

How Vulnerable is India's trade to Possible Border Carbon Adjustments in the EU

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Part I:

Competitiveness, Carbon Leakage and Border Measures in the EU and beyond

Border carbon adjustments at centre stage of trade-climate change interface

- Climate-related border measures have turned out to be the most contested issue in the trade-climate change interface in the recent past.
- The European Union (EU) as well as the United States are contemplating application of these border measures on imports from countries not implementing comparable greenhouse gas mitigation policies with the aim of obviating the problem of 'carbon leakage'.
- The EU, for instance, has included such proposals in its post-2012 climate change and energy package finalized in April 2009 (henceforth referred to as the Directive).
- The emerging economies are among those that are likely to be affected by such unilateral trade measures in the EU.

The European Union Emissions Trading Scheme (EU ETS)

- With the aim of meeting its Kyoto commitments, the EU has set in place the EU ETS.
- The EU ETS is by far the largest cap and trade system operating in the World.
- First phase of EU-ETS ran from 2005-07 with the second phase aligning with the KP first commitment period (2008-12).
- In the 1st and second phases the EU-ETS covers approximately 12,000 installations representing approximately 40% of the EU's carbon dioxide emissions.
- The EU ETS sets a cap on 'installations' above a certain size in six industrial sectors: energy production, ferrous metals production, cement manufacture, ceramics and brick manufacture, glass production, pulp & paper.

EU's Post-2012 Climate-Energy Package

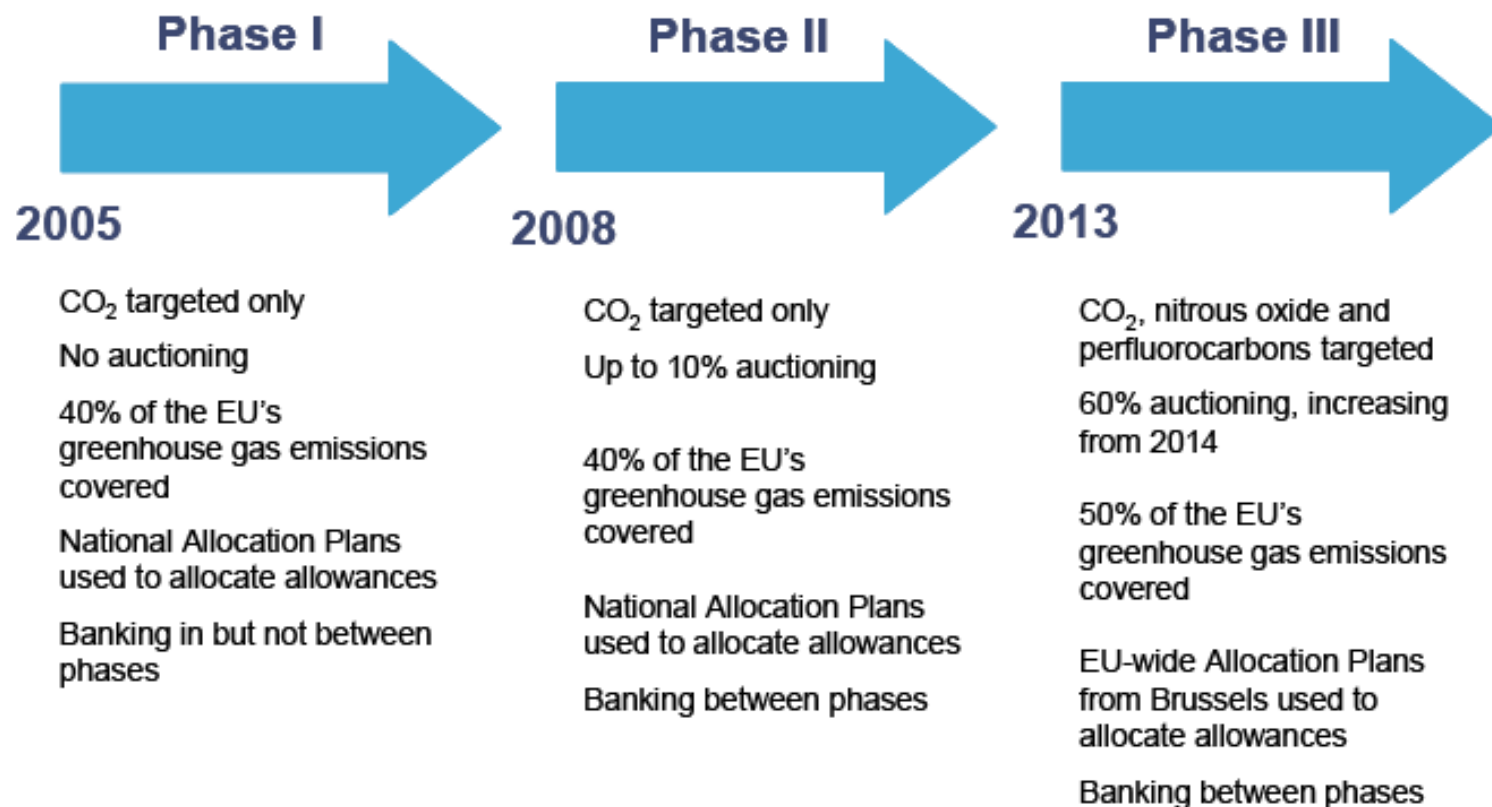
- In January 2008, the European Commission unveiled a package of proposals *inter alia* on amending the EU ETS in the third phase, i.e. 2013-20, which was finally approved in April 2009 (hereinafter the '2009 Directive').
- The package *inter alia* aims at achieving at least a 20% reduction in green house gas (GHG) emissions from 1990 levels by 2020, with provision for raising the target to 30% in the event of an international agreement (under the UNFCCC) committing other developed countries to comparable emissions reductions and economically more advanced developing countries to contributing adequately according to their responsibilities and respective capabilities.
- With this aim in view, the 2009 Directive includes, among other things, an array of measures towards strengthening and expanding the EU ETS beyond 2012 and improving its functioning.

