Motives for using Trade Defense Instruments in the European Union

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ABSTRACT

With the US and India, the European Union is one of the most active users of trade defense instruments (TDIs) worldwide. Traditionally, TDIs have been presented by its proponents as the international trade analogue of internal market competition policies, addressing predatory and other price-distorting and anti-competitive business practices of firms and market-distorting measures of foreign governments (whether for "strategic policy" or mercantilist objectives). The existing economic literature on TDI, however, is quite overwhelmingly negative towards the way TDIs have been used and indeed calls into question whether there is any defensible policy rationale for their existence. This judgment is based on analyses of why, how and with what effect TDIs have been used. This paper contributes to the literature by developing an enhanced framework of analysis for why TDIs are used and applying it to recent European experience. Since TDIs do not involve a motive test, motive must be inferred from patterns of use. As a result, numerous theories have emerged as to the de facto role of TDIs – as "surge" protectors, buffers for macroeconomic shocks, retaliatory threats to safeguard market access abroad, domestic political economy grease for trade liberalization and so forth. This lack of clarity leads to many real problems. For trading firms, it creates uncertainties about the rules of the road for market access, which can have a chilling effect on trade. For governments, it results in an ad hoc quality to policy decisions. For public discourse, it contributes to the often confused, acrimonious and emotive nature of the debate about "unfair" trade. The analytical framework we propose infers motive from context, including the policy context (competition and industrial policy concerns, communitarian motives), business cycle and exchange rate dynamics, the trade policy context of cases (reciprocal TDI applications), and the competitiveness context (revealed comparative advantage for EU compared to target country, emergence of "surge" countries). We find that, with the exception of the use of TDI as protection against "surge" countries no single motive can explain more than a minority of TDI cases.

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1 INTRODUCTION

In this paper, we consider the de facto role of trade defense instruments (TDIs) in the European Union's (EU) economic policy framework. Since TDIs do not involve a motive test, their actual policy role must be inferred from patterns of use.

Given the heterogeneity of circumstances facing industries, the link between the pattern of actual use and the formal stated policy motive of countering some form of predatory practice in the absence of competition policy and other market regulatory mechanisms in the international domain, has been found in many analyses to be weak and numerous theories have emerged as to the de facto role of TDIs. The resulting lack of clarity concerning the role of TDI leads to many real problems. For trading firms, it creates uncertainties about the rules of the road for market access, which can have a chilling effect on trade. For governments, it results in an ad hoc quality to policy decisions. For public discourse, it contributes to the often confused, acrimonious and emotive nature of the debate about "unfair" trade. Our approach is to identify the "revealed motive" (analogous to the concepts of revealed preference in consumer demand theory, and revealed comparative advantage in trade theory) from the context of use.

In this regard, we consider the various potential roles for TDIs identified in the literature: as an instrument of industrial policy; as an international surrogate for competition policy; as a buffer for macroeconomic volatility (including business cycles and exchange rate fluctuations); as a means of retaliation to protect market access abroad; as a "surge" protector that helps manage the pressures of disruptive structural change in the global trading system; and as a way to intercede with primarily social goals when trade pressures threaten disruptions to communities.

The paper is organized as follows:
- Section 2 provides the basic background information concerning the frequency and pattern of use of TDIs by the EU. We concentrate on the most recent period, cases initiated in 2005-2010.
- Section 3 considers whether there is evidence for the traditional theoretical construction of TDI as the international surrogate for competition policy. We follow the literature and apply a series of filters or "screens" to eliminate cases that would not typically raise domestic competition policy concerns to identify a residual class of cases that might be prompted by such considerations. We discuss the economic significance of TDI as an international competition policy instrument in that light.
- Section 4 considers whether the patterns of comparative advantage in sectors targeted by TDIs indicate tendencies towards strategic industrial or trade policies.
- Section 5 considers the role of TDI as a buffer for cyclical and exchange rate fluctuations, a view that has received considerable attention in the literature.
- Section 6 considers the evidence for and against retaliatory motives.

- Section 7 considers TDI as "surge" protectors to attenuate the impact on the EU economy of disruptive change in the global economy; the prominent role of China, the "surge" economy of the 2000s and the predominant target of EU TDI measures, is discussed.
- Section 8 considers possible "communitarian" motives based on an analysis of the communities in which plant closures are at risk in particular TDI cases.
- Section 9 sets out our conclusions.

2 BACKGROUND ON THE EU'S USE OF TDI

According to the WTO, from 1995 to the end of June 2010, 414 investigations were initiated by the EU, of which 269 resulted in affirmative determinations (Table 1). Nevertheless, since 2007 the EU's AD activities have been comparatively restrained. In 2009, 15 new investigations were initiated and 9 measures taken. The pace of trade defense actions continued at a similar level in 2010 (European Commission 2010): 15 investigations were initiated and 6 definitive AD measures were imposed. As at 31 December 2010, 124 anti-dumping measures were in force. According to the WTO's Trade Policy Review of the EU, the share of EU trade covered by TDIs is about 0.6% (WTO 2011).

Table 1: Comparison of EU and global use of TDI, 1995-2010

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Total
Anti-dumping initiations																	
EU	33	25	41	22	65	32	28	20	7	30	25	35	9	19	15	8	414
Global	157	226	246	266	358	298	371	315	234	220	202	203	165	213	209	69	3752
Share EU/ Global (%)	21	11	17	8	18	11	8	6	3	14	12	17	6	9	7	12	11.0
Anti-dumping measures																	
EU	15	23	23	28	18	41	13	25	2	10	21	12	12	15	9	2	269
Global	119	92	127	181	190	237	170	218	224	154	138	140	108	139	137	59	2433
Share EU/ Global (%)	13	25	18	16	10	17	8	12	1	7	15	9	11	11	7	3	11.1
Anti-subsidy initiations																	
EU		1	4	8	19		6	3	1		3	1		2	6	2	56
Global	10	7	16	25	41	18	27	9	15	8	6	8	11	16	28	5	250
Share EU/ Global (%)	0	14	25	32	46	0	22	33	7	0	50	13	0	13	21	40	22.4
Countervailing measures																	
EU			1	2	3	10		2	3	2	1				1		25
Global	19	5	3	6	14	21	14	14	6	8	4	3	2	11	9	4	143
Share EU/ Global (%)	0	0	33	33	21	48	0	14	50	25	25	0	0	0	11	0	17.5

Notes: Data for 2010 refer to first six months. "Initiations" refers to initiations of new investigations; "measures" refer to definitive measures imposed.
Source: Authors' calculations based on WTO statistics.

While the share of total trade covered by TDIs is small, the share of trade in the particular sectors targeted by TDI tends to be quite large (see Table 2, which covers cases initiated in 2005-2010).

Table 2: Relative size of EU imports from target countries in sectors concerned case over overall EU imports in that sector

Product	Case	%
Seamless pipes and tubes, of iron or steel	AD.490	35.55%
Lever arch mechanisms	AD.491	58.95%
Ethyl alcohol	AD.492	31.17%
Refrigerators (side-by-side)	AD.493	57.50%
Footwear with protective toecaps	AD.495	31.55%
Plastic sacks and bags	AD.497	60.92%
Footwear (with uppers of leather)	AD.499	29.80%
Compact disks - recordable (CD-Rs)	AD.500	29.75%
DVD+/-R (recordable digital versatile discs)	AD.501	33.22%
Tungsten electrodes	AD.502	5.85%
Cathode-ray color television picture tubes	AD.503	43.26%
Pentaerythritol	AD.504	80.68%
Strawberries (frozen)	AD.505	37.82%
Ironing boards	AD.506	60.43%
Sweet corn (prepared or preserved in kernels)	AD.507	68.17%
Saddles	AD.508	48.40%
Polyester staple fibers	AD.509	34.67%
Camera systems	AD.510	32.92%
Peroxosulphates	AD.511	68.33%
Dicyandiamide	AD.512	87.39%
Silico-manganese	AD.513	52.00%
Dihydromyrcenol	AD.514	6.86%
Ferro-silicon	AD.516	30.74%
Polyvinyl alcohol (PVA)	AD.517	37.50%
Coke (over 80mm)	AD.518	53.04%
Compressors	AD.519	18.15%
Manganese dioxides	AD.520	80.06%
Monosodium glutamate	AD.521	59.96%
Citric acid	AD.522	78.82%
Hot-dipped metallic-coated iron or steel flat-rolled products	AD.526	31.75%
Stainless steel cold-rolled flat products	AD.527	17.91%
Candles, tapers and the like	AD.528	70.91%
PSC wires and strands	AD.529	27.01%
Wire rod	AD.530	67.76%
Biodiesel	AD.531	5.88%
Seamless pipes and tubes, of iron or steel	AD.533	35.76%
Aluminium Foil	AD.534	46.59%
Sodium metal	AD.535	49.37%
Hollow sections	AD.537	58.02%
Ring binder mechanisms	AD.538	7.07%
Hot-dipped metallic-coated iron or steel flat-rolled products	AD.526	31.75%
Stainless steel cold-rolled flat products	AD.527	17.91%
Cargo scanning systems	AD.539	7.29%
Molybdenum wires	AD.540	37.79%
Aluminium road wheels	AD.541	21.63%
Stainless steel fasteners and parts thereof	AD.542	7.46%
Sodium gluconate	AD.544	57.57%
Polyethylene terephthalate (PET)	AD.545	29.66%
Ironing boards (Since Hardware)	AD.548	75.17%
Continuous filament glass fiber products	AD.549	43.37%
Purified terephthalic acid and its salts	AD.550	70.80%
Coated fine paper	AD.552	14.19%
Melamine	AD.554	49.95%
Stainless steel bars	AD.555	39.98%
Open mesh fabrics of glass fibers	AD.558	42.84%
Ceramic tiles	AD.560	47.60%
Wireless wide area networking modems	AD.561	45.85%
TCPP	AD.562	66.41%
Fatty alcohols	AD.563	65.33%
Seamless pipes and tubes of stainless steel	AD.565	25.12%
Vinyl acetate	AD.566	86.29%
Graphite electrode systems	AD.567	24.73%

Source: Calculations by the authors based on International Trade Center data. Note: One case was removed due to data inconsistency (AD 496: Chamois Leather).

The reduced use of AD measures by the EU in recent years is also reflected in the decline of the EU's share in new AD measures adopted globally (see Figure 1). EU TDI use fell from 11.1% in 2007 to 3.4% in the first half of 2010, compared to 11.1% over the period 1995 to 2010.

Figure 1: Comparison of EU and global use of TDI, 1995-2010

(a) Anti-dumping
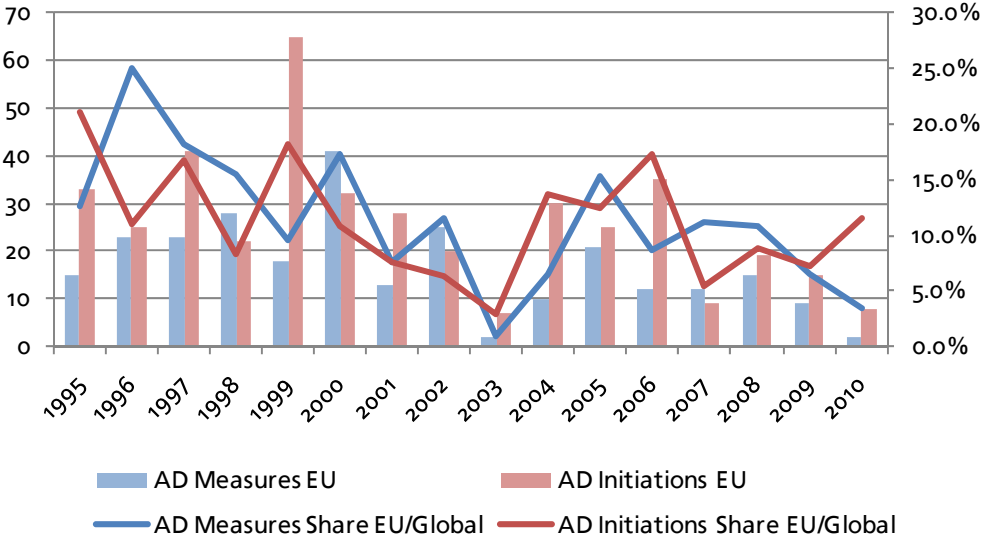
(b) Anti-subsidy (countervailing measures)
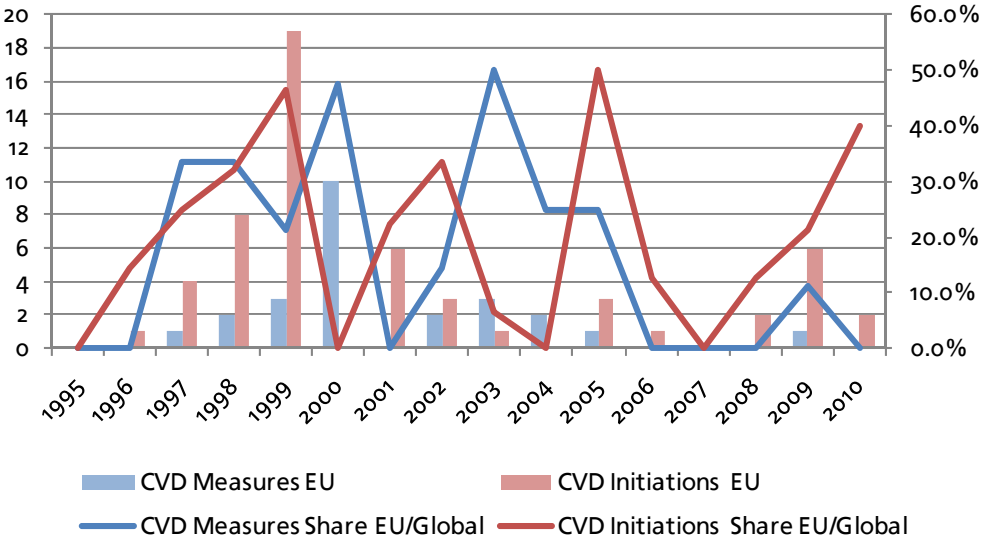
Notes: Data for 2010 refer to first six months. "Initiations" refers to initiations of new investigations; "measures" refer to definitive measures imposed.
Source: Authors' calculations based on WTO statistics.

Nonetheless, despite the slowdown of AD initiations by the EU, globally the restraint in initiating new cases was even stronger and as a result the EU's share in new AD initiations increased from 5.5% in 2007 to 11.6% in 2010, against a long-term average of 11.0% (1995-2010).

With regard to anti-subsidy measures, since 1995, 56 investigations were initiated of which 25 were affirmative. Unlike anti-dumping measures, there was an uptick in the European Union's

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use of anti-subsidy measures in response to the global economic crisis; i.e. the number of new investigations increased sharply in 2009 to 6, leading to 4 measures taken in 2010[1]. In 2010, 3 new investigations were initiated (European Commission 2010). As at 31 December 2010, 11 countervailing measures were in force. In comparison with global use of anti-subsidy investigations, the EU's use of the instrument has sharply increased since 2007 (Figure 11).

Compared with other users, the EU is among the "heavy users" of TDI. Nevertheless, along with the United States (with uses AD more frequently than the EU), the EU is the only major user whose share in global AD over the recent past (2007-2010) was lower than over the long run (Table 3). India, Argentina, Brazil, China and Turkey all became relatively more important users.

Table 3: Most important users of anti-dumping, ranked by frequency of use 2007-2010

	AD initiations	2007-2010		1995-2010		AD measures	2007-2010		1995-2010	
		No.	%	No.	%		No.	%	No.	%
1	India	150	22.9	613	16.3	India	103	23.3	436	17.9
2	United States	66	10.1	442	11.8	United States	48	10.8	289	11.9
3	Argentina	62	9.5	277	7.4	Brazil	39	8.8	105	4.3
4	**European Union**	**51**	**7.8**	**414**	**11.0**	Argentina	38	8.6	190	7.8
5	Brazil	50	7.6	184	4.9	**European Union**	**38**	**8.6**	**269**	**11.1**
6	China	39	5.9	182	4.9	China	35	7.9	137	5.6
7	Turkey	36	5.5	145	3.9	Turkey	35	7.9	142	5.8
8	Pakistan	29	4.4	53	1.4	Korea, Republic of	16	3.6	70	2.9
9	Korea, Republic of	23	3.5	111	3.0	Canada	10	2.3	94	3.9
10	Australia	21	3.2	212	5.7	Colombia	10	2.3	24	1.0
11	Indonesia	18	2.7	83	2.2	Pakistan	10	2.3	24	1.0
12	Ukraine	15	2.3	31	0.8	Ukraine	9	2.0	24	1.0
13	Colombia	14	2.1	50	1.3	South Africa	8	1.8	128	5.3
14	Israel	12	1.8	43	1.1	Australia	7	1.6	81	3.3
15	Canada	11	1.7	152	4.1	Egypt	6	1.4	52	2.1
16	South Africa	11	1.7	212	5.7	Indonesia	6	1.4	35	1.4
17	Mexico	7	1.1	98	2.6	Japan	4	0.9	7	0.3
18	New Zealand	6	0.9	53	1.4	Peru	4	0.9	48	2.0
19	Peru	6	0.9	69	1.8	Thailand	4	0.9	31	1.3
20	Thailand	6	0.9	43	1.1	Israel	3	0.7	21	0.9
21	Chile	4	0.6	19	0.5	New Zealand	3	0.7	22	0.9

Notes: Data for 2010 refer to first six months. "Initiations" refers to initiations of new investigations; "measures" refer to definitive measures imposed.
Source: Authors' calculations based on WTO statistics.

The development of countervailing actions is similar, as shown in Table 4. The EU's share both in initiation of investigations and in measures taken over the period 2007 to 2010 was lower than long-term average. At the same time, however, these average data hide the fact, described above, that most recently anti-subsidy measures have picked up.

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[1] These are not reflected in Table 1 as they were adopted only in the second half of 2010 (European Commission 2010).

**Table 4: Most important users of countervailing measures, ranked by frequency of use 2007-2010**

	CVD initiations	2007-2010		1995-2010		CVD measures	2007-2010		1995-2010	
		No.	%	No.	%		No.	%	No.	%
1	United States	29	48.3	104	41.6	United States	15	57.7	62	43.4
2	**European Union**	**10**	**16.7**	**56**	**22.4**	Canada	6	23.1	16	11.2
3	Canada	5	8.3	24	9.6	Australia	1	3.8	2	1.4
4	Australia	4	6.7	11	4.4	Brazil	1	3.8	7	4.9
5	China	3	5.0	3	1.2	China	1	3.8	1	0.7
6	Peru	3	5.0	6	2.4	**European Union**	**1**	**3.8**	**25**	**17.5**
7	South Africa	2	3.3	13	5.2	Turkey	1	3.8	1	0.7
8	Brazil	1	1.7	3	1.2	Argentina	0	0.0	4	2.8
9	Chile	1	1.7	6	2.4	Chile	0	0.0	2	1.4
10	India	1	1.7	1	0.4	Costa Rica	0	0.0	1	0.7
11	Turkey	1	1.7	1	0.4	Japan	0	0.0	1	0.7

Notes: Data for 2010 refer to first six months. "Initiations" refers to initiations of new investigations; "measures" refer to definitive measures imposed.
Source: Authors' calculations based on WTO statistics.

When looking at the exporter countries being affected by EU anti-dumping measures, the pattern is not substantially different from the global average (Figure 2).

Figure 2: Target countries of AD measures, EU practice compared with other users, 1995-2010
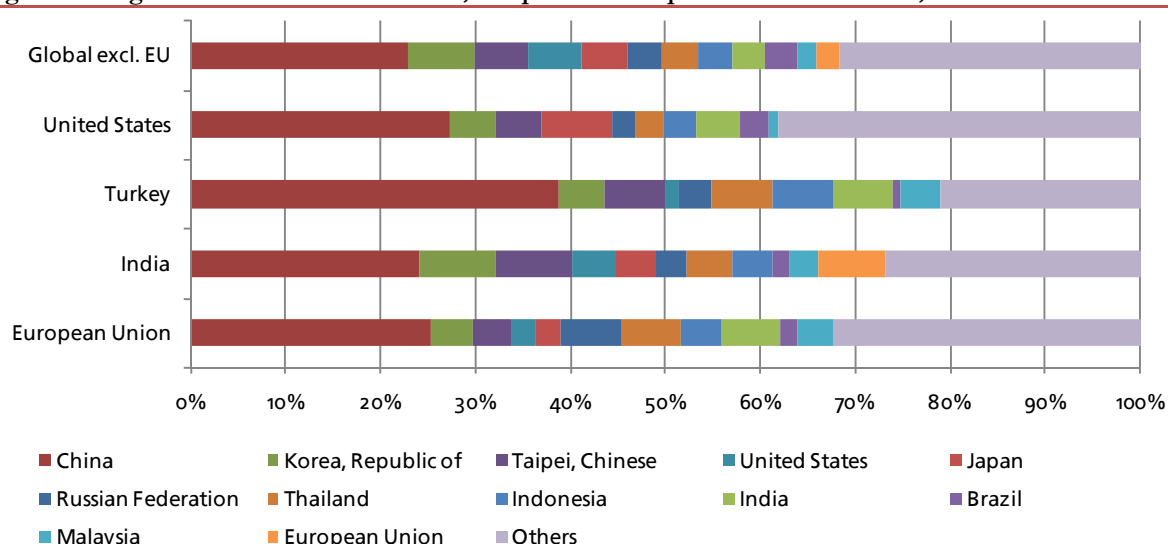
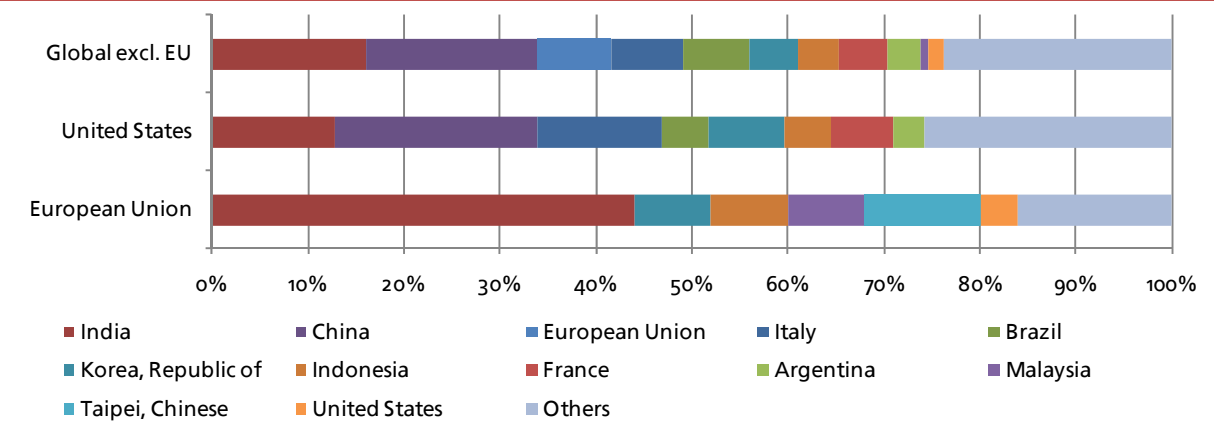Source: Authors' calculations based on WTO statistics.

