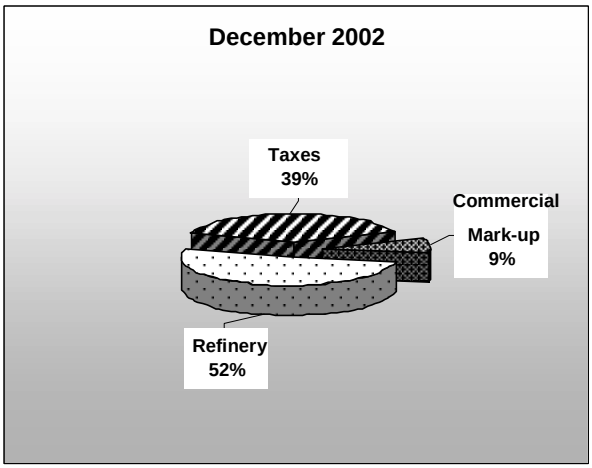


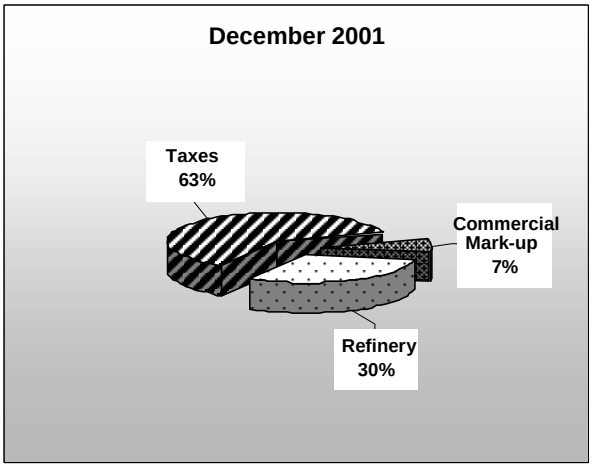
Figure 2.2 Composition of consumer prices in Bolivia

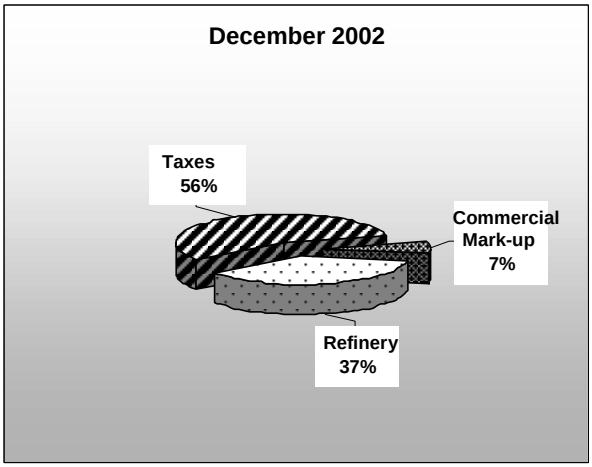
(a) Regular gasoline



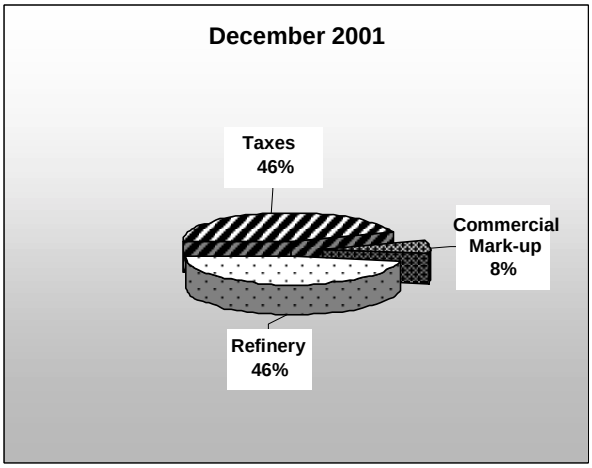


(b) Premium gasoline





(c) Diesel oil



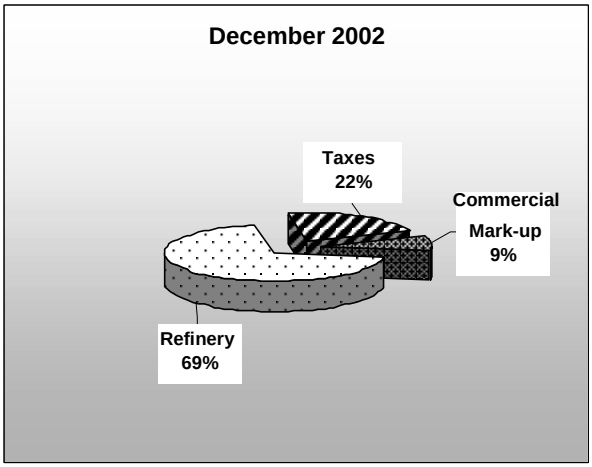
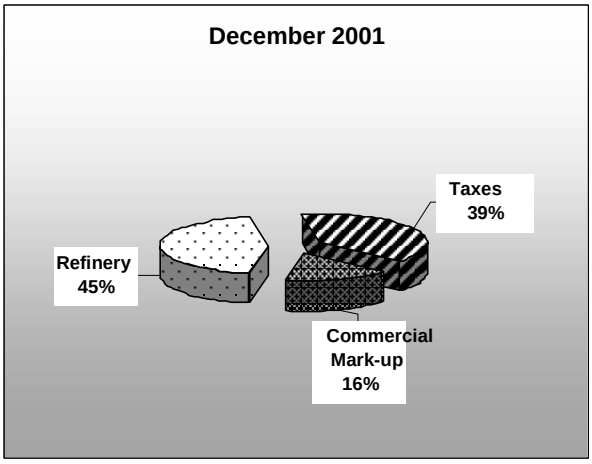
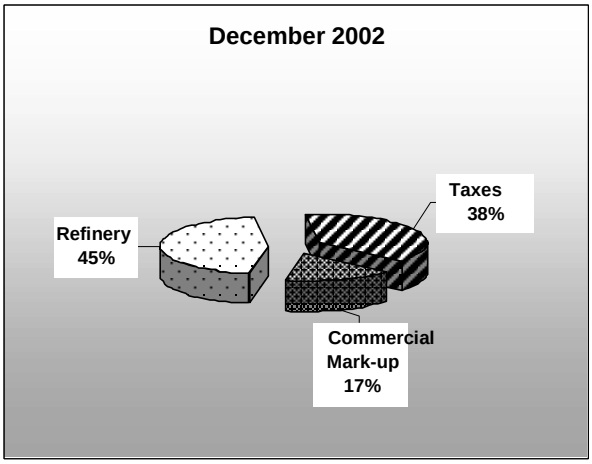


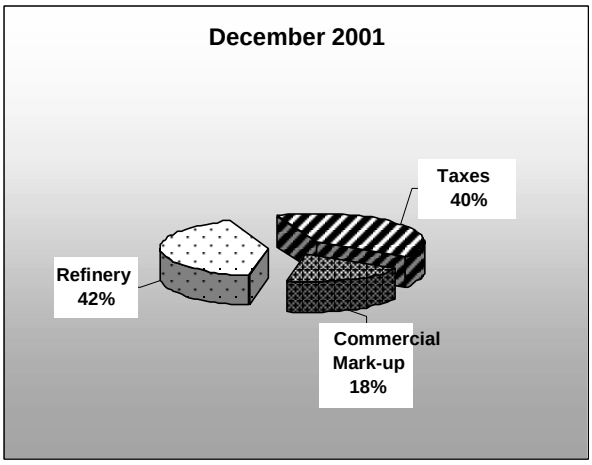
Figure 2.3 Composition of consumer prices in Colombia

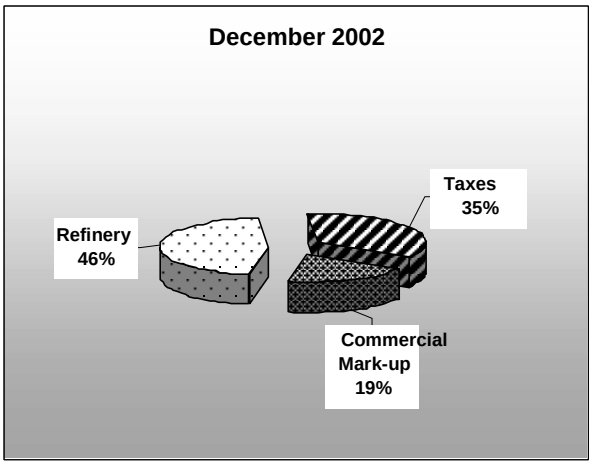
(a) Regular Gasoline



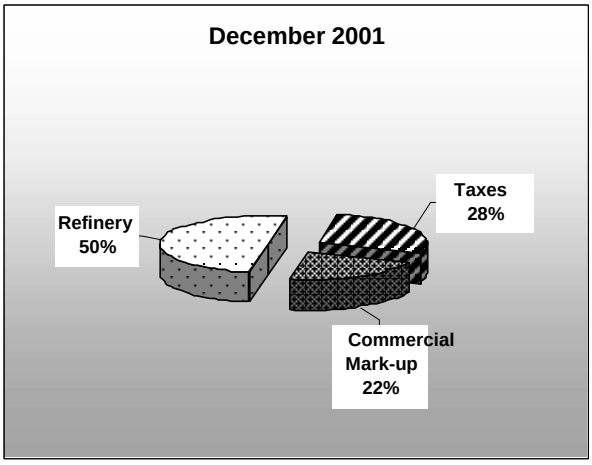


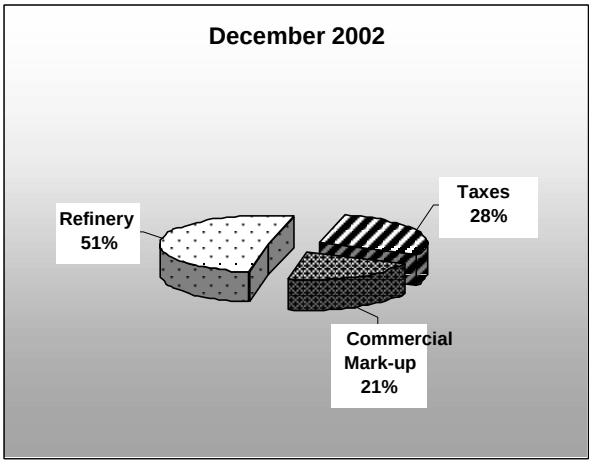
(b) Premium gasoline





(c) Diesel oil





2.2 Analysis of the price chain of oil importing countries

2.2.1 Ex-refinery prices

In general, domestic ex-refinery prices for all sources in December 2002 tended to be below or close to international prices except in the case of Uruguay. There the domestic ex-refinery price includes an import duty on the product, which is applied before it enters the refinery and is worked into the ex-refinery price, which automatically raises its value (Methodological annex 3.5).

In the case of gasolines, since deregulation of the Brazilian domestic market, the domestic price of gasolines has not differed significantly from the international benchmark price; the two prices tend to be equal, so that there is an almost perfect alignment with marginal deviations of -3% and 4% (Table 2.5). A similar case may be seen in Chile. On the other hand, for Peru and Paraguay, there are huge gaps between the domestic ex-refinery price and international prices (Figures 2.4 and 2.5).

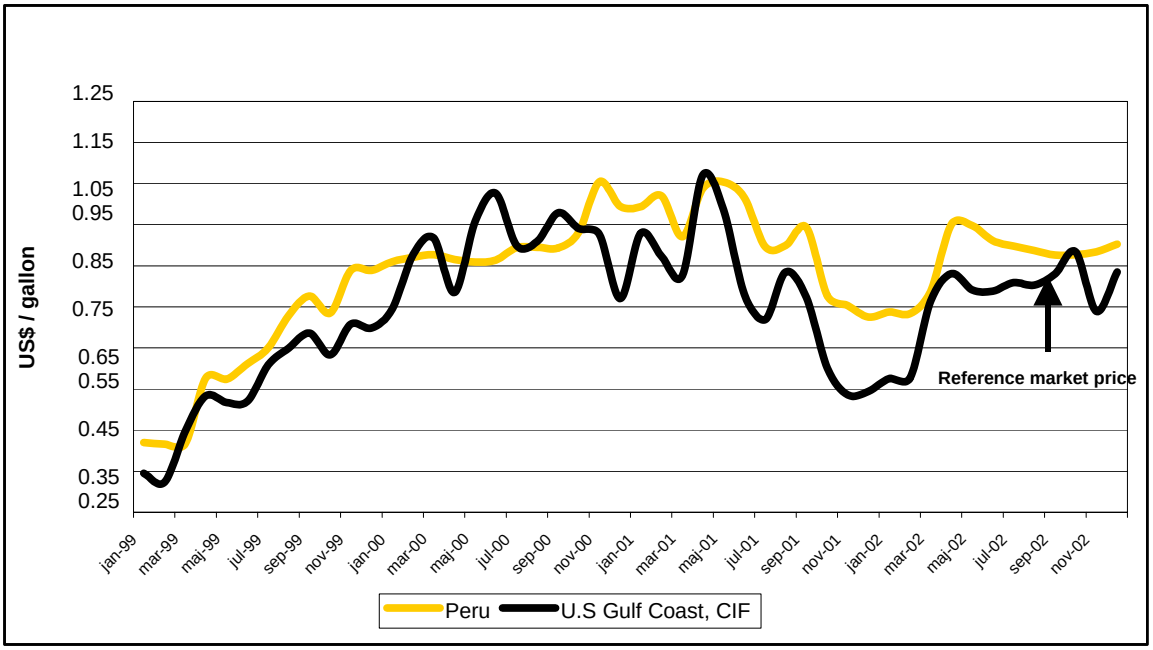
In December 2001, Uruguay had an alignment rate of 2.40, which is 140% higher than the benchmark price while in December 2002 it fell to 62%, despite which Uruguay still has the highest full price for regular gasoline in South America. This decline in prices is also valid for the other fuels and is due to a sharp increase in the exchange rate, or devaluation in the local currency. Nevertheless, if we compare ex-refinery prices for December 2001 with December 2002 in local currency, these have doubled. A comparison with international prices shows that the ex-refinery price of the National Fuel, Alcohol and Portland Administration (ANCAP) is double the United States Gulf Coast price (Figure 2.6).

Table 2.5 Comparison of ex-refinery prices in oil importing countries

	December 2001 US$ / litre						December 2002 US$ / litre					
	Brazil	Chile	Paraguay	Peru	Uruguay	IMBP	Brazil	Chile	Paraguay	Peru	Uruguay	IMBP
Exchange rate	2.373	669.1	4692.63	3.434	14.066		3.639	702	6974.02	3.510	27.129	
Regular gasoline	0.168	0.172	0.221	0.192	0.346	0.144	0.213	0.223	0.211	0.240	0.357	0.220
Premium gasoline	0.193	0.171	0.247	0.210	0.372	0.156	0.221	0.230	0.225	0.280	0.380	0.231
Diesel	0.173	0.171	0.240	0.172	0.250	0.143	0.234	0.235	0.254	0.240	0.255	0.227
Fuel oil	0.121	0.112	0.081	0.134	0.121	0.104	0.157	0.146	0.146	0.200	0.100	0.163
Kerosene		0.174	0.300	0.190	0.328	0.146		0.237	0.287	0.250	0.299	0.229
LPG (kg.)	0.292	0.237	0.311	0.277	0.335	0.165	0.243	0.355	0.281	0.370	0.285	0.288

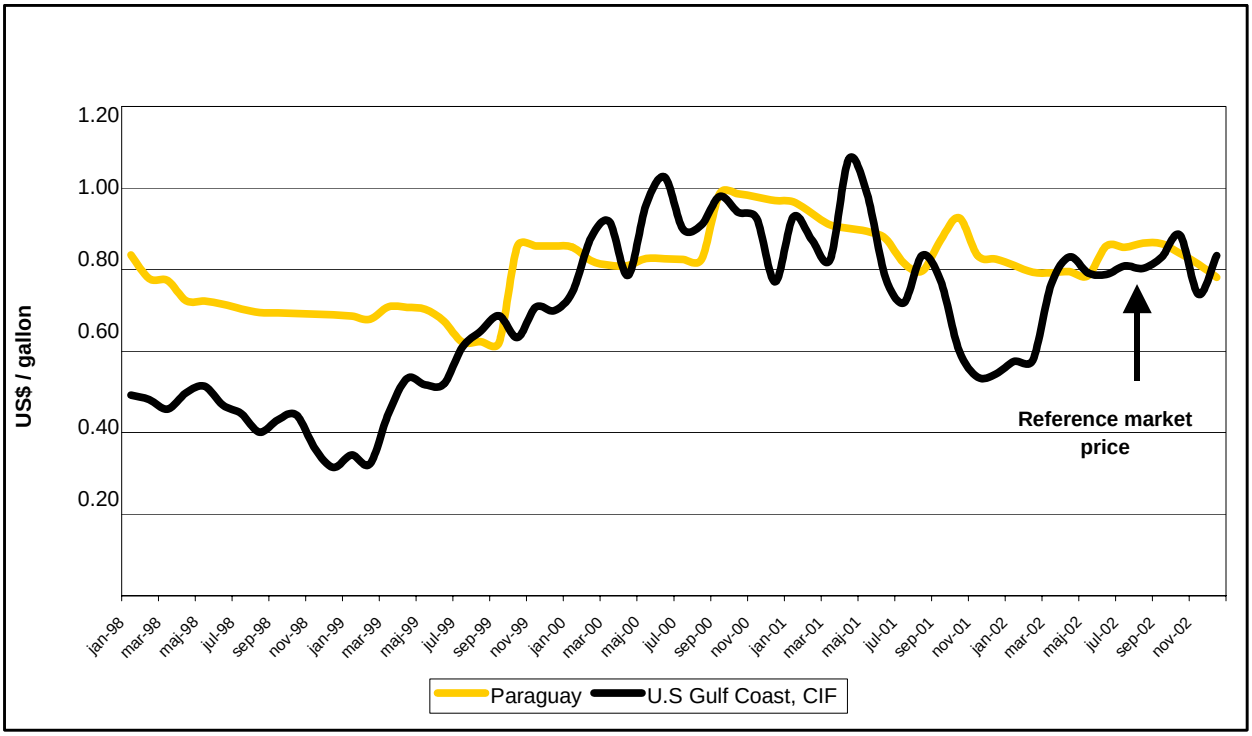
Notes:
- To obtain the estimated CIF price 7% for freight and 0.02% for insurance are added to the international market benchmark price (IMBP) of regular and premium gasolines, diesel oil, fuel oil and jet-fuel-type kerosene in the United States Gulf Coast.
- The international market benchmark price for liquefied petroleum gas is the Mont Belvieu reference FOB spot price for propane plus 15% for freight and 0.02% for insurance, which gives an estimated CIF price.
Source: ECLAC with data from the National Petroleum Agency of Brazil (ANP), National Petroleum Company of Chile (ENAP), Paraguay Petroleum Company (Petropar), Ministry of Energy and Mines of Peru (MEM) and National Fuel, Alcohol and Portland Administration of Uruguay (ANCAP).

Figure 2.4 Price trends: ex-refinery price and United States Gulf Coast reference price for regular gasoline



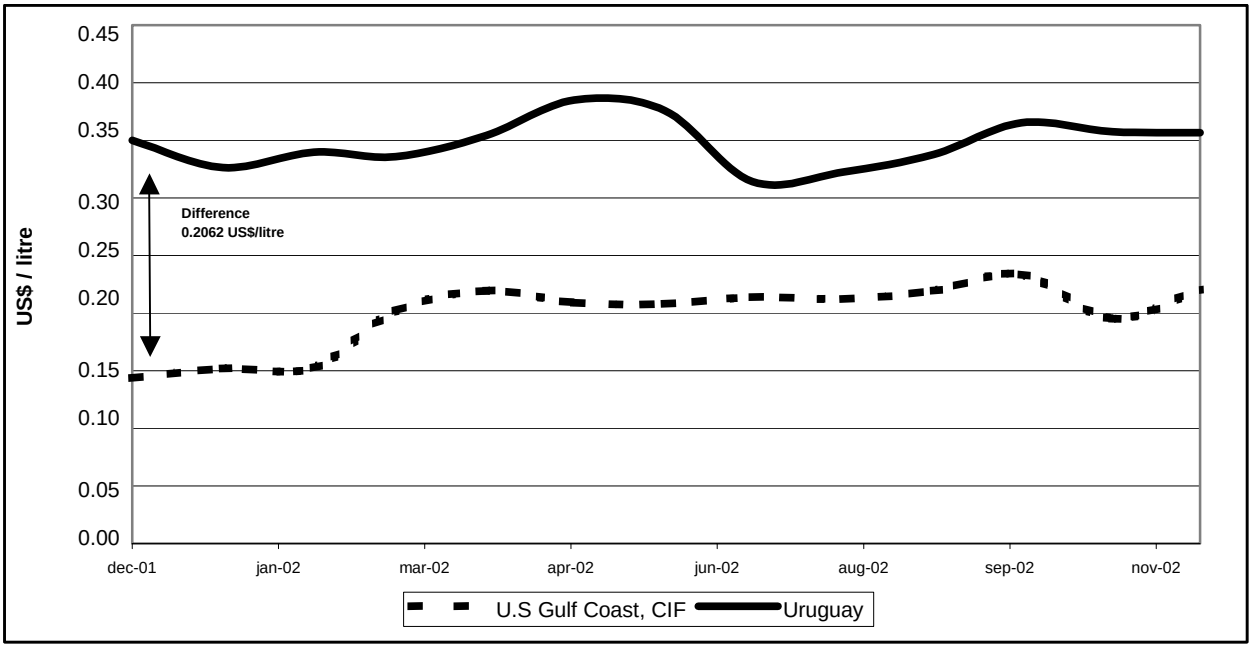
Source: based on methodological annex and the Department of Energy (DOE) USA and the Energy Information Administration (EIA), http://www.eia.doe.gov/emeu/international/petroleu.html#IntlPrices

Figure2.5 Price trends: ex-refinery price and United States Gulf Coast reference price for regular gasoline



Source: : based on methodological annex, the Department of Energy (DOE) USA and the EIA, http://www.eia.doe.gov/emeu/international/petroleu.html#IntlPrices

Figure 2.6 Comparison of ex-refinery price and United States Gulf Coast benchmark price for regular gasoline



Source: based on methodological annex and the Department of Energy (DOE) USA and the EIA, http://www.eia.doe.gov/emeu/international/petroleu.html#IntlPrices

In the case of diesel oil, the sharp disparities in 2001, especially those of Uruguay where the price is 138% higher and Paraguay, where it is 68% higher, tended to disappear in 2002. Table 2.5 shows that the ex-refinery price of diesel oil is much more even in comparison with regular and premium gasoline, so that the importing countries show an almost perfect alignment with the United States Gulf Coast benchmark price. Although Paraguay does not use import parity to set prices (while using it to assess its position in comparison with other countries), in 2002, its domestic price fell significantly into line with the international benchmark price.

In terms of producer income for fuel oil, all sources were in closer alignment with the international price, especially from December 2002, except for Peru, the only country where the price was above the benchmark (Table 2.5).

With respect to fuels for domestic use, Paraguay and Uruguay had the highest ex-refinery prices for kerosene in December 2001, compared with international prices; in December 2002, their domestic prices decreased in real terms by 4.3% and 8.9% respectively. Meanwhile for LPG, the high producer or importer subsidies for 2001 (103% in Uruguay, 89% in Paraguay, 77% in Brazil, 68% in Peru and 4% in Chile) fell drastically in 2002, when Brazil, Paraguay and Uruguay were below the Mont Belvieu international market price; while prices remained higher in Chile (23%) and Peru (29%), these figures were much lower than those of the previous year (Table 2.5).

2.2.2 Taxes

In December 2001, Uruguay levied the highest taxes on regular and premium gasoline, kerosene and LPG, and Paraguay the lowest. This situation changed in December 2002; Peru had the highest taxes on all oil products and the lowest were again recorded in Paraguay (Table 2.6). LPG, fuel oil and kerosene are the fuels with the lowest tax component, followed by diesel oil. This suggests that a selective tax policy is being used to curb price rises in fuels used mainly by the productive sectors and low-income families.

One of the reasons for the increase in taxes in Peru is that the excise tax went up from 0.88 new soles to 1.58 new soles per gallon in September 2002, this being one of the measures taken by the Minister of Energy to avoid the adulteration of fuels. Gasolines and diesel oil are the fuels with the highest tax content in Peru, amounting to approximately 50% of the full price. A similar situation occurs in Chile, where the tax component in gasolines accounts for 50% of the final consumer price; although taxes account for only 30% approximately of the final price of diesel oil.

With the total liberalisation of the Brazilian market, there has been an increase in taxes on LPG, due to the introduction of the market entry or intervention tax (CIDE) on LPG and diesel, a tax which replaced the PPE tax (Parcela de preços especifica), which had a negative value. Current taxes on gasolines (CIDE) have diminished compared to the situation in December 2001, although gasolines still remain the fuels which attract the highest taxes in Brazil.

In Uruguay, taxes on gasolines are quite high; in December 2001 they accounted for more than 55% of the final consumer price; by December 2002, they declined to 44% although in absolute terms, they remained high.

Fuel taxes applied by oil importing countries are slightly higher than those described above for oil self-sufficient countries.

Table 2.6 Comparison between taxes on petroleum-based fuels in oil importing countries

Countries/ Products	December 2001 US$ / litre					December 2002 US$ / litre				
	Brazil	Chile	Paraguay	Peru	Uruguay	Brazil	Chile	Paraguay	Peru	Uruguay
Regular gasoline	0.447	0.319	0.163	0.276	0.544	0.273	0.293	0.124	0.310	0.291
Premium gasoline	0.475	0.320	0.197	0.359	0.646	0.278	0.294	0.124	0.414	0.291
Diesel oil	0.116	0.122	0.047	0.219	0.120	0.103	0.109	0.049	0.237	0.065
Fuel oil	0.039	0.037	0.008	0.024	0.029	0.015	0.035	0.015	0.035	0.024
Kerosene	-	0.064	0.030	0.105	0.119	-	0.052	0.029	0.186	0.063
LPG (kg)	0.025	0.132	0.029	0.128	0.136	0.149	0.100	0.020	0.157	0.109

Source: ECLAC with data from ANP, ENAP, Petropar, MEM and ANCAP.

2.2.3 Mark-ups

Table 2.7 shows the average mark-ups in South-American oil importing countries for each of the periods and each type of fuel under consideration. In comparison with self-sufficient countries, the oil importing countries have higher gross mark-ups for all fuels, except for diesel oil, in which they are equal.

Table 2.7 Comparison of gross mark-ups associated with petroleum-based fuels in oil importing countries

Countries/ Products	December 2001 US$ / litre					December 2002 US$ / litre				
	Brazil	Chile	Paraguay	Peru	Uruguay	Brazil	Chile	Paraguay	Peru	Uruguay
Regular gasoline	0.102	0.054	0.113	0.068	0.092	0.087	0.065	0.110	0.056	0.060
Premium gasoline	0.107	0.060	0.130	0.118	0.092	0.106	0.064	0.139	0.093	0.060
Diesel oil	0.064	0.050	0.039	0.065	0.070	0.069	0.052	0.041	0.042	0.046
Fuel oil	0.007	0.057	0.069	-	0.006	-	0.087	0.026	-	0.004
Kerosene	-	0.072	0.053	0.145	0.056	-	0.061	0.043	0.080	0.036
LPG (kg)	0.298	0.308	0.232	0.393	0.257	0.191	0.280	0.086	0.344	0.188

Source: ECLAC with data from ANP, ENAP, Petropar, MEM and ANCAP.

The pattern of mark-ups for regular gasoline and kerosene in Peru shows distortions. According to the Ministry of Energy and Mines, the hydrocarbon market still shows a series of distortions which are an obstacle to a competitive and transparent market owing to a series of factors which are obstacles to a competitive and transparent market owing to a series of factors such as the presence of the State in different phases, differential tax policy, unaligned relative prices; informality, smuggling and adulteration of fuels and unfair competition on the retail market.[3]

With respect to LPG, Peru and Paraguay may be noted for their very high levels, while Paraguay with its regular and premium gasolines, followed by Brazil, are those that obtain the highest gross mark-ups.

[3] Press note from the Ministry of Energy and Mines, "Podría perfeccionarse metodología de fijación de paridad internacional para combustibles", Quijandría, Jaime, Minister of Energy: 18/03/2003.

In view of the competitive market that has been established in Chile, it is logical that the mark-ups on gasolines should be lower than for fuel oil and kerosene, owing mainly to the higher volume of sales associated with lower mark-ups for the service station owners and distributors.

2.2.4 Full prices

The full price for regular gasoline in Uruguay was almost the double those in Paraguay and Peru in December 2001, while in December 2002 the full prices for regular gasoline in Uruguay and other countries were more even. In Paraguay, ex-refinery prices in general presented a slight decline between 2001 and 2002 (Table 2.8).

In Chile, all consumer fuel prices rose between December 2001 and December 2002. This higher rise was due to an increase in the ex-refinery prices for all fuels, owing to the increase in the United States Gulf Coast benchmark price and/or international crude prices. The Petroleum Price Stabilisation Fund (FEPP) has attenuated the effect of the rise in international prices, reducing the rise in consumer prices (Methodological annex 3.2). Since the mark-ups for fuels remained unchanged, the percentage composition of the consumer price of one litre of fuel in December 2001 varied in comparison with December 2002.

In the case of Peru, fuel prices increased across the board as a result of an increase in ex-refinery prices and in taxes and a reduction in mark-ups, thereby showing a different percentage composition. In the case of oil products, which were deregulated in Paraguay (gasolines as from August 2000), the results show that applying higher full prices, together with lower taxes meant higher profits for producers and/or importers of products (Figures 2.8 and 2.9).

Comparatively and in the light of paragraph 1.4 above, full prices for fuels in oil importing countries are higher than in oil self-sufficient countries.

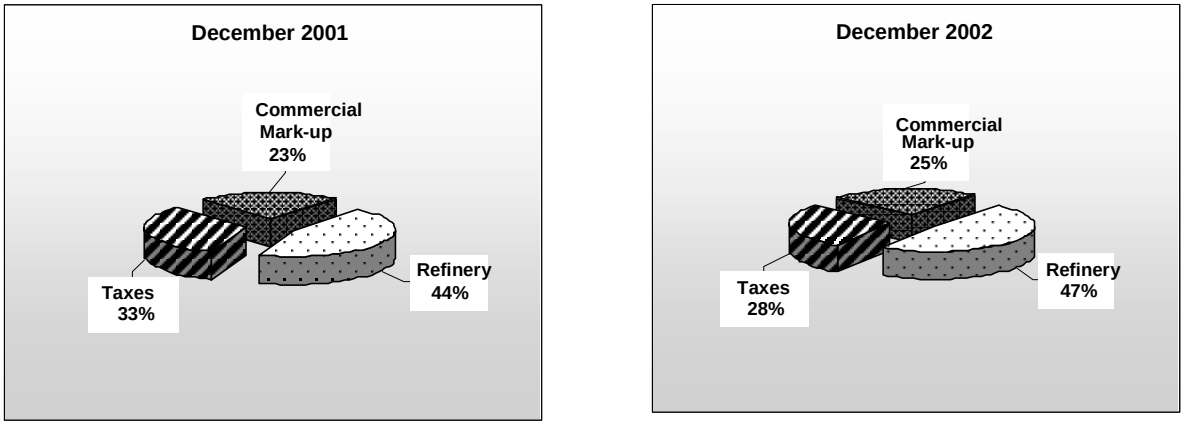
Table 2.8 Comparison of full prices of petroleum-based fuels in oil importing countries

Countries/ Products	December 2001 US$ / litre					December 2002 US$ / litre				
	Brazil	Chile	Paraguay	Peru	Uruguay	Brazil	Chile	Paraguay	Peru	Uruguay
Regular gasoline	0.717	0.546	0.497	0.535	0.982	0.572	0.581	0.445	0.604	0.708
Premium gasoline	0.775	0.550	0.573	0.688	1.11	0.604	0.588	0.488	0.783	0.785
Diesel oil	0.353	0.344	0.326	0.456	0.441	0.405	0.396	0.344	0.516	0.365
Fuel oil	0.167	0.206	0.158	0.158	0.156	0.173	0.268	0.186	0.232	0.128
Kerosene	-	0.310	0.384	0.441	0.503	-	0.350	0.358	0.518	0.398
LPG (kg)	0.615	0.678	0.573	0.798	0.727	0.583	0.734	0.387	0.868	0.582

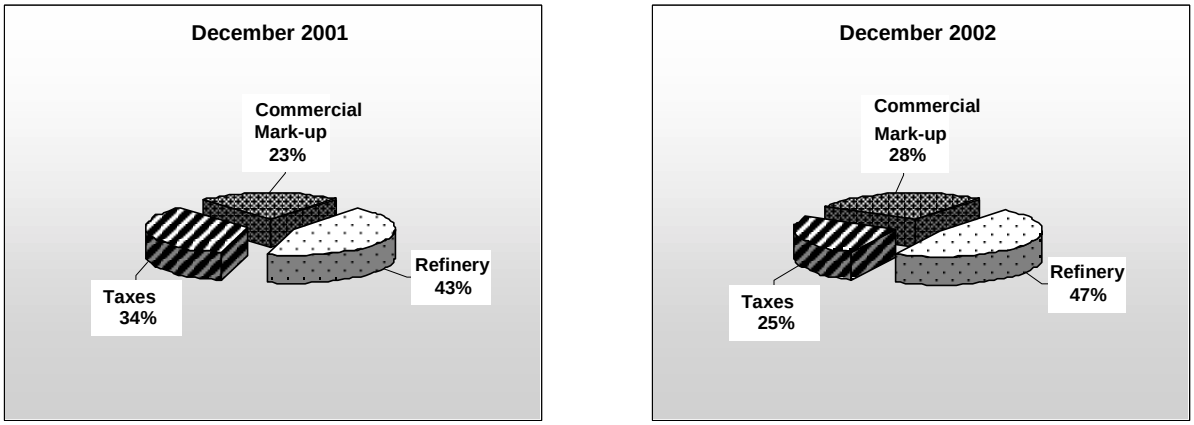
Source: ECLAC with data from ANP, ENAP, Petropar, MEM and ANCAP.

Figure 2.7 Composition of consumer prices in Paraguay

(a) Regular gasoline



(b) Premium gasoline



(d) Diesel oil

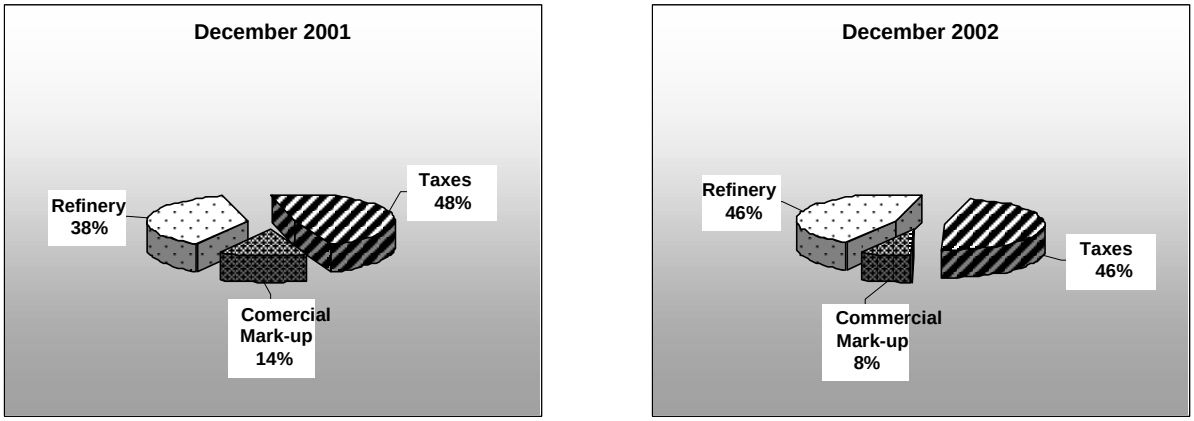
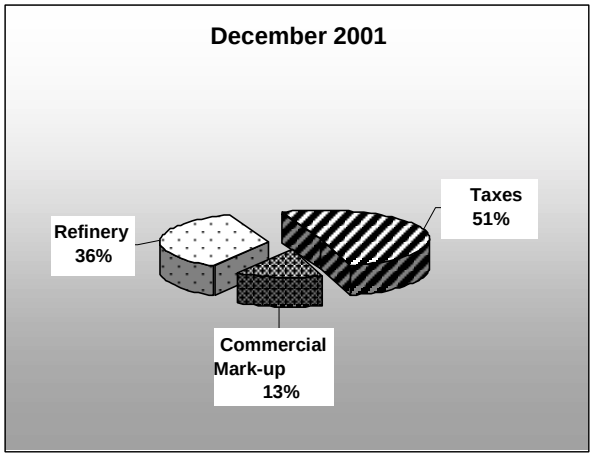
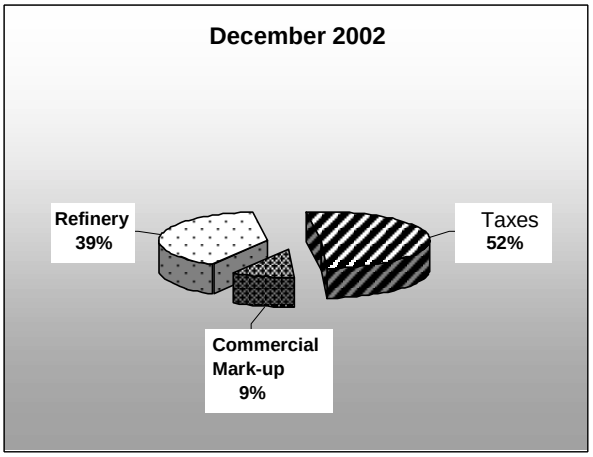


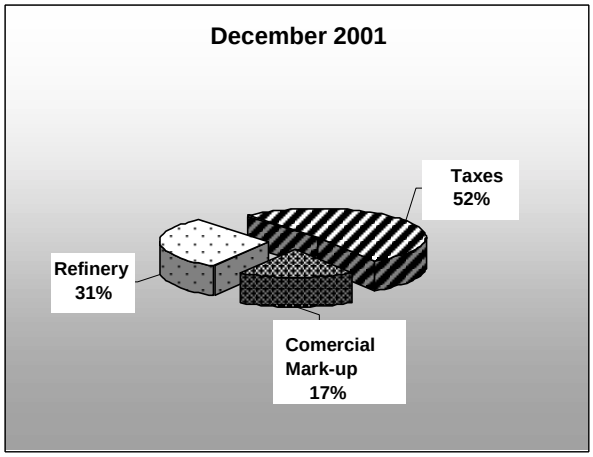
Figure 2.8 Composition of consumer prices in Peru

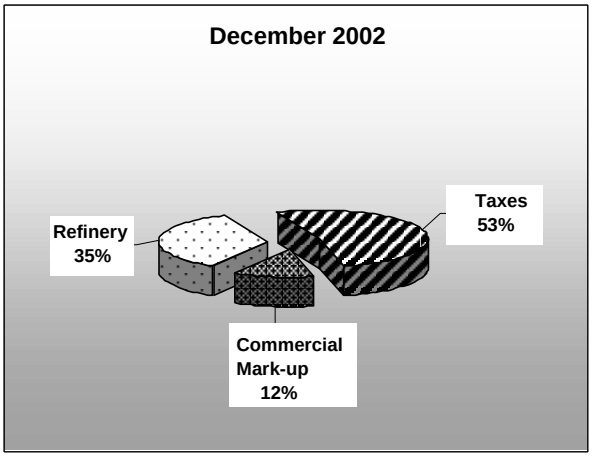
(a) Regular Gasoline



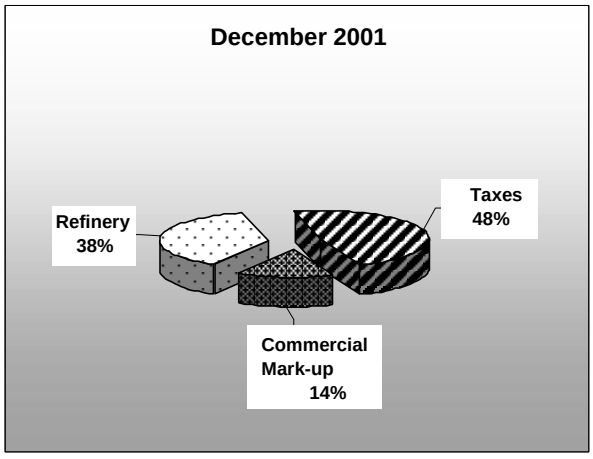


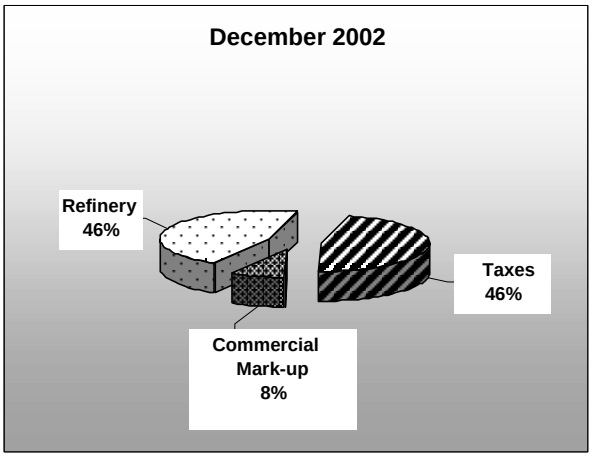
(b) Premium Gasoline





(c) Diesel oil





2.3 Analysis of the price chain of oil exporting countries

2.3.1 Ex-refinery price

The oil exporting countries, with the exception of Venezuela, namely, Ecuador and Mexico, displayed the same pattern as the oil self-sufficient or oil importing countries. The differences recorded in 2001 for Ecuador both for regular gasoline (50%) and for premium gasoline (77%) fell sharply in December 2002 to 9% and 33% respectively; in the case of Mexico, the values are substantially lower. Thus, they reached differences of 30% and 38% falling to 9% and 31% in 2002 for both types of gasoline (Table 2.9 and Figures 2.9 and 2.10).

The low ex-refinery price for Venezuela is due mainly to a direct subsidy policy justifiable on the grounds of its low production costs for domestic oil and not to the obsessive application of the opportunity cost or international prices. Thus, in 2001 domestic ex-refinery prices for regular gasoline were 86% lower than the international benchmark price, while the price of premium gasoline was 62% lower. These differences widened in 2002 to 92% and 84% less respectively (Table 2.9).

Table 2.9 Comparison of ex-refinery prices for regular gasoline in oil exporting countries

	December 2001 US$ / litre				December 2002 US$ / litre			
	Ecuador	Mexico	Venezuela	IMBP	Ecuador	Mexico	Venezuela	IMBP
Exchange rate	-	9.1541	751.8		-	10.21	1316.11	
Regular gasoline	0.201	0.175	0.019	0.134	0.224	0.226	0.02	0.206
Premium gasoline	0.259	0.202	0.055	0.146	0.283	0.269	0.035	0.216
Diesel oil	0.156	0.181	0.025	0.134	0.179	0.222	0.01	0.212
Fuel oil	0.123	0.103		0.104	0.123	0.139		0.163
LPG (kg)		0.255	0.06	0.144		0.327	0.034	0.25

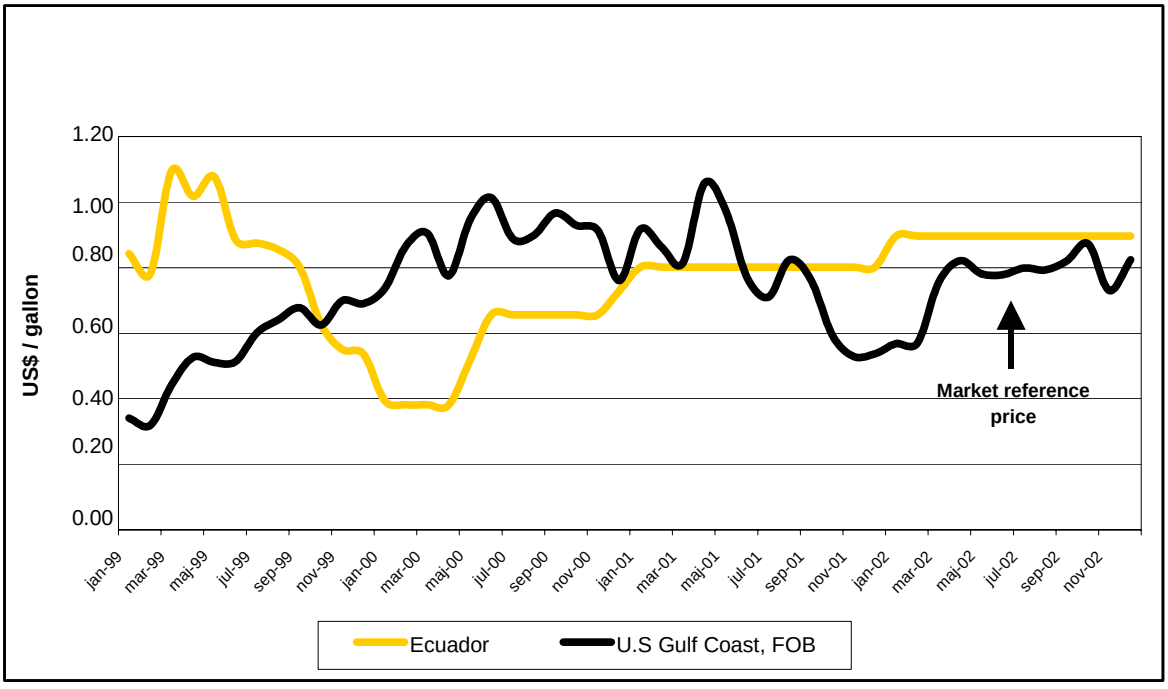
Notes:
- The international market benchmark price (IMBP) for regular and premium gasolines and diesel oil in the United States Gulf Coast is an FOB price.
- The international market benchmark price (IMBP) for fuel oil in the United States Gulf Coast is a CIF price.
- The international market benchmark price for liquefied petroleum gas is the Mont Belvieu FOB Spot Price for propane.

Source: ECLAC, with data from Mexican Petroleum Agency (PEMEX), PetroEcuador, Petrocommercial Division of Ecuador, and the Ministry of Energy and Mines of Venezuela (MEM).

Like gasolines, diesel oil and fuel oil trends show that Mexico has the highest ex-refinery price with a price 35% higher in 2001; in the case of diesel, the Mexican price was less than 5% higher in 2002. In Ecuador, the differences are not so pronounced ranging from a 16% producer subsidy in 2001 to a consumer subsidy of 15%. In the case of Venezuela, it is 82% less in 2001 and 95% less in 2002 compared with Ecuador.

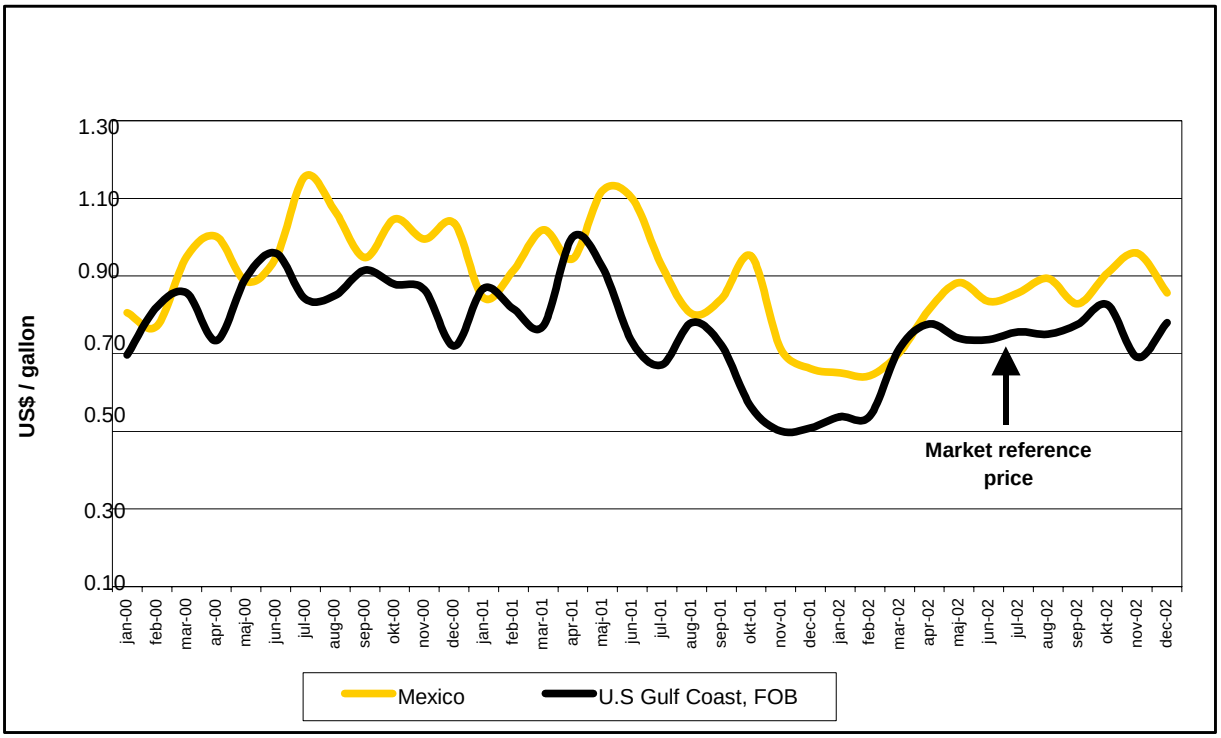
Lastly, there is a significant difference between the international price for LPG and the Mexican ex-refinery price, whose rate of alignment shows a difference of 77% over in December 2001, which declined to 31% in December 2002, while Venezuela is the exact opposite with a subsidy of 48% and 86%, respectively, for the two periods.

Figure 2.9 Trends in ex-refinery price and United States Gulf Coast benchmark price for regular gasoline



Source: based on methodological annex and the Department of Energy (DOE) USA and the EIA, http://www.eia.doe.gov/emeu/international/petroleu.html#IntlPrices

Figure 2.10 Trends in ex-refinery price and United States Gulf Coast benchmark price for regular gasoline



Source: based on methodological annex and the Department of Energy (DOE) USA and the EIA, http://www.eia.doe.gov/emeu/international/petroleu.html#IntlPrices

2.3.2 Taxes

In Venezuela, tax on diesel oil has been increasing over the past three years. Apart from kerosene, gasolines attract the highest tax especially unleaded or premium gasoline. This, compared with leaded gasoline and diesel cost the most at the refinery gate. As from January 2002, the general consumption tax rate was 30%.

Between December 2001 and December 2002, Ecuador maintained the same taxes on all products, while in Venezuela; the application of the new hydrocarbon act implied a reduction of the tax rate on gasolines but maintained the taxes on diesel. Meanwhile, Mexico also reduced its taxes by 22% on average (Table 2.10).

Table 2.10: Comparison of taxes on petroleum-based fuels in oil exporting countries

Countries/ products	December 2001 US$ / litre			December 2002 US$ / litre		
	Ecuador	Mexico	Venezuela	Ecuador	Mexico	Venezuela
Regular gasoline	0.028	0.395	0.047	0.032	0.307	0.016
Premium gasoline	0.037	0.437	0.047	0.040	0.329	0.022
Diesel oil	0.022	0.299	0.013	0.025	0.229	0.011
Fuel oil	0.016	0.016	0.001	0.015	0.021	0.014
Kerosene	-	-	0.009	-	-	0.057
LPG (kg)	-	0.038	-	-	0.049	-

Source: ECLAC, with data from PEMEX, PetroEcuador, Petro-commercial Division of Ecuador, and the MEM of Venezuela.

2.3.3 Mark-ups

Mexico leads the way with gross mark-ups for fuels followed by Ecuador and, then Venezuela. The margins for LPG are the highest, followed by those for premium gasoline and regular gasoline. Table 2.11 shows that there are no great variations between the per unit margins for each fuel between December 2001 and December 2002, due largely to the fact that the margins are regulated in the three countries.

Table 2.11 Comparison of gross mark-ups associated with petroleum-based fuels in oil exporting countries

Country/ Product	December 2001 US$ / litre			December 2002 US$ / litre		
	Ecuador	Mexico	Venezuela	Ecuador	Mexico	Venezuela
Regular gasoline	0.036	0.044	0.027	0.040	0.041	0.017
Premium gasoline	0.047	0.049	0.027	0.051	0.046	0.017
Diesel oil	0.028	0.027	0.026	0.032	0.026	0.016
Fuel oil	0.003	-	-	0.002	0.004	-
Kerosene	-	-	-	-	-	-
LPG (kg)	-	0.241	0.283	-	0.238	0.175

Source: ECLAC, with data from PEMEX, PetroEcuador, Petro-commercial Division of Ecuador, and the MEM of Venezuela.

2.3.4 Full prices

The rise in full prices observed in Ecuador (15% for diesel oil, 12% for gasoline extra and 9% for premium gasoline) is due to the slight increase in ex-refinery prices given that the percentage composition of fuel prices in December 2002 did not change with respect to December 2001. In relative terms, 11% of the full price for all fuels is tax (Table 2.12).

The percentage composition of gasoline prices in Venezuela has changed, specifically as a result of the reduction in taxes and an increase in inflows to Petróleos de Venezuela (PDVSA).

In the case of Mexico, LPG and fuel oil went up in price, while gasoline and diesel prices declined. This sharper decline in gasolines and diesel was due to a decrease in tax, specifically the Special Tax on Products and Services (IEPS). In addition, LPG and fuel oil had a higher ex-plant price which was reflected in a higher price to the consumer. As a result of the foregoing, the percentage composition of fuel prices was affected in December 2002 in comparison with December 2001. Taxes on regular gasolines were cut by 10% and on premium gasoline, by 13%, while the price to the producer was increased by these same percentages (Figure 2.11).

Mexico has higher full prices than Ecuador and Venezuela. The full price for regular gasoline in Mexico is 2.3 times as high as in Ecuador and 6.6 times as high as in Venezuela in December 2001, but in December 2002, the difference compared with Ecuador and Venezuela increased becoming 10.8 times as high. Meanwhile, the full price for fuel oil in Mexico does not differ much from the Ecuadorian price and was only 3.5 times as high as in Venezuela in December 2002.

It should be noted that the full price for LPG in Mexico is 5 times as high as in Ecuador and 2 to 3 times as high as in Venezuela.

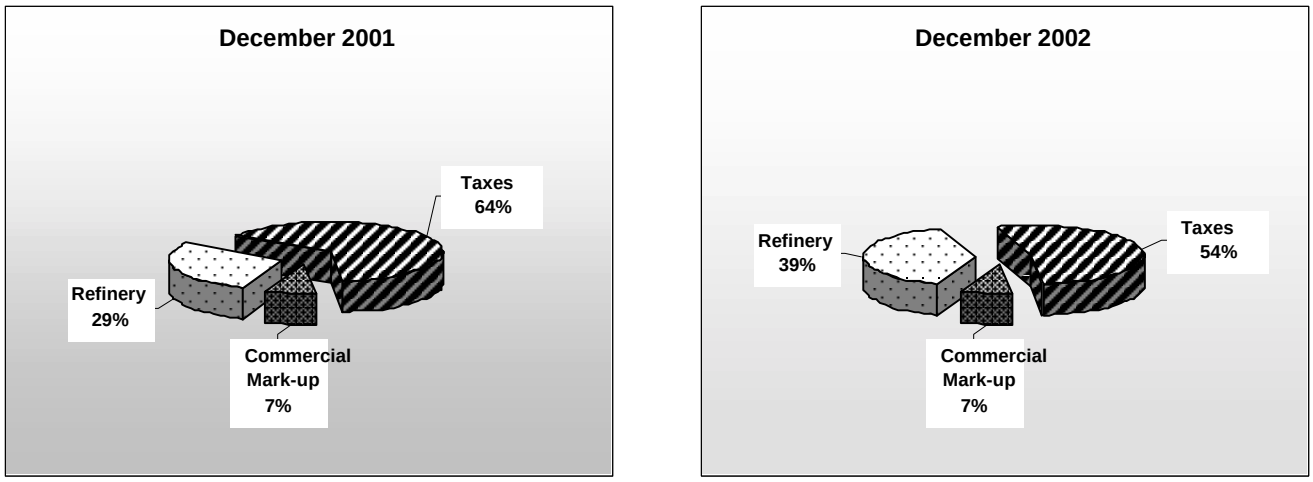
Table 2.12 Comparison of full prices for petroleum-based fuels in oil exporting countries

Country/ Product	December 2001 US$ / litre			December 2002 US$ / litre		
	Ecuador	Mexico	Venezuela	Ecuador	Mexico	Venezuela
Regular gasoline	0.265	0.613	0.093	0.296	0.574	0.053
Premium gasoline	0.343	0.687	0.129	0.374	0.644	0.074
Diesel oil	0.206	0.508	0.064	0.237	0.476	0.036
Fuel oil	0.141	0.119	0.063	0.140	0.165	0.046
Kerosene	-	-	0.135	-	-	0.191
LPG (kg)	0.106	0.534	0.344	0.106	0.614	0.210

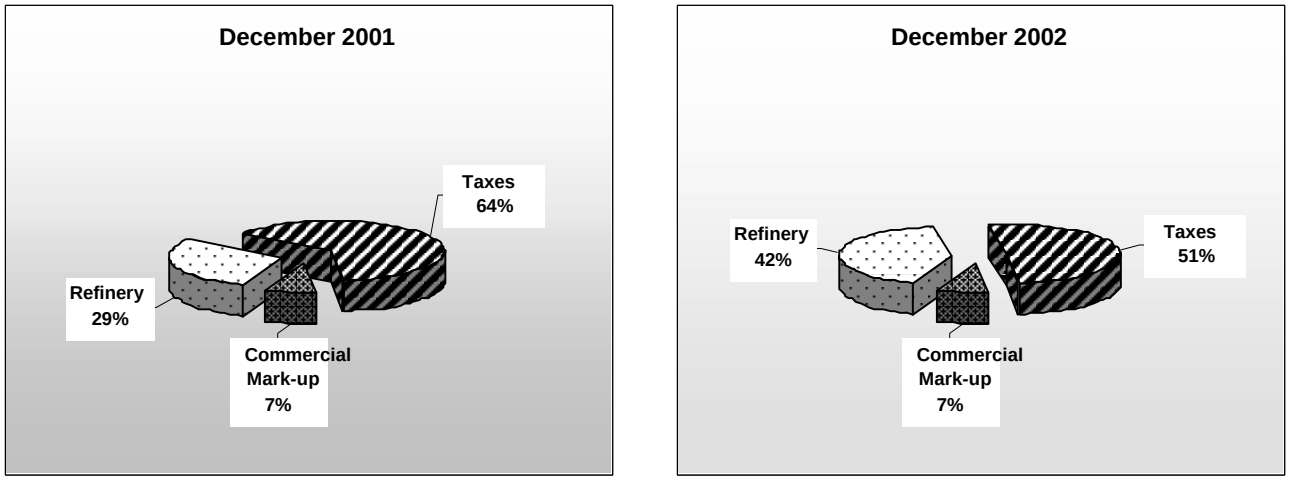
Source: ECLAC, with data from PEMEX, PetroEcuador, Petro-commercial Division of Ecuador, and the MEM of Venezuela.

Figure 2.11 Composition of consumer prices in Mexico

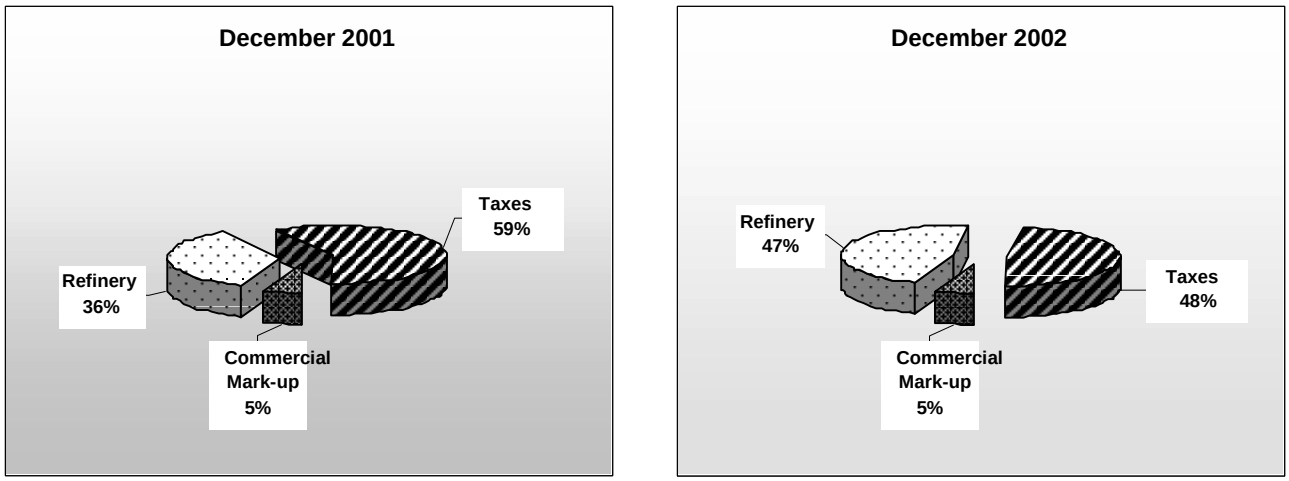
(a) Regular gasoline



(b) Premium gasoline



(c) Diesel oil



2.4. Monitoring

One central element of pricing policy that must be structured and coherently institutionalised is the control of regulatory matters, whether these are mandatory (such as a law), or for monitoring (as in the comparison of a domestic price with an international benchmark). The mechanism for informing consumers on variations in the price chain to make this a transparent and efficient procedure must also be changed (Table 2.13).