Strengthening of the EU ETS post-2012

The measures aimed at strengthening of the EU ETS include, among others, the following:

- a much larger share of allowances to be auctioned in the third phase (2013-20) instead of being allocated for free, which is the predominant practice under the first two phases.
- the scope of the ETS to be extended with the inclusion of a number of new sectors like aluminium and ammonia, as well as two more greenhouse gases (nitrous oxide and perfluorocarbons) under its purview (in addition to the hitherto included carbon dioxide).

Fig.1: The EU ETS architecture in three phases



Competitiveness issues cropped up

- The implications of increased auctioning of emission allowances in the third phase of the EU ETS, particularly for competitiveness of the EU industries and the concomitant problem of carbon leakage, dominated much of the domestic debates in the EU on the post-2012 climate change and energy package ever since the proposals were unveiled by the European Commission in January 2008.
- **Carbon leakage** refers to the effect that a part of the carbon dioxide emissions reduction achieved by the countries undertaking abatement measures is offset by an increase in carbon dioxide emissions in the non-abating countries.
- It is argued that the mitigation policies adopted by, say, the EU, could render some of their emission-intensive, trade exposed industrial products less-competitive *vis-à-vis* those produced in non-carbon-constrained countries, eventually leading to loss of market share for the former.

Competitiveness and 'Carbon Leakage'

- In the longer run, this could influence the investment decisions of the affected industries in the carbon-constrained countries and induce them to relocate to countries with less stringent mitigation requirements.
- As a result, it is apprehended that the emission reduction achieved, say in the EU, would be offset to a great extent by an increase in emissions elsewhere, thereby leading to carbon leakage.
- Such leakage effects could end up undermining the environmental integrity of the carbon constraining domestic policy measures concerned, according to these developed countries.

Border carbon adjustments to tackle carbon leakage

- The 2009 Directive includes two alternative strategies towards addressing the problem of carbon leakage, namely: (a) free allocation of emissions allowances; and (b) border carbon adjustments.
- As for free allocation, it has been decided that the Community will allocate free allowances at 100% of the benchmark to (sub)sectors meeting the relevant criteria.
- On the proposed border measure, the package envisages that “(s)uch a system could apply requirements to importers that would be no less favourable than those applicable to installations within the Community, for example by requiring the surrender of allowances”.
- As of now, the EU is planning to use free allocation.

The EU List of sectors prone to carbon leakage

- In December 2009 the EU has released a list in which 164 (sub)sectors have been identified as prone to carbon leakage.
- Under one quantitative approach followed by the European Commission, a sector is deemed to be exposed to a significant risk of carbon leakage if the sum of direct and indirect additional costs induced by the implementation of the Directive leads to a **cost increase of at least 5%** of its gross value added, **and** the sector's **trade intensity with third countries exceeds 10%**.
- Trade intensity is measured by the total value of a sector's exports to third countries and imports from third countries, divided by the total value of its turnover and imports from third countries.
- According to the other quantitative approach, a sector is deemed to be exposed to a significant risk of carbon leakage **if the cost increase effect is found to be particularly high (>30%); or if the trade intensity effect is found to be particularly high (>30%)**.

