Sixth meeting of the Advisory Expert Group on National Accounts
12 – 14 November 2008, Washington D.C.

The Treatment of Tradable Emission Permits in the SNA

By Chris Heady

Background document to AEG paper SNA/M1.08/06: Emission permits

The Treatment of Tradable Emission Permits in the SNA

By Chris Heady

1. Introduction

The purpose of this note is draw attention to a number of ways in which the current draft of the SNA does not give adequate guidance on how to record tradable emission permits. This is a serious shortcoming as the scale of emission trading systems is already significant in a number of countries and is likely to increase dramatically over the next few years. Also, at least one national statistical office (the UK's Office of National Statistics, UK-ONS) has already made decisions on how to record them that go some way beyond the guidance in the draft SNA (see "UK environmental taxes: classification and recent trends" by Ian Gazley in **Economic Trends 635** October 2006, pp. 15-24.).

It is therefore recommended that a task force be established quickly to address the issues discussed in the following sections.

Section 2 provides a background to the discussion by describing the basic operation of tradable emission permit schemes. Section 3 then shows how the current draft does not provide sufficient guidance in cases where some or all of the permits are issued by the government without charge or below value. Section 4 raises the issue of when the tax payment should be recorded. Finally, section 5 raises the issue of the criteria that should be used in deciding whether a particular tradable scheme should be regarded as a tax.

2. The operation of tradable permit schemes

There are a number of variations in the detail of tradable permit schemes but the important issues can be analysed by considering 'cap and trade' schemes, such as the European Union's Emission Trading System (EU-ETS). In a cap and trade scheme, the government decides on the limit that should be applied to a particular type of emission within a particular time period (such as a year or a number of years) and issues a quantity of permits to reflect that limit. Firms must surrender a number of permits that correspond to the quantity of emissions that they produce, within a specified time after the emissions are made. Firms may obtain the permits that they need to surrender from an initial allocation made to them by the government and/or by purchasing them on the market.

Schemes typically run for a number of periods – possibly indefinitely – and new permits are issued for each new time period. In some cases, it is possible to carry permits forward if they have not been surrendered.

A key aspect of the schemes is the way in which they are issued. There are four basic possibilities:

a. The permits are sold at auction.

b. The permits are sold at a fixed price, and allocated to firms according to a formula (typically based on past emissions).

c. The permits are given to firms without charge, and allocated according to a formula (typically based on past emissions).

d. A proportion of the permits are sold and the remainder are distributed without charge according to a formula.

It is generally the case that permits will be traded on the market at prices that are different from the amount charged by the government.

3. Permits distributed without charge or below value

The guidance provided in the current paragraph 17.354 appears to be readily applicable to the case in which the permits are sold at auction. The tax revenue recorded would be the total receipts from the auction, which would equal the number of permits multiplied by their unit value (the market price for which they can be sold).

However, in each of the three other possibilities, it is likely that (at least some of) the permits would be provided to firms at a price that is below their value. There then appear to be two options:

i. To record the tax revenue as the total receipts obtained for the permits sold.

ii. To record the tax revenue as the number of permits multiplied by their unit value, and to record the difference between this figure and the total receipts for the permits sold as a subsidy.

It is approach ii that appears to have been chosen by the UK-ONS, at least for possibilities c and d. It is not clear whether this is what is intended by paragraph 17.354.

As most existing tradable permit schemes distribute some or all of the permits without charge, it is important that clear guidance be given on this issue.

4. When the tax payments should be recorded

In the case of an ordinary environmentally related tax, such as a tax on motor fuel, the payment by the taxpayer and the receipt of revenue by the government take place at the same time. This is also, typically, close to the time at which the environmental damage (in this case, vehicle emissions) is produced by the tax payer.