Table 2.13 Supervisory agencies and relationship with the media

Country	Agency	Supervisory mechanism		Communications media
		Gasolines	Diesel oil	
Argentine Self-sufficient	Secretariat of Energy and Mines (SEM)	Determines the import parity prices ex-refinery and at the pump on a monthly basis. Comparisons are made for the cities of the Federal Capital, Rosario and Córdoba. The Secretariat has a fuel price verification system for each company and province. The Secretariat is also conducting a National Verification Programme for fuels (full price controls in 500 service stations). From January 2002, it stopped providing the information for financial reasons.		The oil companies Repsol, YPF, Shell and Esso constantly issue announcements and/or press communiqués on variations in the full price of the domestic market; they are also bound to advise the Secretariat of Energy and Mines of any such variation within 24 hours. These price adjustments are accompanied by a brief explanation of the variations.
Bolivia Self-sufficient	Office of the Superintendent of Hydrocarbons National Institute of Statistics	Publishes on its web site the full prices of oil products, with their respective Administrative Resolutions Publishes on its web site the variations in average prices to the public of oil products.		The Office of the Superintendent of Hydrocarbons publishes through the media the changes in the full prices of oil products and issues an Administrative Resolution for each change in fuel price. These price adjustments are accompanied by a brief explanation of the variations.
Brazil Importer	Ministry of Energy and Mines (MEM) and the Ministry of Finance	They determine the parameters for quarterly revision of prices for oil products established in the Inter-ministerial Decree MF/MME No. 02, of 4 January 2001 This is the basis for the establishment of the adjustment percentages applied to the prices of gasoline, diesel oil and LPG at the refineries and other producers and importers.		The Ministry of Finance and MEM publish in the media the quarterly adjustments in fuel prices

	National Petroleum Agency (ANP)	ANP publishes weekly weighted average prices in the regions of the north, north-east, centre west, south and south-east charged to producers and importers of regular gasoline, diesel oil, aviation kerosene and LPG. These prices do not include ICMS (goods and services tax). The full prices and mark-ups are monitored for approximately 4,000 posts of localized retailers in 363 cities, distributed in all states and which serve as an input for ANP for publishing a monthly summary of price trends in the domestic fuel market (the wholesale and retail margins are studied as well as the average sales prices) ANP also publishes the price structure for regular gasoline in terms of the formula only. Lastly, a monthly bulletin is published on the qualities of the fuels marketed in the country.	
Chile Importer	National Energy Commission (CNE) National Consumer Service (SERNAC) National Institute of Statistics (INE)	Determines reference prices and PPI on a weekly basis Determines the structure of the full price of fuels on a monthly basis Conducts a weekly survey (also a poll) of the full prices in the service stations in order to monitor the increases or decreases in prices set by the National Petroleum Company (ENAP) INE publishes full fuel prices monthly at its web site	ENAP informs the communications media weekly of the movements in fuel prices to wholesalers in Santiago for the following week, that is, ENAP specifies how much the full domestic market price for fuels will rise or fall. CNE issues a press release every week indicating the new benchmark prices and average international price (PPI) for each of the products covered by the Petroleum Price Stabilisation Fund (FEPP)
Colombia Self-	Ministry of Mines and Energy (MME)	Determines the producer income, wholesale-retail distributor's mark-up and the full price of controlled products.	The Ministry publishes monthly press releases indicating the variations in reference prices and full prices of

sufficient	Energy Mining Planning Unit (UPME)	Monthly survey of the full price to service stations with monitored free regime	gasolines and diesel. Fuel prices applied during a given month are reported in a wide-circulation newspaper. In addition, the media are informed of the pricing methodology
	Colombian Petroleum Company (Ecopetrol)	The price structure for regular gasoline (up to the full price) and extra gasoline (up to the maximum price to the wholesale distributor) may be obtained on the Web.	
Ecuador Exporter	Ministry of Energy and Mines	The Ministry is implementing a project for "outsourcing of fuel control", the objective of which is to control the quality and quantity of fuels in service stations on a monthly basis. This inspection is done by staff trained by the National Directorate of Hydrocarbons (DNH)	Explanatory statements are made to the press whenever there are variations in the full price of fuels.
	Petrocomercial	Publishes monthly the full prices of oil products on its web page.	
México Exporter	Federal Government Price Committee	Determines the reference prices on the international market (oil, refined products) Prices (spot and contract) Quality adjustments (sulphur content).	
	Energy Secretariat (Sener)	The Secretariat is developing new methods of control against the illegal fuel market and payments of unregulated businesses	
	Mexican Petroleum Company (PEMEX)	Publishes the variations in average full prices for oil products.	
	National Institute of Statistics, Geography and Informatics (INEGI)	At regular intervals, INEGI publishes average annual prices for fuels on its web page. It also conducts monthly surveys on wholesale fuel prices.	
Paraguay Importer	General Directorate for Fuels	Does not use any control or monitoring mechanism for the full prices of fuels	Whenever there are variations in the full price of gas-oil, a Resolution Decree is issued with the new prices.

	Petropar	Uses the import parity price (PPI) only to see how it is placed in comparison with other countries, in terms of mark-up, tax rates, final consumer price, but not to set prices	
Peru Importer	Ministry of Mines and Energy (MME)	It publishes the variations in the average fuel price to the consumer in Metropolitan Lima. It also issues monthly reports for the domestic market on the structure of the full price for fuels. The Ministry does not have a control mechanism for verifying the increases or decreases in fuel prices.	No press conference is held to explain the reasons for the change in prices. Since there are three different oil-refinery operators as well as various fuel importers, the prices are set on the basis of free competition. Usually, a brief press note is issued explaining the reasons for the adjustment.
	National Institute of Statistics and Informatics (INEI)	INEI publishes monthly the average end price to the public for oil products	
Uruguay Importer	National Administration of Fuels, Alcohol and Portland Cement (ANCAP)	ANCAP is implementing a parametric fuel information system (similar to the international parity price) as a tool for controlling variations in variables (crude, exchange rate) that affect fuel prices.	Whenever there are variations in the full price for fuels a decree is issued and published with the new prices.
	National Energy Directorate (DNE)	Has the full price decrees of recent years Conducts a monthly record of average prices for oil products (with and without taxes).	
Venezuela Exporter	Ministry of Energy and Mines	Owing to its low production costs (indirect subsidy), it does not raise refinery prices to import parity. It does not use any control or monitoring mechanism for the full price of fuels in service stations since they are regulated. It only publishes the current prices of oil products	Whenever variations occur in the full price of fuels, a decree is issued and published with the new prices
	Petróleos de Venezuela (PDVSA)	For the month of September, two types of gasoline will be sold in Venezuela: 91 leaded octane and 95 unleaded octane, as part of a programme for improving quality and rationalizing the consumption of this fuel, which is partly environmentally-friendly	

Source: prepared on the basis of the Methodological annex.

Fuel price monitoring mechanisms for selected countries in the region are presented below. As before, the countries in the region are divided into three groups: oil self-sufficient countries: Argentina, Bolivia, Colombia; oil exporting countries: Ecuador, Mexico and Venezuela; and oil importing countries: Brazil, Chile, Paraguay, Peru and Uruguay.

Oil self-sufficient countries

- Argentina

The Secretariat of Energy and Mining in the Ministry of Energy and Production of the Argentine Republic has established fuel specifications in Resolution No. 54 of 1996. This Resolution indicates the minimum qualities that the products must have in order to protect the consumer, the environment and in order to establish the corresponding taxes. In order to control fulfilment, the Secretariat signed a technical assistance agreement with the National Institute of Industrial Technology (INTI) in order to conduct five hundred controls each month in the six operational areas in which the country has been divided. Each inspection checks compliance with security standards, the volumetric control of the pumps and selling prices; three types of samples are taken (regular gasoline, super gasoline and diesel) and analysed in INTI laboratories. Should any anomalies and infractions be detected, a decision is taken to apply the sanctions contained in Resolution No. 79 of 1999.

The Office of the Under-Secretary of Fuels, which comes under the Secretariat of Energy and Mining publishes the "Informe Mensual de Combustibles"[4], which is a statistical report on the production of oil and natural gas and on sales of crude oil and oil products based on geographical, political and administrative criteria and on the type of operator.

[4] The Informe Mensual de Combustibles may be consulted at the Internet site of the Ministry of the Economy http://energia.mecon.gov.ar/contenidos/contenidos.asp?id=328, this site can also be accessed for the annual bulletins and for substantive related information. The information available dates back to 1998 for some cases.

Pump prices: The alternatives available to the consumer are indicated by locality. These data are obtained from the National Fuel Verification Programme (PNVC). Since January 2002, it stopped providing information on the internet site[5] due to lack of financing.

Domestic wholesale prices and import parity: Until the previous edition, information had been sought exclusively on wholesale parity, termed until then "parity at the plant". The wholesale import parity is a theoretic value, an indicator that shows the profit margin to the importer with respect to the domestic wholesale prices before tax, in order to assume the financial costs of taxes, sales and storage and obtain a profit.

Import parity and domestic prices at the pump: This section presents the final prices to the consumer of the most important companies in Argentina (YPF, Shell, Esso and EG3). In addition, it looks at the import parity at the pump for distributors, to calculate this, all the financial costs are considered and the importer is assumed to have made a profit in order to obtain a parity value at the pump which serves as a reference to the end consumer considering the bonus to the vendor and all taxes.

The figures and formulae for calculation of each of the items that make up these parities may be consulted in the section "Definitions and assumed values" of the respective bulletin of fuel prices.

Comparisons are still made for the cities for the Federal Capital, Rosario and Córdoba.

- Bolivia

The Office of the Superintendent of Hydrocarbons of the Republic of Bolivia publishes the final maximum prices to the consumer and maximum pre-terminal prices for regulated products. These change in line with the periodic application of the price computation methodology indicated in Supreme Decree No. 24.914 and its relevant

[5] See the web site of the National Fuel Verification Programme of the Secretariat of Energy and Mining of the Ministry of Energy and Production of the Argentine Republic http://energia.mecon.ar/home_pet.asp

amendments.[6] The administrative resolutions on this issue may be found at the web site of the Office of the Superintendent.[7] The Office of the Deputy Minister of Energy and Hydrocarbons in the Ministry of Economic Development also issues information on daily fuel price trends. In addition, the Office of the Deputy Minister of Energy and Hydrocarbons provides information on daily fuel price movements.

The Office of the Superintendent of Hydrocarbons controls fuel stations to detect possible alterations in quality, monitors the correct functioning of the systems that control the volume of fuel sold and avoids products being diverted to other stations.

Lastly, the Consumer Bureau (ODECO) was set up on 17 November 1998 in order to give guidance to regular fuel consumers as to their duties and rights. Since its creation, ODECO-Hydrocarbons has restricted its area of influence to the control of prices, quality and volumes of sale of LPG, diesel oil and gasoline. In addition, it set up a free telephone service to enable consumers to report those fuel distributors who do not comply with standards on the issues mentioned above.

- Colombia

The Mining Energy Planning Unit (UPME) of the Ministry of Mines and Energy of Colombia publishes a monthly price bulletin. It also publishes at its web site a monthly price bulletin, "Boletín Mensual de Precios"[8], which informs the public on maximum prices, average prices, reference prices, well-head prices and costs of transport of fuels, such as gasoline, diesel, natural gas, liquefied petroleum gas, natural gas for vehicles, carbon and other oil products.

[6] Supreme Decree No. 24.914 of the Republic of Bolivia contains the "Reglamento sobre Régimen de Precios de los Productos del Petróleo" (Regulation on the Pricing Regime for Petroleum Products), approved by the Executive Power on 5 December 1997.
[7] See the web site of the Office of the Superintendent of Hydrocarbons of the Republic of Bolivia http://www.superhid.gov.bo/
[8] See the web site of the Unit (UPME) at http://upme.gov.co/docum/mensual.htm

The bulletin seeks to satisfy the need for compiled information on the historic and forward-looking trends in the domestic prices of the main petroleum energy products used in Colombia. The document is organised in three main sections:

(a) Liquid fuels for residential, domestic and industrial use and for transport: Monthly price structures are published for regular and extra gasoline, LPG, diesel oil, natural gas and other hydrocarbon fuels.

(b) Fuels for the electricity sector: Transport of natural gas and carbon.

(c) Useful indicators and an appendix: Rate of change, crude oil prices West Texas Intermediate (WTI), reference price trends.

In the light of the possible expectations of the users, each item is introduced in the subtitle termed "Annotations". These contain current resolutions which set the methodology and considerations relating to price calculations. This subtitle includes additional information which explains the results obtained.

Through the UPME, the Ministry of Mines and Energy monitors full prices on a monthly basis in the main cities where the Regime of Controlled Freedom is operated through observations of prices at the pump (gas stations). These observations correspond to a sample of 74 gas stations distributed among the main cities in the country (Barranquilla, Bogotá, Cali and Medellín) with the exception of the capitals of Chocó, La Guajira, San Andrés and the former National Territories.

This survey is termed "Technical specifications" and is conducted monthly for regular gasoline for motor vehicles, extra gasoline, and diesel oil.

Oil exporting countries

- Ecuador

Petrocomercial, the subsidiary of PetroEcuador[9] publishes every month (US$ / gallon), full prices for fuel products (Super gasoline, Extra gasoline, Diesel no. 2, Diesel no. 1, Diesel Premium and Aviation gasoline), for motor vehicles, naval vessels, artisans' workshops, industrial uses and aeronautics. It also publishes the full prices charged to clients by the marketing company, Petrocomercial (distributors, consumers, armed forces, electrical companies and others), international prices at the terminal for oil exploitation and oil exploring companies, heat generation and mining, as well as international prices for marine fuels by terminal and the prices for domestic LPG both bulk rates and residential, industrial and commercial rates.

The Ministry of Energy and Mines, for its part, is developing a project called "Outsourcing of Fuel Control". This project is part of a series of initiatives relating to the regulation of hydrocarbons[10] and its central objective is to control the quality and quantity of oil products sold in service stations in the country, in addition to complementary services through the following control procedures: monthly control of service stations, random checks, control of complementary services: water, air, grease traps, bathrooms and others.

The decision to outsource the quality and quantity control service for hydrocarbon products sold in service stations in the country and complementary services is aimed at increasing the efficiency of the control and improving the results so that the final beneficiary is the fuel consumer.

- Mexico

[9] State Oil Company of Ecuador, which replaces the Ecuadorian State Oil Company (CEPE), was created on 26 September 1989 to explore and exploit hydrocarbon deposits on the national territory, including the territorial seas in accordance with the existing Hydrocarbons Act.

[10] See web site of the Ministry of Energy and Mines of Ecuador, which provides information on various hydrocarbon projects. These include "Outsourcing of the control of service stations", and the project "Modernising the structure of gas marketing", http://www.menergia.gov.ec/php/index.php

The company Petróleos Mexicano publishes energy statistics every month on its web site[11] together with the final prices to the public of oil products, such as: gasolines for the northern border and rest of the country, pemex diesel, fuel oil and jet fuel. It also publishes the volumes of monthly sales and the value of total sales of the above-mentioned products.

For its part, the Energy Regulatory Commission (CRE) of the Energy Secretariat of the Republic of Mexico publishes "InfoCRE[12], a bimonthly publication which informs consumers on LPG prices, method of calculating final prices and modifications of the laws that regulate first-hand sales of gas and other materials relating to the energy sector.

- Venezuela

The Ministry of Energy and Mines of the Republic of Venezuela publishes on its web site[13] information relating to the domestic prices for oil products with their relevant pricing resolution or decree.

Oil importing countries

- Brazil

The Ministry of Mines and Energy and the Ministry of Finance of the Republic of Brazil publishes quarterly reports on adjustments in fuel prices that come from the application of the Parametric formula established in Inter-ministerial decree MF/MME No. 2 of 4 January 2001. This new system of calculation determines the price adjustments of oil products in accordance with international prices and the variation in Brent oil.
The objectives of this Decree are as follows:

[11] PEMEX is the semi-public agency responsible for the extraction and processing of oil and gas in the Republic of Mexico. See http://www.pemex.com
[12] Publication disseminated by the Energy Regulatory Commission of the Energy Secretariat of the Republic of Mexico. It can also be consulted at the Commission's web site: http://www.cre.gob.mx/publica/infocre.html
[13] See the web site of the Ministry of Energy and Mines of the Republic of Venezuela http://www.mem.gov.ve

- To foster greater transparency in the pricing mechanism for oil products.
- To balance the transparency of resources between the Treasury of the Republic and Petrobras.
- To cushion the impact of the rise in international prices for oil products.

The National Petroleum Agency (ANP) is an important source of information on the hydrocarbon sector. Its web site[14] contains information on the following:

(a) Price monitoring: this section contains weekly and monthly data on final prices of the different fuels organised in different geographic areas (municipalities and states). For monitoring of fuel prices, weekly surveys are made of prices and mark-ups for gasoline and hydrated ethyl alcohol fuel (HEAF) in 4,010 service stations in 363 cities scattered across the country. The monitoring results, which are updated each week, provide consumers with timely information on the prices applied in the market, thereby enabling them to make better purchasing decisions. In addition, this consultation permits the central government to identify breaches by particular economic agents and to apply the sanctions specified in existing legislation.

The Government has recently been adopting measures to promote deregulation of the fuels sector, in particular the relaxation of controls on consumer prices, mark-ups and transport costs throughout the country. Within this section one can find the mechanism for the price structure of "C" gasoline, diesel oil and LPG.

(b) Centre for Consumer Relations (CRC): The National Petroleum Agency has set up a service to attend to economic agents and oil and gas consumers in order to promote and disseminate the duties and rights that persons and institutions have as consumers. From this perspective, the CRC mandate is to receive, hear and analyse the demands of consumers in order to find, as far as possible, a solution to any conflicts that may arise.

[14] See the Internet web site of the National Petroleum Agency (ANP), in particular the section corresponding to data on prices of oil and oil products. http://www.anp.gov.br/petro/analise_precos.asp

Lastly, the web site of the National Petroleum Agency provides information on distributors, retailers, product specifications, current legislation, technological advances and other related issues.

- Chile

The National Energy Commission of the Republic of Chile (CNE)[15] is responsible for calculating the credits or taxes of the Petroleum Stabilisation Fund (FEPP), as established under Law No. 19,030 on the basis of reference or parity prices. Applying a policy of maximum transparency for the national consumer, CNE publishes every month on its web site[16] the variations in parameters associated with the five oil-based products that belong to FEPP, namely, gasoline, kerosene, diesel, fuel oil and LPG. Hydrocarbon statistics may also be consulted at the web site, where the compositions of prices of the different types of fuel are published monthly. Information is also published monthly on the prices and mark-ups in the different regions of the country (weekly for Santiago, the capital).

The National Petroleum Company (ENAP) provides a forward-looking report to the media every week on wholesale fuel price trends in Santiago; that is, ENAP specifies when and by how much it will adjust fuel prices on the domestic market.

The National Consumer Service (SERNAC) conducts a weekly survey of the full price to the consumer charged by service stations in order to monitor price increases or reductions projected by ENAP and to indicate which service stations comply with standards. It even suggests those that are more convenient and serious in applying prices. The National Institute of Statistics (INE) also publishes average final prices to the consumer.

[15] The National Energy Commission of the Republic of Chile is a public, decentralised body with equity capital and the full capacity to acquire and exercise rights and obligations. It reports directly to the President of the Republic.
[16] See the web site of the National Energy Commission http://www.cne.cl/hidrocarburos/f_hidrocarburos.html

- Paraguay

Except in the case of gas oil, there is no regulatory agency for fuel prices in the Republic of Paraguay. Nevertheless, the General Fuel Directorate is responsible for regulating the commercial policy for fuels. In short, final prices to the consumer are not monitored, and no agency evaluates or records full price trends in the service stations with a view to informing consumers.

- Peru

The General Directorate for Hydrocarbons (DGH) of the Ministry of Energy and Mines of the Republic of Peru publishes the following reports on its web site for the information of investors and the public as a whole[17]:

- Monthly report of the hydrocarbon statistics: in this report, it is possible to find information relating to fuel sales in the country, variation in sales, net fuel prices, fuel price structure, average production of liquid hydrocarbons and the hydrocarbon trade balance, among others.
- Statistical Yearbook on Hydrocarbons 2000: this yearbook specialises in recording information on activities of exploration, exploitation, hydrocarbon reserves, refining and marketing activities. An Executive Summary of the Annual Report on Reserves 2000, the Reference Plan on Hydrocarbons, Laws and Regulations in Force, and so forth, has been published.

According to the Ministry itself, control and regulation mechanisms in the domestic fuel market in Peru can be improved in order to enhance competitiveness in the retail market and provide consumers with greater transparency, dissemination and monitoring of fuel prices charged by service stations.

[17] See the home page of the General Directorate of Hydrocarbons (DGH) of the Ministry of Energy and Mines: http://www.mem.gob.pe/wmem/hidrocarburos/default.asp

- Uruguay

Despite the absence of a regulatory framework in the hydrocarbon sector, Law no. 17.488 relating to the demonopolisation of imports, exports and refining of crude oil seeks to ensure that any entrepreneur or economic group can invest for 30 years in oil importation, exportation and refining, and the distribution and exportation and marketing of refined products and the importation of the latter as from 1 January 2006 subject to certain conditions".[18]

The National Energy Directorate of the Republic of Uruguay[19] publishes information on fuels on its web site. The purpose of this site is to inform consumers of the issues relating to the energy sector; so that the following information is given:

(a) Main laws and decrees. This section offers the Decrees on fuel prices in recent years: gasolines, diesel, fuel oil, kerosene, natural gas and propane. It is also possible to obtain laws on oil products, electricity and other services, for example:

- Law no. 17.488 of 27 December 2001, Demonopolisation of importation, exportation and refining
- Law no. 17.296 of 21 February 2001 – Art.565, IMESI – National Budget Act
- Law no. 16.213 of 4 October 1991 – Revocation of Art. 17 of Law 14.181.
- Law no. 14.181 of 29 March 1974, Exploration and exploitation of hydrocarbons.
- Law no. 8.764 of 14 October 1931, Creation of ANCAP.

(b) Statistical information: This section provides information on the following:

- Average monthly price of oil products (with and without taxes).
- Crude processed monthly.
- Monthly output of products.
- Monthly sales of products on the domestic market.

[18] For further information on Law no. 17.488, see the website of the National Energy Directorate http://www.dne.gob.uy/leyes_y_decretos/

[19] This is the unit responsible for proposing and coordinating national energy policy in terms of both fuels and electrical energy.

- Socio-economic information.
- Monthly price indices.

(c) National energy assessment: This section provides information on the following:

- Production, importation, exportation and supply of primary and secondary energy sources.
- Assessment of processing centres.

Final consumption of primary and secondary sources by consumption sector.

3. FUEL PRICING POLICIES AND THEIR ECONOMIC AND ENVIRONMENTAL IMPLICATIONS

The pricing policies applied in South American countries and in Mexico do not follow a single, homogeneous pattern, but rather reflect different degrees of State intervention, which prove to be independent of the source analysed and of the category or degree of the country's oil dependency (Table 3.1). Thus, in the case of the oil self-sufficient countries, Argentina is at one extreme with companies absolutely free in setting ex-refinery prices and gross mark-ups and Bolivia is at the other with totally regulated systems in all sources, while Colombia has a mixed pattern with regulation of ex-refinery prices of all products, and the existence of controlled and free mark-ups.[20] The same occurs in oil importing countries, where the extremes may be seen in Paraguay, Peru and Brazil with free pricing for all the products and components of the chain. This contrast with the regulation in Uruguay; while in Chile, although there is free pricing, there is also price setting by the public company ENAP, which reflects price setting in a semi-free regime. In the case of the oil exporting countries, all apply price controls at all sources and for all components.

3.1 Estimation of the economic impact measured through the ex-refinery prices for fuels

The variance between international reference prices and domestic ex-refinery prices may be interpreted as a "subsidy" if the domestic price is lower than the international price and as a tax if it is higher.[21] In the first case, it is clear that this subsidy benefits the consumer directly; in the second case, it is not so clear who the beneficiary of this "tax" is, especially when there are different agents –private and/or public- in different links of the chain downstream.

[20] Mark-ups are controlled or decontrolled depending on the city (see Methodological annex 2.2).
[21] See IEA, 2002.

The International Energy Agency (1999) points to the serious difficulties in giving a precise definition of subsidy and opts for a very general one: "An energy subsidy is any government action that lowers the cost of energy production, raises the price received by energy producers or lowers the price paid by energy consumers." From this point of view, it is clear that a tax is a subsidy to the producer.

Table 3.1 Pricing policies applied to fuels in South America and Mexico

Countries	Components	Regular Gasoline	Premium Gasoline	Diesel oil	LPG	Important Notes (see notes)	Price lining up based on
SELF SUPPORTED							
Argentina	P-EX-REF MCB PVP	F	F	F	F	11-1989 (1)	Import price parity (PPI)
Bolivia	P-EX-REF MCB PVP	R	R	R	R	12-1997 (2)	Reference market
Colombia	P-EX-REF MCB PVP	R R/F R/F	R F	R R/F R/F	R R/F R/F	12-1998 (3)	Reference market
IMPORTERS							
Brazil	P-EX-REF MCB PVP	F	F	F	F	1997 (4)	Import price parity (PPI)
Chile	P-EX-REF MCB PVP	SF	SF	SF	SF	01-1982 (5)	Import price parity (PPI)
Paraguay	P-EX-REF MCB PVP	F	F	R	F	01-1990 (6)	Reference market
Peru	P-EX-REF MCB PVP	F	F	F	F	08-1993 (7)	Import price parity (PPI)
Uruguay	P-EX-REF MCB PVP	R	R	R	R	10-1931 (8)	Reference market
EXPORTERS							
Ecuador	P-EX-REF MCB PVP	R	R F F	R	R	07-1996 (9)	Reference market
Mexico	P-EX-REF MCB PVP	R	R	R	R	(10)	Reference market
Venezuela	P-EX-REF MCB	R	R	R	R	09-1998 (11)	Reference market

Notes:
- P-EX-REF: Domestic ex-refinery price
- MCB: Gross mark-up
- PVP: Full price

- Regulated (R): Implies the imposition of a maximum price by the relevant authority.
- Semi-free (SF): Implies that although there is a reference price, the distributing companies or major consumers can purchase their products abroad.
- Free (F): Implies the free determination of margins and prices by agents.
- PPI: Import parity price.
- Reference price: Average price for a product in a reference market (United States Gulf Coast).
- For kerosene and fuel, the pricing policy is the same for each one of the fuels of the countries previously analysed.

(1) Decree 1.212 of November 1989 established free pricing for petroleum products.

(2) Prices are regulated by the Office of the Superintendent of Hydrocarbons on the basis of Supreme Decree No. 24914 of December 1997 and its amendments.

(3) The ex-refinery prices of regular gasoline and diesel oil are determined by Resolutions No. 82.438 and 82.439, respectively, of December 1998; for gasoline extra, the legal framework is resolution 80278 of 29 February 1996. The mark-ups under the Regulated Free Regime (RFR) for regular gasoline are determined by the above-mentioned resolution (note that the retail mark-up is decontrolled in some areas of the country); for premium gasoline under the Monitored Free Regime (MFR), it is also decontrolled. For diesel oil under RFR, the wholesale and retail mark-ups are set by the Ministry of Energy and Mines and for diesel under MFR, it is decontrolled.

(4) Deregulation of the fuel supply sector in Brazil was initiated in the 1990s starting with law 9.478 of 1997 and culminated in the total opening of the market with effect from January 2002. Among other things, this process provided for the decontrol of prices, mark-ups and freight rates throughout the production chain and for the creation of the market entry or intervention tax (CIDE) in replacement of the Parcela de preços especifica (PPE). These measures were necessary in order to eliminate distortions in the market generated by the existence of cross-subsidies and compensation of distribution and transport expenses. This was done with the idea of allowing an equilibrium between the national product and the imported product and consequently to permit the possibility of creating a competitive market.

(5) In 1978, decontrol of fuel distribution started and economic agents were given full freedom to produce, distribute and market petroleum products, this was completed in 1982 with price liberalisation. As from 1991, the prices at the refinery gate are raised to the import parity price, on the basis of law 19.030 of 1991, amended by law 19.681 of 2000.

(6) The first fuel to be deregulated was liquefied petroleum gas (LPG) on the basis of Decree No. 4.454 of January 1990, followed by fuel oil and kerosene with Decree No. 5445 of April 1990 and, lastly, regular and super gasoline were decontrolled in August 2000 by virtue of Decree no. 10.183. The price of diesel oil is regulated by the Government through the Ministry of the Economy by virtue of Decree No. 10.911 of 2000 “Regulation on the refining, importation, distribution and marketing of petroleum-based fuels”.

(7) The prices of petroleum products are deregulated by Law No. 26.221 – Hydrocarbon Act, Section VII – Free Trade, article 77 of August 1993.

(8) Fuel prices are set by the Board of Directors of the National Fuel, Alcohol and Portland Administration of Uruguay (ANCAP) in accordance with article 3 of Law 8764 of 15 October 1931 and subsequent amendments. In future, that is from 31 March 2004, maximum fuel prices at the refinery gate, tax not included, must be equal to the import parity price in accordance with Law 17.448 of 27 December 2001.

(9) Marketing of liquid hydrocarbon-based fuels is a public service, which must be provided with respect for the principles set forth in article 249 of the Political Constitution of the Republic. It is regulated by the Ministry of Energy and Mines and controlled by the National Hydrocarbon Directorate. The mark-up on fuels can vary up to 18% over the selling price of oil products at the terminal and is set by the State except in the case of super gasoline.

(10) To establish the pricing formulas for products in the country in relation to the other oil products, PEMEX and the Federal Government Pricing Committee use international reference prices adjusted on the basis of international quality standards, net transport costs and opportunity costs to obtain the producer price. The mark-up is set by the Committee, which is made up of representatives of the Secretariat of the Economy, Petróleos Mexicanos, the Secretariat of Finance and Public Credit and the Secretariat of Energy.

(11) The Organic law on the opening-up of the domestic market for gasoline and other oil-based fuels for use in motor vehicles, of 11 September 1998, eliminated barriers to the importation and exportation of fuels, guaranteed the supply of oil and oil products by industry and distributors, and also permitted the positioning of trademarks and investments in the domestic market; lastly, it provided for the prices of products to be set by the National Executive through the Ministry of Energy and Mines.

Source: based on Methodological annex.

Between 2001 and 2002, the total amount of "subsidies" or "taxes" varied depending on the source and/or country (Table 3.2):

- Venezuela's ex-refinery prices were in all cases lower than its FOB export prices. In this way and by order of importance, (i) gasoline consumers would have received a subsidy for an amount of US$1 345 million in 2001, increasing to almost US$2 300 million in 2002; (ii) the transport of passengers and goods using diesel oil was subsidised to the tune of US$488 million in 2001 and US$845 million in 2002; (iii) lastly, in the case of LPG, the subsidy is aimed at satisfying the population's fuel requirements and amounted to US$190 million in 2001 and US$276 million in 2002.
- In 2001, Mexico applied high surcharges on gasolines and to a lesser extent diesel oil. This generated additional income for the producer of US$3.76 billion on gasolines;

US$1 507 million and almost US$400 million in the case of LPG. The turnaround observed in 2002 meant that the surcharges on gasolines declined seven times to stand at US$473 million; and there is a negative difference for LPG and fuel oil of US$130 million and US$162 million respectively.

- Brazil, like Mexico, had aligned its prices so that there were small differences of a fraction of a dollar per unit of fuel, whether litres or kilos, which, when multiplied by the quantities of each fuel sold, meant that the additional income to the producer was approximately US$2.9 billion. This amount changed radically in 2002, since the producer absorbed a difference of slightly over US$1.8 billion.
- Argentina showed the most radical change of all the countries analysed. Whereas producers recorded a surplus of almost US$5 billion in 2001, in 2002, US$6.3 billion was transferred to consumers, of which 95% is applied to gas oil. That is, in this case, clearly the increase in ex-refinery prices was not applied to the transport and agricultural sectors.
- In 2001, Colombia subsidised diesel oil (thus consumption associated with public passenger transport and goods transport in general) much more than gasolines. However, the subsidy spread to all sources in 2002 reaching a total of close to US$3 billion.

Table 3.2 Amount accumulated by differences between domestic prices and the IMBP (US$ million)

		Arg	Bol	Bra	Chile	Colom	Ecu	Mexico	Paraguay	Peru	Uruguay	Venezuela
LPG	2001	156	-9	170	72	30	-113	381	10	51	19	-190
	2002	-94	-56	-402	65	-70	-201	-130	-1	44	0	-276
Gasoline	2001	448	22	1053	60	136	182	3769	20	71	77	-1345
	2002	-17	13	-889	1	-243	91	473	-2	44	47	-2297
Diesel Oil	2001	4359	340	1491	1954	-3344	52	1507	578	1518	1814	-488
	2002	-6123	377	-535	984	-2714	-75	0	454	840	566	-845
Fuel Oil	2001	-34	n-a	184	13	-9	13	58	-2	49	3	-35
	2002	-56	n-a	-15	-24	-7	-20	-88	-1	441	-13	-52

Source: based on Methodological annex and Latin American Energy Organisation (OLADE) Ecuador, January 2002 and February 2003 http://www.olade.org.ec/sieehome/home_siee.htm.

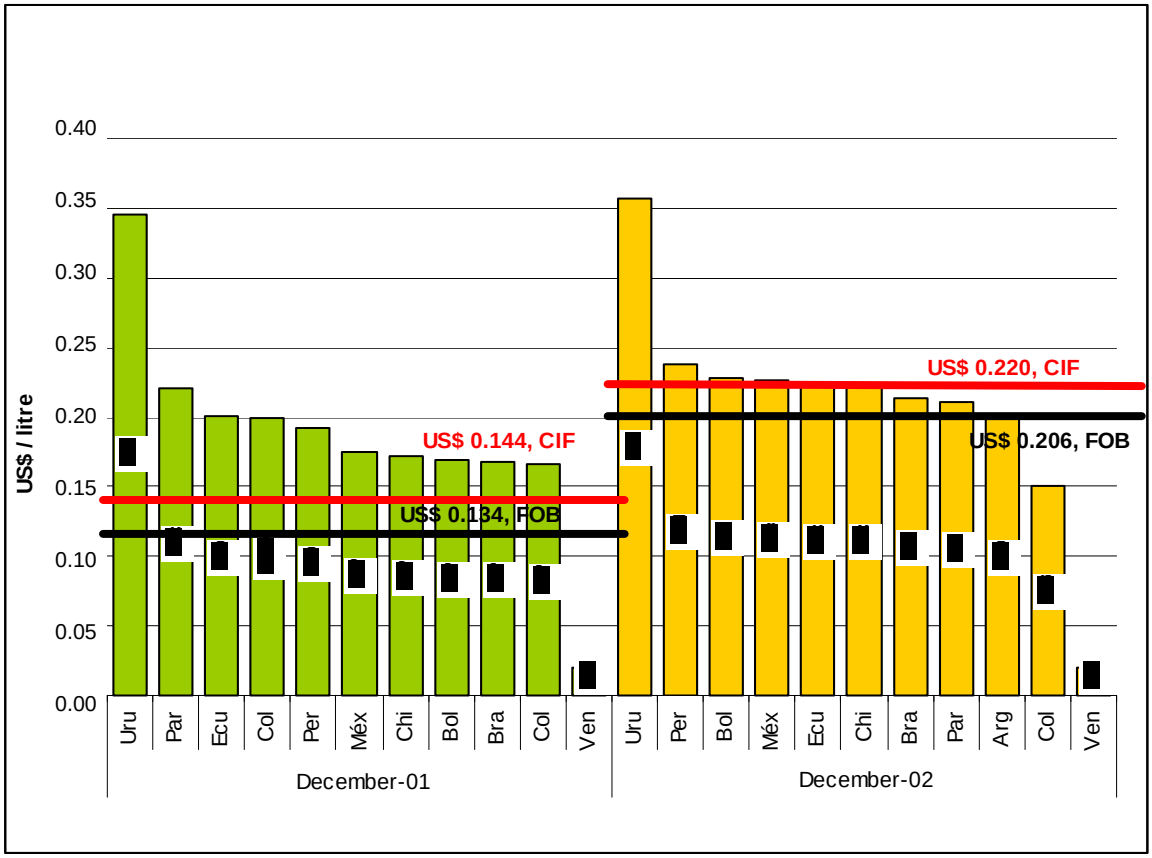
With respect to the differences between ex-refinery prices and international reference prices, it can be seen that there is no systematic correlation over time with the country's status as an oil exporter, an oil self-sufficient producer or oil importer. A possible explanation is that the purpose was to halt the rise in international prices in 2002 compared with 2001 and to avoid applying that increase in an automatic way, but that it would appear to have been effected in a selective manner.

It is also significant that in December 2001, gasoline prices as well as those of diesel and fuel oil were higher than the IMBP; this would have detracted from the competitiveness of the economies, inasmuch as the costs of production of the primary, manufacturing and transport sectors increased (Figures 3.1 to 3.5). Summing up the trend, it may be noted that:

- In December 2001, all countries, except for Venezuela had prices that were higher than the United States Gulf Coast reference prices. The case of Uruguay is noteworthy since this country had the highest price in the region - double the reference price in that year. The situation changed in December 2002, when the price for regular gasoline in Bolivia, Peru and Uruguay stood above the CIF reference price (US$0.220/1itre), while the rest of countries practically aligned themselves on the CIF or FOB price, depending on their status as an importer or exporter of these fuels. With the exception of Venezuela, in December 2002,

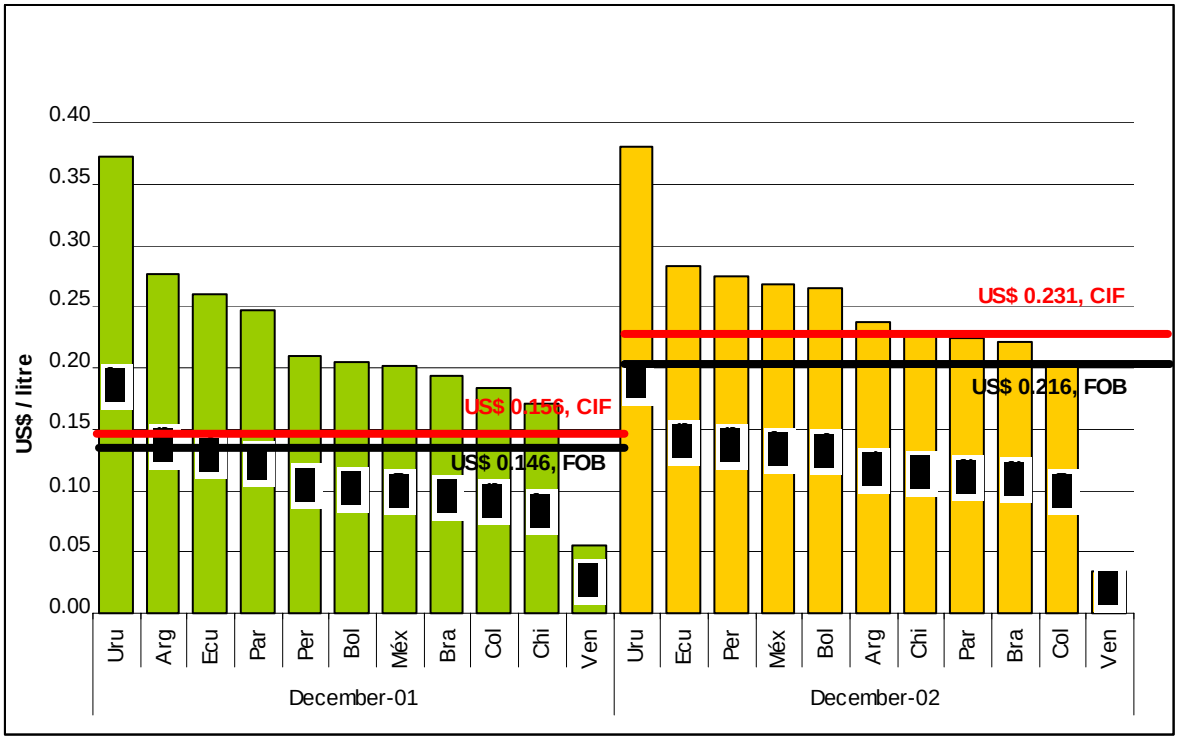
domestic prices were aligned on international prices with differences among importing countries: Brazil, -4.47%, Chile, -0.57% and Paraguay, -2.72%, followed by the self-sufficient countries: Argentina, 3.02%, Colombia -12.71% and, lastly, the exporting countries.

Figure 3.1 Comparison of ex-refinery prices for regular gasoline in South American countries and Mexico



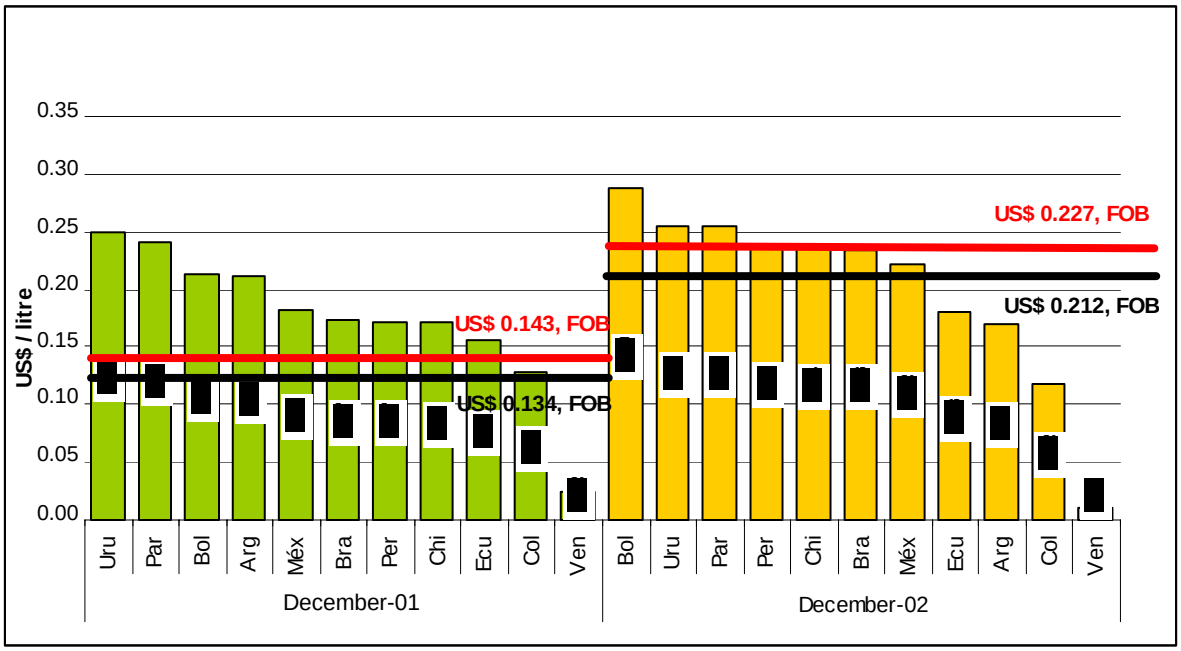
Source: based on Methodological annex and IEA, 2002.

Figure 3.2 Comparison of ex-refinery premium gasoline prices in South American countries and Mexico



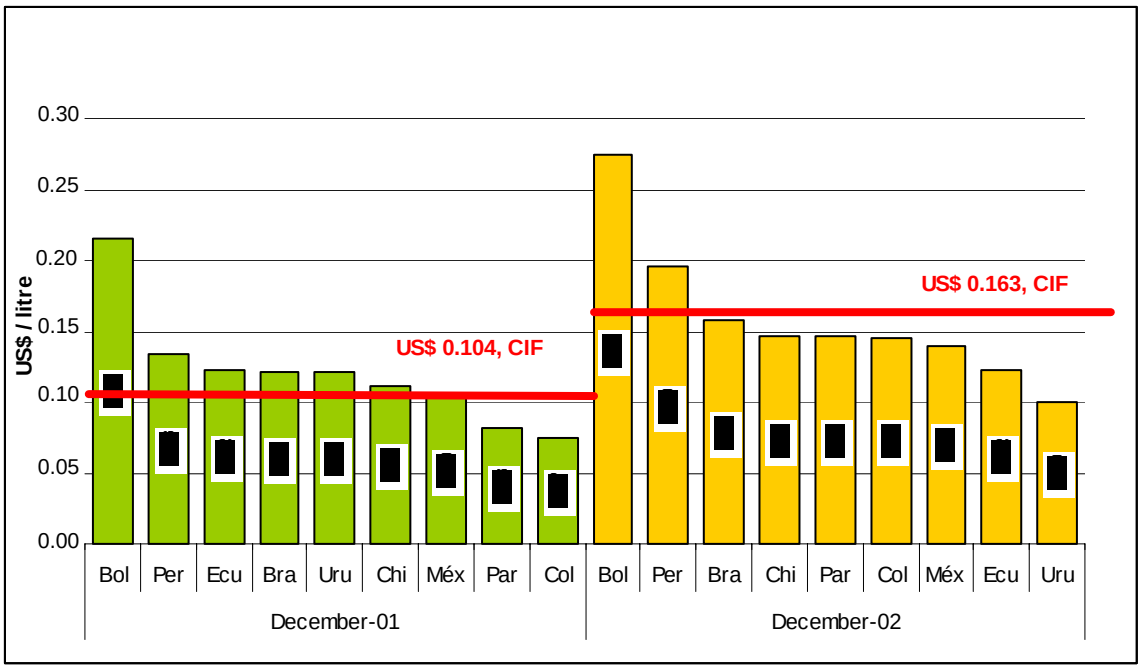
Source: based on Methodological annex and IEA, 2002.

Figure 3.3 Comparison of ex-refinery diesel oil prices in South American countries and Mexico



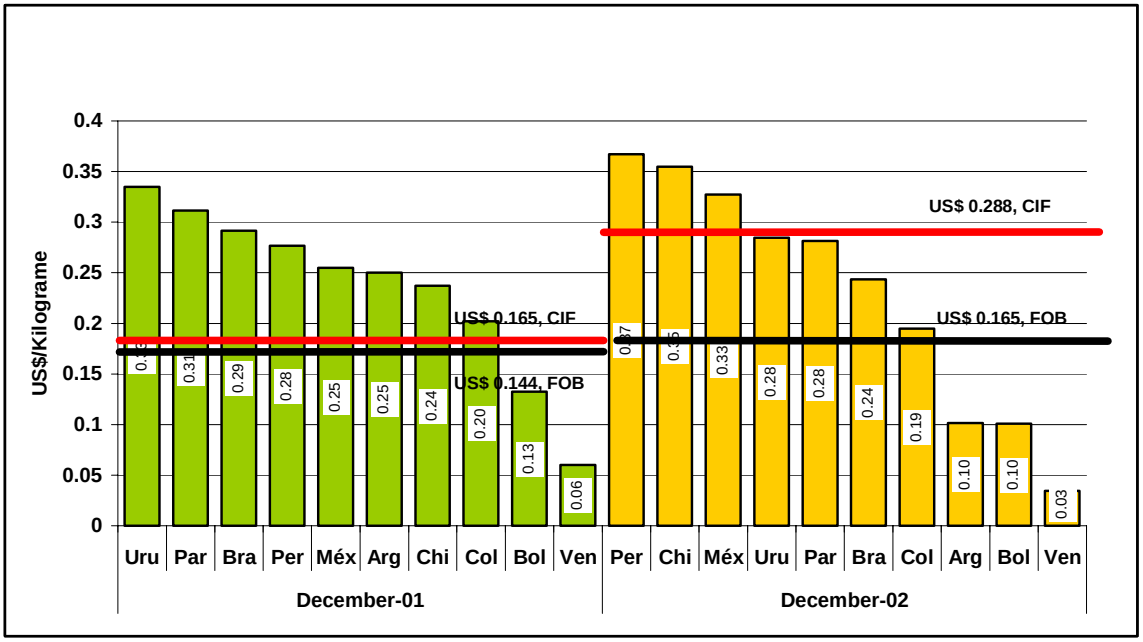
Source: based on Methodological annex and IEA, 2002.

Figure 3.4 Comparison of ex-refinery fuel oil prices in South American countries and Mexico



Source: based on Methodological annex and IEA, 2002.

Figure 3.5 Comparison of ex-refinery LPG prices in South American countries and Mexico



Source: based on Methodological annex and IEA, 2002.

- Bolivia is the country that had the highest ex-refinery price for diesel oil, in December 2002 and Venezuela, the country with the lowest. The importing countries were those that subsidised the producer or importing agent most heavily: Paraguay, 12.03%, Uruguay, 12.21%. On the other hand, countries that subsidised the consumer included both oil self-sufficient countries, such as Argentina (-25.21%) and Colombia (-48.37%) and oil exporting countries, such as Ecuador (-15.39%).
- As specified earlier, the ex-refinery price for fuel oil fell below the reference price in December 2002 in most of the countries with the exception of Bolivia and Peru, compared with December 2001 when it stood above it. If substitute fuel prices were aligned in accordance with the dominant fuel, the reduction in fuel price observed in December 2002 should have been reflected in a significant reduction in coal and natural gas prices in the industrial sector and in the cost of electricity generation. Bolivia stands out as the country with the highest ex-refinery price for fuel oil in December 2002 and, contrary to the case of intermediary and light fuels, Uruguay is the country with the most reasonable prices.
- Domestic prices for both diesel and LPG in December 2001 were much higher than the Mont Belvieu reference price (except in Bolivia and Venezuela). Special reference is made to Uruguay (102%), Paraguay and Brazil. The situation changed in 2002: while Chile, Mexico and Peru remained above the reference price, the self-sufficient countries were those that were below, especially Argentina and Bolivia with -65% and Colombia with -32.42%.

3.1.1 Impact of the tax policy applied to fuels

In 1986, when a specific tax was established for fuels, diesel was used basically in heavy transport (buses and trucks) and therefore the low tax on diesel was geared towards maintaining relatively low costs for public transport and goods transport. In addition, one should recall that the environmental issue became prominent only in the 1990s.

Acquatella (2003) states that since the 1980s most of the developing countries have tended to apply simpler fiscal regimes, with emphasis on the use of the value added tax (VAT) and simplifying the structure and fiscal administration with a view to achieving greater efficiency in tax collection increasing the tax base and eliminating subsidies, tariffs and export duties.

In the case of Latin America, most countries already use the tax on gasoline (oil and oil products) for tax collection purposes. Between 2001 and 2002, the amounts collected as tax on liquid fuels as a percentage of GDP increased in all countries except Argentina and Venezuela. Significant increases were recorded in Bolivia, Brazil, Ecuador, Paraguay and Peru, countries where tax collection for fuels exceeded 3% of GDP (Table 3.3).

Table 3.3 Tax collection on liquid fuels

	2001 Total collections		2002 Total collections	
	(US$ million)	(% of GDP)	(US$ million)	(% of GDP)
Argentina	5376	1.97	3225	1.33
Bolivia	218	2.59	319	3.69
Brazil	12751	2.12	19965	3.27
Chile	1375	1.89	2232	3.00
Colombia	674	0.82	1184	1.41
Ecuador	88	0.61	500	3.36
Mexico	11301	1.96	15113	2.60
Paraguay	58	0.73	285	3.69
Peru	1284	2.40	1938	3.44
Uruguay	216	1.12	318	1.84
Venezuela	323	0.26	313	0.28

Source: based on Methodological annex and ECLAC, 2002.

The energy taxes applied to fuels based on oil, coal and electricity play an important role within the tax structure in both industrialised and developing countries. The difference between the tax policy applied to fuels in Latin American countries and that of the more developed countries is that in the latter energy taxes account for the bulk of total fiscal collections of what could be considered environmental taxes, whereas in Latin America

the sole purpose has been to increase tax collections. According to Acquatella (2003), whereas in the developed countries, with the exception of the United States, most of these energy taxes were not designed for specifically environmental purposes but rather for tax collection purposes, they have been treated increasingly within the fiscal regimes within the logic of green taxes in order to make them more politically palatable.

The different positions relating to the fiscal rationale have been discussed at length but no agreement or reconciliation of positions was achieved between energy producing and consumer countries, in particular with the industrialised countries, which account for a high share of world energy consumption and therefore are the main producers of greenhouse gases. In international debates, the positions of energy producers and consumers do not generate antagonism as long as it is recognised that the rationale for these general taxes on energy in the industrialised countries is strictly fund-raising. On the other hand, once authorities seek to justify the tax structure on energy consumption in the industrialised countries on the grounds that they are "environmental" taxes, the problem arises as to how the proceeds should be shared globally, given that the environmental externality associated with energy consumption is a global externality that affects all countries alike and therefore the tax should not be appropriated by the consuming country alone.

If we consider the taxes applied in 2001 and 2002 for the two highest consumption fuels, it can be seen that:

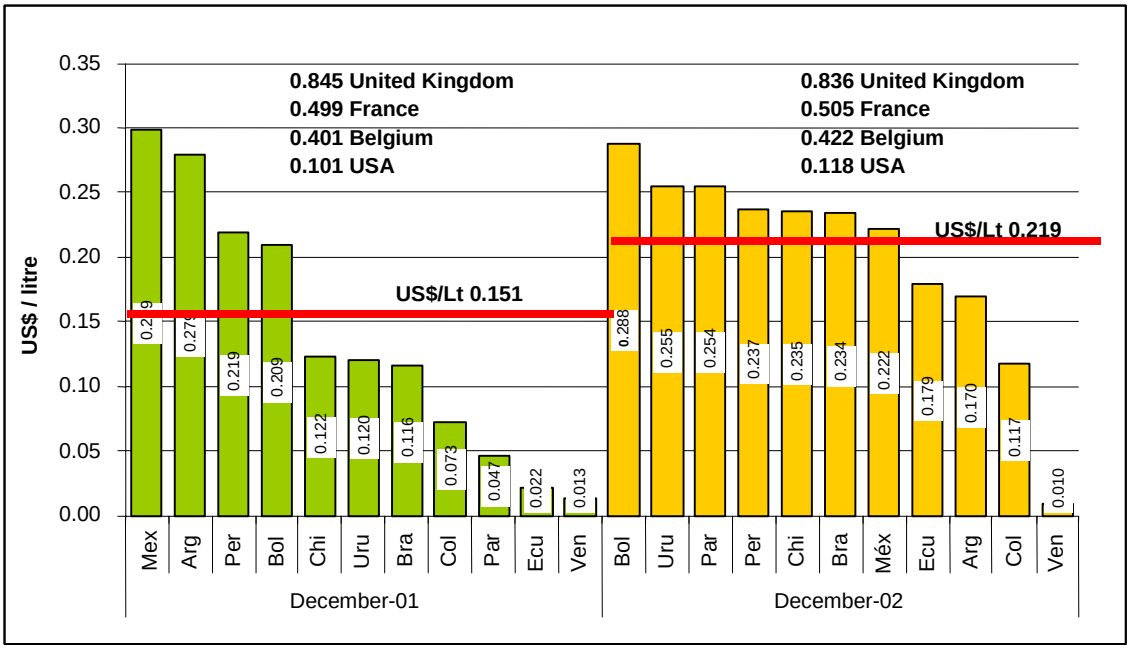
- In 2001, Mexico, Argentina, Peru and Bolivia, in that order, imposed high taxes on diesel oil, i.e. between 21 and 30 US cents per litre, which was more than double the tax in the United States but much lower than those applied in Europe, especially in Belgium (40 US cents), France (50 US cents) and the United Kingdom (84.5 US cents), which, according to the International Energy Agency is the country that had the highest tax burden in the world next to Norway.[22] The situation changed slightly in 2002, more in Latin America than in the

[22] See IEA Energy Prices and Taxes, Quarterly Statistics, Third Quarter 2002, OECD 2002.

industrialised countries used here for comparative purposes, inasmuch as Mexico and Argentina cut back the amount in absolute terms while the rest of countries in the region increased it and as such, as shown in Figure 3.6, those values tend to be equivalent and do not show the divergences of 2001. Thus, there is a significant difference between these countries and the industrialised countries.

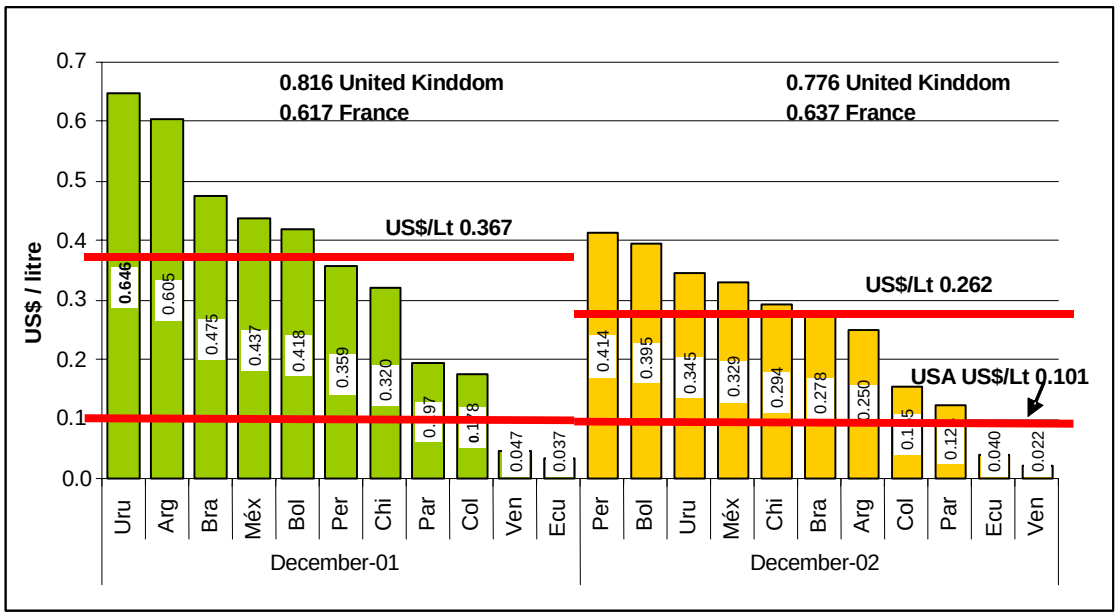
- In the case of premium gasoline, the tax rates applied in Uruguay and Argentina (over 60 US cents / litre) and to a less extent those of Brazil, Mexico and Bolivia (over 40 US cents) are the highest observed in 2001 and are almost six and four times as high as the tax in the United States, but lower than France (62 US cents) and above all than the United Kingdom (82 US cents). The rates applied in 2002 suggest that countries, with the exception of Peru, preferred to reduce the tax burden and thus to avoid affecting the final price to the consumer as much as would have occurred if the same tax as in 2001 had been applied to the ex-refinery price in 2002. (Figure 3.7).

Figure 3.6 Taxes applied to fuels



Source: based on Methodological annex and IEA, 2002.

Figure 3.7 Taxes applied to premium gasoline



Source: based on Methodological annex and IEA, 2002.

3.1.2 The full price to the consumer and changes in the price structure

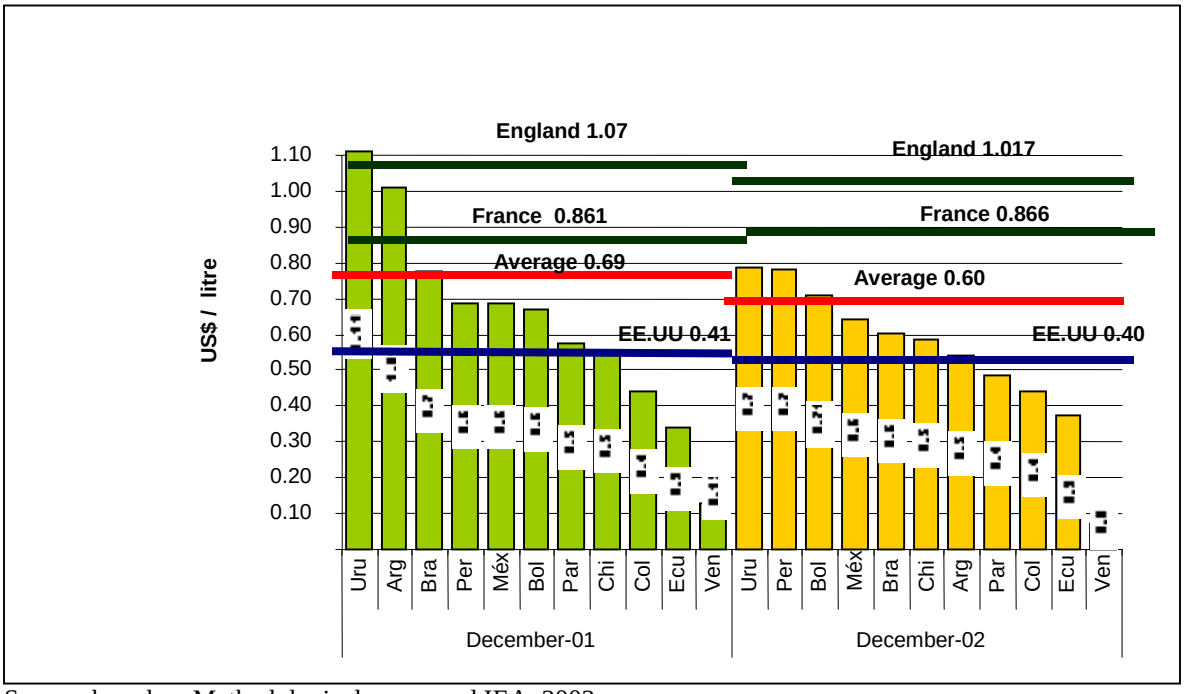
Between 2001 and 2002, the final gasoline price to the consumer followed a general downward trend, fuel oil prices trended upwards and gas oil and LPG prices declined slightly. The declines recorded were as follows:

For premium gasoline, the average fell by 14% from 69 cents / litre in 2001 to 6 cents / litre in 2002. The largest reductions were recorded in Argentina (46.5%) followed by Uruguay (28%) and, to a lesser extent, Brazil (22%). The industrialised countries, such as the United Kingdom, United States and France, did not show substantial changes (Figure 3.8).

Average prices for regular gasoline fell by 17% and the sharpest differences were recorded in the Mercosur countries: Argentina (44%), Uruguay (27%), Brazil (21%) and Paraguay (12%). Meanwhile, in the United States, an increase of 4 US cents was recorded, raising the price from 33 US cents/litre to 37 US cents / litre (Figure 3.9).

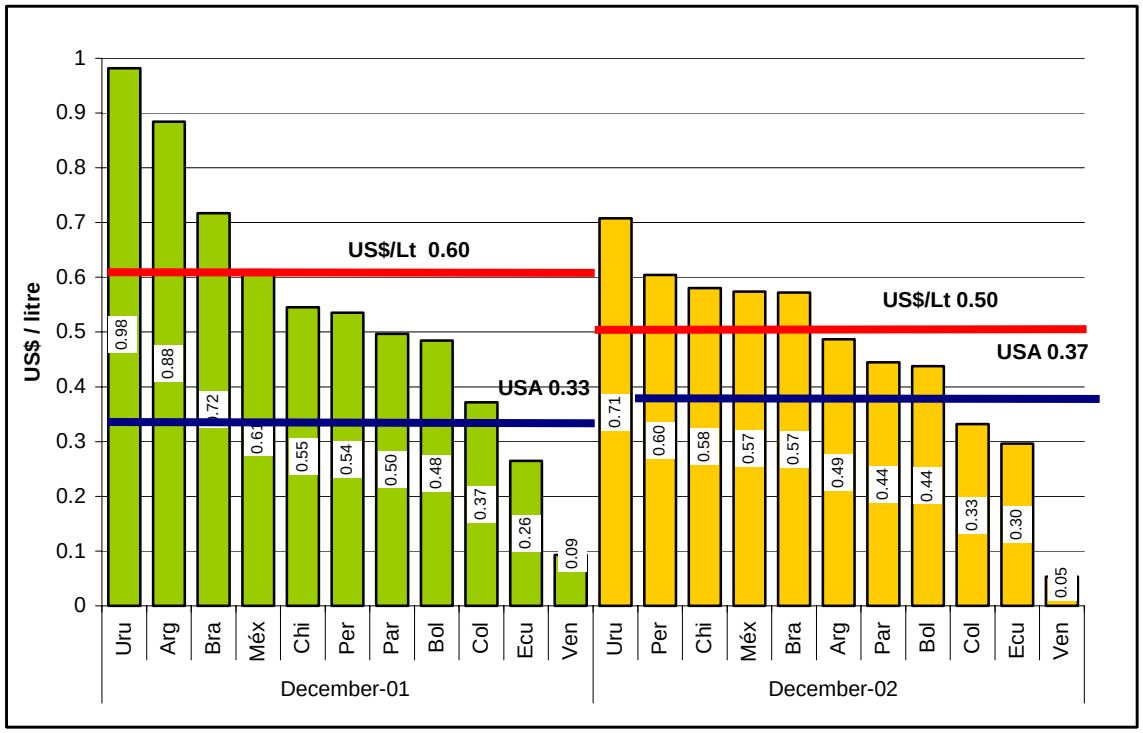
Clearly, diesel oil prices in the various countries did not present a homogeneous pattern. While increases were recorded in Brazil and Peru of 17% and 13% respectively, in Argentina, the price fell by 33%. With respect to the industrialised countries, the prices observed in 2002 were 13% lower in the United States, 6% lower in the United Kingdom and practically unchanged in France (Figure3.10).

Figure 3.8 Comparison of full prices for premium gasoline in South American countries and Mexico



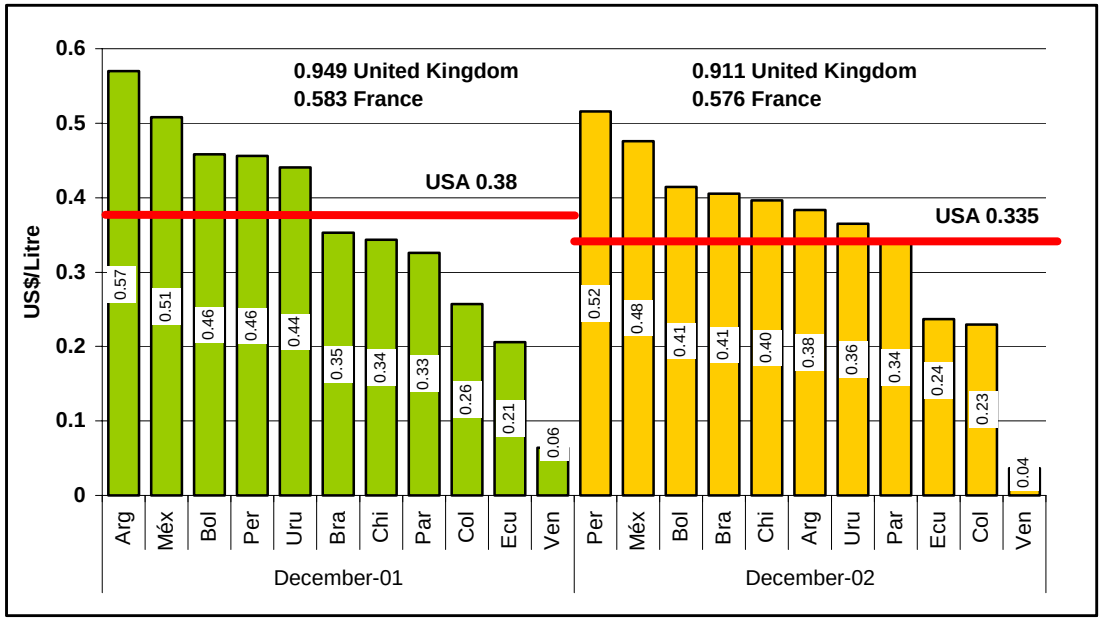
Source: based on Methodological annex and IEA, 2002.