More about the EU List

- Among these 164 (sub)sectors, 151 have been identified at NACE 4-digit level, while the remaining 13 (sub)sectors/product groups have been identified at Prodcom 6-digit or 8-digit levels.
- Among the 151 NACE 4-digit sectors included in the EU List, as many as 117 (77%) have been included only on grounds of their particularly high trade intensity (>30%), despite not having any significant cost impact from the implementation of the Directive.
- The inclusion of the vast majority of sectors in the EU List solely on grounds of high trade intensity, therefore, raises serious questions about the European Commission's methodology.

Part II

Possible Border Carbon Adjustments in the EU and India's Trade: Results from an Empirical Study

Objectives of the study

- The key objectives of this study were to assess:
 - How vulnerable is India's trade to any future border carbon adjustments in the EU?
 - Which HS 6-digit items are most likely to be affected?
 - How vulnerable is India's trade *vis-à-vis* other four BRICS countries?
- The starting point of the study is the EU List of 164 (sub)sectors identified as prone to carbon leakage.
- Though it is difficult to gauge at this juncture as to which sectors would come under the ambit of such a border measure, in case the EU at all decides to implement it, it is clear that the covered sectors would be from among the sectors that have been included in the EU List.

Significance of the study

- Although as of now, the EU is planning to use free allocation of emissions allowances as the key instrument to deal with the problem of carbon leakage, the possibility of using border measures in the future has not been ruled out by the EU entirely.
- Moreover, some of the EU members like France and Italy have continuously been pushing for use of border measures on imports.
- Hence, border measures continue to remain an option that the EU may choose to exercise in the future, depending on how the post-2012 global climate change regime shapes up.
- Moreover, this is a key issue in the negotiating agenda of India at the UNFCCC.
- India has been consistently pushing for inclusion of appropriate textual provisions in the upcoming climate deal barring developed countries from imposition of such border measures.

BASIC countries oppose Border Carbon Adjustments

- Some other emerging economies like China, Brazil and South Africa, which are part of the BASIC grouping in the context of the UNFCCC negotiations, have also supported the Indian proposals.
- It is widely argued by these countries that such border measures on imports would be akin to “protectionism” in the guise of safeguarding the climate.
- Concerns have emerged that these measures could act as a discriminatory market access barrier affecting the exports of these countries to the developed countries in energy intensive sectors that may come under the purview of these measures.
- There is also a big question mark about the WTO-consistency of the proposed border measures [see Das (2011)]

Das, Kasturi (2011), ‘Can Border Carbon Adjustments be WTO-Legal?’ *Manchester Journal of International Economic Law*, Vol. 8 (3), pp.65–97.

Data sources and methodology

- As mentioned above, the empirical exercise is based on the EU List of 164 (sub)sectors.
- In order to determine the product items as per the HS 6-digit classification corresponding to the EU List, a concordance table has been prepared.
- For the NACE 4-digit sectors included in the EU List, the concordance table has been prepared at three levels using the correspondence tables already available on the UNSTATS portal:
 - Level (I): NACE Rev 1.1 to ISIC Rev 3.1
 - Level (II): ISIC Rev 3.1 to CPC Ver 1.1
 - Level (III): CPC Ver 1.1 to HS 2002.
- For the 13 Prodcom items belonging to the EU List, the correspondence table for Prodcom 2002 to HS 2002 available on the UNSTATS web portal has been used.

- In this context, it deserves to be mentioned that there are certain unavoidable difficulties that crop up in preparation of any concordance table that involves going from an activity-based classification (e.g., NACE) to a product-based classification (e.g., HS).
- Certain steps have been followed in the course of preparation of the concordance table with the aim of minimizing the errors.
- At the first stage, a preliminary concordance table has been prepared based on correspondence tables available on the UNSTATS portal. After preparing this preliminary table, each item at each level of the concordance exercise has been individually checked once again in order to minimize on omission of relevant items as well as inclusion of irrelevant items to arrive at the final concordance table corresponding to the EU List.
- Trade data have been extracted from the UN Comtrade database.

