TRADE PREFERENCE INDEX

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EU preferential policies

➢ This paper focuses on the EU tariff preferences: the EU, as a matter of fact, has been engaged in a web of preferential trade relations: e.g., the regular Generalized System of Preferences (**GSP**), the Everything But Arms – (**EBA)**, the Africa-Caribbean-Pacific agreement (**Lomé**/**Cotonou** agreements) and the Bilateral **Euro-Mediterranean** Association Agreements.

➢ Preferential trade policies do vary a lot across thousands of tariff lines products and exporters. If we want to carry out sensible comparisons across sectors, countries and over time we need to construct measures that summarize the levels of trade preferences implied by the various schemes available for different commodities and/or countries.

Introduction

This paper focuses on the EU tariff preferences

- The **objective** of this paper is to shed some light on the market access granted by the EU preference programs.

- The main contribution of the paper is the computation of aggregate indexes of the **preference margins** granted by EU to different sectors and country groups.

- To this end we build on the work of **Anderson and Neary** (2003) defining an index (MTPI) that is computed using a partial equilibrium model as in **Bureau and Salvatici** (2004 and 2005)

Preferential Margin

- We compute the **preference margin** for each product on a bilateral basis as **the difference between the maximum applied duty by the EU across all exporters and the actual duty faced by each exporter**.

- This means that we do not care about the difference between multilateral, bound tariffs and bilateral, applied duties; rather we focus on the **actual preference margins** with respect to possible **competitors**.

The tariff aggregation problem

Several forms of trade policy aggregation have been used but most of them are without theoretical foundation (for a survey see Cipollina and Salvatici, 2008).

- The simplest is the **simple average**, with the same weight on all margins, regardless of the importance of the products to which they are granted.

- Clearly, trade policies should be **weighted** by their relative importance in some sense. The simplest and most commonly-used method of doing so is to use actual trade volumes as weights, but trade-weighted averages have major deficiencies in the case of tariffs. As the tariff on any one good rises, its imports fall, so the now higher tariff gets a *lower* weight in the index.

The preference margin aggregation problem

Preferential margins do not seem to be affected by the **endogeneity problem**, since higher margins are typically associated with higher trade values. However, import volumes could be much larger than under an MFN regime because preferences are high **or** because they are imposed on highly elastic goods.

What is needed is a conceptual framework within which the *level* and the *effects* of preferential policy can be combined, and this is what new approaches with rigorous theoretical foundations for the aggregation problem provided.

Mercantilistic Trade Preference Index (MTPI)

- ➤ Since foreign exporters are concerned with domestic market access, it makes sense to aggregate preferences in a way which holds the volume of imports as the reference standard. Accordingly, our policy index is strictly related to the Mercantilistic trade restrictiveness index introduced by Anderson and Neary (2003).

- ➤ Taking import flows as the standpoint, the appropriate way of answering the question "How do we measure trade preferences?" is to compute the uniform preference margin which, if applied to all goods, would be equivalent to the actual tariffs, in the sense of yielding a constant volume of imports.

Definition & Implementation

The *Mercantilistic Trade Preference Index* (MTPI) is the uniform preference margin (**1-**α) where α is the uniform percentageto applied to the maximum applied rates ($\tau^{\mathbf{max}}$) which yields the same volume (at world prices) of tariff-restricted imports as the initial vector of tariffs (***t***).

Formally $\alpha : M[(1 + \alpha\tau^{max})p^{*}, B^{0}] = M^{0}$

➢ ***M*** denotes the import demand functions, while holding constant the balance of trade function at level B^{0}

➢ **p*** denotes the international price vector of the *K* goods ($k = 1, . . . , K$): small country assumption

➢ ***M⁰*** is the value of aggregate imports (at world prices) in the reference period.