Figure 3.9 Comparison of full prices for regular gasoline in South American countries and Mexico



Source: based on Methodological annex and IEA, 2002.

Figure 3.10 Comparison of full prices for diesel oil in South American countries and Mexico



Source: based on Methodological annex and IEA, 2002.

The widest variations, however, were recorded in the structure or composition of consumer prices for the different fuels; that is, the tax components together with refining costs and mark-ups changed significantly between 2001 and 2002.

As mentioned earlier, many countries decided not to pass on to the final consumer the increase in ex-refinery prices in 2002 over 2001. They therefore reduced the tax rate. This obviously affected the percentage of the fiscal component in the price structure.

In 2001, the tax component for premium and regular gasoline and diesel oil accounted for the largest proportion of the final price in almost all countries. Argentina, for example, taxes fuels at rates close to those applied in Europe: close to 61% of the selling price is tax.

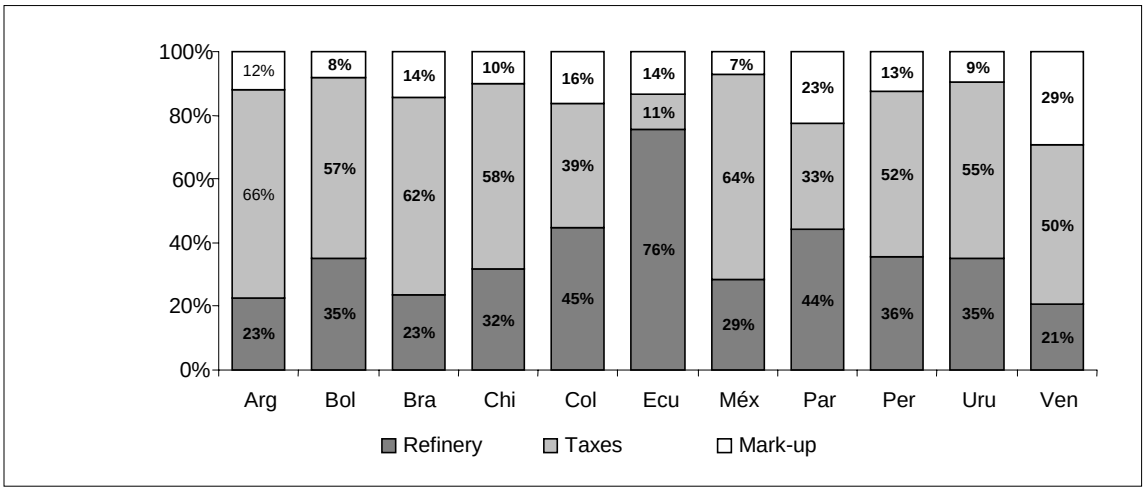
In 2001, with the exception of Ecuador, Venezuela and Peru, and, to a lesser extent, Colombia, all of which applied rates below 50% to premium gasoline, rates were above 50%, starting with Mexico (64%), Bolivia (60%), Brazil (61%) and Argentina (60%). This situation changed radically in 2002 when rates above 50% were observed only in Mexico, Peru and Bolivia and the rest were much lower than those recorded in 2001 (Figures 3.11 and 3.12).

The shift in regular gasoline was even more radical. Whereas in 2001, only three countries, Colombia, Ecuador and Paraguay applied rates below 40%, the rest applied percentages above 50% and even 60% as in the cases of Argentina, Bolivia, Brazil, Mexico and Chile. In 2002, all countries recorded sharp reductions and only two countries (Mexico and Peru) exceeded 50% (Figures 3.13 and 3.14).

Lastly, in the case of diesel oil, all countries, except Ecuador and, to a lesser extent, Venezuela, recorded sharp reductions, in particular, in the cases of Argentina, where the rate was cut back from 60% to 41%; Brazil, from 61% to 25%; Mexico, 64% to 48% and Uruguay, 58% to 18% (Figures 3.15 and 3.16).

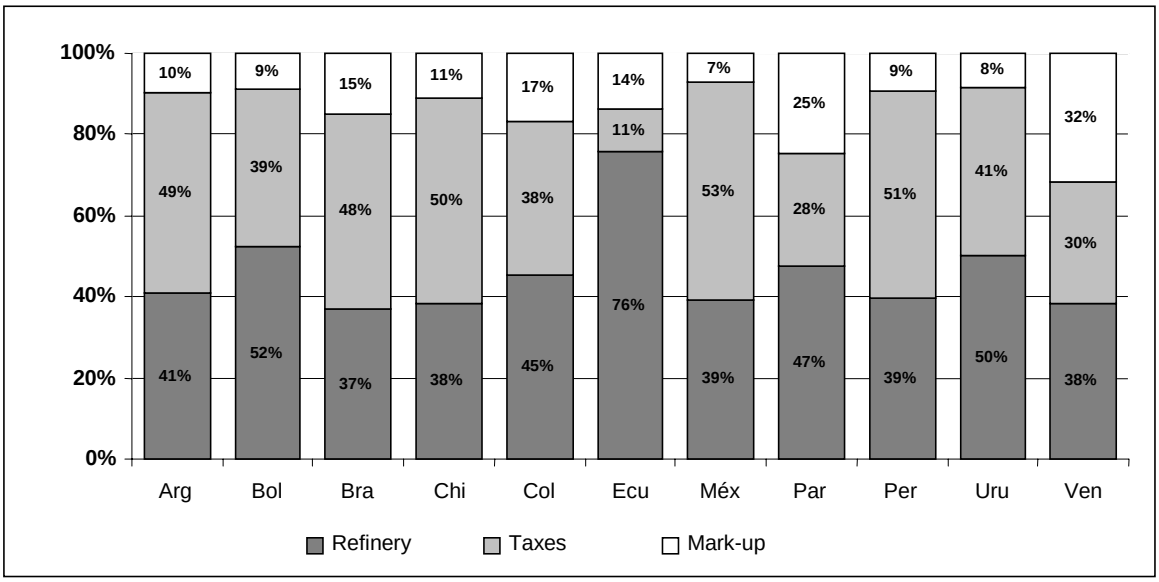
These trends reveal clearly that in the majority of countries, the pricing policy left no room for increasing the level of the general tax on fuels, which present clear environmental externalities as a result of their use in the transport sector. In these cases, opportunities lie in strategies such as the differential rate of fossil fuels based on their coal and/or sulphur content and, hence, on their pollution potential. The design of a tax structure conducive to cleaner fuels and sources of energy and unfavourable to more polluting fuels represents another area of opportunity. The experience in Latin America in this sense is very limited; the case of Mexico, which applies surcharges on leaded gasoline and differential regimes based on environmental fuel standards, is well known. The differential taxation of fossil fuels based on environmental standards offers a wide field of opportunities for the application of innovative instruments in countries of the region (Acquatella, 2003).

Figure 3.11 Price structure of regular gasoline, December 2001



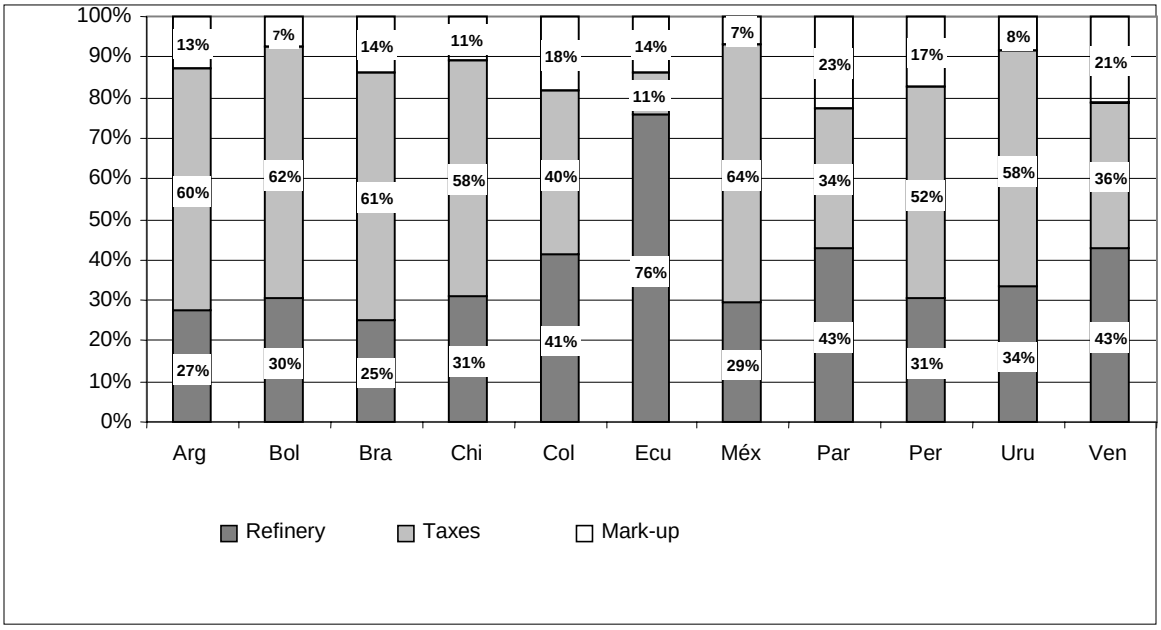
Source: based on Methodological annex.

Figure 3.12 Price structure of regular gasoline, December 2002



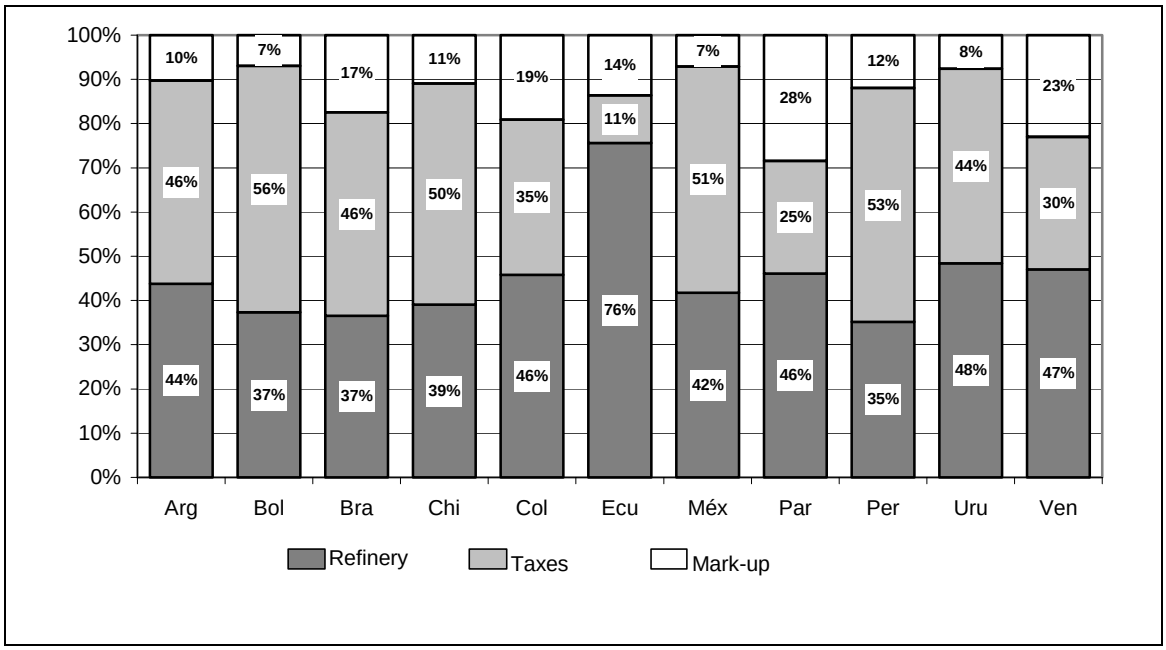
Source: based on Methodological annex.

Figure 3.13 Price structure of premium gasoline, December 2001



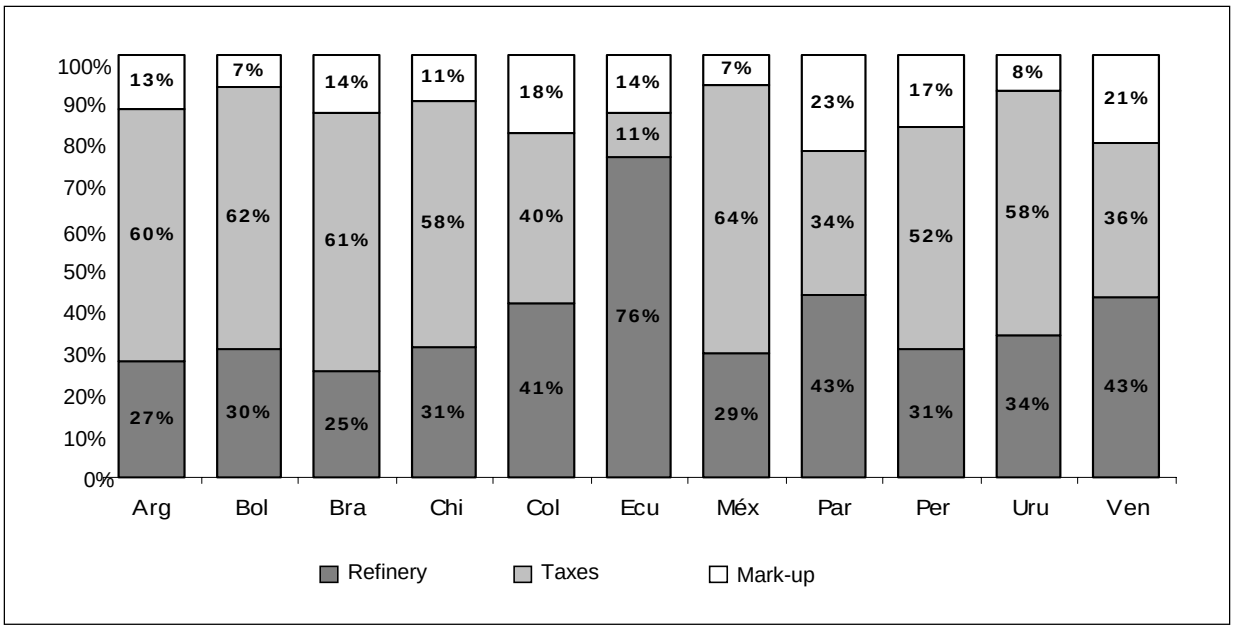
Source: based on Methodological annex.

Figure 3.14 Price structure of premium gasoline, December 2002



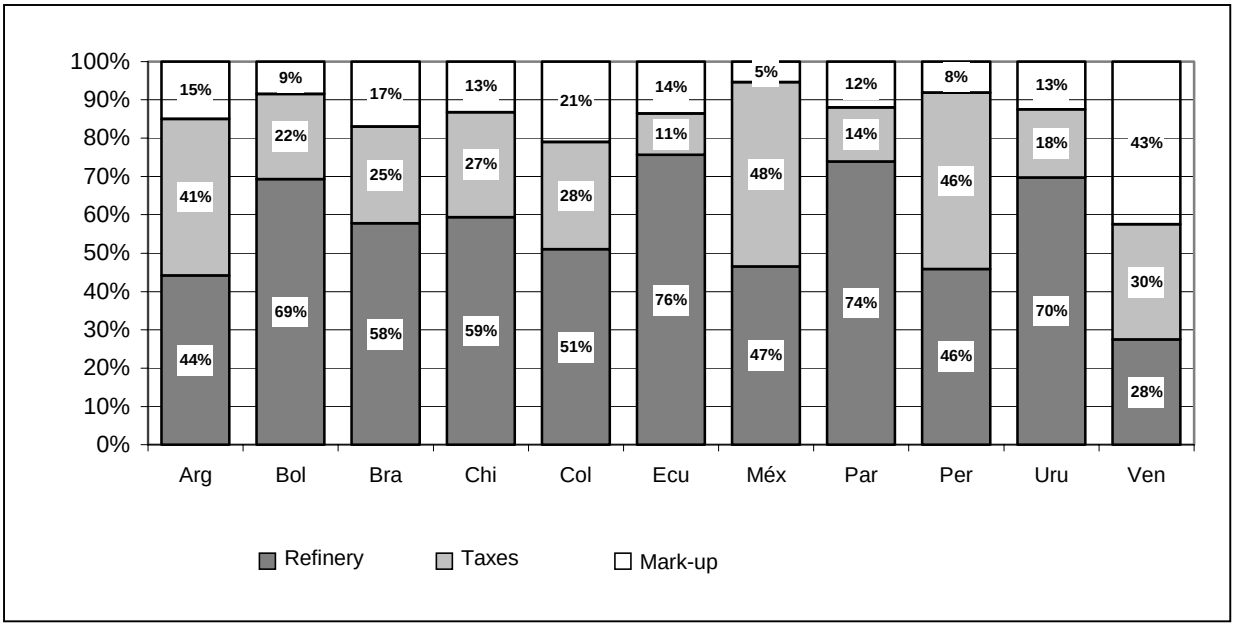
Source: based on Methodological annex.

Figure 3.15 Price structure of diesel oil, December 2001



Source: based on Methodological annex.

Figure 3.16 Price structure of diesel oil, December 2002



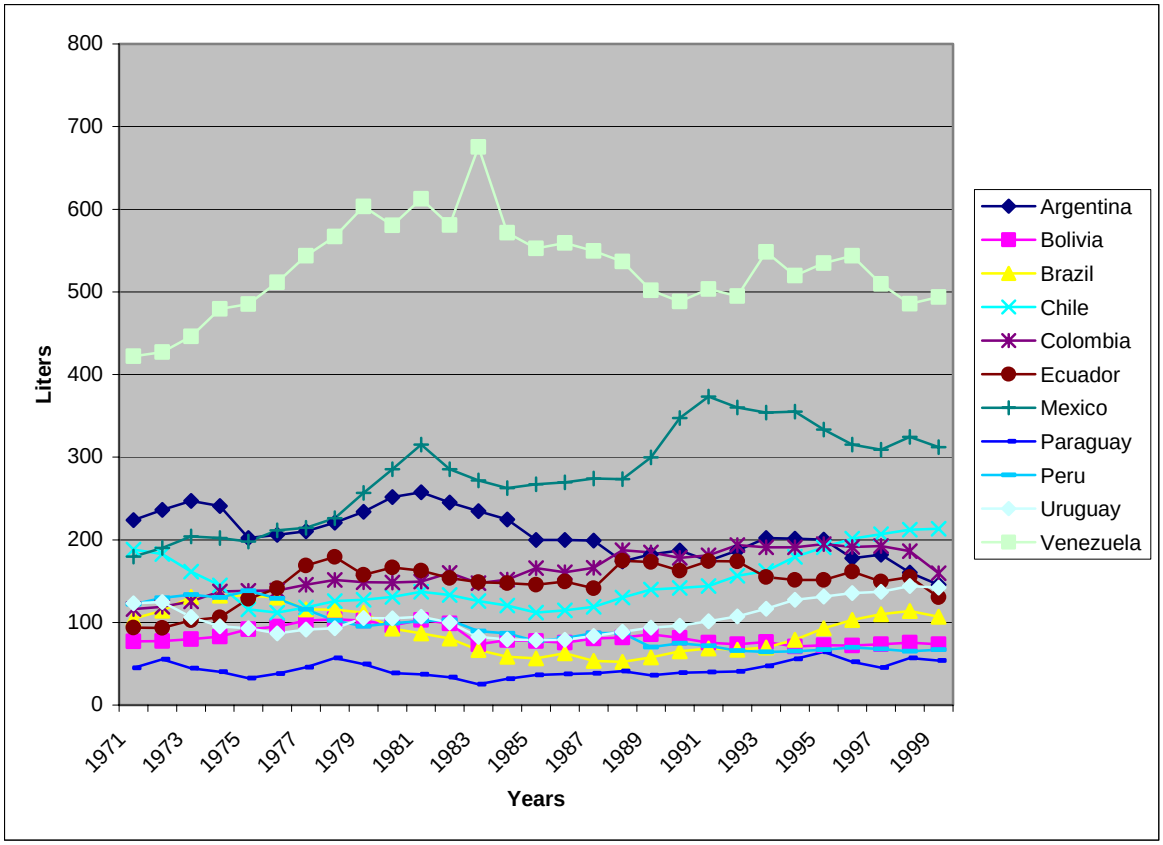
Source: based on Methodological annex.

3.2 Environmental Implications

Rising income levels and changes in lifestyle in combination with low fuel prices lead to increased demand for transportation and thereby, to increased levels of emissions. In the absence of sound fuel pricing policies, this pattern is likely to continue. The effectiveness of fuel pricing as an instrument for influencing fuel consumption is frequently underestimated; it is generally believed that transport is indispensable and relatively inflexible and that price increases will leave fuel consumption unaffected. This belief is true in the very short run, but less so in the long run. There are a number of adaptation mechanisms, such as more efficient cars, the shift to non-motorised transportation, car-pooling and others that need to be taken into consideration. These mechanisms will, in the long term, make fuel pricing a relatively effective instrument. A number of studies which analyse the responsiveness of fuel demand to changes in prices in developing countries provide some evidence; they include: Sterner (1989); Sterner and Belhaj (1989); Dahl and Sterner (1991a); Rogat and Sterner (1998).

Fuel prices have been very low in some of the countries of the South American region, especially in oil exporting countries. In these countries, fuel consumption and, in particular gasoline consumption, has been very high compared to other countries of the same region. The consumption pattern of motor gasoline is shown in Figure 3.17.

Figure 3.17 Per capita motor gasoline consumption. 1971 – 1999

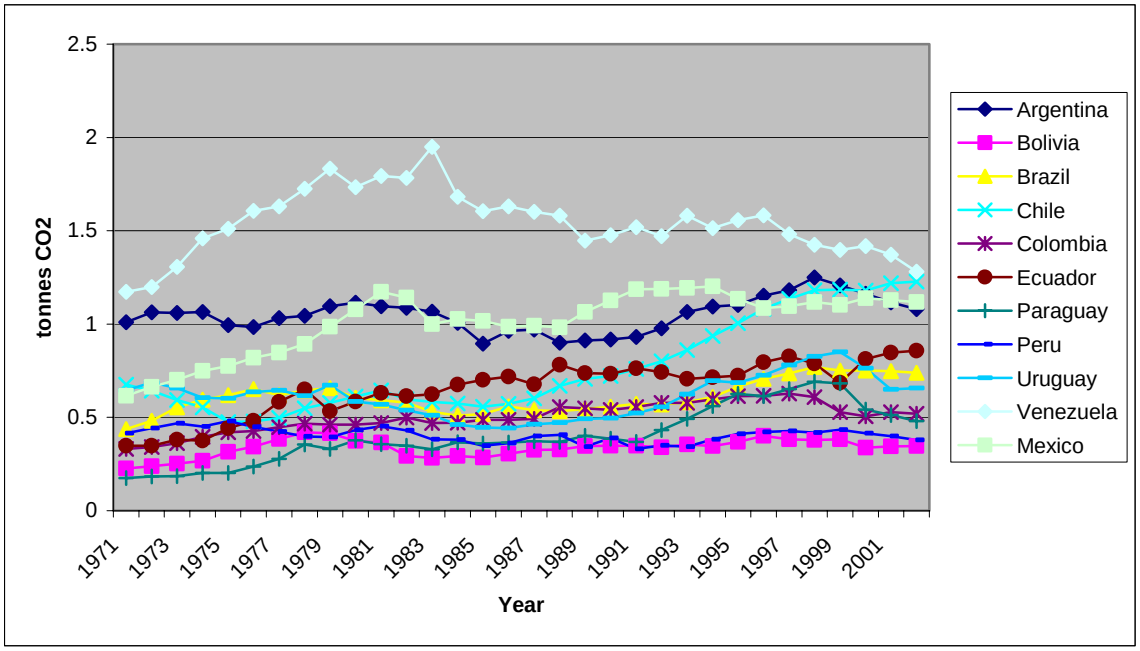


Source: World Energy Database, 2003.

Motor gasoline consumption was relatively stable throughout the period, except for the two oil-price shocks of 1973/74 and 1979/80. Not surprisingly, the highest per capita gasoline consumption is found in the oil exporting countries, Ecuador, Venezuela and Mexico, where fuel prices are lower than in the other countries of the region. Obviously, this relationship may be attributed to a number of other factors including the rate of motorisation and the distance between home and the work place. Lack of access to this information makes analysis difficult, and in its absence economic indicators, such as per capita GDP, may be used. Thus, we can see for instance that a country like Ecuador, which had a lower per capita GDP in 1999 than Paraguay (US$3 100 and US$4 500 respectively) had, in the same year, a per capita gasoline consumption which was as much as double that of Paraguay. Similarly, Venezuela, whose per capita GDP was less than half that of Argentina (US$5 620 and US$12 300 respectively), had a per capita gasoline consumption several times higher than that of Argentina.

The use of fuels for transportation gives rise to emissions of pollutants such as carbon monoxide (CO), nitrogen oxides (NOx), sulphur oxides (SOx), particulate matter (PM), carbon dioxide (CO_2) and others, which may have severe impacts on both the local and global environment. For example, CO, which in high concentrations is one of the most toxic of automobile exhaust products, has a direct impact on health by combining with haemoglobin over 200 times faster than oxygen. This blocks the function of the haemoglobin, restricting the supply of oxygen to the blood. NOx affects the respiratory track and lowers lung function. The effects of SOx are mainly related to the respiratory track and can be of serious concern in inner cities. PM affects primarily the respiratory system with bronchitis as one of the most obvious consequences. At the global level, CO_2 emissions are the most serious owing to their contribution to the green house effect. Although they are caused mainly by the combustion of fossil fuels like coal, a considerable proportion is caused by combustion in vehicle engines. Figures 3.18 shows the pattern of per capita CO_2 emissions from the transport sector for the eleven countries analysed here.

Figure 3.18 Per capita CO_2 emissions from the transport sector 1971 – 2002



Source: World Energy Database, 2004.

Figure 3.17 shows that the oil exporting countries were the ones with the highest per capita gasoline consumption. Figure 3.18 reveals that these same countries also have high levels of per capita CO_2 emissions. Not surprisingly, Venezuela had by far the highest level of per capita emissions of CO_2 in the region throughout the period. Similarly, Ecuador had higher levels of CO_2 emissions than Bolivia, Colombia, Paraguay and Peru.

From the environmental point of view, low fuel prices are detrimental to both the local and global environments by encouraging the use of private transportation, but also by discouraging research and development relating to cleaner and renewable energy sources. To come to grips with this problem, sound pricing policies are urgently needed. In this context, it is important to understand that national pricing policies will only address local problems. To address both local and global problems at the same time, harmonisation of regional and global policies is required.

4 CONCLUDING REMARKS AND RECOMMENDATIONS

4.1 Concluding Remarks

The objective of this study has been twofold; first to collect and compare information on current fuel pricing policies among a number of South American countries and Mexico, and secondly to analyse the implications of these policies with regard to the economy and the environment. In doing so, data on gasoline, diesel, fuel oil, LPG and kerosene prices across the eleven countries studied here have been collected and analysed. The collected data cover the periods of December 2001 and December 2002. Since the level of oil resource endowments among the eleven countries varies, countries have been divided into oil self-sufficient, oil importing and oil exporting countries.

Fuel pricing policies differ among the countries, ranging from fully regulated to fully liberalised ones depending on the degree of government intervention. No relationship between level of oil resource endowment and fuel pricing policies could be found in oil self-sufficient, or in oil importing countries. A direct relationship between oil resource endowments and fuel prices was, however, found in oil exporting countries, where the degree of government intervention is at the highest. Generally in countries where prices are controlled, oil companies are in the hands of the state, and this particularly applies to the oil exporting countries where the state is in charge of most of the processes, from exploration and production to refining and final distribution. The price formation chain in the studied countries is composed of price prior refinery, taxes and margins. These three components also make up the retail price of the fuels. Among the oil self-sufficient countries, Argentina is the only country with a fully liberalised pricing system, which applies to each of the components of the price formation chain. Bolivia has, in contrast, fully controlled fuel prices in the whole price formation chain, and Colombia has a mix of regulated and liberalised prices. Among the oil importing countries, Brazil and Peru have fully liberalised fuel prices, while a semi-liberalised pricing system is found in Chile. Paraguay has liberalised prices except for diesel oil, fuel which is fully regulated. At the other extreme, Uruguay has fully regulated prices for all the components of the price

formation chain. Fuel prices are, in most of the cases, fully regulated in the oil-exporting countries. One exception is Ecuador where only the price of premium gasoline is liberalised, which applies only to the margins and retail component of the price formation chain, while the rest of the fuels are fully regulated in all the components.

The eleven countries studied here, use the price of the Gulf Coast of the USA as the international reference price. It is found that while some countries have domestic pre-refinery prices which are above the international reference price, others have prices which are considerably below it. In this context it is worthwhile noticing that Mexico, one of the major oil exporters of the region, has pre-refinery prices above the international reference price. It was found that in countries where fuel prices are fully regulated, retail prices are considerably lower than in the countries where these are liberalised. Even here, Uruguay is exceptional in having fully regulated prices in the whole price formation chain, with prices which are very high by region standards. As expected, the oil exporting countries Ecuador and Venezuela have the lowest retail fuel prices in the region.

We have assumed that a negative difference between the international reference price, and the domestic pre-refinery price should be considered as a subsidy, while a positive difference between the two represents a tax. Based on this, it is found that most of the countries have, to some extent, subsidised some of the fuels studied here, some time between 2001 and 2002. Venezuela and Colombia have the largest amount of subsidies, followed by Ecuador. In Venezuela, the amount of subsidies given to the various fuels was estimated to be in the order of US$2.3 billion in 2001, amount that increased to US$3.5 billion in 2002. In Colombia, the amount corresponding to subsidies to the various fuels amounted to US$3.2 billion in 2001, slightly decreasing to US$3.0 billion in 2002. In countries like Argentina and Brazil, where fuel prices are fully liberalised, subsidies are also found. At the other extreme, a tax corresponding to US$10.5 billion was found in Mexico in 2001 - decreasing to US$7.2 billion in 2002.

As mentioned earlier, a subsidy normally implies a market distortion, which is both economically inefficient, and environmentally unsustainable. Although most of the countries of the region have initiated liberalisation processes aimed at decreasing and in some cases dismantling energy subsidies, as has been shown, subsidies can still be found. The existence of fuel subsidies encourages fuel use, giving rise to both economic distortion and to environmental deterioration.

4.2 Recommendations

In the study, difficulties have been encountered in conducting a comprehensive and detailed analysis of the fuels examined. For instance, data on Guyana and Surinam could not be collected. Problems of data availability were also encountered in some of the eleven countries covered. This problem could be addressed by developing a detailed and standardised data set for all the countries of the region, which would allow them to be studied in a more in-depth basis. The data set should preferably cover not only information on fuel pricing policies, but also on economic, social and environmental indicators, which is currently lacking in several countries of the region. This information would allow for a more comprehensive and detailed analysis of the economic and environmental implications of current fuel pricing policies.

With regard to the development of a standardised data set, two main issues need to be dealt with. The first is the development and establishment of a common format and procedures for the collection of the data. The second relates to its coordination and maintenance. This should be preferably done by a regional organisation, which has the required infrastructure and is in a position to dedicate the necessary efforts.

During the two days of the seminar held at ECLAC's headquarters in Santiago, Chile in December 2002, the various stakeholders of the region were brought together to discuss the issue. Most of them expressed their gratitude for the initiative and recognised that a platform to discuss fuel pricing issues for the entire region was a priority. However, this

platform should include the oil sector representatives from all the countries of the region. It is only then that an integrated and common fuel pricing policy approach for the whole region can be adopted. This is particularly important from the environmental point of view, since the emissions that the burning of fossil fuels gives rise to affect not only the local environment and regional environment, but also the global environment. The mitigation of emissions like greenhouse gases depends on harmonisation. In the absence of coordinated fuel pricing policies, where these aspects are taken into consideration, the level of fuel consumption - and so of emissions - will continue to increase in the region.

In this context, two policy options are worth consideration. The first should be aimed at addressing the gap on tax levels on fuels. While countries like Argentina, Mexico and Brazil tax fuels heavily by regional standards, other like Venezuela and Ecuador have very low fuel taxes. A harmonisation would require an increase on fuel taxes where these are too low in comparison to the rest of the countries of the region. Most of the countries have not seriously considered fuel taxes as an instrument through which environmental problems could be addressed, but have generally taxed fuels bluntly, with increased government income as the main goal, so that, for instance, tax regimes for both clean and non-clean fuels are quite similar. Therefore, a second policy option, which would considerably benefit the environment, would be to implement a differentiated tax scheme in which fuels with high carbon and sulphur contents, are more heavily taxed.

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Methodological annex

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1. OIL SELF-SUFFICIENT COUNTRIES

1.1 ANALYSIS OF THE STRUCTURE OF FUEL PRICES IN ARGENTINA

1.1.1 REGULATION OF PETROLEUM PRODUCT PRICES

The Ministry of Energy and Mining is responsible for supervising and inspecting the energy sector, including the electric-power, mining and hydrocarbons sub sectors. The legal structure of the hydrocarbons sub sectors is set out in the Hydrocarbons Act (Law No.17.319).

The main ministerial responsibilities include:

- Monitoring the activities of permit- and concession-holders.
- Establishing environmental protection standards.
- Evaluating output levels and reserves of oil and gas.
- Studying and evaluating natural gas exports.

Table A1.1 summarises the price systems applicable to each fuel, disaggregated by components of the final consumer price.

Table A1.1 Summary of price system in use in Argentina

Fuels	Refinery price	Taxes	Commercial mark-up
Regular gasoline	Free	Liquid and Gaseous Fuels Tax (ICLG) , Gross Revenues Tax, Value Added Tax (VAT)	Free
Premium gasoline	Free	ICLG, VAT and Gross Revenues Tax	Free
Diesel	Free	ICLG, VAT and Gross Revenues Tax	Free
Kerosene	Free	ICLG, VAT and Gross Revenues Tax	Free
Fuel oil	Free	VAT and Gross Revenues Tax	Free
LPG	Free	VAT, Gross Revenues Tax and National Budget Act	Free

Notes:
- A system of wholesale import parity is used in Argentina. This is the theoretical value of a fuel calculated by adding to the FOB price all costs and expenses incurred in placing the product at the gates of a given city.[23]
- Regulated means that a ceiling price is established.
- Free means that economic agents are free to determine margins and prices.

Source: prepared by the authors on the basis of data from the Ministry of Energy and Mining of Argentina.

[23] Fuel Prices Bulletin, December 2001, Ministry of Energy and Mining of Argentina.

1.1.2 TAX BASE

The taxes levied in the fuels market in Argentina are as follows:

A. Value Added Tax: VAT is the consumption tax *par excellence* in Argentina. It is levied at a rate of 21% at each stage of production and commercialisation.

B. Liquid and Gaseous Fuels Tax (ICLG): The legal basis for ICLG is Law 23.966 (Amendatory Regulation, Decree 976 of 2001). This establishes a nationwide tax on the transfer of ownership of national or imported products, whether in return for payment or otherwise, to be levied on a single stage of their circulation. Table A1.2 shows how ICLG has developed over the last decade. The ICLG for the various fuels are in Argentinean pesos per litre (A$ / litre).

Table A1.2 ICLG (formerly ITC) and Amendatory Regulations

Regulation		Regular gasoline (1)		Premium gasoline (1)		Diesel (1)	Fuel oil (1)
	Entry into force	Leaded	Unleaded	Leaded	Unleaded		
Res. 2/91	03/02/91	0.2729	0.2729	0.3665	0.3665	0.0682	0.0268
Res. 77/91	26/02/91	0.2729	0.2729	0.3665	0.3665	0.0614	0.0268
Law 23.966	20/08/91	0.2909	0.2618	0.3885	0.3496	0.0614	0.0268
Res. 1022/91	05/09/91	0.2729	0.2679	0.3665	0.3615	0.0614	0.0268
Decree 2021/92	14/11/92	0.2729	0.2379	0.3665	0.3315		
Res. 969/93	01/09/93	0.2878	0.2509	0.3865	0.3496		
Res. 504/96 Decree 402/96	16/04/96	0.2878	0.2878	0.3865	0.3865		
Law 24.698	01/10/96	0.3878	0.3878	0.4865	0.4865	0.12	
Law 25.239 Decree 171/99	01/01/00	0.4865	0.4865	0.4865	0.4865	0.12	
Decree 802/01	19/06/01	0.38	0.38	0.38	0.20		
Decree 976/01	01/08/01	0.4865	0.4865	0.4865	0.4865	0.20	
Decree 1381/01 1676/01	01/01/02	0.48	0.48	0.48	0.48	0.2	
Decree 652/2002	22/04/2002	0.48	0.48	0.48	0.48	0.15	
Res. 273/2002	07/08/2002	0.5375 (2)	0.5375	0.5375	0.5375	0.15	

Note:
(1) Values are in Argentinean pesos per litre (A$ / litre)
(2) "Tasa hídrica" or water infrastructure rate, levied at 0.05 A$ / litre.
Source: Ministry of Energy and Mining of Argentina.

C. Tax on gross revenues: This tax is levied on fuels (especially gasolines and kerosene) at a rate of 3.4% of the pump price, less VAT.

D. Diesel tax. This tax entered into force in May 2002, at a specific rate of 18.5% on the pump price before tax (except for taxes on gross revenues). This tax replaced the infrastructure charge of US$0.05 per litre previously levied on diesel**.**

1.1.3 METHODOLOGY USED TO CALCULATE THE COMPONENTS OF PETROLEUM PRODUCT PRICE STRUCTURE

The mechanism used to calculate each of these components is set out below:

1.1.3.1 Refinery price

This price includes the crude petroleum, refining, distribution and margin of the refiner, obtained from the Argentinean Energy Institute (General Mosconi).[24]

The refinery price of fuel oil was obtained directly from the General Company of Fuels, S.A.[25]

The producer price of LPG was obtained from the LPG distributors in Argentina. Table A1.3 shows refinery prices for the different fuels.

Table A1.3 Refinery prices, Argentina (A$ / litre)

Fuel	Regular gasoline	Premium gasoline	Diesel	Kerosene (1)	Fuel oil	LPG
December 2001	0.199	0.276	0.211	0.319	0.132	0.25
December 2002	0.691	0.820	0.585	0.947	n.d.	0.35

Notes:
- (1) Corresponds to a pre-tax price, with the wholesale and retail margin included.
- n.d.: no data.
Source: prepared by the authors on the basis of information from the Argentinean Energy Institute and the General Company of Fuels, S.A.

1.1.3.2 Taxes

A. To the refinery price must be added the Liquid and Gaseous Fuels Tax (ICLG), which is levied on the sale of imported and domestically-produced products. This tax was established by resolution of the Ministry of Energy and Mining of Argentina, and its rates for different fuels are shown in table A1.4.

Table A1.4 Liquid and Gaseous Fuels Tax, Argentina (A$ / litre)

Fuel	Regular gasoline	Premium gasoline	Diesel	Kerosene (1)	Fuel oil	LPG
December 2001	0.487	0.487	0.20	0.20	n.a.	n.a.
December 2002	0.588	0.588	0.15	0.15	n.a.	n.a.

Note:
n.a.: not applicable.
Source: Ministry of Energy and Mining of Argentina.

[24] www.iae.org.ar
[25] www.cgc.com.ar

B. The Tax on gross revenues is then added. This corresponds to 3% on the pump price, less VAT. The rates for different fuels are shown in table A1.5.

Table A1.5 Tax on gross revenues, Argentina (A$ / litre)

Fuel	Regular gasoline	Premium gasoline	Diesel	Kerosene	Fuel oil	LPG A$ / kg
December 2001	0.024	0.028	0.015	0.016	0.005	0.02
December 2002	0.045	0.050	0.034	0.034	n.d.	0.04

Source: Ministry of Energy and Mining of Argentina.

C. Lastly, value added tax (VAT) is added, at the general rate of 21%. The following formula is used to calculate VAT:

$$\textbf{VAT} = [(\textbf{Pump price minus ICLG}) / (1+T_{VAT})] \times T_{VAT}$$

Table A1.6 shows the value added tax levied on the different fuels.

Table A1.6 Value added tax, Argentina (A$ / litre)

Fuel	Regular gasoline	Regular gasoline	Diesel	Kerosene	Fuel oil	LPG A$ / kg
December 2001	0.069	0.090	0.064	0.072	0.032	0.214
December 2002	0.189	0.223	0.203	0.2207	n.d.	0.386

Source: Ministry of Energy and Mining of Argentina.

The sum of ICLG plus Gross revenues tax and value added tax gives the tax total, as shown in table A1.7.

Table A1.7 Total taxes, Argentina (A$ / litre)

Fuel	Regular gasoline	Premium gasoline	Diesel	Kerosene	Fuel oil	LPG A$ / kg
December 2001	0.580	0.605	0.279	0.288	0.037	0.238
December 2002	0.821	0.860	0.539	0.391	n.d.	0.430

Notes:
- The total tax on LPG includes the value from the National Budget (A$0.003 / litre).
- The total tax for gas oil includes the road tax rate.

Source: prepared by the authors on the basis of tables A1.4, A1.5 and A1.6

1.1.3.3 Commercial Mark-ups

Mark-ups are freely set by the retailer as a percentage of the pump price, and are estimated by the Ministry of Energy and Mining of Argentina. The retail margin is approximately 10.5% of the pump price for gasoline fuels, and 7% for diesel. The distributor's profit is included in this mark-up. Table A1.8 shows the mark-ups for different fuels.

Table A1.8 Mark-up, Argentina (A$ / litre)

Fuel	Regular gasoline	Regular gasoline	Diesel	Kerosene	Fuel oil	LPG A$ / kg
December 2001	0.105	0.127	0.080	0.005	0.014	0.512
December 2002	0.165	0.193	0.198	0.005	n.d.	1.020

Note:
The wholesale and retail margins on kerosene are not currently available. The marketing margin includes: the wholesale and retail margin, plus transport for liquid fuels and transport and operational costs for LPG.
Source: prepared by the authors.

LPG

The price structure of liquid petroleum gas at December 2001 was as follows:

Table A1.9 Price structure of liquid petroleum gas

COMPONENT	VALUE
Pump price	A$ / Tn (240-260)
VAT	21%
VAT collection	12%
Gross revenues (Province of Buenos Aires)	2%
National Budget Act	A$3/Tn
To distributors	(A$/Kg.)
Base price	0.402
VAT	21%
Collection	3.5%
Total	0.5
To retailer	(A$/Kg.)
Price	(0.6-0.65)
To the public	(A$/Kg.)
Final price	1.000

Source: Gerardo Rabinovich, IAE.

1.1.3.4 Final consumer price

Lastly, the sum of the three components –refinery price (Table A1.3), total taxes (Table A1.7) and marketing margin (Table A1.8) – gives the price of petroleum products, as shown in Table A1.10.

Table A1.10 Final consumer prices, Federal Capital (A$ / litre)

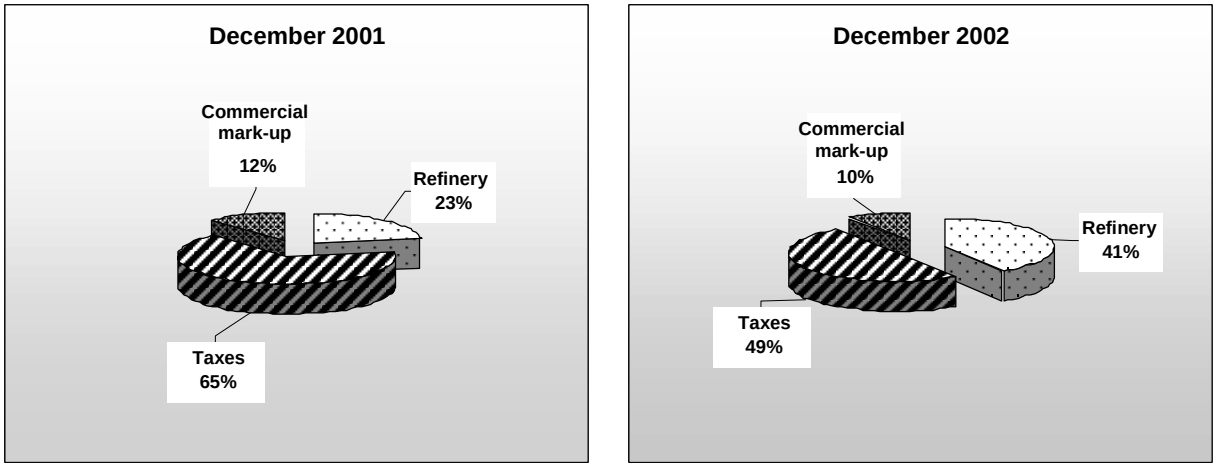
Fuels	Refinery price (1)	TAXES				Wholesale price (1+2)	Commercial mark-up (3)	Price to the public (4)=(1+2+3)
		ICLG	Gross revenue	VAT	Total (2)			
December 2001								
Regular gasoline	0.199	0.487	0.024	0.069	0.58	0.779	0.105	0.884
Regular gasoline	0.276	0.487	0.028	0.090	0.605	0.881	0.127	1.008
Diesel	0.211	0.20	0.015	0.064	0.279	0.490	0.080	0.57
Kerosene	0.319	0.20	0.016	0.072	0.288	0.607	0.005	0.612
Fuel oil	0.132	0	0.005	0.032	0.037	0.169	0.014	0.183
LPG	0.25	0	0.020	0.214	0.238	0.488	0.512	0.996
December 2002								
Regular gasoline	0.691	0.588	0.045	0.189	0.822	1.513	0.165	1.678
Regular gasoline	0.820	0.588	0.050	0.223	0.861	1.681	0.193	1.874
Diesel	0.585	0.15	0.034	0.203	0.539	1.124	0.198	1.322
Kerosene	0.947	0.15	0.034	0.207	0.391	1.338	0.005	1.343
Fuel oil	n.d.	0	n.d.	n.d.			n.d.	
LPG	0.35	0	0.04	0.386	0.430	0.780	1.020	1.80

Notes:
- The price of LPG is expressed in A$ per kilograms.
- The final prices of fuels were provided by the Ministry of Energy and Mining of Argentina.
- n.d.: No data.

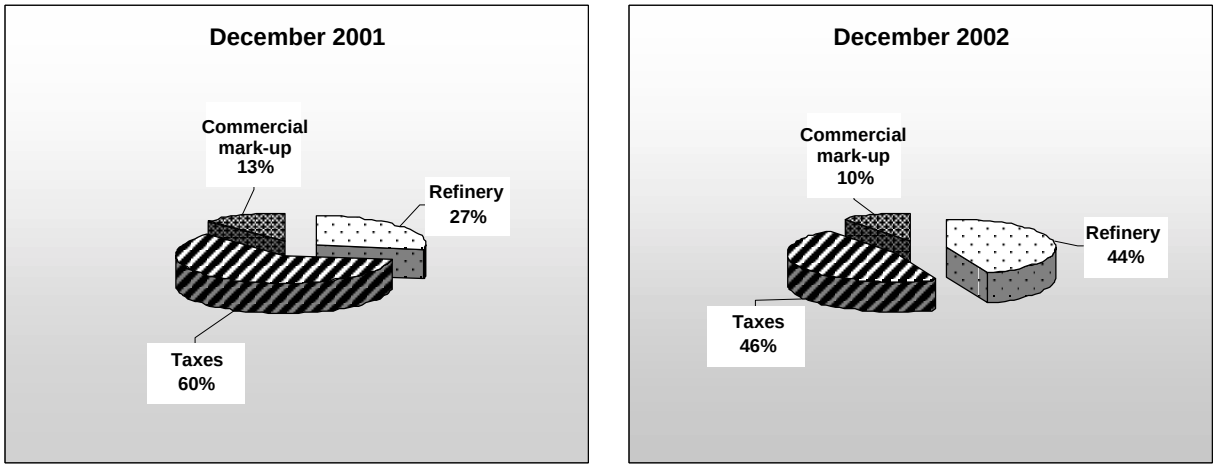
Source prepared by the authors on the basis of tables A1.3, A1.4, A1.5, A1.6 and A1.8

Figure A1.1 Composition of final consumer price, in percentages, Argentina

(a) Regular gasoline



(b) Premium gasoline



(c) Diesel

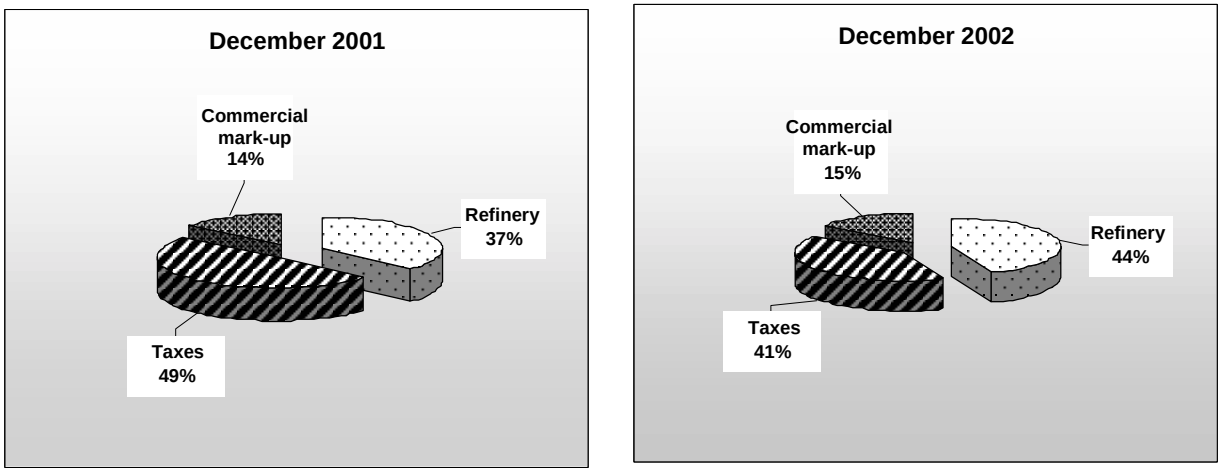
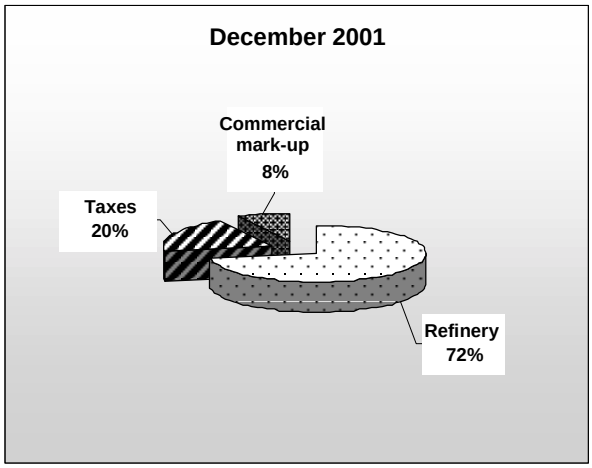
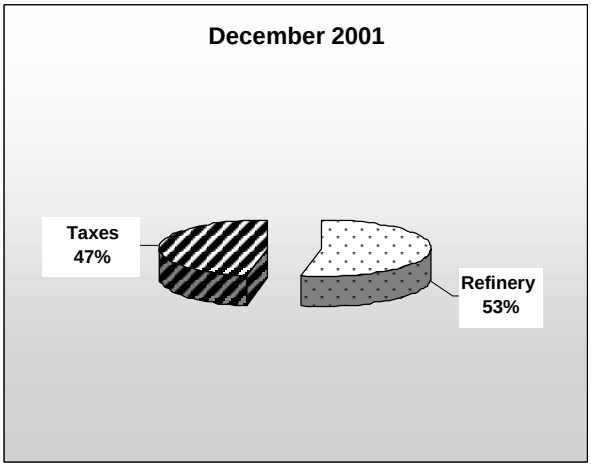


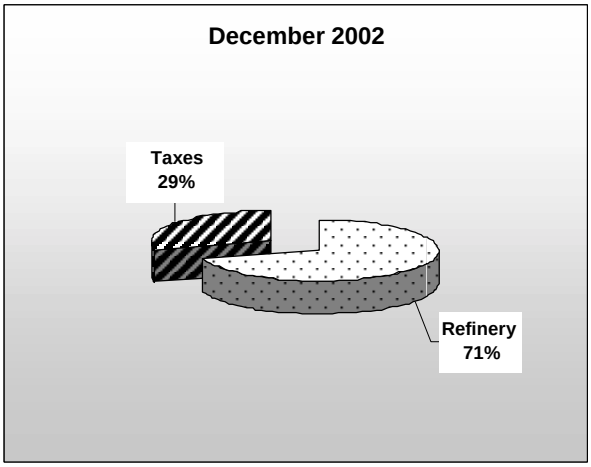
Figure A1.1 Composition of final consumer price, in percentages, Argentina (continued)

(d) Fuel oil

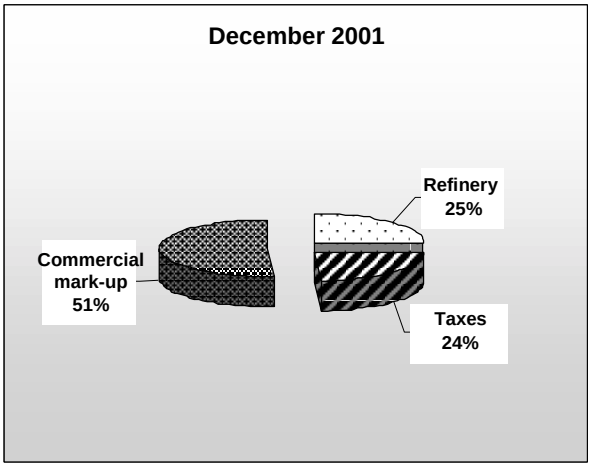


(e) Kerosene





(f) Liquid petroleum gas



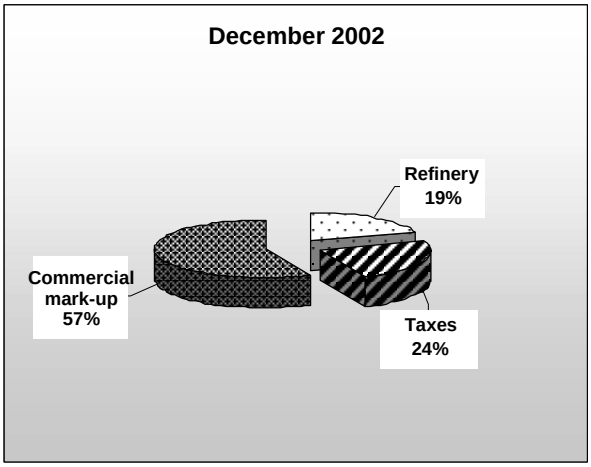
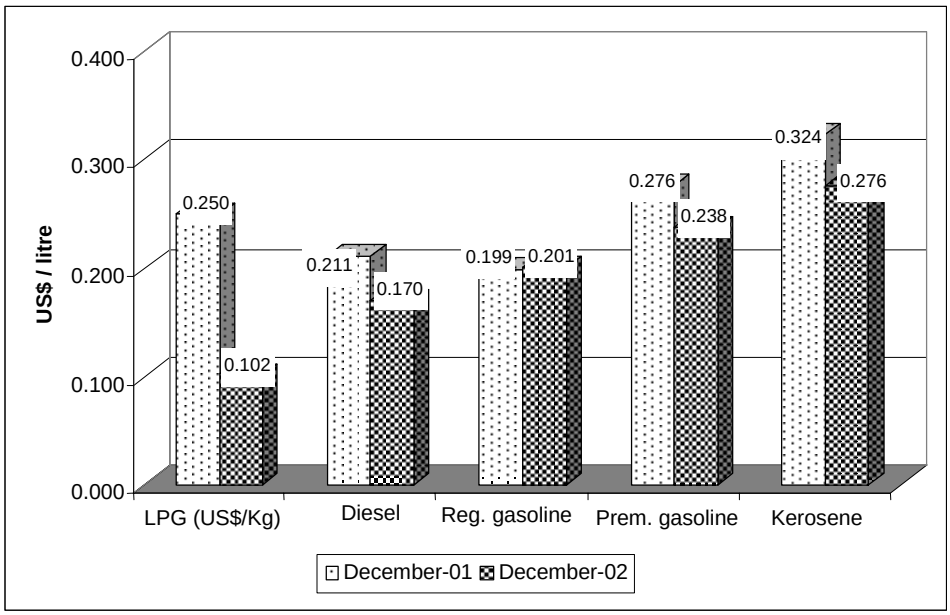


Figure A1.2 Comparison of components of price structures of petroleum products, Argentina.

(a) Refinery price



(b) Taxes

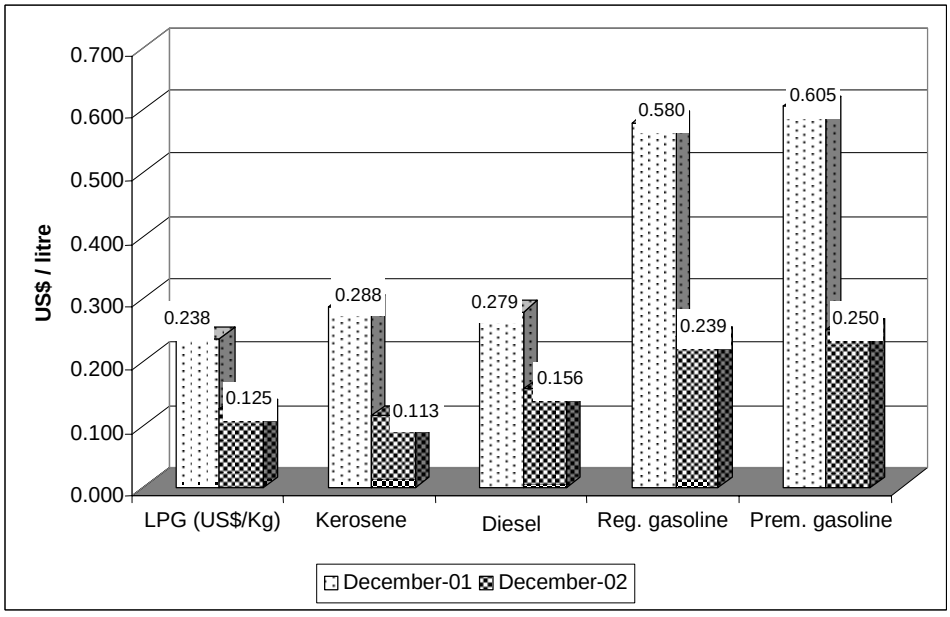
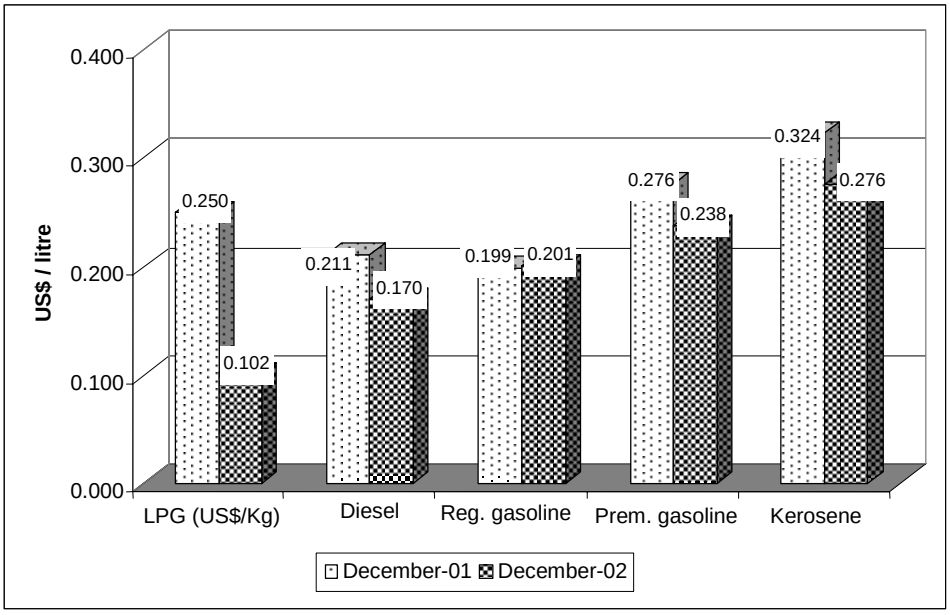


Figure A1.2 Comparison of components of price structures of petroleum products, Argentina (continued)

(c) Commercial mark-up



(d) Final price to the public

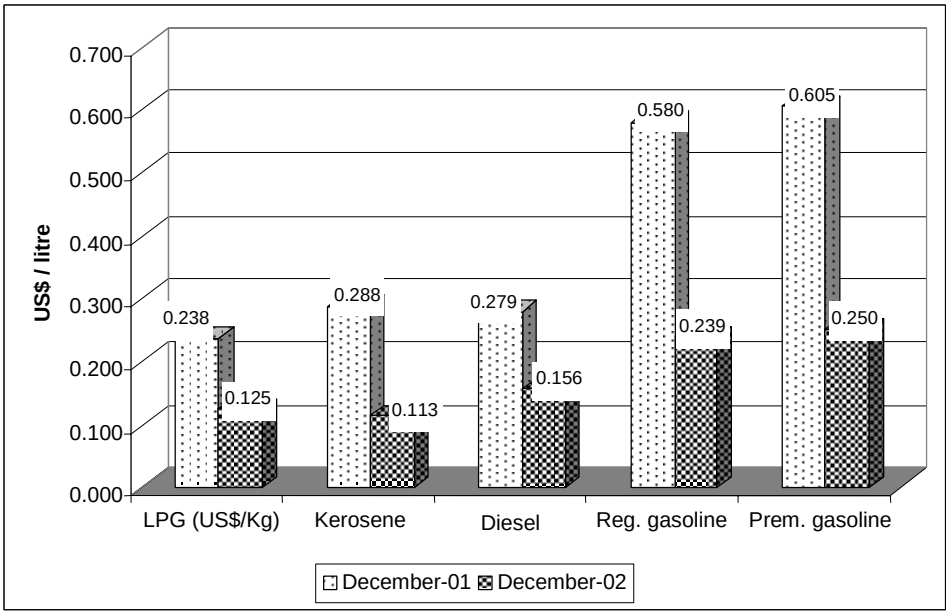
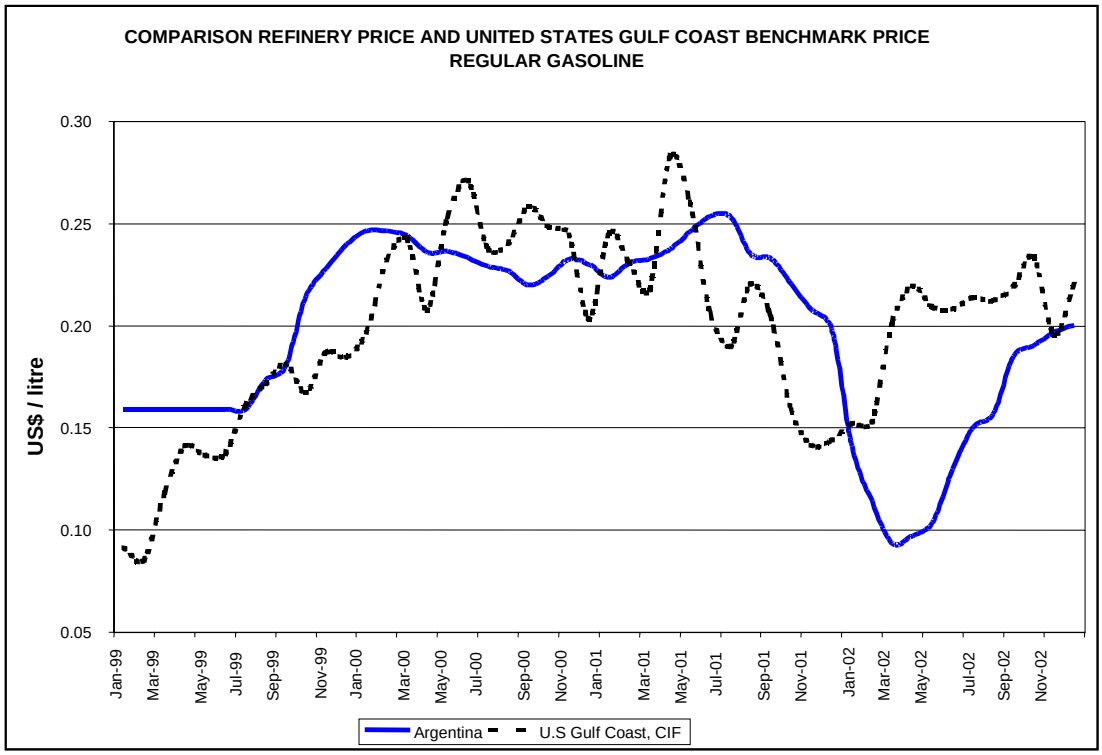


Figure A1.3 Refinery prices, regular gasoline, Argentina



1.2 *ANALYSIS OF THE STRUCTURE OF FUEL PRICES IN BOLIVIA*

1.2.1 REGULATION OF PRICE STRUCTURES OF PETROLEUM PRODUCTS

The hydrocarbons sector in Bolivia is regulated by the Office of the Superintendent of Hydrocarbons, which formulates, approves, directs and oversees hydrocarbons energy policy and advises the Office of the General Superintendent and the Ministry of Economic Development on issues within its competence.

