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Considerations on national accounts recording methods for Government
Management of Carbon trading rights

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

NOTE

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Object : Considerations on national accounts recording methods for Government management of Carbon trading rights

The present note is describing preliminary views developed at INSEE for the treatment in national accounts of greenhouse gases emissions trading rights that were established in the context of the Kyoto Agreement.

At this stage, it should not be considered as reflecting a firm and definitive standpoint from INSEE on the matter. There are two main reasons for this.

On one hand, the management system of carbon trading rights is quite complex. Through lack of detailed information on the subject and considering the limited amount of time available, it might prove necessary to amend the present position since a sufficient understanding of the rationale and of all mechanisms at work cannot be met.

On the other hand, and above all, the treatment of Carbon trading rights by national accounts is obviously an issue which all Governments have to deal with. Therefore, a solution will necessarily have to be found at an international level, especially within the European Union in view of its potential impact on public finances. A reflection has already been initiated by Eurostat which circulated a first paper on the subject. However, this document shows a sufficient complexity of the matter so as to demonstrate the need for a more extended dialogue and in-depth reflections between Member States. Of course, whatever be the initial position INSEE may be led to take in the debate, it will eventually abide to the European decision.

Once we have formulated all these reservations, the preliminary conclusions are the following ones.

1. Description of allocation mechanism of greenhouse gases emissions trading rights

Within the context of the Kyoto Agreement, the international community undertook to set up a system of trading rights to reduce their greenhouse gases emissions. Each State is allocated an emission quota by the UN system (UQA allowance).

Moreover, EU Member States have decided to implement a deliberate regional scheme with sub-markets for trading rights that are specifically designed for highly polluting industries (ETS allowances). These permits can be exchanged within the Union. Member States would make a preliminary allocation of their national ETS allowances to enterprises, which would predominantly be free, but a part of it could also be for sale.

Ex-post, enterprises are expected to pay to the Governments the amount of trading rights corresponding to emissions effectively generated by their activity. Diverse ways can be used by enterprises to obtain the necessary amount of trading rights: they may have been initially free; they may be the result of auctioning by Member States; they could also have been bought on the market to other enterprises. However, if at the end of the period an enterprise cannot meet its payment obligations for emission allowances, it should be fined with a surcharge.

2. Assuming that Government is able to receive some revenue for part of the allowances, what is the economic nature of the payment made by enterprises?

This payment cannot be the counterpart of a sale of services by the Government.

It seems difficult to consider this transaction as the sale of a non financial asset. The emission allowance is not generating any product per se. The Government has no use for it (at least not in due proportion to the allocated amounts). It cannot be regarded as the right to use a resource which is scarce because of physical limitations, but as the right to use a resource which becomes scarce because the Government decides to do so on its own will. To a degree, this asset might be considered as an intangible non-produced asset, to such an extent that it constitutes for its holder a licence to operate some activity, although this licence is not permanent (emissions allowances are annual) and the nature of this activity is not specifically determined.

Thus, this payment has the characteristics of a tax, and belongs more specifically to the "other taxes on production" category.

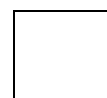
3. When should this tax be recorded?

The recording time should be determined when greenhouse gases are emitted. The tax is then levied every year on the basis of an ex-post assessment by the Government of emissions generated by the enterprises activities. Thus all enterprises are subjected to this tax in proportion to their polluting activities.

Under those conditions, the preliminary auctioning of emission trading rights can be assimilated to the securitization of a fiscal debt, i.e. a financial transaction and more specifically the creation of a debt through the issuing of securities other than shares (F3). It is only because the corresponding tax is due for payment in the future that the securities acquire a value on the market and can be bought by an enterprise, whether it is emitting or not greenhouse gases. After the sale is completed, the Government increases its assets by the amount of received payments (F2) and is symmetrically recording as liabilities the counterpart value of securities allocated to buying enterprises. Finally, when the ex-post assessment of emissions takes place, enterprises pay the due taxes by transferring the securities they own to the Government.