Partial equilibrium implementation (Bureau and Salvatici, 2005) modeling demand through a constant elasticity of substitution (CES) functional form.
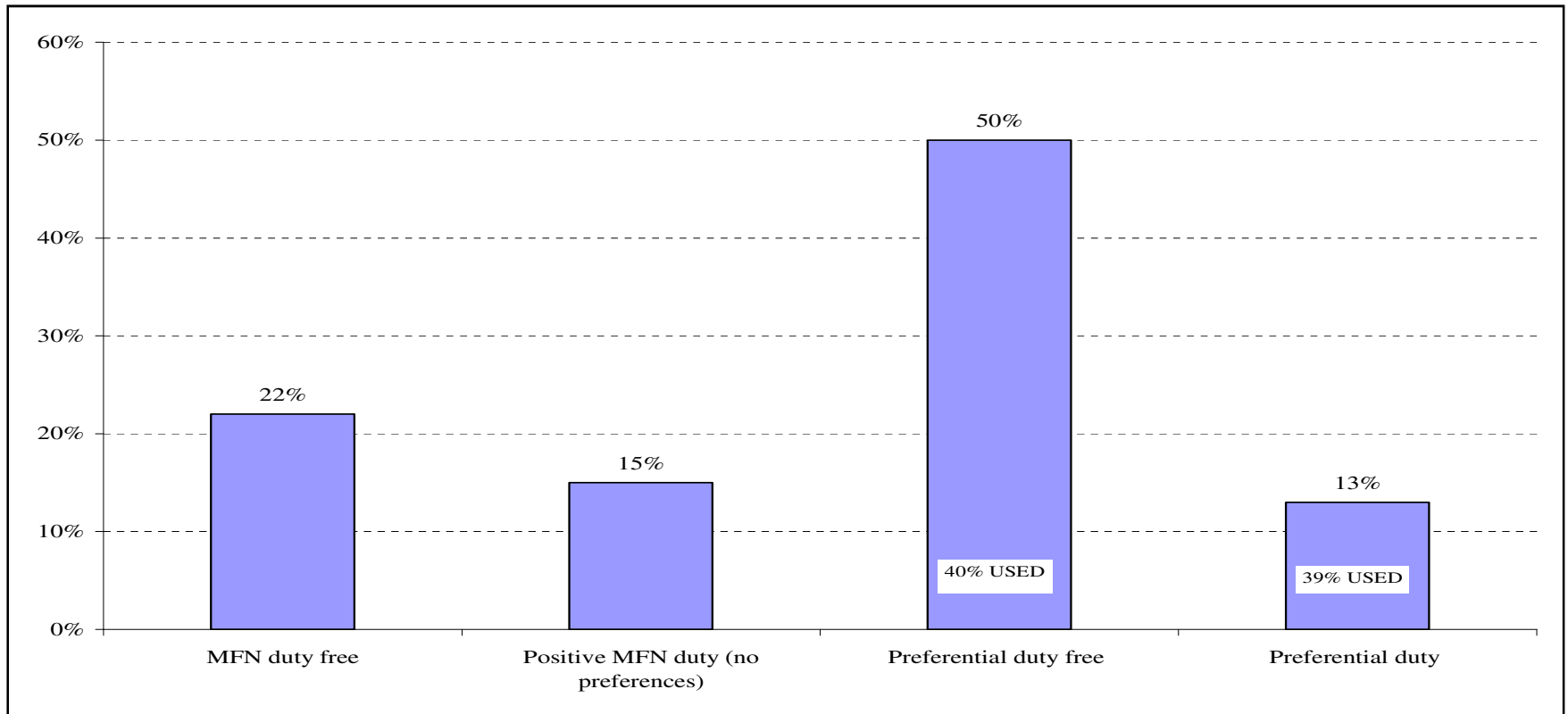
Data sources

- ➢ **Tariffs** are taken from the **MAcMap-HS6 database**.
- ➢ **Trade flows** are from the **Eurostat database Comext**.

We consider **5212 products** from **170 exporters** to the **EU** (15 countries): accordingly, we need to aggregate **283,187 positive bilateral tariff lines**.

- ➢ Information on the **elasticities of substitution** and the **domestic expenditures** is from the GTAP database (**44 sectors** in Version 6)

The most recent year for which these data are (or are going to be as far as the the Version 7 of the GTAP database is concerned) available is **2004**.

Share of EU tariff lines by type of tariff regime

Category	Value
MFN duty free	22%
Positive MFN duty (no preferences)	15%
Preferential duty free	50% (40% USED)
Preferential duty	13% (39% USED)

More than 60% of the tariff-lines with positive trade flows enjoy preferential access, and 80% of them are actually used; while 22% of the tariff lines are MFN-duty free.

