Labour Management Programme

WORKSHOP WITH EXPERTS FROM INTERNATIONAL NON GOVERNMENTAL ORGANISATIONS ON "SOUND ENVIRONMENTAL PRACTICES AND TAX/SUBSIDY POLICY"

DISCUSSION PAPER

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WORKSHOP WITH EXPERTS FROM
BUSINESS, LABOUR AND ENVIRONMENT PROTECTION
INTERNATIONAL NON-GOVERNMENTAL ORGANISATIONS ON

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Participants in the meeting will find attached a discussion paper prepared by the Rapporteur, Ms. Anne Richards. Intended only as general guidance for the meeting, the paper does not constitute a rigid agenda and experts are therefore free to raise other questions relevant to the subject under discussion. The paper should be considered in conjunction with the descriptive note and agenda circulated as document number SG/RE/LMP(97)8.
INTRODUCTION

Reliance on market-driven prices to allocate the world's resources is greater than ever before. Because of its momentum and scale, the ongoing process of liberalisation that is opening up markets around the world makes government policies that interfere with pricing mechanisms much more evident and more subject to error. At the same time, dismantling remaining market barriers, especially in the form of subsidies, requires an understanding of complex economic interactions and a conviction of a commonality of interests.

The reform of subsidies and tax concession programmes that have negative effects on the environment can make the whole process of reform easier. This workshop aims to provide an important step in this direction. It deals with four main issues: (1) understanding the mechanisms through which the reform of subsidy and tax concession programmes can create beneficial environmental effects; (2) identifying characteristics of measures most amenable to reform; (3) planning implementation strategies; and (4) addressing some important political issues.

1. HOW DO TRANSFERS AND TAX INCENTIVES INFLUENCE THE ENVIRONMENT?

Subsidies and tax incentives are often suspected of generating inappropriate signals about pollution costs and/or natural resource scarcities. To the extent that this is true, the removal (or modification at least) of these programmes might be expected to lead to environmental improvements. Moreover, the reform of existing subsidies/tax concessions might also encourage a more efficient use of economic resources by helping to shift market prices to levels that result in polluters/users paying the "full social costs" of their activities (including the environmental costs). The existence of a "win-win" strategy, reducing or abolishing subsidies and improving the environment simultaneously underpins the desirability of reforming these types of support measures.

Complex relationships

A positive-sum outcome from reforming environmentally harmful subsidies is not easy to prove, however, because it depends on three basic relationships that are not always reliable.

"Reducing subsidies decreases government spending." This is not always true. Large amounts of subsidies are subsidies from consumers to producers (for example, due to price regulations in agriculture and energy) not directly affecting government budgets.
"Reducing subsidies increases the efficiency of resource allocation and therefore is beneficial for the economy (and public finance)." This is not always true either. Decreasing subsidies to public transport, for example, may induce more congestion. A decrease in agricultural subsidies may (under certain circumstances) reduce landscape maintenance and might even induce erosion.

"Subsidies to economic activities do increase the level of these activities and that is invariably bad for the environment." Although this is generally the case, the links between subsidies and environmental effects are complex and may in some cases point at opposite directions.

Analysis being carried out in the OECD is nevertheless tracing the environmental effects of subsidies. This work is in response to the recent request by Environment Ministers to "...carry out a wide-ranging analysis of the effects of subsidies and tax disincentives to sound environmental practices in various economic sectors and the costs and benefits of their elimination or reform."

**Characteristics of measures**

The OECD analysis defines subsidies and tax disincentives to sound environmental practices as: all forms of government regulations and elements of the tax system to the effect that they support certain activities that discriminate against (relatively) environmentally benign products and production processes. They include money transfers due to government policies as well as institutional arrangements to uphold these transfers. They also include statutory tax rates in so far as they discriminate against sound environmental practices. Five types are distinguished according to their points of incidence. They are: (1) financial support to production costs; (2) direct financial support to income; (3) regulatory support by means of minimum price regulations; (4) regulatory support by means of purchase obligations; and (5) denial of access to markets.

