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MOTIVES FOR USING TRADE DEFENSE INSTRUMENTS IN THE EUROPEAN UNION

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Motives for using Trade Defense Instruments in the European Union*

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ABSTRACT

The European Union is one of the most active users of antidumping and antisubsidy measures (trade defense instruments or TDIs) worldwide. Traditionally, TDIs have been characterized 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 economic literature, 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. 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. 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. 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 (retaliatory TDI applications), and the competitiveness context (revealed comparative advantage for EU compared to target country). We find that the strongest case for TDI is based on an implicit "insurance" role. The EU, like other WTO Members, in liberalizing access to its market under conditions of imperfect information and an absence of appropriate insurance markets, de facto uses TDI as a form of insurance policy to deal with disruptive pressures. This perspective on TDI reconciles trade liberalization with the occasional recourse to protection. The fact that TD has been the main instrument of this insurance policy, rather than the provisions in the WTO intended for the purpose (safeguards and renegotiation of commitments), appears to reflect weaknesses in the design of these latter instruments.

Keywords:
Trade remedies, anti-dumping, anti-subsidy, European Union

JEL Codes: F13, F14

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ABBREVIATIONS

AD	Antidumping
AS	Antisubsidy
B&M	Bourgeois and Messerlin
CIF	Cost including Insurance and Freight
EU	European Union
FOB	Free On Board
GATT	Generall Agreement on Tariffs and Trade
GDP	Gross Domestic Product
HHI	Herfindahl-Hirschman Index
HS	Harmonized System
IRR	Incidence Rate Ratio
LFI	Lafay index
OMAs	Orderly Marketing Arrangements
R&D	Research and Development
RER	Real Exchange Rate
SME	Small and Medium-Sized Enterprises
TDIs	Trade Defense Instruments
TSI	Trade Specialization Index
USITC	United States International Trade Commission
VERs	Voluntary Export Restraints
VRAs	Voluntary Restraint Agreements
WTO	World Trade Organization

1 INTRODUCTION

Conceptually, trade defense instruments (TDIs) serve as the international trade analogue of domestic market competition policies. Consistent with this understanding of the role of TDIs, their use has been replaced by competition laws within the European Union's (EU) internal market and some bilateral trade agreements, such as the Australia-New Zealand Closer Economic Cooperation Agreement and the Canada-Chile Free Trade Agreement. Given this characterization, TDIs address predatory and other anti-competitive business practices of foreign firms and market-distorting measures of foreign governments. The economic benefit of TDIs in theory is thus analogous to that of competition policy: there is a short-run cost to consumers since the policy intervention to prevent cut-throat price competition from foreign suppliers raises market prices in the first instance. However, by preserving competition, the policy intervention assures, in the longer run, lower prices than would have been the case had predation been allowed to succeed and domestic rival firms been forced out of the market, or new firms prevented from entering. Similarly, by countering foreign government subsidization of particular activities, which shifts market share to less efficient foreign suppliers, TDIs ensure that efficient domestic firms are not driven out of the market forcing domestic consumers rely on what may eventually be higher-cost sources if and when the foreign subsidies are withdrawn. By the same token, TDIs ensure that the global division of labor is based on genuine comparative advantage.

However, 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. As a consequence, 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.

In this paper, we consider the de facto role of TDIs in the EU economic policy framework. 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.