Issues about preferences

The vast literature about preferences focuses on:

○ *margins*: (usually) the difference between MFN and preferential tariffs for products;

○ *coverage*: the ratio between the value of products covered by a scheme and that of the dutiable imports originating from the beneficiary country;

○ *utilization*: the ratio between the value of imports that actually receive preferential treatment and the value of those that are in principle covered;

○ *utility* (coverage x utilization): the ratio of the value of imports that get preferences to that of all dutiable imports from the same exporter.

Preference utilization

- The Eurostat COMEXT database contains trade data distinguished by **tariff regimes** as reported by the EU member states.

- Using the information about the preferential trade flows, the applied duty (t) used for the computation of the MTPI is equal to the "MFN tariff" if the preference is not used and to the "preferential (bilateral) tariff" otherwise.

- Accordingly, our MTPI calculation takes into account the volume of trade that actually benefits from the preference.

Potential vs. Preferential MTPI

- Our import demand system is not limited to the preferential imports. In this respect, we compute a **Preferential MTPI**, using preferential (rather than total)-trade weights, that can be compared with the traditional trade-weighted preference margins in order to have an idea of the relevance of the pure aggregation bias.

- We are not able to deal with the coverage of EU preferentialschemes since we have no information about each specific preferential scheme. In order to shed some light on the relevance of the utilization issue, we compute a **Potential MTPI** assuming that all eligible imports do pay the preferential duty.

Preferential-MTPI, simple and weighted average preference margins (%)

Sectors	Preferential-MTPI margin $(1-\alpha)$	Weighted mean margin	Simple mean margin	Preferential tariff lines
Agricultural products:				
Food products n.e.c.	80	83	70	6903
Sugar	72	85	95	53
Dairy products	87	91	83	114
Fishing	88	88	88	633
Vegetables, fruit, nuts	84	87	85	1678
Beverages and tobacco products	26	28	52	388
Crops n.e.c.	89	91	81	1041
Bovine cattle, sheep and goats, horses	94	96	87	32
Non- Agricultural products:				
Textiles	76	80	73	10643
Wearing apparel	82	86	78	9038
Mineral products n.e.c.	84	85	86	3445
Leather products	59	61	84	3125
Motor vehicles and parts	88	89	92	1398
Metal products	98	98	96	4623
Machinery and equipment n.e.c.	99	99	97	12762
Metals n.e.c.	96	96	88	1111

- The table shows the most relevant products in terms of preferential trade.
- The MTPI margins are positively correlated with the averages, though the sector ranking is not always the same.
- The simple averages are often misleadng, but the trade-weighted averages (as it could have been expected) are quite close to the peferential MTPIs: so, why should we bother?

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Preferential MTPI

- ➤ The preferential-MTPI provides a rigorous answer to the preferential margin aggregation problem, but it does not take into account the other relevant dimensions of any preferential policies, such as coverage, utilization and utility.

- ➤ For example, if we consider two sectors characterized by the same preference margins and preferential trade volumes, the preferential-MTPI would be the same, but the relevance of the preferential policies may be quite different according to the relevance of preferential trade on the overall trade flows.

- ➤ In this respect, the MTPI provides a much more satisfactory picture, since it would be equal to the preferential MTPI if all trade was preferential, but it decreases with the share of preferential imports with respect to total trade.

MTPI and potential-MTPI preference margins (%)

