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**ECONOMIC EFFICIENCY OF PUBLIC POLICIES TO ENCOURAGE
THE RE-REFINING OF USED OILS**

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Overview

Used oils are a hazardous waste product that nevertheless have a high economic value. The main uses of this waste are re-refining to obtain base oils for the production of lubricants and burning as fuel. Under environmental legislation, re-refining is the preferred option for the re-use of this waste, but the treatment nonetheless competes with the acquisition of used oils for burning. Consequently, it has been necessary in both Spain and our partner countries to adopt public policy measures to foster re-refining.

The aim of this paper is to examine the efficiency of the policies proposed for the purpose, which commonly involve financial incentives in the form of subsidies for the production of recycled oils, a tax on lubricating oils obtained from initial refinement and a standard for recycled materials.

Methods

The analysis is based on a partial equilibrium model of the lubricating oils market, in which the prices of first refinement and recycled oils is the same. We then go on to examine the impact of three different instruments (subsidies for the production of re-refined oils, a tax on first refinement lubricating oils and a standard for recycled materials) on price and private marginal cost. Comparison of the results provides a criterion to gauge the most efficient policy.

The analysis is then applied to the Spanish lubricating oils market in 2002, based on an estimation of the relevant parameters for the re-refined and used oils for re-refining market over the period 1965-2000. The net cost of intervention or the reduction in profits sustained by the producers of first refinement oils allow the efficient policy to be determined.

Results

Our results show that setting a standard for recycled material based on a system of negotiable permits is the most efficient policy to foster the re-refining of used oils in a framework of financial incentives for that purpose. The marginal impact of the standard (based on a system of negotiable permits) on price is greater than that of either subsidies or a tax on first refinement oils, because the price of the permit acts as a tax per unit of first refinement oil produced and the level of intervention required is lower. The private marginal cost is also lower, and the difference increases with the value of the standard.

The application of the model to the Spanish lubricants market confirms that the private marginal cost of the standard (based on a system of negotiable permits) is less than that of subsidies for the production of re-refined oils or a tax on first refinement oils, and the difference increases as the value of the standard rises. The net cost of intervention is lower and, consequently, the standard is the most efficient policy to foster re-refining of used oils.

Conclusions

Analysis of the lubricants market reveals that if the price of re-refined and first refinement oils is the same, then the volume of recycled oils produced will determine the market equilibrium. In this context, analysis of the efficiency of financial incentives policies shows that the standard for recycled materials based on a system of negotiable permits is the most efficient policy out of the raft of financial incentive measures considered to foster development of re-refining. The application of the theoretical analysis to the Spanish lubricants market confirms the results obtained.

The partial equilibrium model for the lubricants market also allows the conclusion that the producer responsibility enshrined in the prevailing Spanish Used Oils Management Act (Royal Decree 679/of June 2nd 2006), which requires manufacturers and importers to accept the delivery of used oils derived from the lubricants sold, constitutes an alternative to financial incentives to foster the collection and re-refining of used oils.