The Office of the Superintendent of Hydrocarbons is an independent body with national jurisdiction under public law; it has technical, administrative and economic autonomy. Its main functions are to approve, monitor and publish prices and rates in accordance with the legal regulations governing the sector, oversee their proper implementation and ensure that the appropriate information is available to interested parties. Another statutory responsibility is the analysis, approval and oversight of investments made by regulated firms, to ensure correct provision of services that promote national economic development.

Lastly, the Sectoral Regulation System (SIRESE) comprises the Superintendence of Hydrocarbons, Electricity, Transport, Telecommunications and Basic Sanitation. Each of these operates in an autonomous manner.

Price policy applicable to petroleum product fuels

Table A1.11 summarises the price systems applicable to each fuel, disaggregated by components of their respective final consumer price.

Table A1.11 Summary of price system in use in Bolivia

Fuel	Refinery price	Taxes	Mark-up margin
Regular gasoline	Regulated	Special Tax on Hydrocarbons and Petroleum Products (IEHD); Transactions Tax (IT); Value Added Tax (VAT)	Regulated
Premium gasoline	Regulated	IEHD, IT, VAT	Regulated
Diesel	Regulated	IEHD, IT, VAT	Regulated
Kerosene	Regulated	IT, VAT	Regulated
Fuel oil	Regulated	IEHD, IT, VAT	Regulated
LPG	Regulated	IT, VAT	Regulated

Notes:
- Supreme Decree 24.914 of December 1997 establishes the methodology for calculating the prices of regulated products (regular gasoline, premium gasoline, diesel, kerosene, fuel oil and LPG), establishing ex-refinery,[26] pre-terminal and final consumer prices based on a benchmark price[27] on the coast of the Gulf of Mexico.
- Regulated means that a maximum price is imposed.
- Free means that agents are free to set commercial mark-ups and prices.

Source: prepared by the authors on the basis of data provided by the Office of the Superintendent of Hydrocarbons of Bolivia.

[26] At the point of transfer of regulated products leaving the refinery. The refinery gate must be physically located inside the refinery facilities.

[27] The average value of the daily prices of a product published by Platts, using the maximum and minimum values to determine the monthly (arithmetic) mean price.

1.2.2 TAX BASE

The taxes levied in the fuels market in Bolivia are as follows:

A. **Special Tax on Hydrocarbons and Petroleum Products** (Law 843, article 108, of 1997): This tax is levied on the importation of hydrocarbons and petroleum products and their sale on the domestic market. It was created to compensate for transfers to the General National Treasury which were lost following the privatisation of Yacimientos Petrolíferos de Bolivia (YPFB). The tax is levied at specific rates expressed in Bolivian pesos per litre, as determined by the Office of the Superintendent of Hydrocarbons. An annual adjustment is made to take account of the variation in the exchange rate of the boliviano against the United States dollar.

B. **Transactions Tax (IT)** (Law 843, title VI, of 20 May 1986): This tax is levied on gross revenue accrued from the exercise of any activity, profitable or otherwise, such as commerce or industry, independent exercise of a profession or trade, and so forth. The tax is charged at 3% of the transaction value.

C. **Value-Added Tax:** This tax is levied on any commercial operation involving the sale of movable assets, leasing, rental or sub rental of movable or immovable assets, final imports, civil works construction and provision of services in general. Under Law 1314 of 1 March 1992, VAT is charged at 13% of the total value of sales and/or provision of services.

1.2.3 METHODOLOGY USED TO CALCULATE THE COMPONENTS OF PETROLEUM PRODUCT PRICE STRUCTURE

The mechanisms used to calculate each of these components is set out below:

1.2.3.1 Refinery price

The refinery price of fuels was obtained by subtracting from the final price to the public IEHD and IT taxes, the wholesale and retail commercial mark-ups, and the storage and distribution margins. This price is composed of the benchmark price plus a refining margin. The benchmark price is the average value of the daily prices of any product imported from the United States Gulf Coast to the nearest refinery, and the refining margin refers to the profit or earnings of the refining company.

For LPG the refinery price was obtained from Administrative Resolution SSDH N° 0576/2001 published on 14 November 2001 by the Office of the Superintendent of Hydrocarbons and, for December 2002, from Administrative Resolution. N° 0479/2002 published on 9 October 2002. Table A1.12 shows the refinery prices of the different fuels.

Table A.12 Refinery prices, December 2001, Bolivia (Bolivian pesos per litre (B$ / litre))

Fuel	Regular gasoline	Premium gasoline	Diesel	Kerosene	Fuel oil	LPG B$ / Kg.
December 2001	1.155	1.394	1.454	1.315	1.473	0.903
December 2002	1.703	1.971	1.744	2.143	2.049	0.752

Source: prepared by the authors on the basis of information provided by the consultant Enrique Birhuet of the Bolivian Hydrocarbons Ministry and the Bolivian Internal Revenue Service www.si.gov.bo

1.2.3.2 Taxes

To the refinery price must be added the special tax on hydrocarbons and petroleum products (IEHD), which is shown for different fuels in Table A1.13.

Table A1.13 Special tax on hydrocarbons and petroleum products, Bolivia (B$ / litre)

Fuel	Regular gasoline	Premium gasoline	Diesel	Kerosene	Fuel oil	LPG B$ / Kg.
December 2001	1.66	2.58	1.163	Not levied	0.29	Not levied
December 2002	0.96	2.58	0.305	Not levied	0.29	Not levied

Source: Administrative Resolutions of the Hydrocarbons Superintendence, 2001-2002 and the National Chamber of Industry, www.bolivia-industry.com

Next, the transactions tax must be added. This is levied at 3% of the refinery price. Table A1.14 shows this tax for the different fuels.

Table A1.14 Transactions tax, Bolivia (B$ / litre)

Fuel	Regular gasoline	Premium gasoline	Diesel	Kerosene	Fuel oil	LPG B$ / Kg.
December 2001	0.035	0.042	0.044	0.039	0.044	0.027
December 2002	0.051	0.059	0.064	0.052	0.061	0.023

Source: prepared by the authors.

Lastly, value-added tax (VAT) must be added, at the general rate of 13%. VAT is levied on the sum of the refinery price and the commercial mark-up. Table A1.15 shows the figures for VAT on different fuels.

Table A1.15 Value-added tax, Bolivia (B$ / litre)

Fuel	Regular gasoline	Premium gasoline	Diesel	Kerosene	Fuel oil	LPG B$ / Kg.
December 2001	0.185	0.225	0.220	0.198	0.214	0.237
December 2002	0.259	0.304	0.313	0.256	0.291	0.228

Source: prepared by the authors.

The sum of IEHD plus transactions tax and VAT gives the total tax levy.

Table A1.16 Total taxes, Bolivia (B$ / litre)

Fuel	Regular gasoline	Premium gasoline	Diesel	Kerosene	Fuel oil	LPG B$ / Kg.
December 2001	1.88	2.847	1.427	0.237	0.548	0.264
December 2002	1.27	2.943	0.682	0.308	0.642	0.251

Source: prepared by the authors on the basis of Tables A1.13, A1.14 and A1.15

1.2.3.3 Commercial mark-ups

The mark-up margin was calculated by taking the difference between the final consumer price and the maximum pre-terminal price, discounting VAT[28]. The remainder comprises the margin gained by storage plants and the wholesale and service station margins. These are shown in Table A1.17.

Table A1.17 Commercial mark-ups, Bolivia (B$ / litre)

Fuel	Regular gasoline	Premium gasoline	Diesel	Kerosene	Fuel oil	LPG B$ / Kg.
December 2001	0.267	0.34	0.24	0.208	0.175	0.917
December 2002	0.288	0.367	0.263	0.224	0.191	1.005

Source: prepared by the authors on the basis of information provided by the consultant Enrique Birhuet of the Bolivian Hydrocarbons Ministry.

1.2.3.4 Final consumer price

Lastly, the sum of the three components – refinery price (Table A1.12), total taxes (Table A1.16) and mark-up margin (Table A1.17) – gives the final prices of petroleum products as shown in Table A1.18.

[28]Final consumer prices and pre-terminal prices are valid countrywide and were obtained form the information bulletin N°55 issued by the Office of the Superintendent of Hydrocarbons.

Table A1.18 Final consumer prices, Sucre (B$ / litre)

Fuel	Refinery price (1)	TAXES				Wholesale price (1+2)	Commercial mark-up (3)	Price to the public (4)=(1+2+3)
		IEHD	IT	VAT	Total (2)			
December 2001								
Regular gasoline	1.155	1.66	0.035	0.185	1.88	3.035	0.267	3.30
Premium gasoline	1.394	2.58	0.042	0.225	2.847	4.241	0.340	4.58
Diesel	1.454	1.163	0.044	0.22	1.427	2.881	0.24	3.12
Kerosene	1.315	0	0.039	0.198	0.237	1.552	0.208	1.76
Fuel oil	1.473	0.29	0.044	0.214	0.548	2.021	0.175	2.20
LPG	0.903	0	0.027	0.237	0.264	1.167	0.917	2.09
December 2002								
Regular gasoline	1.703	0.96	0.051	0.259	1.27	2.973	0.288	3.26
Premium gasoline	1.971	2.58	0.059	0.304	2.943	4.914	0.367	5.28
Diesel	2.143	0.305	0.064	0.313	0.682	2.825	0.263	3.09
Kerosene	1.744	0	0.052	0.256	0.308	2.052	0.224	2.28
Fuel oil	2.049	0.29	0.061	0.291	0.642	2.691	0.191	2.88
LPG	0.752	0	0.023	0.228	0.251	1.003	1.005	2.01

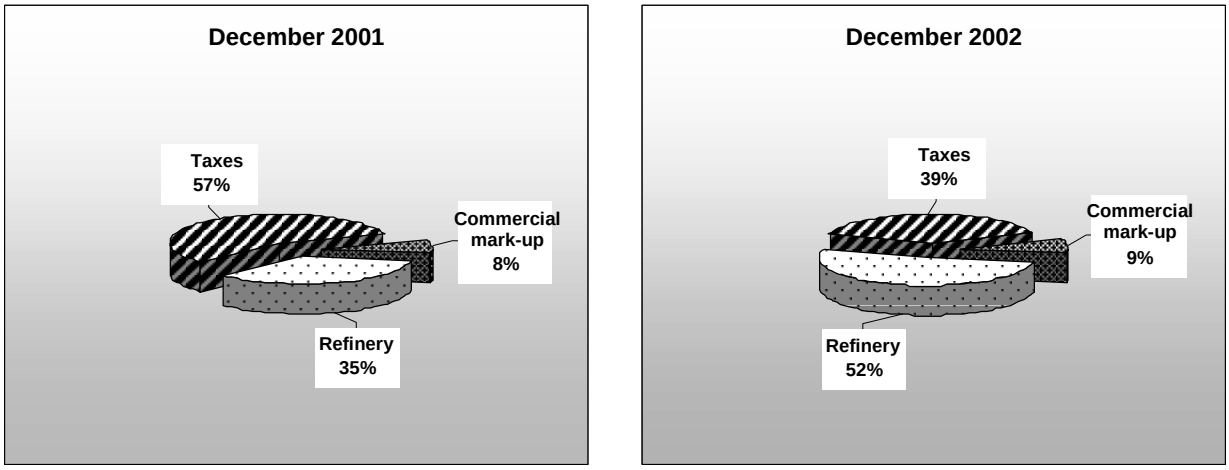
Notes:

- The price of LPG is expressed in Bolivian pesos per kilograms.
- The final prices of fuels are provided by the Office of the Superintendent of Hydrocarbons, information bulletins N˚s 55 and N˚65 (There is a difference with respect to the December 2002 prices, because of the exchange rate at the time).

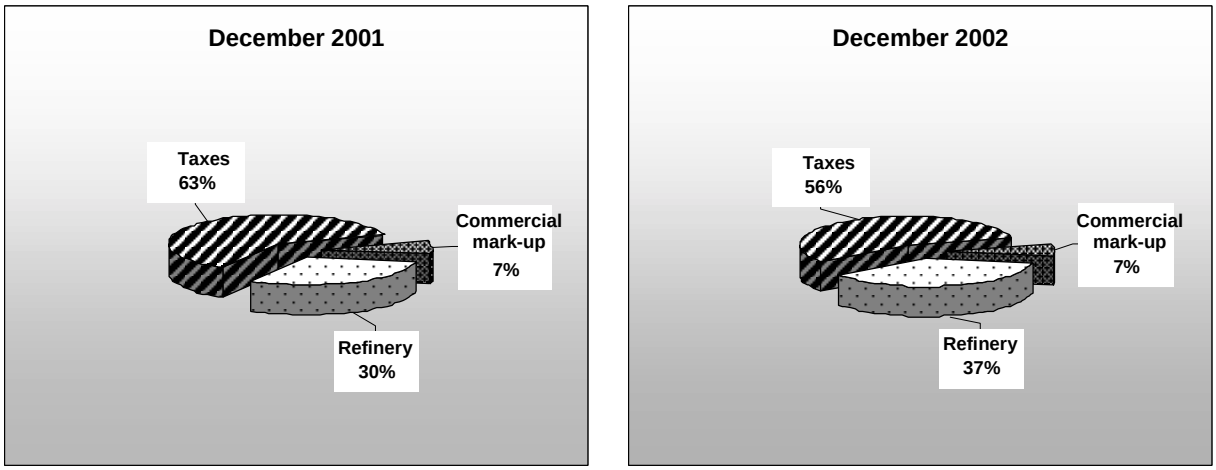
Source: prepared by the author on the basis of Tables A1.12, A1.16 and A1.17

Figure A1.4 Composition of final consumer prices, in percentages, Bolivia

(a) Regular gasoline



(b) Premium gasoline



(c) Diesel

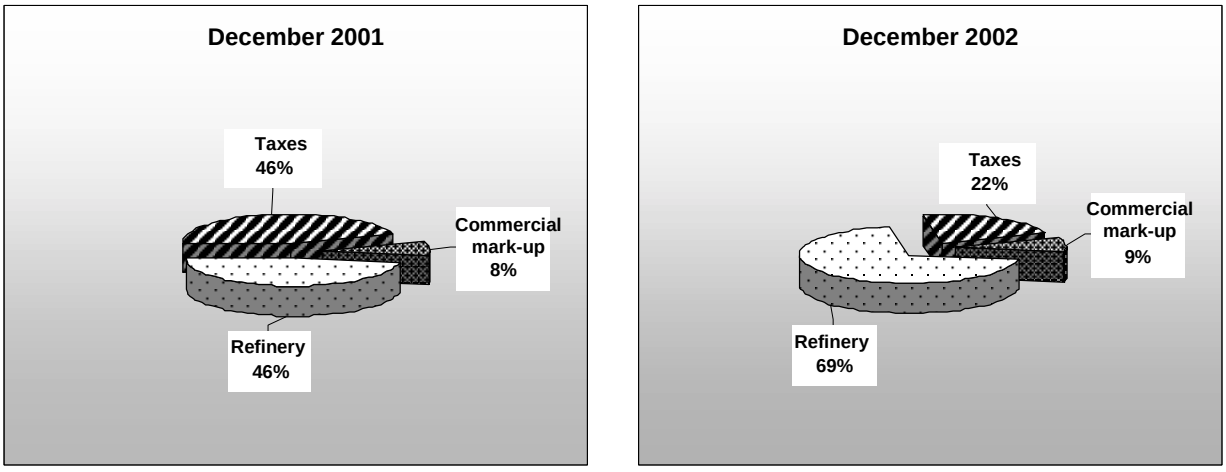
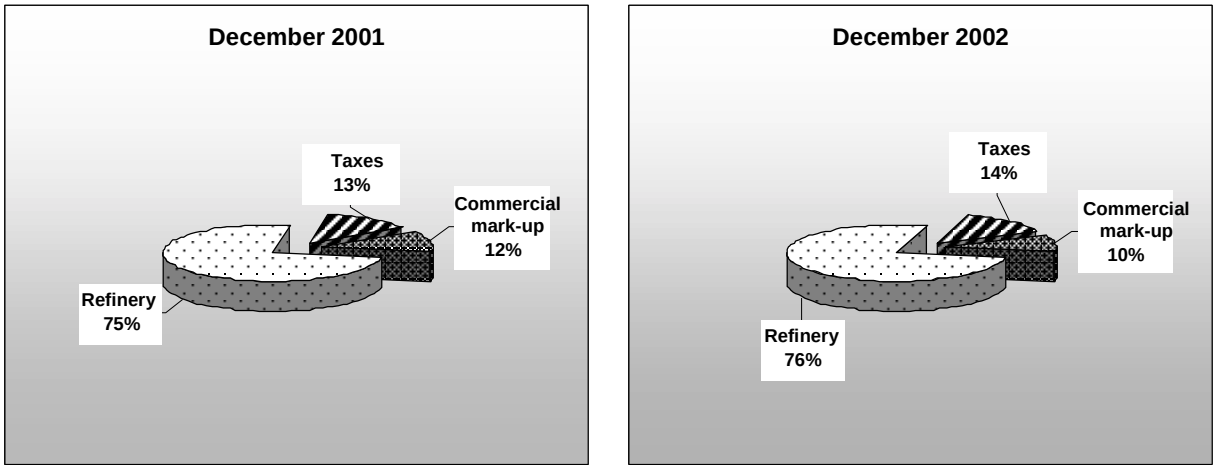
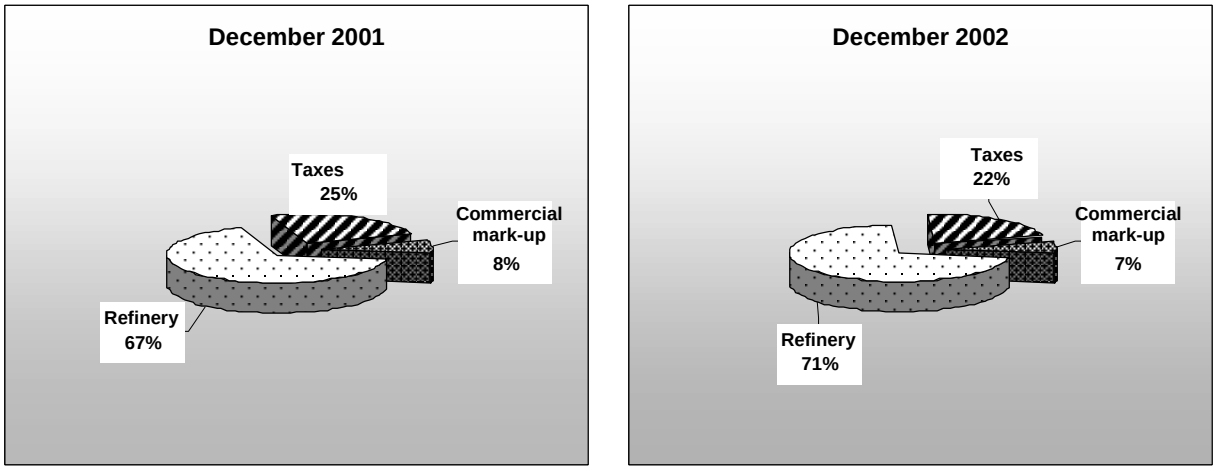


Figure A1.4 Composition of final consumer prices, in percentages, Bolivia (continued)

(d) Kerosene



(e) Fuel oil



(f) Liquid petroleum gas

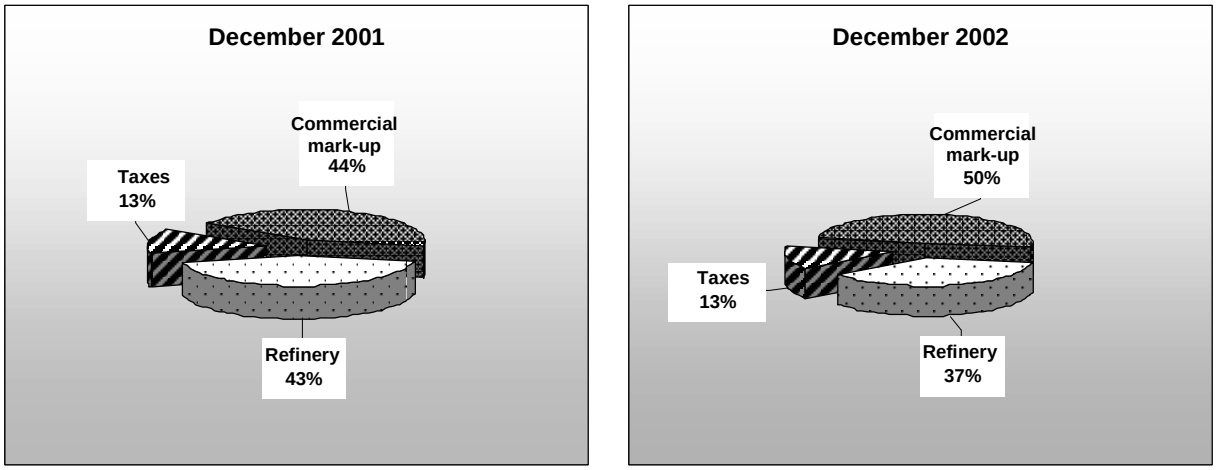
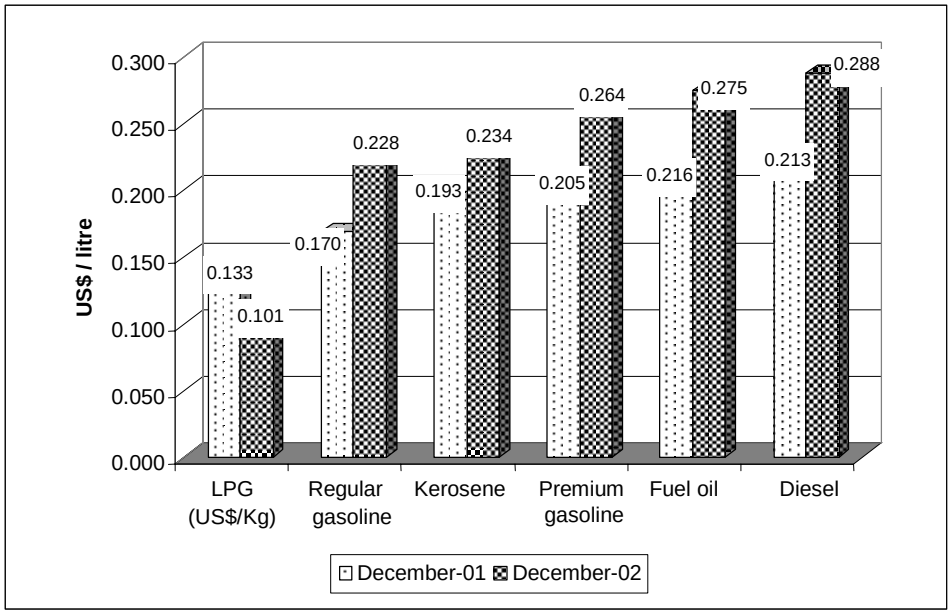


Figure A1.5 Comparison of components of petroleum product price structures, Bolivia

(a) Refinery price



(b) Taxes

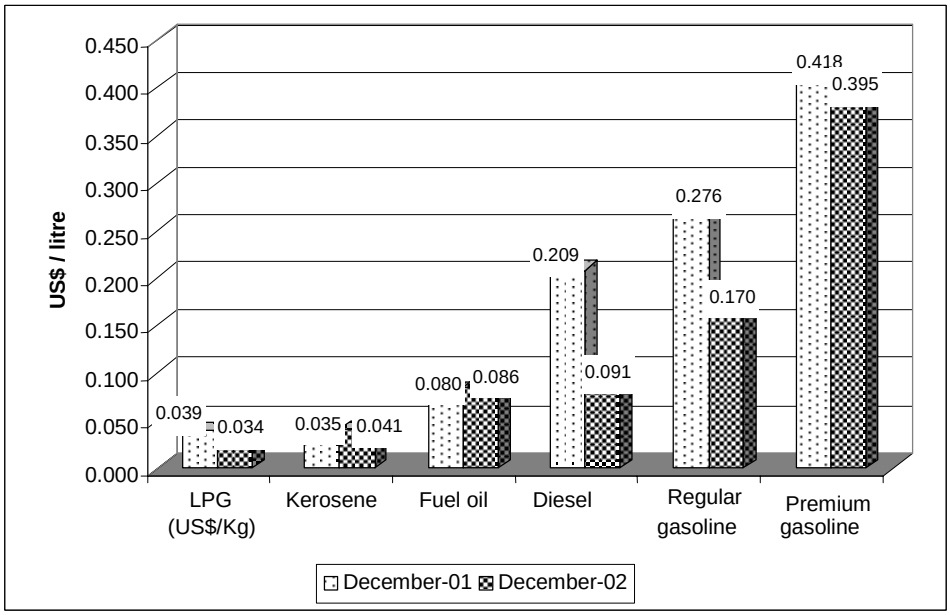
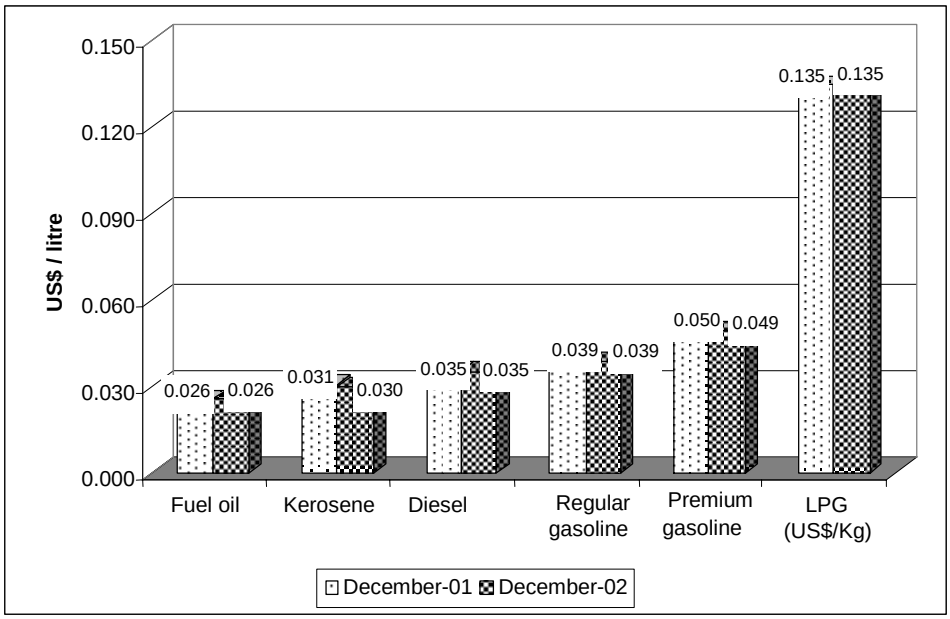


Figure A1.5 Comparison of components of petroleum product price structures, Bolivia, (continued)

(c) Commercial mark-up



(d) Final price to the public

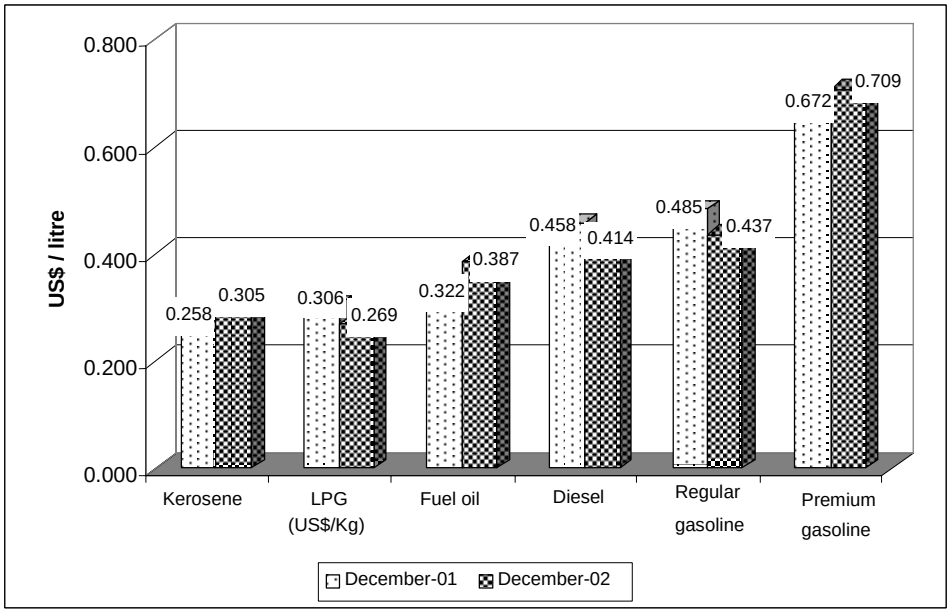
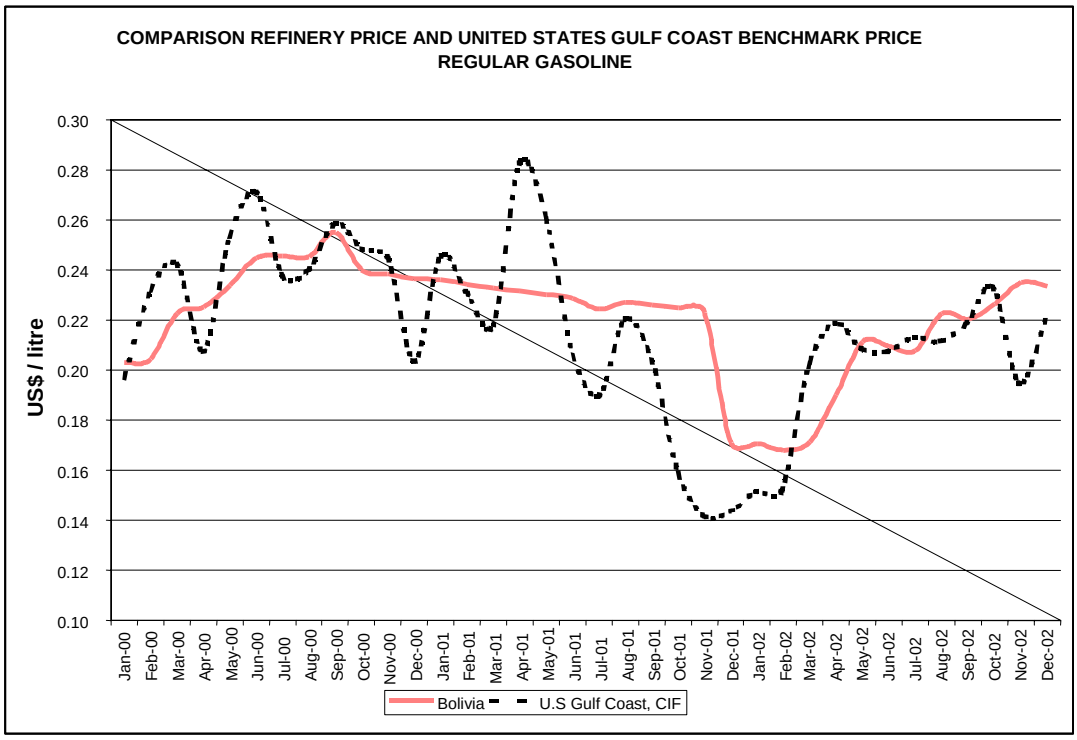


Figure A1.6 Refinery prices of regular gasoline, Bolivia



1.3 ANALYSIS OF THE STRUCTURE OF FUEL PRICES IN COLOMBIA

1.3.1 REGULATION OF PRICE STRUCTURES OF PETROLEUM PRODUCTS

The Ministry of Mines and Energy is the regulatory body for the hydrocarbons and fuel sector. Its aims are to promote the rational use of energy resources, guarantee a reliable and efficient energy supply, reduce its costs, increase coverage, protect users, increase the contribution of exports to the country's economy, and promote private-sector engagement in the sector's activities. In fulfilling this mission, the Ministry is assisted by a group of attached bodies: the Mining and Energy Planning Unit (UPME); the Energy and Gas Regulatory Commission (CREG); and related agencies such as the Colombian Petroleum Company (Ecopetrol).

Price policy applicable to petroleum product fuels

In the energy sector a number of price-setting and regulation schemes affect petroleum products. Generally speaking, pricing policy seeks to reflect economic costs in the sector. With a view to this, fuel prices have been in the process of deregulation since changes in energy policy that began in 1998. These changes were intended to:

1. Rationalise Ecopetrol finances, by differentiating between producer income and income from transport and handling. Producer income is referenced to opportunity cost, adjusted to pay for the transport and storage operation. Another policy element clarified the subsidy.
2. Eliminate subsidies for high-income sectors; this generated an increase in producer income and raised the public price of gasoline, to the detriment of diesel. The main reasoning for this was that the gasoline subsidy was regressive since it favoured mainly the higher income strata (40% of regular gasoline is consumed by private vehicles).
3. End the indexation of prices to inflation. Price liberalisation delinked inflation from fuel price increases.
4. Promote free competition in the productive chain and in private investment. This has allowed gradual liberalisation for the different fuels along the chain, free access to transport and storage infrastructure, price setting for storage and transport, elimination of the concept of saturation, and controlled and regulated freedom in sales to the public.

The Government will develop a regulatory framework for production and/or importation, transport, storage and distribution of petroleum products, based on the following policy guidelines:

- Opportunity cost, import or export parity on petroleum products.
- Differentiation of storage costs based on regional demands.
- Upgrading of regulatory frameworks governing wholesale and retail distribution.
- Harmonisation of time periods for updating the prices of petroleum products and their substitutes.
- Standardisation of the scope of application of systems of regulated and supervised price freedom.
- Introduction of opportunity cost into the well-head price of natural gas vis-à-vis petroleum products.

- Elimination of cross subsidies in natural gas distribution rates between high- and low-population density areas.

Table A1.19 summarises the price systems applicable to each fuel, disaggregated by component of final consumer price.

Table A1.19 Summary of price systems in use in Colombia

Fuel	Refinery price	Taxes	Commercial mark-up
Regular gasoline	Regulated	Global Tax, Surcharge, VAT	Regulated and free
Premium gasoline	Regulated	Global Tax, Surcharge, VAT	Free
ACPM, Diesel	Regulated	Global Tax, Surcharge, VAT	Regulated and free
Kerosene	Regulated	VAT	Free
Fuel oil/Combustoleo	Regulated	VAT	Free
LPG	Regulated	None	Regulated and free

Notes:
- Regular gasoline under the Regulated Free Regime (RFR) and diesel oil (also under RFR) are determined in accordance with Resolutions 82438 and 82439 of 1998, respectively, issued by the Ministry of Mines and Energy.
- Regulated means that a maximum price is set.
- Free means that agents are free to determine margins and prices.
Source: Cerón and Torres, 2001.

1.3.2 TAX BASE

The taxes levied on fuels are as follows:

A. Value-Added Tax (VAT)

This is a nationwide tax levied on the provision of services and on merchandise sales and importation on national territory. Although the VAT rate varies according to the class of goods or services, the general rate is 16%; certain goods have differential rates while others are VAT-exempt.

B. Global Tax

This was established under Law 681 of 2001 as a tax set in national currency, levied on normal gasoline, ACPM[29] and "extra" grade gasoline. It is collected by the Central Government and is normally used for highway maintenance.

C. Surcharge

This tax was established by Law 488 of 1998 and is levied at 20% on regular and "extra" grades of gasoline. It is calculated on the benchmark sale price per gallon to the public, as provided in the law. In the case of diesel, the applicable surcharge is 6% on the benchmark sale price per gallon to the public. The resulting revenues are distributed among municipalities, departments

[29] ACPM is defined as fuel oil for engines, marine or river diesel, marine diesel, gas oil, *intersol*, No. 2 diesel, electro-fuel, or any distilled medium grade and/or related oils, whose physical and chemical properties and performance in high-revolution engines make them suitable for use as automotive fuel.

and the national government, and used among other things to finance highway infrastructure works undertaken by territorial bodies.

1.3.3 METHODOLOGY USED TO CALCULATE THE COMPONENTS OF PETROLEUM PRODUCT PRICE STRUCTURE

The mechanism used to calculate each of the components is set out below.

1.3.3.1 Refinery price

The refinery price or producer income of the different petroleum products can be obtained from the Colombian Petroleum Company (Ecopetrol) and the Mining Energy Planning Unit (UPME). Ecopetrol presents the price structure of fuels as follows:

Table A1.20 Price structure of regular gasoline in Colombia

Price structure December 2001	Regular gasoline Colombian pesos per gallon (C$ / gallon)
Producer income	1447.35
VAT (16%)	231.58
Global Tax	503.62
Transport stamp rate	190.00
Maximum price of sale to wholesale distributor	2372.55
Margin wholesale distributor	123.46
Maximum price at wholesale supply plant	2496.01
Margin retail distributor	188.04
Loss through evaporation	9.98
Transport of product to service station	11.53
Price before surcharge	2705.56
Surcharge	536.18
Final price to the public	3241.74

Source: Ecopetrol.

Table A1.21 shows the refinery prices of the different fuels.

Table A1.21 Refinery price, Colombia (C$ / gallon)

Fuel	Regular gasoline (GCM)	Premium gasoline	Diesel (ACPM)	Kerosene	Fuel oil	LPG C$ / Kg.
December 2001	1447.35	1597.83	1122.04	1272.77	646.73	465.82
December 2002	1596.29	2147.40	1248.19	2072.00	1540.81	547.58

Note:
Under the Regulated Free Regime, the price structure of GCM and ACPM is relegated from producer income through to maximum final sale price in a number of cities.[30]
Source: UPME, Monthly Price Bulletin, December 2001.

1.3.3.2 Taxes

To the refinery price must be added VAT, at a rate of 16%, except for LPG, which is VAT-exempt. See Table A1.22.

Table A1- 22: Value-added tax, Colombia (C$ / gallon)

Fuel	Regular gasoline	Premium gasoline	Diesel	Kerosene	Fuel oil	LPG
December 2001	231.58	255.65	179.53	203.64	103.48	Not levied
December 2002	255.41	343.58	199.71	331.52	246.53	Not levied

Source: prepared by the authors.

To this price structure is then added the Global Tax, which is set by law. Kerosene, fuel oil and LPG are exempt from this tax, as shown in table A1.23.

Table A1.23 Global Tax, Colombia (C$ / gallon)

Fuel	Regular gasoline	Premium gasoline	Diesel	Kerosene	Fuel oil	LPG
December 2001	503.62	579.17	333.79	Not levied	Not levied	Not levied
December 2002	533.84	613.92	353.82	Not levied	Not levied	Not levied

Source: UPME, Monthly Price Bulletin, December 2001

Lastly a surcharge is added. By law, the rate is 20% for gasoline on the benchmark public sale price and 6% for diesel. Fuel oil, kerosene and LPG are exempt. See Table A1.21.

Table A1.24 Surcharge, Colombia (C$ / gallon)

Fuel	Regular gasoline	Premium gasoline	Diesel	Kerosene	Fuel oil	LPG
December 2001	536.18	717.26	122.27	Not levied	Not levied	Not levied
December 2002	559.86	688.89	132.99	Not levied	Not levied	Not levied

Source: UPME, Monthly Price Bulletin, December 2001

The sum of VAT plus the Global Tax and Surcharge gives total taxes, as shown below.

[30]Amazonas, Arauca, Caquetá, Casanare, Chocó, Guainía, Guaviare, La Guajira, Vaupés and Vichada.

Table A1.25 Total taxes, Colombia (C$ / gallon)

Fuel	Regular gasoline	Premium gasoline	Diesel	Kerosene	Fuel oil	LPG
December 2001	1271.38	1552.08	635.59	203.64	103.48	0
December 2002	1349.11	1646.39	686.52	331.52	246.53	0

Note:
For regular and extra gasoline, the surcharge is calculated on the basis of the benchmark price taken from the monthly bulletin published by UPME.
Source: Tables A1.22, A1.23 and A1.24

1.3.3.3 Commercial mark-ups

There are two systems for retail fuel sales in Colombia:

Monitored Free Regime (MFR): retail distributors are free to set their own margins in capital cities (Medellín, Barranquilla, Cartagena, Tunja, Manizales, Popayán, Montería, Sincelejo, Neiva, Santa Marta, Villavicencio, Pasto, Bucaramanga, Armenia, Pereira, Cúcuta, Ibague, Cali, Santafé de Bogotá, Mocoa and Valledupar), which means that the price structure is regulated only up to the maximum sale price in wholesale supply plants.

Regulated Free Regime (RFR): the price or price structure of fuels is regulated from producer income through to the maximum consumer sale price in the remaining cities (Amazonas, Arauca, Caquetá, Casanare, Chocó, Guainía, Guaviare, La Guajira, Vaupés and Vichada)

The price policy applicable to Commercial mark-ups in Colombia is as follows:

Table A1.26 Price policy applicable to Commercial mark-ups, Colombia.

Commercial mark-up	Regular gasoline	Premium gasoline	Diesel	LPG
Wholesale	Regulated	Free	Regulated	Regulated
Retail	Free - regulated	Free	Free - regulated	Free - regulated

Source: prepared by the authors.

LPG

The general price formula for LPG came into effect on 1 March 1998, and is valid for five years. The formula is used to determine end consumer prices, and contains the cost components shown below:

$$M = G + E + Z + N + D$$

Where:

G = producer income: The Energy and Gas Regulation Commission (CREG) chose an international benchmark price to establish producer income for large commercialising agents, which is calculated on the basis of the international prices of butane and propane in the Mont Belvieu market. An additional component for imports and exports is also considered. (Resolutions CREG-144 of 1997 and CREG-011 of 2001)
E = Transport: LPG is currently transported by gas pipelines, polyducts and tankers. The formula for transport income for large commercialising agents of LPG is a national stamp charge which remunerates only piped transport.

Z = Safety margin: the resources form the safety margin established in the price structure are administered by the Ministry of Mines and Energy through a trust contract, and are used for the following:

- Trust Commission
- Global Policy
- User training
- Maintenance of bottles, stationary tanks and technical inventory
- Replacement of bottles, stationary tanks and technical inventory

N = Wholesale commercialising agent: At present, the only large agent (Ecopetrol) delivers the product to 28 wholesale commercialising agents (storage agents) at 8 terminals. The base margin was established by means of a cost study, and is indexed by a discount factor.

D = Distribution margins: distribution margins are applicable to the service provided by tankers, and bottles of 20, 40 and 100 pounds.

M = Final user price: With regard to final user prices, CREG established the following rules in the price regime:

- The maximum prices that result from the use of the price formulas are valid for localities where large commercialising agents deliver: Apiay, Bucaramanga, Cartagena, Manizales, Pereira, Mansilla (Facatativa), Vista Hermosa (Mosquera), Puerto Salgar and Yumbo.
- For other localities, the prices are set by the distributors, adding the cost of transport from the nearest terminal to the municipality where the fuel will be distributed.
- Distribution prices in the urban perimeters of Cartagena, Barranquilla, Santa Marta, Riohacha, Sincelejo, Montería, Neiva, Bucaramanga, Villavicencio, Barrancabermeja and Floridablanca, are freely set by the distributor under the Monitored Free Regime (MFR).

Lastly, price formulas relating to transport income and the wholesale and distribution margins are indexed to the variation in the consumer price index from the start-up of the price regime to the date of annual revision, minus an efficiency factor equivalent to 0.01.

Table A1.27 LPG structure, Colombia.

Component	December 2001 C$ / gallon
Producer income	974.08
Transport income	92.44
Safety margin income	95.18
Global Tax	0
VAT	0
Wholesale distributor sale price	1161.70
Wholesale margin	64.12
Supply sale price	1225.82
Retail or distribution margin	144.56
Final price to the public	1370.38

Source: prepared by the authors on the basis of information from the Monthly Price Bulletin, December 2001, UPME.

Table A1.28 shows the commercial mark-ups for the different fuels.

Table A1.28 Commercial mark-ups, Colombia (C$ / gallon)

Fuel	Regular gasoline	Premium gasoline	Diesel	Kerosene	Fuel oil	LPG C$ / Kg.
December 2001	523.01	705.09	487.50	290	Not applicable	189.52
December 2002	587.73	896.21	512.50	292	Not applicable	200.83

Note:
Wholesale and retail commercial mark-ups of fuels include: transport stamp rate; evaporation loss and transport of the product to the service station. LPG commercial mark-ups include: transport, safety margin, wholesale and distribution margins.
Source: prepared by the author using data from UPME.

1.3.3.4 **Final consumer price**

Lastly, the sum of the three components – refinery price (TableA1.21), total taxes (Table A1.25) and commercial mark-up (Table A1.28) – gives the final prices for petroleum products, which are shown in Table A1.29.

Table A1.29 Final consumer prices, Bogotá (C$ / gallon)

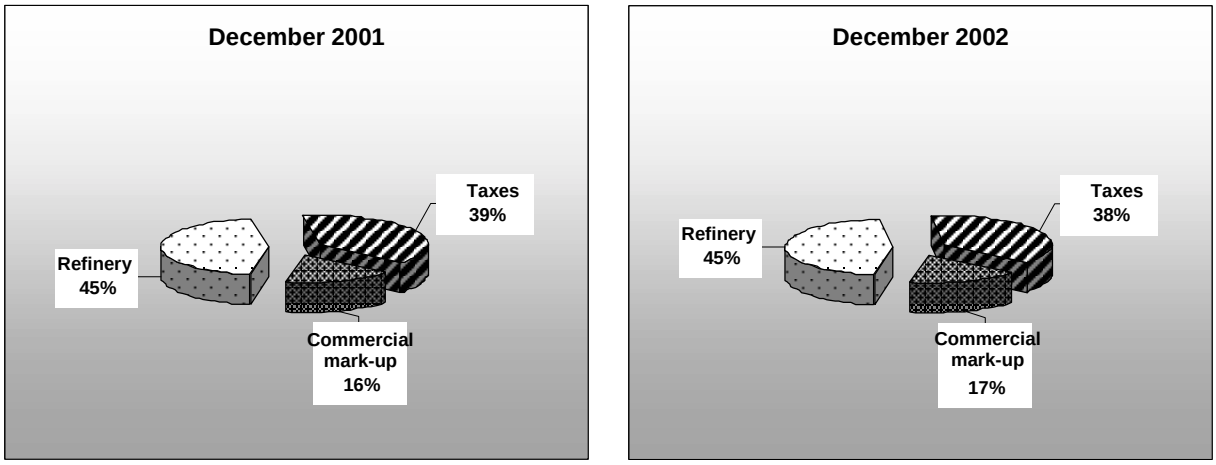
Fuel	Refinery price (1)	TAXES				Wholesale price (1+2)	Commercial mark-up (3)	Price to the public (4)=(1+2+3)
		Global	Surcharge	VAT	Total (2)			
December 2001								
Regular gasoline	1447.35	503.62	536.18	231.58	1271.38	2718.73	523.01	3241.74
Premium gasoline	1597.83	579.17	717.26	255.65	1552.08	3149.91	705.09	3855.00
Diesel	1122.04	333.79	122.27	179.53	635.59	1757.63	487.50	2245.13
Kerosene	1272.77	0	0	203.64	203.64	1476.41	290.00	1766.41
Fuel oil	646.73	0	0	103.48	103.48	750.21		
LPG RLR	465.82	0	0	0	0	465.82	189.52	655.34
LPG Bogotá	465.82	0	0	0	0	465.82	218.03	683.85
December 2002								
Regular gasoline	1596.29	533.84	559.86	255.41	1349.11	2945.40	587.73	3533.13
Premium gasoline	2147.40	613.92	688.89	343.58	1646.39	3793.79	896.21	4690
Diesel	1248.19	353.82	132.99	199.71	686.52	1934.71	512.50	2447.21
Kerosene	2072	0	0	331.52	331.52	2403.52	292	2695.52
Fuel oil	1540.81	0	0	246.53	246.53	1787.34	0	
LPG RLR	547.58	0	0	0	0	547.58	200.83	748.41
LPG Bogotá	547.58	0	0	0	0	547.58	233.82	781.40

Notes:
- The price of LPG is expressed in Colombian pesos per kilograms.
- The price of fuel oil corresponds to the wholesale price.
- Prices to the public are taken from UPME.

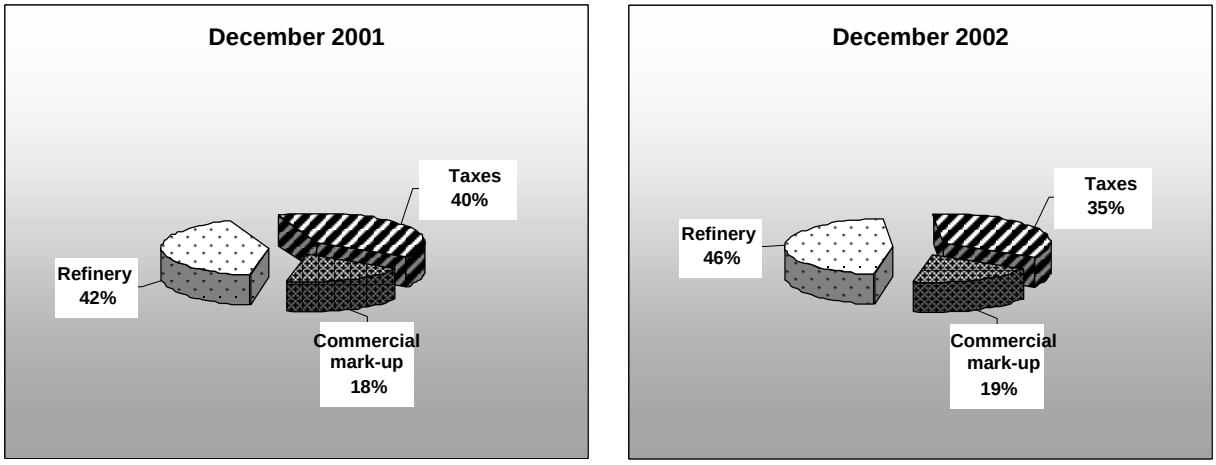
Source: prepared by the authors on the basis of tables A1.21, A1.22, A1.23, A1.24 and A1.29.

Figure A1.7 Composition of final consumer price, in percentages, Colombia

(a) Regular gasoline



(b) Premium gasoline



(c) Diesel

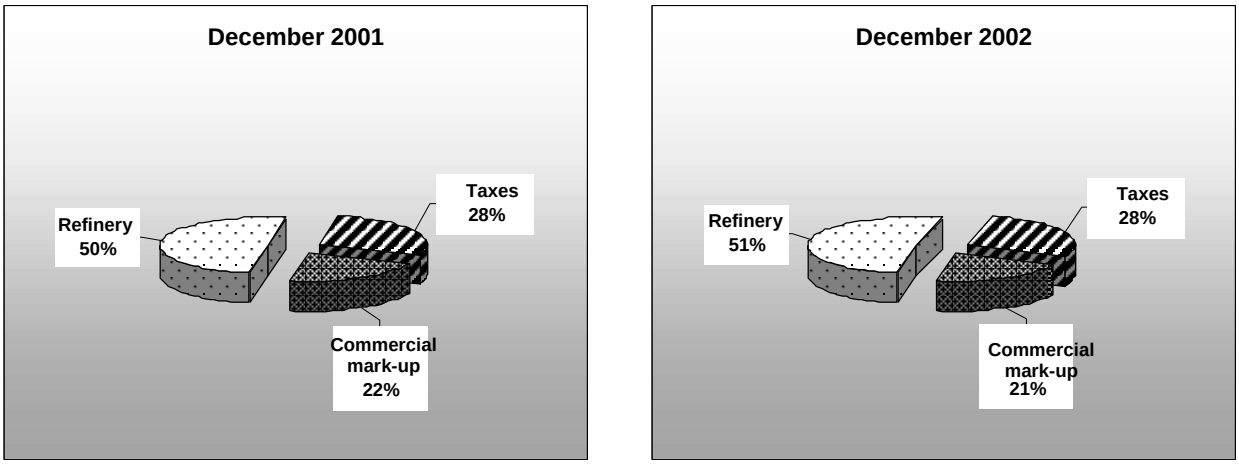
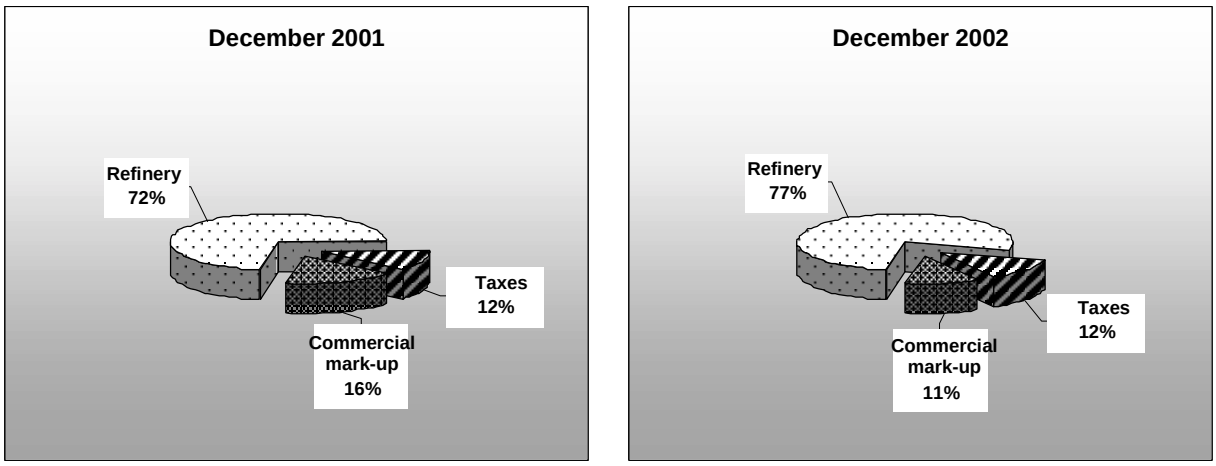
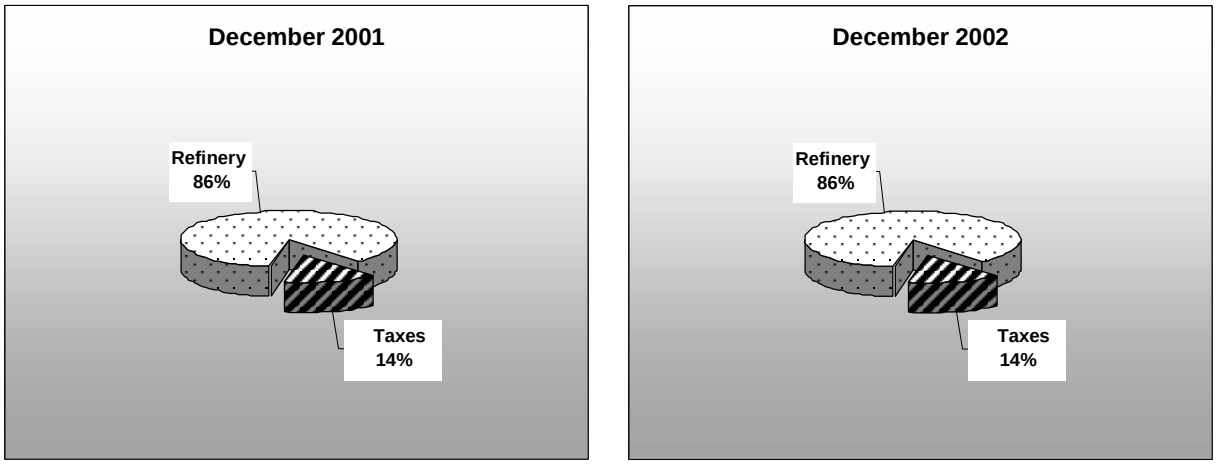


Figure A1.7 Composition of final consumer price, in percentages, Colombia (continued)

(d) Kerosene



(e) Fuel oil



(f) Liquid petroleum gas

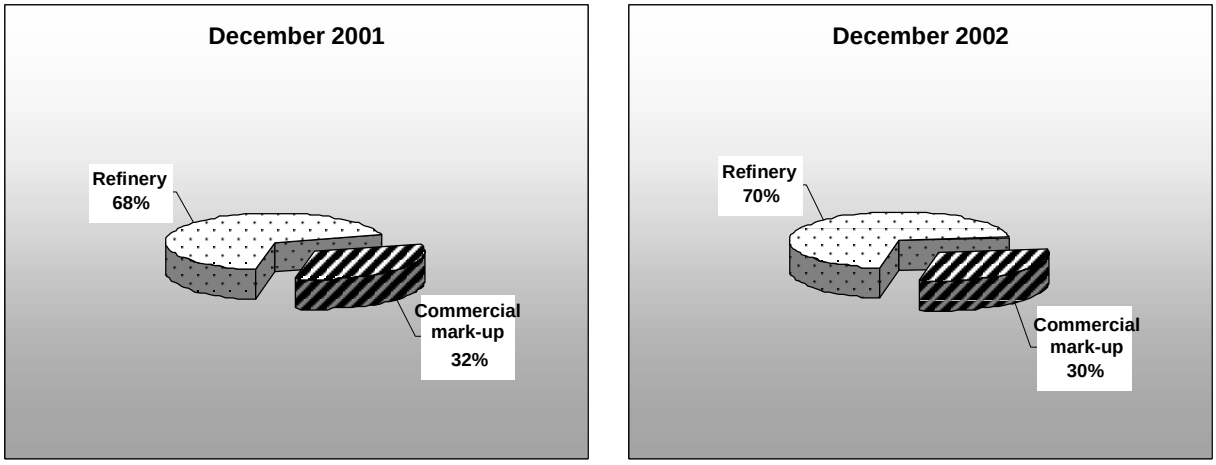
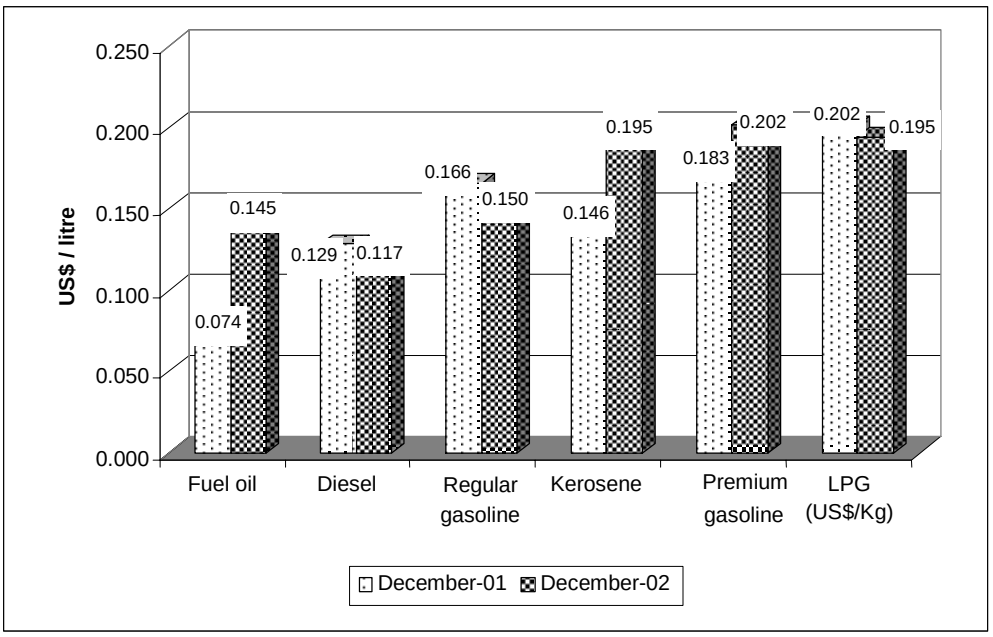


Figure A1.8 Comparison of the components of petroleum product price structures, Colombia

(a) Refinery price



(b) Taxes

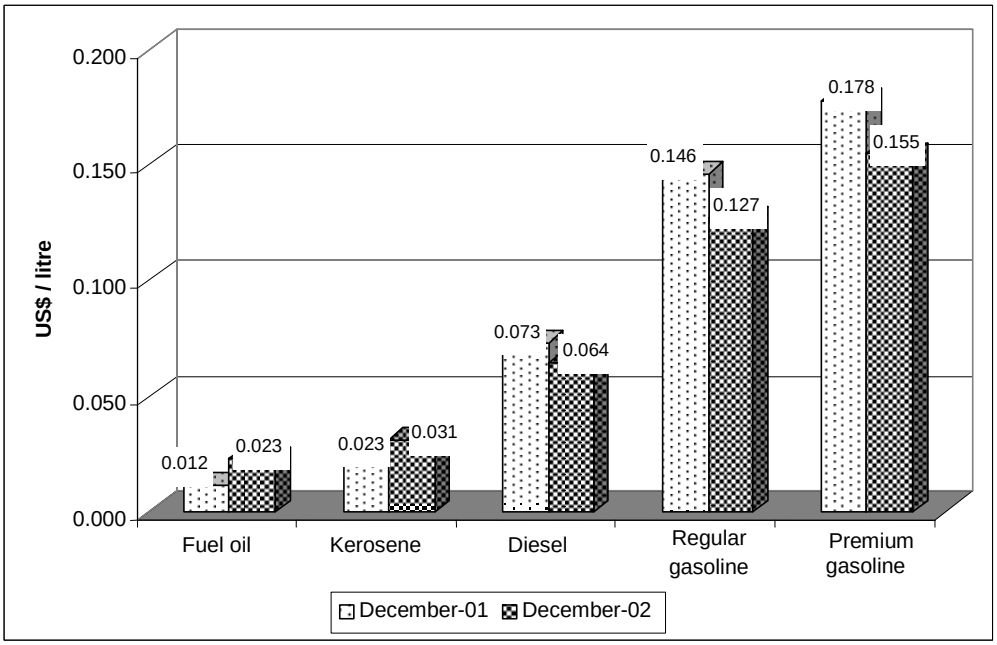
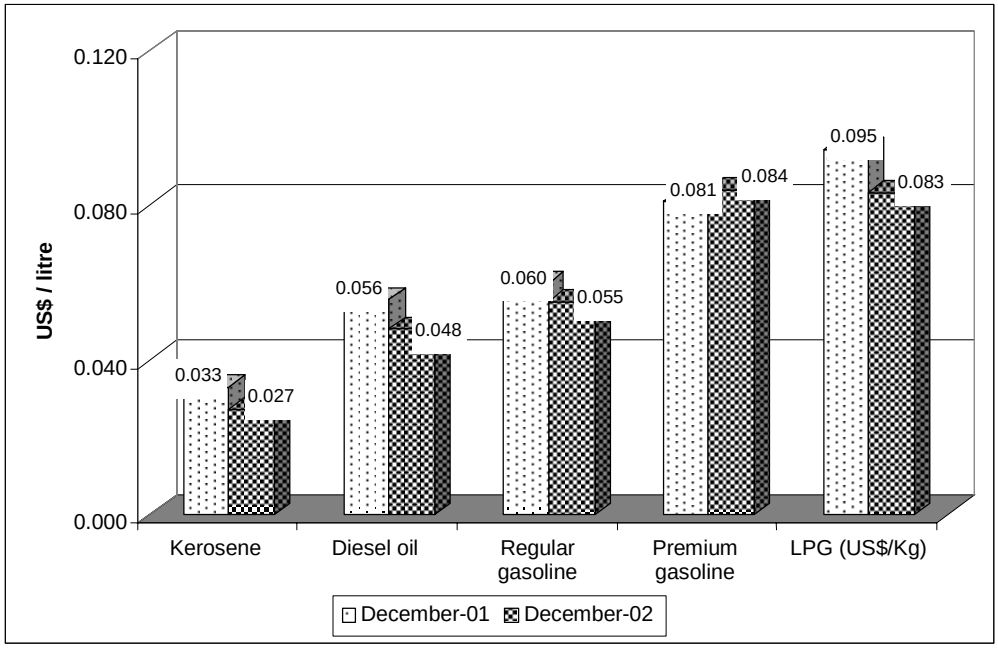


Figure A1.8 Comparison of the components of petroleum product price structures, Colombia (continued)

(c) Commercial mark-up



(d) Final price to the public

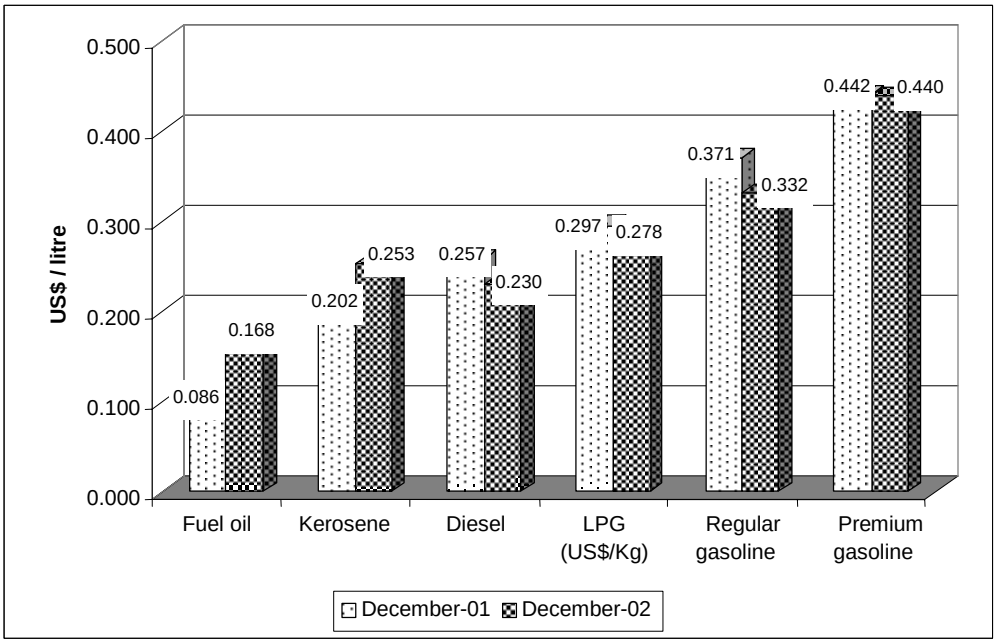
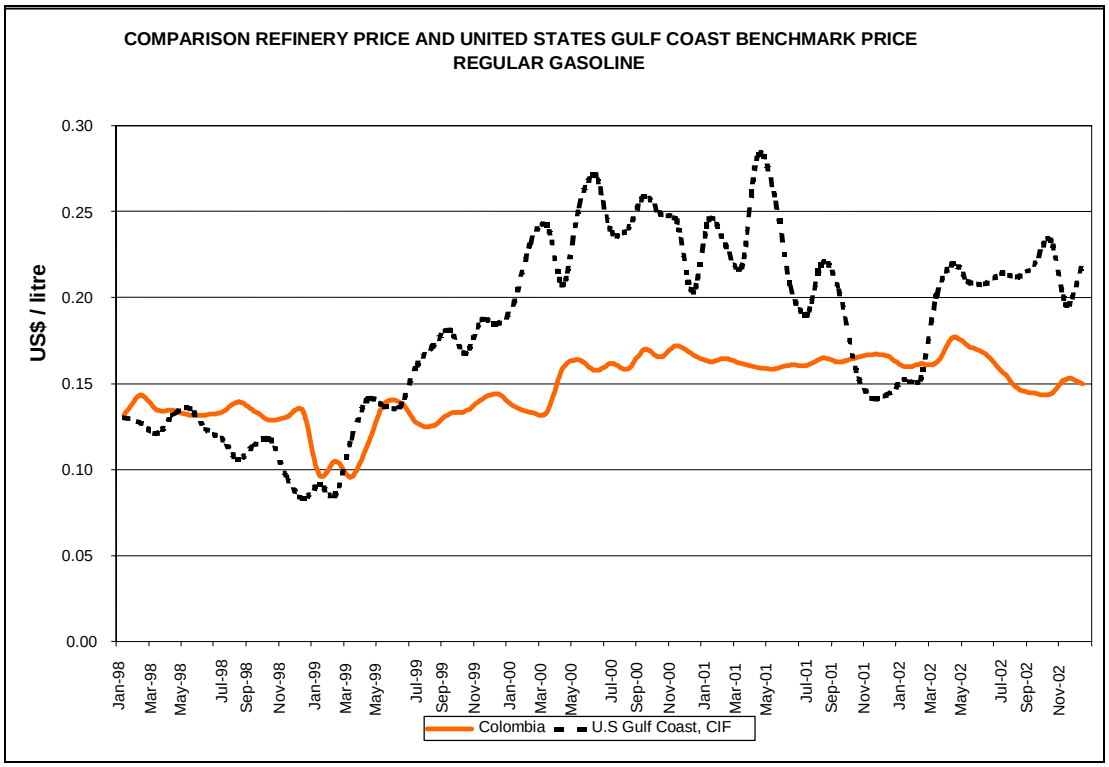


Figure A1.9 Refinery prices of regular gasoline, Colombia



2 OIL EXPORTING COUNTRIES

2.1 ANALYSIS OF THE PRICE STRUCTURE OF FUELS IN ECUADOR

2.1.1 REGULATION OF PRICE STRUCTURES OF PETROLEUM PRODUCT

The Ministry of Energy and Mines (MEM) is responsible for energy resource policy and management in Ecuador. Its responsibilities revolve around the promotion of the harmonious and sustainable development of the country's energy and mining sectors. For this purpose it regulates, oversees and inspects hydrocarbon and mining operations; and it promotes local and foreign investment while safeguarding State interests. Given that over 30% of the national budget is financed from petroleum revenues, this is one of the areas that contribute most to the country's development.