Since the establishment of the WTO, 68 AD measures (25.3% of all AD measures taken by the EU) were imposed against China. India, Russia and Thailand follow with 17 measures (6.3%) each. The only notable difference between the EU's pattern and the global pattern is the relatively high share of the Russian Federation in AD measures.

With regard to the distribution of countervailing measures against exporters, the EU's pattern differs more substantially from the global use of the instrument (Figure 3). The main difference is that until the end of 2010 the EU did not use countervailing measures against China[2], which is

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[2]   The first definitive countervailing measure against China (coated fine paper) was imposed in May 2011; cf. Council Implementing Regulation No 452/2011 of 6 May 2011.

the target of 18% of all countervailing measures imposed by other WTO members. On the other hand India is the most important target country of EU countervailing measures, having accounted for 11 measures (44%) out of a total of 25 over the period 1995 to the first half of 2010. The EU is also the only country having used the anti-subsidy instrument against Chinese Taipei (3 cases).

Figure 3: Target countries of CV measures, EU practice compared with other users, 1995-2010

Source: Authors' calculations based on WTO statistics.

Finally, when comparing the sectors in which TDI have been used, the EU's use of anti-dumping measures is not very different from global use (Figure 4): base metals and articles thereof are the most important sector, accounting for 38% of all EU AD measures over the period 1995 to 2010 (compared to 28% in a all other WTO members). It is followed by the chemical industries (20% in both the EU and globally). The main difference between the EU practice and the global average is that the EU until mid 2010 did not apply measures in the wood, pulp and paper sector countries.[3]

The sectoral breakdown of countervailing measures is slightly different. While the base metals and articles thereof still constituted the most important sector (28% of all CV measures), plastics and rubber, and textiles and textile articles follow in second place (each at 20% of all CV measures). Also, the machinery and electrical appliances sector is relatively more important for anti-subsidy than anti-dumping cases. Globally, the concentration of CV measures in the metals sector is even more pronounced.
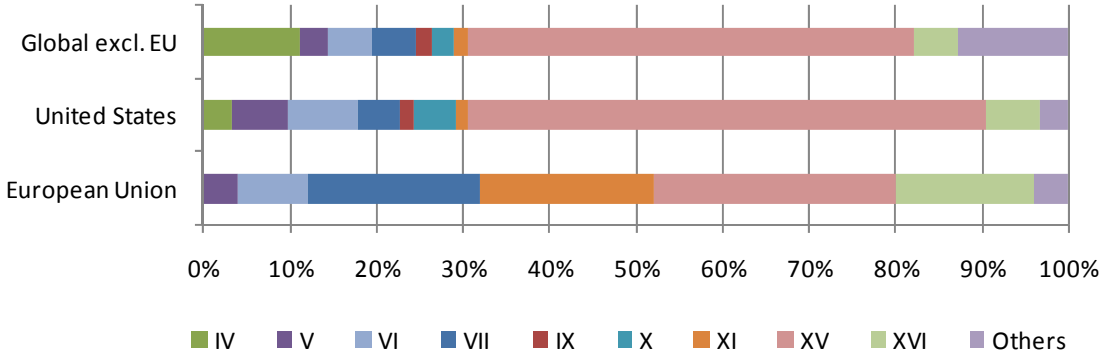
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[3] Since then, the EU has imposed AD measures in coated fine papers against China; cf. Council Implementing Regulation (EU) No 451/2011 of 6 May 2011.

Figure 4: Distribution of trade defense measures across sectors, EU practice compared with other users, 1995-2010

(a) Anti-dumping measures
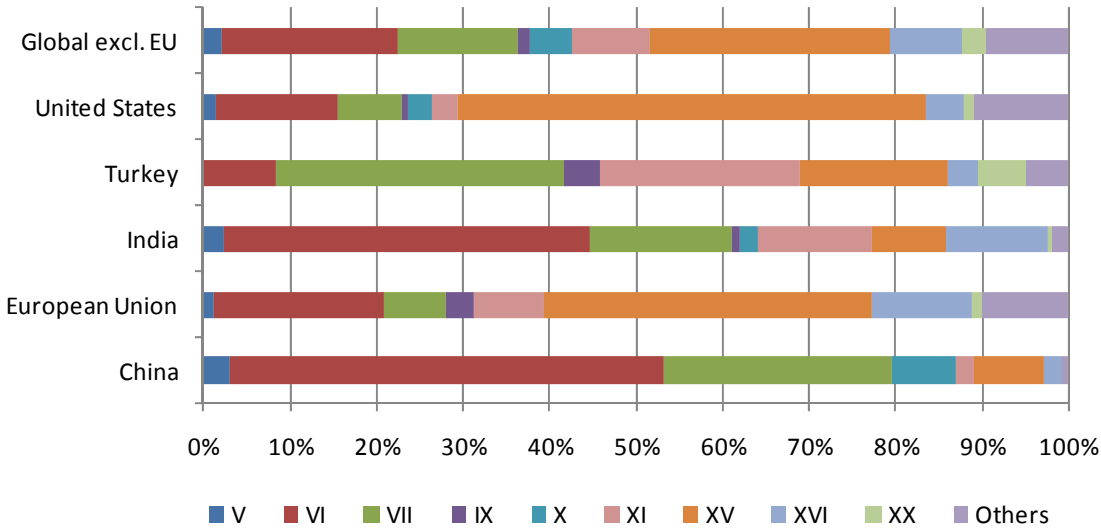
(b) Countervailing measures

IV   Prepared Foodstuffs; Beverages, Spirits and Vinegar; Tobacco and Manufactured Tobacco Substitutes
V   Mineral Products
VI   Products of the Chemical or Allied Industries
VII   Plastics and Articles Thereof; Rubber and Articles Thereof
IX   Wood and Articles of Wood; Wood Charcoal; Cork and Articles of Cork; Manufactures of Straw, of Esparto or of Other Plaiting Materials; Basketware and Wickerwork
X   Pulp Of Wood or of Other Fibrous Cellulosic Material; Recovered (Waste and Scrap) Paper or Paperboard; Paper and Paperboard and Articles Thereof
XI   Textiles and Textile Articles
XV   Base Metals and Articles of Base Metal
XVI   Machinery and Mechanical Appliances; Electrical Equipment; Parts Thereof; Sound Recorders and Reproducers, Television Image and Sound Recorders and Reproducers, and Parts and Accessories of Such Articles
XX   Miscellaneous Manufactured Articles

Source: Authors' calculations based on WTO statistics.

Given the broad similarity of the pattern of use of TDI by the EU to the global use, we infer that the EU is not exceptional to any meaningful degree; by the same token, the various analyses of motives of use in the literature on TDI use internationally are also relevant to the EU.

3 COMPETITION POLICY MOTIVES FOR TDI

As noted, TDIs have been traditionally characterized as the international trade analogue of internal market competition policies, notwithstanding important differences in the substantive construction of TDI and competition law provisions that emerged at a very early stage of their development, and notwithstanding a modern pattern of TDI use that in the view of many observers lends little evidentiary support for the characterization. This section discusses the extent to which the EU's use of TDIs is consonant with competition policy objectives.

Competition policy concerns itself with a wide variety of corporate business practices that restrain competition in the market place. The practices targeted are primarily those that either (a) raise consumer prices through monopolization, cartelization, collusive practices such as market-sharing agreements, price fixing, retail price maintenance and so forth; or (b) exclusionary practices that deny access to markets to competitors, such as refusal to supply, denial of access to networks, exclusive dealing arrangements, price discrimination in selling to competing businesses (typically dominant sellers favoring firms associated with them, or vertically integrated firms selling at discriminatorily high prices to downstream un-integrated competitors) or abusing a dominant position in one market to gain market share in another through tied selling. Many of these practices raise trade frictions; this has prompted multilateral initiatives to develop stronger competition policy disciplines into the WTO rules. TDI addresses just one segment, and a fairly narrow one at that, of the range of competition policy concerns: predatory pricing.[4]

Under competition law, predatory pricing is understood as a deliberate strategy to drive competitors out of the market by setting very low prices (e.g., "cut-throat pricing"), including at below average variable costs. Since the price undercutting strategy reduces profits in the short run, and possibly results in losses that must be cross-subsidized from profits in other areas of the firm's activity, the presumption is that, having established a dominant position or outright monopoly, the predator firm will then seek to recoup the losses by raising prices and generating monopoly profits. Accordingly, for the strategy to succeed, the firm must be in a position to subsequently prevent competitive entry into the market by erecting artificial barriers to entry (e.g., through advertising), or through resort to exclusionary practices on the gamble that these might escape sanctions from competition policy.

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[4] Note that predatory pricing through foreign affiliates is addressed by competition policy authorities; it is only in cross-border trade that TDIs come into play. In light of the fact that foreign affiliate sales now exceed cross-border trade by a good margin, TDI must be considered to have only a niche role in addressing international competition issues involving predation. As well, in an intra-EU context, anti-subsidy measures that are in other jurisdictions dealt with through TDI are addressed through competition measures dealing with state aid. Finally, note also that competition laws address price discrimination and that dumping is by definition price discrimination across borders. However, since the welfare effects of price discrimination are generally ambiguous, competition authorities only step in when there is abuse, which in this context involves the customers that might be gouged by high prices; TDI by contrast is used by authorities in the jurisdiction that is benefiting from the lower prices. So there is no parallel in this case.

Dumping or subsidization, to trigger TDI, must create injury to domestic industry. Hence, parallel to predatory pricing in a domestic context, it too involves price competition that is injurious. In both instances, the remedial provisions contemplate foregoing the welfare benefits to consumers of temporarily lower prices in order to prevent injury to the competitors of the dumping/predatory firm, which would lead in the longer term to damage to consumers in the eyes of the competition authorities (a consequence that is, interestingly, of no consequence to TDI authorities however as they look no further than the damage to the domestic competitor[5]).

Since dumping as a predatory pricing strategy in an international setting inherently involves traded goods, successful execution of the strategy must also involve some ability to exclude subsequent new entry not only from new domestic competitors that might face high start-up costs, but also from established global competitors from other countries. The bar that a predatory pricing strategy must clear to succeed in an international setting is thus higher than in a domestic setting. At first blush, the rarity of successful predation prosecutions therefore stands in stark contrast to the frequency of successful antidumping claims. However, the punitive nature of the sanctions in competition cases also stands in sharp contrast to the remedial nature of the measures in TDI. So it is difficult to draw inferences concerning the frequency of predatory behavior from frequency of application of the two types of measures. That being said, the general consensus of economists examining TDI application is in line with Blonigen (2006; 875):

> "Most economists would worry about price dumping only if such behaviour were predatory in nature and intended to drive out domestic-market competitors. The definition of dumping is clearly much broader, so that practices that are not necessarily anti-competitive, such as price discrimination or pricing below average cost, are included as 'unfair' dumping behaviour."

Some papers have applied a suite of criteria to individual cases to characterize them in terms of the possibility of successful predation and thus to bring out the extent to which the use of TDI plausibly stands in place of comparable competition policy provisions in a domestic setting.

Bourgeois and Messerlin (1998) apply a five-screen test to check for the likelihood that EU TDI applications were in contexts that would be considered consistent with standard competition policy motives, such as countering predatory practices. They assess 461 of the 658 anti-dumping cases for which adequate information is available to apply their methodology. They observe that the 197 cases omitted cases fall into three groups: anti-circumvention cases that were the aftermath of some of the 461 antidumping cases that were eliminated from consideration by one or another of their screens; cases that were not terminated by *official* antidumping measures (e.g., where the EC firms withdrew the complaint), and a few cases terminated by the Commission but for which information was not available.

The Bourgeois and Messerlin (henceforth B&M) screens are as follows:

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[5] This contrast is brought out in comments from USITC Commissioners Janet Nuzum and David Rohr remarking on the results of a study showing welfare costs from TDI use: "it must be remembered that the purpose of the antidumping and countervailing duty laws is not to protect consumers, but rather to protect producers. Inevitably, some cost is associated with this purpose. However, unlike the antitrust laws, which are designed to protect consumer interests, the function of the AD/CVD laws is, indeed, to protect firms and workers engaged in production activities in the United States." cited in Tavares (2001).

1. Dominant market position of the dumping/subsidized firms: The criterion used by B&M for assessing possible dominance is based on the history of competition enforcement in the European Community, which in their assessment implies a market share of 40 percent is necessary for a firm to have a dominant position. B&M increase the likelihood of finding dominance by applying the test on a forecast basis (the test is applied on the basis of projected market share in the absence of TDI, where the projection is done on the basis of simple extrapolation of growth of the market share in the period prior to the application of TDI), and the market share is the combined market share of all the firms targeted in the investigation. This test screens out 311 of the 461 cases.

2. No dumping or injury found: The second test examines the cases remaining after the first screen and eliminates those cases which were terminated by negative outcomes for all the countries involved, on the reasoning that there is no reason to suppose that antidumping cases are a response to predatory behavior if the EU investigations concluded that "no injury" or "no dumping" was present. 14 of the remaining 150 cases were screened out at this stage.

3. Four or more countries are targeted simultaneously: The third test eliminates cases where more than three countries are involved in the investigation on grounds that joint predatory behavior would require an implausible level of coordination and consistency in such cases. 75 of the remaining 136 cases were screened out at this stage.

4. Eight or more firms are targeted simultaneously: The fourth test eliminates cases on a similar rationale that predatory behavior amongst many firms would involve very high costs of maintaining a "joint monopoly". 17 of the remaining 61 cases were screened out on these grounds.

5. The EU market is competitive: The fifth test examines market concentration in the EU based on case documentation concerning the aggregate market shares of EU firms and total number of EU firms identified as being in the market. Since individual market shares are not available, B&M calculate Herfindahl-Hirschman indexes (HHIs) based on extreme assumptions: a minimum HHI based on the assumption that the foreign firms and the EU firms split their respective market shares evenly; and a maximum HHI based on the assumption that one foreign firm has virtually the entire foreign market share and one EU firm has virtually the whole EU market share, with the remaining firms having market shares close to zero. On the basis of these pseudo-HHIs, they screen out all cases except those in which both the minimum and maximum HHIs were higher than 0.18 in the final period.

    B&M divided the remaining 44 cases into two groups:
    - One group consists of 16 cases for which the domestic market share was not available. In two of these cases, foreign firms held small (4.5 and 6.1 percent) market shares while facing five and nine EC firms, respectively. B&M reasoned that neither the low foreign market shares nor the relatively high number of EC competitors suggested the existence of non-competitive markets that would lend themselves to successful predation and so excluded these, while leaving the remaining 14 cases without a definitive conclusion.
    - For the second group of 28 cases, B&M used the pseudo-HHIs described above to divide the group into three:

(i) 4 of the cases featured both the minimum and maximum pseudo-HHI fell below 0.18, their cutoff for potential dominance and so were ruled out;

(ii) 12 cases featured minimum pseudo-HHIs below the cutoff but maximums above the cutoff, leaving them indeterminate, absence the actual information on firm market shares; and

(iii) 12 cases featured both minimum and maximum pseudo-HHIs above the cutoff, leaving this group as clear-cut candidates for at least the possibility of successful predation.

They conclude as follows:

> "This conclusion is very conservative and overstates the situation for three reasons: 7 of these 12 cases exhibit declining or stable minimum and maximum HHIs between the initial and final periods; 4 other cases involve China (for which our HHI estimates always assume the existence of one producer and exporter, and hence they systematically underestimate the level of competition and overestimate the HHIs); and none of these 12 cases involve sophisticated products for which entry barriers could be high" (Bourgeois and Messerlin 1998: 144)

Note that B&M consider a sixth test, namely whether there are high barriers to entry in the industry, a necessary pre-condition for successful predation; they do not, however, treat this as a screen.

Shin (1998) examines 451 completed investigations of anti-dumping in the United States over the period 1980-1989. He adopts a screening approach similar to B&M's, eliminating as possible cases of predation those instances where

▪ negative findings were made, on the grounds that predatory intent could not have been in play if there was insufficient evidence for dumping or injury, reducing the sample of possible predation to 288;

▪ the US domestic industry was not concentrated, because predatory dumping is unlikely to be successful in industries that are not highly concentrated since the existence of many U.S. producers is indicative of low minimum efficient scale or low barriers to entry.

For this purpose, Shin calculates the HHI for the four or five-digit sector in which the protection was provided, with a HHI reading of 0.18 or higher indicating a "highly concentrated" industry. Shin acknowledges that the industry groupings at this level may encompass a broader group of products than that targeted by the AD measures but argues that firms in these groups may possess the technology and organization to produce the product if it becomes profitable and/or the products within the wider grouping may also be close demand substitutes for the targeted product.

Since this test excluded almost all cases, Shin also included cases where the HHI is below 0.18 at the four- or five-digit level but where USITC case data allow the construction of a pseudo-HHI on the assumption that the USITC-reported market shares are split evenly amongst the number of firms indicated in the case documentation. This boosted his potential predatory case count to 86.

▪ there were numerous exporters in the targeted country, since successful coordination in bearing the initial losses and in the subsequent recoupment of those losses is more difficult the greater the number of players. Shin calculated pseudo-HHIs from the case

documentation. This eliminated only a small percentage of the cases, leaving 75 in the running.

- there were five or more countries targeted, for the same coordination reasons, reducing the number of potential cases to 62; and
- where imports did not have a high degree of penetration or were not growing rapidly, since it is unlikely that dumping could create monopoly power for the foreign firms if imports were not making significant inroads into the market. Shin eliminated those cases where the case documentation showed import penetration of 20 percent or less, and those where negative findings were issues by the USITC on "critical circumstances", which indicates in US practice a massive importation surge.

Applying these screens, Shin found only 39 of the original 451 cases to have potentially involved predatory motives. As can be seen, Shin's "screens" are conceptually similar to the B&M screens but with some different judgments concerning the threshold levels for screening out cases. His results are also similar to B&M's showing that only a small percentage of US cases meet the criteria that would establish them as potentially involving predatory practices.

An earlier study by Hutton and Trebilcock (1990), examining Canadian cases, considered contextual clues as to whether competition concerns were at issue. They similarly screened out cases where certain conditions are not met. However, their criteria for exclusion were somewhat different. In their case, they excluded cases as potentially predatory where:

1. global excess capacity in the industry implied that dumping was the natural firm-level competitive response and the resultant exit of the least efficient producers to reduce global capacity would be a good thing. 14 of the 30 cases overall could be excluded on this criterion (9 of which were steel cases);
2. cyclical lags in production and climatic variation in agriculture resulted in pricing below marginal cost to sell of unexpectedly large quantities of product, which was the rational firm-level response and was not indicative of predatory intent. 4 cases could be excluded on this criterion (all of them agricultural);
3. low prices were used to introduce products into a market and/or to learn by doing as the firm found its way in the market, which is legitimate business practice that benefits society and raises no predatory concerns as firms acting in this fashion clearly do not have market power. 2 cases involved new product introductions and so could be excluded on this ground;
4. market conditions do not allow the eventual raising of prices to recoup short-term losses due to the predatory strategy; in particular, successful predation is only possible where:
   o market demand is inelastic (otherwise an attempt to raise prices reduces revenues). 6 cases involved elastic demand and so could be excluded;
   o there are sufficient barriers to entry to prevent domestic firms from re-entering the market if the successful predator attempts to raise prices to recoup its losses. 11 cases featured low barriers to entry; and
   o the firm has a dominant position internationally so that producers from third countries are not in a position to step in and compete away excess profits once the

domestic industry has been driven from the market. This test was sufficient to exclude all the cases.

5. the domestic industry has market power (including instances where the domestic industry is a monopolist) and anti-dumping is being used to protect rents. At least 14 cases involved sectors where domestic market power was not in evidence.

In sum, none of the 30 Canadian cases were considered as plausible candidates for consideration as predatory practice cases, most being ruled out on multiple grounds. The absence of international market power was easily the most consistent reason for the impracticality of a predatory strategy.

Against this background, we apply a version of the approach developed by Bourgeois and Messerlin to the EU cases during the period 2005-2010 to provide a test of the extent to which the EU's use of TDI is a surrogate for competition policy in the international domain in terms of addressing cases of predatory pricing.

We modify the B&M screens as follows. First, we re-order the sequence as a matter of operational convenience (since a case must pass all the tests, the order in which they are applied is inconsequential). Second we treat the barriers to entry test as part of the consideration of whether the EU market is competitive since low barriers to entry and competitive markets go hand in hand.
1. Four or more countries are targeted simultaneously
2. Eight or more firms are targeted simultaneously
3. Dominant market position of the dumping/subsidized firms
4. The EU market is competitive/low barriers to entry
5. The case is terminated

As regards termination, we consider this less compelling as a clear-cut test of the absence of competition policy concerns since not all dumping cases end in affirmative decisions, but cases with negative outcomes nonetheless contain features that prompted the authorities to undertake investigations. As well, it is possible that complaints are withdrawn because the firms involved strike an agreement; agreements struck under duress are not necessarily indicative of an absence of competition policy concerns, they might signify quite the opposite. Accordingly, we consider this screen last.

Echoing the views of B&M and Shin, we view these tests as conservative in that they allow many cases to be considered as potentially predatory where the number of countries targeted and the number of exporters involved are still quite large and issues such as elasticity of demand and international dominance that are part of the Hutton-Trebilcock test are not considered. On the other hand, in the modern context of hyper specialization of production due to the increasingly refined division of labor amongst firms, a low level of concentration of an industry may mask a high degree of concentration in specialized niche products. Often, in industries that supply what appear to be highly substitutable commodity inputs into production processes, the ability of firms

to produce to the exact specifications required by the industrial users varies. In some of these cases, there may be significant non-tariff barriers to entry into a market since the customers may have to pre-clear the supplier's production processes. For example, in the case of steel pipe that is used for drilling oil and gas exploration wells, end users need to approve a product from a new source after site visits to confirm that specification requirements have been met, and to receive a guarantee of the quality and availability of the new products, since the risk of using an unknown product in the drilling business, even if it has an international certification, is simply too high.[6]

The full results of this screening process for the 64 dumping cases initiated in the period 2005 to 2010 are presented in Table 15 in the annex. Four cases are screened out immediately for targeting four or more countries, and 37 others because the exporters targeted number eight or more in each case. Sixteen others are screened out because the combined market share of the targeted exporters is too low to be considered as occupying a dominant position. None of the remaining cases are screened out by screens 4 or 5. The remaining seven cases are thus at least potentially instances of predatory intent. Note that all the terminated cases were ruled out on other grounds. The seven cases that pass the screens are listed in Table 5.

