Dynamic allocation of allowances

An analysis of the ministry of economy on an efficient way of reducing carbon leakage and distortions of competition

CEPS meeting 09/09/2009 -
France, Ministry of economy,
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Harmonised allocation of free allowances in cap and trade systems

- In a cap and trade system with free allowance, the allocation rules of free allowances have to be determined.

- **The allocation method will be a major factor to avoid distorsion and carbon leakage**. A dynamic allocation method would be a smart option.

Different impacts on costs

- Capping emissions increases **m**arginal **p**roduction **c**ost – MPC (real/opportunity cost)
- Auctioning allowances puts additional pressure on **a**verage **p**roduction **c**osts (APC) and profitability
- **Both** may lead to relocation of investment to countries not facing similar constraints
- "Static" free allocations only alleviate the impact on APCs
- Dynamic benchmarking leads to lower MPCs too

Allocations based on benchmarks, when possible

- **Harmonised benchmarks** would be determined for every sector or sub-sector covered by free allocations and for which it would technically make sense to do so.

- Compared to the grandfathering method, this would lead to a **rewarding of efficient installations**, and would not unduly penalize early efforts.

- For sectors for which benchmarks do not make sense, free allowances would have to be determined through a traditional grandfathering method.

Dynamic versus static allocations

- One option would be to calculate free allocations using the benchmark and output data from a reference year such as 2005 for instance. **But this static formula might be ill-adapted to an 8-year period** : accordingly, the quantity of allowances an installation would receive free in 2020 would derive from its activity 15 years earlier. This would be neither fair nor efficient.

- Instead, the quantity of allowances allocated free of charge to a given installation could be calculated using the sectoral benchmark and **a more recent output level**. The signal would be clear and fair : **the more installations emit per output unit and the more they produce, the more they would have to pay** eventually.

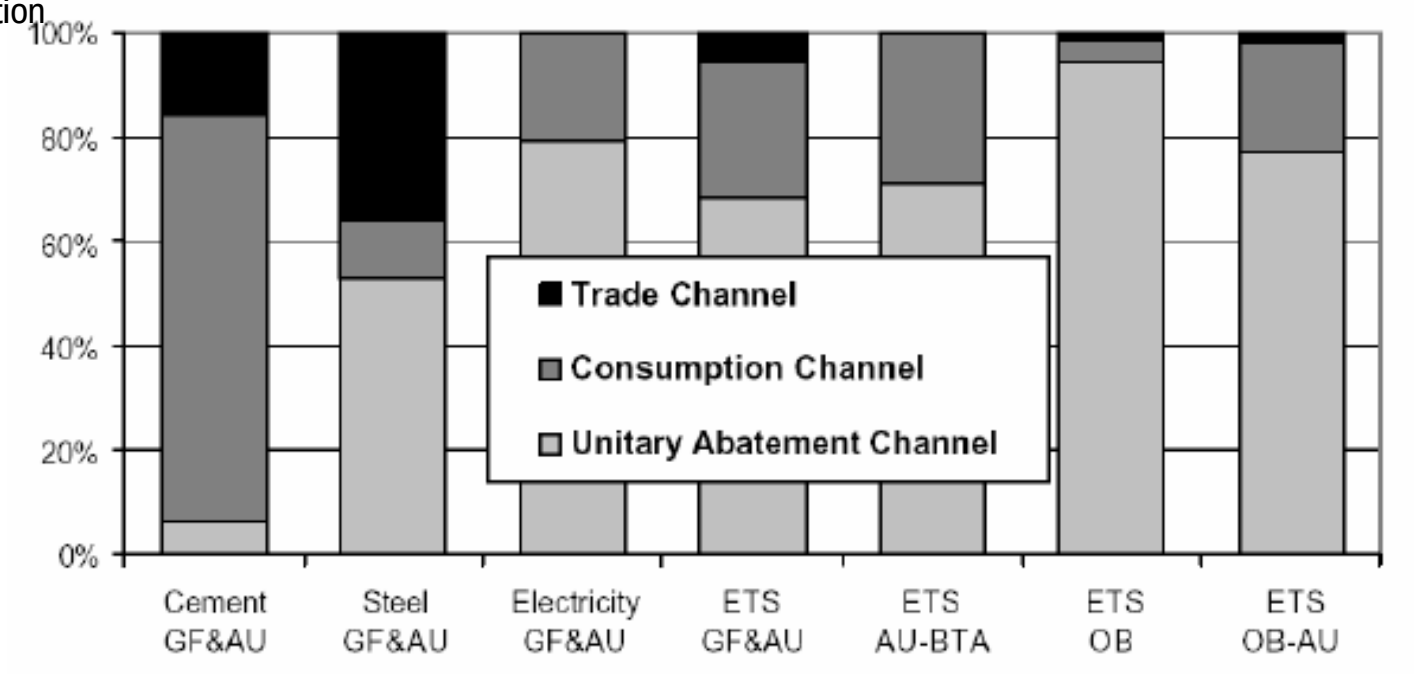
Dynamic benchmarking : main rationale

- Benchmarking per se rewards past efforts to reduce carbon intensity (unlike grandfathering) = FAIRNESS
- Output-based : no built-in incentive for downsizing production/closing plants = GROWTH-FRIENDLY
- Focus on process improvements and INNOVATION
- Lower impact of ETS on MPC :

