

Adopting gasoline prices policy: Why is it easier for Brazil than China?

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Introduction

With the rise in oil prices since 2003, it has become urgent for a lot of countries, even if for a limited period, to adopt pricing policies for oil products, particularly for gasoline and diesel, in order to fix their domestic prices at levels below those prevalent on the international market. The purpose of these policies is to mitigate inflationary pressures and, therefore, to prevent the emergence of popular dissatisfaction, especially in a context also characterized by the rise in food prices.

It is true that the subsidy on fuel prices is not a recent phenomenon. Over the past decades, several countries, particularly the oil exporters, have been setting domestic fuel prices in line with the cost of extraction and not with the international prices. With the rise in the oil prices over the last decade, the opportunity cost of such policies has increased for exporting countries. On the other hand, several other countries have been compelled to adopt fuel pricing policies, given the strategic nature of this energy input to the economic performance and its inflationary impacts.

Nevertheless, the adoption of a pricing policy for petroleum products implies significant costs, especially for public finances. It is no coincidence that today several countries are considering the implementation of measures to reduce or simply to eliminate fuel subsidies. Indonesia's government, which has turned from an oil exporter to an importer over the last decade, has faced strong popular resistance against reducing fuel subsidies, whose impact on public accounts are significant (Platts, 2012). In Nigeria, the government of President Jonathan had to go partially back on measures to reduce fuel subsidies after a wave of protests that swept the country (The Associated Press, 2012). On the other hand, Pakistan and Taiwan recently were successful in reducing subsidies measures (Platts, 2012).

The aim of this paper is thus to present the main objective conditions that restrict one country's ability to implement a pricing policy in order to decrease the dependence on fluctuations and tendencies of international markets, as well as to illustrate in a comparative way the experiences of Brazil and China in adopting such a policy.

1. Objective conditions for the adoption of a pricing policy for petroleum products

Firstly, it is necessary to clarify the main advantages highlighted by economic policy makers by implementing a pricing policy for petroleum derivatives. In order to achieve this goal, we shall look at the work of the economist J. Tinbergen, Nobel laureate in economics in 1969 and a pioneer in the construction of econometric models.

According to Tinbergen, achieving a number of objectives of economic policy requires that policy makers are provided with the same number of instruments, otherwise they could face policy dilemmas, depending on the circumstances. For example, when you want to achieve two policy objectives (such as maintaining a certain level of growth with low inflation) with only one instrument (e.g. interest rate) there can be a dilemma, because increasing interest rates may contribute to lower inflation but, on the other hand, there is an adverse effect on the growth rate. In order to get out of this dilemma, the creation of a new instrument, such as a pricing policy for petroleum derivatives, can contribute to reducing inflation without accepting, in turn, a reduction in the

economic growth rate. It is important to remember that, generally speaking, fuel prices tend to have significant weight on inflation rates, which is why it is very attractive to use fuel prices in order to combat inflation.

In addition, fuel prices are fundamental to ensure the competitiveness of the economy, given that oil is the main source of energy in most countries. It is important to note that oil, after taking a key strategic role since World War I, which had been emphasized by the oil shocks in the 90's, the situation changed due to the low price of oil on international markets and oil came to be seen by many analysts as a commodity like any other, without any special strategic importance.

However, since 2003, driven by growing consumption in China and other developing countries, oil prices initiated a period of rising that reflects its intrinsic characteristics: a) low price elasticity of demand, which means that even substantial price increases have a low impact on consumption, b) low price elasticity of supply, since oil is a scarce resource and huge investments in a significant period of time are necessary so that the supply might increase, c) high income elasticity of the demand, given that much of the incremental demand for oil is directed to the transportation sector - where consumption is associated with increased acquisition of vehicles for personal transport and transport of goods, whose behavior tends to follow closely GDP. In this new scenario, there are no doubts about the role of oil to sustain current levels of living standards and world economic growth.

Nevertheless, the adoption of a pricing policy for petroleum products detached from those prevailing in the international market depends on the existence of objective conditions, whose nature is structural and which vary by country. Put another way, adopting a pricing policy in this segment is not possible in the long run without certain requirements that go beyond mere political will.

One of the main constraints is related to the fact of being or not a net importer of oil and oil products. That is because the extraction costs are usually substantially lower than the prices in the international markets. In other words, the big surplus generated by the oil industry allows flexibility in the determination of petroleum prices, without representing absolute loss of added value to the economy. However, when the country is a net importer of oil, the refineries need to acquire from abroad certain proportion of oil, at prices set in the international markets. As refining margins are generally low compared to other economic activities (with margins generally below 10%), there isn't too much space for adopting oil prices very different from those practiced abroad without incurring losses, at least for that portion of petroleum derivatives that has been refined from imported crude oil. In an extreme situation, when the country has to import all the crude oil, even if all the oil was processed by domestic refineries, the oil prices could be set at no more than 10% below the prevailing prices on the international market without representing a financial loss to refining companies.