**A typology of linkages**

The channels through which subsidies/tax concession programmes can generate harmful environmental effects are complex. According to the OECD analysis, it is necessary to distinguish four types. This separation helps to understand:

- How support/tax incentives affect the relative competitiveness of the recipient sector in domestic and international markets.
- How the changes in relative competitiveness of the recipient sector, in turn, affect market performance and outcomes downstream – thereby influencing the potential generation of emissions and waste.
- How environmental or other policy measures mitigate potential emissions/waste.
- How emissions/waste actually affect the environment.

First linkage: It makes little sense to stimulate relatively harmful economic activities by support measures and tax incentives to be confronted later on with soaring costs of environmental policy or to suffer significantly increasing environmental damage.

But there are important political choices involved in launching a reform process. In particular, there are sharp differences of opinion as to the distribution of the benefits and costs of reform among different groups of people and over time.

Second linkage: The degree to which production/consumption decisions are affected by changes in relative production/delivery costs upstream will depend largely on the elasticity of substitution between different
alternatives. Narrowing analysis to decisions about materials and forms of energy makes a very complex task more manageable without losing too much information. This is due to the fact that, in most cases, the early stages of production have the greatest impact on the total pollution load of a product over its life cycle. Moreover, available evidence suggests that there is at least some reason to expect that subsidies and tax incentives that are conditional upon energy and materials have the largest potential effects on the environment. In general, it can be said that they are probably larger than subsidies to capital or labour.

Third linkage: The effects on the environment of changes in the relative volumes of activities depend on the environmental profiles of these activities. Profiles are shaped by both the potential emissions/waste generated by the activities and the environmental policies in place. Environmental policies differ greatly among Member states. Making quantitative evaluations of the environmental effects of reform is therefore very difficult. As a start, it makes sense to distinguish between the potential effects of support/tax measures and the mitigating effects of environmental policy. Later on, this information can be put together in order to gauge the potential effects of reform on the environment and hence the decrease in the burden of environmental expenditures in the long run.

Fourth linkage: The environmental effects of emissions and waste streams generally differ according to various local conditions. This makes evaluations at an international level difficult. However, one method is to compare the long-run cost of attaining the same level of environmental protection internationally – with and without the subsidies/tax concession programmes in place.

2. WHICH MEASURES TO ELIMINATE OR REFORM?

Support measures are often accompanied by other types of regulations, like import and export restrictions, environmental requirements, or production quotas, which are necessary to uphold the support. All these elements encumber efforts to trace a link between the support measures and the volumes of economic activity, and therefore on their environmental as well as economic effects. One way to begin might be to distinguish: (1) the characteristics of the support measures themselves (e.g., their conditionality on materials and energy use or production volumes); and (2) the characteristics of the recipient sector (e.g., its cost structure and the structure of the market in which it competes). This process can help to answer the question of whether the removal of a subsidy/tax incentive will actually bring the price of the subsidised activity nearer to its full social cost.

**Measurement issues**

Measuring the environmental effects of a subsidy or tax incentive requires detailed analysis. Empirical methods that have been tried include macroeconomic models (such as Computable General Equilibrium models and input-output analysis) and microeconomic or sectoral models (including comparative static analysis and approximations of tax shifting). It might be possible, however, to adopt a simpler approach. It involves developing descriptions of characteristics of subsidies and tax incentives and circumstances that are reliable predictors of strong adverse environmental effects. Two hypotheses are set out to begin with.

First, given that prices matter increasingly, microeconomic theory tells us that the effect on marginal cost must be the key variable, predicting changes in production and consumption decisions. Second, because pollution and waste have only two sources: matter and energy, subsidies and tax measures that are conditional on the use of energy, materials and products are most likely to be worse than subsidies that are conditional on income or even the deployment of capital. This points to two principal characteristics for
selecting support measures for reform: (1) the greater the net effects of support/tax incentives on prices; and (2) the more directly support/tax measures affect the level and rate of intake of materials and energy.

If these are reliable predictors of strong adverse environmental effects, they can provide governments with an analytical tool to prioritise the subsidies and tax incentives. Their reform or elimination would improve the environment, increase the efficiency of the economy and – depending upon who is actually paying for the subsidy – reduce government spending.