4. How to register free allowances of emissions rights?

Since the sale of an emission trading right is assimilated to the securitization of a fiscal debt, the free allocation of such a right (or at a price below market price) must be assimilated to a grant. The recording as a grant can be explained by the fact that the Government gives up its right to perceive part of taxes related to the greenhouse gases emissions. For this reason the recording time of the grant coincides with the one when the tax is due.



The abandonment by the Government of part of the tax collection is granted specifically to the enterprise that received the security. Thus, it can be assimilated either to a tax credit, if the enterprise is actually liable for the ex-post tax (i.e. depending on the effectiveness of its greenhouse gases emissions), or to a subsidy if the enterprise is not.

In the final stage, a free (or below the market price) allocation of emission trading rights, i.e. an allocation without cash payment from the beneficiary enterprise, results from two simultaneous financial transactions. On one hand, the enterprise buys a security from the Government (F3). On the other hand, it receives a loan (F4) from the Government for the same amount since the security is given without a cash payment. When redemption time comes, i.e. when the tax is due, we simultaneously record a tax credit (D2) or a subsidy (D3) granted to the enterprise that received a free (or below market price) allowance. This transfer from the Government to the enterprise takes the form of debt forgiveness, by giving up its right for reimbursement of the loan (F4) it granted.

5. What happens at international level?

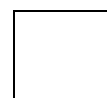
Initially, the United Nations are granting free quotas of emission rights to countries.

Once again, this free allocation of can be interpreted as a double financial transaction. On one hand, the UN securitize future fiscal debts (“rights to future tax”) vis-à-vis the States. On the other hand, as the securitization is done “freely”, the UN grants in parallel a loan to the States, with the same amount as the allocated quotas. At the end of this period of free allocation of quotas, the States are thus recording in their assets the securities (“emission rights”) which they can claim on the UN, and in their liabilities a loan which has been granted to them by the UN.

The States can allocate securities to their own enterprises (freely or not) only within the limits of these rights that can be claimed on the UN.

Finally, if on a planetary level greenhouse gases emissions were ex-post consistent with the total amounts of rights issued ex-ante by the UN, then the proposed recording system would lead to the following situation:

- Taxes paid by enterprises would correspond to their real levels of greenhouse gases emissions;
- Reductions in public deficits of States would correspond to amounts collected when auctioning emission trading rights;
- “virtuous” countries (i.e. the ones that emit less greenhouse gases than was allowed by the UN) display Net lending equal to lower quantities of gases emissions. Conversely, “non-virtuous” countries exhibit Net borrowing equal to surpluses of emissions. In other terms, “virtuous” countries are financing transfers to “non-virtuous” ones.



Annex 1: recording example for one country

We assume that polluting rights have a constant market price: 1 trading right = 1€

Period t=0

The Government sells 200 polluting rights to E1.

The Government gives freely 100 polluting rights to E2.

The paying allocation of polluting rights is a securitization of a fiscal debt, recorded as F3 (issuing of securities).

The free allocation of polluting rights is a securitization of a fiscal debt, with a symmetric loan from the Government to the enterprise that receives the rights without paying cash.

U/ΔA	Government	R/ΔL	U/ΔA	E1	R/ΔL	U/ΔA	E2	R/ΔL
F.2	+ 200		F.2	- 200		F.3	+ 100	
	F3	+300	F.3	+ 200				
F.4	+ 100						F.4	+ 100

Case #1

Period t=1

Enterprises are being assessed for their emissions, which are consistent with the rights acquired in t=0.

Enterprises that are liable to tax don't pay in cash, but through the transfer of their securities representing polluting rights.