Table 5: EU antidumping cases which may represent cases of predatory dumping, 2005-2010

Year of Initiation	Product	Source of dumped imports
2005	Certain Tungsten Electrodes	China
2005	Refrigerators	Korea
2006	Certain Manganese Dioxides	South Africa
2006	Dicyandiamide	China
2006	Certain Compressors	China
2009	Cargo Scanning Systems	China
2010	Certain Fatty Alcohols and their Blends	India, Indonesia, Malaysia

Of these cases, the only one which would appear to satisfy Hutton and Trebilcock's fourth and fifth criteria for potential successful predation is *Refrigerators*. Hutton and Trebilcock argue that the dumping firm must have a dominant position globally and the ability to defend its market to recoup losses by erecting non-tariff barriers through advertising and other means. In *Refrigerators*, the firms found to be dumping were several large Korean multinationals that have (a) a large global presence in a number of differentiated products where they actively compete on a market-share basis; (b) brand-name recognition achieved in part through extensive advertising; (c) the ability to exploit economies of scale in mass production of consumer goods; (d) the ability to create barriers to entry for competitors through an established presence in distribution channels (which newcomers might have difficulty penetrating due to quantity discounts etc.), and (e) the technological capacity to sustain market share over the long term. As well, they faced relatively low costs of coordination. Finally, this case involved a single Community producer which, therefore, had domestic market power, meeting Hutton and Trebilcock's fifth criterion.

The last criterion identified by Hutton and Trebilcock is of particular interest in other respects as well. Davis (2009; 15) observes that the EU candle industry which filed for protection on 3

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[6] See the discussion of this issue in connection with Korean suppliers of pipe to the Canadian oil and gas industry in *Oil and Gas Well Casings from Korea and the United States* – CITT, Orders and Reasons: Expiry Review No. RR-2000-001, July 4, 2001; at 10-11.

January 2008 was itself the subject of an antitrust investigation and fined €676 million by the Competition Directorate on 2 October 2008 for illegal price fixing and artificially inflating the price of EU-produced candles. Such cases are likely to be rare, however. Baylis and Malhotra (2006), who systematically study the instances where sectors that file for protection are themselves the subject of antitrust investigations, found that antidumping cases had no discernable effect on the probability of antitrust cases subsequently being brought.

To summarize, in this section we have reviewed the EU's use of TDI through the lens of competition policy, for which TDI is characterized as a substitute given the absence of adequate competition rules in international trade. We find that only in 7 of 64 cases were even minimal criteria met for predatory practices to likely be in play. Of these only one had all the characteristics that would strongly hint at the possibility of predatory intent. Further, on at least one occasion, TDIs may have worked adversely to competition policy goals by heightening domestic market power, which had to be subsequently addressed by competition authorities. This argues for some restraint, given empirical evidence that third country import competition appears to be inadequate to remove excess rents being achieved by protected industries (Konings and Vandenbussche, 2005). That being said, it must be acknowledged that, through interventions aimed at protecting *competitors,* it cannot be excluded that TDIs protect *competition* in the domestic market; consider in this regard that competition authorities, whose aim is to protect competition, can only do this by protecting some competitors in the process. Seen in this light, this distinction, which has often been made in the literature, may actually often be moot in practice; it depends ultimately on the circumstances.

4 INDUSTRIAL POLICY MOTIVES FOR TDI

While the EU's TDI cases are initiated by industries, the European Commission, which conducts the inquiries, and the European Council, which has the final say as to whether or not to impose measures, cannot be considered to be neutral players. While it would be quite a leap to impute policy intent based on trends in trade data, we can nonetheless consider whether the de facto application of TDI policy has an *appearance* of applying industrial policy in a "revealed" sense.

To apply this test, we consider the EU's two-way trade with the world in the affected products. This is necessary to take into account: (a) trade diversion as imports from non-subject countries become more competitive in the EU market as a result of measures applied to subject imports; and (b) impacts on EU export flows as EU domestic production is redirected to serve domestic customers switching away from subject imports and the firms in the subject countries redirect their production to their home market and to third markets in which the EU might also be present as an exporter, increasing competition abroad for EU exports. The significance of these effects has been established in recent papers. Bown and Crowley (2007) show the impact of US TDI measures on Japanese trade flows; US measures targeting Japan caused Japanese exports to third countries to grow by 5-7% as Japanese producers redirected their production away from the

US market; US measures targeting third countries meanwhile depressed Japanese exports to these countries as the domestic producers redirected their output to domestic customers. Konings and Vandenbussche (2009) using data on French firms, show that EU TDI measures reduce exports to the target country by protected firms by almost 8% compared to a control group of unprotected firms. At the product level, they find that extra-EU exports of goods protected by TDI measures fall by 36%; exports to the target countries fall by as much as 66%.

A precise estimate of the total trade impact is of course quite difficult because this involves constructing a counter-factual scenario that shows the level and direction of EU trade without the measures in place. The actual trade data affected by TDIs to allow these estimates are generally not available, as the information is often confidential; moreover, the subject goods often constitute a subset of the total goods traded under the Harmonized System (HS) codes that are listed in the case documentation. As a second-best alternative, we assess the scale of trade impacts on the product group defined at the HS 6-digit level in which the subject goods are classified.

Further, a global partial equilibrium analysis would be required for each product group, which in turn would require knowledge of the specific demand, supply and substitution elasticities for each product; this information is not generally available.

We approach this issue as follows. First, we consider measures of revealed comparative advantage that take into account exports as well as imports. The basic measure of this nature is the Trade Specialization Index (TSI), which, for good i, is as follows:

$$TSI_i = (X_i - M_i)/(X_i + M_i)$$

TSI reveals the pattern of net trade by product or product group (values run from -1 for only imports to +1 for only exports; 0 indicates balanced trade). The evolution of the TSI vector over time reveals changes in the EU's comparative advantage. However, since the simple version of the TSI does not control for general imbalances between exports and imports due to macroeconomic developments (e.g., exchange rate fluctuations and asynchronous business cycles), we use a modified version proposed by Lafay (1992) which controls for such macroeconomic factors. The Lafay index (LFI) for good i is as follows:

$$LFI_i = (X_i - M_i)/(X_i + M_i) - \sum_i (X_i - M_i) \Big/ \sum_i (X_i + M_i)$$

A negative LFI score indicates comparative disadvantage in the specific sector, while a positive reading indicates comparative advantage.

An important correction to the data in evaluating the LFI is to adjust for differences in valuation of imports versus exports. For intra-EU trade, the International Trade Center data that we use show significant margins between the reported value of intra-EU exports ("free on board" or FOB valuation) versus intra-EU imports ("cost including insurance and freight or CIF). We

apply the CIF/FOB ratio observed on intra-EU trade to adjust exports to the rest of the world to put the valuation on a comparable basis to imports.[7]

First, we consider whether protection is provided for generally strong sectors or weak ones. We consider here the cases initiated in 2005-2010, treating each HS code sector identified in the case documentation as a separate sector. On this basis, the number of cases is 149. We find a 50-50 breakdown; about half the sectors have a revealed comparative advantage and about half a revealed economic disadvantage (50.3%). Furthermore, if we treat sectors in terminated cases as the control group for protected sectors, reported statistics tend to suggest that sectors that benefited from TDI relief are less likely than the control group to have a negative LFI (only 51.7% of the protected sectors show revealed comparative *disadvantage* versus 56.1% in the control group). Mean and median LFI scores are also higher in protected sectors. Taking all the cases initiated in the period 2005-2010, we obtain the following results (Table 6).

Table 6: LFI at HS 6 level one year prior to initiation – Investigations initiated in 2005-2010

	Measures Imposed (Provisional or Final)	Investigations terminated	Ongoing Investigations	Total
Number of Observed EU Trade Flows at the HS 6 digit level	87	41	21	149
Number of HS 6-digit sectors with a negative LFI	45	23	7	75
Percentage of HS 6 - digit sectors with a negative LFI	51.7%	56.1%	33.3%	50.3%
Mean LFI	0.02	-0.11	0.21	0.03
Maximum LFI	0.89	0.95	0.86	0.00
Minimum LFI	-0.92	-0.89	-0.69	-0.89

Source: Authors' calculations based on International Trade Centre online database

For deeper analysis, we limit the cases studied to those where definitive duties were imposed. This reduces the cases to 68. We examine trends in the LFI scores for protected sectors to identify the following patterns:

- Positive and rising (indicative possibly of offensive industrial policy and/or anti-competitive behavior on the part of EU industry).
- Positive and declining (indicative possibly of defensive industrial policy response to declining global competitiveness).
- Negative and rising (indicative possibly of emerging areas).
- Negative and falling (indicative of industries on the exit ramp).
- Reversal: a V-shaped pattern in the data, with the LFI falling from positive to negative and rebounding (indicative of a successful restoration of competitiveness, which incidentally would provide the clearest case for effectiveness of TDI).
- Temporary Relief: a decline, followed by an uptick associated in time with the application of TDI measures, followed by a resumption of the decline (indicative of a temporary delay of the decline of the industry).

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[7] The International Trade Centre does not report world imports from the EU; this would have to be assembled for each product by searching for imports from the EU. For the purposes here, the intra-EU CIF/FOB margins should correct for the major part of the valuation issue.

The overall context in which TDIs are applied varies considerably (see Table 7 for a summary and Table 16 in annex for details). By our count, in about one-quarter of the cases, 16 in all, in which measures were imposed, there was clear evidence of a V-shaped pattern in the LFI over time, which we interpret as consistent with the general story of TDI, that competitive conditions were being distorted to the detriment of EU industry with the TDI measures serving to correct that situation. There is little evidence, only one case, that TDIs provide only very temporary relief with the decline in industry performance that prompted the complaint reasserting itself immediately after the initial "breather".

Table 7: Summary of Patterns in Lafay Index of EU HS 6–digit sectors affected by TDI, 2005-2010

	Positive and Rising	Positive and Declining	Negative and Rising	Negative and Falling	V-Shaped	Temporary Relief	Unclear	Apparent positive shift in Lafay Index due to the measure
Number	13	15	2	18	16	1	4	45
Percent	18.8%	21.7%	2.9%	26.1%	23.2%	1.4%	5.8%	65.2%

Source: Calculation by the authors.

There were enough cases with a rising LFI – 13 or almost one-fifth of the cases – that suggest grounds for further scrutiny in terms of whether competition issues might be being generated by the application of TDIs.

Generally, the results suggest that TDI has some positive overall effect for EU industry in about 2/3 of the cases. A clear-cut reversal is much less frequently to be observed. Importantly, given the recent concerns about the impact of TDI on the export performance of EU industry, our use of the Lafay index, which takes export performance into account suggests that the measures against subject imports do not for the most part weaken overall performance.[8]

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[8] One feature of TDI use that needs to be addressed given the findings in the heterogeneous firms trade literature is the difference in impact of protection across firms based on their level of productivity. As reported by Konings and Vandenbussche (2008), firms that file for protection tend to have, on average, a lower initial productivity than firms in the control groups. Also, antidumping protection increases the average productivity of the protected firms during the period of protection, but this reflects an increase in the productivity of the least productive and a decrease in the productivity of the most productive firms in the industry. The productivity gain may simply reflect higher rents from the protection (which is shared with labor since wages go up in protected firms during the period of protection), but it also may reflect productivity-enhancing adjustments in the firms, including labor shedding, increased R&D spending, and increased investment in fixed assets, and possibly product switching towards higher-value-added products. Finally, firm exit rates are somewhat lower during the period of protection compared to industries that did not benefit from protection. Thus, while the improvement in the productivity of the least efficient firms represents a positive outcome, this is to some extent offset by the reduced rate of exit, which slows down the reallocation of production towards more productive firms.
There is however a distinction of considerable importance for dynamic analysis that has not yet been addressed in the currently available studies on TDI. The literature on capital investment documents that young firms investing heavily in new technology and still gaining experience with the new technology are less profitable than mature firms that are investing less but are extracting returns from their prior investments and "experience" capital. Whether TDI is predominantly preventing an efficiency-enhancing reallocation of market shares from (statically) low productivity firms (e.g., old firms with old technology on the exit ramp) to (statically) high productivity firms and thus generating dynamic welfare costs, or is providing a window for young firms investing intensively to gain experience and thus generating dynamic welfare benefits, is unclear on a priori grounds. We find only two examples of industries that have a negative LFI reading but are improving in the pre-TDI period, the pattern that would seem to best fit this circumstance.

In sum, the range of patterns evident in the data argue against any strong, systematic industrial policy motivation behind the use of TDI by the EU – rather the evidence is more consistent with TDI use being driven by very specific factors relevant to the industry concerned at the particular point in time and in respect of particular competitive conditions.

5   MACROECONOMIC BUFFER MOTIVES FOR TDI

This section considers the role of TDI as a buffer for cyclical and real exchange rate fluctuations, a view that has received considerable attention in the literature. Knetter and Prusa (2003) provide a good point of reference for this literature. They examine the relationship between antidumping filings, real exchange rates, and business cycle developments. As regards business cycle developments, they note that a slump in economic activity in the importing country makes it more likely that domestic firms will file for protection. First, weaker domestic market demand means that the economic performance of domestic firms will also weaken. Knetter and Prusa argue that this increases the likelihood of an affirmative injury finding as investigating authorities may be attributing injury to dumping that properly should be assigned to the business cycle. They further note that weaker demand in the importing country naturally leads to lower prices; this would increase the likelihood of pricing below fair value if the foreign firms follow price declines in the domestic market. This would increase the likelihood of dumping actually being found.

In respect of growth developments in the home market of the exporter, weaker growth increases the likelihood that foreign firms will cut prices to maintain overall levels of output; this would raise the probability of dumping being found under cost-based calculations of normal value (although not under the price-based methods), and would also raise the chances of causing injury to domestic firms.

As regards currency fluctuations, Knetter and Prusa observe that a real exchange rate appreciation of the domestic currency makes imports more competitive (on average about 50% of an exchange rate change is passed through to prices in destination markets in industrialized countries), increasing the likelihood that a domestic industry will come under pressure. However, it also decreases the likelihood that a foreign firm will be found to be pricing below cost or below the price it sets in its domestic market.[9]

Using annual data, Knetter and Prusa find that the probability of a filing in one of the major traditional AD users (Australia, Canada, EU, and US) against any one of the countries which were targets in any antidumping case in their review period (1980-1998) increased by 33% for a one-standard deviation appreciation in the bilateral exchange rate of the home country and by 23% for a one-standard deviation decline in home country GDP; cyclical developments in the

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[9]   For example, a firm that is "pricing to market" in the destination market will see that price rise relative to its domestic price when the destination market currency appreciates and fall when the destination market currency depreciates. Its risk of being in a dumping position therefore is reduced (increased) with destination market currency appreciations (depreciations).

exporter country GDP were not significant. They conclude that the construction of TDI laws allows them to be used successfully (from the perspective of the complainants) to address macroeconomically induced stresses rather than anti-competitive firm-level behavior.

Other studies have been less successful in identifying macroeconomic determinants for the EU's use of TDI. Bourgeois and Messerlin (1998), examining the record over 1980-1997, found no correlation between the initiation of the cases by the EC and the business cycle. Jallab, Sandretto and Gbakou (2006), examining the filing record over the period 1990-2002, similarly fail to find a significant effect of the business cycle on filings; they do find a weak negative relationship between industrial production and filings. The latter study finds the expected effect of a rise in the real exchange rate to increase filings but the effect is small and its strength varies depending on the specification of the equation, which suggests interaction between the independent variables in their alternative equations.

In a similar fashion to Knetter and Prusa (2003), we use a negative binomial regression model to study the relationship between macroeconomic variables (real exchange rate and real GDP growth rate) and:

- EU aggregate filings: we estimate the number of filings since 1995 as a function of the real exchange rate, EU real GDP growth, and World real GDP growth;
- EU bilateral filings: we estimate the number of filings as a function of the bilateral exchange rate, EU real GDP growth, and affected country real GDP growth.

Aggregate filings

As shown in Table 8, we first construct our database in a similar fashion to Knetter and Prusa (2003) but we allow for a longer GDP lag period to reflect the relative length of the EU pre-initiation phase: the real GDP growth variable is the 3-year growth rate from t-4 to t-1 (i.e. the 3 years one year prior to the filing date), while Knetter & Prusa used the rate from t-3 to t.

Table 8: Aggregate data used to study the relationship b/w EU TDI and macroeconomic factors, 2005-10

Year	AD initiations	EU Rxr (-1)	EU GDP t-4 to t-1	World GDP t-4 to t-1
1995	34	101.49	1.78	6.67
1996	24	103.31	3.56	7.92
1997	42	101.94	5.76	9.05
1998	21	96.75	8.15	10.81
1999	66	102.32	8.02	11.74
2000	31	100.00	7.98	10.97
2001	27	88.33	9.03	10.67
2002	20	88.82	10.35	11.21
2003	7	93.10	9.44	10.90
2004	29	103.76	7.70	10.24
2005	24	108.96	5.14	9.03
2006	35	105.07	5.64	11.84
2007	9	104.17	6.47	13.69
2008	18	108.49	8.52	15.47
2009	14	108.61	9.16	15.99
2010	15	105.14	7.55	14.10

Notes: The time series have been constructed as follows (i) For AD initiations, a count of each filing/country observation was performed based on the WB Chad Bown database, (ii) For the real effective exchange rate at t-1, data comes from EUROSTAT, (iii) For the EU and World real GDP growth rate, the cumulative 3-year GDP growth rate between t-4 and t-1 was constructed using data from the IMF, World Economic Outlook database.

Correlation coefficients are reported in Table 9. Based on this we find a marginal positive relationship between the appreciation of the Euro and the number of filings over the years 1995-2010: the correlation coefficient is 0.06. Second, there seems to be a negative correlation between EU real GDP growth and the number of filings (correlation coefficient of -0.25). The relationship between filings and world GDP growth also appears to be negatively correlated (correlation coefficient of -0.35).

Table 9: Correlation coefficient between filings and macroeconomic factors, 1995-2010

	Number of Initiations at t	EU Rxr (-1)	EU GDP t-4 to t-1	World GDP t-4 to t-1
Number of Initiations at t	1.00			
EU Rxr (-1)	0.06	1.00		
EU GDP t-4 to t-1	-0.25	-0,42	1.00	
World GDP t-4 to t-1	-0.35	0,27	0,63	1.00

We then run a negative binomial regression under different models. In Table 10 and Table 11, we report the incidence rate ratios (IRR) associated with the parameter estimates. The IRR is the ratio of the counts predicted by the model when the variable of interest is one unit above its mean value. The "aggregate" models A1 to A3 (Table 10) seek to explain the number of filings by one single independent variable. This is a more sophisticated version of the correlation coefficient as it allows to capture the statistical significance of the independent variable. Specifically, model A1 presents the number of aggregate filings as a function of EU real effective exchange rate at t-1, model A2 as a function of the 3 year EU real GDP growth rate, and model A3 as a function of 3 year world real GDP growth rate.

In "aggregate" models A4 and A5 (Table 11), we include several independent variables at once. While model A4 presents the number of aggregate filings as a function of EU real effective exchange rate at t-1 and 3 year EU real GDP growth rate, model A5 includes the EU real effective exchange rate at t-1 and 3 year World GDP growth rate as independent variables. The nature of the data did not allow us to construct a model with all three explanatory variables included. Potential collinearity issues might be at play as suggested by the correlation coefficients in Table 9. This restriction was also present in the Knetter and Prusa (2003) study.

Table 10: Negative binomial estimation of aggregate filings with a single explanatory variable

Model	(A1)			(A2)			(A3)		
Reported statistics	IRR	Z-score	P>|z|	IRR	Z-score	P>|z|	IRR	Z-score	P>|z|
EU Rxr (-1)	4.2	0.29	0.775						
EU GDP t-4 to t-1				0.94	-1.05	0.294			
World GDP t-4 to t-1							0.92	-1.72	0.08

Notes: Rxr (-1) is the log of the real exchange rate, lagged 1 year; GDP is percentage growth in real GDP of the EU over prior years t-4 to t-1. Number of observations = 16

Table 11: Negative binomial estimation of aggregate filings with several explanatory variables

Model	(A4)			(A5)		
Reported statistics	IRR	Z-score	P>|z|	IRR	Z-score	P>|z|
EU Rxr (-1)	0.38	-0.18	0.86	28.61	0.73	0.467
EU GDP t-4 to t-1	0.92	-1.02	0.31			
World GDP t-4 to t-1				0.91	-1.84	0.07

Notes: Rxr (-1) is the log of the real exchange rate, lagged 1 year; GDP is percentage growth in real GDP of the EU over prior years t-4 to t-1. Number of observations = 16

The results of the negative binomial regression in model A1 suggest that a 100% increase in the exchange rate would drive up the number of cases by 4.2. However, the reported Z-score do not allow to establish a robust statistical significance. The results of models A2 and A3 in Table 10 suggest that a 1% increase in the EU's 3 year GDP growth rate would lead to a 7% decrease in filings, while a 1% increase in global 3 year GDP growth would lead to a decrease in 9% in filings. Once again, the reported Z-score do not allow establishing a robust statistical significance.

The low statistical significance of our results is confirmed by Table 11: under models A4 and A5 when we attempt to run a regression with two independent variables combined, the coefficients assigned to each explanatory variable become unstable. This is without doubt due to the low number of observations in our data set (16 observations between 1995 and 2010, which is much lower to the 74 observations used by Knetter and Prusa conducting this analysis for 4 filing countries – Australia, Canada, USA, and EU combined – from 1980 to 1998). We however note that the only variable that is somewhat close to being significant in explaining filings is the World real GDP 3 year growth rate, which shows consistent, results across all scenarios, and has the highest Z-score. In other words, EU TDI filings seem to be affected by global business cycles more than by other macroeconomic factors.

To summarize, the results of the analysis of the pattern of aggregate filings against macro-economic factors demonstrate that evidence for exchange rate fluctuations affecting filings is very low. This is in contrast with expectations based on previous empirical studies. Second, evidence for business cycles dynamic affecting filings is relatively higher, with borderline statistical significance for a negative relationship between world growth and aggregate filings.

Given the low number of observations under the "aggregate scenario", and in order to compare our findings above with more precise data, we now turn to the bilateral analysis.

