

Addressing Competitiveness and Carbon Leakage in ETs

October 10th, 2014, Paris

*IEA-IETA-EPRI Annual Workshop on
GHG Emission Trading*

Andrei Marcu

Carbon Leakage

What are the issues:

1. *How to determine if a sector is at risk of carbon leakage?*
2. *What are the options to mitigate the risk of carbon leakage?*

What is the problem?

- In the EU there is no post 2020 solution
- In process of getting on with the MSR which will influence prices upwards
- The EU ETS does not have supply side flexibility. To fix this
 - Auctioning ---- MSR
 - Free allocation ?

Carbon leakage – Risk factors

Risk factor can trigger asymmetry in carbon policies to carbon leakage

- Carbon cost
- Ability to pass through carbon cost

Carbon cost – risk factors

- a) Carbon price level
- b) CO₂ intensity of production
- c) Carbon costs relative to production costs
- d) Costs passed on from other sectors
- e) Sectoral margins
- f) Abatement potential and the cost of abatement

Carbon cost – risk factors

- a) Carbon price level
- b) CO₂ intensity of production
- c) Carbon costs relative to production costs
- d) Costs passed on from other sectors
- e) Sectoral margins
- f) Abatement potential and the cost of abatement

Ability to pass carbon costs through - risk factors

- a) Trade intensity
- b) Price setting mechanism
- c) Risk for other parts of the value chain
 - i. Transport costs
 - ii. Loss of positive externalities
- d) Commoditization
- e) Market concentration
- f) Availability of substitutes
- g) Exchange rate risks
- h) Price elasticity of demand

Table 1. Quantitative risk tests used in the EU ETS, Australia CPR, California, the US Waxman-Markey Bill and New Zealand

	Formulas	Stand-alone test	Combined tests
EU ETS	<p>Carbon costs $\frac{(\text{Direct emissions } tCO_2 + \text{Indirect emissions } tCO_2) * €30/tCO_2}{\text{Gross value added}}$</p> <p>Trade intensity $\frac{(\text{Imports} + \text{Exports})}{(\text{Turnover} + \text{Imports})}$</p>	<ul style="list-style-type: none"> • Carbon costs over 30% • Trade intensity over 30% 	<ul style="list-style-type: none"> • Carbon costs above 5% • Trade intensity above 10%
Australia CPR	<p>Emissions intensity $\frac{\text{Tonnes } CO_2e}{\text{Million AUD revenue}} \text{ or } \frac{\text{Tonnes } CO_2e}{\text{Million AUD value added}}$</p> <p>Trade intensity $\frac{(\text{Annual value of imports} + \text{annual value of exports})}{\text{Annual value of production}}$</p>		<ul style="list-style-type: none"> • Emissions intensity <ul style="list-style-type: none"> ○ Highly emissions-intensive: At least 2,000 tCO₂e emissions per million AUD revenue, or 6,000 tCO₂e per million AUD value added ○ Moderately emissions-intensive: 1,000 tCO₂e emissions per million AUD revenue, or 3,000 tCO₂e per million AUD value added • Trade intensity above 10%
California Cap-and-Trade	<p>Emissions intensity $\frac{\text{Tonnes } CO_2e}{\text{Million USD value added}}$</p> <p>Trade intensity $\frac{(\text{Imports} + \text{Exports})}{(\text{Shipments} + \text{Imports})}$</p>		<ul style="list-style-type: none"> • Emissions intensity <ul style="list-style-type: none"> ○ High: > 5,000 ○ Medium: 1,000-4,999 ○ Low: 100-999 ○ Very low: less than 100, and • Trade intensity <ul style="list-style-type: none"> ○ High: > 19% ○ Medium: 10-19% ○ Low: less than 10%
US Waxman-Markey Bill	<p>Carbon costs $\frac{\text{Cost of electricity} + \text{fuel costs}}{\text{Shipments}} \text{ or } \frac{(\text{Direct} + \text{indirect emissions})tCO_2 * \\$20/tCO_2}{\text{Shipments}}$</p> <p>Trade intensity $\frac{(\text{Imports} + \text{Exports})}{(\text{Shipments} + \text{Imports})}$</p>	<ul style="list-style-type: none"> • Carbon costs over 20% 	<ul style="list-style-type: none"> • Carbon costs over 5%, and; • Trade intensity of at least 15%
New Zealand	<p>Emissions intensity: $\frac{\text{Tonnes } CO_2e}{\text{Million NZD revenue}}$</p> <p>Trade intensity: Assumes all sectors are trade exposed unless they obviously are not</p>	<ul style="list-style-type: none"> • Emissions intensity <ul style="list-style-type: none"> ○ High: 1,600 (or 4% of revenue) ○ Moderate: 800 (or 2% or revenue) 	