At the same time, the Government grants a tax credit to enterprise E2, under the form of debt forgiveness for its claim on E2 (a tax credit commitment was made in t=0 since polluting rights had been allocated freely)

U/ΔA	Government	R/ΔL	U/ΔA	E1	R/ΔL	U/ΔA	E2	R/ΔL
	D2	+ 300	D2	+ 200		D2	+ 100	
	D2	- 100				D2	- 100	
F.2	+ 200		F.2	- 200		F.3	0	
	F3	0	F.3	0				
F.4	0						F.4	0

Result:

Tax received by Government: 200

Tax paid by E1 : 200

Tax paid by E2 : 0

Case #2

In fact, E2 does not emit greenhouse gases, whereas E1 emits 300.

E1 is thus led to buy 100 polluting rights to E2.

U/ΔA	Government	R/ΔL	U/ΔA	E1	R/ΔL	U/ΔA	E2	R/ΔL
F.2	+ 200		F.2	- 300		F.2	+ 100	
	F3	+300	F.3	+ 300		F.3	0	
F.4	+ 100						F.4	+ 100



Period t =1

E1 pays due tax.

E2 is not liable to tax for it has not emitted greenhouse gases. The Government grants a subsidy to E2, under the form of debt forgiveness for its claim on E2 (a subsidy commitment was made in t=0 since polluting rights had been allocated freely)

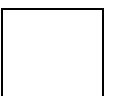
U/ΔA		Government		R/ΔL		U/ΔA		E1		R/ΔL		U/ΔA		E2		R/ΔL	
		D2	+ 300	D2	+ 300							D3	- 100				
		D3	- 100														
F.2	+ 200			F.2	- 300							F.2	+ 100				
		F3	0	F.3	0							F.3	0				
F.4	0													F.4			0

Result:

Taxes minus subsidies received by the Government: 200

Tax paid by E1 : 300

Subsidy received by E2 : - 100



Annex 2: recording example in two countries

We assume that polluting rights have a constant market price: 1 trading right = 1€

Period t=0

UN grant (freely) 200 paying rights to country C.
UN grant (freely) 100 paying rights to country C*.

U/ΔA	UN	R/ΔL	U/ΔA	GG	R/ΔL	U/ΔA	GG*	R/ΔL	
F.4 ^{UN}	+ 300	F.3 ^{UN}	+ 300	F.3 ^{UN}	+ 200	F.3 ^{UN}	+ 100	F.4 ^{UN}	+ 100
F.4 ^{UN}	+ 300			F.4 ^{UN}	+ 200			F.4 ^{UN}	+ 100

States GG and GG* sell to their respective enterprises E et E* polluting rights for 100 et 75 (the 125 other additional rights are supposed to be kept so as to deal with Households emissions).

U/ΔA	GG	R/ΔL	U/ΔA	E	R/ΔL
F.2	+ 100		F.2	- 100	
F.3 ^{UN}	+ 200	F.3 ^C	F.3 ^C	+ 100	
		F.4 ^{UN}			+ 200

U/ΔA	GG*	R/ΔL	U/ΔA	E*	R/ΔL
F.2	+ 75		F.2	- 75	
F.3 ^{UN}	+ 100	F.3 ^{C*}	F.3 ^{C*}	+ 75	
		F.4 ^{UN}			+ 100

In fact, enterprise E emits only 50 of greenhouse gases, whereas enterprise E* emits 125. Under those conditions, E sells to E* 50 of polluting rights.

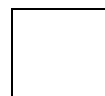
U/ΔA	E	R/ΔL	U/ΔA	E*	R/ΔL
F.2	- 50		F.2	- 125	
F.3 ^C	+ 50		F.3 ^{C*}	+ 75	
			F.3 ^C	+ 50	

Period t=1

Enterprises E et E* pay their taxes to their respective Governments. They don't pay cash, but transfer securities representing polluting rights.

E transfers to GG : 50 securities representing polluting rights issued by GG.

E* transfers to GG* : securities representing polluting rights issued by GG* et 50 securities representing polluting rights issued by GG (which it had previously bought on the market from enterprise E).