Bilateral filings

We construct our bilateral matrices in a similar fashion to Knetter and Prusa (2003) by collecting data at the bilateral level. We report the number of filings per year and per filing country, bilateral real effective exchange rates (from the US Department of Agriculture Economic Research Service) as well as target country real GDP growth (from the IMF online statistical database). As was the case for aggregate filings, we allow for a longer GDP lag period to reflect the relative length of the EU pre-initiation phase: the real GDP growth variable is the 3-year growth rate from t-4 to t-1.

We present our results in Table 12 and Table 13. In Table 12, we report IRR for simple regressions allowing just one explanatory variable by model. We find that:
1. The effect of the bilateral exchange rate on filings has no more significance under this model than under the aggregate models.
2. The effects of EU growth rate are of the same magnitude as before, and are borderline significant.

3. The effect of target country growth rates are actually positive (a 1% increase in the target country growth rate would lead to a 4% increase in filings) and are significant at the 1% level. This is contrary to expectations that would associate increased growth in the target country with a lower likelihood of dumping, and therefore a negative effect on filings.

The "bilateral" models B1 to B3 (Table 12) are analogous to models A1 to A3.

Table 12: Negative binomial estimation of bilateral filings with a single explanatory variable

Model	(B1)			(B2)			(B3)		
Reported statistics	IRR	Z-score	P>|z|	IRR	Z-score	P>|z|	IRR	Z-score	P>|z|
Rxr (-1)	1.55	0.93	0.351						
EUGDP t-4 to t-1				0.94	-1.66	0.10			
TGDP t-4 to t-1							1.04	6.06	0.00

Notes: Rxr (-1) is the log of the bilateral real exchange rate, lagged 1 year; TGDP is percentage growth in real GDP of the Target country over prior years t-4 to t-1; EU GDP is percentage growth in real GDP of the EU over prior years t-4 to t-1. Number of observations = 672

We interpret the positive and statistically significant effect of target country GDP growth rate to be the result of the presence of the "surge" countries such as China, India, Korea, Taiwan and Thailand in our database. These countries are associated with having both a high growth rate and a high number of EU AD initiations during the study period. In order to allow the model to control for this "surge" factor, we introduce target country dummy variables to control for fixed effects while running the negative binomial regression.

In "bilateral" models B4 to B6 (Table 13), we include several explanatory variables:
- Model B4: Number of bilateral filings as a function of bilateral real effective exchange rate at t-1 and 3 year EU real GDP growth rate.
- Model B5: Number of bilateral filings as a function of bilateral real effective exchange rate at t-1 and 3 year EU real GDP growth rate, and 3 year target country growth rate.
- Model B6: Same variables as Model B5, but allowing for a target country fixed effect. As discussed above, this allows to control for the "surge" effects associated with China, India, Taiwan, Thailand, Korea, etc.

Table 13: Negative binomial estimation of bilateral filings with several explanatory variables[10]

Model	(B4)			(B5)			(B6)		
Reported statistics	IRR	Z-score	P>|z|	IRR	Z-score	P>|z|	IRR	Z-score	P>|z|
Rxr (-1)	1.41	0.72	0.471	0.93	-0.13	0.89	0.90	-0.22	0.823
EUGDP t-4 to t-1	0.95	-1.55	0.12	0.93	-1.92	0.05	0.92	-2.68	0.007
TGDP t-4 to t-1				1.04	5.97	0.00	1.00	0.39	0.698
Target countries fixed effects	NO			NO			YES		

Notes: Rxr (-1) is the log of the bilateral real exchange rate, lagged 1 year; TGDP is percentage growth in real GDP of the target country over prior years t-4 to t-1; EU GDP is percentage growth in real GDP of the EU over prior years t-4 to t-1. Number of observations = 672

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[10] We have reproduced a number of different regressions to ensure that our results were consistent to different "EU group" definitions. For instance, under one scenario, we have excluded the 12 "new" EU member states that were target countries prior to 2002 (2006), and which became part of the EU in 2002 (2006). When we exclude these countries from the target country list, no major deviation from the previous results is to be reported: EU growth rate and target country dummies are still statistically significant.

The reported results can be interpreted as follows:

- With all 3 explanatory variables included (Models B5 and B6), the exchange rate coefficient is now negative, with no statistical significance. The instability of the exchange rate coefficient (which goes from positive to negative) combined with the very low Z-score allows one to conclude that exchange rate variations do not have clear or significant impact on filings;
- EU GDP growth on the other hand becomes more significant under this model, especially when one allows for target country fixed effects;
- Target country GDP, once the "surge" effect has been controlled for, has virtually no effect on filings, as shown by the IRR of 1.00 in column 3;
- As expected, countries such as China, India, Korea, Taiwan and Thailand show a significant fixed effect at the 1% level.

The results of the analysis of potential macroeconomic motives for the use of TDI can be summarized as follows:

- Under both the "aggregate" and "bilateral" scenarios, and in contrast to expectations, there is no statistical evidence that movements in the real exchange rate affect the pattern of AD initiations. This result differs from the findings of Knetter and Prusa (2003) over the 1980-98 period. We speculate that the introduction of the Euro may account for these different results.
- Under the "bilateral scenario", there is significant statistical evidence that the EU growth rate has an impact on filings: we find that a 1% decrease in 3 year real GDP growth leads to a 7% increase in the number of filings. This result is in line with the findings of Knetter and Prusa.
- There is no evidence that the number of initiations is affected by the GDP growth rate in the target country (once we control for the "surge" effect, we find an IRR of 1.00 for target country GDP). This result is also similar to the Knetter and Prusa findings.
- The "surge" effect associated with countries like China, Korea, Thailand and Taiwan is positive and very significant. Surge dummy variables for these countries are strongly positive and significant at the 1% level. We revisit this issue in section 7.

6 RETALIATORY MOTIVES FOR TDI

In this section, we consider the evidence for and against retaliatory motives. With the spread over the past few decades of TDI use beyond the traditional core users, the possibility of "tit-for-tat" retaliatory antidumping actions has clearly increased. A clear-cut recent example of this was China's response to the recent US imposition of duties on imports of Chinese tires. China saw this as politically motivated and immediately responded with a tit-for-tat application of duties to an exactly equivalent volume of imports from the United States.

To briefly summarize the main results of the literature in this area, Prusa and Skeath (2002) find that retaliation is a plausible motive for over 45% of "traditional users" AD actions. Blonigen and Bown (2003) find that U.S. industry is influenced by the threat of foreign retaliation in its decision of which foreign countries to name in their AD petitions, and that the US authorities are influenced in their decision-making by the threat of foreign retaliation. Since most US TDI cases (873 out of the 1,230 cases documented in the WTO's global antidumping database) target countries like the EU and Canada that are armed and practiced at using TDI and WTO dispute resolution, the effect of this deterrence is clearly not transformative – rather it must be seen as potentially raising the cut-off bar for marginal cases. Vandenbussche and Zanardi (2010) find that the cumulated number of AD measures with which a country has been targeted strongly increases the probability that it will adopt an AD law itself. Thus, there is the sense from the literature that retaliation is a fairly significant factor in shaping TDI use.

While in the first instance recognition of this type of behavior raises concerns about the reversal of trade liberalization gains, upon further consideration it was suggested that the rising threat of retaliatory AD actions actually might have the reverse effect (i.e., a "cold war" equilibrium of low use might set in).

Table 14 shows the number of cases brought against EU Member States by countries with data in the World Bank's Global Antidumping Database and compares those totals to the number of cases brought by the EU against those countries.

Table 14: EU Antidumping compared to Antidumping against the EU, by Country

	Cases Against EU	EU Cases
USA	300	19
Australia	117	2
South Africa	100	8
Canada	80	2
India	77	39
Brazil	45	12
Mexico	38	7
Argentina	36	1
Israel	35	0
China	30	135
Korea	22	52
Turkey	14	30
Pakistan	13	10
Colombia	10	0
Taiwan	9	32
Indonesia	7	20
New Zealand	5	0
Malaysia	3	24
Philippines	2	2
Thailand	2	33
Chile	1	1
Ecuador	1	0
Japan	1	38
Peru	1	0
Uruguay	1	0
Venezuela	1	2

Source: World Bank, Global Antidumping Database; authors' calculations.

Examining the pattern of use of antidumping measures by the EU against countries that have targeted EU Member States with their own antidumping measures, we find no apparent evidence that TDI is used in any systematic fashion to retaliate. Indeed, the simple correlation coefficient between the two series is -0.001. This perspective differs quite sharply with the literature. In our view, this points to potential problems in the framing of the issues in the literature. For example, the Prusa and Skeath retaliation model does not distinguish between cases where a target country has filed, say 117 AD actions against the EU and "elicited" 2 "retaliations", as was the case with Australia, or had mounted 1 case and elicited 38 "retaliations" as in the case of Japan (Table 14). The massive differential in cases for and against on a bilateral basis is well illustrated by the fact that 4 countries (Australia, Canada, Argentina and Israel) alone mounted a total of 268 cases with the EU only mounting 5 "in response" over the timeframe covered by the World Bank dataset.[11]

The lack of any semblance of balance on a bilateral basis in TDI cases contrasts with the often overtly "tit-for-tat" responses in trade disputes brought under the WTO's Dispute Settlement Understanding (Garrett and McCall Smith, 2002) and strategic state behavior in exercising the retaliation privileges awarded by panels (Bown and Pauwelyn, 2010).

In summary, we see no compelling evidence that EU TDI practice involves to any significant extent a tit-for-tat retaliatory element.

7 TDI AS SURGE INSURANCE

This section considers TDI as "surge" protectors to attenuate the impact on the EU economy of disruptive change in the global economy. WTO rules (Article 19 - Safeguards) allow Members to temporarily restrict imports of a product in cases where a surge in imports injures or threatens to seriously injure a domestic industry. An import "surge" is defined as either an increase in imports in absolute terms or relative terms (e.g., if the level of imports do not go up but their share does in a shrinking market). Thus, there is an appropriate instrument to deal with disruptive import surges within the multilateral rules-based trade framework.

Nonetheless, it has been widely argued that anti-dumping and anti-subsidy (AD/AS) measures are used in lieu of the safeguards instrument to deal with import surges (e.g., Stiglitz, 1997). To the extent that this is true, this would appear to reflect various differences in the design of AD/AS that might make these instruments more attractive to both governments and industry than the safeguards instrument. In contrast to anti-dumping and anti-subsidy measures, safeguard measures cannot be targeted at imports from a particular country but rather must be applied on a most favored nation basis. Also unlike anti-dumping and anti-subsidy measures, the

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[11] Note that the fact that antidumping cases against individual EU member states are counted as separate cases inflates the total against; for example, the 300 US cases involve 149 separate case files. However, the method of counting does not affect the overall conclusion of no relationship, which is driven by the large number of extreme cases of virtually no actions on one side and a large number on the other side.

safeguards agreement allows countries whose exports are restrained to seek compensation through consultations and in the event that none is forthcoming to retaliate by raising tariffs on the country imposing the safeguard. The measures must be progressively liberalized while in force. And the cumulation rules for safeguards against developing country imports are also more generous to the developing country.

The extent to which AD/AS measures are used as a preferred from of surge protection is, however, difficult to establish. Historically, safeguard measures were provided in Article XIX of the original GATT, "Emergency Actions on Imports of Particular Products," which was referred to as the escape clause or safeguard clause. This provision, which allowed temporary restrictions on imports where domestic industries faced "serious injury", was used in only some 150 actions over the entire pre-WTO period from 1947-1994. The European Community was the second most frequent user of this provision (behind Australia), accounting for 26 such actions (Bown and Crowley, 2005; Table 1).

The more frequently used tools to manage import surges in the pre-WTO era were "grey-area" measures variously labeled as voluntary export restraints (VERs), voluntary restraint agreements (VRAs), and orderly marketing arrangements (OMAs) and an additional array of informal measures.

With the entry into force of the WTO Agreement in 1995, use of grey-area measures was banned. Such grey-area measures as were in effect at the time of the WTO Agreement were required to be brought into conformity with the Safeguards Agreement or phased out within four years. All Members had the right to one exception which allowed an extra year for phase-out; only the EC elected to make use of this option. Thus, all EU grey area measures were eliminated by the beginning of the 2000s.

Many suspect that the action simply shifted over to AD/CVD measures. This is indeed plausible. In the pre-WTO era, almost half of the anti-dumping and countervailing initiations (348 of 774) over the period 1980-1988 were superseded by negotiated restraints (Zlate, 2002). Accordingly, there was no clear distinction in the pre-WTO era between the use of surge measures and the use of anti-dumping and anti-subsidy measures. By the same token, there was no obvious discontinuous surge in antidumping actions when grey-area measures were banned.

The history of use of grey-area measures is of considerable interest from the perspective of analyzing the *de facto* role of TDI because of the blurred distinction between AD/AS and the various VERs/VRAs/OMAs and because the use of the latter instruments was to some extent documented and discussed openly. In particular, the use of grey-area measures was discussed at length in context of the Uruguay Round on the basis of a list prepared by the GATT Secretariat

of measures notified under Article XIX together with other measures that appeared to serve the same purpose.[12]

Reviewing the history of US grey-area measures, Coleman and Yoffie (1990; 138) emphasize the heterogeneous nature of the products concerned: "the United States has employed VERs to protect capital-intensive (automobiles) and labor-intensive (apparel) businesses, differentiated products (machine tools) and commodities (steel), and concentrated industries (automobiles) as well as fragmented sectors (machine tools)." Many other products were also caught up in grey area measures imposed by other countries.[13]

The same appears to be true of the EU. The members of the present-day European Union used such measures in respect of a vast range of goods.[14]

Just as product coverage does not suggest a unifying theme for grey area measures, neither does motive. The range of rationales for grey area measures offered by countries using them included the desire to guarantee domestic producers stable prices where production conditions were cyclical, to provide "breathing space" for producers facing structural adjustment, to allow affected communities to adjust, and in some cases simply to protect incomes. However, what is very important for the purposes at hand in the present study is that the word "dumping" appears only twice in the documentation of these measures. The word "unfair" does not appear at all. GATT members discussed the use of the measures to manage the frictions involved in the course of the across-the-board liberalization that was then in full swing under the multilateral process.

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[12] The list of grey area measures was originally prepared prior to the launch of the Uruguay Round and incorporated as annexes in the GATT document Spec(82)18 dated 26 March 1982. The list was subsequently revised three times and served as the basis for a 1987 discussion of the issue by GATT Members: MTN.GNG/NG9/W/6, dated 16 September 1987. The list here is taken from the third revision: Spec(82)18/Rev.3 dated 22 May 1984.

[13] See, MTN.GNG/NG9/W/6, dated 16 September 1987. Notable by its omission from the both the GATT list and the summary by Coleman and Yoffie is the case of semiconductors. The U.S.-Japan rivalry in this sector resulted in a series of VERs adopted by Japan and eventually in the bilateral U.S.-Japan Semiconductor Trade Arrangement that was signed on 1 September 1986. This agreement led to a GATT challenge by the EEC in respect of the aspect of the STA which involved undertakings by the Government of Japan to monitor cost and export prices on the products exported by Japanese semi-conductor firms from Japan to third country markets, and the exhortations for Japan to open its market to foreign companies which in the opinion of the EEC favored US interests. Consultations were held on 20 November 1986 and 29 January 1987; the issue was not resolved and went before a panel. The panel found that the external monitoring was not consistent with GATT but upheld the measures to open the Japanese market. For a discussion of this episode see Flamm and Reiss (1993).

[14] Apples (five EEC measures in respect of five countries); Automobiles (four EEC measures on behalf four EEC members in respect of automobile imports from Japan); Black and white TVs from Korea; Certain electronic piezoelectric quartz watches with digital display; Certain Fabrics; Certain species of timber; Certain textile products; Cheese/cheese and curds (seven separate measures, including five by Spain and two by the EEC); Color TV sets from Japan; Color TV tubes from Japan; Cultivated mushrooms in brine; Dried grapes; Motorcycles of a cylinder capacity of 50cm or less; Flatware (cutlery) (three separate measures by three EEC members, all against Korea); Footwear (five separate measures against three countries); Forklift trucks from Japan; Fresh or chilled garlic; Frozen cod fillets; Grooved carped shells and other mollusks; Hard coal and hard coal products; Jute products (two separate measures against different countries); Jute yarn; Light commercial vehicles (two separate measures, both against Japan); Sheep and goats/sheep and goat meat (11 separate measures targeting 13 different countries); Steel (15 measures targeting 15 countries); Synthetic rubber; Tableware and other articles of a kind commonly used for domestic or toilet purposes, of stoneware (two measures); Tunny for industrial purposes; Video tape recorders (four measures, all against Japan); and Yarn of synthetic fibres.

Exporting countries accepting VERs offered a number of reasons why they found it preferable to enter into an agreement rather than insisting on their GATT rights. It was suggested by various parties that VERs or other bilateral restraints allowed solutions to be worked out that corresponded to the particular nature of the problem in each case, and often involved less risk to exporters than taking their chances in investigations. In some cases, exporting countries apparently accepted importing countries' arguments that time was necessary to allow positive structural adjustment in the importing country; in other cases, however, exporters did insist on their negotiated rights.

The second key take-away point from the history of grey area measures is the very prominent roles of Japan and to a lesser extent Korea, the "surge" countries of the 1970s and 1980s, as the most frequently targeted exporters. Alongside the general liberalization under the GATT Rounds, the era of grey measures also featured the integration into what had previously been largely a North Atlantic trading system of the rapidly growing East Asian countries. The grey area measures were used to manage this major structural adjustment in the global trading system. China has since replaced Japan and the other East Asian "Tigers" as the surging economy that is integrating itself rapidly into the global system—and it has also displaced them as the main target of AD actions. This is brought out best with reference to US AD actions against Japan in particular, since data for US actions for the early 1980s are most easily available (see Figure 5).

Figure 5: US AD Cases versus Japan and China, 1980s, 1990s, and 2000s, number of cases
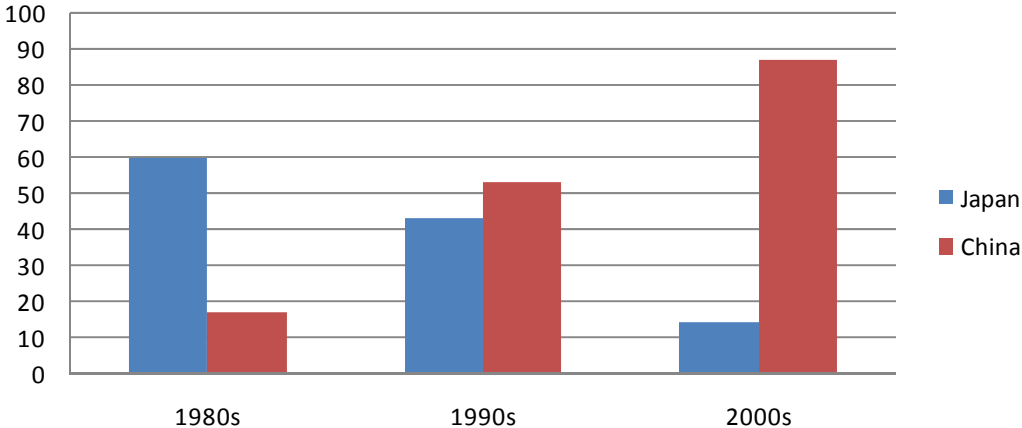
Source: World Bank, Global Anti-Dumping database (GAD-USA).

The pattern for the EU is far less clear as full data are not available on the World Bank's database (the EU data are available for only 1987 and on (Figure 6). The transfer of trade pressures from Japan and the other dynamic East Asian economies during the "Asian Miracle" era of the 1980s and 1990s to China in the 2000s is evident; however, EU actions against the other members of the "BRICSA" (Brazil, Russia, India and South Africa), which also surged in the 2000s, fell off in the 2000s. Moreover, to some extent, the shift of EU TDI to target other East Asian economies simply reflects the shift in trade patterns in which China increasingly came to account for the last stage of an East Asian value chain.

Figure 6: EU TDI initiations versus dynamic emerging market economies, 1990s, and 2000s, number of cases
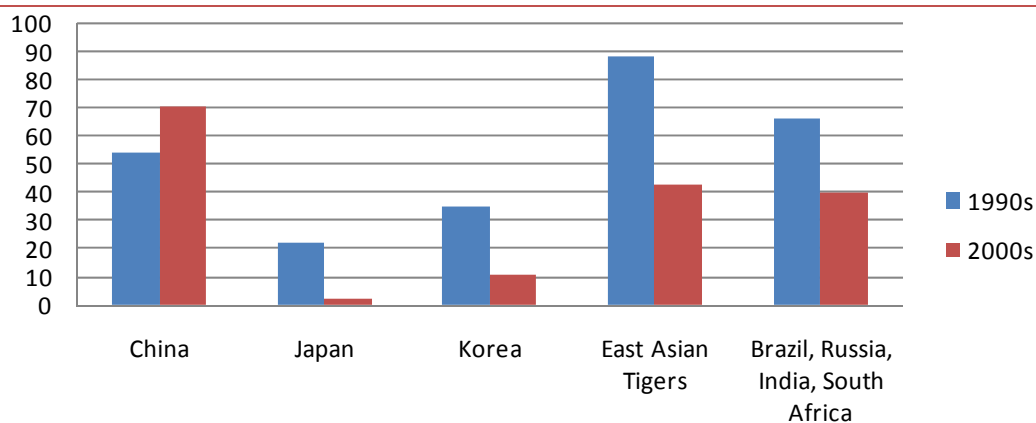
Taking all the evidence into account, this comparison suggests that, in the 2000s, EU TDI is being used to deal with the frictions emanating from China's surge, in lieu of the diplomatic measures that were available in the pre-WTO era to help manage the integration of the other dynamic East Asian economies in previous decades. The important point brought out by the historical perspective is that this is a transition, not a trend. In this sense, TDI may be seen as a stand-in for alternative, diplomatic means of facilitating major transitions in the global trading system.

This has important implications for how TDI is seen. One of the general arguments that have been put forward in support of TDIs is that they act as insurance policies that have allowed countries to take on deeper commitments in trade negotiations than they would otherwise have been willing to make. Nelson (2006) reviews the history of this argument and shows that it is based on observed behavior:

> "Going back to Viner, the academic literature on antidumping has recognized that antidumping law was often adopted as part of a strategy of tariff reduction or protection resistance. However, it was only with the adoption of the Reciprocal Trade Agreements Act of 1934 (RTAA) that antidumping became part of a system explicitly linking administered protection to liberalization ... The architect of the RTAA, Secretary of State Cordell Hull, realized that Congress would not agree to a program of systematic trade liberalization without a number of assurances that American industry would be protected from serious injury. From the RTAA to the present, omnibus trade legislation makes this link explicit by presenting both tariff cutting authority and the details of the administered protection mechanisms in the same legislation. It seems clear that no one involved in the politics of the RTAA saw it as transformative. On the contrary, it was simply a practical measure to accomplish the tariff reduction that had long been part of the Democrat party's core agenda." (at 573; internal references omitted).