  Δ MPC = EUA * (Emissions/Output – Benchmark)

  [whereas with GF : Δ MPC = EUA * (Emissions/Output)]
- Less carbon leakage

Dynamic benchmarking : no Malthusian bias



GF: Grandfathering

AU: Auctioning

BTA: Border Tax Adjustment

OB: Output based

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No loss of predictability

- The uncertainty as to the final quantity of free allowances received by each installation would increase.

- But this would be counterbalanced by an **enhanced predictability of the quantity of allowances received per output unit, which can be just as useful to know for operators**.

Taking account of new entrants and closures

- A special reserve for new entrants would be necessary for sectors under grandfathering.

- For sectors under dynamic allocation, **no reserve would be needed** : new entrants would receive allowances according to their output, and **closures would automatically be accounted for**, no other complex rule being needed.

A method equivalent to auctioning combined with compensations…

- For sectors exposed to a risk of carbone leakage, there have been ideas of combining 100 % auctioning with financial compensations, thus implicitly combining the advantages of auctioning and the need to reduce carbon leakage.

- Financial compensations would have to be, somehow, proportional to the size of the installation.

- Compensations based on emissions should be ruled out, since they would reduce incentives to abate them.

- On the contrary, compensations based on output levels would seem a better option.

- **But auctioning combined with output-based compensations is strictly equivalent to a dynamic allocation based on benchmarks.**

… compatible with state-aid rules

- Whereas financial compensations for sectors exposed to a risk of carbon leakage could raise issues regarding state-aid rules, **there would be no such difficulty with a dynamic allocation based on benchmarks**

What about the overall cap ?

- Output-based free allocations could generate uncertainty as to the total quantity of allowances thus allocated. Of course, **it would be necessary to make sure this has no impact on the overall cap**.

Adjusting the quantity of allowances auctioned

- **The quantity of allowances auctioned could be ajusted with regard to the quantity of allowances allocated for free.**

- Thus, **there would be no impact on the overall cap.**

What impact on other installations ?

- **There would be an impact on the quantity of allowances left for auctioning, but there would be no direct impact on the quantity of allowances available to other installations.** As a matter of fact, the quantity of allowances available to a given set of installations does not depend on the quantity of free allowances **allocated free of charge** to other installations, but on the quantity of allowances « used » (i.e. **surrendered**) by those installations (i.e. their emission levels).

- It could however **result in potential financial transfers.**

- But this effect should not be overstated :
  - Firstly, **only output variations with respect to expectations would be an issue.**
  - Secondly, **output levels could as likely be lower as higher than expected.**

Output variations should not be overstated…

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- Thirdly, **the quantity of allowances left for auctioning would much more critically depend on the benchmarks chosen for installations covered that on the output variations of those installations.** Indeed, whereas a 20 % difference in the benchmark chosen would result in a 20 % difference in the quantity of allowances allocated free of charge, output variations of such a magnitude would be very unlikely provided the set of installations and sectors covered by dynamic allocations is large enough : on a large scale, the « minuses » would compensate for the « pluses ». Consolidated output growth figures on a long period could be calculated in the first place to check this.

Dynamic allocations would not be an implementation headache

- **Operators would have to declare their output simultaneously with their emissions** (as they would have to at the beginning of the 8-year period if a static benchmarking were to be chosen).

- **Free allocations for year n could be based on output for year n-1, or on the average output for the last n years.** The fact that this would differ from output in year n would not be a problem :
  - static benchmarking is based on output levels dating back to a far more distant reference year
  - the advantages of dynamic allocations would be maintained (less impact on marginal production costs, less carbon leakage, enhanced fairness).

Dynamic allocations would not be an implementation headache

- **The adjustment of the quantity of allowances auctioned would raise no difficulty as long as all allowances are not auctioned in a single move**. It could be performed regularly, and a final adjustment could be planned at the end of the 8-year period during the time span between the declaration of output and emissions and the surrendering of the allowances.

Another variant of dynamic benchmarking

- **Another variant could suppress all impact on the quantity of allowances auctioned.**
- When allocating allowances free of charge for year n, and given :
  - the output for year n-1, or the average output for the last n years
  - the benchmarks

  a single linear factor could be applied from the start to the amounts resulting from the dynamic benchmarking formula so that the total quantity of allowances allocated for free remains lower than a predetermined amount.

Another variant of dynamic benchmarking

$$Linear\ adjustment\ \ factor = \frac{\text{Predetermined upper amount}}{\sum_{\text{sec}tors} (RO_{\text{sec}\,tors} * Benchmark_{\text{sec}\,tors})}$$

RO = real output observed per sector (n-1, or average last n years)

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