Results from the Full EU List

- From the concordance table prepared for this study, **4010 HS 6-digit items** have been identified as corresponding to the 'Full EU List' of 164 (sub)sectors.
- These 4010 items are spread across **84 HS chapters**.
- Such a wide coverage is largely attributable to the dominating influence of the high trade intensity criterion in determining the sectors prone to carbon leakage, as applied by the European Commission.
- However, it seems unrealistic to assume that the EU would choose to apply any impending border carbon adjustment to all the sectors included in the EU List.

Why wide coverage is unlikely?

- First, free allocation of allowances has already been declared by the EU to be the preferred route to address the problem of carbon leakage.
- Second, it has also been officially recognized by the EU that “(i)t could be hard to implement a system which sought to define in detail the carbon content of each individual category of goods, but such precision might be required: this suggests that the system could at best only be envisaged for a limited number of standardised commodities...”

Which sectors then are more likely to face border carbon adjustments?

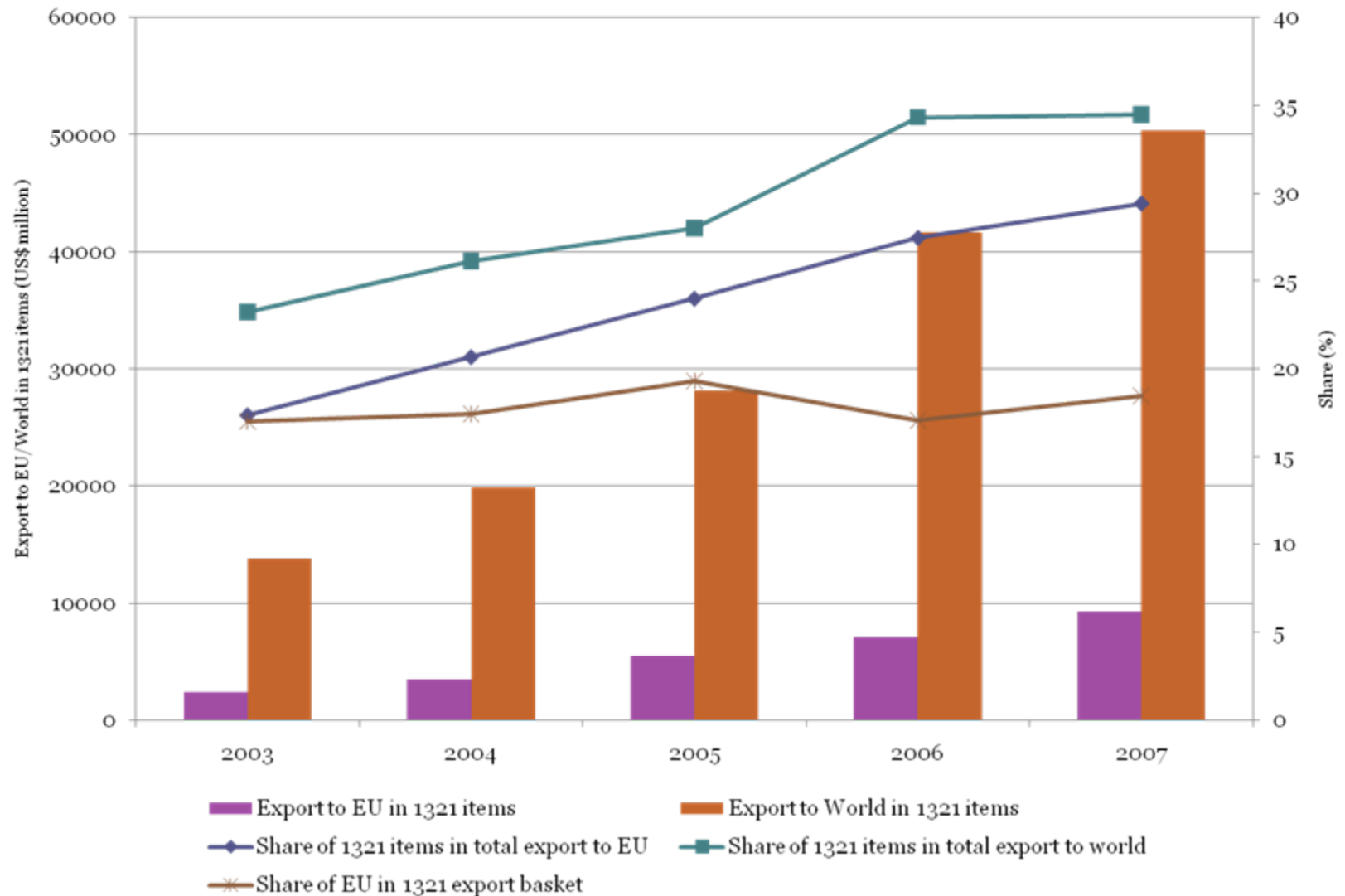
- It may be noted that the **117 highly trade-intensive sectors have low carbon intensities**; in fact a large proportion of these sectors would face a cost increase lower than 1% of their respective Gross Value Added from the Directive.
- It seems plausible to argue that given the small cost burden imposed on these sectors by the EU ETS and in view of the administrative and methodological costs involved in covering any sector under the border measure, the EU may prefer to address the problem of carbon leakage in these 117 sectors through other means than opting for covering them under the border carbon adjustments.
- Hence, **the 47 (sub)sectors may be expected to have a greater likelihood of being covered under any future border carbon adjustments in the EU.**