Dam (1970) observes that the inclusion of TDI in GATT rules from the beginning greatly increased the extent of liberalization achieved in the early GATT rounds by diffusing using domestic political opposition toward trade liberalization. Much of that regulation concerned itself with contingent measures (surveillance and safeguards). More recently, the accession of China to the WTO, which involved the further dismantling of a massive array of individual

protectionist measures both within China[15] and on the part of WTO Members against China, was also contingent on the inclusion of special contingent protection measures.[16]

Perhaps the most compelling case for this role of TDI is that of India. In the early 1990s, India reversed its trade policy in the context of a balance of payments crisis. It reduced tariffs sharply on a unilateral basis and relaxed or removed a wide range of non-tariff trade-restrictive controls. At the same time, it became a heavy user of TDI.[17] This aspect of TDI is thus very well established.

More importantly, Fischer and Prusa (2003) show that, with incomplete insurance markets, contingent measures can we *welfare enhancing* when the economy is subject to sector-specific trade shocks. In this regard they write (at 751):

> "Trade negotiators have long argued that the inclusion of the most popular sector-specific tool—antidumping actions—is a precondition for the approval of any trade agreement. The main result of the paper affirms this intuition by showing that there is an insurance role for antidumping that had not been considered in the theoretical literature."

Again, when the assumption of perfectly functioning and complete markets is relaxed, the conventional evaluation of TDIs acquires important new qualifications. This argument is of course not a justification for any *specific* form of contingent protection, but rather for the availability of an effective form of contingent protection. Insofar as TDIs are the instruments of choice for exercising the contingent protection that is available, their use must be understood in light of this larger process of liberalization.

The importance of the availability of contingent protection for EU trade liberalization appears to have been considerable but the evidence is anecdotal. For example, the EU's progress towards completion of the single market involved the elimination of a vast number of quantitative trade restrictions which was only possible because of the availability of contingent protection. In this regard, the WTO's 1995 Trade Policy Review of the EU notes (at Part IV, paragraph 18): "6,318 quantitative restrictions applied by the member States against imports of non-textile products from third countries, including some 4,700 restrictions vis-à-vis China, were abolished by Council

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[15] For example, Erixon, Messerlin and Sally (2008) observe that, "In 2005 [China] reported that 1,416 national standards had been abolished as a result [of WTO accession commitments.]"

[16] China's WTO accession Protocol included special provisions on antidumping and safeguard allowing the use, with essentially full flexibility, of the "non-market economy" status in antidumping investigations, of the "Transitional Product-Specific Safeguard Mechanism" for 15 and 12 years from the date of China's entry into the WTO; and of the extended clothing and textiles safeguard, which was used by the EU (and the US); see Bown (2007) at note 27.

[17] In fact, the World Bank's Antidumping Database lists 629 individual cases initiated by India since mid-1992, just ahead of the United States with 619 over the same period. Over this period, imports of goods as a share of GDP rose from 8.8% in 1990 (Panagariya, 2004) to 25% in 2008 prior to the global crisis. The heaviest use of TDI was during the initial period of reforms to the early 2000s, during which India moved from a tightly controlled, near autarkical trade regime with a simple tariff average of 113% and comprehensive import licensing towards a largely decontrolled regime with tariffs cut to roughly one-third their initial levels. The secondary phase of liberalization in the 2000s, which saw the dismantling of the remaining import licensing measures and a further reduction in tariffs by half, was accompanied by a less intense use of TDI. A contrasting interpretation of this liberalization episode is provided in Vandenbussche and Zanardi (2010); they interpret the Indian experience in the 1990s as one of TDI largely offsetting the gains from liberalization, rather than enabling the liberalization that did take place.

Regulation 519/94 of 7 March 1994." A major part of that regulation concerned itself with contingent protection (safeguards and surveillance).

In China's WTO accession, it was however the United States that played the major role in exacting special terms in the form of extraordinary contingent protection measures: as noted by Ma (2004), except for minor changes, the Transitional Product-Specific Safeguard Mechanism is the same as the relevant part ("Product-Specific Safeguard") in the Protocol Language of the U.S.-China WTO Market Access Agreement of November 15, 1999.

8 COMMUNITARIAN MOTIVES FOR TDI

This section considers possible "communitarian" motives based on an analysis of the communities in which plant closures are at risk in particular TDI cases. To motivate the application of the communitarian welfare test, Hutton and Trebilcock (1990; 124) observe that

> "economists do the world a disservice by conjecturing a one-value world where the only legitimate justificatory criterion against which to measure the appropriateness of particular policy responses is an efficiency criterion (here translated into a consumer welfare test). Clearly, every community widely shares other values which policy responses should legitimately reflect. ... [Communitarianism] stresses the important role of stable family and community ties, roots and networks for individual and societal welfare, and would see a justification for policy responses designed to reduce the disruptive impacts of foreign imports on the integrity of long-standing communities. This perspective would presumably require some demonstration of significant and deleterious community impact as a pre-condition to the invocation of anti-dumping remedies. Again, protection of domestic producers *per se* would seem to be ruled out as a primary goal of unfair trade remedies."

A very similar comment is made by Jenny (2000; 24) on essentially the same nexus of issues but using a different analytical construct and in a different but closely related field, competition policy:

> "Overall, what may sometimes appear to the economist to be an 'economic failure' of competition policy regimes or competition laws and their enforcement may be in fact 'a failure of economists' to recognize the potentially legitimate desire of society to produce (at a cost) intangible public goods of a socio-political nature. For example, until economists have demonstrated that a collective sense of 'fairness' or 'social cohesion' can be socially produced at a cheaper cost than through 'fair competition laws' (which typically restrict competition) they may be misguided in criticizing such laws."

What Hutton and Trebilcock characterize as a welfare criterion, Jenny characterizes as the production of a public good. Implicit in Hutton and Trebilcock is a trade-off between welfare gains from preserving the community's stability and welfare gains from consumption of consumer goods. Implicit in Jenny is the trade-off between the production of public goods which generate welfare gains of an essentially identical nature at the cost of production of some consumer goods, which is the unstated consequence of the restriction of competition to which he refers.

We observe that the appropriate welfare standard in evaluating TDI is not consumer surplus (or its Hicksian income-compensated variant, equivalent variation), but national welfare, which

includes both producer surplus and consumer surplus. Further, we note that, associated with the transfer of producer surplus to consumers is an impact on factor incomes. This impact, if large enough to disrupt employment rather than simply to dampen returns to capital and labor (e.g., by lowering profit margins and constraining wage increases) cannot legitimately be compared dollar-for-dollar with widely distributed and shallow consumer surplus gains, since in these instances there is an obvious violation of the assumption of constant marginal utility of real income on which Harberger's (1971) surplus test is explicitly based. In these cases, the negative impact on factor incomes that accompany the gain in consumer welfare works to partly, wholly or more than wholly offset the Harberger triangles that measure the deadweight welfare loss from imposition of TDI duties, if the latter is given appropriately greater weight. Moreover, in these instances, negative externalities felt in the local community must be weighed in the accounts in determining the net welfare impact in the EU of applying TDI.[18] Accordingly, in considering motives, it is possible that an unstated consideration for EU policymakers is an implicit difference in weighting of narrowly borne welfare losses associated with factor income impacts and widely spread, shallow welfare gains for consumers.

We approach this issue indirectly by considering communitarian impacts. If factor market adjustment is largely frictionless, there is little cost from disruptions due to trade – labor and capital are redeployed to equivalent if not more profitable uses. In certain contexts – e.g., Silicon Valley where it is joked that individuals can change jobs without changing parking lots – this may be close to the reality. But in many cases, it is quite the opposite – closure of a key employer in a town can have large and long-term negative impacts on dependent individuals and communities. Job mismatch issues might constitute a major problem.[19] Very much depends on the context of the community – and these contexts are highly heterogeneous.

For our purposes, we adapt the communitarian test developed by Hutton and Trebilcock; arguably, this can serve as a stand-in for the appropriate but impossible weighted welfare calculation under the surplus test. Moreover, in the manner in which this test is presented by Hutton and Trebilcock, with the "demonstration of significant and deleterious community impact as a pre-condition", there is a clear circumscription of the contexts in which it would provide a welfare justification for TDI.[20] That is, the impacts must clearly go beyond the private

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[18] An alternative way to look at this issue is in terms of the height of exit costs. Aggarwal, Keohane and Yoffie (1987) suggest a way to categorize protection according to ease of exit; when the industry is large and exit is difficult, protection tends to institutionalized; when the domestic industry is small and exit is easy, only temporary protection tends to provided; and when barriers to entry are high, sporadic protectionism is likely. The idea of exit costs is comparable to the notion of weighing transitional factor income losses against consumer welfare gains in instances where plants close.

[19] To give a sense of the current state of difficulties in job transition consider that the European Commission's job mobility portal listed 1,811 job vacancies, 675,552 CVs and 24,620 employers registered (accessed 6 August, 2011). See, EURES, http://ec.europa.eu/eures/home.jsp?lang=en

[20] This addresses one of the concerns that will inevitably be raised in discussion of this test—i.e., whether its use can in fact be effectively circumscribed or whether it constitutes something of a slippery slope. It may be helpful to observe in this context that slippery slope arguments are themselves subject to slippery slopes if they go so far as to write out of public policy practice checks and balances to conventional approaches (in this case ignoring factor income losses in welfare calculations) in those instances where the assumptions underpinning the conventional approach are clearly invalid.

interests of the EU firms or workers directly involved – i.e., a threshold must be reached where the private impacts generate significant externalities for the communities in which they are situated.

To summarize, the communitarian test identifies those instances where the assumptions that underpin conventional welfare cost-benefit analysis are likely to be invalidated by significant differences in the depth of impacts of costs versus benefits. We argue, therefore, it is not a question of weighing economic goals against socio-political goals but rather simply getting the calculation of net economic welfare right.

So far we have considered this test only qualitatively – whether the conditions are there for it to be applicable – and no quantitative parameters have been discussed. While actual quantification is impossible because of the absence of empirically determined ways to weigh factor income losses against consumer surplus gains when the former are narrow and deep, and the absence of empirical evidence on the size of externality multipliers, consideration of the issue in terms of a conventional welfare analysis can shed light on the contexts which communitarian principles strengthen the case for TDI use and the contexts which would weaken the case.

To provide some quantitative "feel" for the issue, we run some simulations using a version of the USITC's COMPAS model that is used to calculate the impacts of dumping on the domestic economy. For a base case, we establish the following assumptions:

- Demand elasticity = -1.0
- Domestic supply elasticity = 3.0
- Import supply elasticity = 10.0
- Substitution elasticity = 2.5 between domestic and imported products and 5.0 between the two alternative sources of imports which divide the import market share equally, one being dumped at a 10% margin, the other non-dumped.

Setting initial total market size at € 100 (which allows the various impacts on consumer and producer surplus to be read as percentages of the initial size of the market), we then simulate the model with initial domestic market shares ranging at 10% intervals from 10% to 90%.

Second, we calculate the loss of factor incomes as the change in producer revenue less producer surplus (the latter, being transferred to consumers, does not represent a welfare cost to society). We assume that 85% of factor incomes accrue entirely to the immobile factors of production, labor (70%) and land (15%). And we assume that 50% of the wage component is replaced by social assistance which flows into the local community from the wider community.

Third, we take into account the local income multiplier effect. The recent literature on local investment multipliers in a European context suggests a value of about 2 is reasonable.[21]

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[21] See for example, Vasiljevic and Govorušic (2009). This study estimated multipliers for three communities in Serbia: 2.51, 1.81 and 1.75 for an average of 2.02. Acconcia, Corsetti and Simonelli (2011) find local spending multipliers of 1.8 to 2.0 taking into account dynamic effects; in their case, they compute the multiplier in a

To create a quantitative experiment, we break down the impact on producer revenues from an incident of dumping into producer surplus and factor incomes. We then assume that the factor income change represents the loss of a marginal plant. The industrial organization and heterogeneous firm trade literature shows that firms and individual plants vary widely in their level of productivity. In an industry faced with the need to reduce capacity due to some exogenous event (whether increased import competition or reduced demand), consolidation often involves the closure of marginal plants (with the firms consolidating their production in their more efficient plants) or the failure of the marginal producer. For example, one of the EU firms involved in the TDI complaint in *Polyester Fibers*, Performance Fibers, announced shortly before the launch of the complaint its intention to close its Bobingen plant and possibly its Guben plant to concentrate production at its main Bad Hersfeld plant.[22] In such circumstances, it seems legitimate to consider the factor income effects of an industry production reduction driven by dumping to be felt in the communities in which the plants subject to closure are located. Further to reflect the fact that, even with slow adjustment, the income effect is reduced over time, we compare the value of consumer surplus over 5 years to a cumulative income effect that is calculated on a sliding scale from 100% at impact to zero at the end of the period; this is accomplished simply by comparing half the income effect over 5 years to the full consumer surplus effect over five years. For convenience, we refer to this as the "communitarian offset". Finally, we run the model with different domestic market shares ranging from 10% to 90% and valuing the income effect at par and at multiples of 2 and 5 to notionally reflect the higher marginal utilities of income for losses that are deep and narrow in their incidence. With this simple set-up, we obtain the results as presented in Figure 7.

Figure 7: Consumer surplus trade-off versus communitarian offset
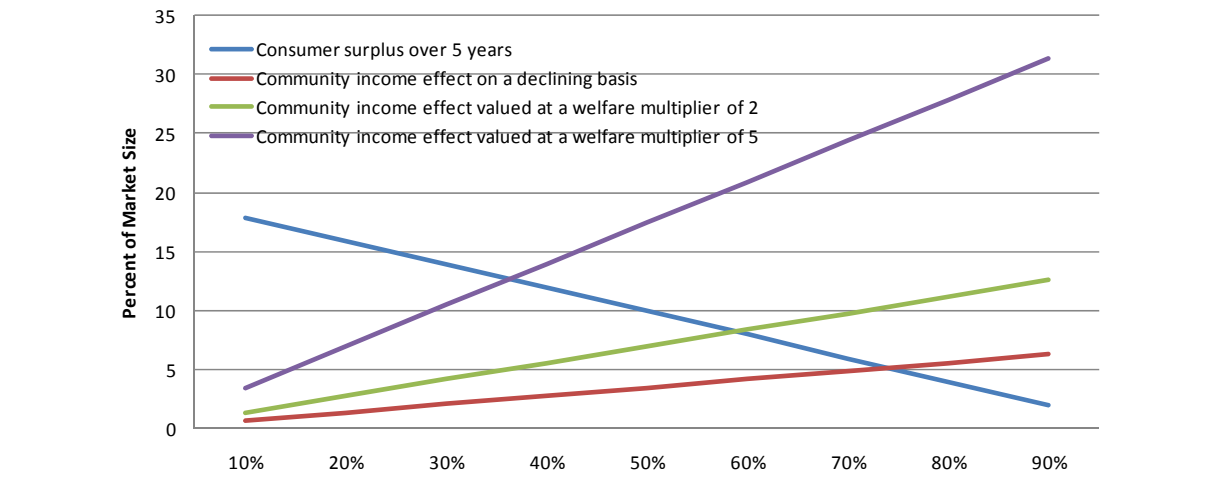
Note: the horizontal axis represents domestic market share, the vertical represents consumer surplus gain as a percentage of total market size.

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context of a reduction of local government spending, which is similar to the case we posit of a loss of local income.

[22] See "Performance Fibers schiebt Entscheidung zu Guben auf" *Lausitzer Rundschau* 01 August, 2009. Note that it is not clear why the firm involved was closing the plants—because of the import competition or for other reasons; rather, the example serves simply to illustrate the type of development we are positing.

As can be seen, the conventional economic welfare effect still dominates at lower domestic market shares but the offset dominates national economic welfare based on the standard surplus analysis at higher domestic market shares. In the intermediate range, the cut-off point for domestic market share at which communitarian offsets surpass the conventional measure of domestic welfare falls from the 70% to the 30% range as we apply higher multiples for the value of the factor income loss in the offset calculation. Varying the underlying elasticity assumptions, we find that the market share cut-off point for equivalence between communitarian offsets and conventionally measured economic welfare shifts to the left as:

- the substitution elasticity rises;
- the domestic supply elasticity falls; and
- the elasticity of demand for the product in the EU market falls.

In short, at low domestic market shares, consumer surplus dominates the welfare calculation; at high domestic market shares, any disruption to domestic production dominates in a static welfare calculation; at intermediate EU market shares, communitarian considerations tend to neutralize the welfare calculation where applicable. Interpreted this way, communitarian considerations do not offer a *carte blanche* for authorities to apply TDI; for example, in two cases that the Commission terminated on public interest grounds where the EU market share was minimal, *Compact discs,* where the EU total production was on the order of 10% of the market, and *DVDs* where the EU industry share of the market was less than 1%,[23] even if communitarian considerations had been weighed in the welfare calculation, they would not have materially affected the decision. Rather, these considerations take the welfare loss sting out of the use of TDI for a range of cases.

Several cautionary observations are worth making regarding these simulations and their interpretation.

First, these calculations assume that there remains some EU industry; if dumping eliminates the entire EU industry, the welfare evaluation would require measuring the full amount of factor income impact, rather than just the marginal portion. For this calculation we would require information about the whole supply curve, not just the portion in the neighborhood of the market solution.

Second, the evaluation is static; dynamic considerations would also have to be applied in evaluating the cost-benefit of applying TDI. In particular, communitarian considerations arise most sharply where plants close; if the plants that close are the least efficient in the EU, TDI use attenuates the process of shifting market share and resources towards higher productivity plants.

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[23] See Commission Decision of 3 November 2006 terminating the anti-dumping proceeding concerning imports of recordable compact discs (CDR) originating in the People's Republic of China, Hong Kong and Malaysia (2006/753/EC); and Commission Decision of 20 October 2006 terminating the anti-dumping proceeding concerning imports of recordable digital versatile discs (DVD+/-R) originating in the People's Republic of China, Hong Kong and Taiwan (2006/713/EC).

Based on the above arguments, we apply a communitarian test to the EU TDI cases initiated in the review period. We seek to do two things: to identify the extent to which TDI use might be, on an *ex post* basis, evaluated to be substantially better on a welfare accounting than under conventional welfare treatments, and to shed light on whether this concept has played a role – even if not explicitly articulated – in influencing EU TDI use on an *ex ante* basis.

As a practical matter, Hutton and Trebilcock identified candidate cases where the complainants were located in small towns or where large numbers of jobs were affected in larger communities. To apply their test, they considered the size of the workforce or population in affected communities, the unemployment rate prevailing in the community and the number of jobs at risk.

We examine 63 EU TDI cases initiated in the period 2005-2010. Consistent with the threshold criterion of significant and deleterious community impacts for communitarian considerations to represent a significant component of the welfare calculation in TDI applications, we first screen out those cases where the complaint was withdrawn or where the Commission found no dumping or injury. This is straightforward since in such instances the complainant may have suffered erosion of profitability and some workers may have been laid off but the dumping cannot have represented an existential threat to the domestic industry. In all, 16 cases are screened out on this basis (Table 17 in annex).

Of these cases, several involved potentially concentrated impacts. For example, *Cameras* involved one community producer, Grass Valley in the Netherlands; *Silicon Carbide* appears to have involved two community producers;[24] *Sodium Metal* involved a single producer, Métaux Spéciaux in Savoie, France; and *Ring Binders* involved only Ring Alliance Ringbuchtechnik GmbH, a Vienna-based company that reintroduced a complaint two years after withdrawing the first. One terminated case (*Wireless Area Networks*) we leave in for communitarian consideration because the resolution to this case which led to the withdrawal of the complaint was based on the company reaching a working arrangement with one of the competing Chinese exporters.

In cases where a large number of EU producers are involved, spread across a large number of EU Member States, the impacts of dumped or subsidized products on local communities in which EU production takes place are *ipso facto* spread over a large number of communities of varying sizes and economic contexts. Communitarian concerns might arise in particular cases; however, it would be impractical to attempt to evaluate each instance. An additional 7 cases could be excluded on the basis of highly dispersed EU production (Table 18 in annex).

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[24] Neither the initiation nor the termination reports listed the community producers; however, these were named in another antidumping case in respect of silicon carbine; see Council Regulation (EC) No 1264/2006 of 21 August 2006 terminating the investigations concerning the anti-dumping measures applicable to imports of silicon carbide originating in the Russian Federation and Ukraine and imposing a definitive antidumping duty on imports of silicon carbide originating in the People's Republic of China.

In some cases the extent of dispersion of EU production is less clear. For these cases, we construct pseudo HHI values, using available information from the case documentation (Table 19 in annex). A minimum HHI can be constructed by assuming even market shares for the firms within the stated segments. A higher HHI can be estimated by assuming that, in the largest segment, there is a dominant firm (subject to plausibility judgments based on the case information). On this basis, we calculate minimum and maximum HHIs for the questionable cases and are able to exclude another 19 cases as unlikely to have sufficient concentration of impact to make communitarian concerns an important factor in the welfare calculation as the maximum HHI reading is 0.18 or less.

The above criteria together screen out 42 of the 63 cases under examination. The remaining cases all involve a relatively small number of firms. For these, we consider factors that might bear on whether the firms involved face existential threats from the dumping. Clearly, in terms of externalities for local communities, there is a discontinuous increase in harm when the level of damage leads to a plant shutdown compared to the situation in which a plant gears down, even with layoffs related to production cutbacks. Of course, the case documentation does not allow us to determine the financial condition of the firms involved. Accordingly, the extent of existential threat to a firm must be based on general characteristics. We consider two such characteristics in particular. First, whether the establishment carries out headquarter functions, which often include research and development, for a larger group of establishments, or whether it is a branch or subsidiary. This reflects the judgment that a branch or subsidiary is much more likely to be shut down than the headquarters. Second, we consider the extent of product diversification of the firm. This reflects the judgment that a specialized establishment, focused largely or entirely on production of the like good, is more likely to face an existential threat than a diversified establishment. The HQ/branch status of a firm is determined from the firm's published documentation as is the extent of product diversification.

Again, as before, we proceed by eliminating the cases where the risks of closure of establishments in the face of the dumping or subsidization appear to be relatively low. The results of this analysis are set out in Table 20 in annex. Note that we label a single firm that combines production and headquarter function in one location as "both". Generally speaking, the determinative factor in our view is the degree of exposure to the specific product or product group that is being dumped or subsidized; however, it takes less of an exposure for a branch or subsidiary to face shutdown than a headquarters, hence the dual criteria.