MEM has four departments dealing with hydrocarbons, mines, environmental protection, and electrification and administration.

The National Hydrocarbons Department (DNH) is responsible for overseeing and inspecting hydrocarbons operations, as well as the refining and selling of petroleum products (fuels), ensuring maintenance of the standards of quality, quantity, reliability and safety set out in the various bodies of legislation.

DNH has a broad sphere of action encompassing, among others, the following:

- Approval or authorisation of different phases of hydrocarbons activity.
- Sanctioning of infractions of the Hydrocarbons Act and associated regulations.
- Establishing the amount of official hydrocarbons reserves.
- Approval of plans, programmes of activities, budgets of investment, costs and expenditure; and requests concerning geology, geophysics, drilling, deposits and production of crude petroleum put forward by oil companies.
- Setting and overseeing rates of crude petroleum production.
- Authorisation of start-up of pipelines, polyducts and gas pipelines, and monitoring of their operation and storage systems.
- Oversight and inspection of sales of petroleum products and LPG.
- Rating of firms that sell petroleum products and LPG.
- Registry of distributors of petroleum products and LPG.
- Preparation of estimates of production, domestic consumption, royalties and exports of petroleum and petroleum products.
- Oversight of contractual obligations arising from different types of petroleum contracts.[31]

2.1.1.1 Legal framework

Hydrocarbons Act
(Art. 3) The transport of hydrocarbons via oil pipelines, polyducts and gas pipelines, and the refining, industrialisation, storage and marketing of hydrocarbons, will be conducted by PetroEcuador or by domestic or foreign firms established in the country of recognised competence to carry out those activities, which will assume the exclusive responsibility and risks of their investment, without compromising public resources.

[31] Ministry of Energy and Mines of the Republic of Ecuador, **www.menergia.gov.ec**

(Art. 68) The storage, distribution and sale to the public of hydrocarbons derivatives within the country, or any one of these activities, will be conducted by PetroEcuador or by natural persons or domestic or foreign firms legally established in the country and of recognised competence in the industry.

(Art. 69) Natural or legal persons may conduct sales to the public on behalf of PetroEcuador, for which they will sign the corresponding distribution contracts with the respective subsidiary company.

(Art. 72) The consumer sale prices of hydrocarbons derivatives will be governed by the Regulations issued for this purpose by the President of the Republic, who will set fuel prices for the domestic market.

Regulations for the authorisation of sales of hydrocarbon-derived liquid fuels
(Ministerial Agreement 347 of July/1996, replacing D.E. 2024 of October/2001)

- Regulates the sale of hydrocarbons derivatives, with the exception of liquid petroleum gas and natural gas, which have their own specific regulation.

- The sale of hydrocarbon-derived liquid fuels is a public service which must be provided in accordance with the principles set out in Article 249 of the Political Constitution of the Republic. This activity is regulated by the Ministry of Energy and Mines and supervised by the National Hydrocarbons Department.

Actors

Supplier- At present, PetroEcuador, through its subsidiary Petrocomercial, is responsible for supplying fuels at the national level, whether domestically produced or imported. PetroEcuador is responsible for the reception of fuels from refineries or at the port of import, their transport via polyducts, storage in terminals and deposits and dispatch to commercialising agents.

Commercialising agents.- Natural or legal persons authorised by the Ministry of Energy and Mines to engage in the selling of fuels. This definition includes PetroEcuador through its subsidiary Petrocomercial.

Distribution Centre.- Facilities registered with the National Hydrocarbons Department, where fuel is received, stored and sold to the consumer (service stations, industrial deposits, fishing, shipping or airline companies).

Distribution network- The set of distribution centres owned by a commercialising agent or contractually associated with one and distributing fuels under its brand name and standards.

Regulations for commercialising agents of liquid petroleum gas
(D.E. 3989 of August/1996, replaced by D.E. 2282 de feb./2002)

Encompasses the activities of wholesale acquisition, storage, bottling, transport and distribution to the consumer.

The marketing chain includes the same agents as for other fuels.

Supply.- Authorised commercialising agents must obtain LPG supplies from Petrocomercial, or from any other contractually registered supply plant.

Oversight.- Commercialising agents are obliged to vouch for the quality and weight of the LPG they sell and ensure that it complies with the applicable regulations. They are also responsible for complying and ensuring compliance with technical regulations, safe handling of LPG and other legal and statutory provisions on the part of storage plants, bottling plants, transport and distributors. DNH is responsible for oversight, which it conducts though contracted inspection companies.

Import or export.- Commercialising agents may import or export LPG upon authorisation from the Ministry of Energy and Mines.

Freedom of operation.- any natural or legal person, Ecuadorian or foreign, may build and operate supply plants, storage and bottling plants, providing they register beforehand with DNH.

Distribution.- Sales of bottled LPG to the final consumer will be carried out by distributors registered with DNH in possession of a distribution contract with the commercialising agents. They can distribute bottled LPG from any agent.

Marked bottles.- Sellers are obliged to maintain cylinders clearly marked with their brand name. They may not use bottles of other brands unless they are in possession of the requisite bottling contracts.

2.1.1.2 Price policy applicable to petroleum product fuels

Although the law and regulations allow for any firm to produce or import fuels, the price-setting policy that has prevailed consists of prices regulated by the State through the President of the Republic. This modality reflects the fact that PetroEcuador is the largest oil producer, the only producer with refinery plants, and the only firm with infrastructure for pipeline transport and fuel storage terminals. The private sector has not invested in infrastructure or engaged in fuel imports, on the basis that prices do not justify investments.

Fuel prices are set on the basis of financing needs of the State budget, which means that the Ministry of Economic Affairs participates actively in this area. Historically, fuel prices have been a strategic part of the economic policy of successive governments; and they play a major role in fulfilling commitments with the International Monetary Fund. Conceptually speaking, revenues from the sale of fuels by PetroEcuador belong to the State budget. The Ministry of Economic Affairs reimburses PetroEcuador for its costs and expenses. The difference between revenues and costs/expenses finances the State budget. Prices are therefore set in direct relation to fiscal funding needs, subject only to social and economic constraints arising from price hikes. The best example of this policy is the price of gas, which has become a vehicle for claims by social sectors

that staunchly oppose realistic prices being set for gas, whose current price covers less than one third of its import cost. The possibility of eliminating the subsidy, which costs the State about US$200 million, has been under study for several years. The current idea is to target the subsidy through vouchers, or to introduce supply systems using containers smaller than those normally sold. Ecuador imports 70% of the liquid gas consumed in the country.[32]

Table A1.30 summarises the price systems applicable to each fuel, disaggregated by component of the final price to the consumer.

Table A1.30 Summary of price system in use in Ecuador

Fuel	Refinery price	Taxes	Commercial mark-up
Regular gasoline	Regulated	VAT	Regulated
Premium gasoline	Regulated	VAT	Free
Diesel	Regulated	VAT	Regulated
Fuel oil	International	VAT	Regulated
LPG	Regulated	VAT	Regulated

Notes:
- A maximum terminal price is imposed by Petrocomercial (a subsidiary of PetroEcuador); prices are set by the President of the Republic (Hydrocarbons Act, chapter VIII, Price Setting, article 72).
- Free means that agents are free to determine margins and prices.
- International means that maritime and air freight prices for international vessels are set by Petrocomercial in line with the international market.
Source: Ministry of Energy and Mines.

2.1.2 TAX BASE

Taxes on fuels are levied as follows:

Value-Added Tax (VAT)

VAT is levied on domestic merchandise sales, service provision within the national territory and importation of goods into the country. The general rate of VAT is 12%.

Article 124, title III of the Domestic Tax Regime of Ecuador establishes the following:

On sales of petroleum products to distributors, in addition to the corresponding value added tax, Petrocomercial or its fuel marketing units shall retain the 12% VAT assessed on the distributor's profit margin, and shall declare and pay this amount every month as a tax on presumptive value added withheld on retail sales. The distributor's monthly declaration must include VAT paid on its purchases and VAT withheld by Petrocomercial or the marketing unit. Withholding agents shall make a monthly declaration of tax withheld, in the format, conditions and details set out by the Internal Revenue Service.

[32] Presentation given by Ramón Ricaurte, Vice-President of Petrocomercial (Ecuador), Seminar on International Fuel Price Policies in Latin America: Impact on the Economy and the Environment, Santiago, Chile, 3-4 December 2002.

Commercial agents shall declare VAT charged on their sales less VAT paid on their purchases. They shall also declare and pay, without deduction, the presumptive VAT withheld from distributors.[33]

2.1.3 METHODOLOGY USED TO CALCULATE THE COMPONENTS OF PETROLEUM PRODUCT PRICE STRUCTURE

The mechanism used to calculate each of the components is set out below.

2.1.3.1 Refinery price

The refinery price can be determined by using the terminal prices published by Petrocomercial, which include refining costs, domestic marketing and import, and VAT. The price before tax is therefore obtained by dividing by the VAT rate. LPG, meanwhile, is sold by Petrocomercial to selling agents at the current official price, which is maintained until is it sold to the final consumer. This price does not reflect the production, importation or marketing costs of LPG. Table A1.31 shows the refinery price of different fuels.

Table A1.31 Refinery price, Ecuador (US$ / gallon)

Fuel	Regular gasoline	Premium gasoline	Diesel	Fuel oil	LPG US$ / kg
December 2001	0.759	0.982	0.589	0.464	0.1067
December 2002	0.848	1.071	0.679	0.464	0.1067

Notes:
- Kerosene is not soled on the domestic market.
- The price of LPG is subsidised.

Source: Petrocomercial.

2.1.3.2 Taxes

Lastly, value-added tax must be added at the general rate of 12% over the refinery price and the commercial mark-up, in accordance with article 124 of Ecuador's domestic tax regime. Table A1.32 shows VAT for the different fuels.

Table A1.32 Value-added tax, Ecuador (US$ / gallon)

Fuel	Regular gasoline	Premium gasoline	Diesel	Fuel oil	LPG US$ / kg
December 2001	0.107	0.139	0.083	0.059	0.014
December 2002	0.120	0.152	0.096	0.057	0.011

Source: prepared by the authors.

2.1.3.3 Commercial mark-ups

According to the Ministry of Energy and Mines the commercial mark-up of petroleum products is 18% over the terminal price before tax, with the exception of premium gasoline, whose margin is freely set by agents. This percentage must cover the selling agent and distributor's transport and

[33] Internal Revenue Service, **www.sri.gov.ec**

storage costs, plus the profits of the agents in the chain. Table A1.33 shows the commercial mark-ups on different fuels.

Table A1.33 Commercial mark-ups, Ecuador (US$ / gallon)

Fuel	Regular gasoline	Premium gasoline	Diesel	Fuel oil
December 2001	0.137	0.177	0.106	0.011
December 2002	0.153	0.193	0.122	0.009

Source: Ministry of Energy and Mines.

Liquid Petroleum Gas

Ecuador's liquid petroleum gas (LPG) market is managed through monopolies at the production phase and oligopolies at the marketing phase.

Petroecuador handles domestic production and the importation of the LPG sold in Ecuador, while 11 firms are involved in the whole process of bottling, transport and distribution of gas from the storage centres to the final consumer.
Of these 11 firms, three –Duragas, Agipecuador and Congas– account for 85% of the market, with Duragas and Agipecuador (the two largest) dominating the coast and highland markets, respectively, and the other nine firms operating in the other regions of the country.

93% of consumption corresponds to domestic gas at a subsidised price of US$10.67 per kilograms, and the remaining 7% is sold to the industrial sector with a lower subsidy at 37 US cents per kilograms.

Petrocomercial delivers LPG wholesale to the agents approved by DNH, which are responsible for transporting and bottling the gas and delivering it to the final consumer through a network of distributors.

Gas is sold by Petrocomercial to the commercialising agents at the current official price of US$0.1067 per kilogramme (US$1.60 per 15-kilo bottle), which is maintained up to its sale to the final consumer. This price does not reflect the costs of producing, importing or marketing LPG.

Since 1996, the commercialising agents receive payment, in the form of a service supply rate, from Petrocomercial for their intermediation. A structure was thus established to ensure that the costs incurred by the commercialising agents and others involved in distribution would be covered by Petrocomercial.

In 2001, the service supply rate paid by the State to commercialising agents included two tariffs: a global rate of US$067 cents per kilogramme (including VAT) covering bottling, transport of containers, public sale margin, maintenance, repair or replacement of bottles and valves and administrative costs; and a rate of 2.19 cents (including VAT) for wholesale transport including the transfer of LPG from Petrocomercial storage terminals to the storage centres of the commercialising agents.

Table A1.34 Tariff model for commercialising agents, Ecuador

Purpose	US$ / kg
Service supply rate	0.06991
Transport of LPG to distribution centres	0.02192
Value paid by State to commercialising agents	0.09183
Taxes	0.01487
Price to the public	0.1067

Source: prepared by the author on the basis of information provided by the Ministry of Energy and Mines.

In February 2002 the global rate was set at US$0.06472, because valve-related activities were eliminated, while the bulk transport rate remained unchanged. These rates will be maintained until a new rate is established with the new model.

2.1.3.4 Final consumer price

Lastly, the sum of the three components – refinery price (table A1.31), taxes (Table A1.32) and commercial mark-up (Table A1.33) – gives the price of petroleum products.

Table A1.35 Final consumer prices, Quito (US$ / gallon)

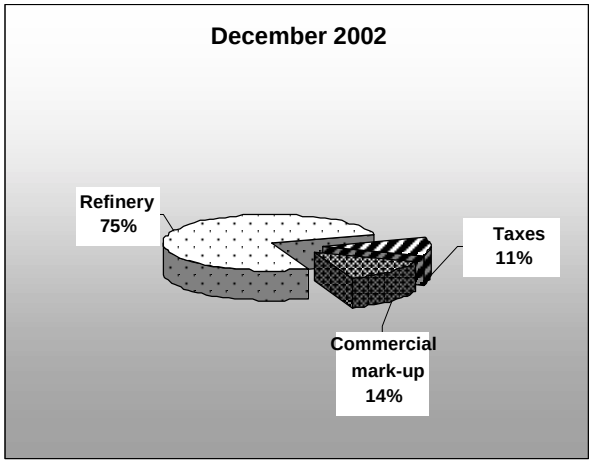
Fuel	Refinery price (1)	TAXES		Wholesale price (1+2)	Commercial mark-up (3)	Price to the public (4)= (1+2+3)
		VAT	Total (2)			
December 2001						
Regular gasoline	0.759	0.107	0.107	0.866	0.137	1.003
Premium gasoline	0.982	0.139	0.139	1.121	0.177	1.298
Diesel	0.589	0.083	0.083	0.672	0.106	0.778
Fuel oil	0.464	0.059	0.059	0.523	0.011	0.534
LPG	0.118	0.014	0.014	0.106	0	0.106
December 2002						
Regular gasoline	0.848	0.120	0.120	0.968	0.153	1.121
Premium gasoline	1.071	0.152	0.152	1.223	0.193	1.416
Diesel	0.679	0.096	0.096	0.775	0.122	0.897
Fuel oil	0.464	0.057	0.057	0.521	0.009	0.53
LPG	0.0952	0.011	0.011	0.106	0	0.106

Notes:
- The price of LPG is expressed in US$ per kilogramme.
- The final prices of fuels are provided by Petrocomercial

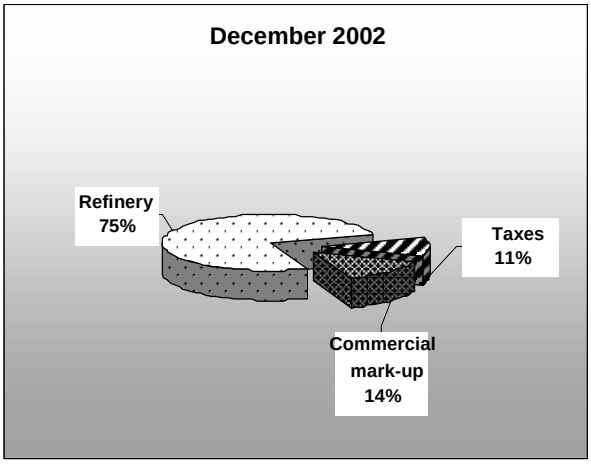
Source: prepared by the authors on the basis of Tables A1-31, A1-32 and A1-33

Figure A1.10 Composition of final consumer price, in percentages, Ecuador

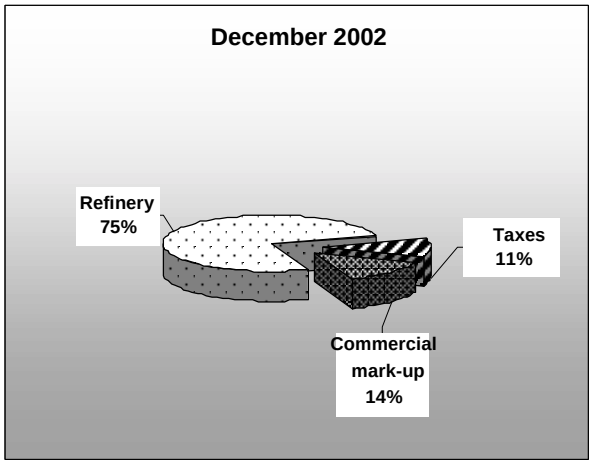
(a) Regular gasoline



(b) Premium gasoline



(c) Diesel



(d) Fuel oil

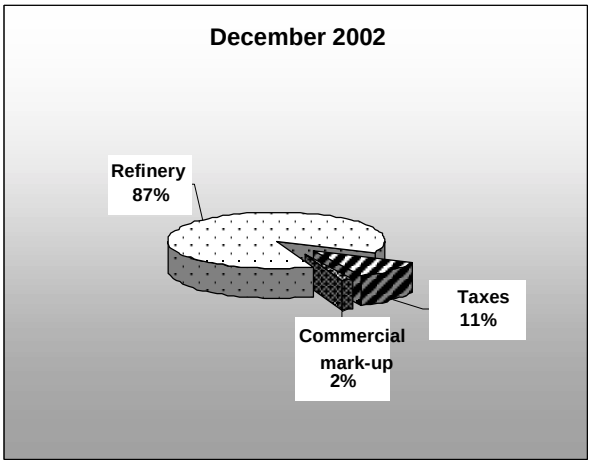
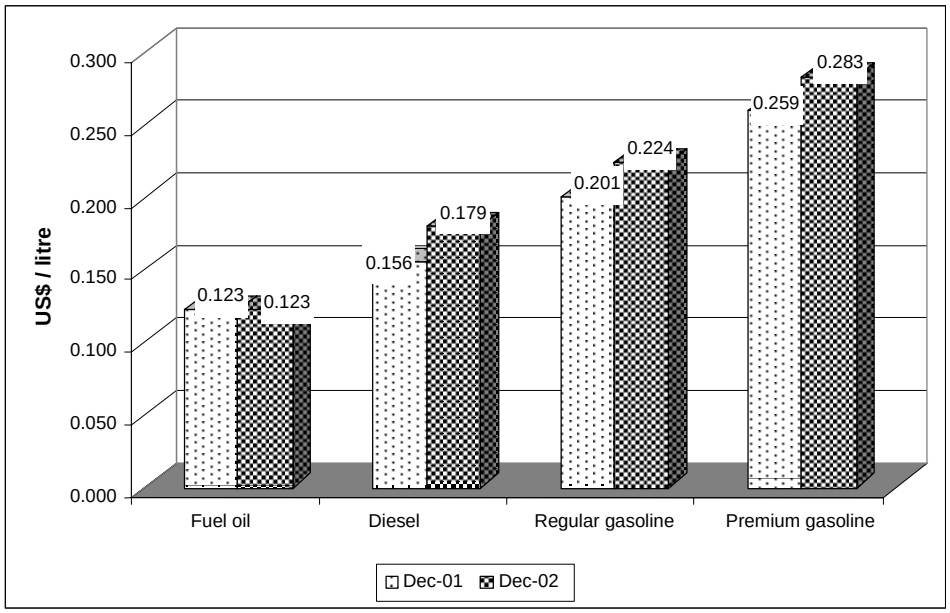


Figure A1.11 Comparison of the components of price structures of petroleum products, Ecuador

(a) Refinery price



(b) Taxes

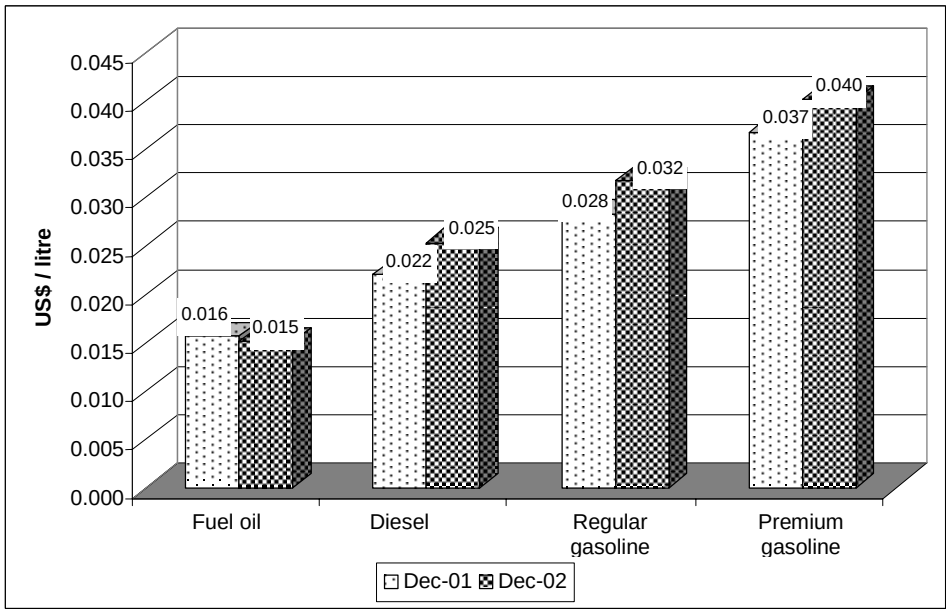
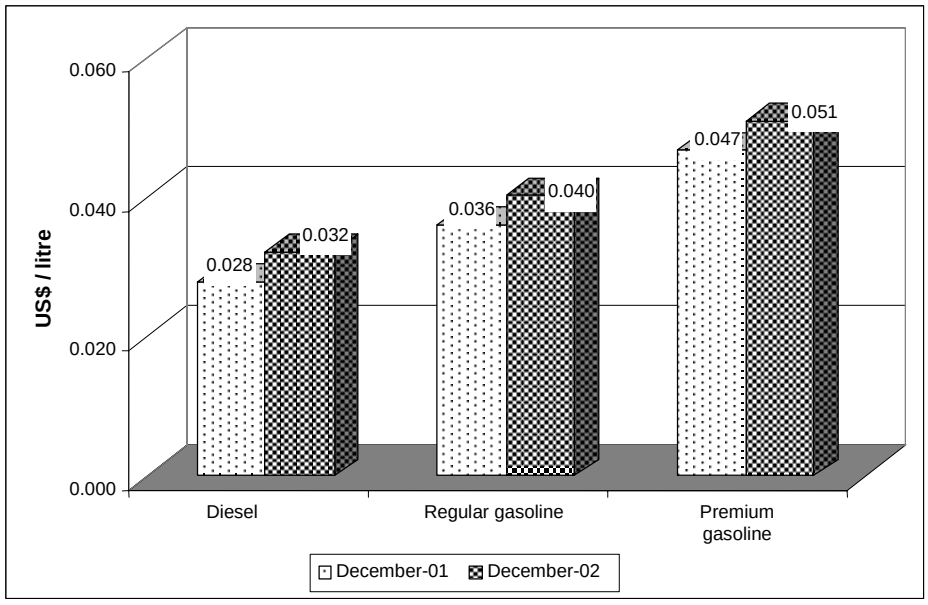
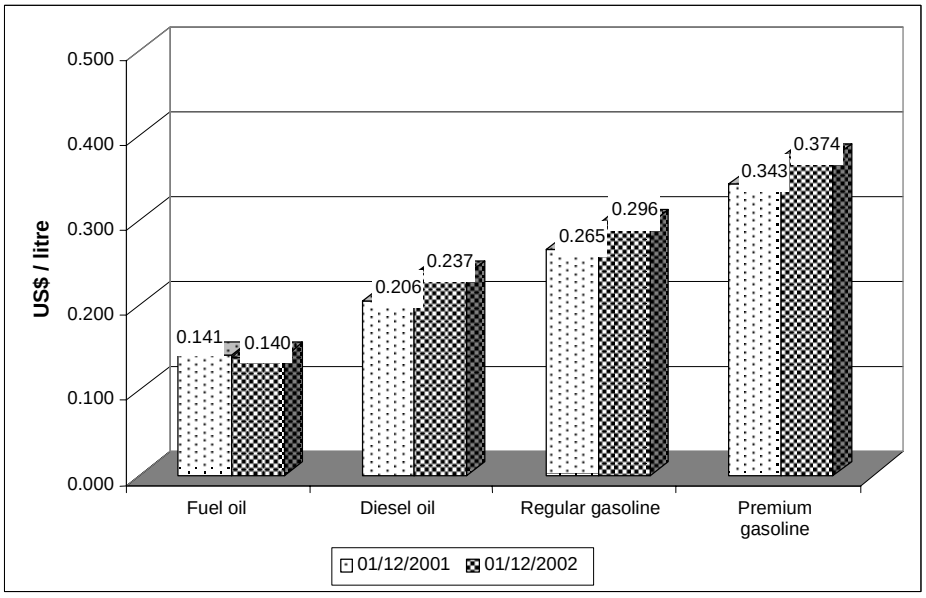


Figure A1.11 Comparison of the components of price structures of petroleum products, Ecuador (continued)

(c) Commercial mark-up



(d) Final price to the public



2.2 ANALYSIS OF FUEL PRICE STRUCTURE IN MEXICO

2.2.1 REGULATION OF PRICE STRUCTURES OF PETROLEUM PRODUCTS

The Ministry of Energy, which is part of the executive federal body, is responsible for conducting energy policy within the constitutional framework, in order to guarantee a supply of energy that is competitive, of high quality, economically viable and environmentally sustainable as required for the pursuit of national affairs.[34]

Summary of the legal framework of the hydrocarbons industry

Political Constitution of the United States of Mexico

Article 25: The public sector shall be responsible for strategic areas, and the Federal Government shall maintain ownership and control over agencies established for this purpose.

Article 27: The Nation is direct owner of petroleum and all solid, liquid or gaseous hydrocarbons. National ownership is unalienable and imprescriptible, and no concessions or contracts will be awarded.

Article 28: The functions that the State exercises exclusively in the strategic areas of petroleum and other hydrocarbons, including basic petrochemicals, shall not constitute monopolies.

Regulatory Law of Constitutional Article 27 in the petroleum sector

Article 1: The Nation is the direct owner of all hydrocarbons in the national territory, including the continental platform.

Article 2: Only the Nation may perform the various exploitations of the hydrocarbons that constitute the petroleum industry.

Article 3. The petroleum industry encompasses:

- Exploration, exploitation, refining, transport, storage, distribution and first-hand sales of petroleum and petroleum products.
- Exploration, exploitation, preparation and first-hand sales of gas and transport and storage as necessary and indispensable to connect exploitation and preparation.
- Preparation, transport, storage, distribution and first-hand sales of basic petrochemical products.

Article 4:

The Nation shall perform the exploration and exploitation of petroleum and other activities through Petróleos Mexicanos and its subsidiary entities.
Except for the provisions of Article 3, the transportation, storage and distribution of gas may be performed, with a prior permit, by social and private sectors.

[34] Ministry of Energy (SENER), **www.energia.gob.mx**

Price policy applicable to petroleum product fuels

Summary of legal framework of pricing policy

Article 31, Item X of the Organic Law of Federal Public Administration;

- The Ministry of Finance and Public Credit (SHCP) is responsible for establishing and reviewing prices and tariffs of goods and services of the federal public administration, or the bases on which they shall be set, in consultation with the Ministry of Economic Affairs and with the participation of appropriate departments.

Article 15, Item V of the Planning Law;

- SHCP is responsible for considering the effects of goods and services prices and tariffs policy implemented by the federal public administration on the achievement of objectives and priorities set out in the National Development Plan and on sectoral, regional, institutional or special programmes.
- SHCP may draw assistance from the Committee on Prices Petroleum Products, Natural Gas and Petrochemical Products, which comprises SHCP, the Ministry of Economic Affairs, the Ministry of Energy (SENER), Petróleos Mexicanos (PEMEX) and its subsidiary bodies in the capacity of representatives, and the Energy Regulation Commission (CRE) in an advisory capacity.

Article 26 of the Regulation of the Federal Act on Para-State Bodies;

- Prices and rates charged on goods and services produced by such bodies shall be determined using criteria of economic efficiency and financial soundness.
- Prices and rates charged on internationally tradable goods and services will be set in the light of those prevailing on international market.
- Prices and rates charged on goods and services that are not tradable on the international market shall be set in the light of their production cost in terms of inputs valued at their real opportunity cost.
- Differential prices may be established for the sale of goods or services, only when such prices reflect marketing strategies and are granted on a general basis.

Article 7 of the Federal Economic Competition Act (imposition of maximum prices on products and services required for the national economy or popular consumption) establishes the following:

- It is the exclusive prerogative of the Federal Government to determine which goods and services may be subject to maximum prices.
- The Ministry of Economic Affairs shall set maximum prices for goods and services based on criteria that avoid supply shortages.
- The Ministry of Economic Affairs may agree and coordinate with producers or distributors such actions as are deemed necessary in this regard, seeking to minimise their impacts on free competition.

Article 3, Item VII of the Energy Regulation Commission Law

- The Energy Regulation Commission (CRE) has the attribute of approving the terms and conditions that govern First-Hand Sales (VPM) of natural gas and liquid petroleum gas (LPG) and expediting methodologies for the determination of prices.

Article 8 of the Natural Gas Regulations

- The maximum price of gas sold under VPM shall be set in accordance with the directives issued by CRE.
- The methodology used to calculate these prices shall reflect the opportunity costs and conditions of competitiveness with respect to the international market and the place where the sale takes place.

Article 7 of the Liquid Petroleum Gas Regulations;

- SENER shall regulate the prices and rates applicable to the storage, transport and distribution of LPG, except when conducted by pipeline.
- CRE shall expedite methodologies for determining the price of VPM sales and for the calculation of counter payments for pipeline transport and distribution services.

Table A1.36 shows the different modalities and time periods used in setting the consumer prices of fuels, in accordance with Mexican legislation.

Table A1.36 Summary of criteria used to set prices under Mexican legislation

Product	Producer price	Public price	Regulator	Frequency
Pemex Regular gasoline	Opportunity cost	Administered (1)	SCHP	Monthly
Pemex Premium gasoline	Opportunity cost	Administered (1)	SCHP	Monthly
Pemex Diesel	Opportunity cost	Administered (1)	SCHP	Monthly
Turbosina (Jet fuel)	Opportunity cost	Opportunity cost	SCHP	Weekly
Fuel oil (Combustóleo)	Opportunity cost	Opportunity cost	SCHP	Bi-monthly
LPG	Opportunity cost	Administered (2)	CRE, SE	Monthly
Natural gas	Opportunity cost	Opportunity cost	CRE	Monthly

Notes:
- Using criteria of economic efficiency and financial soundness.
- Using criteria that avoid supply shortages.

Source: presentation by Miguel Ángel González, Ministry of Energy of Mexico, International Seminar on Fuel Price Policies in Latin America: impact on the economy and the environment, Santiago, Chile, 3-4 December 2002.

The objectives of the price system are:

- To send out appropriate economic signals through price mechanisms that reflect the opportunity costs in an open economy, encouraging market solutions in the framework of the State monopoly.
- To establish competitive price levels in relation to relevant market prices, encouraging arbitrage processes that unify them.
- To achieve transparency in price integration.
- To have streamlined and flexible price-setting mechanisms that respond to changes in product supply and demand conditions.

- To make subsidies, premiums and cross subsidies explicit, and gradually eliminate this last type of subsidy.

Table A1.37 Structure of producer and public prices, Mexico

	Pemex Regular	Pemex Premium	Pemex Diesel	Turbosina	Combustóleo	Natural gas	LPG
Producer price							
Reference	●	●	●	●	●	●	●
Quality adjustment	●	●			●	●	
Transport	●	●	●	●	●		●
Handling	●	●	●	●	●		●
Service						●	
Public price							
Producer price	●	●	●	●	●	●	●
Transport	●	●	●	●	●	●	●
Distribution						●	
Commercial mark-up (EESS)	●	●	●	●	●	●	●
IEPS	●	●	●			●	
VAT	●	●	●	●	●	●	●

Source: Miguel Ángel González, Ministry of Energy of Mexico.

Table A1.38 References used to set producer prices, Mexico

Product	Reference	Region	Publication
Pemex Regular Gasoline	Unleaded Regular-87	CNGM[1]	Platts Oilgram US Marketscan
Pemex Premium Gasoline	Unleaded Regular-87/Unleaded premium 93	CNGM	Platts Oilgram US Marketscan
Pemex Diesel	Fuel oil 2 (low sulphur)	CNGM	Platts Oilgram US Marketscan
Turbosina (Jet fuel)	Jet fuel 54	CNGM	Platts Oilgram US Marketscan
Fuel oil (Combustóleo)	Fuel oil 6	CNGM	Platts Oilgram US Marketscan
Natural gas	TETCO/EPGT	Southern Texas	FERC
LPG	Propane/butane/natural gasolines	Mount Belview, Tx.	Non-Tet Oil Price Information Service

Notes:
CNGM: Costa Norte Golfo de Mexico.
Source: Miguel Ángel González, Ministry of Energy of Mexico.

Table A1.39 Price adjustments for quality, handling and service, Mexico

Product	Quality adjustment	Handling and service cost
Pemex Regular gasoline	Octane / steam pressure	Spot/rack price differential
Pemex Premium gasoline	Octane / steam pressure	Spot/rack price differential
Pemex Diesel	Sulphur	Spot/rack price differential
Turbosina (Jet fuel)		CNGM commercial practices
Fuel oil (Combustóleo)	Sulphur /Viscosity/Heavy metals	CNGM commercial practices
Natural Gas	Pressure and temperature conditions	CNGM commercial practices
LPG	Composition	In costs

Source: Miguel Ángel González, Ministry of Energy of Mexico.

2.2.2 TAX BASE

The taxes levied on fuels are as follows:

A. Special Tax on Production and Services (IEPS)

- Only PEMEX and its subsidiary organisations pay this tax.
- It is adjusted automatically in line with the variation between the producer price and price of sale to the public.
- It is determined on a monthly basis by SHCP.
- The tax is levied on sales of Pemex Magna, Pemex Premium, Pemex Diesel, Industrial Diesel (low sulphur), "Special" Marine Diesel, and Natural Gas "Carburación", within the national territory, or on imported fuels in the various PEMEX sales agencies.
- The 2003 Revenues Act includes LPG "Carburación".

B. Value-added tax (VAT)

- Under the respective law, this tax is paid on merchandise sales and the provision of services, and on the import and use or temporary exploitation of goods and services.
- The general rate of VAT is set at 15% in the interior of the country, and 10% in border areas.

2.2.3 METHODOLOGY USED TO CALCULATE THE COMPONENTS OF PETROLEUM PRODUCT PRICE STRUCTURE

The mechanism used to calculate each of the components is set out below.

2.2.3.1 Refinery price

The producer income can be obtained from the reports PEMEX publishes on its web site, in the section on petroleum indicators, which gives access to data on production, external trade and domestic sales. This last section includes the following information:

- Volume of domestic sales of petroleum products and natural gas.

- Value of domestic sales of petroleum products and natural gas.
- Price to the public of petroleum products.
- Volume of domestic sales of petrochemical products.
- Value of domestic sales of petrochemical products.

Table A1.40 Value of domestic sales of petroleum products and natural gas, December 2001

Fuel	Monthly value MM$
Pemex Regular gasoline	3780.1
Pemex Premium gasoline	760.6
Pemex Diesel	1720.8
Combustóleo / Fuel oil	1787.4
Turbosina	302.7

Notes:
- The value of domestic sales does not include IEPS, VAT or the distributor's commission.
- MM$: millions of Mexican pesos.
Source: Petróleos Mexicanos.

Table A1.41 Volume of domestic sales of petroleum products and natural gas, December 2001

Fuel	Volume Tbd
Pemex Regular gasoline	495.6
Pemex Premium gasoline	86.4
Pemex Diesel	217.2
Combustóleo / Fuel oil	397.3
Turbosina	52

Notes:
- The volume of domestic sales of fuel oil was taken from an average of the last six months.
- Tbd: Thousands of barrels per day.
Source: Petróleos Mexicanos

In order to determine producer income, the value of domestic sales of petroleum products and natural gas is divided by the volume of domestic sales of petroleum products and natural gas, each taken to M$/litre. Table A1.42 shows the refinery prices of each of the different fuels.

Table A1.42 Refinery price, Mexico (M$ / litre)

Fuel	Regular gasoline	Premium gasoline	Pemex Diesel	Turbosina	Fuel oil	LPG (1) M$ / Kg.
December 2001	1.599	1.846	1.661	1.221	0.943	2.333
December 2002	2.309	2.745	2.263	2.075	1.420	3.341

Notes:
(1): The price of LPG (VPM), corresponds to a national average (average of the north, central and south areas of the country).
Source: prepared by the authors on the basis of Tables A1.40 and A1.41.

2.2.3.2 Taxes

To the refinery price must be added the Special tax on production and services (IEPS), at the rates published monthly by the Ministry of Finance and Public Credit, which are applied to sales of gasolines and diesel. Table A1-43 shows IEPS for the different fuels.

Table A1.43 Special tax on production and services, Mexico (M$ / litre)

Fuel	Regular gasoline	Premium gasoline	Pemex Diesel	Turbosina	Fuel oil	LPG M$ / Kg.
December 2001	2.880	3.176	2.131	Not levied	Not levied	Not levied
December 2002	2.370	2.501	1.700	Not levied	Not levied	Not levied

Notes**:**
- Although there is a rate for each agency per product, which is published monthly by SHCP, the IEPS was obtained by subtracting the producer income and commercial mark-up from the price to the public (for the rest of the country).
- The rate for calculating IEPS on the sale of gasolines and diesel is approximately 180.11% for regular gasoline, 172.05% for premium and 128.30% for diesel.
Source: prepared by the authors.

To this price structure must then be added VAT, at the general rate of 15% (10% in border zones 10%). VAT is calculated on the sum of the refinery price, IEPS and the commercial mark-up. Table A1.44 shows VAT for the different fuels.

Table A1.44 Value-added tax (M$ / litre)

Fuel	Regular gasoline	Premium gasoline	Pemex Diesel	Turbosina	Fuel oil	LPG M$ / Kg.
December 2001	0.732	0.820	0.607	0.203	0.142	0.350
December 2002	0.764	0.857	0.634	0.382	0.219	0.501

Source: prepared by the authors

The sum of IEPS plus VAT gives total taxes.

Table A1.45 Total taxes, Mexico (M$ / litre)

Fuel	Regular gasoline	Premium gasoline	Pemex Diesel	Turbosina	Fuel oil	LPG M$ / Kg.
December 2001	3.612	3.997	2.738	0.203	0.142	0.350
December 2002	3.134	3.358	2.334	0.382	0.219	0.501

Source: prepared by the authors on the basis of Tables A1.43 and A1.44

2.2.3.3 Commercial mark-ups

Once the refinery price plus IEPS plus VAT has been calculated, the wholesale distributor's sale price is obtained.

The retail distributor's margin corresponds to a percentage of the final consumer price, which varies depending on the type of service station. There are three categories, distinguished by size and type of maintenance offered: two-star, three-star and three-star high-maintenance (the difference between the two categories lies basically in aspects of image and service).

Commercial mark-ups correspond to 5.7% plus a quality variable of 0.22%, and 4.2% for diesel.

The commercial mark-up for LPG (VPM) corresponds to the difference between the final consumer price and the Pemex billing price. This margin includes transport and distribution costs. Table A1.46 shows the values of commercial mark-ups for the different fuels.

Table A1.46 Commercial mark-up, Mexico (M$ / litre)

Fuel	regular gasoline	Premium gasoline	Pemex Diesel	Turbosina	Fuel oil	LPG M$ / Kg.
December 2001	0.399	0.447	0.251	0.136	0	2.207
December 2002	0.417	0.467	0.262	0.473	0.041	2.428

Note:
Commercial mark-up on fuels includes expenses and costs such as: downturns in service station business, transport of the product to the service station.
Source: prepared by the authors on the basis of information provided by the National Organisation of Petroleum Expenders (Onexpo).

2.2.3.4 Final consumer price

Lastly, the sum of the three components –refinery price (Table A1.42), total taxes (Table A1.45) and commercial mark-up (Table A1.46)– gives the prices of petroleum products, as shown in Table A1.47.

Table A1.47 Final consumer prices, rest of the country[35] (M$/litre)

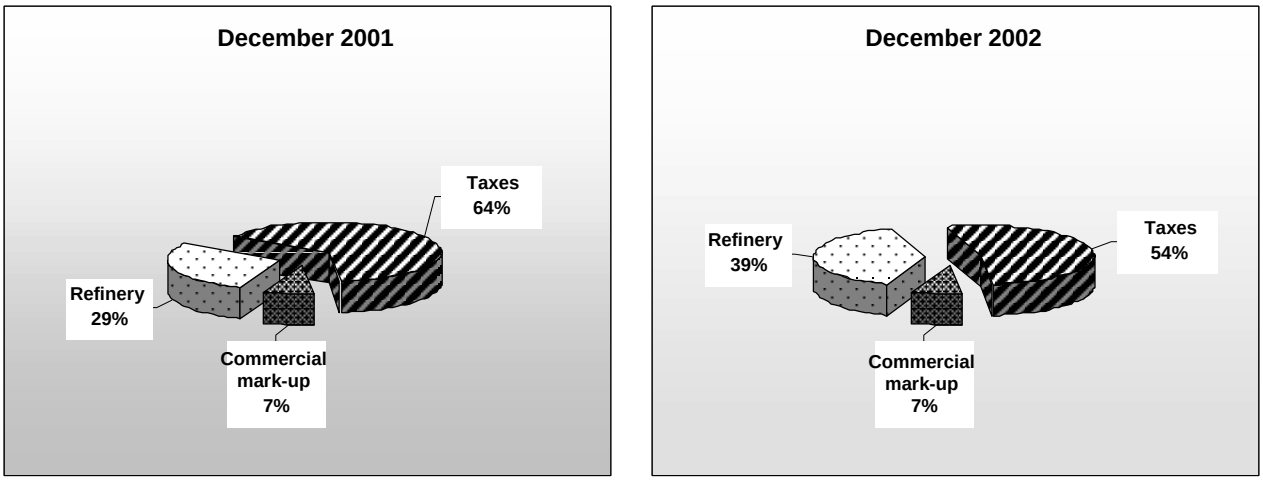
Fuel	Refinery price (1)	TAXES			Wholesale price (1+2)	Commercial mark-up (3)	Price to the public (4)=(1+2+3)
		IEPS	VAT	Total (2)			
December 2001							
Pemex Regular gasoline	1.599	2.880	0.732	3.612	5.211	0.399	5.61
Pemex Premium gasoline	1.846	3.176	0.820	3.996	5.843	0.447	6.29
Pemex Diesel	1.661	2.131	0.607	2.738	4.399	0.251	4.65
Turbosina	1.221	Not levied	0.203	0.203	1.424	0.136	1.56
Fuel oil	0.943	Not levied	0.142	0.142	1.085		
LPG national average	2.333	Not levied	0.350	0.350	2.683	2.207	4.89
December 2002							
Pemex Regular gasoline	2.309	2.370	0.764	3.134	5.443	0.417	5.86
Pemex Premium gasoline	2.745	2.501	0.857	3.358	6.103	0.467	6.57
Pemex Diesel	2.263	1.700	0.634	2.334	4.597	0.262	4.859
Turbosina	2.075	Not levied	0.382	0.382	2.457	0.473	2.93
Fuel oil	1.42	Not levied	0.219	0.219	1.639	0.041	1.68
LPG national average	3.341	Not levied	0.501	0.501	3.842	2.428	6.27

Notes:
- The price of LPG is expressed in Mexican pesos per kilogramme, and the average national price of LPG corresponds to the average of the central, south and north zones as published in the official gazette.
- The final value of fuel oil corresponds to the wholesale price.
- The price to the public of the other petroleum products was provided by Petróleos Mexicanos.
Source: prepared by the authors on the basis of Tables A1.42, A1.43, A1.44 and A1.46

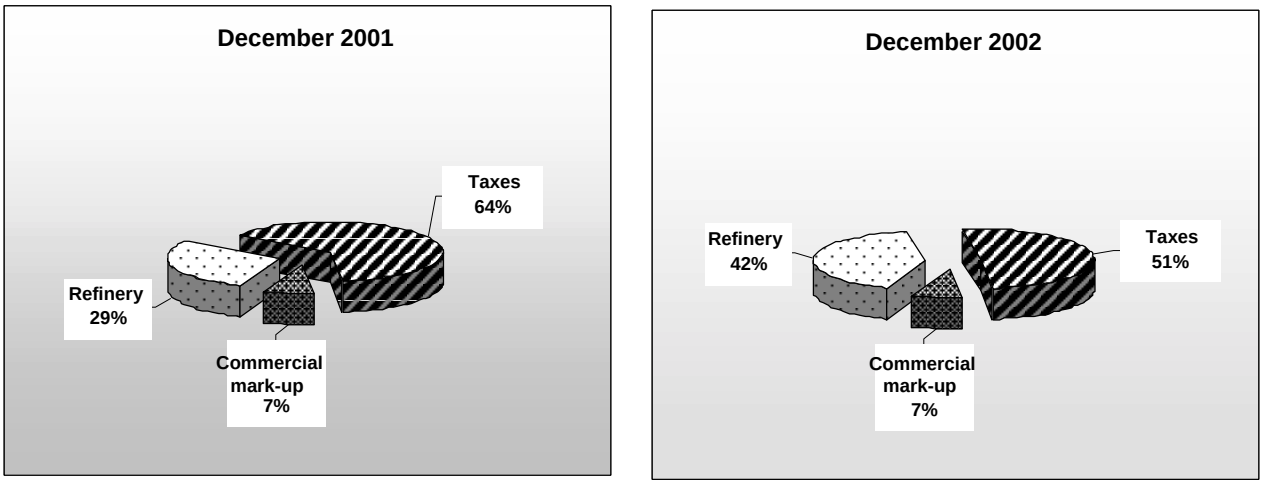
[35] Does not include Valle de Mexico.

Figure A1.12 Composition of final consumer price, in percentages, Mexico

(a) Regular gasoline



(b) Premium gasoline



(c) Diesel

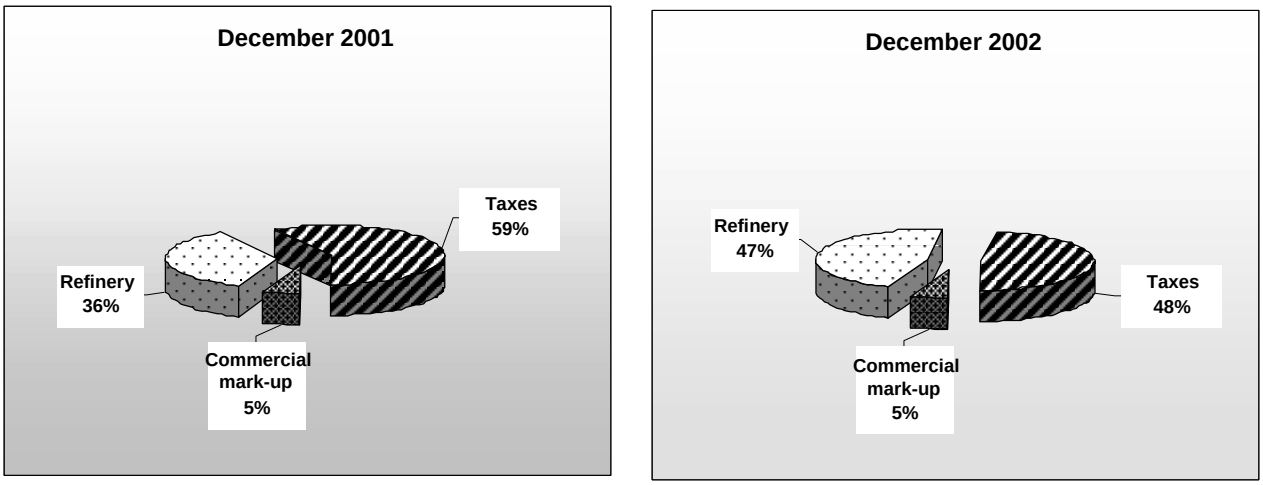
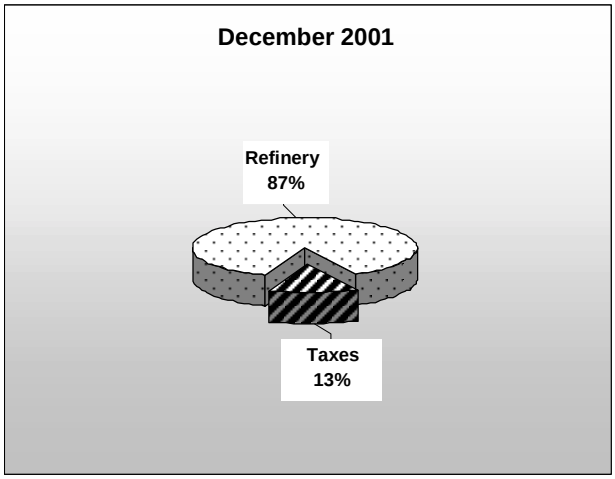
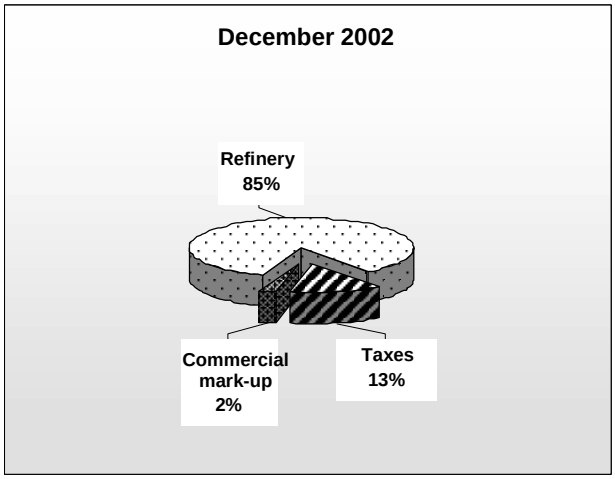


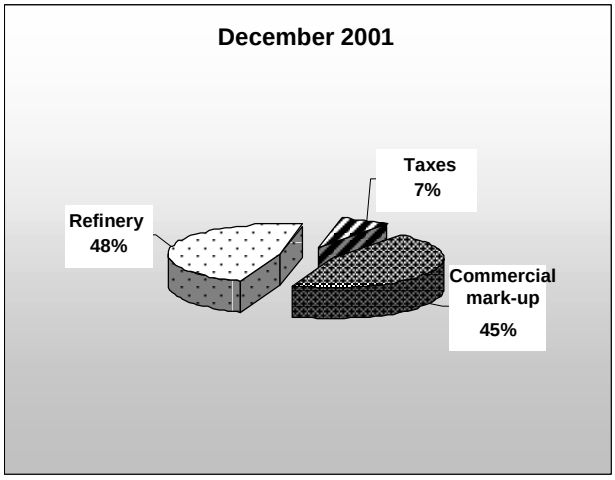
Figure A1.12 Composition of final consumer price, in percentages, Mexico (continued)

(d) Fuel oil





(e) Liquid Petroleum Gas



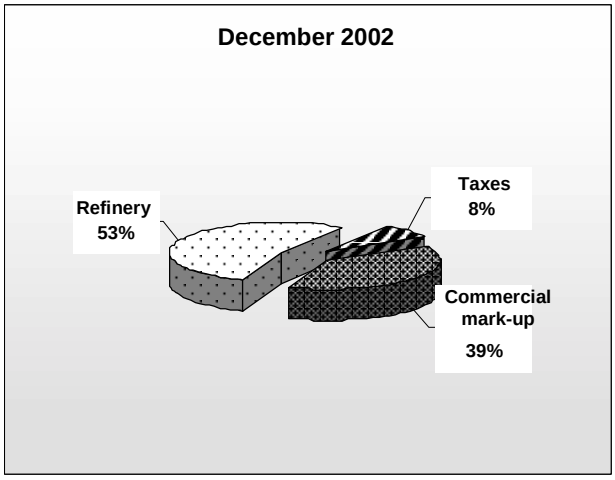
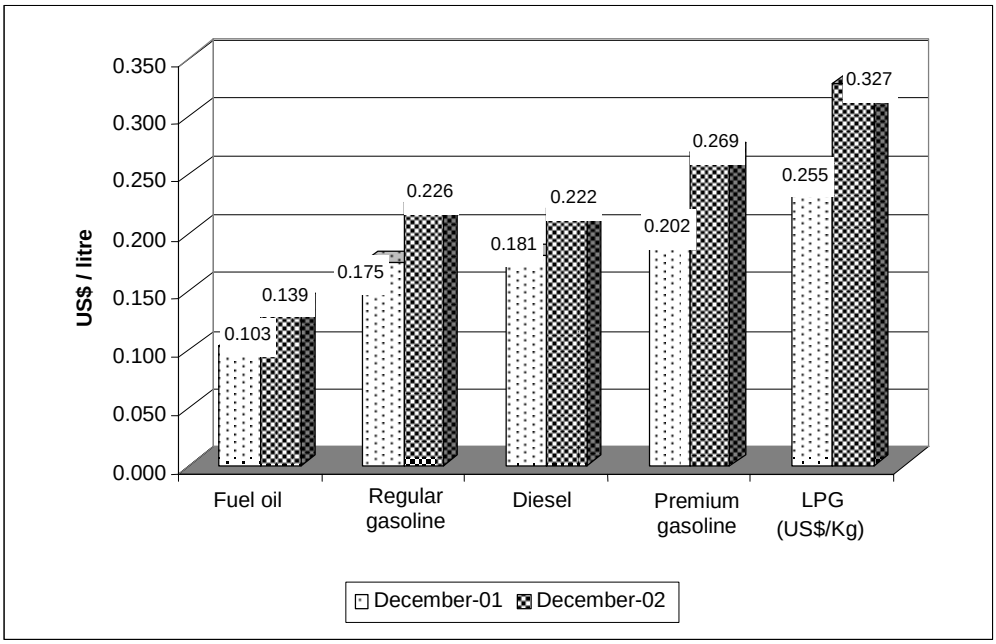


Figure A1.13 Comparison of the components of price structure of petroleum products, Mexico

(a) Refinery price



(b) Taxes

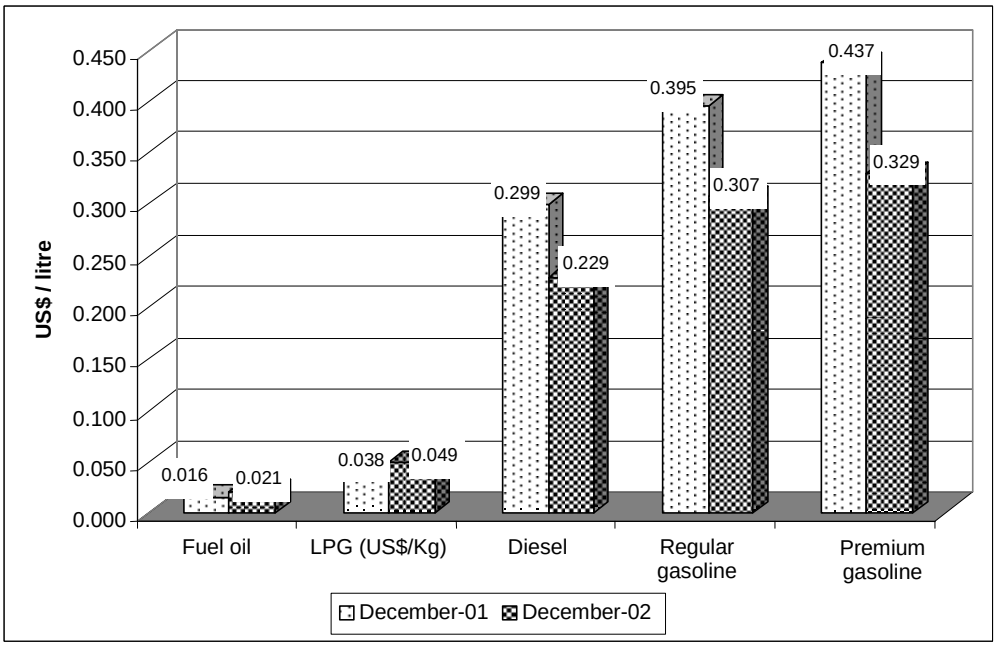
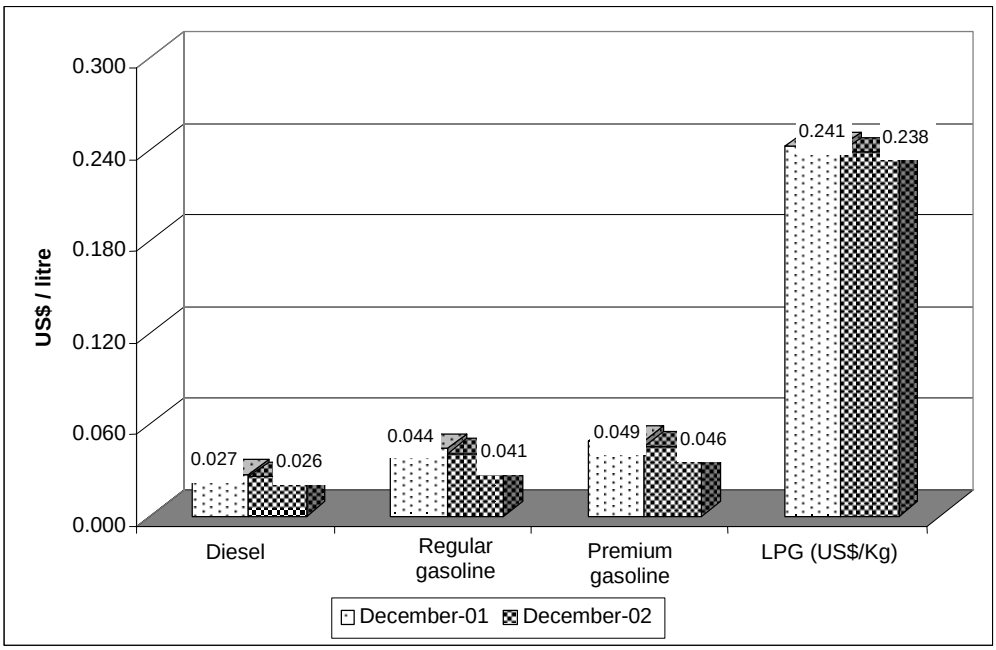


Figure A1.13 Comparison of the components of price structure of petroleum products, Mexico (continued)

(a) Commercial mark-up



(d) Final price to the public

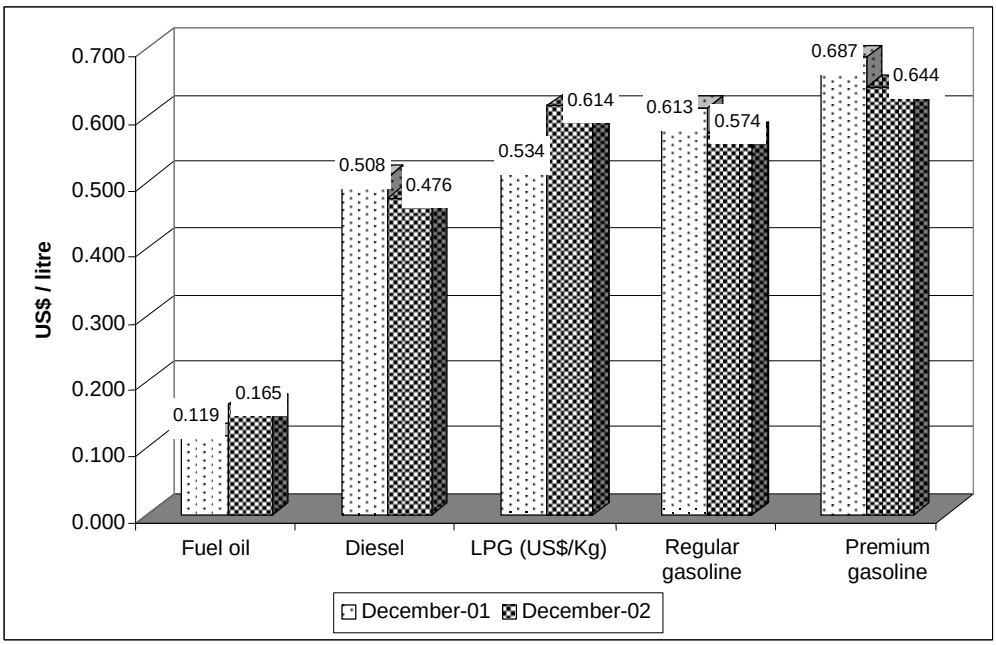
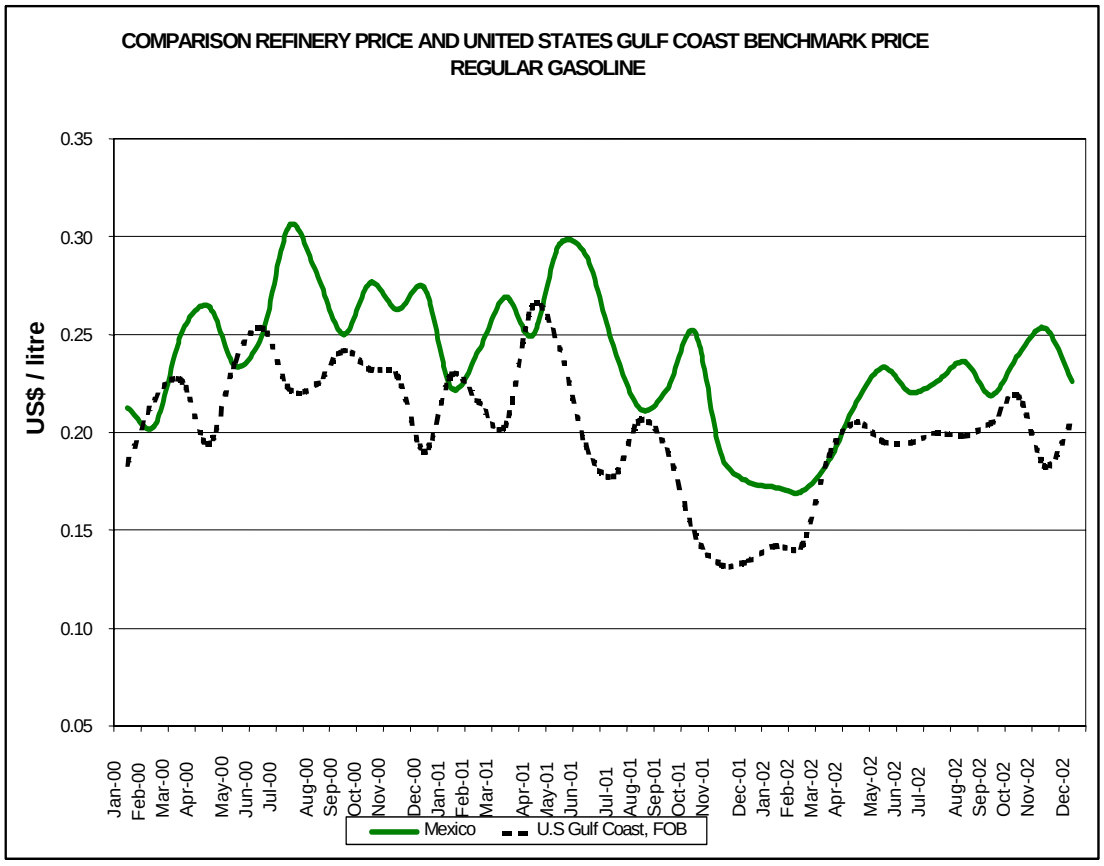


Figure A1.14 Refinery prices regular gasoline, Mexico



2.3 ANALYSIS OF FUEL PRICE STRUCTURE IN VENEZUELA

2.3.1 REGULATION OF PRICE STRUCTURES OF PETROLEUM PRODUCTS

Under new Decree Law 1570, known as the "Organic Hydrocarbons Act", published in the Official Gazette of the Bolivarian Republic of Venezuela, issue No. 37.234 dated 13 November 2001, the Ministry of Energy and Mining (MEM) is responsible for formulating, regulating and monitoring policies and planning, implementation and supervision of activities in the hydrocarbons sector. This sector encompasses the development, conservation, exploitation and control of hydrocarbon resources, together with market studies, analysis and price setting for hydrocarbons and their products.