Results based on the 47 (Sub)sectors

- The question then is, if the EU decides to bring all these 47 (sub)sectors under the purview of the border carbon adjustments, how far India's trade may be affected?
- As per the concordance table, **1399 HS 6-digit items have been found to correspond to these 47 (sub)sectors.**
- These 1399 items are spread across **46 HS chapters.**
- These include some of the most energy-intensive sectors, such as **Iron and steel; Chemicals; Glass; Pulp and Paper; Aluminium; Copper; Cement; and Refined petroleum products**, among others [For a detailed list of these sectors, refer Das (2012)].

Das, Kasturi (2012), 'How Vulnerable Is India's Trade to Possible Border Carbon Adjustments in the EU?', *Journal of World Trade*, Vol. 46 (2), pp.249–300.

Fig.2 India's Export to the EU and World in 1321 HS 6-digit Items



India's exports in items corresponding to the 47 (sub)sectors

- Among the 1,399 HS six-digit items corresponding to the 47 (sub)sectors, India had exports only in 1,321 items for at least one year of the study period (2003–07).
- It could be observed from Fig. 2 that India's exports both to the EU and the World in these items, as a whole, had shown a steady rise between 2003 and 2007.
- An upward trend could also be observed for the share of India's exports to the EU in these items in the country's total exports to the bloc (from 17% to 29%); as well as in the share of India's exports to the World in these items in the country's total global exports (from 23% to 35%).

India's exports

contd...

- Thus, these items seem to assume an increasing significance not only for India's total exports to the EU, but also for India's total global exports.
- Fig.2 further depicts that the share of the EU in India's total global exports in these 1,321 items was hovering around 17%–19%.
- Thus the EU alone accounted for close to one fifth of India's exports in these 1,321 items, as a whole, which implies a fairly high exposure of India to the EU markets for this export basket.

Table 1: Top 10 vulnerable HS chapters in terms of India's Export to the EU in 2007

HS chapter	Description
27	Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral waxes
72	Iron and steel
29	Organic chemicals
52	Cotton
32	Tanning or dyeing extracts; tannins and their derivatives; dyes, pigments and other colouring matter; paints and varnishes; putty and other mastics; inks.
73	Articles of iron or steel
42	Articles of leather; saddlery and harness; travel goods, handbags and similar containers; articles of animal gut (other than silk-worm gut).
39	Plastics and articles thereof
79	Zinc and articles thereof
74	Copper and articles thereof

Part III

India's Exposure to the EU Markets *vis-à-vis* other BRICS Countries

Table 2: Share (%) of main destinations in total exports of BRICS countries –EU DOMINATES