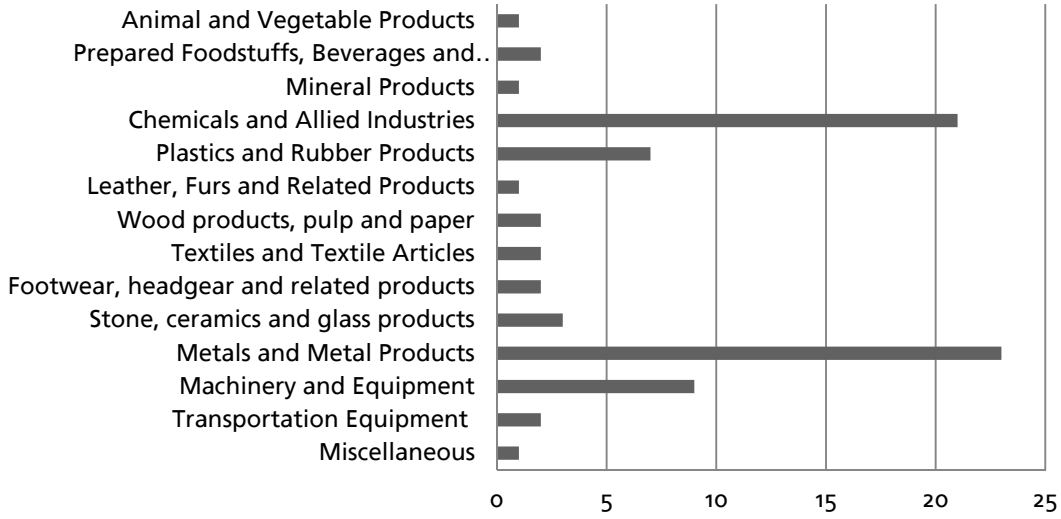
The paper is organized as follows: Section 2 provides the basic background information concerning the frequency and pattern of use of TDIs by the EU. Section 3 considers whether there is evidence for the traditional theoretical construction of TDIs as the international surrogate for competition policy. 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 TDIs 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 TDIs 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 TDIs 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

The EU is generally considered to be one of the main "traditional" users of TDIs, along with the USA, Canada, Australia, and New Zealand. According to the WTO, over the period 1995-2010, the EU initiated 414 antidumping (AD) and 56 antisubsidy (AS) investigations, of which 269 AD and 25 AS investigations resulted in affirmative determinations. However, to put these data into perspective, in recent years (2005-2010), the EU accounted for 9.4% of global TDI measures imposed, which is much lower than the EU's 17.8% share of global imports over the same period. As of 31 December 2010, 124 AD measures and 11 AS measures were in force. According to the WTO's Trade Policy Review of the EU, the share of EU trade covered by TDI measures is about 0.6% (WTO 2011).

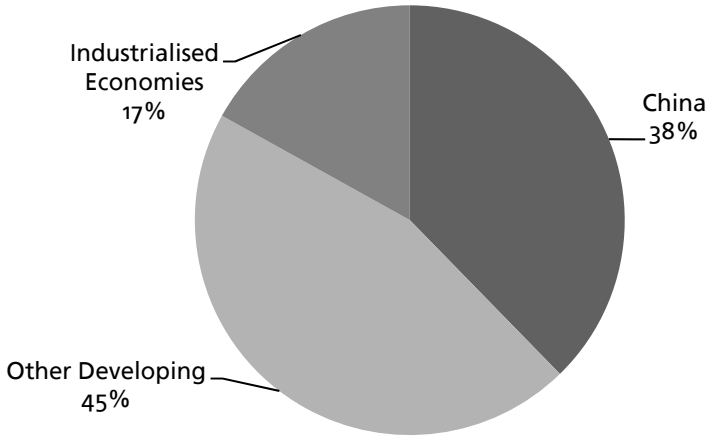
The majority of the EU's TDI cases in recent years concerned fairly basic industrial goods that compete largely on price, such as chemical and metal products (Figure 2.1). Such goods are likely to attract competition from emerging market exporters. Exporters from these countries were involved in 83% of the investigations initiated in the evaluation period (Figure 2.2). In these regards, the EU's use of TDI is hardly exceptional in international comparison.

Figure 2.1: EU trade defense investigations, by Major Industrial Sector, 2005-2010 (number of cases)



Source: Authors' calculations based on DG Trade investigations database.

Figure 2.2: Countries Named in EU trade defense investigations, 2005-2010



Source: Authors' calculations based on DG Trade investigations database.

3 COMPETITION POLICY MOTIVES FOR TDI

As noted, TDIs have been traditionally characterized as the international trade analogue of internal market competition policies. This characterization has persisted over the years notwithstanding important differences in the substantive construction of TDI and competition law provisions that emerged at a very early stage of the development of these respective legal frameworks[1], and notwithstanding a modern pattern of TDI use that in the view of many

[1] The first AD law, which was introduced in Canada in 1904, was motivated by concerns over predation (see Finger 1992 and Sykes 1998 for accounts). New Zealand, which followed Canada in adopting AD legislation in 1905, targeted selective price cutting by US-based International Harvester which threatened to create a monopoly on agricultural equipment in the New Zealand market (Ciuriak 2005). Similarly, the US Antidumping Act of 1916, which was in substance an extension of its antitrust law (Finger 1992), included a requirement that the

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.[2]

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, arbitrage must not be possible (which is not an unlikely condition in international trade given the fixed costs of market entry) and 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 authorities.