A key indicator of both characteristics is the Marginal Effective Tax Rate (METR). It represents the marginal effective tax (the additional tax minus subsidy on the last unit produced or consumed) as a proportion of marginal costs. The starting point is to define alternative ways of producing a certain good or service that vary in their environmental effects. Rank them according to the size of these effects and see whether the overall tax and subsidies regime favours or penalises the environmentally benign alternative. Or, more generally, compare the environmental differences between the alternatives and see whether this justifies the differences in METRs in the eyes of national policy makers.

When multiple stages of production are involved, the METR calculation can become cumbersome. However, the bulk (typically 60-75 per cent) of waste and pollution stems from the early phases of production: extracting, smelting, refining, materials production, linked to each other by large volumes of freight transport. These phases of production, moreover, attract large amounts of subsidies. Concentrating on the initial production stages would therefore yield highly relevant results.

Sectoral studies

Past case studies tend to adopt too narrow an analysis of the environmental effects, as well as of the wider economic consequences, to be used to draw general conclusions. Nevertheless, they are useful to draw upon in setting out a checklist of criteria to prioritise subsidies and tax incentives to be reduced or removed. Analyses that have been applied or are underway in energy, agriculture, transport and industry are selected for review.

Energy: Studies examine the effects of energy subsidies and tax incentives and other tax elements on the marginal costs of primary and secondary materials, in relation to the differences in pollution burdens of both types of materials. Results of past research indicate that the tax system (including energy subsidies) indeed may discriminate at least against some secondary materials. This is an important part of the new case studies because it could fill a gap in existing evidence. It concentrates on industry and examines the effects of taxes and subsidies through materials substitution, an element that has not yet been included in most case studies in a systematic way.

Agriculture: Several case studies underway investigate whether tax and subsidy regimes favour or penalise extensive agriculture. These projects will be combined with existing studies that evaluate the efficiency of transfers.

Transport: Available evidence suggests that all modes of transport are subsidised in most countries. These subsidies include subsidies to infrastructure and fuels as well as vehicle production and sales. All of these subsidies must be paid for by the other sectors in the economy. Work carried out by the European Conference of Ministers of Transport (ECMT) will be drawn upon in the OECD study to highlight how support and tax measures may influence relative marginal cost (and selling prices) of different competing modes of transport. Ideally, the effects of subsidies to transport should be incorporated in the marginal cost of production. They may be significant if freight transport accounts for a large proportion of variable
costs as typically is the case in agriculture and materials production. The OECD study will also include reports on the environmental effects of transport liberalisation in Europe and the United States.

3. IMPLEMENTATION STRATEGIES

Identifying strategies to implement support and tax reform will be assisted by demonstrating and underlining the commonality of interests in obtaining a "win-win" outcome. Ongoing regulatory reform and liberalisation programmes work in this direction. Concerns expressed by certain groups over a loss of competitiveness, nonetheless, may require special attention.

Many subsidies are in place because they are thought to have a positive effect on the competitiveness of the recipient sector. The fact that other sectors are thereby disadvantaged – as well as the overall productivity of the economy -- is often overlooked. If all countries subsidise business that competes on international markets, there will be a negative sum loss for all countries. No country will gain a competitive advantage but all will suffer from the loss of overall efficiency.

Subsidies tend to be conditional upon something like using a particular input (material or energy) or to use a particular mode of production. Especially when technologies change, this conditionality may induce industry to steer away newer technologies, in the long run damaging both competitiveness and higher resource productivity. The latter is the same as a potential reduction of waste and pollution relative to the volume of production. The bottom line is that the more subsidies and tax incentives are conditional upon input use and modes of production, the more they may damage sustainability and competitiveness in the long run.

4. POLITICAL ISSUES FOR CONSIDERATION

- Serious concerns over the incidence and distribution of subsidies/tax incentives – and their removal – can set back indefinitely the best prepared reform programmes if such concerns are not adequately addressed. What are the best ways of handling these concerns?

- No matter how much effort is put into estimating the environmental benefits of support reduction, large margins of uncertainty and incompleteness will always remain. What criteria can we use to determine how much analysis is sufficient in order to proceed to the implementation stage?

- There is some evidence that nations tend to compete with each other over foreign investment by offering tax incentives to a wide range of businesses without taking account of the environmental impacts. When this form of competition has adverse effects on the environment, how should international co-operation take shape to change these practices?