U/ΔA		GG		R/ΔL	U/ΔA		E		R/ΔL
		D2		+ 50	D2		+ 50		
F.2	+ 100				F.2		- 50		
F.3 ^{UN}	+ 200	F.3 ^C	+ 50		F.3 ^C		0		
		F.4 ^{UN}	+ 200						

U/ΔA		GG*		R/ΔL	U/ΔA		E*		R/ΔL
		D2		+ 125	D2		+ 125		
F.2	+ 75				F.2		- 125		
F.3 ^{UN}	+ 100	F.3 ^{C*}	0		F.3 ^{C*}		0		
F.3 ^C	+ 50	F.4 ^{UN}	+ 200			F.3 ^C		0	

The States are now paying their taxes to the UN.

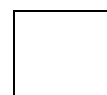
The State GG pays 150 in taxes (100 for Households emissions, 50 for enterprise E emissions), by transferring 150 out of the 200 emission rights it claims on the UN. At the same time, the UN give up the claim of 200 they hold on it (a grant commitment had been made to its benefit in $t=0$, since polluting rights had been allocated freely). The tax paid by GG being inferior to the amount of debt forgiveness from UN, this abandonment is recorded as tax credit for 150 and as subsidy for 50.

The State GG* pays 150 (25 for Households emissions, 125 for enterprise E* emissions), by transferring 100 emission rights it claims on the UN as well as 50 rights issued by the State GG, which State GG* has got back when enterprise E* has paid its tax. At the same time, the UN give up the claim of 100 they hold on it (a grant commitment had been made to its benefit in $t=0$, since polluting rights had been allocated freely). The tax paid by GG* being superior to the amount of debt forgiveness from UN, this abandonment is entirely recorded as tax credit.

U/ΔA		UN		R/ΔL	U/ΔA		GG		R/ΔL	U/ΔA		GG*		R/ΔL	
		D2		+ 50			D2		+ 50	D2		+ 50		D2	+ 125
		D3		- 50	D3		-50								
					F.2		+ 100			F.2		+ 75			
		F3 ^{UN}		+50	F3 ^{UN}		+ 50			F3 ^{UN}		0			
F.3 ^C	+ 50				F.3 ^C		+ 50			F.3 ^C		0		F.3 ^{C*}	0
F.4 ^{UN}	0				F.4 ^{UN}		0			F.4 ^{UN}		0		F.4 ^{UN}	0

Ex post, it appears that the UN and State GG have reciprocal claims for the same amount, which thus cancel each other.

U/ΔA		UN		R/ΔL	U/ΔA		GG		R/ΔL	U/ΔA		GG*		R/ΔL	
		D2		+ 50			D2		+ 50	D2		+ 50		D2	+ 125
		D3		- 50	D3		-50								
					F.2		+ 100			F.2		+ 75			



Result :

Enterprise E has paid 50 in taxes. $B9 = -50$

Enterprise E* has paid 125 in taxes. $B9 = -125$

Taxes paid by enterprises correspond to their greenhouse gases emissions.

The State GG has received 50 in taxes from E and 50 in subsidies from the UN. $B9 = +100$

The State GG* has received 150 in taxes from E* and paid 50 in taxes to the UN. $B9 = +75$

The reductions in Government public deficits correspond to the amounts that the States have collected in $t=0$ when auctioning.

The country C displays Net lending. $B9 = -50 + 100 = +50$

The country C* displays Net borrowing. $B9 = -125 + 75 = -50$

The country C is displaying a Net lending balancing item for, ex post, it has emitted less greenhouse gases than was allowed by the UN. Conversely, the country C displays a Net borrowing balancing item for, ex post, it has emitted more greenhouse gases than was allowed by the UN.*

The UN perceived 50 in taxes and et paid 50 in subsidies. $B9 = 0$.

Everything happens as if the country C, which is polluting more than expected, had financed a transfer to country C, which is less polluting than expected.*