Moreover, depending on foreign exchange restrictions and the weight of oil imports on the trade balance, the adoption of domestic petroleum product prices at levels substantially lower than those in the international market can become even more difficult. For countries whose currencies are not convertible, economic growth is limited by the constraints in the balance of payments. Once a country cannot indefinitely accumulate debt, in the long run, according to Thirlwall's law, the rate of economic growth depends on the relationship between the rate of export growth and the income elasticity of demand for imports (Thirlwall and Hussain, 1982).

The oil trade balance varies considerably over time depending on the levels of crude oil reserves (the supply side) and the per capita income (the consumption side). Once the oil trade balance is not all static, there is the political challenge of making changes in the petroleum derivatives prices as these objective conditions change.

It is important to clarify, however, that if the country is a net exporter of oil it will not necessarily adopt a pricing policy for petroleum products that increases the distance between domestic and international prices. It may be undesirable especially if the country wishes to increase energy efficiency in the input in question, and it could in the long run harm the development of alternative fuels, without considering yet the possible alternative uses of the resources in question .

However, to a net importer, the adoption of domestic oil products prices below those from the international market means that the country should move the surplus generated by the other(s) sector(s) of the economy or by the society as a whole, which somehow makes more explicit the costs that are implied for such a policy.

From this point, we can insert the public accounts in the debate about the adoption of fuel prices at levels below those established in the international market. When the country is a major oil exporter, the conditions are more favorable to adopting domestic prices different from those practiced on the international markets. But, on the other hand, depending on the conditions of public accounts, and the weight of fuel subsidies in relation to tax revenue, the maintenance of this type of policy can be questioned by the policy makers. That is, depending on the difficulties associated to adopt fuel subsidies, it could become more clear to the society the substantial costs incurred, as well as the benefits of alternative allocation of resources. It is no coincidence that Saudi Arabia studies reducing fuel subsidies, which represents an important source of government spending and leads to inefficient use of fuel. In recent years, due to the growing demand for electricity, oil consumption for thermoelectric generation grew substantially thus eliminating excessive amount of oil that could be used to increase its export revenues.

Another conditional factor is related to the structure of the petroleum industry. With vertically integrated companies operating in oil production and refining activities, it becomes easier for government to adopt a fuel price policy. The reason for this is if a company operates only in refining activity and needs to follow a fuel prices policy determined by government, the firm will have to acquire oil as input at market price, which can lead it to incur financial losses, which will make necessary subsidies by the government as a way to not disincentive investments and avoid, in some extreme situations, the bankruptcy of the refineries. Indeed, when firms are vertically integrated and the wholesale fuel prices are set at lower levels compared to input prices, it acts like a tax to oil companies. When companies are not vertically integrated, the government could not benefit from this kind of tax, since the refineries have losses and the government can, depending on the situation, be called to compensate these losses.

Another factor that may hinder the adoption of derivative prices below the prevailing abroad is the existence of private refineries operating in the country, since they would not accept to operating with losses even if only in the short term. The private refineries can reduce or simply decide to stop production of derivatives in order to avoid incurring losses, which may cause, depending on the participation of private refineries in total oil production, domestic supply crisis. As we shall see later, this factor plays an important role in China, since the refineries known as "teapots" represent a significant portion of refining capacity.

Finally, one should not forget that the fuel type ends up interfering in the country's ability to determine the spread between international prices vis-à-vis the domestic. For example, in general the prices of jet fuel in different countries tend to behave closer to those prevailing in the international market, since it is possible to conduct arbitration in different international airports in order to minimize the cost of fuel acquisition. The same does not happen with gasoline and diesel, as these tend to be purchased and consumed in the same country (except in regions near the borders), and there may be significant differences in the specification of these fuels among the countries, which may turn it impossible to do arbitrage.

2. Comparing the Brazil and China experiences in adopting fuel prices policy.

To better understand the various factors that influence the adoption of a policy of fuel prices, Brazilian and Chinese experiences can be quite enlightening. If, on the one hand, needs to adopt a pricing policy are present for both countries, on the other, the objective conditions that enable the adoption of such a policy has greater restrictions for China than Brazil.

2.1 Historical Background of fuel price policy in Brazil

In Brazil, the oil industry came into being with a strong State presence. With the publication of Decree-Law 395/1938, it created the National Fuel Department (DNC) under the Ministry of Infrastructure, aiming to promote the development of national production. In this Decree, the oil was declared a public utility, since the state took a major role in the formation of fuel prices in Brazil (Lameiras and Giambiagi, 2005). In 1953, from the enactment of Law 2.004/1953, Petrobras was created, a state enterprise with a monopoly in exploration, production, transportation and refining of oil and oil products. However, the CNP has retained its supervisory powers over the petroleum sector.