Sources: Australian Department of Climate Change and Energy Efficiency (2011a), California Air Resources Board (2006 and 2012), European Council and Parliament (2003)

Options to address leakage risk (1/2)

- Cost containment measures
 - Lower costs for all covered entities
 - International offsets
 - Linking
 - Transitional funding
 - Research and deployment grants

- Targeted measures
 - Center on sectors deemed at risk
 - Address main factors
 - **Focus of our analysis**

Options to address leakage risk (2/2)

Assessed options:

- Free allocation for direct emissions
- Compensation for the cost of indirect emissions
- ETS in different speeds
- Border adjustments
- Targeted access to international offsets

Assessment of Free allocation for direct emissions

- Most commonly implemented; accepted and well understood
- Cannot be used alone (does not address indirect costs)
- Adaptable and can recognize changes in market conditions (if dynamic, ex-post allocation)
 - But: needs to take environmental integrity into account
 - Dynamic allocation (Australia and California) require effort and resources
- Imports and exports are taken into account
- Market functioning will be affected
 - Ratio free allocation to cap
- Impact on revenue from auctioning
- On its own no WTO compliance issues

Compensation for cost of indirect emissions

- More difficult to evaluate
- Can be as important as direct costs
- Especially critical for electricity-intensive industries
 - Carbon costs imbedded in other inputs: difficult to assess
- Necessary data is difficult to obtain
 - Pass through rates, emissions intensity of generation,...
- EU: compensation at member state level
- California: revenues from specific auctions are earmarked

A number of issues are emerging in need of examination:

1. The number of allowances available for free allocation is decreasing
2. Unfocused coverage – too many sectors covered
3. Likely increase in EUA prices, due to a number of provisions planned and economic circumstances
4. Recognition of increase/decrease in production
5. Coverage of carbon costs from indirect emissions
6. Uneven effort required from different sectors due to different sectoral spread around the benchmark
7. All sectors are treated the same, but are not the same (different margins, varying abilities to pass through, sectoral distribution around the benchmark)
8. Emergence of new global climate change regime will impact risk mitigation measures

Overall direction (1/2)

- BCA interesting but faces barriers from a trade, political and administrative perspective
- Free allocation is likely to remain centerpiece, but with modifications
- Free allocation is positive if there is an opportunity to negotiate linking with other ETSs, as provisions may be similar across systems
- There is no 'silver bullet', a menu of approaches will have to be used

Overall direction (2/2)

- Balance between the breadth and the depth of coverage
 - Increase the focus. This implies focusing on those sectors that are a bigger risk, and provide them with as many free allowances as the available free allocation allows (i.e. those at high risk will receive what they need).
 - Increase coverage, without focusing. This implies the introduction of measures that will provide enhanced risk coverage to all those at risk – this may result in an increase in the number of free allowances (i.e. all those at risk will receive what they need).
 - Increase coverage. This implies providing allowances to those deemed at risk to the level of free allocation allowable under the cap. This implies that there will be an increasing effort for those on the CLL (i.e. all sectors at risk will receive something, but likely not enough).
- Changes that may be considered are linked to the process of EU structural reform

Policies for risk mitigation (1/2)

- Direct emissions
 - Examination of plusses and minuses with dynamic production-based allocation system is needed
 - Learn from other approaches (California and Australia use a ‘true-up’ allocation)
 - However, requires new level of effort and resource implementation
 - Such approach could lead to a risk of the overall EU ETS cap. The risk can be addressed in a number of ways:
 - Greater burden on other ETS sectors
 - Greater burden on non-ETS sectors
 - Purchases of credits in the international markets
 - Other tool could be targeted availability of ‘cheaper-than-EUA’ international offsets.

Policies for risk mitigation (2/2)

- Indirect emissions
 - Current approach is causing serious concern
 - Addressing these concerns could be done at the EU level through free allocation, instead of monetary compensation
 - This would ensure equal treatment across member states and provide compensation to electricity-intensive sectors.

End of presentation

- Thank you for your attention