With tradable permits, the situation is different. Emission permits are generally not refundable and so paragraph 17.342 implies that the fee payable is recorded at the time it is paid. However, the payment to the government (if any) may be made well in advance of the environmental damage, and the entity that makes the payment to the government is not necessarily the entity that produces the damage. So, it is not clear that the payment to the government for the permit is the event at which the tax accrues. Instead, it could be argued that it is the emission of the pollution that should be regarded as the time at which the tax accrues and the surrender of the permit as the time at which the tax is actually paid, at least from the point of view of the taxpayer. Certainly, until that time, the holder of the permit has not suffered any financial loss equivalent to a tax, as the permit is an asset that could be sold until the time that the emission is released. In practice, it would be hard to identify exactly when the emissions occur and so it might be necessary to simply accrue to tax evenly over the period to which the permit relates (although this could become complex in systems where permits can be carried forward into later periods).

One complication here is that, if the time of the emission is taken to be the time at which the tax accrues, it would be natural to value the payment at the current market price of the permit. This would typically be different from the amount at which the government sold it, even if it had been sold at auction.

5. The criteria for a permit scheme to be regarded as a tax

Tradable permit schemes share the characteristic of environmentally related taxes in that they aim to achieve an environmental improvement. Permits that are sold also share the characteristic of raising money for the government. This gives considerable credibility to the idea that these schemes should – in some circumstances – be regarded as a tax.

However, the literature on environmental economics contains substantial analysis of the differences between taxes and permits. For example, one key difference is that taxes fix the price that firms have to pay for the emissions they make but that the amount of emissions is uncertain (depending on the responses of firms) while permits fix the amount of emissions but the market price of permits is uncertain, a point that has led to considerable discussion of the circumstances in which each instrument is the better choice. This important difference could lead people to claim that it is misleading to record tradable permits as taxes in the national accounts, and this deserves full discussion. At the very least, it would be appropriate to record tradable permits in a different line from 'normal' environmentally related taxes (taxes that impose a fixed charge on emissions).

Even if it is accepted that at least some tradable permits should be recorded as taxes, there is the issue of the circumstances under which this should happen. While paragraph 17.354 states that emission permits should be regarded as a tax, paragraph 17.358 qualifies that by saying that they should not be regarded as a tax if the discharge medium is an asset for the purposes of national accounts. In this case, it is treated in the same way as the payment for a license to use the radio spectrum for mobile phones, unless the charge is linked to remedial action (in which case it is treated as a payment for service unless it is out of proportion to the costs, in which case it is a tax).

However, the analogy with the radio spectrum is not very clear. For example, a tradable permit might apply to the release of emissions into an asset that is not owned by the government, so the payment is not agreed between owner and user (as is the case with the radio spectrum), and is paid to the government rather than the owner. Also, the emission may seriously damage the medium into which it is discharged, which seems different from the concept of 'use'.

More fundamentally, it is well recognised in the economics literature that there is no need for the government to use its taxing powers if the pollution problem is one of a single emitter damaging the interests of a small number of people with clearly specified legal rights – the problem can be solved by direct negotiation between the parties resulting in some sort of payment that would not be regarded as tax. This is the case of the radio spectrum but is not the normal situation with environmental pollution.

To see this, consider the run-off of contaminated water from agricultural land into streams and rivers, and ultimately into lakes. Some or all of these water bodies can be regarded as assets, but not all of them will necessarily be owned by the government. In addition, there may be other people who own statutory or customary rights over some of the water bodies (fishing rights, boating rights, swimming rights). All of these people, including the owners of the assets, will be damaged by the pollution but it

will be impractical for all of them to negotiate with all the farmers and negotiate payments, and some of them may not have clearly defined legal rights. It is in this situation that the taxing powers of the state are required to control pollution.

This example suggests that the distinction between a tax and a non-tax payment should not be on the basis of whether the discharge medium is an asset or not. Instead, it should be whether government intervention (in its taxing/regulatory role, rather than as an owner of any assets involved) is required to establish a price for the emissions. This is clearly the case when the discharge medium is not an asset (as there is no owner to negotiate a price) but is also the case in most important instances where the discharge medium is an asset.