This screening process eliminates 21 of the 65 firm-municipality cases, which still leaves us with 44 instances of possible communitarian concern in 15 TDI cases to consider. We next consider the size of the community involved. For this purpose, we identify cases in which the firm involved is an Urban Audit Core City.[25] With one exception in our list, Urban Audit Cities are all communities with over 100,000 population and typically are at the centre of larger

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[25] Eurostat. *Population and living conditions in Urban Audit cities, core city: Total population in Urban Audit cities*, http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&language=en&pcode=tgs00079&plugin=1

agglomerations. If a complainant firm is located in one of these cities, or in the agglomeration immediately surrounding it, and the job loss is moderate, we exclude those cases from further consideration as well on grounds that the business diversification of the agglomeration is probably sufficient to limit the knock-on effects of a single firm's failure. Moreover, job transition is easier and less disruptive for workers in larger agglomerations. In these instances, the static consumer welfare gains and the dynamic efficiency gains from not intervening to prevent firm exit are more likely to dominate the accentuated welfare losses associated with the loss of factor incomes. Five of these firm-community instances can be excluded on this basis (Table 21 in annex). This leaves us with 39 firm/community cases (Table 22 in annex).

What further guidance can be brought to bear in terms of how to take communitarian impacts into account? We suggest four criteria that can help triage the cases where communitarian concerns arise:

- the domestic (EU) industry share in the market for the like goods;
- the employment/population ratio in the affected region;
- the unemployment rate in the affected region; and
- the contextual situation of the firms at risk – in particular, are they part of a concentrated cluster which facilitates job transition for skilled workers?

As discussed above, the lower the EU industry's market share in the like good, the less likely it is that even deep and narrowly felt negative impacts which are accorded a high weight would dominate the welfare costs of imposing TDI in terms of foregone consumer surplus. This criterion is consistent with the Commission's invocation of the public interest in not applying measures in the *CDR* and *DVD* cases, where EU market shares were very low. For high EU market shares, the factor income losses are likely to dominate consumer welfare in a static analysis but here additional considerations need to be brought to bear (e.g., the dynamic efficiency gains from not slowing the firm exit/entry process and also the possibility for collusive, anti-competitive behavior on the part of the domestic industry). For intermediate EU industry market shares (e.g., in the 30-70% range), additional criteria need to be brought to be bear given the uncertainty as to which effect dominates. It is in these latter, intermediate cases that the additional criteria come into play.

Thus, secondly, consideration should be given to the employment/population ratio in an affected region. In particular, the lower this ratio (e.g., compared to the EU average), the more the community is dependent on the existing jobs. This would be notionally reflected in a higher multiplier effect for negative externalities for a given direct shock from a plant closure.

Third, the higher the unemployment rate in a region (again, compared to the EU average), the greater the job transition costs for laid-off workers and the greater the likelihood of disruptive change for the community involved. This would be notionally reflected in a higher multiplier for the depth of impact of narrowly felt factor income losses.

Fourth, the more regionally isolated the firm at risk, the less likely it is that skilled workers can find new employment in their specialties in the local region. In dynamic clusters, it has been noted, the constant cycle of firm creation and destruction means that workers let go by one firm can simply go across the road to find equivalent employment at a new start-up or existing competitor.

Applying these criteria to the 39 communitarian cases we have identified, it can be readily determined that, in 15 of these cases, the EU market share is below 30% (Table 23 in annex). We screen these cases out on grounds that the consumer welfare loss is likely to outweigh even a highly weighted factor income loss and the associated communitarian knock-on effects.

The remaining 24 cases involve 7 in which EU firms have a high market share (over 80%). In these cases, as per the above analysis, the static welfare analysis indicates that the factor income losses and communitarian externalities are likely to dominate consumer welfare gains. Consideration of dynamic effects in terms of firm entry/exit and the possibility of collusive behavior should be taken into account in such cases; however, there is no objective way to parse through the cases on the basis of the available information for the purposes here. However, 5 of these cases involve communities where the regional employment rate is as high as, or higher than, the EU average and the regional unemployment rate is below the EU average. These would be mitigating factors in the static welfare analysis in respect of the depth of the welfare impacts from plant closures.

Of the remaining 19 cases, 11 also feature a combination of relatively high employment ratios and relatively low unemployment rates and can be screened out on that basis. This leaves only 8 instances in 4 TDI cases where a clear-cut communitarian case could be made on static welfare grounds alone for the use of TDI.

The above analysis shows that communitarian concerns might figure prominently in a welfare analysis of the use of TDIs only in a minority of cases. In point of fact, there is considerable heterogeneity in TDI cases in this dimension. Importantly, the relevant distinctions can be brought out with reasonable ease on the basis of readily accessible information. To ignore this heterogeneity of circumstances would be as inappropriate in welfare calculations as we now know it is to ignore firm-level heterogeneity in evaluating the trade impacts of policy measures.

9 DISCUSSION AND CONCLUSIONS

We have examined the pattern of TDI use by the EU through a number of analytical lenses. For the most part, we do not see clear-cut evidence for most "theories of the case" – that is, the pattern of use does not conform in any compelling fashion to notions that EU TDI practice evidences or betrays:
- competition policy objectives;

- implicit industrial policy motives, either offensive or defensive;
- a macroeconomic buffer role;
- retaliatory motives;
- surge protection in the normal course of trade; and
- the desire to protect communities from disruptive change.

To some extent, TDI appear to be motivated by most of these areas in particular cases. For example, it cannot be excluded that they provide on occasion breathing space for young, heavily investing firms still on the learning curve in competition with aggressive price competition from established global firms. Similarly, on occasion TDI will target outright predatory practices, attenuate macroeconomic shocks or retaliate trade policy measures of trading partners. And in some instances, the implementation of TDI will have communitarian welfare effects that arguably outweigh the conventional measures of welfare loss based on consumer surplus. However, these instances appear, on the basis of our research, to be in the minority.

This leaves unexplained the apparent inconsistency between the observed behavior of governments to drive towards more liberalized trading regimes with their simultaneous expansion of protection. There are two ways in which this apparent contradiction is described in the literature, with diametrically opposed implications for the analysis of economic welfare. One is the "substitution effect" whereby governments substitute administered protection for tariffs; since administered protection is far more costly than a simple statutory tariff, the implication is that governments are moving in a welfare-damaging way from efficient to inefficient protection. The second is the "insurance effect" whereby governments, in the absence of knowledge about the future effects of liberalization, include escape clauses which make it politically feasible to commit to sweeping liberalization initiatives such as the multilateral GATT rounds, the creation of the EU internal market, and the integration of major new economies such as China into the global economic division of labor.

In this regard, the study draws on the history of major liberalization episodes and notes the following:
- The explicit linkage of sweeping tariff reforms to the availability of selective safeguards has been a part of the multilateral system starting with the US reciprocal trade agreements of the 1930s, which served as the model for the GATT.
- Similarly, the equally sweeping trade reforms undertaken in the context of the European Single Market exercise were accompanied by explicit safeguards and surveillance mechanisms to redress ex post the problems that could not have been anticipated ex ante.
- The accession of China into the WTO depended on agreement to a range of special safeguards.

Against this background, we note that the widespread use of "grey area" measures in the pre-WTO era, which were justified without reference to dumping or subsidization except in a few cases, focused on the "surge" economies of the 1970s and 1980s – Japan and the other East Asian "Tigers"; the pattern of use of these measures is echoed in the pattern of use of anti-

dumping and anti-subsidy measures since the banning of grey area measures under the WTO, including the shift of focus to the "surge" economy of the 1990s and 2000s, China.

On the basis of this strong circumstantial evidence, we conclude that, for the most part, modern-day TDI use can be likened to claims on various insurance policies put in place to permit the major trade liberalizations of the postwar period. Seen in this light, they are not substitution for liberalization but the ex post adjustment of the degree of liberalization agreed to under conditions of lack of perfect knowledge of future conditions and in the absence of the appropriate insurance markets. The fact that antidumping is the instrument of choice to give effect to these insurance claims, rather than the formally proposed instruments (safeguards), appears to reflect the design of the instruments but does not for the most part detract from the force of the argument. Theoretical treatments of TDI as insurance policies in the absence of perfect information demonstrate that it is welfare improving, consistent, of course, with the general literature on insurance.

This articulation of TDI, that liberalization is contingent on contingent protection, provides a coherent explanation of government policies that is consistent with the documented linkages in liberalization agreements and with the broad pattern of use of TDI, including its often random pattern of incidence. In our view this is by far the strongest support for TDI; however, it also emphasizes that contingent protection under the WTO rules is not well framed which leaves it poorly understood and thus open to widespread criticism, susceptible to inefficient application by administering authorities, and open to potential abuse by rent-seeking industries.

REFERENCES

Acconcia, Antonio, Giancarlo Corsetti, and Saverio Simonelli. 2011. "Mafia and Public Spending: Evidence on the Fiscal Multiplier from a Quasi-experiment," Centre for Studies in Economics and Finance (CSEF) Working Paper No. 281, April.

Aggarwal, Vinod K., Robert O. Keohane and David B. Yoffie. 1987. "The Dynamics of Negotiated Protectionism," American Political Science Review 81(2), June: 345-366.

Baylis, Kathy and Nisha Malhotra. 2006. "Predatory Pricing: The Effect of Antidumping on Domestic Competition Policy," Working Paper, University of British Columbia.

Blonigen, Bruce A. 2006. "Evolving Discretionary Practices of U.S. Antidumping Activity," Canadian Journal of Economics 39(3), August: 874-900.

Blonigen, Bruce A. and Chad P. Bown. 2003. "Antidumping and retaliation threats," Journal of International Economics 60(2): 249-273.

Bourgeois, Jacques H. J. and Patrick A. Messerlin. 1998. "The European Community's Experience," in Robert Lawrence (ed.), Brookings Trade Forum 1998: 127-145.

Bown, Chad P. 2007. "China's WTO Entry: Antidumping, Safeguards, And Dispute Settlement," NBER Working Paper No. 13349.

Bown, Chad P. and Meredith A. Crowley. 2007. "Trade Deflection and Trade Depression," *Journal of International Economics* 72(1), May: 176-201.

Bown, Chad and Meredith Crowley. 2005. "Chapter 39: Safeguards", in Patrick F. J. Macrory, Arthur Edmond Appleton, Michael G. Plummer (eds.), The World Trade Organization: Legal, Economic and Political Analysisx - Volume 2: 43-66. Springer

Bown, Chad P. and Joost Pauwelyn. 2010. "Introduction: trade retaliation in WTO dispute settlement: a multi-disciplinary analysis," Chad P. Bown and Joost Pauwelyn, eds., The Law, Economics and Politics of Retaliation in WTO Dispute Settlement, Cambridge University Press.

Coleman, John J. and David B. Yoffie. 1990. "Institutional Incentives for Protection: The American Use of Voluntary Export Restraints," Proceedings of the Academy of Political Science 37(4): International Trade: The Changing Role of the United States: 137-150.

Dam, Kenneth W. 1970. The GATT: Law and International Economic Organization. Chicago: University of Chicago Press.

Davis, Lucy. 2009. "Ten years of anti-dumping in the EU: economic and political targeting," European Centre for International Political Economy (ECIPE) Working Paper No. 02/2009.

Erixon, Fredrik, Patrick Messerlin and Razeen Sally. 2008. "China's Trade Policy Post-WTO Accession: Focus On China-EU Relations," European Centre for International Political Economy (ECIPE) Working Paper

European Commission (2010). Anti-Dumping. Anti-Subsidy. Safeguard. Statistics Covering the Full Year 2010. Brussels.

Fischer, Ronald and Thomas J. Prusa. 2003. "Contingent Protection as Better Insurance," Review of International Economics 11(5): 745-557.

Flamm, Kenneth and Peter C. Reiss. 1993. "Semiconductor Dependency and Strategic Trade Policy," Brookings Papers on Economic Activity. Microeconomics 1993(1): 249-333.

Garrett, Geoffrey and James McCall Smith. 2002. The Politics of WTO Dispute Settlement, UCLA Occasional Paper Series, http://escholarship.org/uc/item/4t4952d7.

Harberger, Arnold C. 1971. "Three Basic Postulates for Applied Welfare Economics: An Interpretive Essay," *Journal of Economic Literature* 9(3) September: 785-797.

Hutton, Susan and Michael J. Trebilcock. 1990. "An empirical study of the application of Canadian anti-dumping laws: A search for normative rationales," *Journal of World Trade*, 24(3), 123-146.

Jallab, Mustapha S., René Sandretto, and Monnet B. P. Gbakou. 2006. "Antidumping Procedures and Macroeconomic Factors: A Comparison between the United States and the European Union," Global Economy 6(3), Article 5: 1-20.

Jenny, Frédéric. 2000. "Competition Law and Policy: Achievements and Failures from an Economic Perspective," Hope, Einar, ed., *Competition Policy Analysis*, London: Routledge, 20-34.

Knetter, Michael M. and Thomas J. Prusa. 2003. "Macroeconomic factors and antidumping filings: evidence from four countries," *Journal of International Economics* 61: 1–17.

Konings, Jozef and Hylke Vandenbussche. 2009. "Antidumping Protection hurts Exporters. Firm-level Evidence from France," CEPR discussion paper n° 5678, London.

Konings, Jozef and Hylke Vandenbussche. 2008. "Heterogeneous responses of firms to trade protection," Journal of International Economics 76: 371–383.

Konings, Jozef and Hylke Vandenbussche. 2005. "Antidumping protection and markups of domestic firms," *Journal of International Economics* 65(1), January: 151-165

Lafay, Gerard. 1992. "The Measurement of Revealed Comparative Advantages," in M.G. Dagenais and P.A. Muet eds., *International Trade Modeling*, London: Chapman and Hill, 209-234.

Ma, Jing. 2004. "Product-Specific Safeguard In China's WTO Accession Agreement: An Analysis Of Its Terms And Its Initial Application In Section 421 Investigations," Boston University International Law Journal 22(1), Spring: 189-218.

Nelson, Douglas. 2006. "The Political Economy of Antidumping: A Survey," European Journal of Political Economy 22: 554– 590.

Panagariya, Arvind. 2004. "India's Trade Reform: Progress, Impact and Future Strategy," Working Paper.

Prusa, Thomas J. and Susan Skeath. 2002. "The Economic and Strategic Motives for Antidumping Filings," Weltwirtschaftliches Archiv 138(3): 389-413.

Shin, Hyun Ja. 1998. "Possible instances of predatory pricing in recent U.S. antidumping cases," in Robert Lawrence (ed.), *Brookings Trade Forum 1998*: 81-97.

Stiglitz, Joseph E. 1997. "Dumping on Free Trade: The U. S. Import Trade Laws," Southern Economic Journal 64(2), October: 402-424.

Tavaras, Jose. 2001. "Legal and Economic Interfaces Between Antidumping and Competition Policy" www.netamericas.net/Researchpapers/Documents/Tavares/tavares6.doc

Vandenbussche, Hylke and Maurizio Zanardi. 2010. "The Chilling Trade Effects of Antidumping Proliferation", *European Economic Review*, forthcoming.

Vasiljevic, Duško and Sanja Govorušic. 2009. "Local Investment Multipliers in Serbia," Center for Advanced Economic Studies (CEVES) Quarterly Monitor No. 19, October-December, 2009: 81-90.

Zlate, Andrei. 2002. "The Role Of Safeguards In Global Trade Protectionism," American Enterprise Institute (AEI) Working Paper.

ANNEX

Table 15: Screening of EU AD cases for competition policy concerns

Year of Initia-tion	Product	Country	Screen 1: Four or more countries targeted		Screen 2: More than eight foreign firms targeted		Screen 3: Combined Market Share of Targeted firms less than 40%	Screen 4: Concentrated EU market (Number of domestic producers)	Screen 5: No dumping or injury finding/ complaint withdrawn
2006	Cathode-Ray Colour Television Picture Tubes	China Korea Malaysia Thailand	4	Out					
2006	Pentaerythritol	USA, China, Russia, Turkey, Ukraine	5	Out					
2006	Ferro-Silicon	China, Egypt, Kazakhstan, Macedonia, Russia	5	Out					
2007	Certain Welded Tubes and Pipes of Iron or Non-Alloy Steel	Belarus, Bosnia Herzegovina, China and Russia	4	Out					
2005	Chamois Leather	China	1	In	Large (sampling)	Out			
2005	Certain Footwear with Protective Toecap	China India	2	In	Large (sampling)	Out			
2005	Plastic sacks and bags	China Thailand Malaysia	3	In	Large (sampling)	Out			
2005	Certain Footwear with Uppers of Leather	Vietnam China	2	In	Large (sampling)	Out			
2005	Recordable Digital Versatile Discs (DVD+/-R)	China HK Taiwan	3	In	large (more than 15)	Out			
2005	Recordable Compact Discs (CD-Rs)	China HK Malaysia	3	In	large (more than 13)	Out			
2006	Ironing Boards	China, Ukraine	2	In	9	Out			
2006	Sweet Corn	Thailand	1	In	Large (sampling)	Out			
2006	Synthetic Staple Fibres of Polyesters	Malaysia Taiwan	2	In	Large (sampling)	Out			
2006	Peroxosulphates	USA, China and Taiwan	3	In	9	Out			
2006	Silico-Manganese	China, Ukraine and Kazakhstan	3	In	Large (sampling)	Out			
2006	Dihydromyrcenol	India	1	In	Large (sampling envisaged but only two cooperated)	Out			
2006	Polyvinyl Alcohol (PVA)	China, Taiwan	2	In	large (sampling envisaged but only two cooperated)	Out			
2006	Coke 80+	China	1	In	Large unspecified (only one	Out			

Year of Initia-tion	Product	Country	Screen 1: Four or more countries targeted		Screen 2: More than eight foreign firms targeted		Screen 3: Combined Market Share of Targeted firms less than 40%	Screen 4: Concentrated EU market (Number of domestic producers)	Screen 5: No dumping or injury finding/ complaint withdrawn
					cooperated)				
2007	Citric Acid	China	1	In	Large (8 cooperating)	Out			
2007	Monosodium Glutamate	China	1	In	Large, 3 cooperating groups of 8 companies	Out			
2007	Certain Prepared or Preserved Citrus Fruits	China	1	In	large (over 9)	Out			
2007	Certain Iron or Steel Fasteners	China	1	In	Large (sampling)	Out			
2007	Galvanized Steel	China	1	In	Large (sampling)	Out			
2008	Stainless Steel Cold Rolled Flat Products	China, South Korea, and Taiwan	3	In	Large	Out			
2008	PSC Wires and Strands	China	1	In	Large (7 cooperating)	Out			
2008	Certain Candles/Tapers and the like	China	1	In	41 cooperating	Out			
2008	Wire Rod	China Moldova Turkey	3	In	9 cooperating	Out			
2008	Biodiesel	United States	1	In	over 50 cooperating	Out			
2008	Certain Seamless Pipes and Tubes (of Iron or Steel)	China	1	In	Large (sampling, 3 cooperating)	Out			
2008	Certain Aluminium Foil	Armenia Brazil china	3	In	8	Out			
2008	Hollow sections (welded tubes etc)	Belarus, Turkey, Ukraine	3	In	9	Out			
2009	Sodium Gluconate	China	1	In	large (sampling, 2 cooperating)	Out			
2009	Aluminium Road Wheels	China	1	In	large 36 cooperating	Out			
2009	Polyester Yarn	China, Korea, Taiwan	3	In	Large (9 cooperating)	Out			
2009	Glass Fibre Filaments	China	1	In	Large (8 cooperating)	Out			
2010	Melamine	China	1	In	Large (5 cooperating)	Out			
2010	Certain Stainless Steel Bars	India	1	In	large (22 +)	Out			
2010	Glass Fibres	China	1	In	Large (16 replies, 3 sampled)	Out			
2010	Ceramic tiles	China	1	In	Large (105 responses to sampling enquiry)	Out			
2010	Tris (2-chloro-1-	China	1	In	potentially large	Out			

Year of Initiation	Product	Country	Screen 1: Four or more countries targeted		Screen 2: More than eight foreign firms targeted		Screen 3: Combined Market Share of Targeted firms less than 40%		Screen 4: Concentrated EU market (Number of domestic producers)		Screen 5: No dumping or injury finding/ complaint withdrawn	
	methylethyl) Phosphate											
2010	Certain Seamless Pipes and Tubes of Stainless Steel	China	1	In	Large (sampling)	Out						
2006	Frozen Strawberries	China	1	In	5	In	20%	Out				
2009	Certain Molybdenum Wires	China	1	In	1 cooperating	In	around 25% during IP	Out				
2010	Zeolite A Powder	Bosnia Herzegovina	1	In	1	In	10-15% in IP	Out				
2010	Coated fine papers	China	1	In	2 groups	In	4% in IP	Out				
2010	Ring Binders	Thailand	1	In	1	In	15% in IP	Out				
2010	Ironing Boards	China	1	In	1	In	25% (half of about half the market at most	Out				
2006	Saddles	China	1	In	4 groups - 10 companies	In	7-26%	Out				
2009	PET (Polyethylene Terephthalate)	Iran, Pakistan, UAE	3	In	3 exporters named	In	10-22% at most during IP	Out	17 Union producers, five sampled accounted for 65% of the group of 14's production; psuedo-HHI = .08 to 0.16	Out	Terminated on grounds of de minimis (Pakistan, UAE) and non-materiality of injury (Iran)	Out
2009	Purified Terephthalic Acid and its Salts	Thailand	1	In	2 exporters named (one of which is two producers owned by the same holding company)	In	Thai share of EU import market no more than 15%; much smaller share of total domestic market	Out	3 Union producers at least, largest with over 50% of the Union production	In	Terminated (de minimis dumping margin)	Out
2010	Wireless Area Networks	China	1	In	potentially large	Questionable	Chinese share of EU imports in closest 6-digit sectors about 8-10%	Out	1 Union producer with 100% of Union production	In	Withdrawn due to working arrangement	Out
2005	Ethyl Alcohol	Pakistan Guatemala	2	In	potentially large	Questionable	Guatemala and Pakistan share of EU imports was less than 6% of total EU imports and therefore much smaller share of domestic market	Out	Large number of Union producers supported the complaint	Out	Complaint Withdrawn	Out
2005	Silicon carbide	Romania	1	In	potentially large	Questionable	Romania's share of EU imports less than 12%; therefore much smaller share of	Out	Complaint by the industry association CEFIC representing 100% of Union production; 4 named	In	Complaint Withdrawn	Out

Year of Initia-tion	Product	Country	Screen 1: Four or more countries targeted		Screen 2: More than eight foreign firms targeted		Screen 3: Combined Market Share of Targeted firms less than 40%		Screen 4: Concentrated EU market (Number of domestic producers)		Screen 5: No dumping or injury finding/ complaint withdrawn	
							domestic market		producers			
2006	Cameras	japan	1	In	potentially large	Questionable	Japan's share of imports in the 6-digit HS codes containing subject goods was 20% or less	Out	complaint by one company representing more than 25% of Union production but potentially large number	Questionable	Complaint Withdrawn	Out
2008	Sodium Metal	United States	1	In	1 known exporter	In	US share of EU import market was less than 20%; therefore share of domestic market much less	Out	1 community producer accounted for 100% of Union production	In	Complaint Withdrawn	Out
2008	Certain Ring Binder Mechanisms	Thailand	1	In	No information in the case documentation	Questionable	Thailand's share of EU imports was on the order of 3%, therefore share of domestic market was much less	Out	sole complainant accounted for over 50% of Union production	In	Complaint Withdrawn	Out
2009	Steel Fasteners	India	1	In	potentially large	Questionable	The Malaysia + India share of the relevant 6 digit HS code EU imports was on the order of 2% or less	Out	Sole complainant accounted for over 25% of Union production; in Fasteners from China there were a large number of domestic producers; 7 sampled producers accounted for 70% of the market	Out	Complaint Withdrawn	Out
2005	Certain Tungsten Electrodes	China	1	In	4	In	72%	In	2 EC producers, one with more than 50% of Union production	In	Affirmative	In
2006	Certain Manganese Dioxides	South Africa	1	In	1	In	60-70%	In	2 EC producers	In	Affirmative	In
2010	Certain Fatty Alcohols and their Blends	India, Indonesia, Malaysia	3	In	7 cooperating	In	35-45%	In	2 major Union producers and at least 3 small ones accounting for 100% of Union production, pseudo-HHI = 0.44	In	Affirmative	In
2005	Refrigerators	Korea	1	In	3	In	42 to 50%	In	1 with 100% of production	In	Affirmative	In
2006	Dicyandiamide	China	1	In	large (3 cooperating)	In	40-50%	In	1 with 100% of production	In	Affirmative	In
2006	Certain Compressors	China	1	In	large but 6 cooperating accounted for	In	over 50%	In	31 producers, top two with 50% of Union production; psuedo-HHI =0.13 to 0.19	In	Affirmative	In

Year of Initia-tion	Product	Country	Screen 1: Four or more countries targeted		Screen 2: More than eight foreign firms targeted		Screen 3: Combined Market Share of Targeted firms less than 40%		Screen 4: Concentrated EU market (Number of domestic producers)		Screen 5: No dumping or injury finding/ complaint withdrawn	
					93% of imports							
2009	Cargo Scanning Systems	China	1	In		1 In	40-50% in IP	In	2 producers with 100% of Union production	In	Affirmative	In

Source: Case documentation; calculation by the authors.