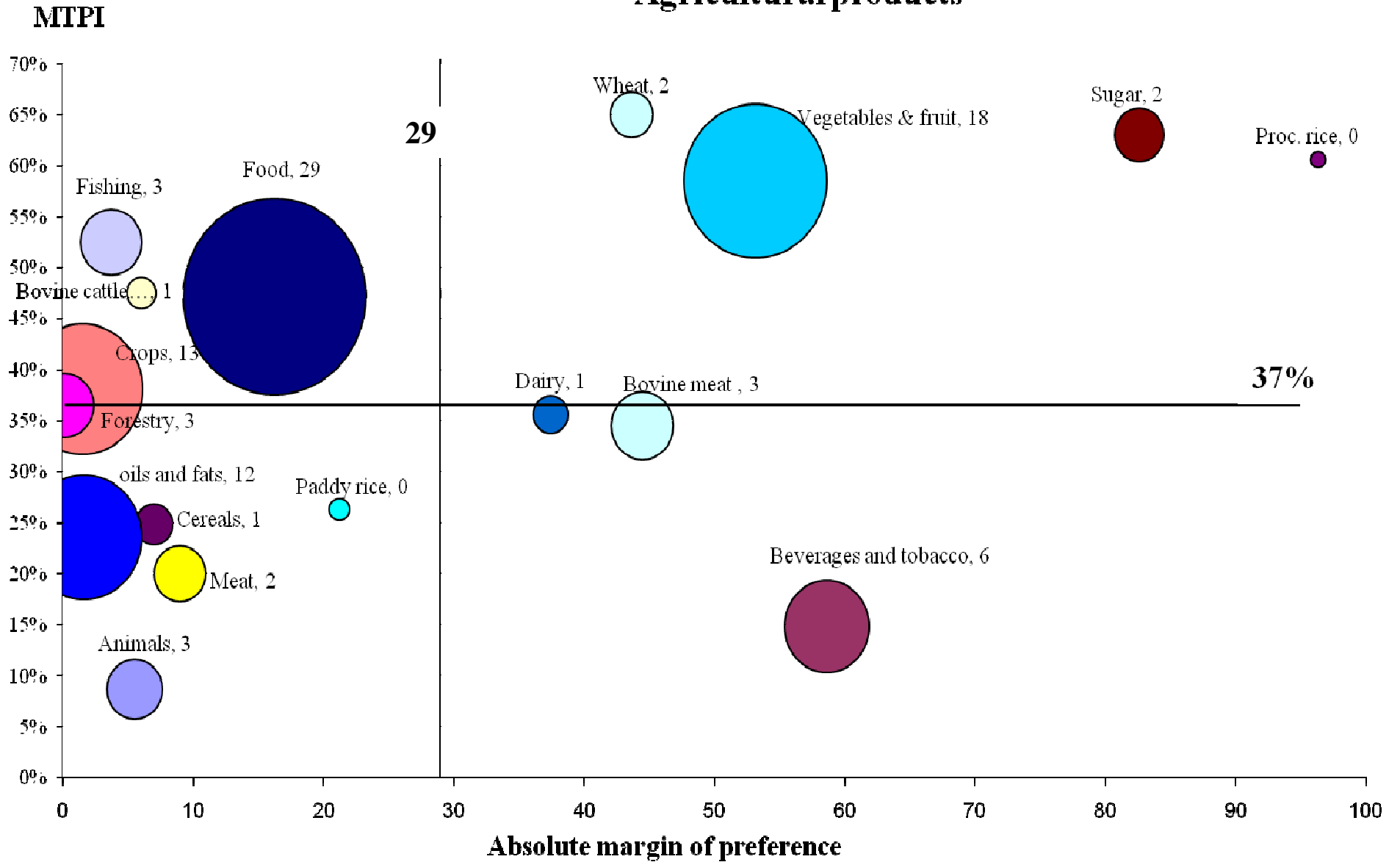| Sectors	MTPI margin (1-α)	Potential-MTPI margin (1-α)
All products	**29**	**42**
Agricultural products	**37**	**47**
Bovine cattle, sheep and goats, horses	48	88
Bovine meat prods	35	62
Animal products n.e.c.	9	33
Dairy products	36	55
Forestry	37	48
Food products n.e.c.	47	58
Crops n.e.c.	38	48
Vegetables, fruit, nuts	59	68
Non Agricultural products	**26**	**40**
Petroleum, coal products	61	84
Textiles	35	54
Metals n.e.c.	50	68
Ferrous metals	63	80
Wearing apparel	27	44
Chemical, rubber, plastic products	22	38
Wood products	45	60
Machinery and equipment n.e.c.	26	38
Minerals n.e.c.	61	73

- The **overall MTPI** margin granted by the EU is **29%**, but there are large differences across sectors. Most agricultural sectors are far above the average with the highest percentage in the case of **animals, vegetables and food products**. On the contrary, most non-agricultural products present lower figures (**26%** vs. **37%)**, even if in some sectors (e.g. **petroleum, metals and minerals**) preferences are quite high.
- The largest differences between MTPI and potential-MTPI, regard the animal sectors – **animas, meat** and **dairy products** – that are quite heavily regulated in terms of sanitary and phyto-sanitary measures.
- Large differences emerge for almost all non-agricultural products: this may be due to the rules of origin requirements.