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dumping had to "be done with the intent of destroying or injuring an industry in the United States, or of preventing the establishment of an industry in the United States, or of restraining or monopolizing any part of trade and commerce in such articles in the United States" (Committee on Ways and Means 1993: 417, cited in Stiglitz 1997). The formal articulation of TDI in the economic literature as the international analogue to domestic competition policy goes back to at least Viner (1923). However, as early as 1921, the scope of US AD law was widened to provide governmental relief against any instances of dumping, regardless of intent. As Finger (1992: 129) notes: "The 1921 act completes the shift of criteria. Any mention of antitrust criteria – conspiracy, combination, or restraint of competition – is gone. Antitrust's injury-to-competition standard has been replaced by a diversion-of-business standard." It is the latter standard that has prevailed in WTO law and general practice since.

2 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, 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[3]).

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 of new domestic competitors that might face high start-up costs, but also of 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 TDIs. 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."

Several papers have applied a suite of criteria to individual TDI 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 policies 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 antidumping 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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[3] 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 EU, according to which a market share of 40% 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 150 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 cases were screened out at this stage, leaving 136 potentially predatory cases.
3. Four or more countries are targeted simultaneously: The third test eliminates cases where more than three countries were involved in the investigation on grounds that joint predatory behavior in such cases would require an implausible level of coordination. 75 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, leaving 44 potentially predatory cases.
5. The EU market is competitive: The fifth test examines, for 28 of the remaining 44 cases where the aggregate market shares of EU firms and the total number of EU firms identified as being in the market was provided in case documentation, market concentration in the EU.[4] Since market shares of individual firms were not available, B&M calculated 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, and using a threshold HHI of 0.18 for the existence of dominance, B&M divided the 28 cases into three groups:
   (i) In four of the cases both the minimum and maximum pseudo-HHI were below 0.18, their cutoff for potential dominance, and so were ruled out;

[4] For the other 16 cases the domestic market share was not available. In two of these cases, foreign firms held small (4.5% and 6.1%) market shares while facing five and nine EU firms, respectively. B&M reasoned that both the low foreign market shares and the relatively high number of EU competitors suggested the existence of competitive markets that would not lend themselves to successful predation and so excluded these, while leaving the remaining 14 cases without a definitive conclusion.

(ii) 12 cases featured minimum pseudo-HHIs below the cutoff but maximums above the cutoff, leaving them indeterminate, in the absence of 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.

B&M consider that:

> "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 AD investigations 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:

1. 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;
2. The US domestic industry was not concentrated, because the existence of many US producers is indicative of low minimum efficient scale or low barriers to entry and predatory dumping would therefore unlikely to be successful.

   For this purpose, Shin calculates the HHI for the HS four or five-digit sector in which the protection was provided, with an HHI 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 excludes almost all cases, Shin also includes 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.
3. 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.

4. There were five or more countries targeted, for the same coordination reasons, reducing the number of potential cases to 62.
5. 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% or less, and those where negative findings were issued by the USITC on "critical circumstances", i.e. where imports did not increase rapidly.

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 judgements 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 30 Canadian AD 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 – they excluded cases from being considered 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 could be excluded on this criterion (nine of which were steel cases);
2. cyclical lags in production and climatic variation in agriculture resulted in pricing below marginal cost to sell large quantities of the product, which was the rational firm-level response and not indicative of predatory intent. Four 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. Two cases involved new product introductions and so could be excluded on this ground;
4. market conditions did 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:
   - market demand is inelastic (otherwise an attempt to raise prices reduces revenues). Six cases involved elastic demand and so could be excluded;
   - 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
   - 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 had market power (including instances where the domestic industry is a monopolist) and AD measures were 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 was considered as a plausible candidate for consideration as predatory dumping 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.