In the period from 1954 to 1964, ex-refinery prices of petroleum products were based on the cost of imported oil, the single tax and the customs and port charges. However, since 1964, with the enactment of Law 4.452/1964, this pricing criteria was modified. It was established that the "ex-refinery price per unit, excluding single tax, of tabulated petroleum products produced in the country will be set periodically by CNP, by multiplying the coefficients (...), by the average CIF cost in national currency per unit volume of crude oil imported in the previous quarter" (Art. 2 of Law 4.452/1964). It should be emphasized that for aviation fuels tax exemptions were to be maintained provided for in Law 1.815/1953, which demonstrated the government's intention in the past to encourage the development of the incipient civil aviation industry.

Thus the CNP had power to increase the coefficients and thus lead to increases in prices of petroleum products in order to provide the necessary resources for PETROBRAS so as to implement its investment program. Moreover, the ex-refinery prices were added to other parcels called points, which corresponded to tax in disguise, and so we can obtain the price realization. Adding to this distribution and retail margins, we obtain the retail price for consumers.

In 1966, there was another change in the formula for calculating the prices of petroleum products, with the average price realization in the refinery going to be calculated from the sum of four categories of unit costs: 1) costs related to international prices of crude oil and other materials imported consumer, whose values also varied depending on the exchange rate, 2) costs related to personnel costs, 3) other variable costs that were determined according to the conjuncture of domestic prices, 4) to cover expenses with depreciation and amortization, and further ensure the return on capital invested. According to Barbosa (1991), these changes were justified based on the following arguments:

a) Convenience prices of petroleum products are formed on the basis of production costs, the domestic market structure and foreign trade;

b) The need to ensure the refinery profitability in their operations;

c) The need to become explicit the fiscal protection given to petroleum products in order to carry out proper verification of the results of refining operations and thereby secure the resources allocated exclusively to Petrobras investments.

Thus, the immediate post-war until the first oil shock in 1973 was a period when there were no reasons for adopting substantially different prices from on the international market, since the world was the era of cheap oil, and, moreover, Brazil was heavily dependent on imported oil.

According to Baer (1987), the increase in imported oil prices between 1973 and 1974 was higher than domestic prices, since the government tried to cushion the oil shock and dilute its effects over time. Nevertheless, as the Brazilian financial system reform of 1964 had set up a series of measures leading to indexation of the economy, oil shocks led to increase in the inflation, whose rates doubled from 1973 to 1974, and thereafter began to float between 30% and 48% until 1979.

Moreover, with the increases in oil prices, dependence on imported oil produced important implications for the Brazilian trade balance. If before oil imports accounted for about 12% of total imports, they already accounted for 23% in 1974. With the second oil shock in 1979, this percentage reached about 50%, which helped to push the Brazilian economy to the debt crisis in the 80s (Fishlow, 1986).

With the oil crisis, the Brazilian authorities have adopted measures to reduce gasoline consumption, such as: a) raising gasoline prices higher than those of other derivatives (by 120% between 1973 and 1977, compared with 40% and 50% increase in prices of diesel and fuel oil, respectively, in the same period, b) implementation of the program PROALCOOL, with the goal of creating a substitute for gasoline, c) closing of gas stations on weekends as a way of discouraging consumption (Araujo and Ghirardi, 1986).

With the second oil shock in 1979 and a sharp rise in interest rates promoted by the chairman of the Federal Reserve (FED), Paul Volcker, Brazil entered a debt crisis period, which ended up exacerbating runaway inflation, since the government could no longer anchor the expectations of economic agents by controlling the foreign exchange rate.

In the period from 1984 to 1989, in the context of accelerating price increases and the succession of economic plans in order to stem inflation, fuel prices and public tariffs, increase in the gap had in relation to other goods, which, increased the budget deficit, constituting an important source of transfer of the public to the private sector (Carneiro, 2002).

During this period, prices of petrol and diesel, for example, accumulated negative real growth of 25.4% and 15.2%, respectively. However, according to Baer (1987), the impacts of price controls by the government had short-term effects, since affected companies had to be compensated financially by the government through subsidies or foreign loans to fund the investment program and even in some cases, to cover operational costs. Thus, price controls are translated later in increasing the public deficit,

which once exceeded a certain limit, inevitably led the government to raise fuel prices and public tariffs, resulting in a new surge of inflation.

In the Collor administration, the DNC was extinguished, being created in its place the National Petroleum Council (NPC), responsible for determining the prices of petroleum products.

