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THE ENVIRONMENT AND EMPLOYMENT : SHOULD WASTE POLICIES ENCOURAGE MORE LABOUR INTENSIVE OPTIONS ?

SUMMARY FINAL REPORT

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I. OBJECTIVES

At the beginning of the 1990's, when the economic recession in the EU was worsening, the support for ambitious environmental policies was questioned. Nevertheless, at the European level, the debate on the Commission proposal for a carbon/energy tax has modified the issue introducing the notion of double dividend : under a constraint of fiscal neutrality, a tax on carbon and energy would reduce CO2 emissions and promote employment if its revenue is used to reduce labour taxes. The goal of this project was to examine the existence of such positive trade-offs between environment and employment objectives in the case of waste policies. The question was the following : can ambitious waste policy objectives promote employment ? More precisely, the direct and indirect employment consequences in three different policy areas were addressed : municipal waste management, site remediation and car recycling.

II. METHODOLOGY

A microeconomic methodology was developed based on an engineering cost estimation for costs and employment. The basic idea was to get engineers to design a representative plant, and estimate its costs and its employment from performance data of the equipment installed. This method has the advantage of 100% comparability (differences in depreciation criteria and indirect cost computing are normalised out of the comparisons). But it also raises theoretical problems. In particular, it tends to underestimate costs. This is due to the fact that the evaluation is based on an ideal case without any technical inefficiencies.

The steps were the following :

(i) Definition of a standard case : This case defined the elementary pollution problem the policy aims to solve. For instance, in the case of car recycling, the standard case was a car of 1000 kg containing 150 kg of plastics, a battery of 12 kg, 8 kg of fluids, 30 kg of glass. In the case of municipal waste management, one of the standard cases was a French urban area of 400 000 inhabitants. 200,000 of them are assumed to live in a medium-sized city and 200,000 in small towns and villages. Each household produced 350 kg of municipal waste per year. In this urban area, waste collection took place twice a week and 95 % of the waste was incinerated. A key point was that the standard case was not an average case. It representated the situation of urban areas.

(ii) Identification of the available technical and organisational options to reach the regulatory targets.

(iii) Assessment of each option in terms of cost, direct employment and environmental objectives.

(iv) Indirect employment was only assessed in two case studies: car recycling and site decontamination. However, the method used differed. As regards car recycling, indirect jobs were computed using an engineering estimation method whereas, for site decontamination, a model called DEFI was used. This model computed for each kind of input, the number of jobs (direct and indirect) required for its production.

III. MAIN RESULTS

Does a more ambitious waste policy have a positive impact on employment ? Having made a quantitative analysis of three case studies, it was possible to observe that a global answer to the question was not possible : the results concerning employment in the three case studies were very different. In fact, in the case of contaminated sites, an intermediary decontamination intensity target provided the biggest positive effects in terms of employment. Concerning car recycling, a recycling ratio of 85 % could slightly and positively affect employment, but the rationalisation of existing, and often very inefficient dismantling plants, and the resulting productivity gains easily overcompensated for this result. Finally, for the case of household waste management, it was the initial waste management system, and in particular the labour-intensity of the pre-existing unsorted collection scheme, that determined the impact on employment. The final impact on employment was positive in Villaverde (the standard case closer to the Italian situation), almost neutral in Grünestadt (the German standard case) and clearly negative in Villeverte and Greenville (respectively the French and British standard case).

The fact that there was no general trend concerning the impact on employment of different waste policies was not surprising in the end. The implementation of environmental policies generates pollution abatement activities but there is no reason why such new activities should have a similar impact on employment.

Nevertheless, it was possible to identify a more general result. First it is important to underline one key difference between the site decontamination policy, on the one hand, and car recycling and waste management policies on the other hand : the first is an entirely new policy topic in the majority of EU countries, whilst the other two consist of modifying pre-existing systems. As far as the latter two are concerned, one common point appeared in the research : the impact on employment depends crucially on the initial conditions: the heterogeneity among the productivity rates of dismantlers in the case of auto-recycling and the different systems for unsorted collection in the case of municipal waste management. But these variables could be modified by micro-economic actors, without any changes in the regulatory framework: theoretically, the rationalisation of dismantling plants could take place without any increase in the recycling objectives; in the same way, a local municipality could modify its unsorted collection scheme, without developing separate collection and recycling. These changes could have a higher impact on employment than the one determined by new policies. Nevertheless it seems that a change in the regulatory framework is a timely opportunity for the modification of these variables. Several points can support this assumption. Firstly, an analysis of the existing schemes is necessary to define the adjustments required by a new regulation. Secondly, a new environmental regulation generally causes an increase in costs, which leads economic actors to pay more attention to the cost efficiency of their production system. Finally, new regulation often causes the involvement of new actors (e.g., the car manufacturers in the case of electric vehicles (ELVs)), which can bring new points of view and knowledge about the efficiency of the existing schemes.

IV SCIENTIFIC INTEREST AND POLICY RELEVANCE

1. Scientific implications

Concerning the three areas which have been investigated, the research has led to the building of data base containing microeconomic information which can be used for further investigation and research.

2. Policy implications

Concerning policy issues, implications for each case study were :

- In the case of waste management, it appeared that labour intensity is higher for the options that do not involve incineration. Other key variables are the frequency of waste collection and the size of bins which can remain unchanged in the new policy context. Nevertheless, a change in the regulatory context is an opportunity for municipalities to assess their waste management system and to modify it (in particular the key employment variables). Policy makers should more take care of these possible policy side effects.

- As far as site remediation is concerned and given that policies aiming at increasing such activities are just starting in many EU countries, the research clearly demonstrated that such policies can have very significant employment impacts *if* intermediate levels of decontamination intensity are set as objectives.

- The setting of car recycling policy objectives will not have *per se* significant employment impacts, but it will lead to the rationalisation of the dismantling sector and hence to job losses. In this respect, public authorities should be cautious with such processes, for instance, by taking part in dismantling plant certification which are under way in some EU countries (e.g. France).