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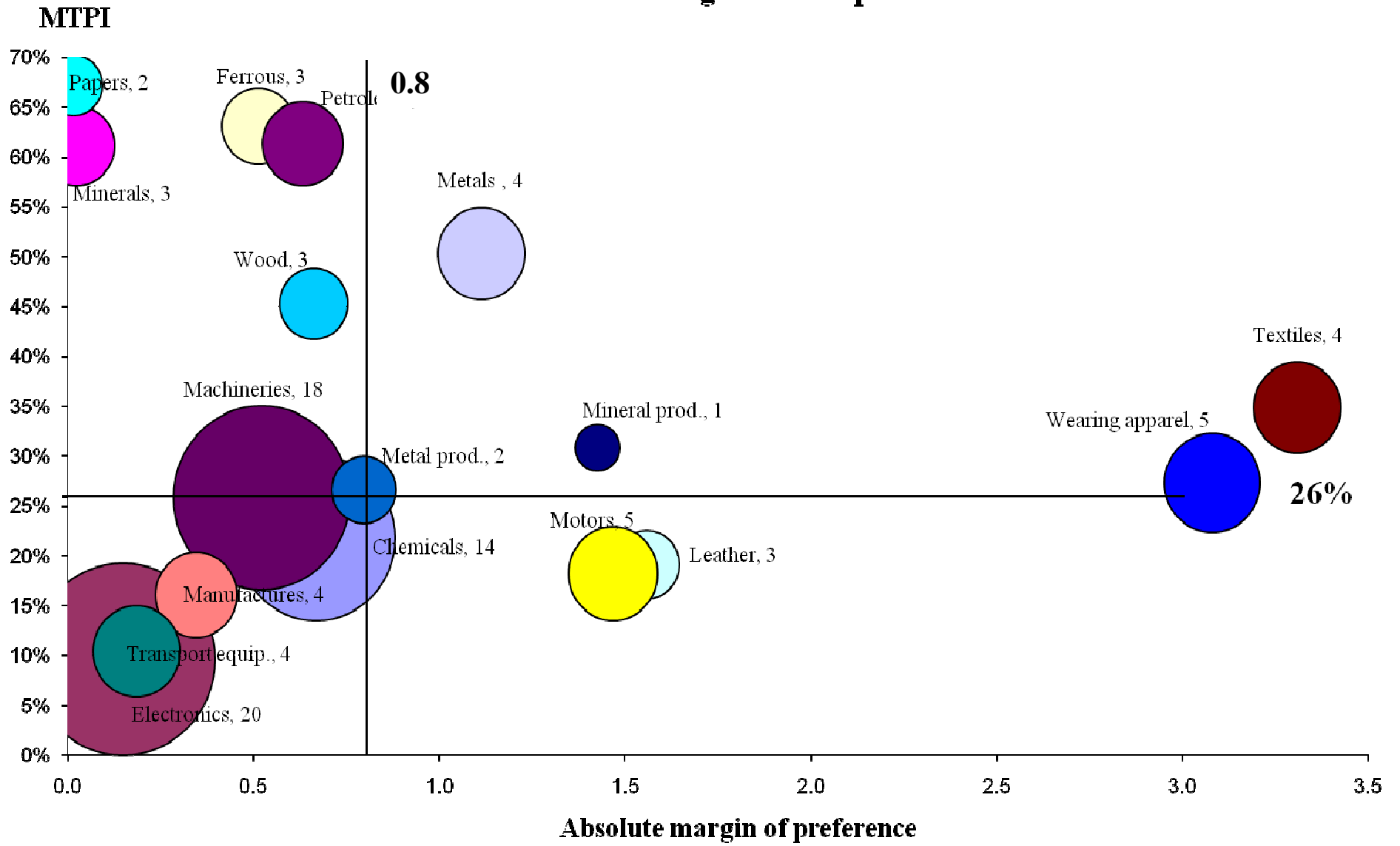# MTRI uniform tariff equivalents and absolute preference margins