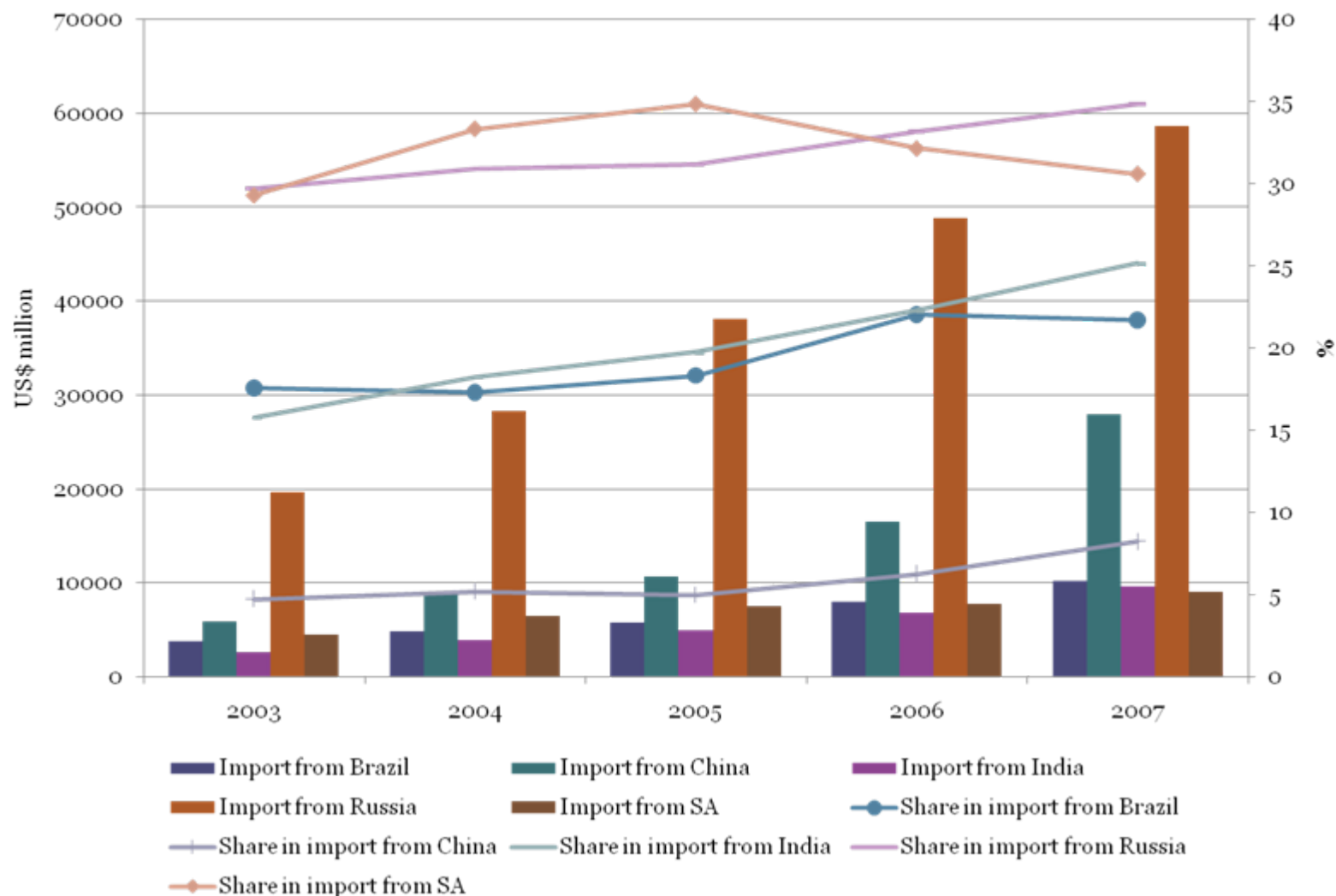
Data Source: WTO

Brazil		China		India		Russia		South Africa	
2007	2010	2007	2010	2007	2010	2007	2010	2007	2010
EU 27 (25.2)	EU 27 (21.8)	EU 27 (20.1)	EU 27 (20.1)	EU 27 (21.7)	EU 27 (20.5)	EU 27 (55.8)	EU 27 (52.2)	EU 27 (33)	EU 27 (26.1)
USA (15.8)	China (15.6)	USA (19.1)	USA (18)	USA (13.8)	UAE (14.4)	Turkey (5.2)	Ukraine (5.8)	USA (11.8)	China (11.4)
Argentina (9)	USA (9.8)	HK China (15.1)	HK China (13.8)	UAE (9.9)	USA (10.8)	Ukraine (4.7)	Turkey (5.1)	Japan (11)	USA (9.9)
China (6.7)	Argentina (9.4)	Japan (8.4)	Japan (7.7)	China (6.5)	China (5.9)	China (4.5)	China (5.1)	China (6.5)	Japan (9)
Venezuela (2.9)	Japan (3.6)	S.Korea (4.6)	S.Korea (4.4)	Singapore (4.4)	HK China (4)	Switzerland (4.1)	Belarus (4.5)	Zambia (2.2)	India (4.2)