Selected guidelines and policies applicable in the hydrocarbons sector

The hydrocarbons sector has set a number of objectives concerning activities associated with the development and exploitation of the country's hydrocarbon resources:

- The formation of national capital will be encouraged and stimulated, together with both local and international firms, including new technologies and training of human resources, in the sector of supply of goods and services to the petroleum, petrochemical and gas industries.

- Economic and monetary petroleum variables will continue to be monitored, analysed and evaluated in order to estimate income from petroleum exports, as well as the distribution of those revenues between the national treasury and the petroleum industry. The purpose of this is to contribute to decisions on the preparation of the national budget and plans for the expansion of the petroleum industry, among others.

- Short-, medium- and long-term studies and analyses of the variables that make up the global petroleum balance will be conducted in order to evaluate the situation of the global oil market, OPEC and Venezuela in this context, on an ongoing basis.

- Studies and policy recommendations on petroleum production and prices will be prepared in order to be put forward to the Organisation of the Petroleum-Exporting Countries (OPEC).

- Potential markets and marketing strategies and policies for Venezuelan hydrocarbons will be analysed.

- Plans for investment and operation in the national petroleum and petrochemical industries will be evaluated.

- Regular evaluation of the international cooperation agreements on energy, and the active participation of Venezuela in these, including: the San José Accord, the Group of Three, the Latin American Energy Organisation (OLADE), and the Informal Group of Latin American and Caribbean Countries (GLIPLACEP).

- Official statistics will be prepared on the hydrocarbons sector.

Price policy applicable to petroleum product fuels

Table A1.48 summarises the price systems applicable to each fuel, disaggregated by components of the final consumer price.

Table A1.48 Summary of the fuel price structure in use in Venezuela

Fuel	Price at the refinery gate	Taxes	Commercial mark-up	Final consumer price
Gasoline 91 oct. (leaded)	Regulated	General Consumption Tax (ICG)	Regulated	Maximum price of sale to the public
Gasoline 95 oct. (unleaded)	Regulated	ICG	Regulated	PMVP
Diesel oil	Regulated	ICG	Regulated	PMVP
Kerosene	Alternate export price	ICG	Free	VAE
Fuel oil	Regulated	ICG	Regulated	PMVP
LPG	Regulated	Not applicable	Regulated	PMVP

Notes:
- Regulated: A maximum price is set by the Government.
- Free means that economic agents are free to determine margins and prices.

Source: presentation by Jesús Mora, Director of the Economics Department at Universidad de los Andes (Venezuela), International Seminar on Fuel Prices in Latin America: Impact on the Economy and the Environment, Santiago, Chile, 3-4 December 2002.

Agents in the domestic fuel market

Wholesale distribution firms

- Petróleos de Venezuela S.A. (PDVSA), through its subsidiary Deltaven, sells products under the PDV brand;
- Subsidiaries of the major international firms (Shell, Exxon Mobil, Texaco and British Petroleum) sell their own brands; and
- Venezuelan corporate groups (Trébol Gas, Monagas fuel corporation, Llanopetrol) sell their own brands.

Expending firms (retailers)

- Service stations, both belonging to the distributors and independent agencies with supply contracts.

2.3.2 TAX BASE

The taxes levied on fuels in the domestic market are as follows:

General Consumption Tax (ICG): For every litre of hydrocarbon-based product sold on the domestic market, between 30% and 50% of the price paid by the final consumer consists of taxes; the specific rate within these limits is set in the annual Budget Act. This tax, which is paid by the final consumer, is withheld at the source of supply and transferred each month to the National Treasury.

The rate set for General Consumption Tax during fiscal year 2002 was 30%.

Table A1.49 General Consumption Taxes levied on the different fuels

Fuel	Unit of measure	Mar-92 to May-92	May-92 to Sep-95	Sep-95 to Abr-96	Apr-96 to Jan -97	Jan -97 to Dec-01	Jan-02
Regular Gasoline	Bs./Lt	2.38	2.10	2.10	8.00	35.00	18.00
Premium Gasoline	Bs./Lt	2.38	2.10	10.00	10.00	35.00	24.00
Gasoline (unleaded)	Bs./Lt	0	0	0	0	35.00	29.10
Diesel	Bs./Lt	1.84	1.60	1.60	8.00	9.84	14.40
Kerosene	Bs./Lt	0.90	0.90	0.90	6.50	6.76	36.174 (1)
Fuel oil	Bs./Lt	1.05	0.75	0.75	0.75	0.9225	14.23
LPG	%	0	0	0	0	0	30-50

Note:
(1): The tax on kerosene corresponds to 0.3% of the Alternate Export Value (VAE).
Source: Ministry of Mines and Energy of Venezuela.

VAT: In Venezuela value-added tax is levied at 14.5%.

Article 18 paragraph 5 of the VAT legislation currently in force provides that:

"Fuels derived from hydrocarbons, together with inputs and additives intended to enhance gasoline quality, such as natural gas, butane, ethane, ethanol, methane, methanol, ether and derivations thereof, for the purpose indicated," are VAT-exempt.[36]

2.3.3 METHODOLOGY USED TO CALCULATE THE COMPONENTS OF PETROLEUM PRODUCT PRICE STRUCTURE

The mechanism used to calculate each of the components is set out below.

2.3.3.1 Refinery price

The refinery price of fuels was calculated by subtracting taxes on hydrocarbons and the commercial mark-up from the final price to the public.

[36] National Integrated Customs and Taxation Administration Service (SENIAT) **http://www.seniat.gov.ve/**.

Table A1.50 shows the refinery prices of the different fuels

Table A1.50 Refinery prices, Venezuela ((Venezuelan Bolivares / litre) (VB / litre))

Fuel	Regular gasoline	Premium gasoline	Super gasoline	Diesel	LPG VB / Kg.
December 2001	14.556	24.556	41.556	18.633	45.251
December 2002	26.700	33.700	45.600	13.20	45.251

Source: presentation by Jesús Mora, Doctor of Economics of the Economics Department at Universidad de los Andes (Venezuela), International Seminar on Fuel Prices in Latin America: Impact on the Economy and the Environment, Santiago, Chile, 3-4 December 2002.

2.3.3.2 Taxes

To the refinery price must be added the General Tax on Consumption of Petroleum and Petroleum Products, which is shown in table A1-51 for the different fuels.

Table A1.51 General Tax on Consumption of Petroleum and Petroleum Products, Venezuela (VB / litre)

Fuel	Regular gasoline	Premium gasoline	Super gasoline	Diesel	Kerosene	Fuel oil	LPG VB / Kg.
December 2001	35	35	35	9.84	6.76	0.92	Not levied
December 2002	21	24	29.10	14.40	75.537	18.15	Not levied

Source: Ministry of Energy and Mines, www.mem.gov.ve

2.3.3.3 Commercial mark-ups

In Venezuela commercial mark-ups are regulated by the Government. They include:

- Distributor's commercial mark-up.
- Transport costs.
- Expender's commercial mark-up.

Table A1.52 shows commercial mark-ups for the different fuels.

Table A1.52 Commercial mark-ups, Venezuela (VB / litre)

Fuel	Regular gasoline	Premium gasoline	Super gasoline	Diesel	LPG VB / Kg.
December 2001	20.44	20.44	20.44	19.53	213.02
December 2002	22.30	22.30	22.30	20.40	230.80

Note: The gross commercial mark-up on LPG corresponds to the commercialisation and distribution chain.

Source: presentation by Jesús Mora, Doctor of Economics of the Economics Department at Universidad de los Andes (Venezuela), International Seminar on Fuel Prices in Latin America: Impact on the Economy and the Environment, Santiago, Chile, 3-4 December 2002 and information obtained from the Latin American Commission of Fuel Merchants, www.claec.org

2.3.3.4 Final consumer price

Lastly, the sum of the three components –refinery price (table A1.50), taxes (Table A1.51) and commercial mark-up (table A1.52)– gives the prices of petroleum products, as shown in table A1.53**.**

Table A1.53 Final consumer prices, Caracas (VB / litre)

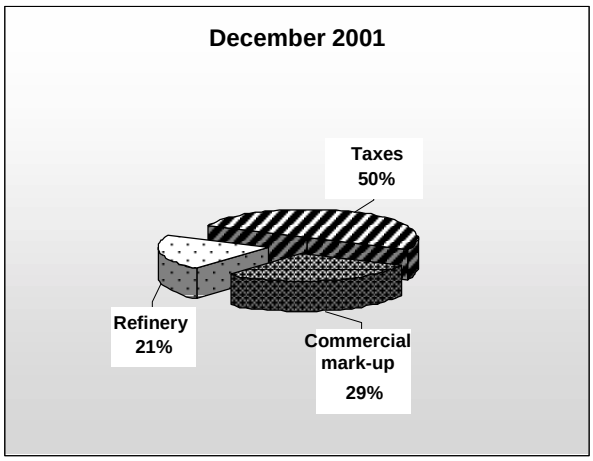
Fuel	Refinery price (1)	TAXES		Wholesale price (1+2)	Commercial mark-up (3)	Price to the public (4)=(1+2+3)
		ICG	TOTAL (2)			
December 2001						
Regular gasoline	14.556	35	35	49.556	20.44	70
Premium gasoline	24.556	35	35	59.556	20.44	80
Super gasoline	41.556	35	35	76.556	20.44	97
Diesel	18.633	9.84	9.84	28.473	19.53	48
Fuel oil	Not available	0.92	0.92		n.d.	47.44
Kerosene	Not available	6.76	6.76		n.d.	101.21
LPG	45.251	Not levied	0	45.251	213.02	258.27
December 2002						
Regular gasoline	26.70	21	21	47.70	22.30	70
Premium gasoline	33.70	24	24	57.70	22.30	80
Super gasoline	45.60	29.10	29.10	74.70	22.30	97
Diesel	13.20	14.40	14.40	27.60	20.40	48
Fuel oil	Not available	18.15	18.15		n.d.	60.49
Kerosene	176.253	75.537	75.537	251.79	Not available	251.79 (V.A.E)
LPG	45.251	Not levied	0	45.251	230.80	276.05

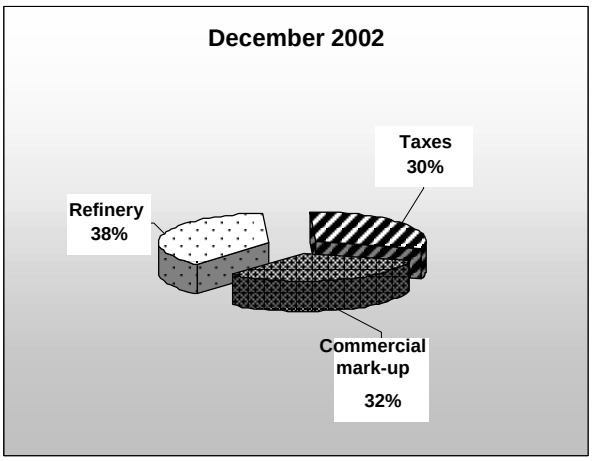
Notes:
- The price of LPG is expressed in Venezuelan Bolivares per kilogramme.
- Final fuel prices are provided by the Ministry of Mines and Energy.

Source: prepared by the authors on the basis of the information in Tables A1.50, A1.51 and A1.52

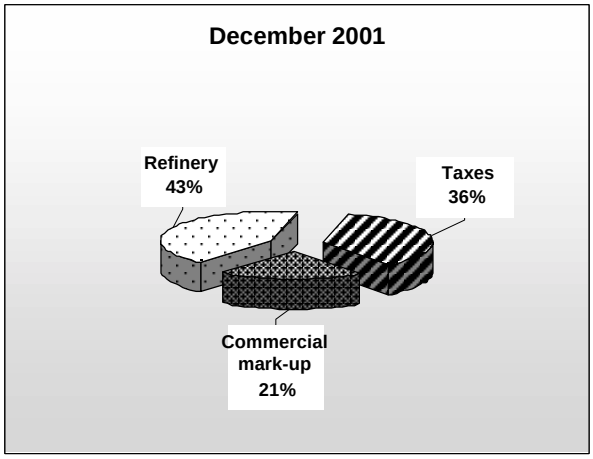
Figure A1.15 Composition of final consumer price, in percentages, Venezuela

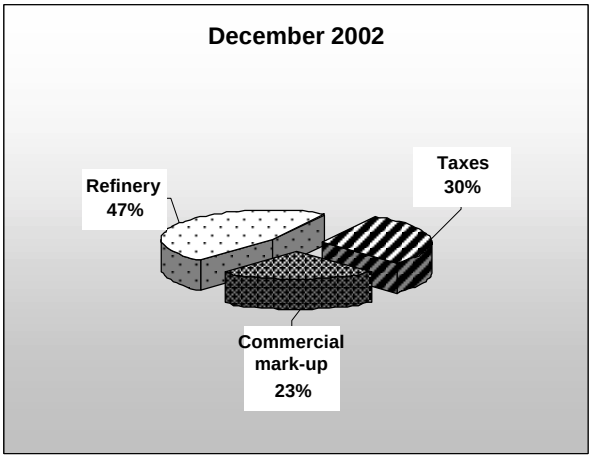
(a) Regular gasoline



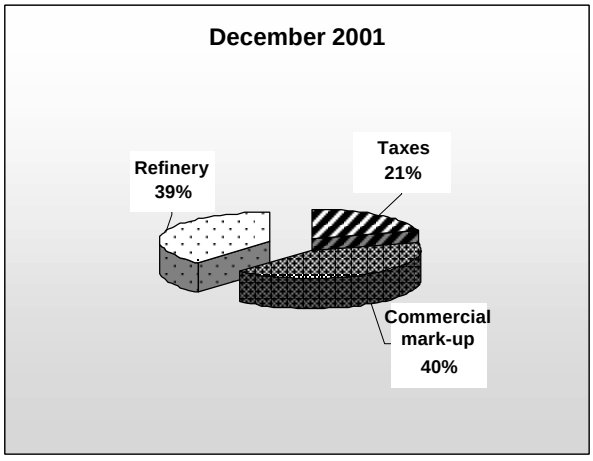


(b) Premium gasoline





(c) Diesel oil



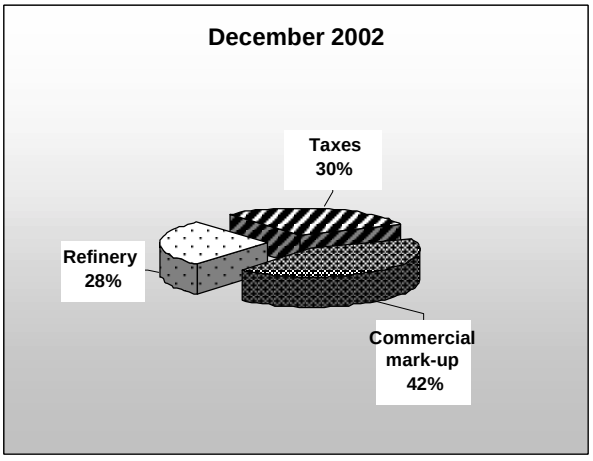


Figure A1.15 Composition of final consumer price, in percentages, Venezuela (continued)

(d) Liquid Petroleum Gas

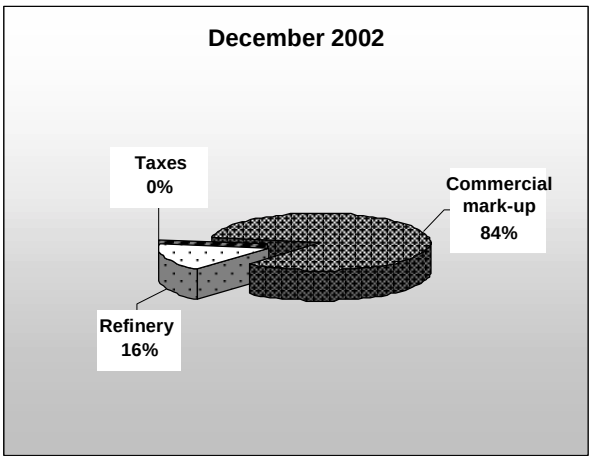


Figure A1.16 Comparison of the components of price structure of petroleum products, Venezuela

(a) Refinery price

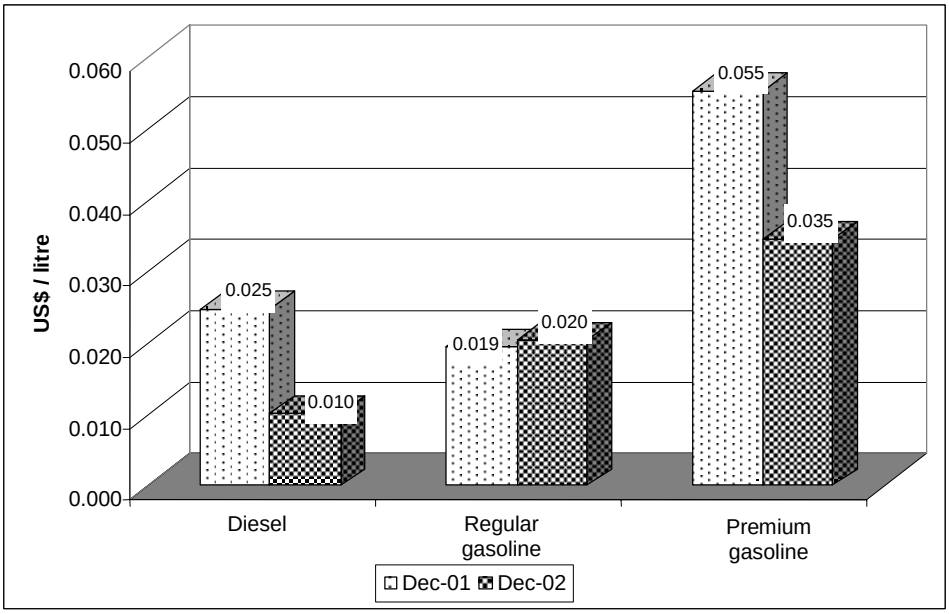
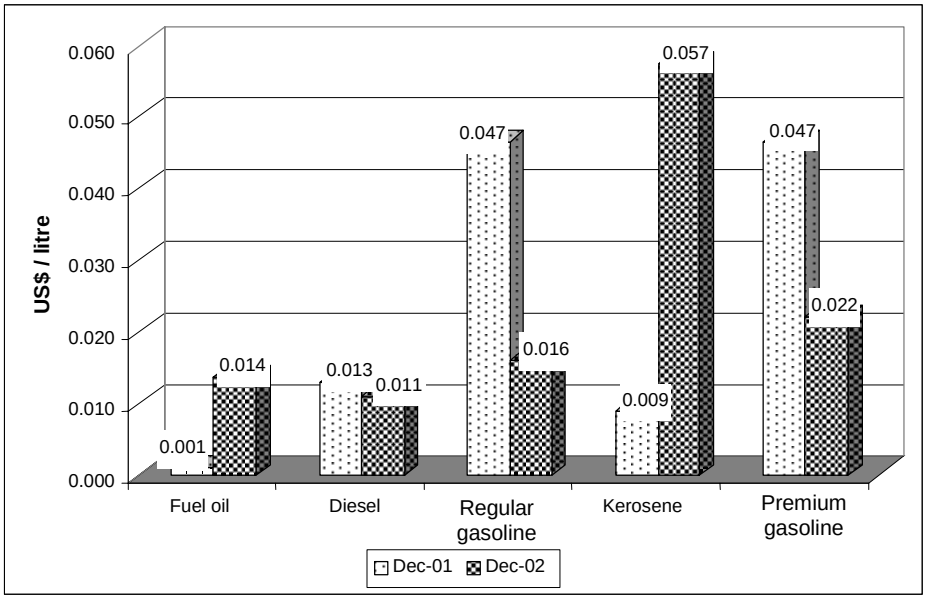


Figure A.16 Comparison of the components of price structure of petroleum products, Venezuela (continued)

(b) Taxes



(c) Commercial mark-up

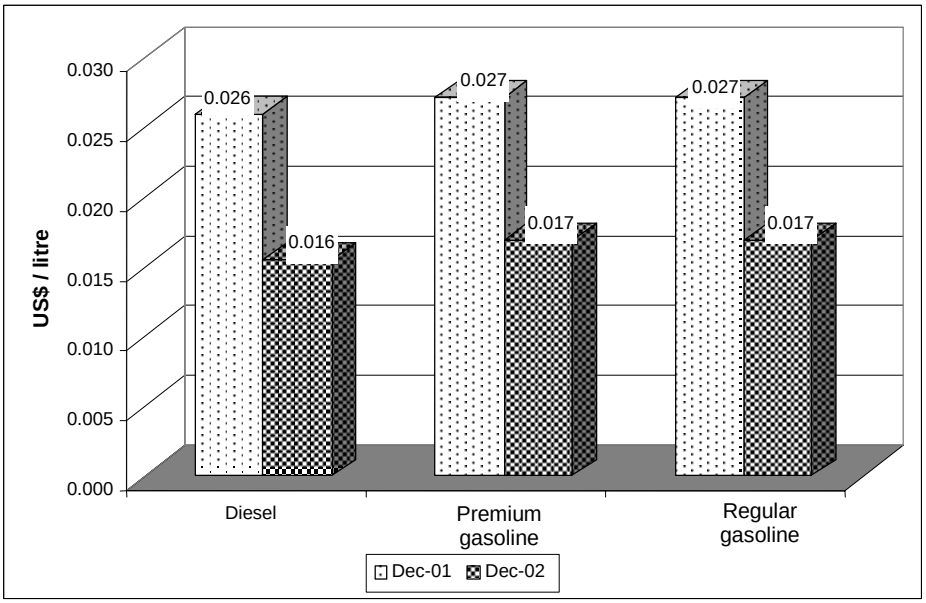
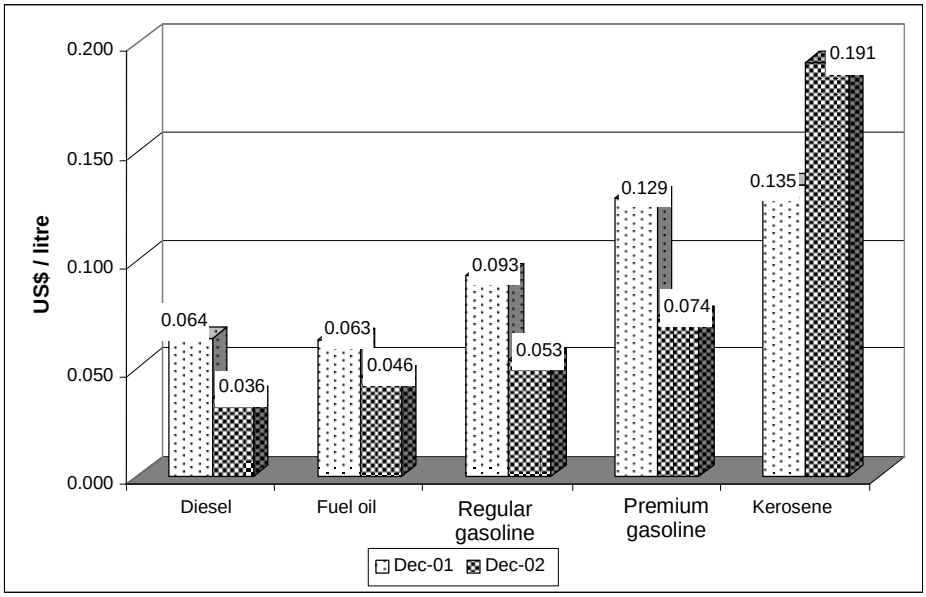


Figure A1.16 Comparison of the components of price structure of petroleum products, Venezuela (continued)

(d) Final price to the public



3 OIL IMPORTING COUNTRIES

3.1 ANALYSIS OF FUEL PRICE STRUCTURE IN BRAZIL

3.1.1 REGULATION OF PRICE STRUCTURES OF PETROLEUM PRODUCTS

The energy sector in Brazil is administered by the Ministry of Mines and Energy. Its objectives are to rationalise the use of energy resources; protect consumer interests with regard to price, quantity and supply of products; protect the environment; promote energy conservation; promote free competition; increase the use of natural gas; and expand the country's competitiveness to international markets. In fulfilling this mission, the Ministry is supported by a number of attached bodies, including: the National Electric Power Agency (ANEEL); the National Petroleum Agency (ANP); the National Department of Mineral Production (DNPM); the Brazilian Geological Service; the National Energy Policy Council (CNPE); the National Programme for Rationalisation of the Use of Petroleum Products and Natural Gas (CONPET).

Price policy applicable to petroleum product fuels

The deregulation of fuel supply in Brazil began in the 1990s with Law 9.478 of 1997, culminating in full market opening as from January 2002. Among other aspects, the process included the liberalisation of prices, margins and freight charges all along the production chain, and the creation of the Economic Intervention Tax [Contribuição de Intervenção de Domínio Económico - CIDE] to replace the Specific Price Portion (PPE). These measures were needed to eliminate the distortions that existed in the market (caused by cross-subsidies and compensation for distribution and transport expenses) and allow a balance to be established between national and imported products, thereby allowing the development of a competitive market.[37]

Table A1.54 provides a summary of the price systems in use for each fuel, disaggregated by component of final consumer price.

[37] National Petroleum Agency, *A abertura do mercado de abastecimento de combustíveis: a nova estrutura tributária e a evolução da desregulamentação de preços,* Joyce Perin Silveira, Superintendence of Strategic Studies, April 2002.

Table A1.54 Summary of fuel price structure, Brazil

Fuel	Refinery price	Taxes	Commercial mark-up
Regular gasoline	Free	Social Security Financing Contribution (COFINS), Social Integration Programme Contribution (PIS), Government Employee Savings Fund Contribution (PASEP), Temporary Tax on Financial Movements (CPMF), Tax on Merchandise Sales and Provision of Interstate Transport and Intermunicipal Communication Services (ICMS), Specific Price Portion (PPE), Economic Intervention Tax (CIDE)	Free
Premium gasoline	Free	COFINS, PIS, PASEP, CPMF, PPE (CIDE) and ICMS	Free
Diesel	Free	COFINS, PIS, PASEP, CPMF, PPE (CIDE) and ICMS	Free
Kerosene	Free	COFINS, PIS, PASEP, CPMF, PPE (CIDE) and ICMS	Free
Fuel Oil A1	Free	COFINS, PIS, PASEP, CPMF, PPE (CIDE) and ICMS	Free
LPG	Free	COFINS, PIS, PASEP, CPMF, PPE (CIDE) and ICMS	Free

Notes:
- The opportunity cost of domestic prices in Brazil is based on international benchmark prices.
- Regulated: a maximum price is set by the Government.
- Free: agents are free to determine margins and prices.
Source: prepared by the authors on the basis of information obtained from the National Petroleum Agency.

3.1.2 TAX BASE

The taxes levied in the fuels market in Brazil are as follows:

– Social Security Financing Contribution (COFINS): This tax is levied to finance social development in Brazil; the rate is 3% (Law 9718 of 1998, article 8).

– Refineries, along with other producers and/or importers of gasoline, excluding aviation fuel, pay a rate of 12.45% on their sales (Law 9718 of 1998, article 4-NR).

– Refineries, along with other producers and/or importers of diesel, pay a rate of 10.29% on their sales (Law 9718 of 1998, article 4-NR).

– Refineries, along with other producers and/or importers of liquefied petroleum gas (LPG), pay a rate of 11.84 % on their sales (Law 9718 of 1998, article 4-NR).

– Distributors of hydrated ethyl alcohol fuel (AEHC) pay a rate of 6.79% on their sales, except in the case of alcohol added to gasoline where the rate is reduced to zero (Law 9718 of 1998, article 5-NR; MP No. 1.991-15 of 10 March 2000).

– In the case of AEHC imported by distributors, the applicable rate is that indicated in subparagraph (d); where the product is imported by agents other than its distributors, the applicable rate is 3% (Law 9718 of 1998, article 6, paragraph 1-NR).

– In the case of sales by distributors of gasoline (excluding aviation fuel), diesel, LPG, and alcohol for fuel (provided this is added to gasoline), the applicable rate is reduced to zero (MP No. 1.991-15 of 2000, article 43).
– On retail sales of gasoline (excluding aviation fuel), diesel, LPG and AEHC fuel, the corresponding rate is reduced to zero (MP No. 1.991-15 of 2000, article 43).

– Social Integration Programme (PIS) Contribution and Government Employee Savings Fund (PASEP) Contribution: The PIS/PASEP contribution is levied at 0.65% on invoicing/gross revenues (Law 9.715 of 25 November 1998, article 8, paragraph I; MP No. 1.807 of 28 January 1999).

– Refineries, along with other producers and/or importers of gasoline (excluding aviation fuel) pay a rate of 2.7% on their sales of this product, (Law 9.718 of 1998, article 4-NR)

– Refineries, along with other producers and/or importers of diesel pay a rate of 2.23%, on their sales of this product (Law 9.718 of 1998, article 4-NR).

– Refineries, along with other producers and/or importers of liquid petroleum gas (LPG) pay a rate of 2.56 % on their sales of this product (Law 9.718 of 1998, article 4-NR).

– Distributors of hydrated ethyl alcohol fuel (AEHC) pay a rate of 1.46% on their sales of this product, except in the case of alcohol added to gasoline, where the rate is reduced to zero (Law 9.718 of 1998, article 5-NR; MP No. 1.991-15 of 10 March 2000).

– In the case of AEHC imported by distributors, the rate applied is as indicated in subparagraph (d); where the product is imported by agents other than its distributors, the applicable rate is 0.65% (Law 9.718 of 1998, article 6, paragraph 1-NR).

– Temporary Tax on Financial Movements (CPMF): This charged at a rate of 0.30%, as provided in Law 9.311 of 24 November 1996, amended by Law 9.539 of 12 December 1997.

– Tax on Merchandise Sales and Provision of Interstate Transport and Inter-municipal Communications Services (ICMS). This levy is a type of value-added tax. The Brazilian ICMS is charged at different rates according to the product being sold (e.g. 25% in the case of luxury products and 7% for articles classified as basic needs); and according to the geographic destination of the good being sold or the service provided (e.g. the 7% rate is charged on operations with the poorer states, and 12% with the wealthier ones). A rate of 18% is levied on imports.[38]

– Specific Price Portion (PPE). This tax was superseded by the Economic Intervention Tax (CIDE) on fuels, with Constitutional Amendment 33 of 11 December 2001, and Law 10.336 of 19 December 2001.

– The new law abolishes the PPE tax paid exclusively by Energia Federal do Brasil Petrobas on oil imports. Currently Petrobas has a monopoly on imports of most petroleum products.

[38] Ministry of Finance of Brazil, **http://www.fazenda.gov.br/espanhol/bien.html**

– The amendment allows or empowers the petroleum sector regulator (ANP) to abolish this final Petrobas monopoly, by levying the CIDE on all companies. The tax will be applied to four groups of oil producers: importers, refiners, petrochemical firms and gasoline distributors.

– CIDE would be charged at a rate of about US$0.19 (0.45 Brazilian reais) per litre of gasoline, compared to the current rate of US$0.18, which Petrobas pays under the PPE regime.[39]

3.1.3 METHODOLOGY USED TO CALCULATE THE COMPONENTS OF PETROLEUM PRODUCT PRICE STRUCTURE

The mechanism used to calculate each of the components is set out below.

3.1.3.1 Refinery price

The refinery price was supplied by the Ministry of Finance, as set out in Table A1.55 for the different fuels.

Table A1.55 Refinery price, Brazil ((Brazilian reais per litre) (BR / litre))

Fuel	Regular gasoline	Premium gasoline	Diesel	Fuel oil A1	LPG BR / Kg.
December 2001	0.399	0.459	0.410	0.287	0.692
December 2002	0.775	0.803	0.852	0.572	0.886

Source: Ministry of Finance, www.fazenda.gov.br

3.1.3.2 Taxes

To the refinery price must be added the Social Integration Programme Contribution (PIS) and Government Employee Savings Fund Contribution (PASEP) which are applied to the invoicing price as follows:

PIS/COFINS = [(Invoicing price / (1 less ICMS))*%PIS/COFINS]
or
PIS/COFINS = [Invoicing price + ICMS] * % PIS/COFINS

[39] Business News Américas, **http://www.bnamericas.com/**

Table A1.56 shows PIS/PASEP taxes for the different fuels.

Table A1.56 PIS/COFINS, Brazil (BR / litre)

Fuel	Regular gasoline	Premium gasoline	Diesel oil	Fuel oil A1	LPG BR / Kg.
December 01	0.219	0.238	0.085	0.013	0.105
December 02	0.267	0.274	0.152	0.023	0.173

Source: prepared by the authors on the basis of information obtained from the National Petroleum Agency.

Next, the FUP tax or Specific Price Portion (PPE) must be added. It is applied to the refinery and invoicing price as follows:

FUP/PPE = [((Invoicing price less minus refinery price) minus PIS/COFINS)]

In the cases of liquid petroleum gas and fuel oil, the CIDE tax was used directly. This gives the FUP/PPE or CIDE tax which is shown in Table A1.57 for the different fuels.

Table A1.57 FUP/PPE or CIDE, Brazil (BR / litre)

Fuel	Regular gasoline	Premium gasoline	Diesel	Fuel oil A1	LPG BR / Kg.
December 01	0.467	0.482	0.103	0.011	-0.255
December 02	0.280	0.280	0.071	0.010	0

Source: prepared by the authors on the basis of information obtained from the National Petroleum Agency.

Lastly, the Tax on Merchandise Sales and Provision of Interstate Transport and Inter-municipal Communications Services (ICMS) is levied on the invoicing price, and is differentiated in terms of the percentage: 25% for gasolines, 18% for fuel oil, and 12% for diesel and LPG:

(A) ICMS = [(Invoicing price / (1 minus % ICMS)) minus invoicing price]

However, from January 2002 on, this calculation was extended as follows:

(B) BASIS FOR CALCULATION OF CMS CHEIO =

[(Invoicing price / (1 minus % ICMS)) * (1 + Value Added Margin (%)]

(C) TAX SUBSTITUTION ICMS =

(B * % ICMS) - A

A + C TOTAL ICMS

Formula (A) was used for the calculations corresponding to both December 2001 and December 2002. Table A1.58 shows the ICMS tax for the different fuels.

Table A1.58 ICMS, Brazil (BR / litre)

Fuel	Regular gasoline	Premium gasoline	Diesel	Fuel oil A1	LPG BR / Kg.
December 01	0.362	0.393	0.081	0.066	0.205
December 02	0.441	0.452	0.147	0.023	0.368

Note:
- The sum of PIS/COFINS plus FUP/PPE, and ICMS gives total taxes.
Source: prepared by the author on the basis of information obtained from the National Petroleum Agency.

Table A1.59 Total taxes, Brazil (BR / litre)

Fuel	Regular gasoline	Premium gasoline	Diesel	Fuel oil A1	LPG BR / Kg.
December 2001	1.060	1.126	0.275	0.0915	0.06
December 2001	0.993	1.012	0.373	0.056	0.541

Note:
Total taxes include 0.38% corresponding to the Temporary Tax on Financial Movements, which is levied on the distribution and resale price.
Source: prepared by the authors on the basis of tables A1.56, A1.57 and A1.58

3.1.3.3 Commercial mark-ups

Commercial mark-ups are freely determined by agents in Brazil. However, the distributor's and resale margins for "C"-grade gasoline and diesel were obtained from the Ministry of Mines and Energy and the method used for the other fuels is explained below:

- "C"-grade gasoline: the distribution margin is 3% of the final price or 10% of the refinery price; the resale margin is 10% of the consumer price or 30% of the refinery price.

- Diesel: the distribution margin is 3% of the final price or 5% of the refinery price; the resale margin is 12% of the consumer price or 20% of the refinery price.

- Premium gasoline: the commercial mark-up was taken to be the difference between the final price to the public and the wholesale price, although the margins on regular gasoline are similar to those for premium gasoline.

- Fuel oil: the commercial mark-up was taken to be the difference between the final price to the public and the wholesale price.

- Liquid Petroleum Gas: the commercial mark-up was obtained from the National Petroleum Agency Superintendence of Strategic Studies.

Table A1.60 shows the commercial mark-ups on the different fuels.

Table A1.60 Commercial mark-ups, Brazil (BR / litre)

Fuel	Regular gasoline	Premium gasoline	Diesel	Fuel oil A1	LPG BR / Kg.
December 01	0.242	0.253	0.153	0.0169	0.708
December 02	0.315	0.384	0.250	0	0.696

Note:
The gross commercial mark-up includes the cost of transport to service stations.
Source: prepared by the authors on the basis of information obtained from the National Petroleum Agency.

3.1.3.4 Final consumer price

Lastly, the sum of the three components –refinery price (Table A1.55), total taxes (Table A1.59) and commercial mark-up (Table A1.60) – gives the prices of petroleum products, as shown in table A1.61.

Table A1.61 Final consumer prices, Sao Paulo (BR / litre)

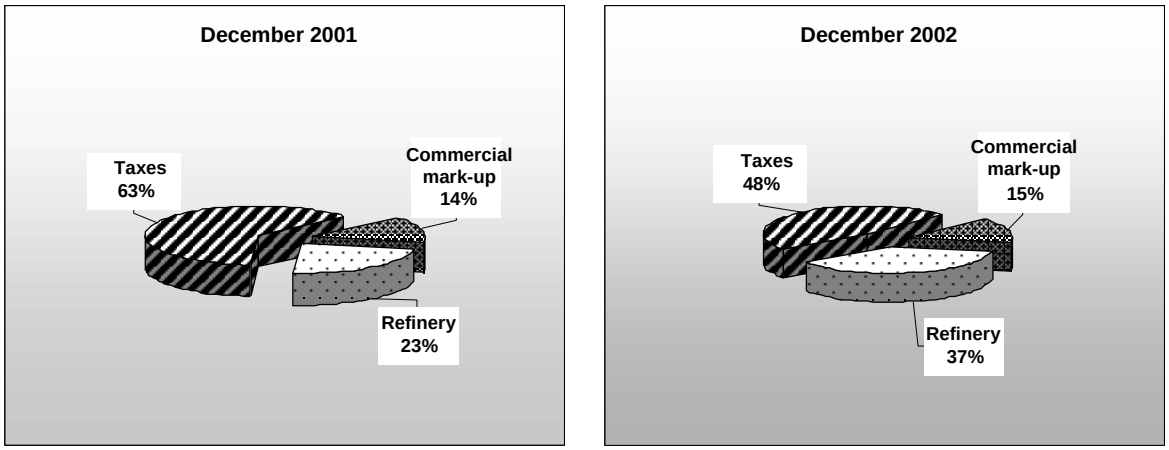
Fuel	Refinery price (1)	TAXES				IP	WP	CM (3)	Price to the public (4)=(1+2+3)
		PIS /COFINS	FUP/PPE CIDE	ICMS	Total (2)				
December 2001									
Regular gasoline	0.399	0.219	0.467	0.362	1.060	1.085	1.459	0.242	1.701
Premium gasoline	0.459	0.238	0.482	0.393	1.126	1.178	1.585	0.253	1.838
Diesel	0.410	0.085	0.103	0.081	0.275	0.598	0.685	0.153	0.838
Fuel oil	0.287	0.013	0.011	0.066	0.092	0.301	0.377	0.017	0.396
LPG	0.692	0.105	-0.255	0.205	0.06	0.543	0.752	0.708	1.46
December 2002									
Regular gasoline	0.775	0.267	0.280	0.441	0.993	1.322	1.768	0.315	2.083
Premium gasoline	0.803	0.274	0.280	0.452	1.012	1.3571	1.815	0.384	2.199
Diesel	0.852	0.152	0.071	0.147	0.373	1.0747	1.225	0.250	1.475
Fuel oil	0.572	0.023	0.01	0.023	0.056	0.599	0.628		
LPG	0.886	0.173	0	0.368	0.541	1.059	1.427	0.696	2.123

Notes:
- Invoicing price less ICMS (IP), wholesale price (WP), commercial mark-up (CM)
- The price of LPG is expressed in Brazilian reais per kilogramme.
- Final fuel prices are provided by the National Petroleum Agency.

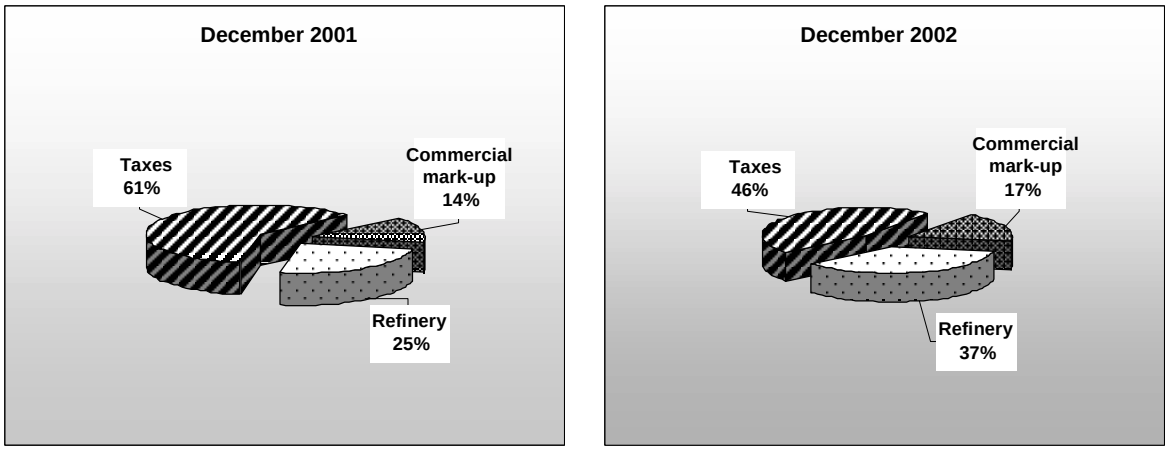
Source: prepared by the authors on the basis of tables A1.55, A1.56, A1.57, A1.58 and A1.60

Figure A1.17 Composition of final consumer price, in percentages, Brazil

(a) Regular gasoline



(b) Premium gasoline



(c) Diesel oil

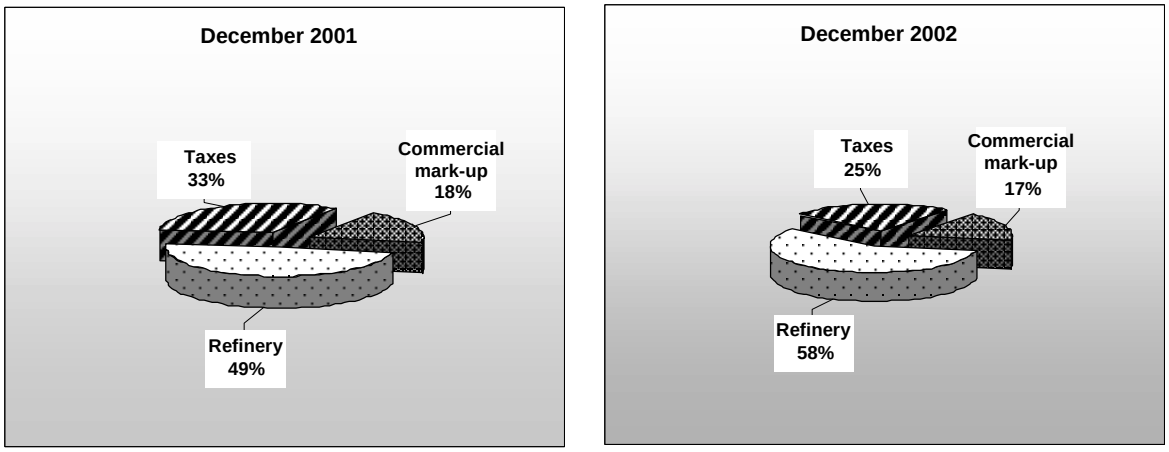
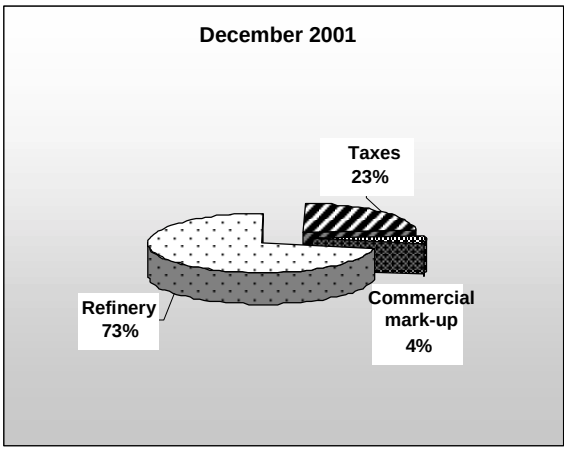
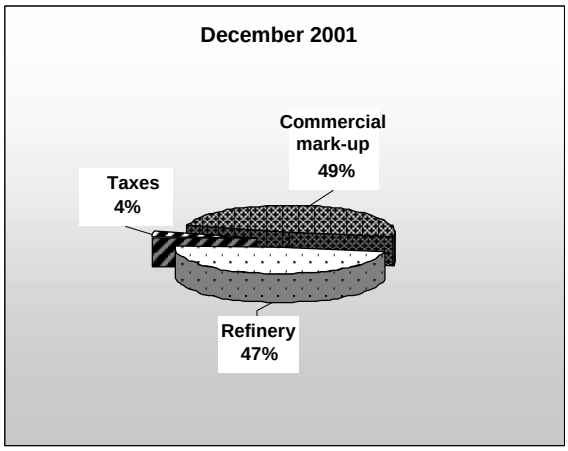


Figure A1.17 Composition of final consumer price, in percentages, Brazil (continued)

(d) Fuel oil



(e) Liquid Petroleum Gas



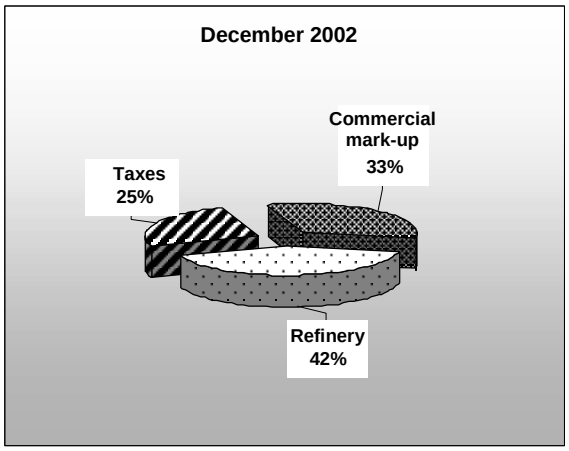
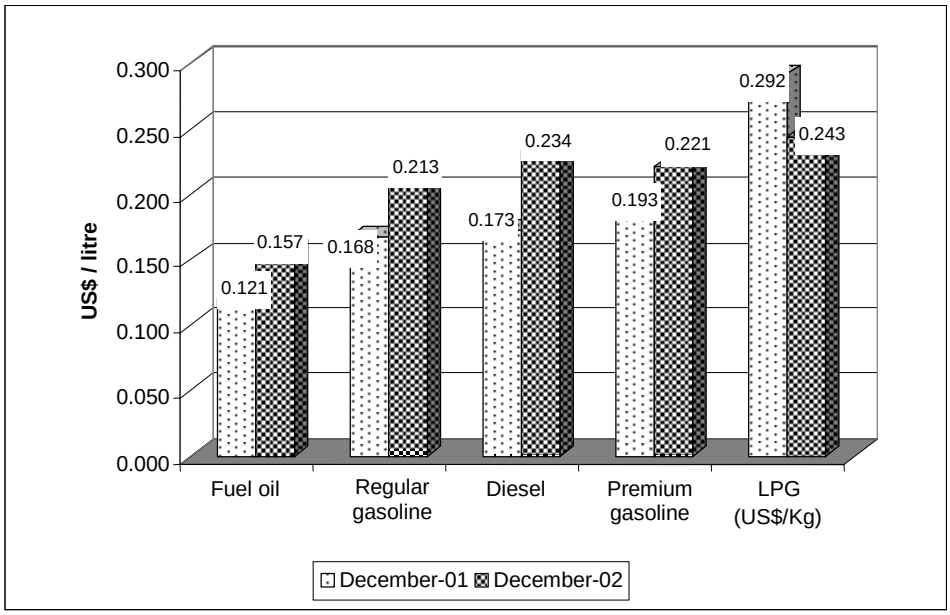


Figure A1.18 Comparison of the components of price structure of petroleum products, Brazil

(a) Refinery price



(b) Taxes

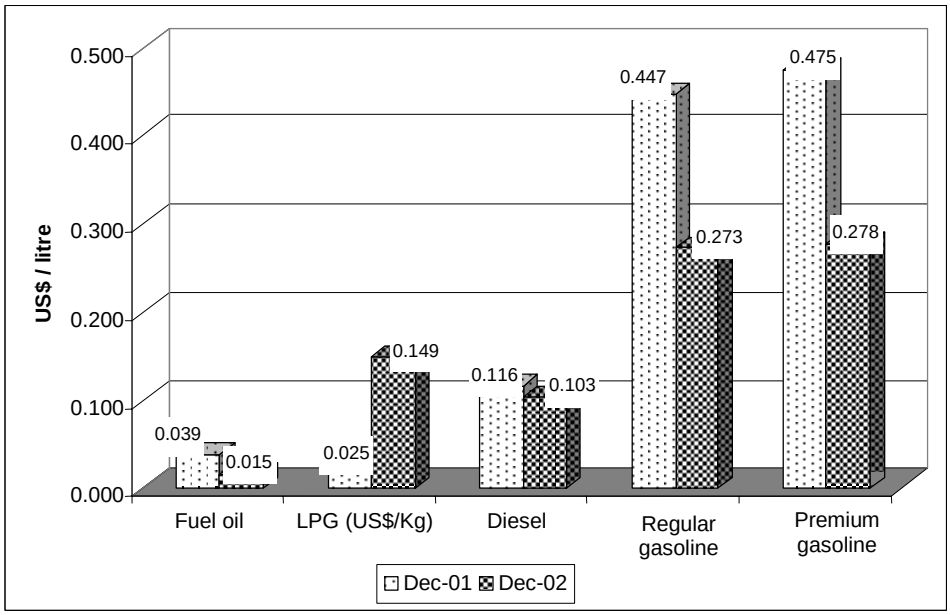
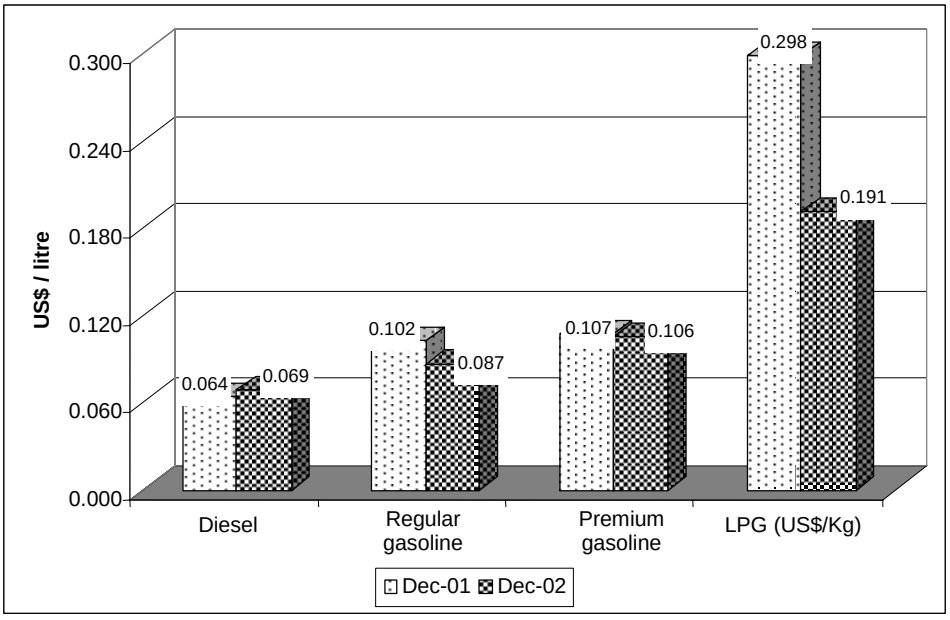


Figure A1.18 Comparison of the components of price structure of petroleum products, Brazil (continued)

(c) Commercial mark-up



(d) Final price to the public

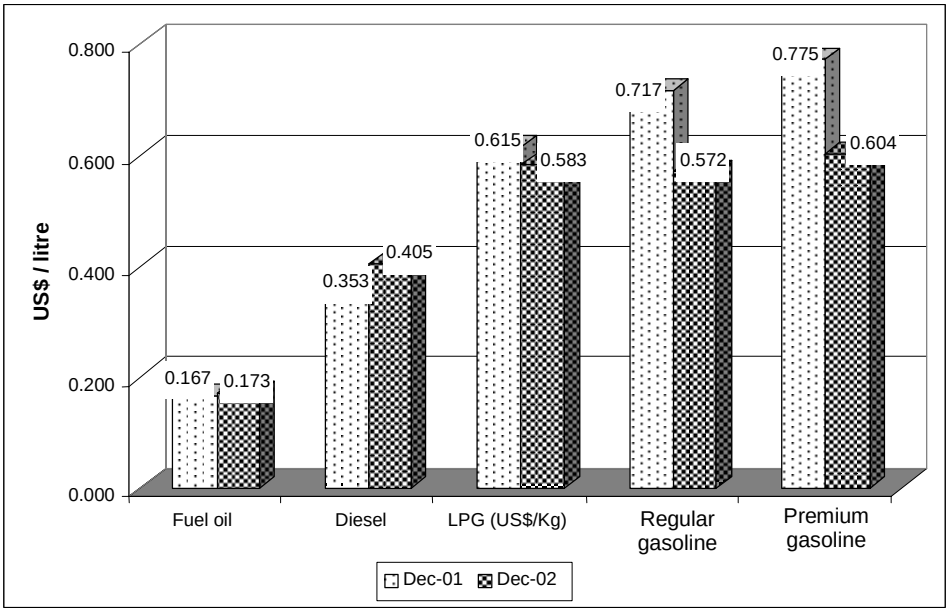
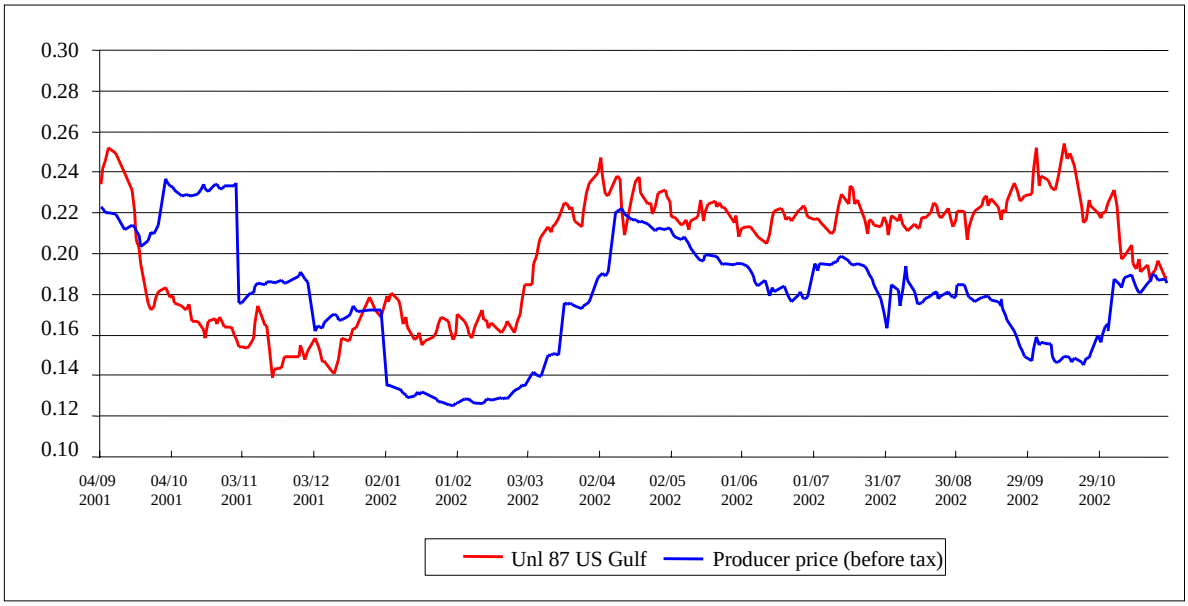
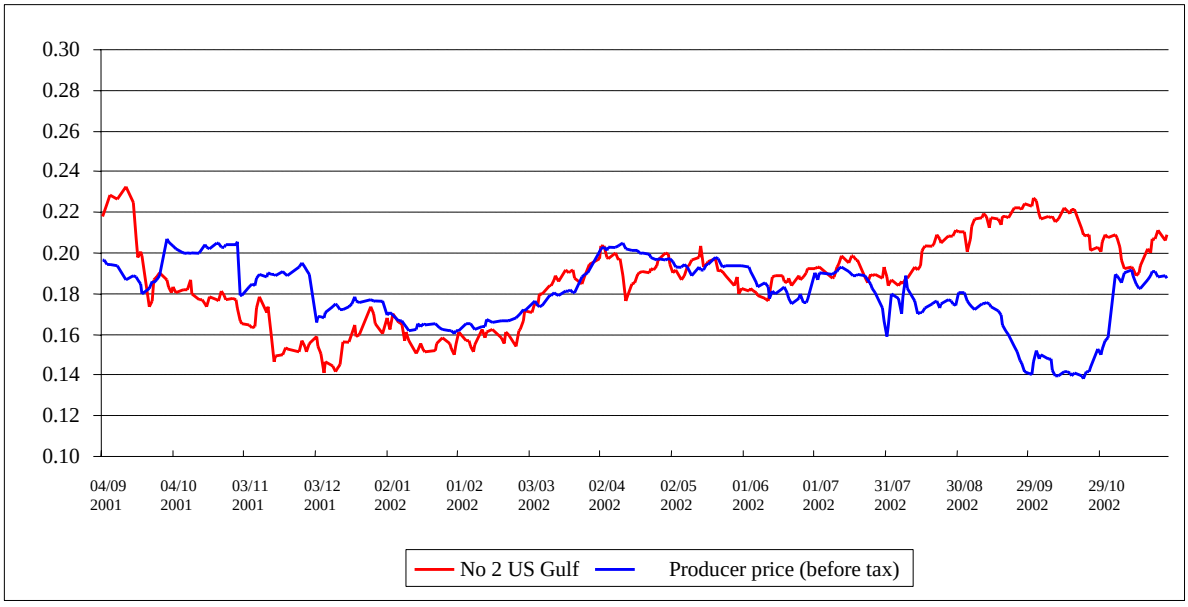


Figure A1.19 Selected comparisons, Brazil (US$ / litre)

(a) Refinery prices regular gasoline



b) Refinery prices diesel



3.2 *ANALYSIS OF FUEL PRICE STRUCTURE IN CHILE*

3.2.1 REGULATION OF PRICE STRUCTURES OF PETROLEUM PRODUCTS

The National Energy Commission is the State body responsible for preparing and coordinating plans, policies and standards to guarantee the proper functioning and development of the country's energy sector, including hydrocarbons. It is also responsible for ensuring compliance with all regulations on energy production and use, and for promoting efficient and appropriate energy use.