Table 16: Lafay index readings of EU HS 6–digit sectors affected by TDI, 2005-2010

Case	Product	HS6	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
AD.490	Seamless pipes and tubes, of iron or steel	730410	1							o
AD.490	Seamless pipes and tubes, of iron or steel	730421	1							o
AD.491	Lever arch mechanisms	830510							1	1
AD.493	Refrigerators (side-by-side)	841810				1				1
AD.496	Chamois leather	411410		1						1
AD.497	Plastic sacks and bags	392321		1			1			1
AD.497	Plastic sacks and bags	392329		1						1
AD.499	Footwear (with uppers of leather)	640320		1						1
AD.499	Footwear (with uppers of leather)	640351		1						1
AD.499	Footwear (with uppers of leather)	640391				1				1
AD.499	Footwear (with uppers of leather)	640510		1						1
AD.502	Tungsten electrodes	810195					1			o
AD.502	Tungsten electrodes	851590	1							1
AD.505	Strawberries (frozen)	81110				1				1
AD.506	Ironing boards	392490				1				o
AD.506	Ironing boards	442190				1				o
AD.506	Ironing boards	732399				1				o
AD.506	Ironing boards	851679				1				o
AD.506	Ironing boards	851690		1						o
AD.507	Sweet corn (prepared or preserved in kernels)	200580		1						o
AD.508	Saddles	871495		1						1
AD.508	Saddles	871499				1				o
AD.508	Saddles	950691	1							1
AD.511	Peroxosulphates	283340		1						1
AD.511	Peroxosulphates	284290	1							1
AD.512	Dicyandiamide	292620	1							1
AD.513	Silico-manganese	720230				1				1
AD.513	Silico-manganese	811100				1				o
AD.514	Dihydromyrcenol	290522						1		o
AD.516	Ferro-silicon	720221				1				1
AD.516	Ferro-silicon	720229				1				o
AD.518	Coke (over 80mm)	270400			1					1
AD.519	Compressors	841440		1						1
AD.519	Compressors	841480	1							o
AD.520	Manganese dioxides	282010				1				o
AD.521	Monosodium glutamate	292242		1						1
AD.522	Citric acid	291814				1				1
AD.522	Citric acid	291815					1		1	1
AD.523	Welded tubes and pipes of iron or non-alloy steel	730630				1				1
AD.524	Citrus fruits	200830				1				o
AD.525	Fasteners, iron or steel	731814					1			1
AD.525	Fasteners, iron or steel	731815					1			1
AD.525	Fasteners, iron or steel	731821					1			1
AD.525	Fasteners, iron or steel	731822					1			1
AD.528	Candles, tapers and the like	340600				1				1
AD.529	PSC wires and strands	721710					1			1
AD.529	PSC wires and strands	721720					1			1
AD.529	PSC wires and strands	731210					1			1
AD.530	Wire rod	721391					1			1
AD.530	Wire rod	721399					1			1
AD.531	Biodiesel	151620		1						1
AD.531	Biodiesel	151800		1						1
AD.531	Biodiesel	271019							1	o
AD.531	Biodiesel	382490		1						1
AD.533	Seamless pipes and tubes, of iron or steel	730429					1			1
AD.533	Seamless pipes and tubes, of iron or steel	730431					1			1
AD.533	Seamless pipes and tubes, of iron or steel	730439					1			1
AD.533	Seamless pipes and tubes, of iron or steel	730451		1						o
AD.533	Seamless pipes and tubes, of iron or steel	730459	1							1
AD.534	Aluminium Foil	760711							1	1
AD.539	Cargo scanning systems	870590	1							o
AD.539	Cargo scanning systems	902219	1							1
AD.539	Cargo scanning systems	902229	1							o
AD.539	Cargo scanning systems	902780	1							1
AD.539	Cargo scanning systems	903010	1							o
AD.540	Molybdenum wires	810296				1				o
AD.541	Aluminium road wheels	870870					1			1

Source: Calculations by the authors

Legend: (1) Positive and Rising; (2) Positive and Declining; (3) Negative and Rising; (4) Negative and Falling; (5) V-Shaped; (6) Temporary Relief; (7) Unclear; (8) Apparent positive shift in Lafay Index due to the measure.

Tables for Communitarian Analysis

Table 17: Cases excluded from Communitarian Analysis – On Grounds of Termination

Product	Year of Initiation	Country	Case terminated or complaint withdrawn
Ethyl Alcohol	2005	Pakistan, Guatemala	Complaint Withdrawn
Footwear with Protective Toecap	2005	China India	Complaint Withdrawn
Silicon carbide	2005	Romania	Complaint Withdrawn
Cameras	2006	Japan	Complaint Withdrawn
Pentaerythritol	2006	China, Russia, Turkey, Ukraine, and USA	Terminated: absence of causal link
Polyvinyl Alcohol (PVA)	2006	China, Taiwan	Terminated: de minimis margin (Taiwan) and lack of causal link (China)
Synthetic Staple Fibres of Polyesters	2006	Malaysia Taiwan	Terminated: Public Interest Grounds
Galvanized Steel	2007	China	Complaint Withdrawn
Hollow sections	2008	Belarus, Turkey, Ukraine	Complaint Withdrawn
Ring Binder Mechanisms	2008	Thailand	Complaint Withdrawn
Sodium Metal	2008	United States	Complaint Withdrawn
Stainless Steel Cold Rolled Flat Products	2008	China, South Korea, and Taiwan	Complaint Withdrawn
PET (Polyethylene Terephthalate)	2009	Iran, Pakistan, UAE	Terminated: no dumping (Pakistan, UAE) or no material injury (Iran)
Purified Terephthalic Acid and its Salts	2009	Thailand	Terminated: dumping margin de minimis
Stainless steel fasteners	2009	India	Complaint Withdrawn
Stainless Steel Bars	2010	India	Complaint Withdrawn

Source: Case documentation

Table 18: Cases excluded from Communitarian Analysis – Dispersed Production

Year of Initiation	Product	Country	Screen 2: Highly Dispersed Production
2005	Footwear with Uppers of Leather	Vietnam, China	10 sampled producers accounted for only 5% of EU production which is evidently very highly dispersed.
2005	Plastic sacks and bags	China, Thailand, Malaysia	29 Community producers represented more than 25% of EU production
2006	Frozen Strawberries	China	Sampling for EU industry used (26 producers identified; 8 sampled accounted for about 14% of EU production
2007	Steel Fasteners	China	Sampling for EU industry used: 46 Community producers accounted for 30% of EU production
2008	Biodiesel	United States	Sampling for EU industry used; large number of EU producers, highly dispersed
2008	Wire Rod	China, Moldova, Turkey	20 cooperating producers accounted for 45% of the EU production (although these were grouped into four related groups of companies, the production was dispersed)
2010	Ceramic tiles	China	Over 500 EU producers, highly dispersed

Source: Case documentation

Table 19: Cases Excluded from Communitarian Analysis – Low Industry Concentration

Year	Case	Country of Export	Disposition of Case	EU Industry	Pseudo HHI
2005	Chamois Leather	China	Definitive duties	8 EU producers accounted for about 95 % of total EU production; 3 cooperating complainants accounted for 56% of EU production	.14 to .17
2005	CD-Rs	China, Hong Kong, Malaysia	Terminated (Public Interest Grounds)	20 producers of which 10 constituted over 50% of EU production which constituted only on the order of 10% of the EU market	.07 to .17
2005	Recordable DVDs (DVD+/-R)	China, Hong Kong, Taiwan	Terminated (Public Interest Grounds)	5 EU producers identified together comprised less than 1% of the EU market	not applicable
2006	Cathode-Ray Colour Television Picture Tubes	China, Korea, Malaysia, Thailand	Terminated as complainants went bankrupt due to other reasons	7 EU producers were in the market: four were related to exporters that were under investigation leaving AB Ekranas, Panevezys, Lithuania and its related company Farimex SA, Geneva, Switzerland; and Thomson Displays Polska Sp. Zo.o, Piaseczno, Poland, (Thomson); and Ecimex Group A.S.(Ecimex), Prage, Czech Republic. The two complainants accounted for 40% of EU production.	.15 to .18
2006	Coke 80+	China	Definitive duties	7 community producers of which the 5 cooperating producers accounted for around 75 % of EU production; the 3 complainants accounted for over 30%	.15 to .16
2006	Ironing Boards	China, Ukraine	Definitive duties	Sampling for EU industry used: at least 30 small and medium sized companies comprise the industry, the five major producers represented more than 50 % of the overall estimated output in the Community; top 3 more than 40%.	.08 to .12
2006	Sweet Corn	Thailand	Definitive duties	18 producers in all, with the 6 cooperating accounting for 70% of EU production	.09 to .15
2007	Welded Tubes and Pipes of Iron or Non-Alloy Steel	Belarus, Bosnia Herzegovina, China and Russia	Definitive duties	Sampling for EU industry used: 17 of the 19 companies cooperated, accounting for around 95% of EU production; top 9 sampled accounted for 67% of EU production	.06 to .14
2008	Aluminium Foil	Armenia, Brazil, China	Definitive duties	23 producers in all, 5 cooperating producers accounted for 60% of EU production; 2 other producers participated, one supporting, one opposing	.08 to .15
2008	Candles	China	Definitive duties	31 producers in total, 3 firms with a total of 5 plants accounted for about 60% of EU production	.08 to .15
2008	PSC Wires and Strands	China	Definitive duties	Sampling for EU industry used; 22 EU producers were identified, the 7 sampled accounted for 51% of EU production	.05 to .12
2008	Seamless Pipes and Tubes	China	Definitive duties	Sampling for EU industry used; 23 Community producers of which 15 cooperated; these accounted for over 90% of EU production, with the 9 sampled accounting for 62% of EU production.	.06 to .08
2009	Aluminium Road Wheels	China	Definitive duties	Sampling for EU industry used; 30 producers in the EU of which 9 supporting the complaint accounted for 85% of EU production; the Commission inspected 7 of the complainants, suggesting a well-diversified group	.08 to .15
2009	Glass Fibre Filaments	China	Definitive duties	Sampling for EU industry used; 11 EU producers, of which 7 cooperating producers accounted for over 90% of EU production; production of reinforcement fibres is spread out across 31 furnaces on 17 sites in ten Member States; there is no concentration in this sector	.12 to .14
2010	Coated fine papers	China	Definitive duties	14 EU producers of which 4 cooperating groups (with at least 6 plants) accounted for 61 % of EU production	.08 to .16
2010	Glass Fibres	China	Provisional duties	19 producers but top 4 accounted for 70% of EU production; the indications are that the industry is not highly concentrated with many production facilities around Europe	.13 to .14
2010	Ironing Boards	China	Definitive duties	large number of EU producers but 3 accounted for about 40% of the market; concentration analysis based on 2006 information (more detailed & consistent with the limited information for the 2010 case)	.08 to .12
2010	Seamless Pipes and Tubes of Stainless Steel	China	Provisional duties	21 producers, of which 5 sampled producers accounted for about 50% of the market	.07 to .18
2010	Zeolite A Powder	Bosnia Herzegovina	Definitive duties	8 producers accounted for about 50% of EU production, of which the 4 sampled accounted for 37% of EU production	.05 to .07

Source: Case documentation

Table 20: Cases excluded from Communitarian Analysis – Diversified Producers

Year	Case	Exporter	Complainants	Corporate Status: Headquarter vs. Branch/Subsidiary	Is the establishment dependent on the like good?
2005	Side-by-side Refrigerators	Korea	Whirlpool Europe S.R.L., Varese, Italy	Both: Whirlpool Europe has about 14,000 employees throughout 38 countries in Europe, the Middle East, and Africa, with its regional headquarters in Comerio, Italy	No. Side-by-side refrigerators produced at a plant in Casinetta; however this site also is a major producer of cooking appliances (ovens, etc.), and a technology centre
2006	Compressors	China	ABAC Aria Compressa SpA of the ABAC Group;	Both: 8 production plants worldwide; NB: no information on which plants produce the like goods; ABAC sold its industrial compressor division to a Swedish multinational in 2007	No: subject goods represent about 1/3 of Italian 4-digit industry global exports
2006	Compressors	China	CHINOOK SpA	Both: single establishment	No: subject goods represent about 1/3 of Italian 4-digit industry global exports; Chinook also involved in production of welding-related products
2006	Compressors	China	FERRUA SYSTEM BLOCK Srl	Not clear	No: subject goods represent about 1/3 of Italian 4-digit industry global exports
2006	Compressors	China	FIAC SpA of the FIAC Group	Both: manufacturing sites in Italy, France and the UK as well as in China, Russia and Brazil	No: subject goods represent about 1/3 of Italian 4-digit industry global exports
2006	Compressors	China	FINI SpA is the HQ of the group	Both: affiliates in Sweden, Slovakia and Benelux as well as China, India and South Africa	No: subject goods represent about 1/3 of Italian 4-digit industry global exports
2006	Dihydromyrcenol	India	Destilaciones Bordas Chinchurreta S.A.	Both: Destilaciones Bordas Chinchurreta, SA's manufacturing site and main office are located in Seville, Spain	No: many essential oils alongside dihydromyrcenol are produced
2006	Dihydromyrcenol	India	Sensient Fragrances S.A.	Subsidiary: Parent is Sensient Technologies, a US-based multinational which acquired the Granada-based food flavor company in 1996. Sensient has a global network of labs and production facilities	No: many essential oils alongside dihydromyrcenol are produced
2006	Dihydromyrcenol	India	Takasago International Chemicals (Europe) S.A.,Murcia, Spain	Subsidiary: the Spanish plant is a subsidiary of the Japanese-headquartered multinational, Takasago, which has a global network of production facilities (including France and Germany, although the product range in those cases might not include the like good).	No: many essential oils alongside dihydromyrcenol are produced
2006	Ferro-Silicon	China, Egypt, Kazakhstan, Macedonia, Russia	OFZ	Both: single establishment	No: ferrosilicon is not the major product for this firm, constituting around 14% of production (Company's annual report 2005)
2006	Ferro-Silicon	China, Egypt, Kazakhstan, Macedonia, Russia	Vargön Alloys	Both: single establishment	No: Vargon produces mainly ferrochrome but can switch furnaces from ferrochrome to ferrosilicon which it at times produces; ferrosilicon is not the major product for this plant
2006	Saddles	China	Selle SMP S.A.S	Both: single establishment	No: also manufacture bicycle accessories and frames; percentage of turnover due to saddles is not available
2006	Silico-Manganese	China, Ukraine and Kazakhstan	Huta Łaziska SA	Both: single establishment	No: only a small percentage of its output is silicomanganese (biggest year was 18%)
2007	Monosodium Glutamate	China	Ajinomoto Foods Europe SAS	Both: Ajinomoto Europe has many affiliates throughout Europe and also in Nigeria	No: Monosodium glutamate is the firm's foundational product and appears to be the largest part of its production which has,

Year	Case	Exporter	Complainants	Corporate Status: Headquarter vs. Branch/Subsidiary	Is the establishment dependent on the like good?
					however, become very diversified. Ajinomoto is the world leader in the product and is unlikely to shut down production in Europe
2009	Cargo Scanning Systems	China	Smiths Detection Group Limited	Both: this UK-based multinational has eight manufacturing centresin North America, Germany, France, Russia and the UK.	No: The production of cargo scanning systems constituted a small part of the complainant's activity according to the regulation. On july 9 2008, Smiths Detection opened a high-tech production plant in Wiesbaden Germany designed to meet the soaring global demand for its advanced x-ray scanning machines. No information is available on plant size.
2009	Molybdenum Wires	China	Plansee Group, Austria	Both: Plansee Group has four divisions Plansee High Performance Materials, GTP Tungsten & Powders, Ceratizit Hard materials & Tools as well as PMG PM-Products. Each of these groups is organized multinationally.	No: Plansee has many production sites across Europe and the molybdenum wires are just one of many high performance products.
2009	Polyester Yarn	China, Korea, Taiwan	Performance Fibers Europe	Both: Performance Fibers is a North-Carolina headquartered multinational with operations in Europe and Asia. Luxembourg is the European HQ.	No: the Luxembourg location provides HQ functions
2009	Polyester Yarn	China, Korea, Taiwan	Performance Fibers GmbH - Bad Hersfeld	Subsidiary	No: the Bad Hersfeld plant lists sewing thread as its top product plus other filaments; it also has an R&D centre; one of three Invista GmbH plants acquired by Performance Fibers, the Bad Hersfeld plant has the best chances of surviving--Bobingen was closed (174 jobs) and Guben is on the bubble (41 jobs)
2009	Sodium Gluconate	China	Roquette	Both: Roquette Freres is a family-owned business that has expanded to 38 establishments including 17 production sites in Europe, Asia and North America.	No: Roquette's production is likely at it Beinheim plant but this cannot be confirmed from available corporate documentation; there is little reference to sodium gluconate in the corporate materials.
2010	Fatty Alcohols and their Blends	India, Indonesia, Malaysia	Cognis GmbH - HQ	Both: plants in Germany, France and USA	No: Cognis is diversified
2010	Melamine	China	Borealis Agrolinz Melamine GmbH	Both: the Linz operations of Borealis include HQ and R&D functions besides melamine and other production	No: Linz is one of the two main sites for Borealis' melamine production but the majority of the staff work on R&D and base chemicals production

Table 21: Cases Excluded from Communitarian Analysis: Diversified Communities

Year	Case	Exporter	Complainant	Corporate Status	Exposure to Like Good	Community	Closest Core City	Workforce at Risk
2006	Peroxosulphates	USA, China and Taiwan	Degussa Initiators GmbH&Co. KG	Both: headquartered in Munich/Pullach, Germany, it has four production sites in Germany, including Pullach where it produces the persulfates, plus Hanau, Marl and Rheinfelden. Other production sites are located in the UK, Spain, US, Brazil, South Africa, Japan and Australia.	Yes: persulphates represents one of the two main lines of business for the firm	Pullach, Germany Population: 8,589	Munich, Germany, Population: 1,326,807: 12 km	Global workforce over 500; production staff for persulfates in Pullach not available
2006	Silico-Manganese	China, Ukraine and Kazakhstan	Ferroatlantica S.L. - Boo of Guarnizo	Branch	yes: 44% of its capacity is silicomanganese	Boo of Guarnizo	Santander, Spain Population 182,302: 10 km	Not available
2010	Fatty Alcohols and their Blends	India, Indonesia, Malaysia	Sasol - Hamburg	Both: Sasol Germany is headquartered in Hamburg, where some 100 employees are engaged in functions such as accounting, communications, controlling, international sales, law and personnel	Yes: Sasol Olefins & Surfactants global business operates from its international headquarters in Hamburg	Hamburg, Germany Population: 1,772,100		About 100
2010	Fatty Alcohols and their Blends	India, Indonesia, Malaysia	Sasol - Witten	Subsidiary	Not clear	Witten, Germany Population: 101,122	Bochum, Germany Population: 378,596: 10 km	About 100
2010	Ring Binders	Thailand	Ring Alliance Ringbuchtechnik GmbH	Both: HQ is in Vienna; operations in Hungary	Yes: the company is heavily dependent on the subject goods so HQ jobs depend on it	Wien 1,674,909		12