The process of liberalization of the automotive fuels prices is before the Law 9.478/1997 (known as "Petroleum Law"), having been initiated by Ministry of Finance (MF) Act No. 59/1996, which released the sales prices of distributors and dealers for gasoline and hydrated ethanol in the South, Southeast and Northeast, as well as the states of Goiás and Mato Grosso do Sul and the Federal District. On 13/12/1996, the MF Act No. 292 extended the measure to the states of Tocantins and Mato Grosso, and the municipalities of Porto Velho (RO), Manaus (Amazonas) and Belém (PA). The following year, the Interministerial MF / Ministry of Mining and Energy (MME) Act No. 293/1997, released the margins of distribution and sale of diesel throughout the country and, finally, on 09/03/1999, the Interministerial MF / MME No. 28 released the prices of gasoline and ethanol in places not designated by the previous regulations.

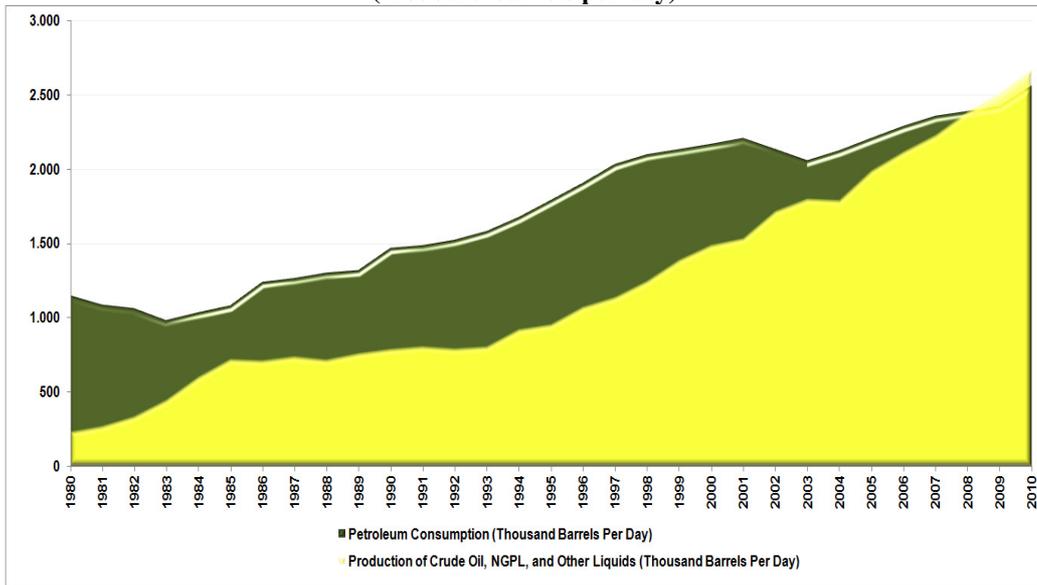
The prices of petroleum products in refineries, also controlled, as determined the Interministerial MF / MME Act N° 3/1998, had their adjustments calculated using parametric formula, systematically remained in force until December 31, 2001. The process of deregulation of fuel prices in Brazil was then completed on 01.01.2002, with the replacement of Specific Price Parcel (PPE) by Contribution of Intervention in the Economic Domain Charge (CIDE), the release price at refineries and production plants and the fall of the legal barriers to the importation of fuel remaining.

Since the beginning of the deregulation process measures were being taken to eliminate distortions in the functioning of the market. These measures included the release of prices, margins and freight throughout the production chain and the gradual elimination of subsidies in existing petroleum products, and changes in tariff structure. It is important to note that, although necessary for the implementation of competition in the markets and beneficial to the population, the removal of cross subsidies on fuel prices and elimination of freight subsidies led to the rise in prices in some states.

Currently, therefore, neither ANP nor any other governmental agency regulates, in any form, the prices of automotive fuels sold in the country. However, the fact that the majority Petrobras has massive presence in the production and petroleum refining and the Union is its main shareholder makes it possible to adopt a fuel prices policy.

In an effort to overcome decades of dependence on imported oil, Brazil has over time significantly increased oil production, a process that has gained more impetus with the breaking of the monopoly of Petrobras, achieving self-sufficiency at the end of last decade (Figure 1). With the discovery of the pre-salt reserves, the country will become a significant exporter of oil, which will ensure greater flexibility for the determination of domestic fuel prices. However, according to Almeida (2012), this new condition may be the temptation to have more leeway to practice different prices on the international market, which in the author's vision can be quite dangerous, from the standpoint of both the national economy and energy sector.