Price policy applicable to petroleum product fuels

Chile may be considered a pioneer in economic deregulation and privatisation in the fuel sector, since deregulation began in 1973. Between 1978 and 1982 fuel distribution was liberalised and economic agents were granted complete freedom to produce, distribute and market petroleum products.

Since 1982 there has been total freedom to set fuel prices; each distributor and service station can charge whatever they deem appropriate, constrained only by competition and the profit expectations (margins) of the business. There is also freedom to produce and import fuels, and to install refinery and storage facilities.

In Chile, fuels are governed by the concept of import parity prices (PPI). Briefly, this means that the firm chooses the lowest cost alternative on offer for any importer to bring a product into Chile from a reference market, which in the case of Chile is the Mexican Gulf Coast in the United States. If the price fixed by the National Petroleum Company (ENAP) is higher than prices prevailing on the international market, distribution firms may buy their supplies abroad, disregarding the output of domestic refineries.

Table A1.62 summarises the price systems applicable to each fuel, disaggregated by component of the final consumer price.

Table A1.62 Summary of price systems in use in Chile

Fuel	Refinery price	Taxes	Commercial mark-up
Regular gasoline	Semi-free	Oil Price Stabilization Fund (FEPP), Specific Tax (IE), Value-Added Tax (VAT)	Free
Premium gasoline	Semi-free	FEPP, IE , VAT	Free
Diesel	Semi-free	FEPP, IE , VAT	Free
Kerosene	Semi-free	FEPP, VAT	Free
Fuel oil	Semi-free	FEPP, VAT	Free
LPG	Semi-free	FEPP, VAT	Free

Notes:
- Semi-free: distributors may buy their products abroad.
- Free: agents are free to determine prices and margins.

Source: prepared by the authors on the basis of information provided by ENAP and CNE.

Import parity includes the CIF value of a product (FOB + freight + insurance), plus tariff duties and other expenses of the import process through to the point of deposit in a storage tank.

The components of import price parity are as follows:

Table A1.63 Component of import parity price

Item	Definition	% contribution to PPI	
		All except LPG	LPG
FOB (Free On Board)	Price free on board ship, including all expenses, duties, taxes, etc. In this case the point of origin is the Mexican Gulf coast of the United States.	86	73
Freight (maritime)	Represents the cost of transport from the Gulf coast to the port of Quintero.	6-7	15
Insurance	Insurance on the product transported.	0.02	0.02
CIF	Sale price including delivery of the product at the port of destination, with freight paid and insurance covered.	>92	>88
Losses	Product losses in transit and unloading.	0.2-0.5	0.4
Customs duty (DA)	Current tariff rate at the moment of entry, levied on the CIF price. The general rate is currently 7%, and is set to stabilise at 6% as from 2003.	6.5	6
Credit card expenses (GCC)	Account opening fee and expenses of the correspondent bank relating to credit card payment of the FOB price plus insurance.	0.2	0.2
"Brida Buque" parity (PPIBL)	The sum of the components of the CIF price, losses, DA and GCC.	>99	>94
Financial cost (CF)	Financial costs in terms of working capital required to cover import expenses from the date of payment until the moment of sale. Also includes the financial cost of taxes.	<0.2	0.04
Fixed and direct unloading costs	Fixed: Costs incurred in operating, owning and maintaining the installations needed to receive and unload ships, specifically installation depreciation and maintenance costs. Direct: All costs relating to staff time spent dealing with the ship and other items.	<0.2	1.8 (+ 0.3, for excess stay)
Storage costs	Costs of product storage, assuming the tanks are really a means of storage and are not simply used to regulate transit of the oil by pipeline to other storage plants.	0.4-0.7	3.2
In plant import parity	Parity price on leaving the storage tank (flange).	100	100

Source: National Energy Commission.

3.2.2 TAX BASE

The taxes levied on fuels are as follows:

- **Oil Price Stabilisation Fund (FEPP):** Established by Law 19.030 of 1991, amended by Law 19.681 of 2000. The aim of the Fund is to reduce the impact of international price fluctuations on the final consumer price, either through a credit in favour of the consumer when international prices are high, or through taxes when prices are low.[40]

- **Specific Tax** (IE): Established by Law 18.502 of 1986, this tax is charged on the import or initial sale of automobile gasoline and diesel fuel. The tax base is the fuel volume expressed in cubic metres.

Table A1.64 Specific Tax on gasoline and diesel, Chile

Year	Diesel	Automobile gasoline
2003	1.5 Monthly Tax Units per cubic metre	6 UTM per m^3
2002	1.5 UTM per m^3	6 UTM per m^3
2001	1.5 UTM per m^3	6 UTM per m^3
2000	1.5 UTM per m^3	5.2 UTM per m^3
1999	1.5 UTM per m^3	4.4084 UTM per m^3

Source: Internal Revenue Service, *www.sii.cl/pagina/petroleo/impuesto.htm*

A. **Value-added tax (VAT)**: established by Decree Law 825 of 1974, replaced by Decree Law 1.606 of 1976. In Chile this tax is charged at a rate of 18% at each stage of the production and commercialisation process.

3.2.3 METHODOLOGY USED TO CALCULATE THE COMPONENTS OF PETROLEUM PRODUCT PRICE STRUCTURE

The mechanism used to calculate each of the components is set out below.

3.2.3.1 Refinery price

Every week, the National Petroleum Company (ENAP) publishes on its web site the prices of the products that it delivers to wholesale distributors in Santiago. The main factors involved in the calculation of ENAP prices are the price in the reference market; transport and logistics costs (oil pipelines and storage); storage costs or customs tariffs; insurance, specific tax and VAT; trends in the exchange rate and the effect of the FEPP tax or credit.

Each week, the National Energy Commission issues the FEPP figure and a parallel calculation of parity prices. Table A1.65 shows the weekly import parity prices (PPI) for the month of December 2001 for the different fuels.

[40] See **www.cne.cl** for further information on the mechanism used to calculate FEPP.

Table A1.65 PPI, Chile, December 2001 (US$/$m^3$)

Parity prices – FEPP calculation, December 2001						PPI ENAP, Dec 2001	
Week	Gasolines	Kerosene	Diesel	Fuel price	LPG	Gasolines	Diesel
03- Dec –01	160.32	170.03	166.21	108.34	131.81	166.52	174.46
10- Dec –01	160.04	167.89	164.43	116.26	127.60	168.81	175.15
17- Dec –01	158.67	162.45	157.52	122.59	123.62	169.30	171.12
24- Dec –01	153.37	156.15	153.42	117.63	124.29	166.86	169.79
31- Dec –01	171.57	175.19	171.69	121.20	132.01	187.30	192.01

Source: National Energy Commission and ENAP.

The parity prices published by CNE are used to calculate the FEPP and the ENAP figures corresponding to the prices at the Concón refinery gate, as shown below.

Table A1.66 Refinery price, Chile (Chilean pesos per litre) (CH$ / litre))

Fuel	Regular gasoline	Premium gasoline	Diesel	Kerosene	Fuel oil	LPG CH$ / Kg.
December 2001	115.19	114.11	114.35	116.37	74.91	158.82
December 2002	156.65	161.22	165.24	166.31	102.67	248.97

Note:
The conversion value used corresponds to the observed exchange rate for the reference month although, for convertibility purposes, CNE uses the dollar value reported by the Central Bank the Friday of the week before the analysis.
Source: prepared by the authors on the basis of information provided by ENAP.

3.2.3.2 Taxes

Once the refinery price has been determined, a credit in the consumer's favour or a tax against must be applied according to the provisions of the Petroleum Price Stabilisation Fund Act (FEPP). Table A1.67 shows the weekly values of FEPP for the month of December 2001 for different fuels.

Table A1.67 Petroleum Price Stabilization Fund, Taxes, Chile (CH$ / litre)

Fuel	Regular gasoline	Premium gasoline	Diesel	Kerosene	Fuel oil	LPG CH$ / Kg.
December 2001	14.99	14.99	12.53	13.44	4.73	22.84
December 2002	-7.29	-7.29	-4.27	-1.23	-4.84	-10.31

Note:
- LPG is expressed in pesos per kilogramme, M^3 LPG = 552.4 Kg.
Source: www.sii.cl/pagina/petroleo/petroDecember2001.htm

The Specific Tax must then be added to the refinery price plus FEPP. This tax corresponds to 6 UTM (an inflation-indexed unit of account known as monthly tax units) per cubic metre for automobile gasolines and 1.5 UTM/M^3 for diesel. Table A1.68 shows the values for the different fuels.

Table A1.68 Specific Tax, Chile (CH$ / litre)

Fuel	Regular gasoline	Premium gasoline	Diesel	Kerosene	Fuel oil	LPG CH$ / Kg.
December 2001	171.14	171.14	42.79	Not levied	Not levied	Not levied
December 2002	176.33	176.33	44.08	Not levied	Not levied	Not levied

Source: prepared by the authors on the basis of information obtained from SII (value UTM in December 2001 = $28.524)

Lastly, value-added tax (VAT) is added at the general rate of 18% over the sum of the refinery price and the commercial mark-up. Table A1.69 shows VAT for the different fuels.

Table A1.69 Value-added tax, Chile (CH$ / litre)

Fuel	Regular gasoline	Premium gasoline	Diesel	Kerosene	Fuel oil	LPG CH$ / Kg.
December 2001	27.30	27.76	26.64	29.62	20.34	65.70
December 2002	36.38	37.14	36.36	37.68	29.42	80.18

Source: prepared by the authors.

The sum of FEPP plus Specific Tax and VAT gives total taxes.

Table A1.70 Total taxes, Chile (CH$ / litre)

Fuel	Regular gasoline	Premium gasoline	Diesel	Kerosene	Fuel oil	LPG CH$ / Kg.
December 2001	213.43	213.89	81.96	43.06	25.07	88.54
December 2002	205.42	206.18	76.17	36.45	24.58	69.87

Source: prepared by the authors on the basis of tables A1.4, A1.5 and A1.6

3.2.3.3 Commercial mark-ups

Commercial mark-ups are freely determined in Chile and correspond to the aggregate value of the chain of distribution and commercialisation, which is calculated as the difference between the average price of sales to the public and FEPP, Specific Tax, VAT and the refinery price. The National Energy Commission publishes estimates of gross commercial mark-ups on the various petroleum products in the national statistics section of its web site.

Table A1.71 Commercial mark-ups, Chile (CH$ / litre)

Fuel	Regular gasoline	Premium gasoline	Diesel	Kerosene	Fuel oil	LPG CH$ / Kg.
December 2001	36.45	40.09	33.64	48.20	38.07	206.17
December 2002	45.49	45.14	36.74	43.00	60.81	196.49

Source: prepared by the authors.

3.2.3.4 Final consumer price

Lastly, the sum of the three components –refinery price (Table A1.66), total taxes (Table A1.70) and commercial mark-up (Table A1.71) – gives the process of petroleum products, as shown in Table A1.72.

Table A1.72 Final consumer prices, Santiago, December 2001 (CH$ / litre)

Fuel	Refinery price (1)	TAXES				Wholesale price (1+2)	Commercial mark-up (3)	Price to the public (4)=(1+2+3)
		FEPP	IE	VAT	Total (2)			
December 2001								
Regular gasoline	115.19	14.99	171.14	27.30	213.43	328.62	36.45	365.07
Premium gasoline	114.11	14.99	171.14	27.76	213.89	328.00	40.09	368.09
Diesel	114.35	12.53	42.79	26.64	81.96	196.31	33.64	229.95
Kerosene	116.37	13.44	0	29.62	43.06	159.43	48.20	207.63
Fuel oil	74.91	4.73	0	20.34	25.07	99.98	38.07	138.05
LPG 15-kg bottle	158.82	22.84	0	65.70	88.54	247.36	206.17	453.53
December 2002								
Regular gasoline	156.65	-7.29	176.33	36.38	205.42	362.07	45.49	407.56
Premium gasoline	161.22	-7.29	176.33	37.14	206.18	367.40	45.14	412.54
Diesel	165.24	-4.27	44.08	36.36	76.17	241.41	36.74	278.15
Kerosene	166.31	-1.23	0	37.68	36.45	202.76	43.00	245.76
Fuel oil	102.67	-4.84	0	29.42	24.58	127.25	60.81	188.06
LPG 15-kg bottle	248.97	-10.31	0	80.18	69.87	318.84	196.49	515.33

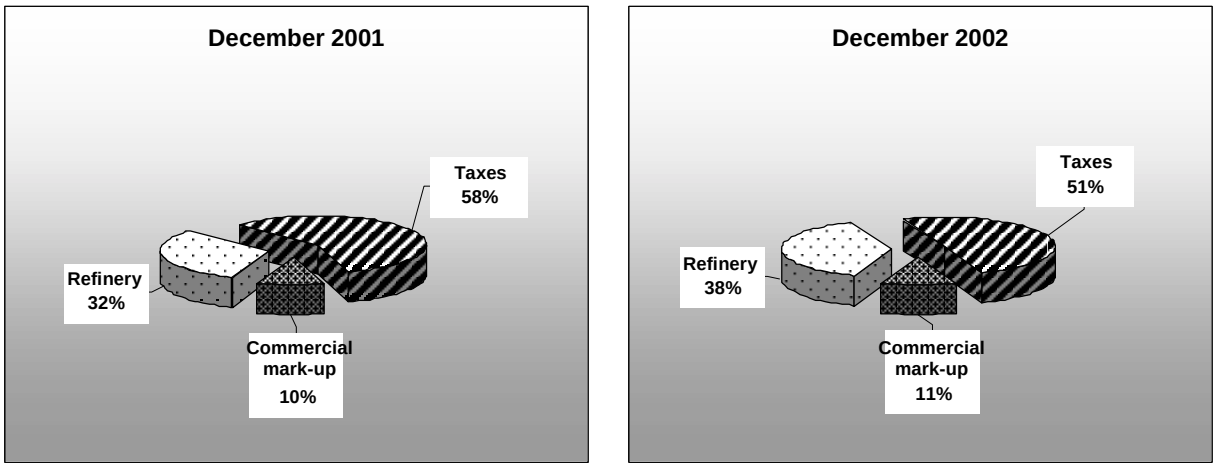
Notes:

- The price of fuel oil corresponds to the list of average prices for December obtained from a large distributor.
- The price of LPG is expressed in Chilean pesos per kilogramme.
- Final fuel prices come from the weekly survey conducted by SERNAC, except for LPG prices, which come from the National Statistics Institute.

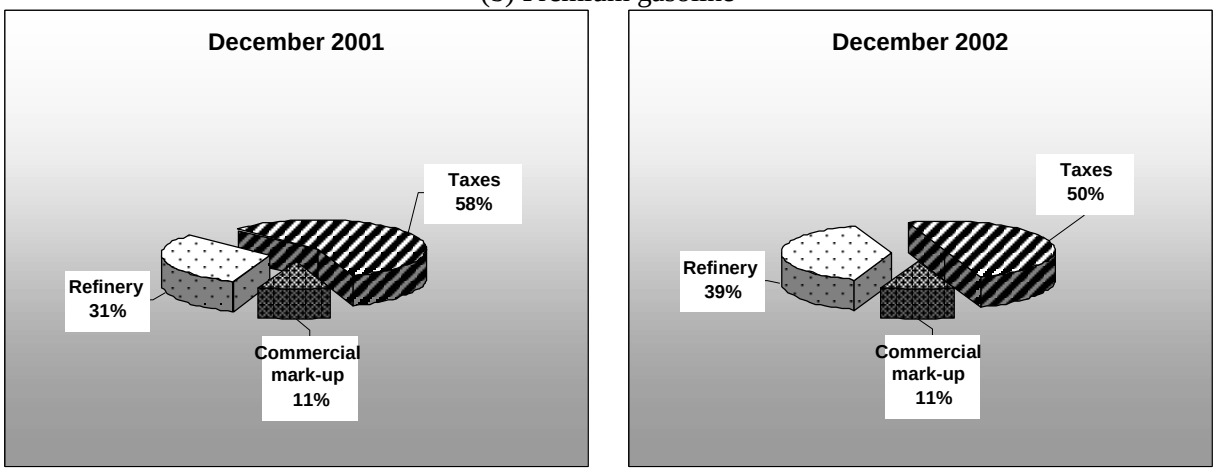
Source: prepared by the author on the basis of Tables A1.3, A1.4, A1.5, A1.6 and A1.8

Figure A1.20 Composition of final consumer price, in percentages, Chile

(a) Regular gasoline



(b) Premium gasoline



(c) Diesel oil

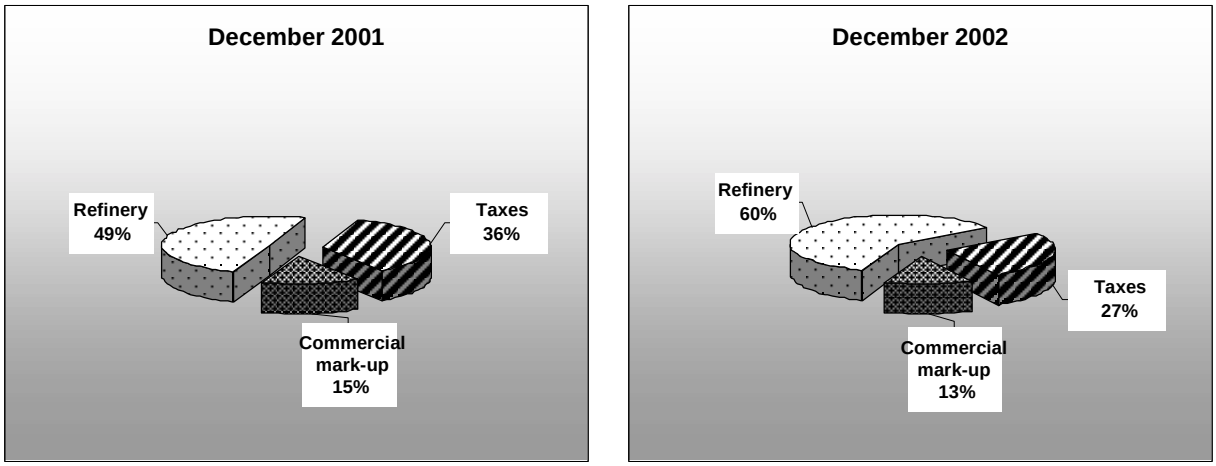
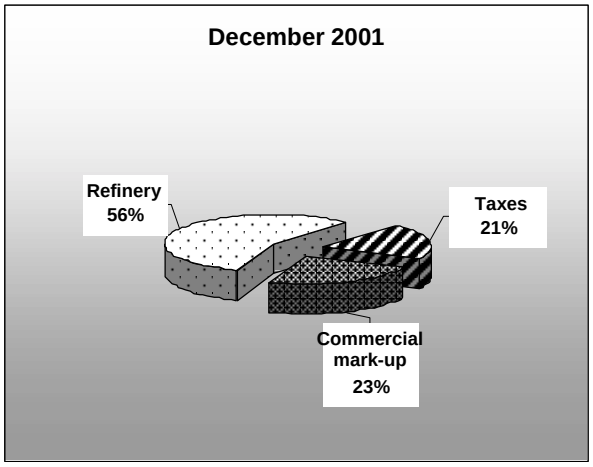
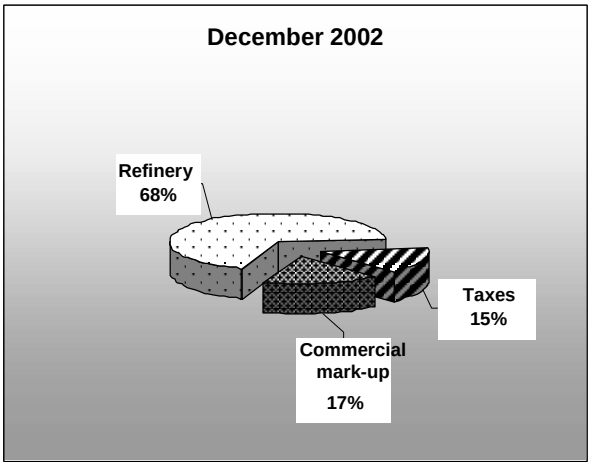


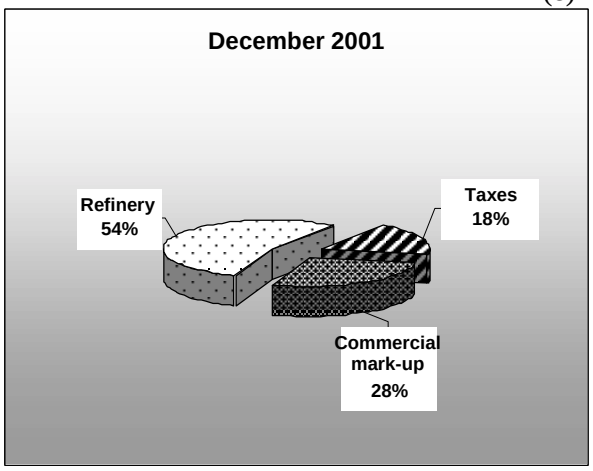
Figure A1.20 Composition of final consumer price, in percentages, Chile (continued)

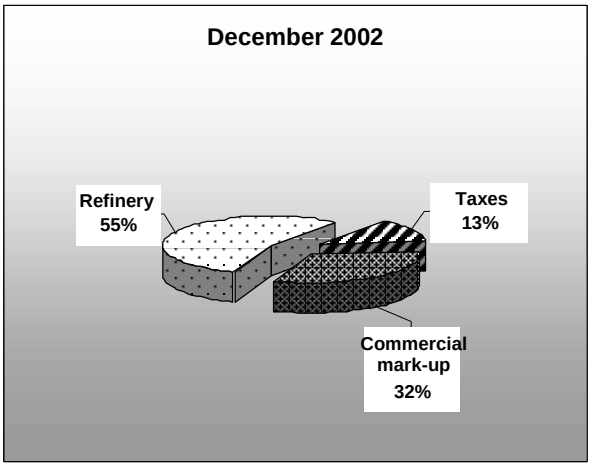
(d) Kerosene



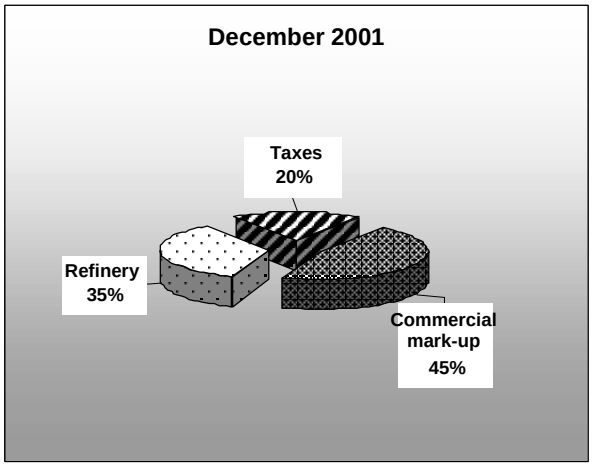


(e) Fuel oil





(f) Liquid Petroleum Gas



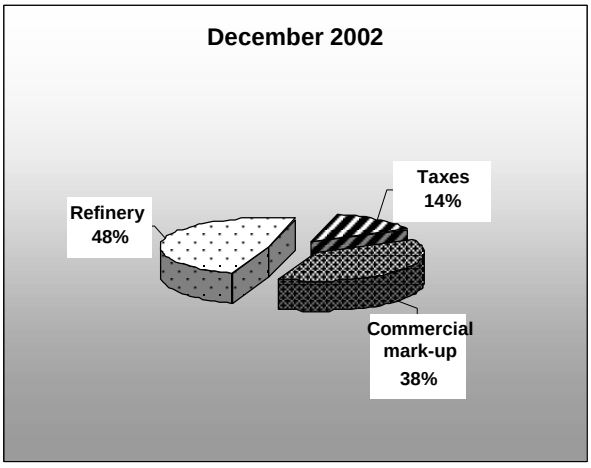
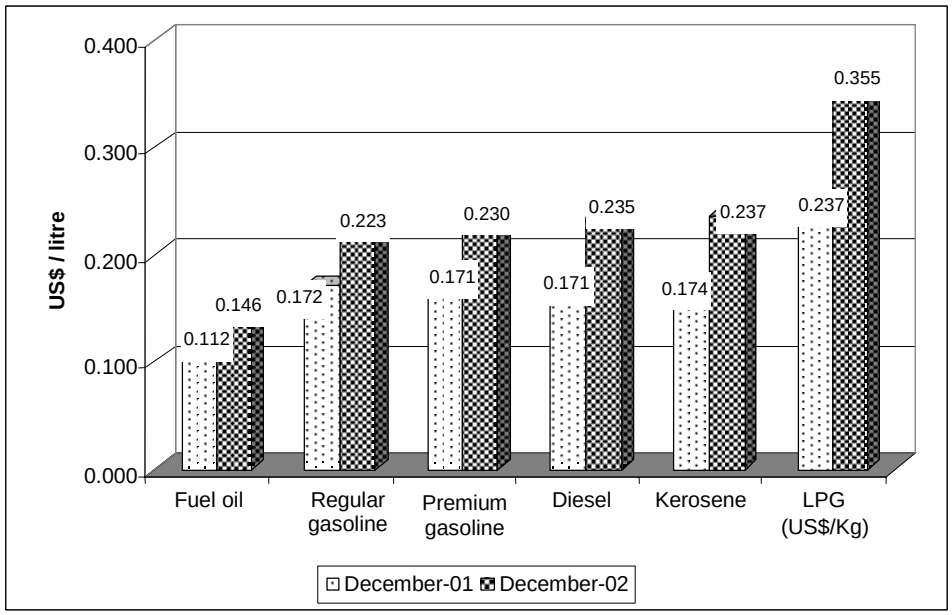


Figure A1.21 Comparison of the components of price structure of petroleum products, Chile

(a) Refinery price



(b) Taxes

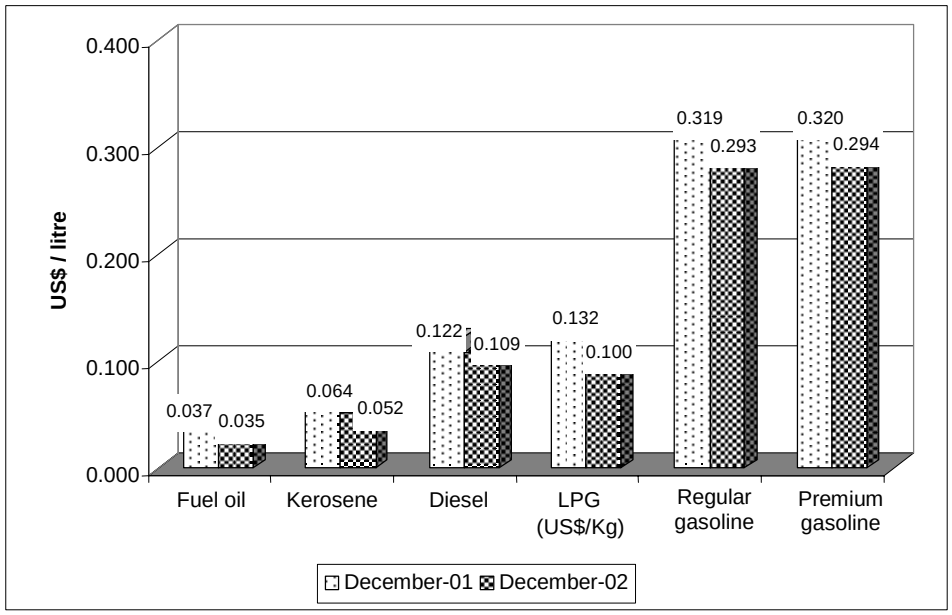
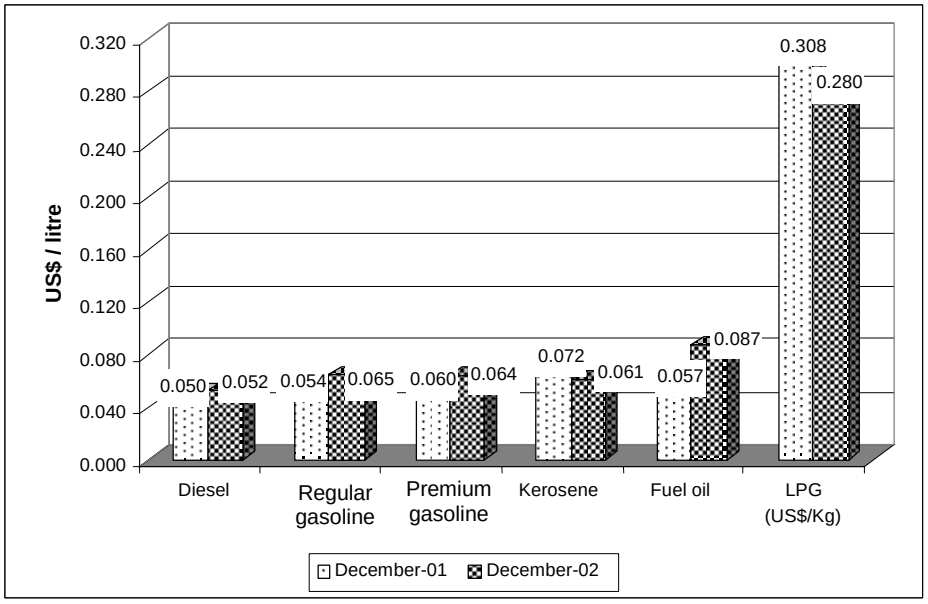


Figure A1.21 Comparison of the components of price structure of petroleum products, Chile (continued)

(c) Commercial mark-up



(d) Final price to the public

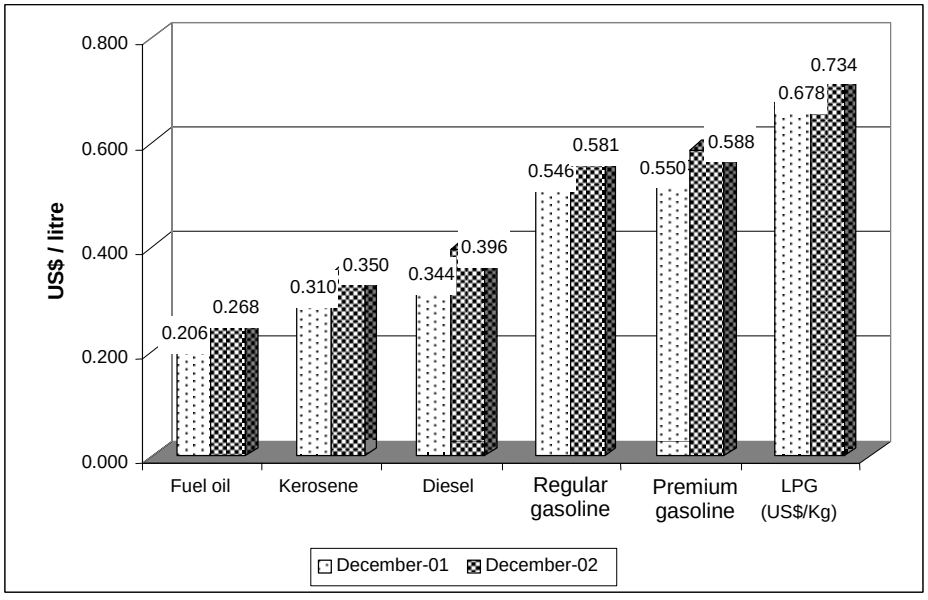
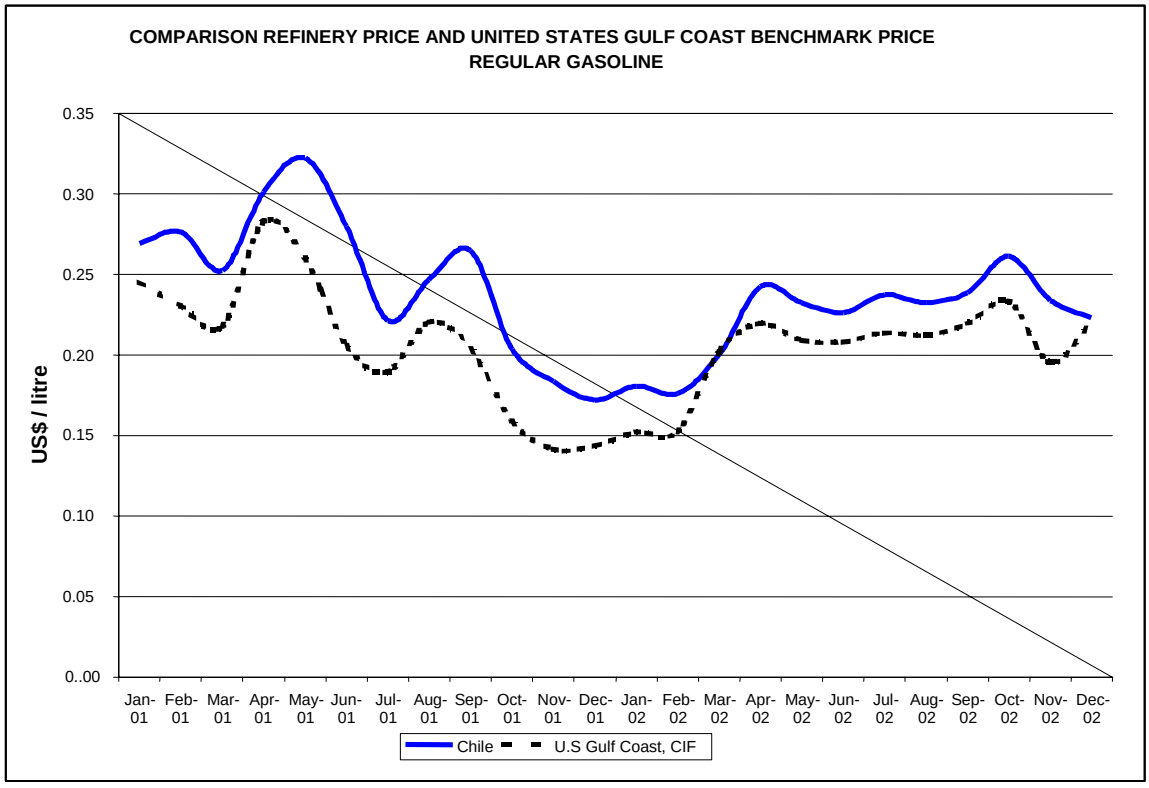


Figure A1.22 Refinery prices regular gasoline, Chile



3.3 ANALYSIS OF FUEL PRICE STRUCTURE IN PARAGUAY

3.3.1 REGULATION OF PRICE STRUCTURE OF PETROLEUM PRODUCTS

The central government agency responsible for establishing national energy policy in Paraguay is the Ministry of Public Works and Communications, acting through the Office of the Vice-Ministry of Mining and Energy, under National Congress Law 167 of 1993. This legislation makes that Office responsible for:

Establishing and directing policy relating to the use and management of the country's mineral and energy resources.

Studying technical, economic, financial and legal aspects to promote the industrial exploitation of available resources.

Ensuring appropriate use of resources in accordance with its responsibilities.

The State engages in entrepreneurial activities in the electric power and hydrocarbons sub sectors, through the following State enterprises:

1. National Electricity Administration (ANDE).
2. Petróleos Paraguayos (Petropar).

- Given the functions set forth in its founding charter, Petropar may produce and commercialise fuels and their derivatives on an industrial basis, and undertake operations of all types.
- Petropar is also the only firm authorised to engage in industrialised petroleum activities and external trade in petroleum, diesel and leaded gasoline; consequently, it has a monopoly in the market for those fuels.
- Importation of fuels not covered by the Petropar monopoly is carried out by private-sector enterprises, which are also responsible for distribution, transport and marketing of petroleum products.[41]

Price policy applicable to petroleum product fuels

Petroleum product prices are freely established for all fuels except diesel, for which the Government sets a single price.

The Ministry of Industry and Trade regulates the distribution, transport and marketing of petroleum products in Paraguay (Decree 10.911, Law 904/63), working through the General Fuels Office, which is required to:

- Administer at the national level and monitor the implementation of trade policy instruments concerning fuels and derivatives.
- Coordinate with other technical agencies of the Ministry of Industry and Commerce, and with other relevant government institutions, the inter-agency programme of oversight and inspection of compliance with regulations on petroleum products, in order to guarantee the quality of the product sold on the domestic market.

[41] Paraguayan Energy Policy, http://energy.org.ar/index1_files/PROYARG/WWW/MERCOSUR/page11.html

- Prepare analyses, studies, directives and consultations as required for the updating of the existing regulations, in order to adapt them to new market requirements and to ensure full compliance with them.

- Channel through the appropriate mechanisms requests, requirements, concerns or problems raised by the private or public sector in relation to the implementation of trade policy in the area of fuels and derivatives.[42]

Table A1.73 summarises the price systems applied to each fuel in the domestic market in Paraguay, disaggregated by component of final consumer price.

Table A1.73 Summary of fuel price system, Paraguay

Fuel	Refinery price	Taxes	Commercial mark-up
Regular gasoline	Free	Selective consumption tax	Free
Premium gasoline	Free	Selective consumption tax	Free
Diesel	Regulated	Selective consumption tax	Regulated
Kerosene	Free	Selective consumption tax	Free
Fuel oil	Free	Selective consumption tax	Free
LPG	Free	Selective consumption tax	Free

Notes:
- Petropar imports crude oil and petroleum products, especially from Argentina, through international tenders.
- Regulated: a maximum price is set by the Government.
- Free: agents are free to determine margins and prices.

Source: prepared by the authors on the basis of data obtained from the General Fuels Office.

The first fuel to be deregulated was liquid petroleum gas (LPG), with Decree 4454 of January 1990; subsequently, fuel oil and kerosene were deregulated with Decree 5445 of April 1990; and lastly, gasoline prices (Nafta "Común" and "Súper") were liberated in August 2000 through Decree 10183.

Price-setting policy for deregulated products is determined by the multinational firms SHELL, ESSO and TEXACO.[43]

3.3.2 TAX BASE

The taxes levied on fuels in the domestic market of Paraguay are as follows:

A. Selective Consumption Tax (ISC). This tax is levied on initial sales of domestically produced and imported merchandise. In the case of fuels, the tax is applied under Law 125 of 1991.

The rate ranges from 3% to 50% according to the type of product. Rates charged on fuels are as follows:

[42] Ministry of Industry and Commerce, www.mic.gov.py

[43] **www.icem.org.br/esla/presparaguay.ppt**

Table A1.74 ISC rates by fuel type, Paraguay

Fuel	Rate %
Regular gasolines and unleaded gasoline	50
Kerosene	10
Fuel oil	10
Diesel	14.10
LPG	10

Source: Under secretariat for Taxation, www.hacienda.gov.py

Tax base - The tax base is the ex-factory sale price, excluding the tax itself and value added tax (VAT).

ISC on gasoline (nafta) is not based on the refinery price or on the price of sale to the public, but only on presumptive taxable values set by the Government. These may not exceed the price of sale in the domestic market to the final consumer.

In the case of diesel, the tax base consists of the price of sale to the public as established by the Government (article 105, title II, Selective Consumption Tax, Law 125/91).

A. **Value-added tax**: This is levied on the sale of goods and provision of services, at a general rate of 10%.

In general, VAT is not levied on fuels and petroleum products.

3.3.3 METHODOLOGY USED TO CALCULATE THE COMPONENTS OF PETROLEUM PRODUCT PRICE STRUCTURE

The mechanism used to calculate each of the components is set out below.

3.3.3.1 **Refinery price**

The refinery prices of petroleum products in Paraguay are supplied by the Petroleum Company Petróleos Paraguayos (Petropar). Table A1.75 shows these prices for different fuels.

Table A1.75 Refinery price, guaraníes per litre ((Paraguayan guaraníes) (PG / litre))

Fuel	Regular gasoline	Premium gasoline	Gas oil	Kerosene	Fuel oil	LPG PG / Kg.
December 2001	1035.22	1157.72	1126.67	1409.09	381.82	1461.57
December 2002	1468.24	1567.24	1773.60	2000	1018.18	1961.57

Source: Petropar, Commercial Management.

3.3.3.2 Taxes

Once the refinery price has been determined, selective consumption tax must be added. Table A1.76 shows this tax for different fuels.

Table A1.76 Selective Consumption Tax, Paraguay (PG / litre)

Fuel	Regular gasoline	Premium gasoline	Gas oil	Kerosene	Fuel oil	LPG PG / Kg.
December 2001	764.78	922.28	219.73	140.91	38.18	138.43
December 2002	866.76	866.76	338.40	200	101.82	138.43

Note:
- There is an implicit value-added tax on gasolines, at 15.09 PG.
Source: Petróleos Paraguayos (Petropar)

3.3.3.3 **Commercial mark-ups**

In Paraguay agents are free to set commercial mark-ups, with the exception of gas oil, which is regulated by the Government through Decree N˚ 10.911 of 2000, entitled "Regulations on the refining, import, distribution and sale of petroleum product fuels". The margin in this case is 12% of the final price to the public (4.5% corresponds to the distributing firm and 7.5% to the service station).[44]

Wholesale and retail commercial mark-ups on other fuels were obtained by taking the difference between the final consumer price and the refinery price before tax. These margins are shown in table A1.77 for the different fuels.

Table A1.77 Commercial mark-ups, Paraguay (PG / litre)

Fuel	Regular gasoline	Premium gasoline	Gas oil	Kerosene	Fuel oil	LPG PG / Kg.
December 2001	530.00	609.99	183.60	250	321.90	1088.27
December 2002	765	966	288.00	300	180	600

Source: prepared by the author on the basis of information obtained from Petropar and the General Fuels Office.

[44] General Fuels Office, **www.mic.gov.py**

3.3.3.4 Final consumer price

Lastly, the sum of the three components –refinery price (Table A1.75), taxes (Table A1.76) and commercial mark-up (Table A1.77) – gives the price of petroleum products, as shown in table A1.78.

Table A1.78 Final consumer prices, Asunción (PG / litre)

Fuel	Refinery price (1)	TAXES		Wholesale price (1+2)	Commercial mark-up (3)	Price to the public (4)=(1+2+3)
		ICS	Total (2)			
December 2002						
Regular gasoline	1035.22	764.78	764.78	1800	530	2330
Premium gasoline	1157.72	922.28	922.28	2080	609.99	2689.99
Gas oil	1126.67	219.73	219.73	1346.40	183.60	1530
Kerosene	1409.09	140.91	140.91	1550	250	1800
Fuel oil	381.82	38.18	38.18	420	321.90	741.90
LPG	1461.57	138.43	138.43	1600	1088.27	2688.27
December 2002						
Special gasoline	1468.24	866.76	866.76	2335	765	3100
Premium gasoline	1567.24	866.76	866.76	2434	966	3400
Gas oil	1773.60	338.40	338.40	2112	288	2400
Kerosene	2000	200	200	2200	300	2500
Fuel oil	1018.18	101.82	101.82	1120	180	1300
LPG	1961.57	138.43	138.43	2100	600	2700

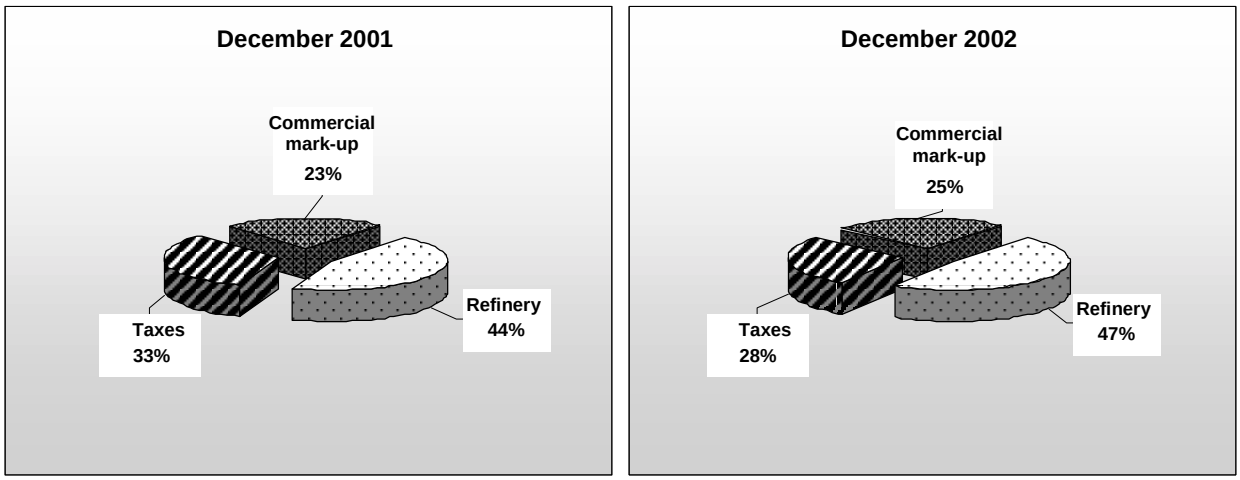
Notes:

- The price of LPG is expressed in guaraníes per kilogramme.
- Final fuel prices are supplied by Petropar.

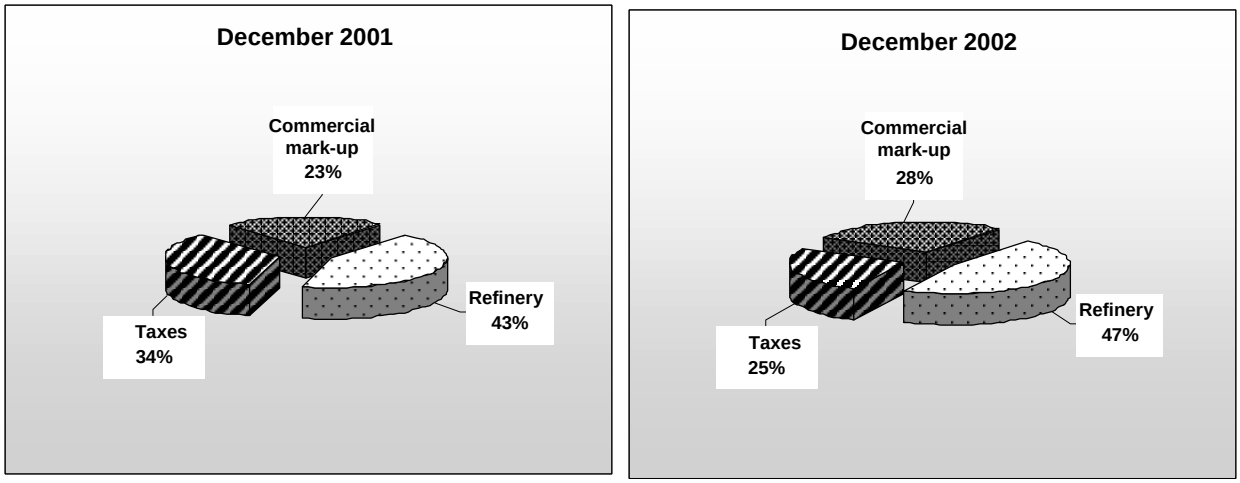
Source: prepared by the authors on the basis of tables A1.75, A1.76 and A1.77

Figure A1.23 Composition of final consumer price, in percentages, Paraguay

(a) Regular gasoline



(b) Premium gasoline



(c) Gas oil

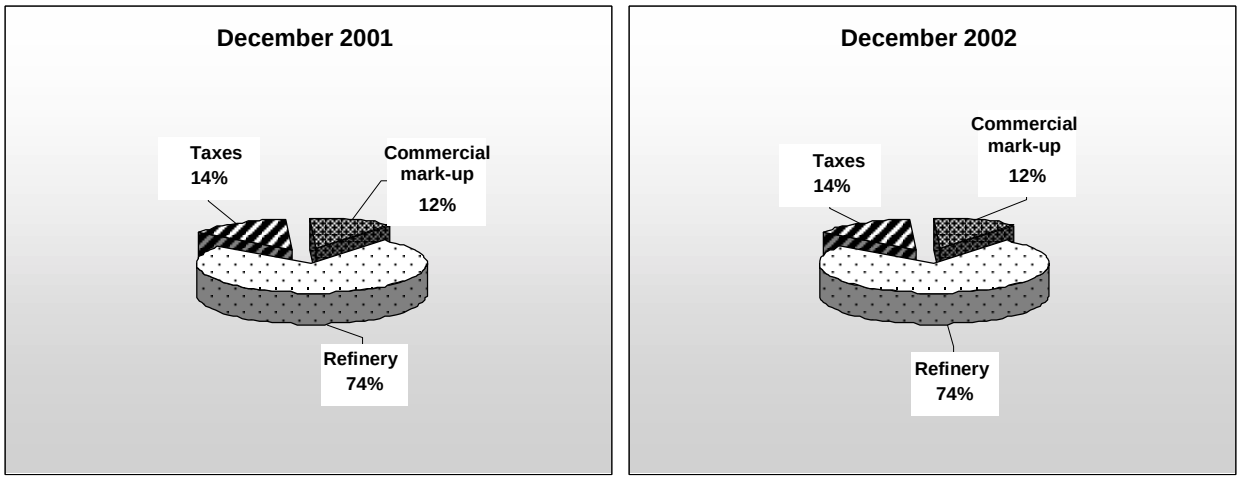
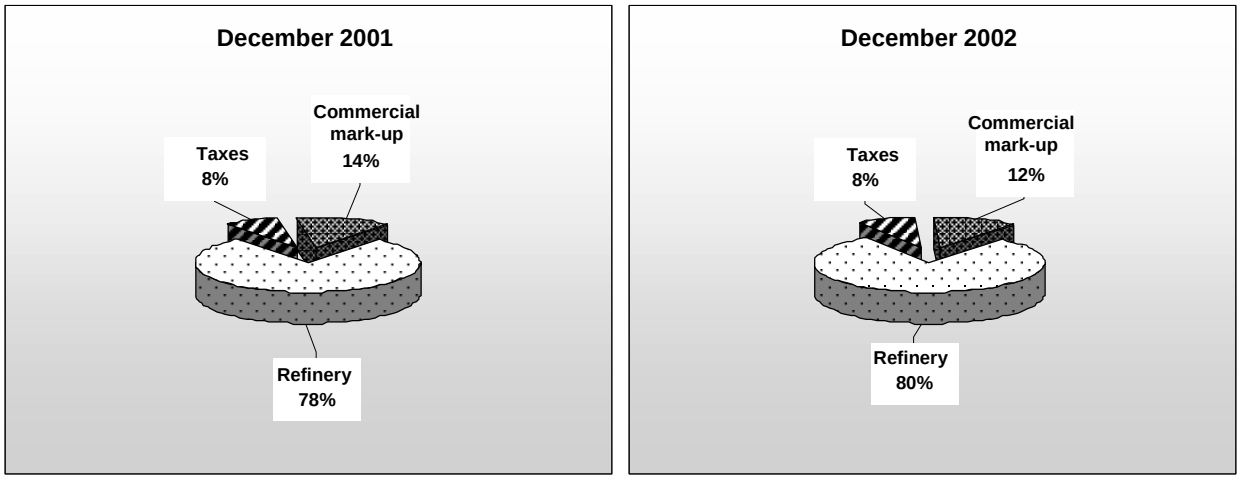
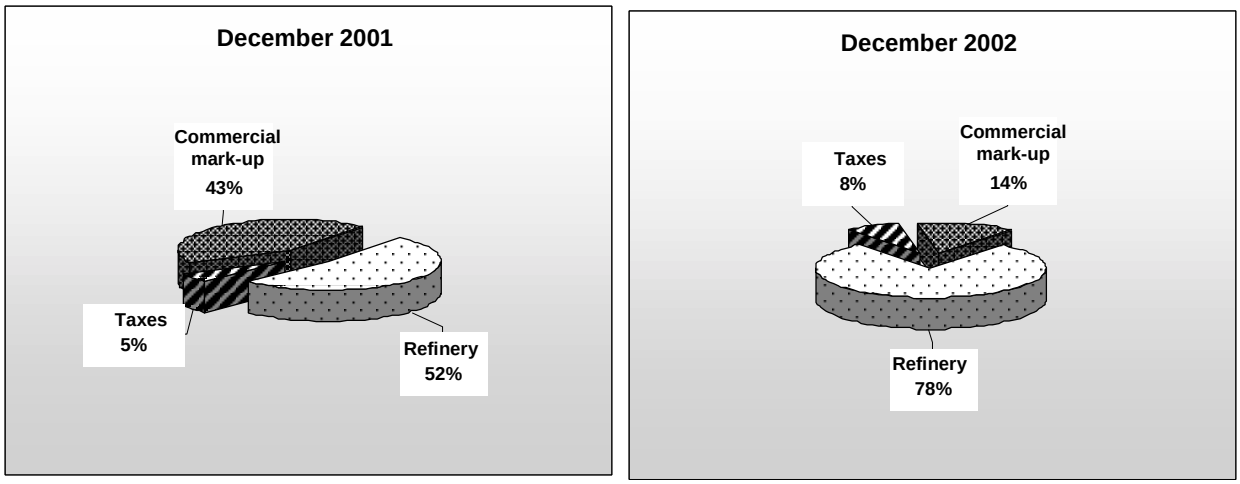


Figure A1.23 Composition of final consumer price, in percentages, Paraguay (continued)

(d) Kerosene



(e) Fuel oil



(f) LPG

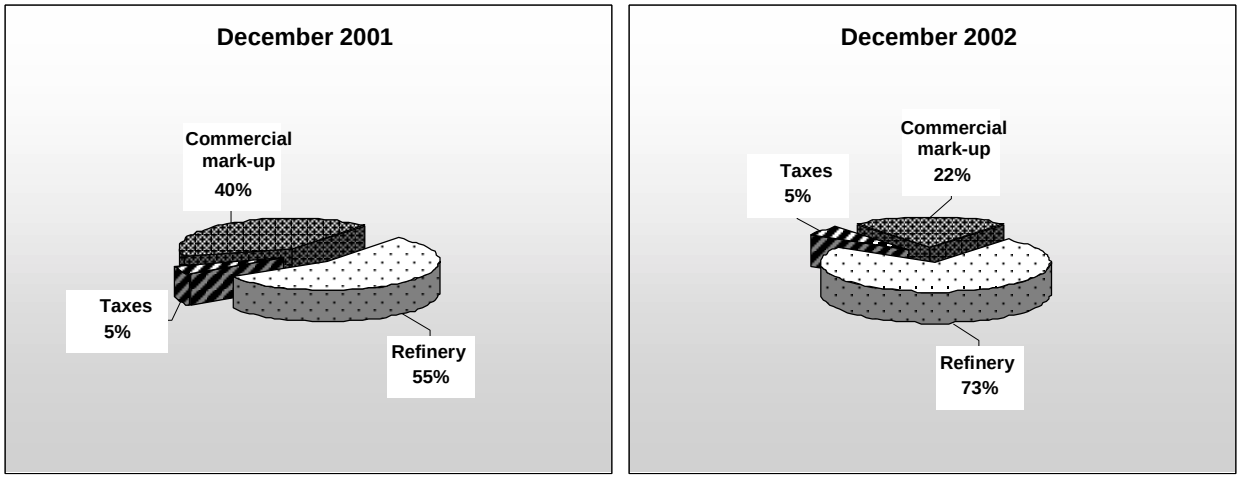
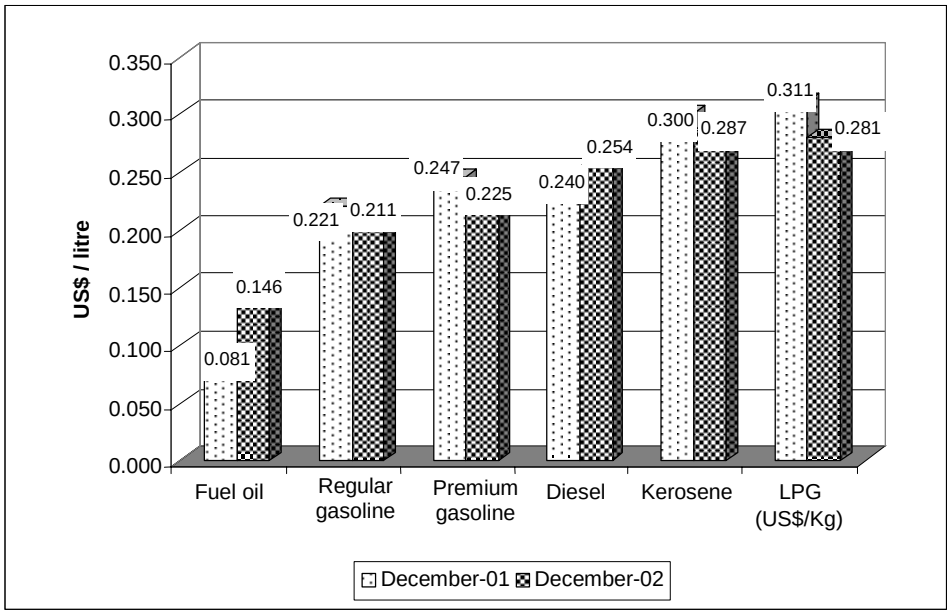


Figure A1.24 Comparison of the components of price structure of petroleum products, Paraguay

(a) Refinery price



(b) Taxes

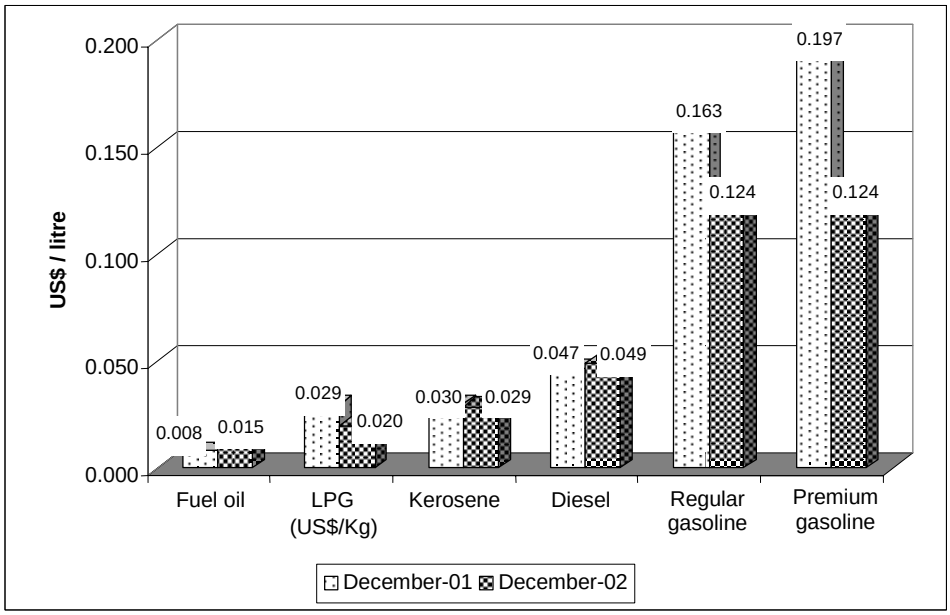
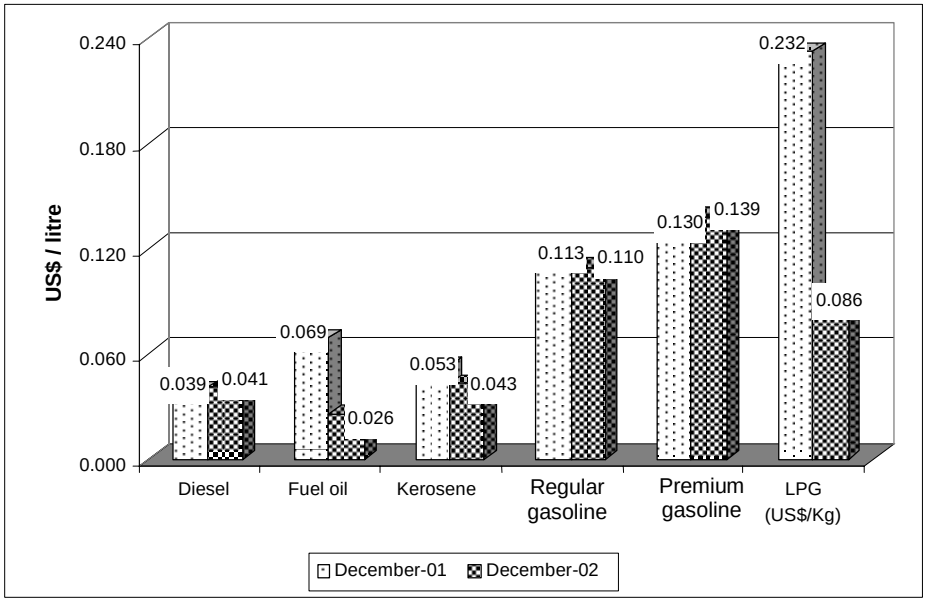


Figure A1.24 Comparison of the components of price structure of petroleum products, Paraguay (continued)

(c) Commercial mark-up



(d) Final price to the public

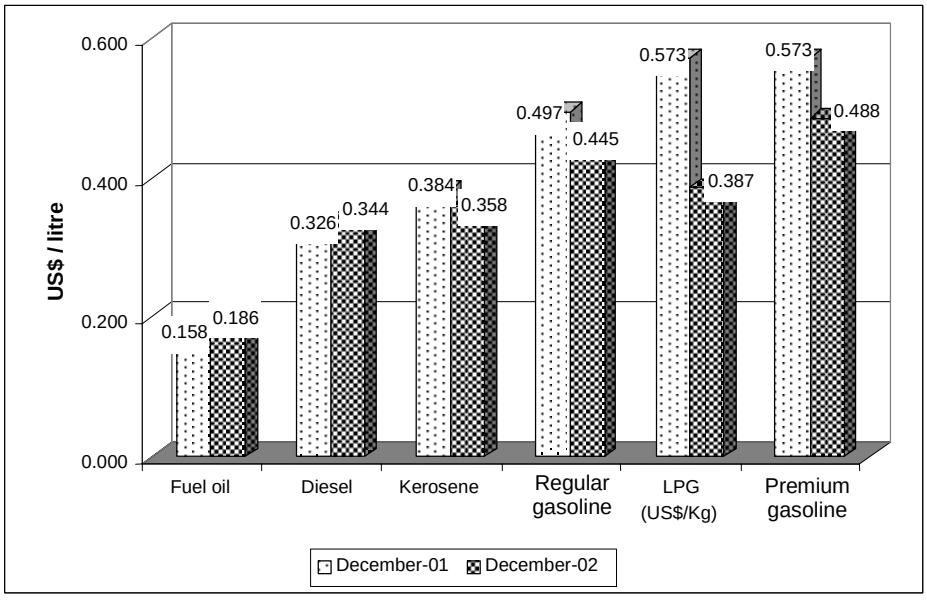
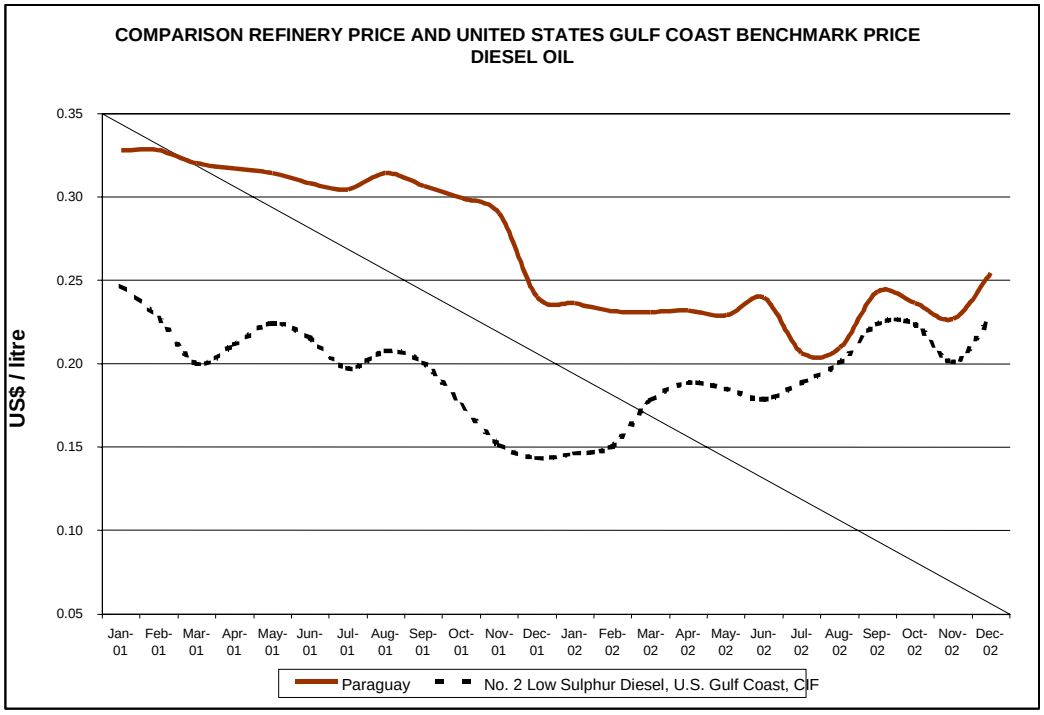


Figure A1.25 Refinery price, diesel, Paraguay



3.4 ANALYSIS OF FUEL PRICE STRUCTURE IN PERU

3.4.1 REGULATION OF PRICE STRUCTURES OF PETROLEUM PRODUCTS

The Organic Hydrocarbons Act (Law 26221, promulgated on 20 August 1993) governs hydrocarbons activities in Peru. Under this legislation, the State promotes hydrocarbons activities, with participation from private investment and on the basis of free competition, in order to enhance human welfare and national development.