Table 22: The Communitarian Cases

Year	Case	Exporter	Status	Complainant	Corporate Status	Exposure to Like Good	Community	Closest Core City	Workforce at Risk
2005	Tungsten Electrodes	China	Definitive duties	Plansee Tungsten Alloys (operating under the brand name of Cime-Bocuze S.A., acquired in 1999)	Subsidiary: the parent is the Austrian-based multinational Plansee Group	Yes: Tungsten electrodes are a major component of the firms output	Saint-Pierre-en-Faucigny, Haute-Savoie, France; population: about 5,000	Geneva, Switzerland, Population 171,042: 30 km	65; the only apparent industrial employer in the otherwise artisan town
2006	Dicyandiamide	China	Definitive duties	AlzChem GmbH, Trostberg, Germany	Both: Alzchem GmbH belongs to Alzchem Group which consists of 4 companies: NIGU Chemie GmbH (Waldkreiburg), AlzChem GmbH and AlzChem Stahltechnik GmbH (Trostberg), all close to Munich, and AlzChem LLC (Atlanta, Georgia), a business consultancy with 5 employees.	Yes: Dicyandiamide is produced at the Trostberg site; however it is one of a very large list of products. However, dicynamide is presumed important to Alzchem's overall viability because of the cost of launching of the TDI case	Trostberg, Germany; Population: 11,676	Munich, Germany, Population: 1,326,807: 95 km	1,300 employees in the Group
2006	Ferro-Silicon	China, Egypt, Kazakhstan, Macedonia, Russia	Definitive duties	Ferroatlantica	Both: production facilities in several locations in Spain as well as in Venezuela; FeroPem is a subsidiary	Yes: Dumbria, Spain plant is almost entirely focussed on ferrosilicon; Cee, plant is diversified with ferrosilicon representing about 17% of its capacity; other plants focus on other alloys	Dumbria, Spain Population: 3,820	La Coruna, Population 245,164: 71 km	Not available
2006	Ferro-Silicon	China, Egypt, Kazakhstan, Macedonia, Russia	Definitive duties	Ferropem	Both: production facilities in several locations in France and South Africa	Yes: Laudun, France plant is about 46% dedicated to ferro-silicon; other Ferropem plants in Anglefort, Château Feuillet, Les Clavaux, Montricher, and Pierrefitte produce other silicon products; several are highly export-dependent	Laudun, France Population 5,361 (2006)	Montpellier Population: 406,139: 84 km (1 hour 20 minute commute by car)	Not available
2006	Ferro-Silicon	China, Egypt, Kazakhstan, Macedonia, Russia	Definitive duties	Huta Laziska, Laziska Gorne, Poland	Both: single establishment	Yes: ferrosilicon is the dominant product for this firm	Łaziska Górne, Poland Population: 21,942	Katowice, Poland Population 309,621: 21 km	Not available
2006	Ferro-Silicon	China, Egypt, Kazakhstan, Macedonia, Russia	Definitive duties	TDR Metalurgija	Both: single establishment	Yes: ferrosilicon appears to be an important part of the firm's output even if not the dominant product - tentatively left in	Ruse, Slovenia Population: 4,497	Maribor, Slovenia Population 111,340: 10 km	Not available

Year	Case	Exporter	Status	Complainant	Corporate Status	Exposure to Like Good	Community	Closest Core City	Workforce at Risk
2006	Manganese Dioxides	South Africa	Definitive duties	Tosoh Hellas AIC	Subsidiary: parent is Tosoh Corporation, a Japanese multinational with 50 locations outside Japan and annual turnover of US$6.8 billion	Yes: according to the Tosoh Corporation information, TOSOH Hellas is engaged solely in the manufacture and sale of electrolytic manganese dioxide, the primary component of dry batteries.	Síndos, Greece Population: 8,228	Thessaloniki, Greece, Population: 386,627: 16 km	110
2006	Peroxosulphates	USA, China and Taiwan	Definitive duties	RheinPerChemie GmbH	Subsidiary: the parent is the Italian company Unionchimica Industriale S.p.A. (Bergamo)	Yes: persulphates represents the only line of business for the firm	Rheinfelden, Germany Population: 32,211 (2009)	Freiburg im Breisgau, Germany, Population: 219,665: 50 km	36
2006	Saddles	China	Definitive duties	Bassano Selle s.r.l	Both: single establishment	Yes: specialized in saddles	Riese Pio X, Italy Population: 11,000	Venice, Italy Population: 268,993: 46 km	20
2006	Saddles	China	Definitive duties	pph ABI sp.j.	No information available	No information available	Nasielsk, Poland Population: 7,000	Warszawa, Poland Population: 1,709,781: 42 km	Not available
2006	Saddles	China	Definitive duties	Selle Italia s.r.l	Both: single establishment	Yes: specialized in saddles	Rossano Veneto, Italy Population: 6,567	Padova, Italy Population: 210,173: 32 km	49
2006	Saddles	China	Definitive duties	Selle Royal S.p.A	Both: single establishment	Yes: specialized in saddles	Pozzoleone, Italy population: 2,597	Padova, Italy Population: 210,173: 31 km	381
2006	Silico-Manganese	China, Ukraine and Kazakhstan	Definitive duties	Eramet Comilog Manganese-Dunkerque	Both: ERAMET Comilog Manganèse is the world's 2nd-largest producer of manganese alloys for steelmaking, with the most extensive product range on the market and plants in Europe, North America and China.	Eramet also has major divisions in nickel and alloys although the manganese division accounts for half of turnover; Eramet Comilog is specialized in manganese although it has an extensive array of products	Dunkerque, France: Population: 70,000	Lille, France Population: 1,107,861: 66 km	Not available
2006	Silico-Manganese	China, Ukraine and Kazakhstan	Definitive duties	Ferroatlantica S.L. - Cee	Branch	28% of its capacity is silicomanganese	Cee Spain Population: 7,691	La Coruna, Population 245,164: 80 km	Not available
2006	Silico-Manganese	China, Ukraine and Kazakhstan	Definitive duties	Ferroatlantica S.L.-Monzon	HidroNitro SA is a subsidiary of Ferroatlantica	Yes: 61% of its capacity is silicomanganese	Monzon, Spain Population: 17,050	Zaragoza, Spain Population: 666,129: 148 km	Not available
2006	Silico-Manganese	China, Ukraine and Kazakhstan	Definitive duties	OFZ, a.s.	Both: single establishment	Silicomanganese constitutes over 40% of production (Company's annual report 2005)	Istebné, Slovakia Population: 49,200	Zilina, Slovakia Population: 85,327: 35 km	Not available
2007	Citric Acid	China	Definitive duties	Jungbunzlauer Austria	Subsidiary of the Swiss-based multinational Jungbunzlauer	Yes: Citric acid is a main product, although xanthan	Wulzeshofen, near Laa an der	Vienna, Austria Population	270

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Year	Case	Exporter	Status	Complainant	Corporate Status	Exposure to Like Good	Community	Closest Core City	Workforce at Risk
					headquartered in Basel, Switzerland	and glucose are also produced (glucose in a separate plant)	Thaya Population 6,200	1,674,909: 60 km	
2007	Citric Acid	China	Definitive duties	S.A.Citrique Belge	Both: single establishment	Yes: citric acid is its main product	Tienen, Belgium Population: 31,743	Brussels, Belgium: Population: 1,048,491: 44 km	266
2007	Citrus Fruits (mandarins)	China	Definitive duties	Agriconsa SA	Both: single establishment	Mandarins are just one of a wide range of canned fruits and vegetables -- not clear what percentage of turnover; the canneries are also important to the local growers	Algemesí, Valencia, Spain Population: 27,700	Valencia, Spain Population: 807,200: 31 km	356
2007	Citrus Fruits (mandarins)	China	Definitive duties	Cofrusa SA	Both: single establishment	Mandarins are just one of a wide range of canned fruits and vegetables -- not clear what percentage of turnover; the canneries are also important to the local growers	Mula, Murcia, Spain Population: 17,000	Murcia, Spain Population: 430,571: 35 km	500
2007	Citrus Fruits (mandarins)	China	Definitive duties	Halcon Group SA	Both: single establishment	Mandarins are just one of a wide range of canned fruits and vegetables -- not clear what percentage of turnover; the canneries are also important to the local growers	Campos del Rio, Murcia, Spain Population: 3,000	Murcia, Spain Population: 430,571: 20 km	424
2007	Citrus Fruits (mandarins)	China	Definitive duties	Videca SA	Both: single establishment	Mandarins are just one of a wide range of canned fruits and vegetables -- not clear what percentage of turnover; the canneries are also important to the local growers	Villanueva de Castellón, Valencia, Spain Population: 7,666	Valencia, Spain Population: 807,200: 45 km	350
2009	Polyester Yarn	China, Korea, Taiwan	Definitive duties	Brilen SA	Both: single establishment	Yes: the plant appears to be specialized in high tenacity fibres	Barbastro, Spain Population: 16,486	Zaragoza, Spain Population: 666,129: 93 km	237
2009	Polyester Yarn	China, Korea, Taiwan	Definitive duties	Longlaville Performance Fibers SAS	Both: single establishment	Yes: the two main products fall within the category of high tenacity yarn	Longwy, France Population: 14,439	Reims, France Population: 211,050: 129 km	227
2009	Polyester Yarn	China, Korea, Taiwan	Definitive duties	Performance Fibers GmbH - Bobingen	Subsidiary	Yes – NB: Performance Fiber decided to close the Bobingen plant in 2009 to reduce capacity	Bobingen, Germany Population: 16,595	Augsburg, Germany Population: 263,313: 11 km	174
2009	Polyester Yarn	China, Korea,	Definitive duties	Performance Fibers GmbH -	Subsidiary	yes	Guben, Germany Population:	Berlin, Germany, Population:	Not available

Year	Case	Exporter	Status	Complainant	Corporate Status	Exposure to Like Good	Community	Closest Core City	Workforce at Risk
		Taiwan		Guben			21,602	3,431,675: 110 km	
2009	Polyester Yarn	China, Korea, Taiwan	Definitive duties	Polyester High Performance	Subsidiary: Polyester High Performance was, up to 2008, Diolen Industrial Fibers GmbH, Obernburg/Germany. From March 1st, 2009, the high-tenacity polyester business – which went into insolvency in autumn 2008 – was continued as Polyester High Performance GmbH as a subsidiary of Polyamide High Performance of Wuppertal.	Yes: the Obernberg plant appears to be specialized in high tenacity fibres	Obernberg, Germany Population: 8,853	Frankfurt am Main, Germany Population: 664,838: 50 km	240
2009	Polyester Yarn	China, Korea, Taiwan	Definitive duties	Sioen Industries	Both: a diversified multinational headquartered in Ardooie, Belgium which also houses its R&D centre	Yes: the Mouscron plant is specialized in hight tenacity yarns	Mouscron, Belgium Population: 53,174	Gent, Belgium Population: 237,250: 51 km	83
2009	Sodium Gluconate	China	Definitive duties	Jungbunzlauer	Both: Jungbunzlauer is a Swiss-based multinational specialised in citric acid, xanthan gum, gluconates, and other products for the food, beverage, pharmaceutical and cosmetic and other industries.	Yes: Jungbunzlauer's production of Sodium Gluconate is at the Marckolsheim plant	Marckolsheim, France Population: 4,318	Strasbourg, France, Population: 467,375: 49 km	58
2010	Fatty Alcohols and their Blends	India, Indonesia, Malaysia	Provisional duties	Cognis GmbH - Dusseldorf	Subsidiary	Yes: Cognis has been trimming its structure to focus on its core products and the Dusseldorf plant is its largest production site	Düsseldorf, Germany Population: 584.217		1,477
2010	Fatty Alcohols and their Blends	India, Indonesia, Malaysia	Provisional duties	Cognis GmbH - France	Subsidiary	Yes: production is centred on NACE Rev. 2 Code: 2014 (no other product)	Saint-Fargeau-Ponthierry, France Population: 12,000	Paris, France Population: 2,181,374: 48 km	Not available
2010	Fatty Alcohols and their Blends	India, Indonesia, Malaysia	Provisional duties	Sasol - Brunsbüttel	Subsidiary	Yes: The Brunsbüttel facility is part of the ChemCoast Park Brunsbüttel and employs a workforce of some 520. Products include alcohols and their derivatives as well as Guerbet alcohols; and inorganic speciality chemicals.	Brunsbüttel, Germany Population: 13,202	Hamburg, Germany Population: 1,772,100: 80 km	520
2010	Fatty Alcohols and	India, Indonesia,	Provisional duties	Sasol - Marl	Subsidiary	Yes: the Marl plant focuses on production of Linear	Marl, Germany Population:	Essen Germany Population: 579,759:	750

Year	Case	Exporter	Status	Complainant	Corporate Status	Exposure to Like Good	Community	Closest Core City	Workforce at Risk
	their Blends	Malaysia				Alkylbenzene Sulfonate a major fatty oil base product. Marl is Sasol's largest production facility in Germany; it is located in Chemiepark Marl, onr of the biggest chemical industry clusters in Europe, with a workforce of over 10 000 employees in ± 30 enterprises. The Sasol facility has a workforce of about 750.	91,398	38 km	
2010	Melamine	China	Definitive duties	Borealis - Lutherstadt-Wittenberg (Piesteritz)	Subsidiary	Yes: melamine is the sole product	Lutherstadt-Wittenberg (Piesteritz), Germany Population 50,000	Berllin, Germany, Population: 3,431,675: 95 km	
2010	Melamine	China	Definitive duties	DSM Melamine BV (now OCI Melamine BV)	Subsidiary	Yes: melamine is the sole product	Sittard-Geleen, the Netherlands Population: 97,487	Eindhoven, The Netherlands: 210,333: 55 km	
2010	Melamine	China	Definitive duties	Zakłady Azotowe Pulawy: Melamina III Sp. z o.o	Subsidiary	Yes: ZAP has three melamine plants; ZAP is the third-largest producer of melamine in Europe and has a total capacity of 96,000 tonnes/year	Puławy, Poland Population: 49,839	Rzeszow, Poland: 170,653: 61 km	86
2010	Ring Binders	Thailand	Provisional duties	Industria Meccanica Lombarda srl	Subsidiary	IML appears to have some measure of diversification but ring mechanisms are the first listed product group	Offanengo, Italy Population: 5,789	Milan, Italy: Population 1,369,261: 44 km	179
2010	Ring Binders	Thailand	Provisional duties	Ring Alliance Ringbuchtechnik GmbH - Hungary	Subsidiary	Yes	OROSZLANY Hungary Population: 20,271	Budapest, Hungary Population 1,702,297: 80 km	166
2010	Wireless Area Networks	China	Complaint Withdrawn	Option NV	Both: Option NV is headquartered in Leuven Belgium and has a production facility in Cork, Ireland and a development centre in Augsburg, Germany	Yes	Leuven, Belgium Population: 91,942	Brussels, Belgium: Population: 1,048,491: 26 km	679 employees in 2008, 411 in 2009 and 206 in 2010.

Table 23: Communitarian Cases – low market shares

Year	Case	Complainant	Community	Jobs at Risk	EU Market Share	
2005	Tungsten Electrodes	Plansee Tungsten Alloys (operating under the brand name of Cime-Bocuze S.A., acquired in 1999)	Saint-Pierre-en-Faucigny, Haute-Savoie, France; population: about 5,000	65; the only apparent industrial employer in the otherwise artisan town	Less than 25% (China's market share rose to 76.2% in the IP)	Out
2006	Ferro-Silicon	Ferroatlantica	Dumbria, Spain Population: 3,820	Not available	17.7% in the IP	Out
2006	Ferro-Silicon	Ferropem	Laudun, France Population 5,361 (2006)	Not available	17.7% in the IP	Out
2006	Ferro-Silicon	Huta Laziska, Laziska Gorne, Poland	Łaziska Górne, Poland Population: 21,942	Not available	17.7% in the IP	Out
2006	Ferro-Silicon	TDR Metalurgija	Ruse, Slovenia Population: 4,497	Not available	17.7% in the IP	Out
2006	Silico-Manganese	Eramet Comilog Manganese-Dunkerque	Dunkerque, France: Population: 70,000	Not available	24.9% in the IP	Out
2006	Silico-Manganese	Ferroatlantica S.L. - Cee	Cee Spain Population: 7,691	Not available	24.9% in the IP	Out
2006	Silico-Manganese	Ferroatlantica S.L.-Monzon	Monzon, Spain Population: 17,050	Not available	24.9% in the IP	Out
2006	Silico-Manganese	OFZ, a.s.	Istebné, Slovakia Population: 49,200	Not available	24.9% in the IP	Out
2007	Citrus Fruits (mandarins)	Agriconsa SA	Algemesí, Valencia, Spain Population: 27,700	356	27.1% in the IP	Out
2007	Citrus Fruits (mandarins)	Cofrusa SA	Mula, Murcia, Spain Population: 17,000	500	27.1% in the IP	Out
2007	Citrus Fruits (mandarins)	Halcon Group SA	Campos del Rio, Murcia, Spain Population: 3,000	424	27.1% in the IP	Out
2007	Citrus Fruits (mandarins)	Videca SA	Villanueva de Castellón, Valencia, Spain Population: 7,666	350	27.1% in the IP	Out
2010	Ring Binders	Industria Meccanica Lombarda srl	Offanengo, Italy Population: 5,789	179	24% in the IP	Out
2010	Ring Binders	Ring Alliance Ringbuchtechnik GmbH - Hungary	OROSZLANY Hungary Population: 20,271	166	24% in the IP	Out

Table 24: Communitarian Cases – Employment and U-Rate Ratios

Year	Case	Exporter	Complainant	Community	Closest Major City (Eurostat: core city)	Jobs at risk	EU market share	Employment Ratio	U-rate ratio	Communitarian Cases
2010	Fatty Alcohols and their Blends	India, Indonesia, Malaysia	Cognis GmbH - Dusseldorf	Düsseldorf, Germany Population: 584.217		1,477	about 80% in the IP	1.00	0.80	Out
2010	Fatty Alcohols and their Blends	India, Indonesia, Malaysia	Cognis France - Boussens	Boussens, France	Toulouse. France Population: 651,586 70 km	NA	about 80% in the IP	1.02	0.86	Out
2010	Fatty Alcohols and their Blends	India, Indonesia, Malaysia	Sasol - Brunsbüttel	Brunsbüttel, Germany Population: 13,202	Hamburg, Germany Population: 1,772,100: 80 km	520	about 80% in the IP	1.06	0.71	Out
2010	Fatty Alcohols and their Blends	India, Indonesia, Malaysia	Sasol - Marl	Marl, Germany Population: 91,398	Essen Germany Population: 579,759: 38 km	750	about 80% in the IP	1.03	0.70	Out
2010	Melamine	China	DSM Melamine BV (now OCI Melamine BV)	Sittard-Geleen, the Netherlands Population: 97,487	Eindhoven, The Netherlands: 210,333: 55 km	NA	86% in the IP	1.10	0.53	Out
2010	Wireless Area Networks	China	Option NV	Leuven, Belgium Population: 91,942	Brussels, Belgium: Population: 1,048,491: 26 km	NA	Not Available	1.03	0.50	Out
2006	Dicyandiamide	China	AlzChem GmbH, Trostberg, Germany	Trostberg, Germany; Population: 11,676	Munich, Germany, Population: 1,326,807: 95 km	1,300	50 to 60%	1.14	0.63	Out
2006	Peroxosulphates	USA, China and Taiwan	RheinPerChemie GmbH	Rheinfelden, Germany Population: 32,211 (2009)	Freiburg im Breisgau, Germany, Population: 219,665: 50 km	36	50 to 60%	1.12	0.65	Out
2006	Saddles	China	Bassano Selle s.r.l	Riese Pio X, Italy Population: 11,000	Venice, Italy Population: 268,993: 46 km	20	58% in the IP	1.00	0.48	Out
2006	Saddles	China	Selle Italia s.r.l	Rossano Veneto, Italy Population: 6,567	Padova, Italy Population: 210,173: 32 km	49	58% in the IP	1.00	0.48	Out
2006	Saddles	China	Selle Royal S.p.A	Pozzoleone, Italy population: 2,597	Padova, Italy Population: 210,173: 31 km	381	58% in the IP	1.00	0.48	Out
2007	Citric Acid	China	Jungbunzlauer Austria	Wulzeshofen, near Laa an der Thaya Population 6,200	Vienna, Austria Population 1,674,909: 60 km	270	50 to 60%	1.10	0.50	Out
2007	Citric Acid	China	S.A.Citrique Belge	Tienen, Belgium Population: 31,743	Brussels, Belgium: Population: 1,048,491: 44 km	266	50 to 60%	1.01	0.47	Out
2009	Polyester Yarn	China, Korea, Taiwan	Performance Fibers GmbH - Bobingen	Bobingen, Germany Population: 16,595	Augsburg, Germany Population: 263,313: 11 km	174	39.2% in the IP	1.13	0.52	Out
2009	Polyester Yarn	China, Korea, Taiwan	Polyester High Performance	Obernburg, Germany Population: 8,853	Frankfurt am Main, Germany Population: 664,838: 50 km	240	39.2% in the IP	1.10	0.63	Out
2009	Sodium Gluconate	China	Jungbunzlauer	Marckolsheim, France Population: 4,318	Strasbourg, France, Population: 467,375: 49 km	58	64.7% in the IP	1.04	0.96	Out
2010	Melamine	China	Borealis - Lutherstadt-Wittenberg (Piesteritz)	Lutherstadt-Wittenberg (Piesteritz), Germany Population 50,000	Berlin, Germany: Population: 3,431,675: 95 km	NA	86% in the IP	1.01	1.19	In
2010	Melamine	China	Zakłady Azotowe Pulawy: Melamina III Sp. z o.o	Puławy, Poland Population: 49,839	Rzeszow, Poland: 170,653: 61 km	86	86% in the IP	0.98	1.03	In
2006	Manganese Dioxides	South Africa	Tosoh Hellas AIC	Síndos, Greece Population: 8,228	Thessaloniki, Greece, Population: 386,627: 16 km	110	60 to 70% in the IP	0.92	1.11	In
2006	Saddles	China	pph ABI sp.j.	Nasielsk, Poland	Warszawa, Poland	NA	58% in the IP	1.03	1.46	In

Year	Case	Exporter	Complainant	Community	Closest Major City (Eurostat: core city)	Jobs at risk	EU market share	Employment Ratio	U-rate ratio	Communitarian Cases
2009	Polyester Yarn	China, Korea, Taiwan	Brilen SA	Population: 7,000 Barbastro, Spain Population: 16,486	Population: 1,709,781: 42 km Zaragoza, Spain Population: 666,129: 93 km	237	39.2% in the IP	0.97	1.44	In
2009	Polyester Yarn	China, Korea, Taiwan	Longlaville Performance Fibers SAS	Longwy, France Population: 14,439	Reims, France Population: 211,050: 129 km	227	39.2% in the IP	0.94	1.30	In
2009	Polyester Yarn	China, Korea, Taiwan	Performance Fibers GmbH - Guben	Guben, Germany Population: 21,602	Berlin, Germany: Population: 3,431,675: 110 km	NA	39.2% in the IP	1.07	1.13	In
2009	Polyester Yarn	China, Korea, Taiwan	Sioen Industries	Mouscron, Belgium Population: 53,174	Gent, Belgium Population: 237,250: 51 km	83	39.2% in the IP	0.80	1.48	In