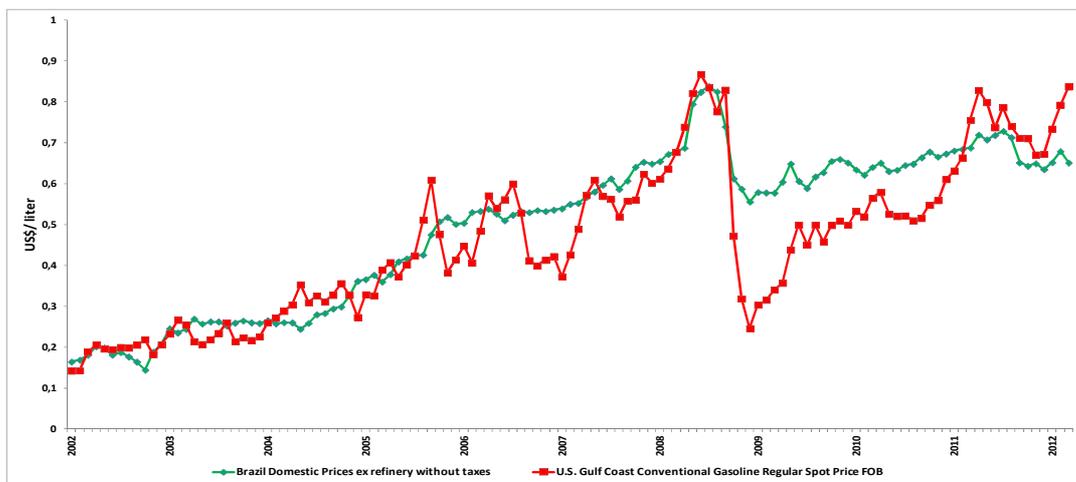
Figure 1. Production of Crude Oil, NGPL and others liquids and Petroleum Consumption in Brazil (thousand barrels per day)



Source: EIA/DOE

In the current context of rising oil prices in the international market, Brazil has avoided increasing fuel prices due to fears of inflationary impacts, since the priority right now is to create conditions for reducing high interest rates to alleviate the public deficit and create a favorable environment for an increased investment rate. In 2011, before the price rising of anhydrous ethanol, which comprised 25% of gasoline, gasoline prices increased substantially as well, which caused strong dissatisfaction and impacts on inflation. The rise of hydrated ethanol made substantially increased gasoline consumption, since a significant proportion of the vehicle fleet is flex-fuel in Brazil. Although the country has achieved self-sufficiency to dependence on crude oil, it has not been obtained in relation to consumption of petroleum products. Thus, with the growth of the economy and the surge of demand for gasoline, Petrobras has had to import gasoline to attend domestic consumption, which puts pressure on the pricing policy, as the company incurs losses in this kind of operation (Figure 2), although as a whole presents company profits. However, the investment program of about \$ 220 billion over the next five years for the extraction of the pre-salt oil reserves also points out limitations in this process.

Figure 2 – The evolution of gasoline prices in Brazil and in the international market



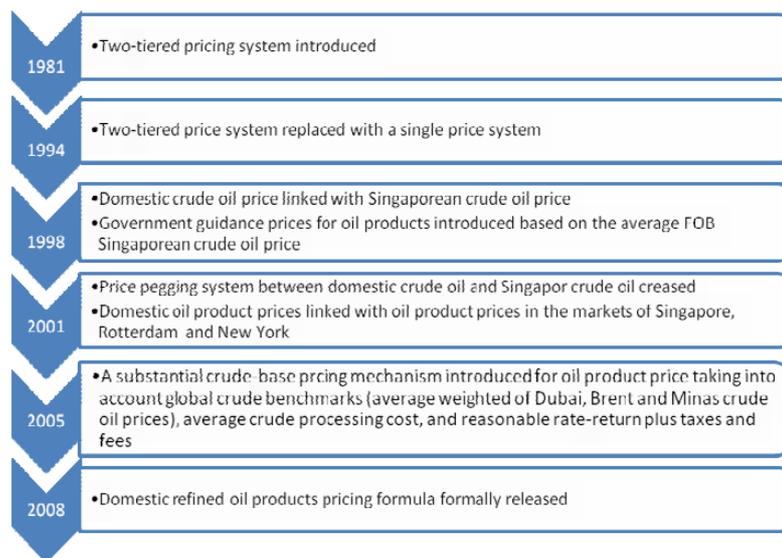
Fonte: ANP and EIA/ DOE

2.2 Historical Background of fuel price policy in China

Until the reforms of the later 1970s, energy prices in general, as the price of most of commodities, were wholly state-controlled in China (Ma et al., 2009). In 1981, “dual-track” pricing was adopted for petroleum products, within the government growth strategy of growing-out of the plan through a gradual path (Naughton, 1996).