Table 3: The EU's imports from the BRICS countries in the 1399 vulnerable HS 6-digit items

Source Country	Sum of EU import from a country in 1399 HS 6-digit Items (US\$ million)					EU's total import from a country (US\$ million)					Share of EU import from a country in 1399 HS 6-digit Items in total EU import from that country (%)				
	2003	2004	2005	2006	2007	2003	2004	2005	2006	2007	2003	2004	2005	2006	2007
Brazil	3797.7	4768.9	5701.0	7931.4	10207.2	21581.3	27557.8	31089.5	35984.1	46996.5	17.6	17.3	18.3	22.0	21.7
China	5857.0	8757.4	10644.0	16517.0	27976.8	123852.7	169307.3	214131.8	263462.0	339741.0	4.7	5.2	5.0	6.3	8.2
India	2595.0	3851.4	4941.8	6755.7	9613.7	16463.1	21145.4	25038.3	30300.6	38225.4	15.8	18.2	19.7	22.3	25.2
Russia	19659.1	28298.8	38130.9	48822.6	58673.0	66142.4	91633.1	122173.7	147207.7	168473.6	29.7	30.9	31.2	33.2	34.8
South Africa	4480.5	6465.1	7495.0	7658.4	9032.5	15285.7	19388.2	21507.5	23820.7	29506.4	29.3	33.3	34.8	32.1	30.6

Fig. 3: The EU's Import from the BRICS Countries in the 1399 Vulnerable HS 6-digit Items



In terms of value of imports...

- It may be observed from Table 3 and Fig.3 that **in terms of the value of imports**, Russia and China are far more exposed to the EU markets compared to the other three BRICS countries.
- The EU's imports from Russia and China also show steadily rising trends during the period under consideration.
- India seems to be the least affected in terms of the value of imports.
- Brazil and South Africa fall somewhere in between.

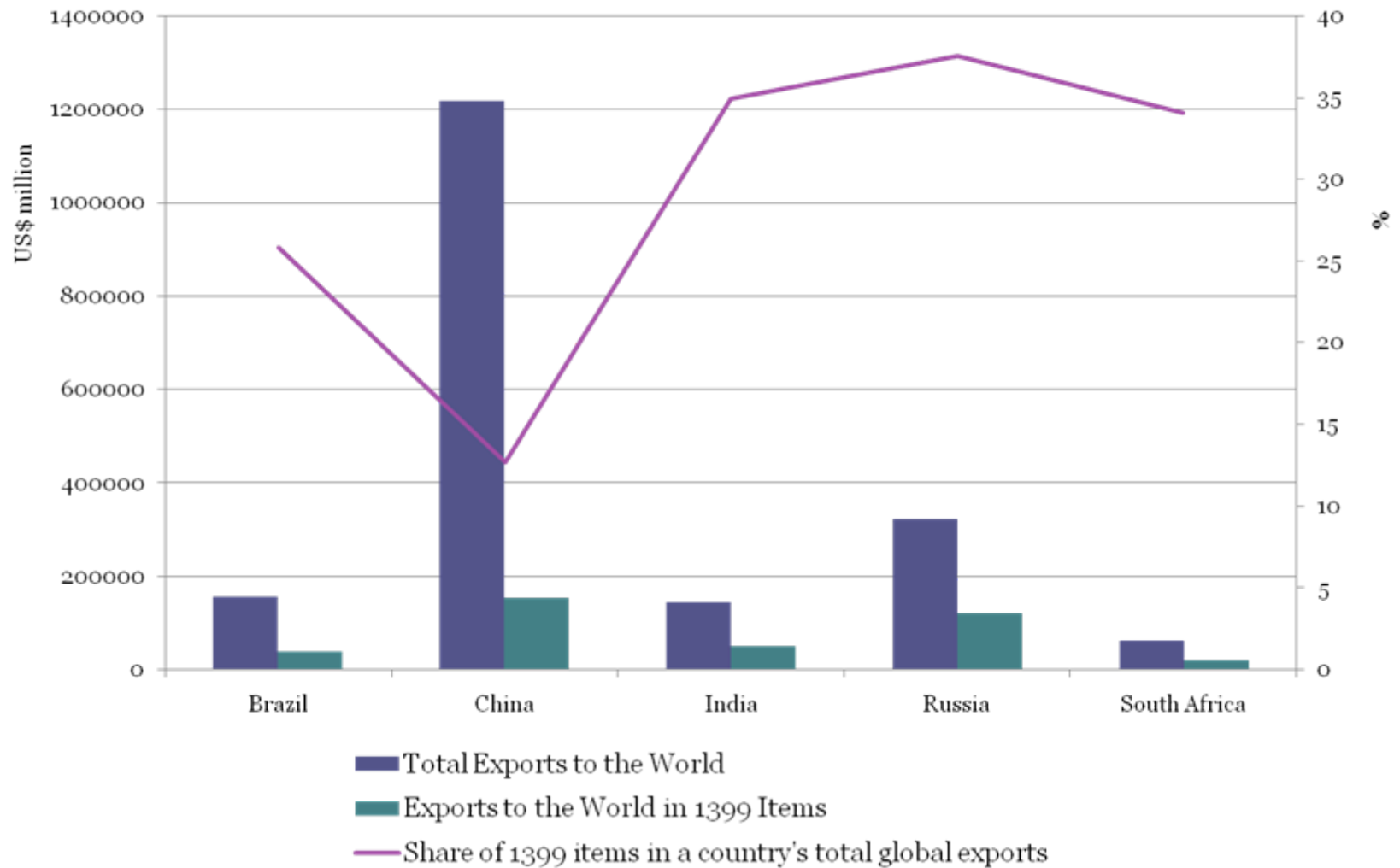
In terms of share of imports...