Synthesizing the approach in the literature, in this paper we apply a series of tests that "screen out" AD cases not meeting criteria that point strongly to the possibility of anti-competitive practices. We apply this approach to 64 of the 78 EU AD cases initiated during the period 2005-2010, for which the required information was provided in case documentation, 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.

The set of screens applied is as follows:

1. Four or more countries are targeted. This screen rules out cases where an implausible level of coordination across countries would be required.
2. Eight or more foreign firms targeted. This screen similarly rules out cases where an implausible level of coordination, across firms in this instance, would be required.
3. The combined market share of targeted firms is less than 40%. This screen rules out cases where the targeted firms do not have a sufficient base to plausibly capture sufficient market share to successfully execute a predatory scheme. The 40% threshold is based on the history of EU competition law enforcement as to what constitutes a dominant position.[5]
4. The EU domestic market is competitive. This screen rules out cases where domestic industry concentration is sufficiently low, which indicates that the market structure is such that achieving market dominance is unlikely (including because barriers to entry are likely to be low). An approximate range for the HHI is calculated based on available case documentation. Following B&M, if the upper end of the calculated range of the HHI is 0.18 or lower the case is screened out.
5. The case was terminated. This screen rules out cases that did not proceed to application of measures on grounds that predatory intent was unlikely if there was insufficient evidence of injury.[6]

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5 The specific features of this test in the present study are based on Messerlin and Bourgeois (1998). Shin (1998), who examined US TD practice, eliminated those cases where the case documentation showed import penetration of 20% or less, and those where negative findings were issued by the USITC on "critical circumstances", i.e. where imports did not increase rapidly.

6 Termination is the least compelling criterion in the literature since cases with negative outcomes may contain features that prompted the authorities to undertake investigations and 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 late in the sequence as compared to the Bourgeois and Messerlin and Shin studies.

6. The targeted firms do not have a dominant position internationally. This screen rules out cases where the targeted producers do not have sufficient global market power to prevent producers from third countries from stepping in and competing away excess profits once the domestic industry has been driven from the market.

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. 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.[7]

Applying the screens, four of the 64 cases are screened out immediately for targeting four or more countries (screen 1), and 37 others because the exporters targeted number eight or more in each case (screen 2). 16 others are screened out because the combined market share of the targeted exporters is too low to be considered as occupying a dominant position in the EU market (screen 3). None of the remaining cases is screened out by screens 4 or 5. Note that all the terminated cases were ruled out on other grounds. The remaining seven cases are listed in Table 3.1 (Annex Table A1 provides the full results of the screening process).

Table 3.1: 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

Source: Calculations by the authors.

Of these cases, the only one which would appear to clearly satisfy the sixth criterion for potential successful predation is *Refrigerators*. To successfully prevent entry by international rivals, 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*,

[7] 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.

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, we note that in one case where an EU industry filed for protection (*Candles*, in which an investigation was launched on 3 January 2008), the EU industry was itself the subject of an antitrust investigation and found to be acting in violation of EU competition laws (the industry was fined €676 million by the Competition Directorate on 2 October 2008 for illegal price fixing and artificially inflating the price of EU-produced candles). For an account, see Davis (2009: 15).

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 seven 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.

4 INDUSTRIAL POLICY MOTIVES FOR TDI

Historically, it is reasonably clear that TDIs have been used by states, at least on occasion, for industrial policy purposes such as capturing a significant share of a strategically important industry, often as part of a larger toolkit of instruments. For example, Leipziger and Petri (1993) identify TDIs and Section 301[8] as instruments of industrial policy in the USA. Hindley and Messerlin (1996) examine the interconnections between TDIs and industrial policy in the USA, Europe and Asian emerging markets; they argue that TDIs are widely used as a means of