In 1994, the government introduced a new price mechanism, and petroleum products undertook to be set by the market with a single price in the place of a two-tiered price system. In 1998, Chinese government allowed that petroleum prices to be set in accordance with Singaporean oil market, but by the condition that prices must be determined by government authorities in line with a new price mechanism. The gasoline prices has been set according to average FOB Singaporean crude oil price, and the enterprises had been allowed to determine their whosale and retail prices with a range of 5%, and the differences between whosale and retail prices were limited by government (Ni, 2009).

Figure 3. Major Oil Price Reform (1980-present)



In 2001, the price pegging system between domestic crude oil price and Singapore crude oil was ceased, and the same modification was imposed on petroleum products, which had begun to follow the behaviour average of oil products in the markets of Singapore, Rotterdam and New York. But now under the new pricing system, prices adjustments were realized only when oil price changes exceeded an amplitude of 8%. This was also the same range of varation of final sales prices of gasoline and diesel. It is important to note that this new pricing mechanism was put into pratice when oil prices were at their lowest levels in twenty years. In this favourable context, it had not been so difficult to set domestic prices of petroleum in accordance with internacinal prices (Ni, 2009).

Nevertheless, with the sharp increase in oil prices since 2003, it has become more difficult for China following the adjustment rule strictly. In 2005, the Chinese government linked oil product prices to a weighted average of Dubai, Brent and Minas crude oil prices, and incorporated to the new pricing system the average processing costs, reasonable rates-of-return, taxes and fees. However, the frequency of adjustments had not been previously explained by the Chinese authorities, so that the adjustments were still being made based on ad hoc considerations (Zhang, 2008).

The formula was only officially “discovered” in December 2008, when it was clarified that product prices could be revised “once average cost and freight (CFR) prices of the international crude markets over a minimum 22 consecutive working days moved outside a 4% fluctuation from the previous period’s weighted crude basket average” (Ni, 2009). The aim of this new pricing system was to decrease government interference, but in a context of high volatility of oil prices and rising inflation makes difficult to follow the readjustment formula. As a result, oil refining and sales firms suffered big losses between 2004 and 2008, especially Sinopec, whose operations has been more concentrated in the downstream oil sector, as we can see in the Table 1.

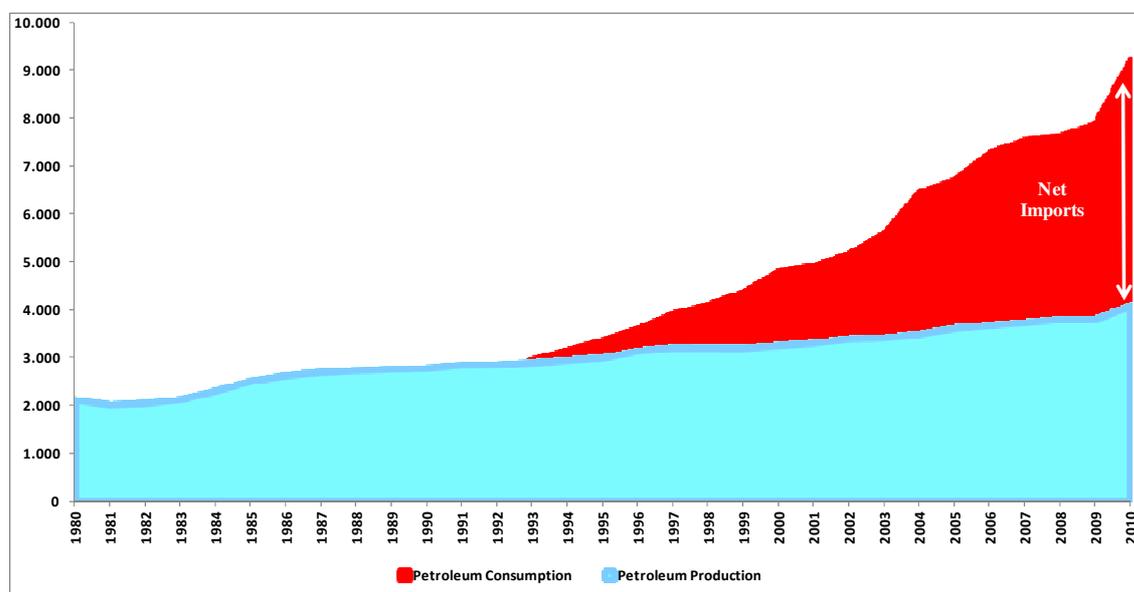
Table 1: Sinopec's Losses in Refining Operation and Concurrent Government Subsidies

Year	Lost in refining operation (Billion RMB Yuan)	Government Subsidy (Billion RMB Yuan)
2005	12	10
2006	30	5
2007	13.7	4.9
2008	6.2	5

Source: Ni (2009)

Thus, in the attempt to achieve several objectives with the regulation of fuel prices, China has faced dilemmas of policy. The priorities to be achieved with instrument vary according to the economic cycle and political conditions. The situation become even more difficult due to the increasing need for crude oil imports (Figure 4) - priced at international levels - and since private refineries - known as "teapots" - hold about 15% of the country's refining capacity.