Sectors	MTRI applied uniform tariff	Absolute preference margin
All products	**5**	**2**
Agricultural products	**50**	**29**
Beverages and tobacco products	337%	59%
Bovine meat prods	84%	44%
Dairy products	68%	37%
Processed rice	63%	96%
Paddy rice	60%	21%
Animal products n.e.c.	58%	6%
Sugar	49%	83%
Vegetables, fruit, nuts	38%	53%
Meat products n.e.c.	36%	9%
Wheat	24%	44%
Non-Agricultural products	**2.4**	**0.8**
Wearing apparel	8%	3%
Leather products	7%	2%
Motor vehicles and parts	7%	1%
Textiles	6%	3%
Mineral products n.e.c.	3%	1%

- It is worth recalling that the same relative margin imply very different duty reductions according to the initial tariff levels. In order to express the margin in (absolute) percentage points, we refer the relative margin to the corresponding MTRI uniform tariffs.
- The two possible measures of the preference margins (relative and absolute) are obviously related, though sectors below the average in terms of the MTPI – such as **beverages, vegetables, dairy, meat and grains** – still present quite substantial absolute margins.
- The **non-agricultural products** face much lower tariff and (consequently) margins. Notwithstanding the largest preferential margins, still the **primary sectors** remain by far the most protected as it is signaled by MTRI uniform tariff equivalents of the actual rates.

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Agricultural products

MTPI

70%
65%
60%
55%
50%
45%
40%
35%
30%
25%
20%
15%
10%
5%
0%

29

37%

Fishing, 3

Bovine cattle..., 1

Food, 29

Crops, 13

Forestry, 3

oils and fats, 12

Cereals, 1

Meat, 2

Paddy rice, 0

Animals, 3

Wheat, 2

Vegetables & fruit, 18

Sugar, 2

Proc. rice, 0

Dairy, 1

Bovine meat , 3

Beverages and tobacco, 6

0   10   20   30   40   50   60   70   80   90   100

Absolute margin of preference

Non Agricultural products

MTPI

Papers, 2

Ferrous, 3

Petrole

0.8

Minerals, 3

Metals , 4

Wood, 3

Textiles, 4

Machineries, 18

Mineral prod., 1

Wearing apparel, 5

Metal prod., 2

26%

Chemicals, 14

Motors, 5

Leather, 3

Manufactures, 4

Transport equip., 4

Electronics, 20

70%
65%
60%
55%
50%
45%
40%
35%
30%
25%
20%
15%
10%
5%
0%

0.0   0.5   1.0   1.5   2.0   2.5   3.0   3.5

Absolute margin of preference

Relative preference margins (1 - α) for exporting regions

Sector		Africa	Asia	Europe
All sectors		**55**	**17**	**69**
Beverages and tobacco products		3	41	16
Processed food	Processed rice	<u>66</u>	66	<u>85</u>
	Food products n.e.c.	34	34	<u>59</u>
Sugar		<u>60</u>	53	69
Grains	Paddy rice	44	44	54
	Cereal grains n.e.c.	27	27	26
	Wheat	55	55	59
Dairy products		16	48	48
Animal products (meat and livestock)	Bovine meat prods	25	25	51
	Meat products n.e.c.	0	0	49
	Bovine cattle, sheep and goats, horses	12	12	51
Textiles and textile articles	Wearing apparel	25	15	<u>70</u>
	Textiles	15	29	<u>73</u>
	Leather products	29	12	<u>64</u>
Fishing		<u>71</u>	78	<u>78</u>
Vegetable oils and fats		34	9	9
Vegetables, fruit, nuts		<u>73</u>	28	28
Chemical, rubber, plastic products		<u>64</u>	13	13
Electronic equipment		34	10	10
Machinery and equipment n.e.c.		74	9	9

- As expected, the other **European countries** benefits from the largest margins (**69% overall**). The most preferred sectors are **processed food** and **fishing**, followed by **textiles and apparels**.
- The second most preferred region is **Africa** (**55% overall margin**) that includes many members of the Generalized System of Preferences (and more recently of the Everything But Arms initiative) as well as of the Africa-Caribbean-Pacific agreement. As far as these countries are concerned, the most preferred sectors are **fruits and vegetables**, **fishing**, **processed rice** and **sugar**, but also **chemicals, rubber and plastic products**.
- **Asian countries** benefit from much lower overall margins (**17%**).