[8] Section 301 of the Trade Act of 1974 allows the United States to impose trade sanctions on foreign countries that either violate trade agreements or engage in other unfair trade practices. When negotiations to remove the offending trade practice fail, the United States may take action to raise import duties on the foreign country's products as a means to rebalance lost concessions. Associated measures include the Special 301 and Super 301 provisions established in the 1988 Omnibus Trade and Competitiveness Act. The Special 301 provisions enable similar action in respect of intellectual-property: countries identified under Special 301 as "priority countries" are subject to a mandatory Section 301 investigation within six months unless there is a determination that this would be detrimental to U.S. economic interests or the dispute is settled through negotiation. A further related measure, Super 301, introduced with the 1988 amendments has since lapsed; however, proposed legislation (Trade Enforcement Priorities Act of 2011) would reinstate this measure which requires the USTR to prioritize countries for Section 301 investigations.

fostering and protecting "strategic industries". [9] Konings and Vandenbussche suggest that, "[a]mong trade economists, there is a growing consensus that in many cases, Antidumping (AD) policy is an industrial policy tool in disguise" (2005: 151). In a recent contribution, Abrami and Zheng (2010) consider whether the pattern of use of TDIs by China indicates industrial policy motives on its part.

The EU has an active industrial policy. Formally, it is stated mainly in terms of horizontal support for industrial development (promoting innovation, reducing regulatory and tax burdens on business and so forth) but it also has vertical elements (e.g., the key emerging technologies initiative which targets nanotechnology, micro-nanoelectronics, advanced materials, photonics, industrial biotechnology and advanced manufacturing systems).[10] Accordingly, it is relevant to ask whether the pattern of the EU's TDI practice is consonant with industrial policy motives.

One basic indicator of industrial policy use is a concentration of measures in particular sectors. The EU's use of TDIs is disproportionately heavy in a handful of sectors. However, the heterogeneous structure of industries means that some industries face lower coordination costs to mount a complaint and also are comprised of larger firms that can better afford the associated costs of participating in investigations than SME-dominated sectors. Moreover, some industries may have greater ability to obtain ordinary protection through greater lobbying influence.[11]

To test whether the EU's use of TDIs indicates industrial policy purpose in the core sense of this term – i.e., to promote the development of strategic industries and in particular to correct for market failures that stand in the way of the development of particular industries – we examine the evolution of the EU's revealed comparative advantage in the products protected by TDIs.

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

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[9] Perhaps the most clear-cut example is that of the competition between Japan and the USA in the 1970s and 1980s in the DRAM sector. As recounted by Flamm and Riess (1993: 270):

> "By the end of July 1986, antidumping cases were in play for three different types of memory chips (as well as a Section 301 unfair trade practices complaint and a private antitrust suit against Japanese chip producers). At that point, after almost a year of negotiations, agreement was finally reached on the first bilateral US-Japan Semiconductor Trade Arrangement. Dumping cases in 256K (and higher) DRAMs and EPROMs, and the 301 case, were suspended after these talks were successfully concluded in late July. The STA was officially signed on September 1, 1986."

[10] *Final Report of the Expert Group on Key Emerging Technologies*, June 2011.

[11] In the extensive literature on the political economy of TDIs, the role of political influence of powerful lobbies, the desire to protect jobs, or simple protection for declining industries are sometimes conflated with industrial policy. In this paper, industrial policy is understood to comprise measures aimed at countering market failures, the classic rationale for industrial policy, which may include use of trade protection as in the *DRAM* case.

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 for goods affected by TDIs 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:

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

The 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 a comparative disadvantage in the specific sector, while a positive reading indicates a comparative advantage.

The raw trade data are adjusted 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). The CIF/FOB ratio observed on intra-EU trade is applied to EU exports to the rest of the world to put the valuation of those exports on a comparable basis to imports.[12]

The evolution of the LFI for each TDI case is tracked over the period 2001-2010. Because of changes to the HS classifications in 2002 and 2007, some of the series of interest were either split into sub-series or consolidated into new or existing series. On this basis, the evolution of the LFI was calculated for 155 HS 6-digit sectors involved in TDI investigations initiated over the period 2005-2010. Table 4.1 reports summary statistics (unweighted mean, maximum and minimum) for the LFI of these sectors one year prior to initiation, by case outcome (duties imposed or case terminated).

