

LPG PRICE DIFFERENTIATION POLICY AND UNIVERSAL ACCESS

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Overview

Liquefied petroleum gas (LPG) is the most widely used petroleum product in Brazil. Usually stored in 13-kg cylinders (P-13), it is mainly used in residential stoves for cooking food. Thus, ensuring access to the product is an important element in food safety. The objective of this paper is to evaluate how the price differentiation policy for LPG contributes to the universalization of access to the product. In order to do so, we will first present conceptual issues related to terms like “massification” and “universalization”, as well as the definition of “product access” used in this study. The analysis then proceed on how the price differentiation policy contributes to universal access to the fuel. Findings indicate that (i) the increase in the proportion of households that predominantly used LPG in the period from 2004 to 2014 are related, among other factors, to the increase in family income, the increase in direct income transfers and the fall in the real consumer price of LPG in that period, (ii) the universalization of LPG consumption requires more focused incentives targeted to lower income segments of the population.

Methods

According to Navas-Sabater et al. (2002), there are two types of gaps to be overcome: the market efficiency gap and the access gap. The market efficiency gap refers to the difference between the market penetration possible under current institutional conditions and that achieved under optimal market conditions. The market access gap refers to the limitations of the market in order to provide access to the population as a whole.

Regarding the meaning of the term “access”, Resolution CNPE No. 4/2005, which is fundamented in the “high social impact [of LPG], since its cost of acquisition affects the portion of the Brazilian population of lower purchasing power”, shows that the objective of the public policy is to universalize in economic terms the access to LPG for the less favored or low income sections of the population.

The analysis of how the price differentiation policy of LPG P-13 contributes to the universalization of access to the fuel utilizes data from the National Agency of Petroleum, Natural Gas and Biofuels (ANP), the Brazilian Institute of Geography and Statistics (IBGE), as well as data disclosed in the National Energy Balance of the Brazilian Energy Research Company (EPE).

Results

The ratio of permanent households in Brazil that used LPG for cooking advanced from 89.1 percent in 2004 to 94.3 percent in 2014. In the same period, the proportion of households that predominantly use firewood decreased from 6.9 percent to 2.3 percent.

This process of replacement of firewood by LPG in residences, which occurred more intensely in the North and Northeast regions, can be explained by the greater coverage of the income transfer program in these regions. According to PNAD data, for 2008, 39 percent of families in the Northeast region and 28 percent in the North region benefited from the “Bolsa Família” program, while in the Southeast and South regions they reached around 10 percent.

The observed data are consistent with the most recent sources on the energy transition process, which establish four essential factors capable of affecting families' energy choices: (a) costs and accessibility; (b) efficiency and convenience in use; (c) culture; and (d) amount of emissions per quantity of energy produced (SANGA, 2004). In other words, the process of choosing the fuel to be used is an interactive process: sometimes some factors may tend towards greater consumption of traditional fuels, while others may act simultaneously against this tendency. This

process can thus result both in progress on the energy ladder and a return to more traditional forms of primary energy source (such as firewood and coal).

In the present case, the urbanization process tends to negatively affect fuelwood consumption, not only because of its association with higher per capita income levels, but because, in the urban environment, firewood is available in a significantly smaller quantity and at higher cost (in monetary terms and the required time for collecting).

From May 2004 to January 2014, the minimum wage (in constant values of January 2016) increased from R\$ 508.74 to \$ 855.82, a real increase of 68.2 percent (DIEESE, 2016). This increase in the salary floor occurred concurrently with the increase in the formalization of the labor market. In the period from 2004 to 2014, more than 19 million formal jobs were created, which raised the formality level of the labor market from 45.7% percent to 57.7 percent.

After the liberalization of LPG prices in the early 2000s, the P-13 retail prices increased substantially in real terms, starting at R\$ 17.19 per 13 kg cylinder in July 2001, to reach the maximum of R\$ 24.71 / cylinder in January 2003, up 43.71 percent in the period. After late 2004, real LPG prices ranged from R\$ 20 to R\$25 per cylinder, above the level prevailing before the process of product price liberalization. As of October 2009, real LPG retail prices started to decline steadily from R\$ 22.30 / cylinder to R\$ 18.60 / cylinder by mid-2015, which represents a real decrease of almost 17 percent in the period. Thus, even though nominal prices for P-13 increased during the period from 2001 to 2016, real prices in 2016 were slightly above the levels recorded in 2001 before the price liberalization process.

Conclusions

The analysis showed that the reduction in the use of firewood by households and the process of universalization of use of LPG in the Brazilian territory are related to three main factors: (i) the implementation of the “Bolsa Família” program in 2003, with the incorporation of other social programs (including the gas voucher) and the progressive increase in the number of beneficiaries and the disbursements of the program, which had a positive impact in reducing the proportion of the poor, a segment in which the predominant use of firewood for cooking food is relatively larger; (ii) the increase in labor income, especially for the less favored strata, which allowed the improvement of living conditions and the exit from poverty, with positive impacts on the consumption of LPG; and (iii) the fact that the retail price of LPG P-13, in real terms, became more accessible to all income strata in the analyzed period.

Regarding the role of this policy in relation to "high social impact [of LPG], since its acquisition cost affects the portion of the Brazilian population with lower purchasing power" (MME, 2005), it can be observed that, as the price differentiation of LPG refers to transportable containers of capacity of up to 13 kg indiscriminately, all those who consume LPG in this modality benefit from the policy (not only the low-income portion of the population).

Thus, it can be seen that a universal subsidies policy for the LPG purchase is not able to ensure that the beneficiary is exclusively the stratum of the population with less purchasing power, which seems to go against the purpose of differential pricing policy of LPG established in Resolution CNPE 04/2005. Nevertheless, it is important to indicate that any standardization of such prices (and consequent increase in the price of containers of up to 13 kg) could raise the price of the product for the lower income stratum of the population, with potential negative social impacts.