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Relative preference margins (1 - α) for exporting regions

Sector		North-America	Pacific	South-America
All sectors		**9**	**21**	**45**
Beverages and tobacco products		1	19	24
Processed food	Processed rice	61	47	39
	Food products n.e.c.	21	22	49
Sugar		41	97	61
Grains	Paddy rice	-	41	0
	Cereal grains n.e.c.	24	57	24
	Wheat	70	72	71
Dairy products		36	21	25
Animal products (meat and livestock)	Bovine meat prods	33	19	49
	Meat products n.e.c.	2	0	20
	Bovine cattle, sheep and goats, horses	0	0	2
Textiles and textile articles	Wearing apparel	1	1	44
	Textiles	3	4	44
	Leather products	3	0	8
Fishing		0	4	20
Vegetable oils and fats		8	74	60
Vegetables, fruit, nuts		6	0	67
Chemical, rubber, plastic products		1	9	53
Electronic equipment		2	0	3
Machinery and equipment n.e.c.		1	0	62

- The third region enjoying rather large preferences (**45% overall**) is **South-America**, where the EU has been rather active in signing reciprocal agreements with different countries or regional blocs, such as the Mercosur. In this case in addition to some sectors already mentioned – **fruits and vegetables**, **sugar**, and **chemical** – there are some specific sectors related to the comparative advantages of the Latin-American countries, such as **vegetable oils and fats** and, more importantly, **bovine meat**.
- The remaining three regions are characterized by much lower overall margins, ranging from **9%** of **North America**, to **21%** of the **Pacific** area.

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Sensitivity of the Preference Margin to changes in the elasticities of substitution

Sector		$0.3*\sigma_j$	$1.3*\sigma_j$	$2*\sigma_j$	$3*\sigma_j$
All sectors		**34**	**28**	**24**	**22**
Beverages and tobacco products		18	14	12	10
Processed food	Processed rice	63	59	53	43
	Food products n.e.c.	51	46	42	37
Sugar		73	59	53	45
Grains	Paddy rice	32	--		-
	Cereal grains n.e.c.	26	25	24	24
	Wheat	67	65	64	62
Dairy products		46	33	28	-
Animal products (meat and livestock)	Bovine meat prods	43	-	26	-
	Meat products n.e.c.	25	19	16	13
	Bovine cattle, sheep and goats, horses	59	43	34	25
Textiles and textile articles	Wearing apparel	32	25	21	17
	Textiles	40	33	28	23
	Leather products	21	18	16	14
Fishing		55	52	50	46
Vegetable oils and fats		27	23	20	18
Vegetables, fruit, nuts		65	55	46	38
Chemical, rubber, plastic products		24	21	19	17
Electronic equipment		12	9	7	5
Machinery and equipment n.e.c.		27	25	24	22

- Even though the ranking of different products sectors the same for the various assumptions, the MTPIs are obviously quite sensitive to the degree of substitution between products, consistently with the results obtained by Bureau and Salvatici (2005).
- An **increase** in the **elasticity of substitution** leads to lower values of the overall-MTPI index, which **decreases** from **34%** to **22%**, since lower margins are required in order to generate the same trade volumes if the products are more similar from the consumer point of view.

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CONCLUSIONS (I)

➢ In this work, we provide a summary measure of the EU preferential policies, taking into account the different margins in a large number of tariff lines.

➢ Even if the preferential-MTPI provides a theoretically consistent aggregation of individual preference margins, it tends to overestimate the relevance of preferential policy ies since it does not take into account neither lower potential coverage or lack of utilizationthe of preferential trade.

➢ Accordingly, the MTPI computed taking into account the total trade flows provides a more realistic assessment of the policies under consideration.

CONCLUSIONS (II)

- In terms of the MTPI, the overall EU preference margin is around 30%, corresponding to 2 percentage points in absolute terms.
- There are large differences across sectors: agricultural sectors feature a 37% overall relative margin corresponding to 29 percentage points; on the contrary, most non-agricultural sectors present much lower figures (26% overall corresponding to only 0.8 percentage points).

CONCLUSIONS (III)

- Results by regions show that African and South-American exporters, though enjoying the largest preferences, have very low shares of EU imports, while Asian and North-American countries register large shares notwithstanding the lack of significant preferences.

- Sensitivity to different values of the substitution elasticities: even though the ranking of different sectors does not change, an increase in the elasticity of substitution leads to lower values of the overall-MTPI index, since lower margins are required in order to generate the same trade volumes if the products are more similar from the consumer point of view.