Figure 4 – Chinese Petroleum Production and Consumption (thousand barrels per day)



Source: Boletim Anual de Preços do Petróleo, Gás Natural e Biocombustíveis - ANP (2012)

The Chinese government does not regulate the crude oil price, but the fact that the country rely on two large state enterprises vertically integrated and responsible for almost all oil production allows government authorities to set prices at a level below the marginal cost of each product (Tan and Wolak, 2009).

The China Petroleum & Chemical (Sinopec) is the largest refiner in China, which accounts for more than 40% of gasoline production in 2005. In addition, Sinopec holds just under 70% of retail market and 51% of capacity refining in the country, while China National Petroleum Corporation (PetroChina) has shares of 30% and 36%, respectively (Tan and Wolak, 2009). Figure 5 shows the geographic concentration of the three Chinese state companies.

Figure 5 - China's Oil Major Territory in General

Source: Ni (2009)

The Chinese government agency responsible for controlling the prices of gasoline and diesel is the National Development and Reform Commission (NDRC). In the first half of 2008, before escalating oil prices quoted in international financial markets, fuel prices in China were significantly lagging behind those practiced in the rest of world. However, with the outbreak of the serious international crisis in October of that year, as well as the economic depression that followed through 2009, the Chinese authorities took advantage of the deflationary scenario to establish a policy of readjustment of fuel prices. This policy has three objectives: to establish prices that better reflect domestic prices prevailing in the international market; to prevent refiners incurring losses and to avoid problems of domestic supply.

Thus, in early 2009, it was announced that the prices of gasoline and in diesel ex-refinery would be adjusted by reference to basket crude oils formed by types of oil, Brent, Dubai and Cinta (Bloomberg, 2009). In addition, PetroChina said in a statement that the prices of fuels are also defined considering the costs of transportation and processing, taxes and 5% profit on refinery activity. Meanwhile, the resale taxes on derivatives had increased, reaching RMB 0.8 yuan per liter of gasoline and RMB 0.7 yuan per liter of diesel (Eastday, 2011). Finally, the minimum prices resale retail fuels were abolished, and allowed the change of prices within the range of 4%, plus or for less than the price of reference set by the NDRC.

With the new mechanism, the NDRC now has the prerogative to adjust fuel prices if the moving average prices of the basket of oils in the last 22 days increased by more than 4%. Thus, according to Yin Xiaodong, an analyst at Citic Securities Co., the new adjustment mechanism allow refiners to secure profits to an oil price of U.S.\$ 80/bbl (in January 2009, prices Brent stood at around U.S.\$ 50/bbl).

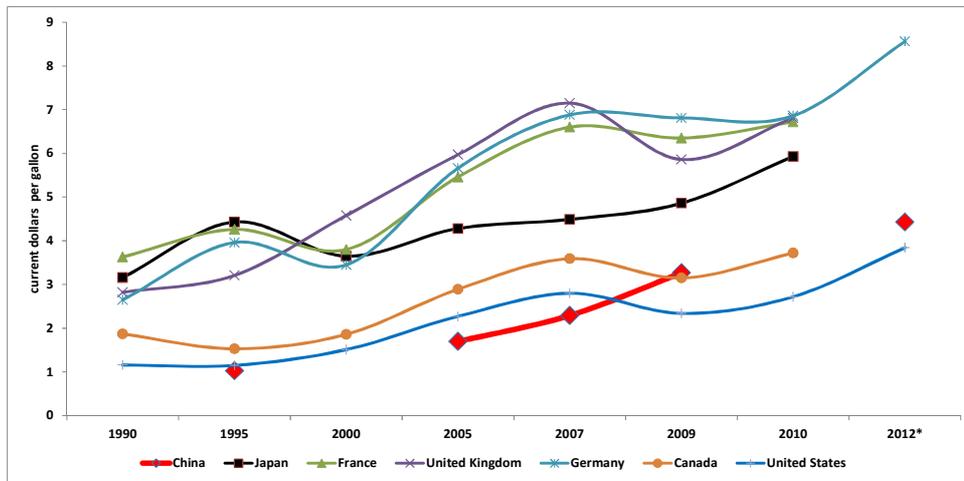
However, with the increase of oil prices at the first semester of 2011, and the Dated Brent that in April reached the level of U.S. \$ 126/bbl, the mechanism was abandoned, since inflation also began to grow fast (above 5% in April 2011 over the same month of previous year), driven by rising prices of agricultural commodities - which represent about a third of the price index to Chinese consumers. The last adjustment in the price of petroleum products took place in April 7, 2011, when the NDRC raised the wholesale price of regular gasoline to RMB 500 yuan per ton, ie, an increase of RMB 0.37 yuan / liter. Diesel prices rose to RMB 400 yuan per ton, or RMB 0.34 yuan per liter. This was the second price increase this year and the fifth since early 2010 (see Figure 1).