Table 4.1: LFI Summary statistics, HS 6-digit level, one year prior to initiation, investigations initiated in 2005-2010

	Measures imposed (provisional or final)	Investigations terminated without measures	Total
Number of EU trade flows at the HS 6-digit level	114	41	155
Mean LFI	0.04	-0.08	0.01
Maximum LFI	0,96	0,89	0.96
Minimum LFI	-0.97	-0.92	-0.97

Source: Authors' calculations based on data from the International Trade Center online database

The unweighted mean LFI value of all sectors seeking protection one year prior to initiation is close to zero, with the mean LFI in sectors in which investigations are terminated somewhat lower than in sectors that succeed in obtaining protection. The dispersion around the mean is large, demonstrating that TDI cases are initiated across a broad spectrum of industries ranging from those with very strong revealed comparative advantage to some facing severe disadvantage. These results do not support the notion that TDI cases are mainly initiated in sectors at a relative comparative disadvantage. The fact that protection is more likely to be *denied* to sectors with weaker comparative advantage also contradicts the often-expressed criticism that "governments pick losers" – or, as Baldwin and Robert-Nicoud (2007) put it, that "losers pick government". At the same time, there are competing explanations for the latter result: (a) the EU might exercise discretion and apply an industrial policy criterion for selective TDI intervention; or (b) weaker sectors may launch less supportable complaints as desperation tactics to obtain protection even absent "unfair" competition.

Aggregating the HS 6-digit sector trade flows to the case level (one case often comprises various HS 6-digit sectors) gives greater weight to larger flows, which are presumably more important to complainants. The results are shown in Table 4.2.

[12] The International Trade Center reports EU global exports but 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.

Table 4.2: Summary statistics, case level LFI, one year prior to initiation, investigations initiated in 2005-2010

	Measures imposed (provisional or final)	Investigations terminated without measures	Total
Number of cases	48	18	66
Mean LFI	-0.12	-0.29	-0.16
Maximum LFI	0.78	0.53	0.78
Minimum LFI	-0.97	-0.92	-0.97

Source: Authors' calculations based on data from the International Trade Center online database

At the case level, the mean LFI is now negative, in line with the hypothesis that "weaker" sectors seek TDI protection. However, the mean is still close to zero, and the dispersion of values around the mean remains considerable, indicating significant heterogeneity across cases. Significantly, the LFI remains lower in terminated cases than in those where protection is obtained (-0.29 v -0.12) and the gap between the two is wider at the case level than at the product level.

To shed light on the nature of the industries that seek protection, trends in the LFI scores for 65 of the reported cases[13] are examined to identify the prevalence of the following patterns:

- positive and rising (consistent with industrial policy motives);
- positive and declining (indicative possibly of a defensive industrial policy response to declining global competitiveness);
- negative and rising (indicative possibly of industrial policy for emerging areas);
- negative and falling (indicative of declining industries with comparative disadvantage suggesting protection to slow adjustment rather than industrial policy); and
- reversal: a V-shaped pattern, with the LFI falling from positive to negative and rebounding (indicative of a successful restoration of competitiveness, the clearest case for TDIs).

The results are set out in Table 4.3. Overall, roughly half the cases might be interpreted as consistent with industrial policy motives while the other half consists of sectors that feature initial negative LFI scores that worsen over time, suggesting declining sectors. Annex Table A3 reports the detailed analysis.

Table 4.3: Summary of patterns in Lafay Indicator of EU HS 6–digit sectors affected by TDI, 2005-2010

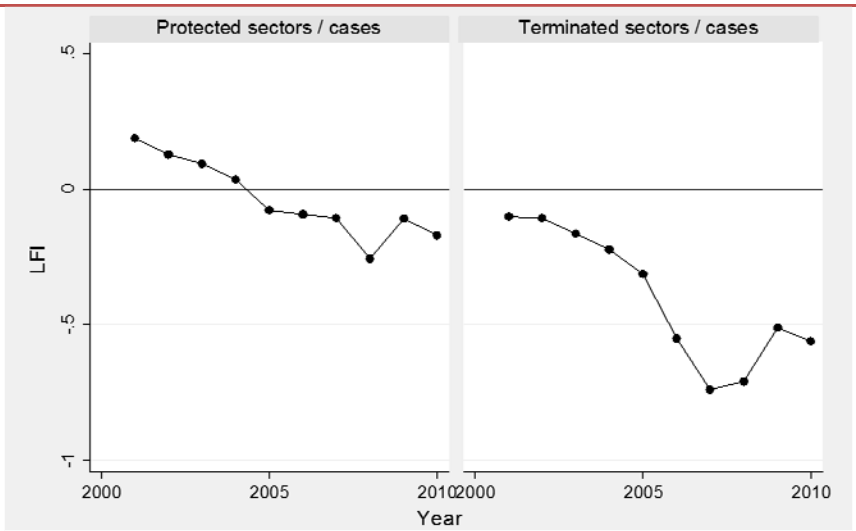
	Positive and rising	Positive and declining	Negative and rising	Negative and declining	V-shaped	Total
Protected	6	13	7	22	0	**48**
Terminated	1	4	1	9	2	**17**
Total	**7**	**18**	**8**	**31**	**2**	**65**
%	**10.61%**	**27.27%**	**12.12%**	**46.97%**	**3.03%**	**100.00%**