Under Law 26221, the Ministry of Energy and Mines is responsible for preparing, approving, proposing and applying sectoral policy, issuing the relevant regulations, and ensuring compliance with the law, which basically translates into functions of regulation, promotion, concession and inspection. Subsequently, Law 26734 created the Energy Investment Supervisory Body (OSINERG), which is attached to the Ministry of Economic Affairs and Finance under Law 27111, and has responsibility for inspection.

Acting through the Ministry of Energy and Mines, the General Hydrocarbons Directorate is required to keep regulations and rules up to date in the light of technological and economic developments. Within its functions of promoting private investment, it provides guidance to investors, users and the public at large, simplifying the procedures and arrangements that are necessarily involved in any investment carried out in an organised country.[45]

Price policy applicable to petroleum product fuels

Since 1990, the development model in Peru has been based on economic freedom, private investment and free competition.

Table A1.79 summarises the price systems applicable to each fuel, disaggregated by component of final consumer price.

Table A1.79 Summary of fuel price system, Peru

Fuel	Refinery price	Taxes	Commercial mark-up
Regular gasoline	Free	Al Rodaje Tax, Selective Consumption Tax (ISC) and General Sales Tax (IGV)	Free
Premium gasoline	Free	Al Rodaje Tax, ISC, IGV	Free
Diesel	Free	ISC, IGV	Free
Kerosene	Free	ISC, IGV	Free
Fuel Oil	Free	IGV	Free
LPG	Free	ISC, IGV	Free

Notes:
- A benchmark price exists in Peru. This is the opportunity cost faced by wholesale distributors of a product imported into the country and placed at the terminal gate for sales in Metropolitan Lima, which any efficient importer with access to a terminal can obtain.
- Regulated: a maximum price is imposed.
- Free: agents are free to determine margins and prices.

Source: prepared by the authors on the basis of data obtained from the Ministry of Energy and Mines.

[45] Ministry of Energy and Mines, General Hydrocarbons Directorate, **www.mem.gob.pe**

3.4.2 TAX BASE

The taxes levied in the fuels market in Peru are as follows:

A. "Al Rodaje" Tax: This is levied on the consumption of fuels used in the automobile transport sector, excluding diesel. The rate charged is 8% on the net ex-refinery price of the fuel.

B. **Selective Consumption Tax (ISC):** This is a differential levy on the consumption of certain fuels, expressed in soles per gallon. The tax was established by Supreme Decree 025-98-EF of 12 March 1997, with fixed amounts set for each type of fuel. Supreme Decree 212-2001-EF, dated 2 November 2001, amended the ISC rates; and a further amendment was made on 24 November through Supreme Decree 218-2001-EF.

C. **General Sales Tax (IGV):** This is a general tax on consumption, levied on movable assets, merchandise imports, provision or use of services within the country, and so forth. It is levied at a general rate of 18%.

3.4.3 METHODOLOGY USED TO CALCULATE THE COMPONENTS OF PETROLEUM PRODUCT PRICE STRUCTURE

The mechanism used to calculate each of the components is set out below.

3.4.3.1 Refinery price

Each month, the Marketing Management department of Petroperú issues the prices of petroleum products net at the various plants.[46] As well, the Ministry of Energy and Mines of Peru publishes the price structure of the different fuels on its web site. Table A1.80 shows the refinery prices of different fuels.

Table A1.80 Refinery price, Peru ((New soles per gallon) (NS / gallon))

Fuel	Regular gasoline	Premium gasoline	Diesel	Kerosene	Fuel oil	LPG NS / Kg.
December 2001	2.49	2.73	2.24	2.47	1.74	0.95
December 2002	3.17	3.66	3.15	3.36	2.61	1.29

Source: Ministry of Energy and Mines of Peru – Upstream–Downstream Monthly Report on Hydrocarbons Activities December 2001 and 2002, www.mem.gob.pe

3.4.3.2 Taxes

Once the refinery price is defined, *rodaje* tax must be added, at a rate of 8% on producer income. Table A1.81 shows this tax for the different fuels.

[46] www.petroperu.com

Table A1- 81 *Al Rodaje tax*, Peru (NS / gallon)

Fuel	Regular gasoline	Premium gasoline	Diesel	Kerosene	Fuel oil	LPG NS / Kg.
December 2001	0.20	0.22	Not levied	Not levied	Not levied	Not levied
December 2002	0.25	0.29	Not levied	Not levied	Not levied	Not levied

Source: Ministry of Energy and Mines of Peru – Referential Hydrocarbons Plan 2002.

Next, the Selective Consumption Tax is added (a fixed tax). This is added to the refinery price plus *rodaje* tax. Table A1-82 shows this tax for the different fuels.

Table A1.82 Selective Consumption Tax, Peru (NS / gallon)

Fuel	Regular gasoline	Premium gasoline	Diesel	Kerosene	Fuel oil	LPG NS / Kg.
December 2001	2.46	3.32	2.07	0.78	Not levied	0.23
December 2002	2.76	3.82	2.19	1.58	Not levied	0.27

Source: Ministry of Energy and Mines of Peru – Referential Hydrocarbons Plan 2002.

Lastly, value-added tax is added at the general rate of 18%, over the sum of the refinery price, *rodaje* tax and selective consumption tax. Table A1.83 shows VAT on the different fuels.

Table A1.83 Value-added tax, Peru (NS / gallon)

Fuel	Regular gasoline	Premium gasoline	Diesel	Kerosene	Fuel oil	LPG NS / Kg.
December 2001	0.93	1.13	0.78	0.59	0.31	0.21
December 2002	1.11	1.40	0.96	0.89	0.47	0.28

Source: prepared by the authors.

The sum of *rodaje* tax, plus the selective consumption tax and VAT gives total taxes.

Table A1.84 Total taxes, Peru (NS / gallon)

Fuel	Regular gasoline	Premium gasoline	Diesel	Kerosene	Fuel oil	LPG NS / Kg.
December 2001	3.59	4.67	2.85	1.37	0.31	0.44
December 2002	4.12	5.51	3.15	2.47	0.47	0.55

Source: Tables A1.81, A1.82 and A1.83.

3.4.3.3 Commercial mark-ups

Commercial mark-ups are free in Peru, and are published by the Ministry of Energy and Mines, corresponding to estimates conducted by the General Hydrocarbons Directorate (DGH). The margin includes general sales tax. It encompasses the wholesale and retail margins, as shown in table A1.85 for the different fuels.

Table A1- 85: Commercial mark-ups, (NS / gallon)

Fuel	Regular gasoline	Premium gasoline	Diesel	Kerosene	Fuel oil	LPG NS / Kg.
December 2001	0.88	1.54	0.84	1.89	0	1.35
December 2002	0.74	1.24	0.56	1.06	0	1.21

Source: Ministry of Energy and Mines of Peru – Upstream–Downstream Monthly Report on Hydrocarbons Activities December 2001 and 2002, www.mem.gob.pe

3.4.3.4 Final consumer price

Lastly, the sum of the three components –refinery price (Table A1.80), total taxes (Table A1.84) and commercial mark-up (Table A1.85)–gives the prices of petroleum products, as shown in Table A1.86.

Table A1.86 Final consumer prices, Lima, December 2001 (NS / gallon)

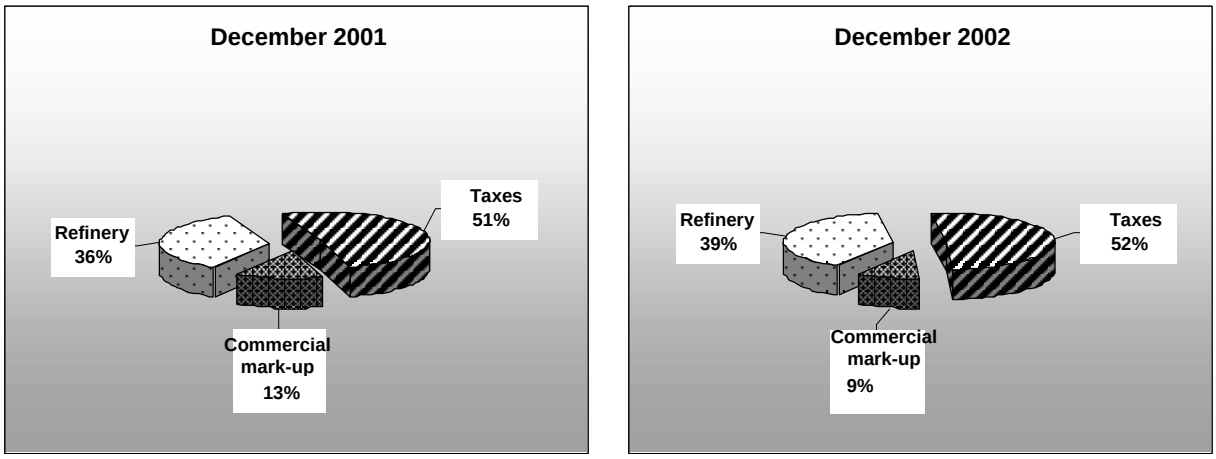
Fuel	Refinery price (1)	TAXES				Plant price (1+2)	Commercial mark-up (3)	Price to the public (4)=(1+2+3)
		Rodaje	Selective consumption	VAT	Total (2)			
December 2001								
Regular gasoline	2.49	0.20	2.46	0.93	3.59	6.08	0.88	6.96
Premium gasoline	2.73	0.22	3.32	1.13	4.67	7.40	1.54	8.94
Diesel	2.24	0	2.07	0.78	2.85	5.09	0.84	5.93
Kerosene	2.47	0	0.78	0.59	1.37	3.84	1.89	5.73
Fuel oil	1.74	0	0	0.31	0.31	2.05	0	
LPG 24-lbs cylinder.	0.95	0	0.23	0.21	0.44	1.39	1.35	2.74
December 2002								
Regular gasoline	3.17	0.25	2.76	1.11	4.12	7.29	0.74	8.03
Premium gasoline	3.66	0.29	3.82	1.40	5.51	9.17	1.24	10.41
Diesel	3.15	0	2.19	0.96	3.15	6.30	0.56	6.86
Kerosene	3.36	0	1.58	0.89	2.47	5.83	1.06	6.89
Fuel oil	2.61	0	0	0.47	0.47	3.08	0	
LPG 24-lbs cylinder	1.29	0	0.27	0.28	0.55	1.84	1.21	3.05

Notes:
- Plant price corresponds to price at the Callao plant.
- The price of LPG is expressed in new soles per kilogramme.
- Final consumer prices come from the National Institute of Statistics and Informatics (INEI).

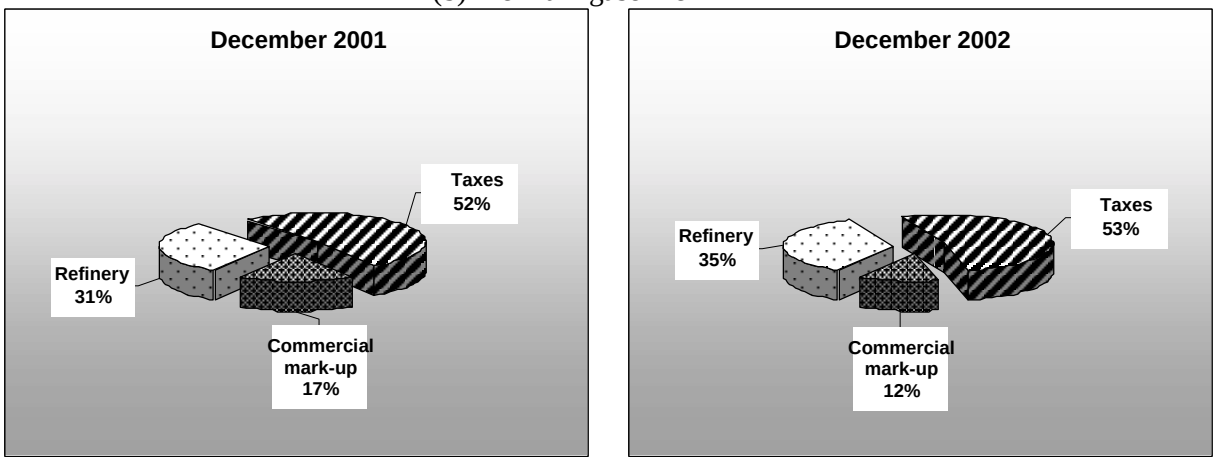
Source: prepared by the authors on the basis of Tables A1.2, A1.3, A1.4, A1.5, and A1.7

Figure A1.26 Composition of final consumer price, in percentages, Peru

(a) Regular gasoline



(b) Premium gasoline



(c) Diesel oil

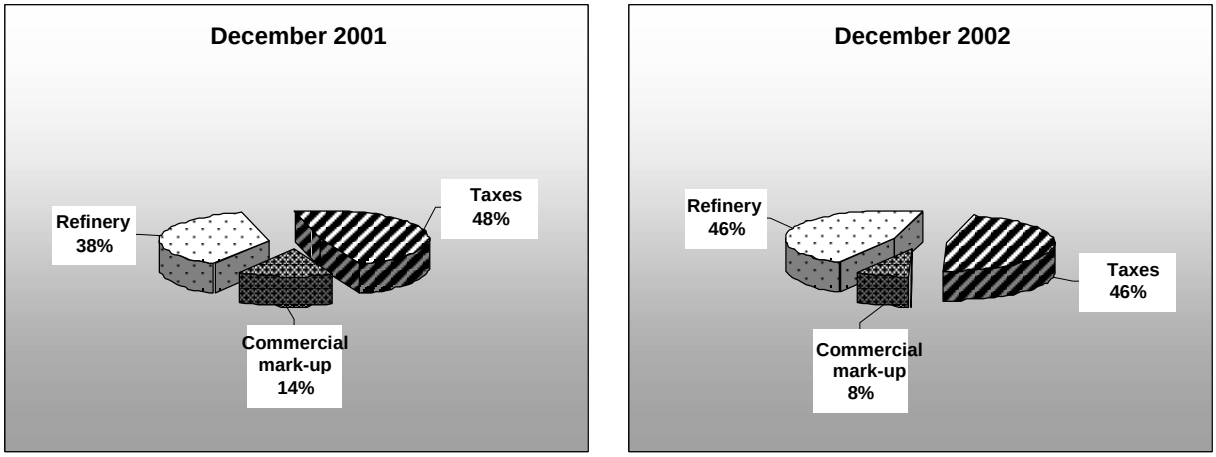
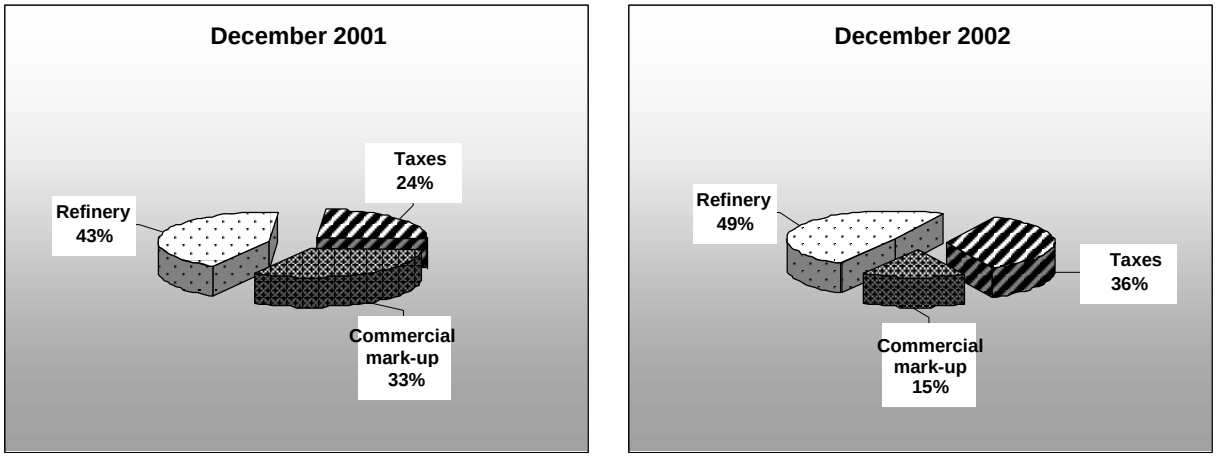
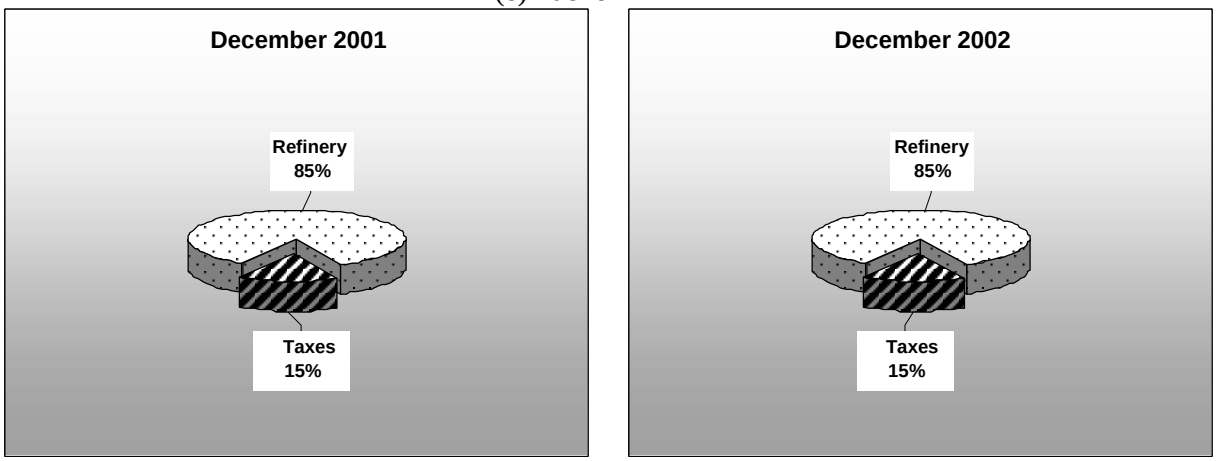


Figure A1.26 Composition of final consumer price, in percentages, Peru (continued)

(d) Kerosene



(e) Fuel oil



(f) Liquid Petroleum Gas

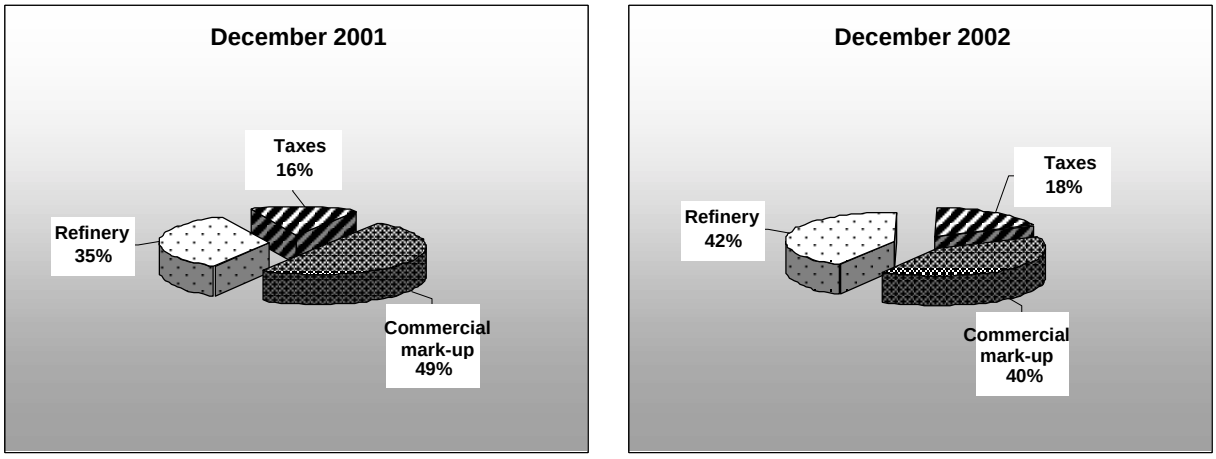
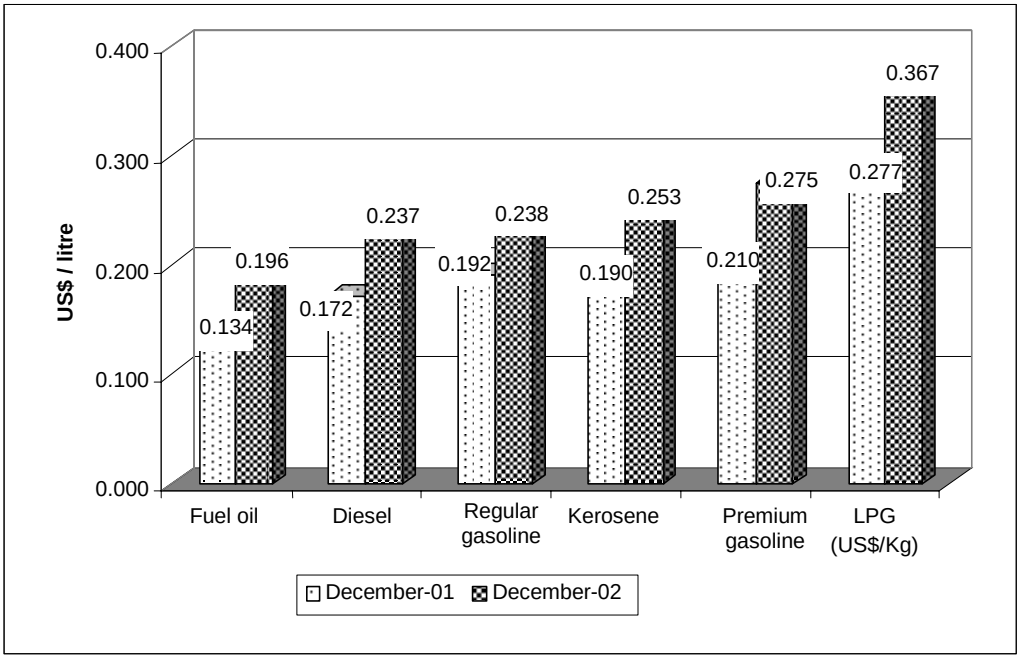


Figure A1.27 Comparison of the components of price structure of petroleum products, Peru

(a) Refinery price



(b) Taxes

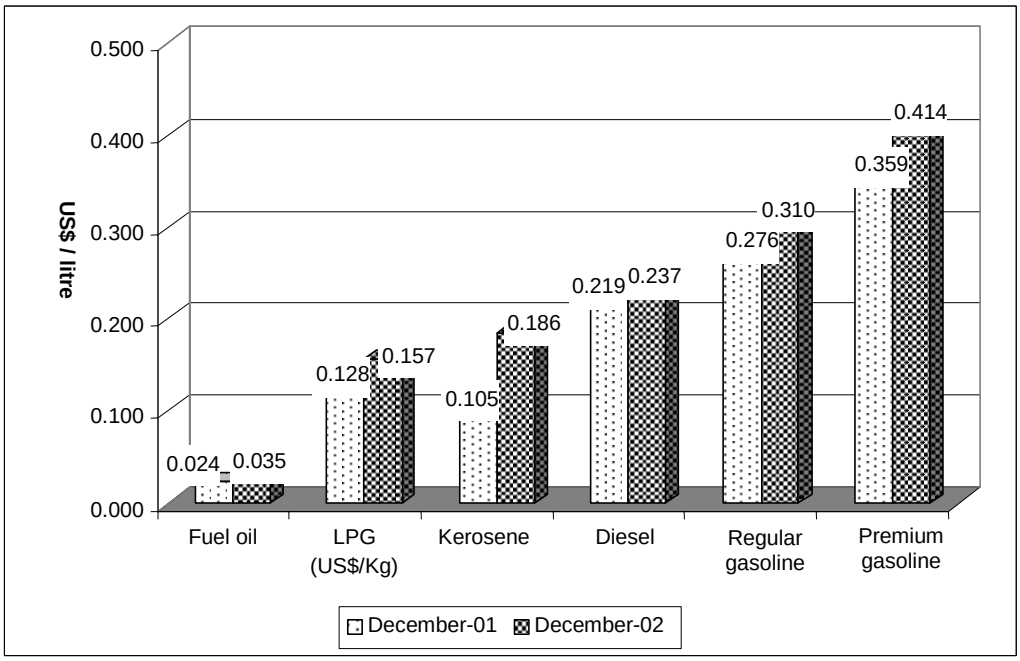
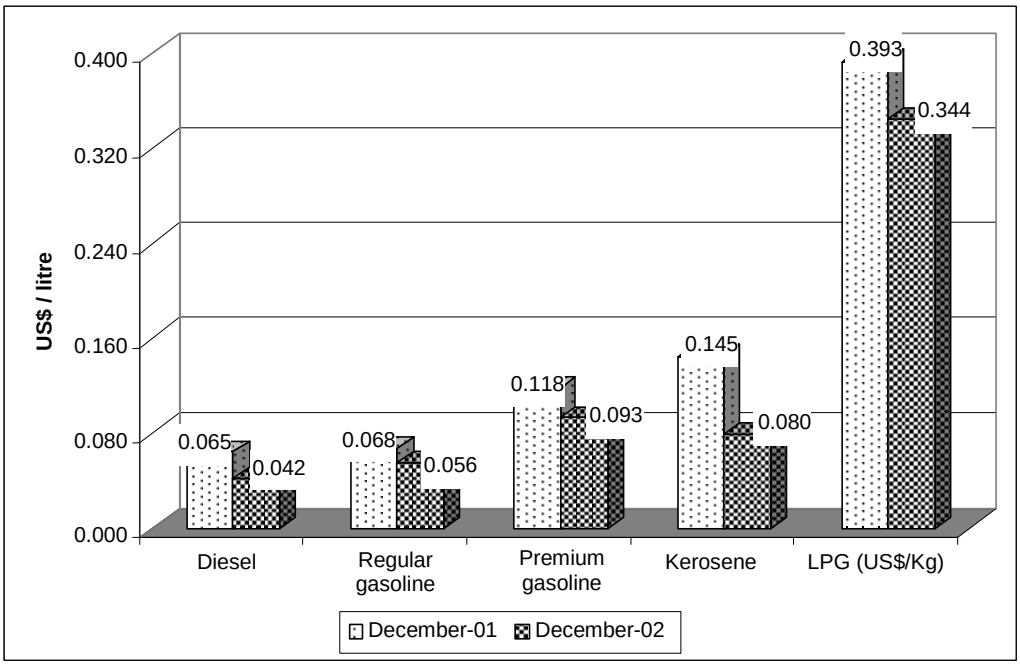


Figure A1.27 Comparison of the components of price structure of petroleum products, Peru (continued)

(c) Commercial mark-up



(d) Final price to the public

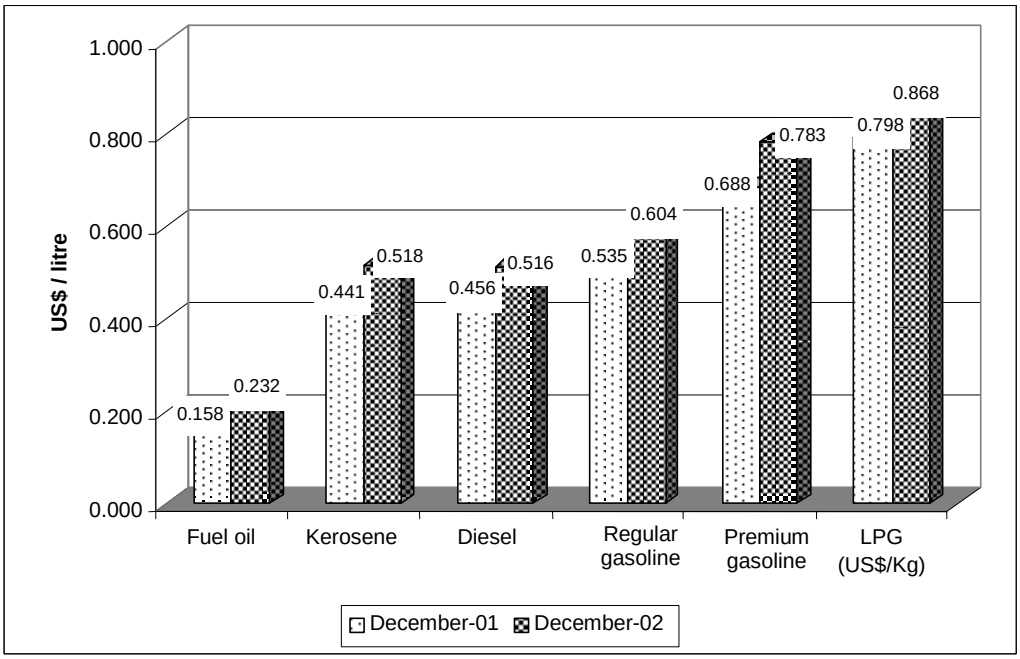
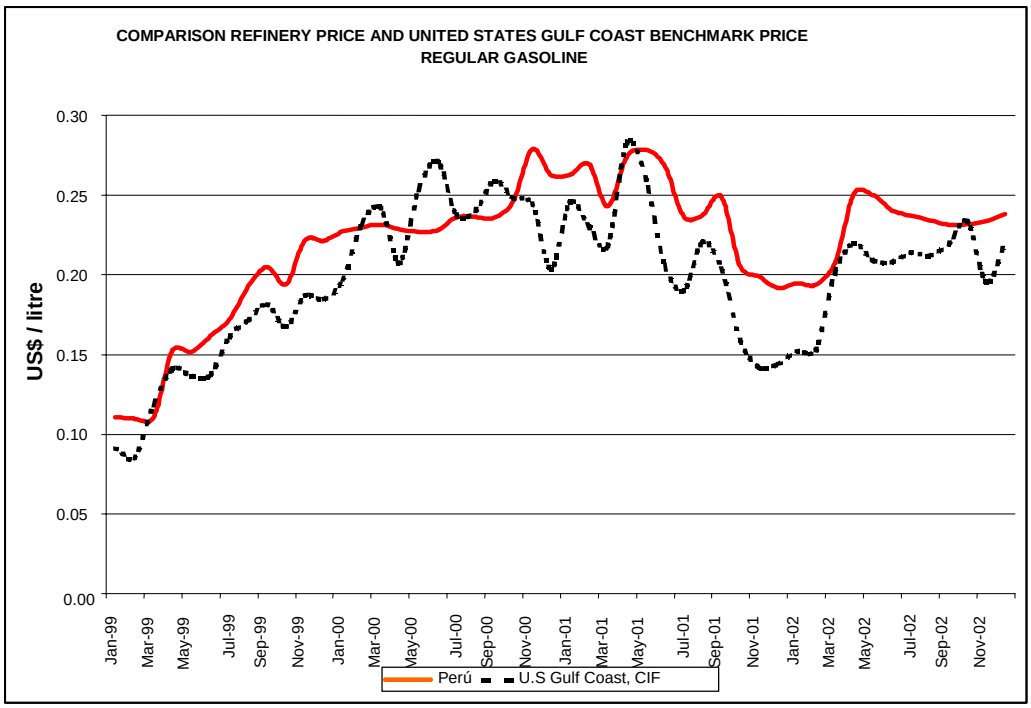
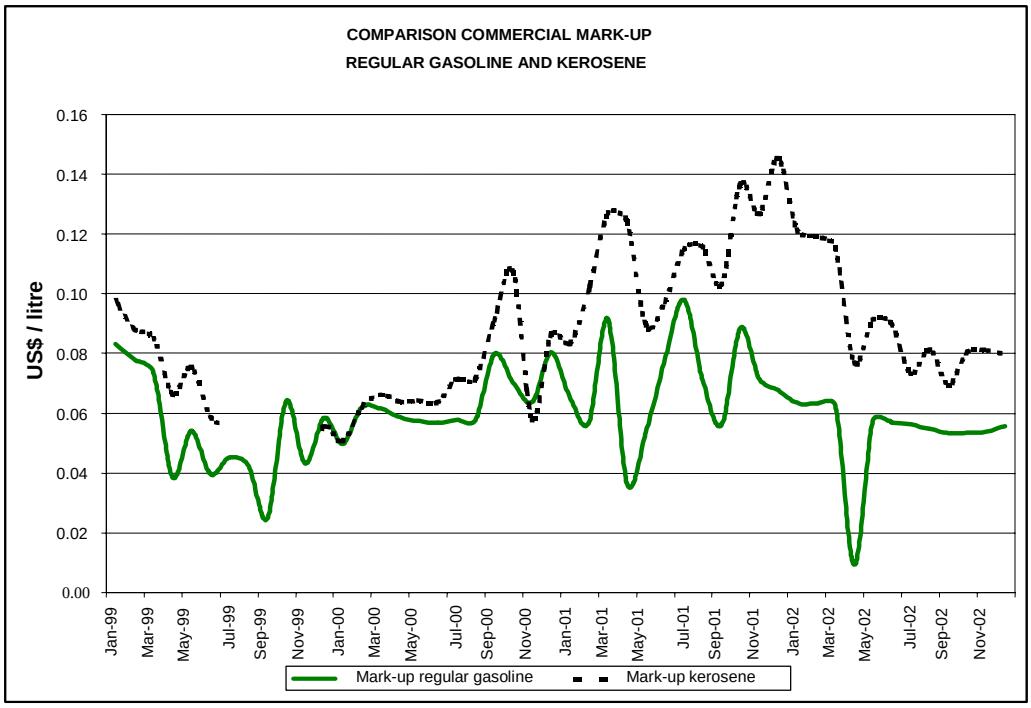


Figure A1.28 Selected comparisons, Peru

(a) Refinery prices, regular gasoline



(b) Commercial mark-ups



3.5 ANALYSIS OF FUEL PRICE STRUCTURE IN URUGUAY

3.5.1 REGULATION OF PRICE STRUCTURES OF PETROLEUM PRODUCTS

The government body responsible for preparing and implementing energy policy is the Ministry of Industry, Energy and Mining (MIEM), specifically the National Energy Office (DNE).

As Uruguay is not an oil-producing country, it has to import all the crude oil it consumes. The State enterprise National Fuels, Alcohol and Portland Administration (ANCAP) was created by Law 8764 in October 1931, and holds a monopoly on importation and refining of crude oil and petroleum products.

In January 2002, Law 17.448 abolished the monopoly on crude-oil import, export and refining activities, and authorised ANCAP to enter partnerships with the private sector.

At present, five firms participate in the distribution of liquid hydrocarbons (Ducsa, Dikamsa, Esso, Shell and Texaco) and three in liquid gases (Acodike, Riogas and Gasur).

The key objectives of such associations are to obtain (pre-tax) ex-refinery prices similar to the import parity price, and to maintain refining activity in the country.

Price policy applicable to petroleum product fuels

The pricing policy in place in Uruguay is established by ANCAP subject to prior authorisation from the Government. It sets all prices along the commercial chain. A single price is used throughout the country, and there is no law or regulatory framework for petroleum products.[47] Table A1.87 summarises the price systems applicable to each fuel, disaggregated by component of final consumer price.

Table A1.87 Summary of fuel price system, Uruguay

Fuel	Refinery price	Taxes	Commercial mark-up
Regular gasoline	Regulated	Specific Domestic Tax (IMESI)	Regulated
Premium gasoline	Regulated	IMESI	Regulated
Diesel	Regulated	IMESI	Regulated
Kerosene	Regulated	IMESI	Regulated
Fuel Oil	Regulated	Value Added Tax	Regulated
LPG	Regulated	VAT	Regulated

Notes:
- Regulated: a maximum price is imposed.
- Free: agents are free to determine margins and prices.

Source: prepared by the authors on the basis of data obtained from the National Energy Office of Uruguay (DNE).

3.5.2 TAX BASE

The taxes levied on fuels are as follows:

[47] Presentation by Álvaro Suárez, ANCAP Uruguay, International Seminar on Fuel Prices in Latin America: Impact on the Economy and the Environment, Santiago, Chile, 3-4 December 2002.

A. Specific Domestic Tax (IMESI): This is levied on sales or imports of a specific group of products, as established in the Ordered Text of 1996.[48]

The tax levied on fuels and other petroleum products is set by the Government with rates varying between 24% and 133% of the sale price. The revenue generated by IMESI is distributed on a percentage basis among the Ministry of Transport and Public Works (MTOP); general revenues (general national accounts); local governments (municipalities); and the MTOP Fund.

Table A1.88 Specific Domestic Tax ((Uruguayan pesos per litre) (U$/litre))

Petroleum products	February 2001	February 2002	February 2003
Unleaded gasoline	9.449	9.756	12.287
Premium gasoline	9.078	9.373	11.804
Regular gasoline	7.650	7.898	9.947
Kerosene	1.668	1.722	2.169
Diesel	1.691	1.746	2.199

Source: National Energy Department of Uruguay.

B. Value Added Tax: This is levied on domestic merchandise sales, the provision of services within the national territory and importation of merchandise into the country. The general rate is 23%. Sales of petroleum-based fuels, other than fuel oil and LPG, are VAT-exempt.

3.5.3 METHODOLOGY USED TO CALCULATE THE COMPONENTS OF PETROLEUM PRODUCT PRICE STRUCTURE

The mechanism used to calculate each of the components is set out below.

3.5.3.1 Refinery price

The refinery price corresponds to the price at the ANCAP refinery gate. Table A1.89 shows the refinery price of different fuels.

Table A1.89 Refinery price, Uruguay (U$ / litre)

Fuel	Regular gasoline	Premium gasoline	Diesel	Kerosene	Fuel oil	LPG U$ / Kg.
December 2001	4.86	5.23	3.52	4.62	1.70	4.71
December 2002	9.68	10.31	6.91	8.10	2.72	7.72

Source: National Energy Department of Uruguay.

3.5.3.2 Taxes

To the refinery price must be added the Specific Domestic Tax (IMESI), as shown in table A1.90 for the different fuels.

[48] Ministry of Economic Affairs and Finance, General Taxation Office, **http://www.dgi.gub.uy/**

Table A1- 90: Specific Domestic Tax, Uruguay (U$ / litre)

Fuel	Regular gasoline	Premium gasoline	Diesel	Kerosene	Fuel oil	LPG U$ / Kg.
December 2001	7.65	9.08	1.69	1.67	Not levied	Not levied
December 2002	7.90	9.37	1.75	1.72	Not levied	Not levied

Source: National Energy Department of Uruguay.

Lastly, the value-added tax (VAT) is added at the general rate of 23%, over the sum of the refinery price and the commercial mark-up. Table A1.91 shows VAT levied on fuels, except for gasoline, diesel and kerosene.

Table A1.91 Value-added tax, Uruguay (U$ / litre)

Fuel	Regular gasoline	Premium gasoline	Diesel	Kerosene	Fuel oil	LPG U$ / Kg.
December 2001	Not levied	Not levied	Not levied	Not levied	0.41	1.91
December 2002	Not levied	Not levied	Not levied	Not levied	0.65	2.95

Source: National Energy Department of Uruguay.

The sum of IMESI plus VAT gives the amount of total taxes.

Table A1.92 Total taxes, Uruguay (U$ / litre)

Fuel	Regular gasoline	Premium gasoline	Diesel	Kerosene	Fuel oil	LPG U$ / Kg.
December 2001	7.65	9.08	1.69	1.67	0.41	1.91
December 2002	7.90	9.37	1.75	1.72	0.65	2.95

Source: prepared by the authors.

3.5.3.3 Commercial mark-ups

Commercial mark-ups are regulated by ANCAP, and the values were obtained from the National Energy Department of Uruguay. These figures, which include the wholesale and retail margins, are set out in table A1.93 for the different fuels.

Table A1.93 Commercial mark-ups, Uruguay (U$ / litre)

Fuel	Regular gasoline	Premium gasoline	Diesel	Kerosene	Fuel oil	LPG U$ / Kg.
December 2001	1.30	1.30	0.99	0.79	0.09	3.61
December 2002	1.62	1.62	1.24	0.98	0.10	5.11

Note:
- Kerosene carries a margin of US$0.34 for retailers, but according to ANCAP this is not applied as retail sales of kerosene are virtually non-existent. No information was available on the wholesale margin for fuel oil.

Source: National Energy Department of Uruguay.

3.5.3.4 Final consumer price

Lastly, the sum of the three components –refinery price (table A1-89), total taxes (Table A1.92) and commercial mark-up (Table A1.93) – gives the prices of petroleum products, as shown in Table A1.94.

Table A1.94 Final consumer prices, Montevideo (U$ / litre)

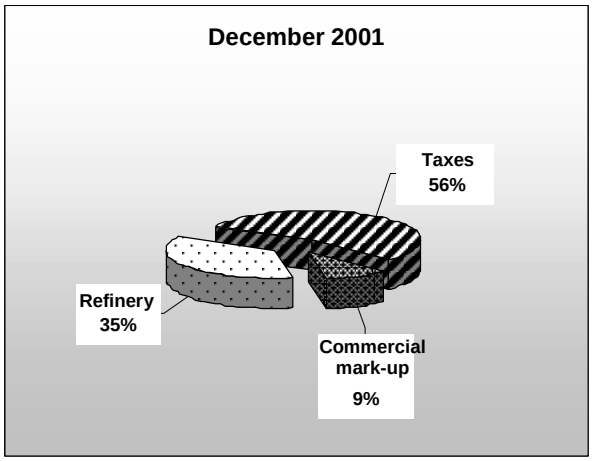
Fuel	Refinery price (1)	TAXES			Wholesale price (1+2)	Commercial mark-up (3)	Price to the public (4)= (1+2+3)
		IMESI	VAT	Total (2)			
December 2001							
Regular gasoline	4.86	7.65	0	7.65	12.51	1.30	13.81
Premium gasoline	5.23	9.08	0	9.08	14.31	1.30	15.61
Diesel	3.52	1.69	0	1.69	5.21	0.99	6.20
Kerosene	4.62	1.67	0	1.67	6.29	0.79	7.08
Fuel oil	1.70	0	0.41	0.41	2.11	0.09	2.20
LPG (*)	4.71	0	1.91	1.91	6.62	3.61	10.23
December 2002							
Regular gasoline	9.68	7.90	0	7.90	17.58	1.62	19.20
Premium gasoline	10.31	9.37	0	9.37	19.68	1.62	21.30
Diesel	6.91	1.75	0	1.75	8.66	1.24	9.90
Kerosene	8.10	1.72	0	1.72	9.82	0.98	10.80
Fuel oil	2.72	0	0.65	0.65	3.37	0.10	3.47
LPG (*)	7.72	0	2.95	2.95	10.67	5.11	15.78

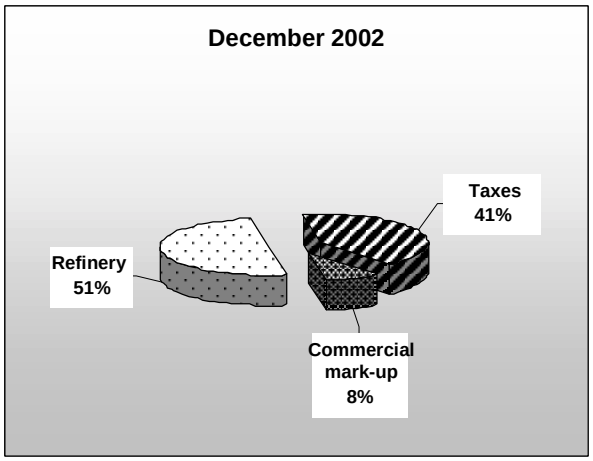
Notes:
- The final price of LPG is expressed in Uruguayan pesos per kilogramme.
- Final fuel prices are provided by the National Energy Department of Uruguay.

Source: prepared by the authors on the basis of tables A1.2, A1.3, A1.4 and A1.6

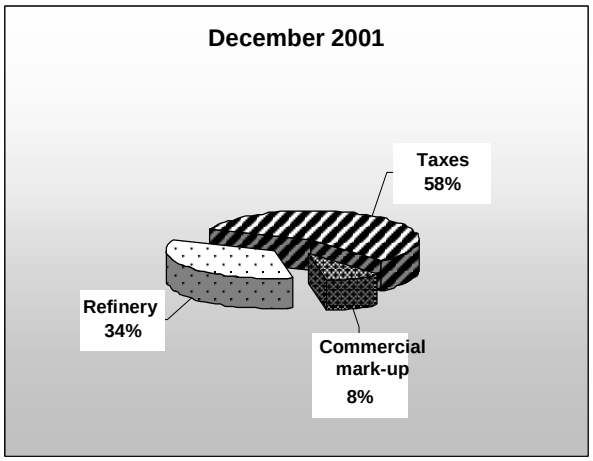
Figure A1.29 Composition of final consumer price, in percentages, Uruguay

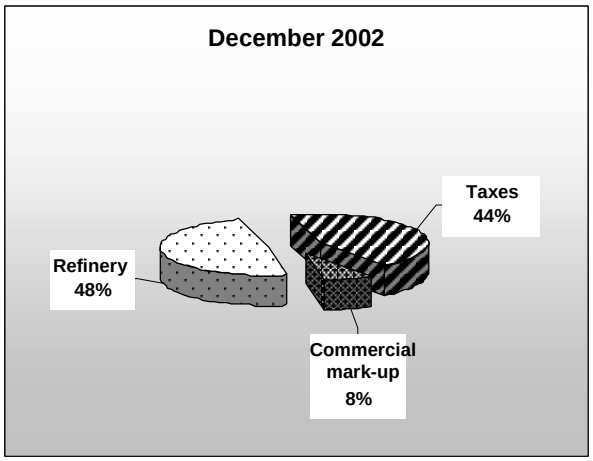
(a) Regular gasoline



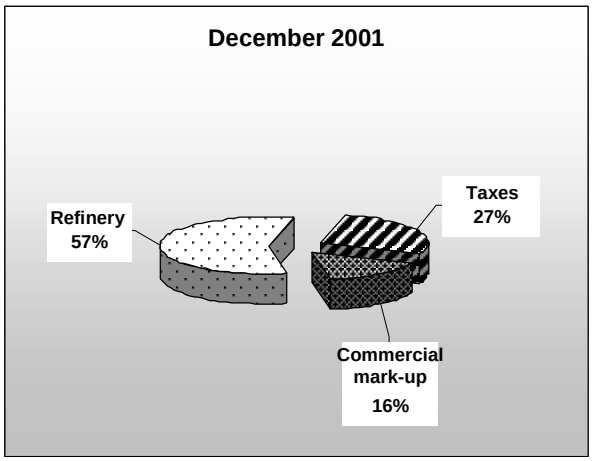


(b) Premium gasoline





(c) Diesel



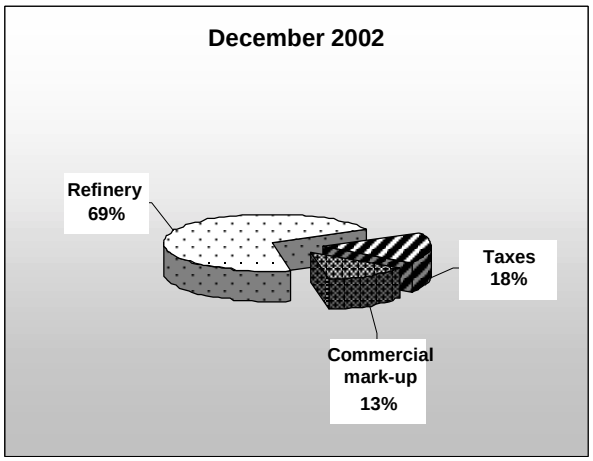
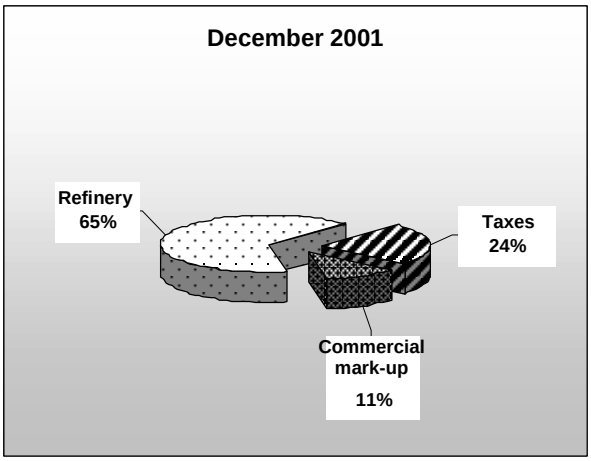
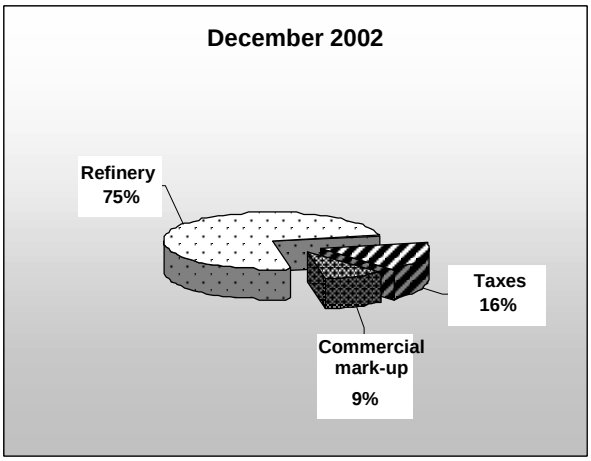


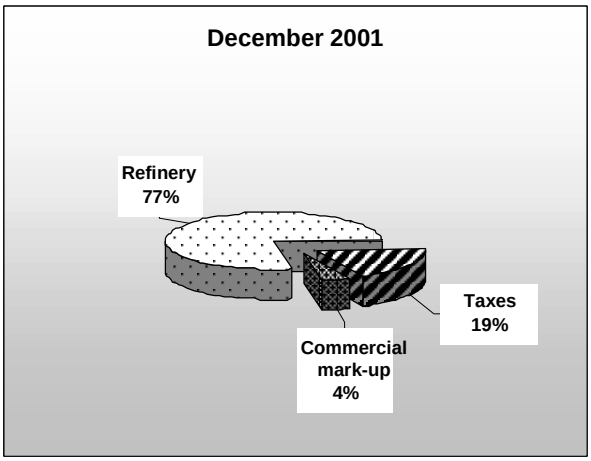
Figure A1.29 Composition of final consumer price, in percentages, Uruguay (continued)

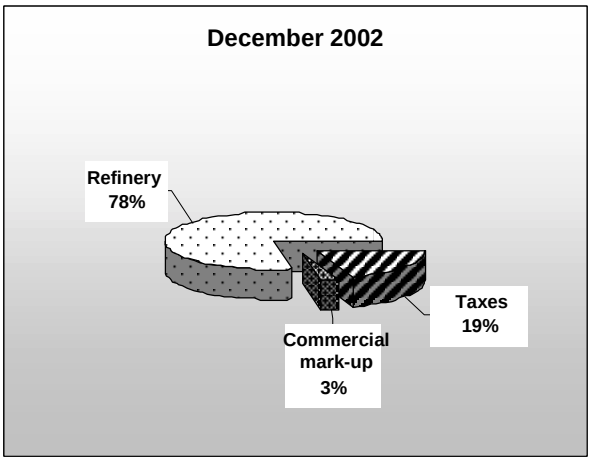
(d) Kerosene



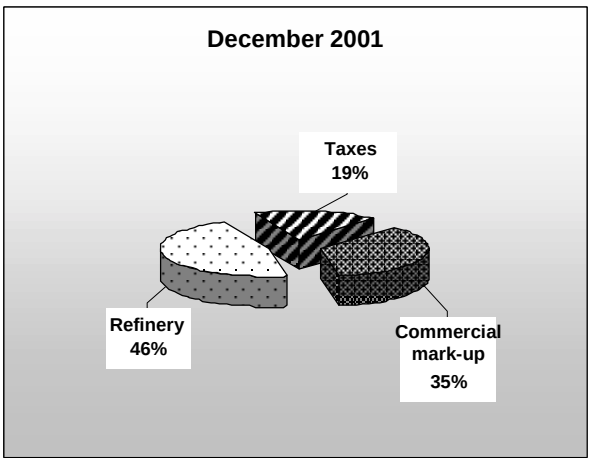


(e) Fuel oil





(f) Liquid Petroleum Gas



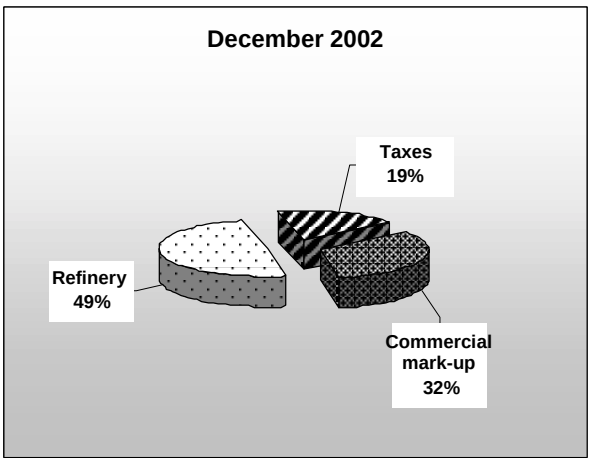
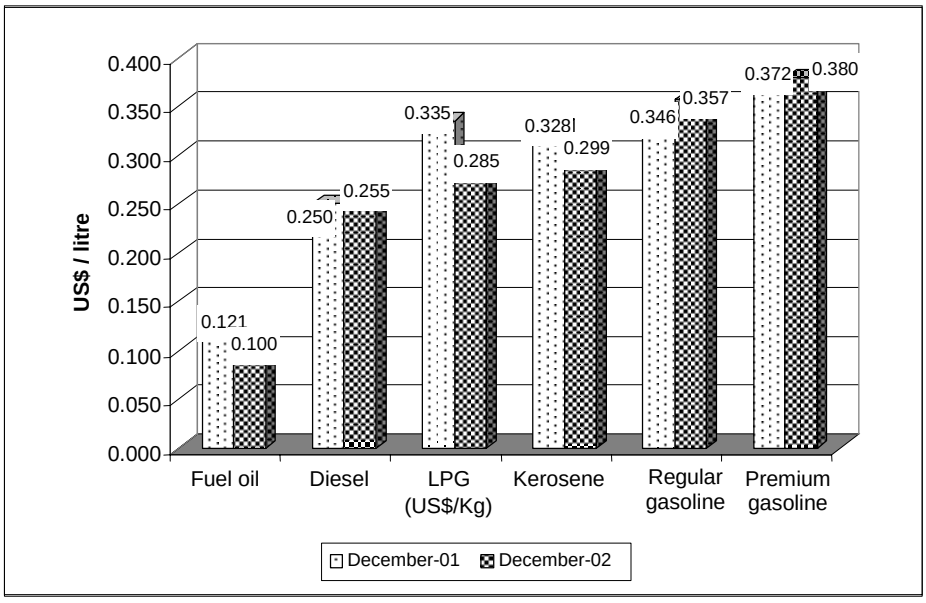


Figure A1.30 Comparison of the components of price structure of petroleum products, Uruguay

(a) Refinery price



(b) Taxes

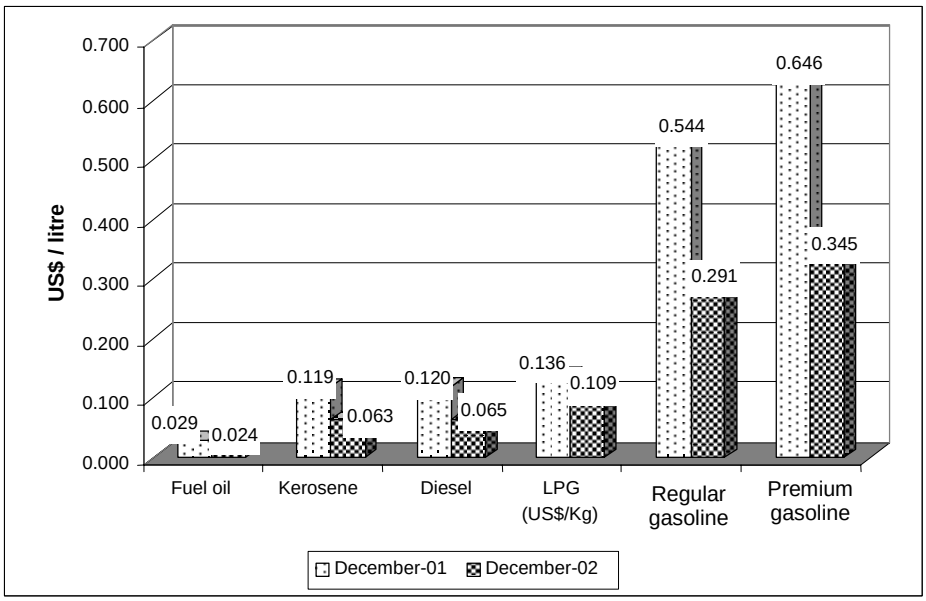
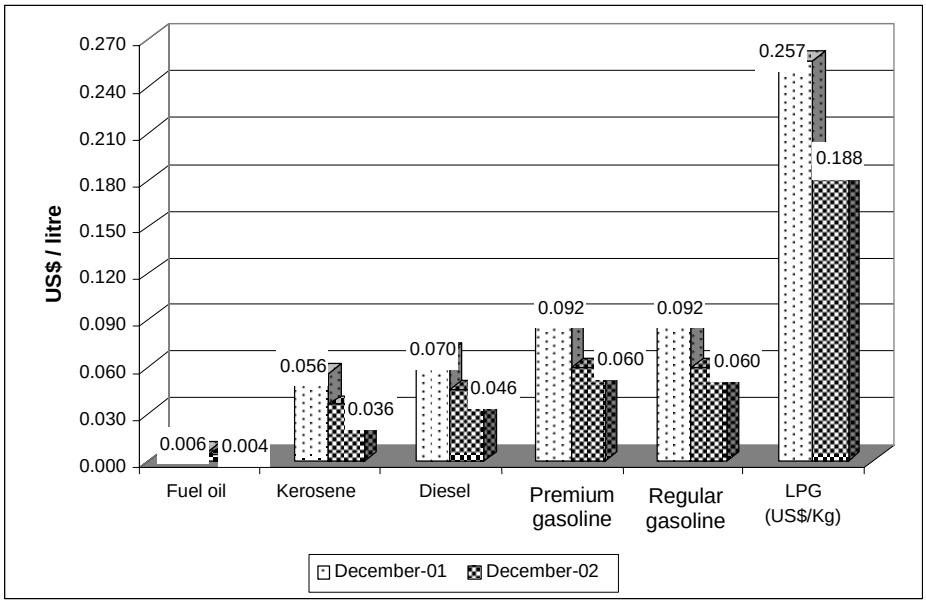


Figure A1.30 Comparison of the components of price structure of petroleum products, Uruguay (continued)

(c) Commercial mark-up



(d) Final price to the public

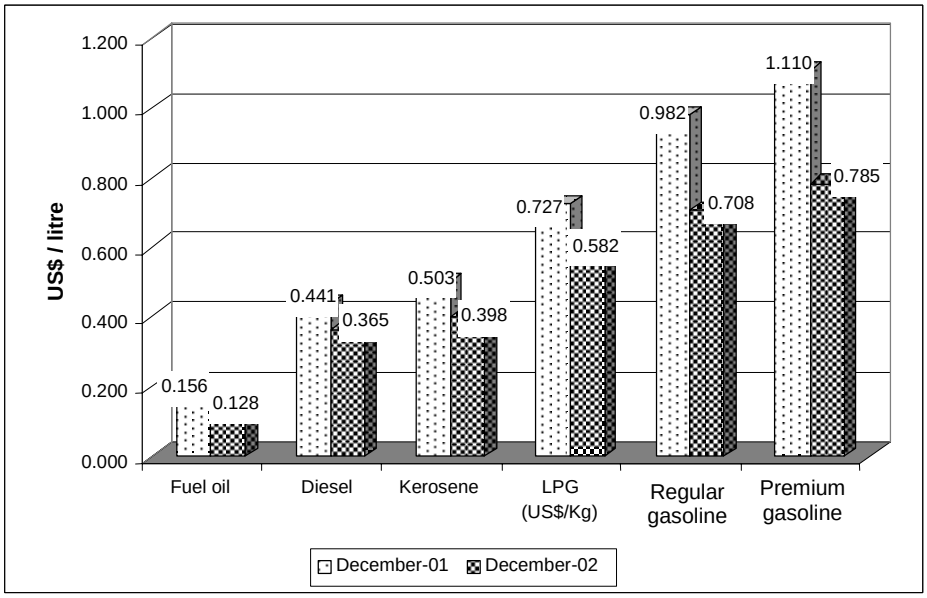


Figure A1.31 Refinery prices, regular gasoline, Uruguay