In a statement which explains the dilemmas faced by the Chinese authorities with reference to different policy objectives, Cao Changqing, head of the NDRC pricing department, admitted that the increases in fuel prices would add some pressure on domestic inflation, but stressed that the two largest oil producers in China, Sinopec and PetroChina, could no longer withstand the increasing gap in the domestic price in relation to the international price. He also said at the time that the government would provide subsidies to farmers, bus companies and taxi drivers. In the words of the NDRC official statement at the time, "there is an urgent need to use price mechanisms as a way to signal scarcity, curbing the excessive fast growth of oil consumption." Moreover, "recent experience has indicated that the price suppression discouraged refiners to produce or import, leading to shortages of products and lines at gas stations".

In fact, the price increase was intended to boost production of smaller refineries, known as "teapots". These refineries, according to the NDRC, have no access to their own supply of crude oil, which leads this segment to purchase imported oil at international prices and, consequently, to incur losses in the refining operation.

As we can see in Figure 6, if in 1995, gasoline prices to final consumers stood at levels below those other selected countries, in 2009 prices in the Asian country were already higher than those of Canada and the United States. In 2011, due to inflationary pressures, the Chinese authorities have prevented much of the variation in international oil prices were passed domestically. However, with the cooling of inflation in 2012, and before the recent escalation in oil prices - in terms of geopolitical uncertainties because of the new sanctions against Iran - the NDRC is imposing significant increases in fuel prices, and only last March two adjustments were made, which signals that the authorities are taking advantage of the opportunity to bring prices closer to those prevailing in international markets. With the new adjustments in March, the resale gasoline price in China again exceeded the United States'. According to an analyst at China Securities Investment Jianyn, Rui Dingkun, prices in Germany, France, South Korea and Japan are relatively high compared to prices in China due to the higher tax burden on fuel and environmental protection policies more severe. In China, the sum of the tax is 30%, while the profits of large state enterprises ranging from 6 to 8% on the resale prices of fuels

Figure 6: Gasoline Retail Prices^a for Selected Countries, 1990–2012



Source: IEA (2011); EIA/DOE (2012), Los Angeles Times (2012) and NBC News (2012).

^a Prices represent the retail prices (including taxes) for regular unleaded gasoline, except for France and the United Kingdom which are premium unleaded gasoline

^b 3rd quarter 2010.

^c End of March 2012

Conclusions

There have been identified two factors that hinders the Chinese governments control over gasoline prices. First, differently from Brazil, where Petrobras owners 99% refinery capacity, in China the private refineries, known as “teapots”, represent around 15% of total refinery capacity, which depend on imported petroleum purchases at international prices, that could be substantially bigger than domestic prices. In order to assure domestic supply of refined products, the Chinese government obligated the big three (Sinopec, CNOOC and CNPC) to sell crude oil at subsidized prices, that results in losses for these enterprises. In the past, the state companies pressured the government to increase gasoline prices by reducing production in their refineries, resulting in rationing problems in major cities. Second, as China depends increasingly on imported petroleum purchased at international prices, the governments decision in the way of controlling gasoline prices at a level below international prices must imply losses for state companies.

Conversely, as Brazil has been self-sufficient in oil since 2006, as well as the majority of petroleum products being refined domestically, the pricing policy adopted does not necessarily imply losses to the Petrobras Group, since the extraction and refining costs are not higher than domestic gasoline prices. Then, it is easier for the Brazilian government to minimize the impact of higher international oil prices on domestic prices of oil products, since this measure does not imply supply problems, neither absolute losses for Petrobras Group. As a consequence, the Brazilian government can define gasoline prices at some moments higher and others below international prices. As Petrobras has a monopolistic condition in many other markets, such as jet fuel and natural gas, the company can inflate these prices to reduce its possible losses incurred in gasoline, diesel and LPG - cylinders of 13kg for residential consumers (historically, this last is sold at highly subsidized rates).

However, China reducing the share of the private sector in refining activity, considered by authorities inefficient, the growing dependence on imported oil will make it more difficult to sustain prices below those prevailing in the international market over the long term. One solution has been found to resort to long-term contracts to supply provisions to prevent the immediate transfer of the variations in the spot market. However, as contracts for the supply of long-term oil still represent a small percentage of imported oil, pressures for a more automatic alignment of pricing will increase in the short term, particularly in the scenery of continuing inflation pressures.

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