- However, a very different picture of relative vulnerability emerges when judged **in terms of the share of these 1399 items** in the EU's respective total imports from the BRICS countries (Table 3 and Fig.3).
- Again in this respect also, Russia seems to be the most vulnerable, followed closely by South Africa.
- China seems to be the least vulnerable, while India and Brazil fall somewhere in between.

Table 4: The BRICS countries' exports to the World in the 1399 vulnerable HS 6-digit items (2007)

Country	Total Exports to the World (US\$ miln)	Exports to the World in 1399 Items (US\$ miln)	Share of 1399 items in a country's total global exports
Brazil	157652.9	40763.1	25.9
China	1217882.9	155081.9	12.7
India	144218.9	50380.4	34.9
Russia	323794.5	121465.0	37.5
South Africa	63958.4	21751.2	34.0

Fig.4: The BRICS Countries Exports to the World in the 1399 Vulnerable HS 6-digit Items (2007)



Share of these 1399 items in BRICS countries' total global exports...

- It could be observed from Table 4 and Fig. 4 that these 1399 vulnerable items as a whole accounted for a very high proportion of the total global exports of the four BRICS countries in 2007, excepting China.
- This indicates that the export basket of 1399 items are not only important for the BRICS countries' exports to the EU, but also to their respective global exports.
- Evidently, if exports in these items get affected by border carbon adjustments in the EU, the domestic economies of these BRICS countries are likely to get significantly affected.

For effects on the Indian manufacturing, see Dhar, Biswajit and Kasturi Das (forthcoming), 'The European Union's Proposed Carbon Equalization System: How will it affect India's manufacturing?', *Discussion Paper*, RIS, New Delhi.

Part IV

Policy Implications

Domestic policies

- In view of the significant vulnerability of India to any future border carbon adjustments in the EU, the country should adopt appropriate domestic policies with a view to prepare itself well in advance to tackle any such impending measure in a better way.
- The empirical exercise in this study has been undertaken at HS six-digit level. However, for undertaking targeted policy measures, the identification of the high-risk items should ideally be carried out at a more disaggregate (HS eight-digit) level, so as to allow for a more accurate identification of the most vulnerable items.
- India needs to undertake adequate and appropriate domestic policy measures with the aim of reducing carbon emissions in the energy intensive sectors as a part of its low carbon development strategy.
- The PAT (Perform, Achieve and Trade) scheme, being implemented by India, seems to be a step in right direction.

International policies

- In view of the very high exposure of India to the EU markets in the potentially vulnerable export items, the country needs to explore possibilities of diversification of its export destinations in these items as a step towards softening the potential adverse impacts of such measures on its economy at large.
- Overall, India's exports have shown some diversification in the recent past and the Foreign Trade Policy 2009–2014 of the Government of India has underscored the need for further diversification of trade partners.
- Finally, given their vulnerability to any future border carbon adjustments in the developed countries, it is imperative for India and other vulnerable developing countries to ensure that appropriate safeguard provisions are included in the post-2012 climate change deal against imposition of such unilateral trade measures.

Thank you...

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