Source: Calculation by the authors.

[13] In the case of *CDRs* and *Recordable DVDs*, which involve the same product codes, it was not possible to splice the series with reasonable confidence for the full period; this product code was therefore dropped for the pattern analysis, eliminating one case from the analysis.

Taking this analysis one step further, we aggregated the trade flows for all sectors that sought TDI protection over the 2005-2010 and examined the evolution of the aggregate LFI for those sectors that received protection and for those sectors that had their cases terminated. The visual evidence provided in Figure 4.1 is coherent with the previous findings that the disadvantage is deeper in sectors for which investigations were terminated.

Figure 4.1: Aggregate LFI, sectors seeking TDI protection by outcome: Investigations initiated in 2005-2010



Source: Calculation by the authors.

To summarize, industries that succeed in receiving protection tend to have stronger performance and thus better future prospects. Thus there does appear to be some *prima facie* support to the argument that the EU's use of TDIs is at least somewhat influenced by industrial policy considerations.

Notably, none of the cases receiving protection showed the V-shaped pattern that one would expect from a combination of injurious dumping followed by successful relief through the implementation of TDI measures (although at a finer level of disaggregation, some product groups did show such a pattern). Thus, at this *prima facie* level of analysis, the data do not provide a strong case for the overall effectiveness of TDI, even if import flows from the subject countries are sharply attenuated, as they almost invariably are.[14]

[14] 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.

5 MACROECONOMIC BUFFER MOTIVES FOR TDI

This section considers the role of TDIs as a buffer for growth and exchange rate fluctuations, a view that has received considerable attention in the literature. The basic arguments are as follows.

A slump in economic activity in the importing country naturally leads to lower prices, increasing the likelihood of pricing below fair value if foreign firms follow price declines posted by domestic firms, thereby increasing the likelihood of dumping being found. Further, an economic downturn in the importing market implies weaker economic performance of domestic firms, increasing the probability of an affirmative injury finding if investigating authorities attribute injury to dumping that properly should be assigned to the business cycle. Accordingly, domestic firms have a greater likelihood of obtaining contingent protection during a domestic market downturn, increasing the likelihood that they will file for protection.

Slower growth in the exporting country, meanwhile, increases the likelihood that foreign firms will cut prices to maintain overall levels of output, raising the probability of dumping being found under cost-based calculations of normal value (although not under the price-based methods). Moreover, it increases the supply available to serve export markets, increasing the chances of import surges in destination countries, causing injury to domestic firms.

The implications of currency fluctuations are less clear cut. Higher real exchange rates for the destination market currency make imports more competitive, increasing the likelihood that a domestic industry will come under pressure. At the same time, they also decrease the likelihood that a foreign firm will be found to be pricing below cost or below the price it sets in its own domestic market. Conversely, lower destination market real exchange rates make domestic firms more competitive, reducing the likelihood of competitive pressure from imports but raising the likelihood that firms that "price to market" will be found to be dumping.

Knetter and Prusa (2003) examine the relationship between AD filings, real exchange rates, and business cycle developments. Using annual data, they 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%

There is however a distinction of considerable importance for dynamic analysis that has not yet been addressed in the currently available studies on TDIs. 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 (e.g., Lin 2010). Whether TDIs are 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 score but are improving in the pre-TDI period, the pattern that would seem to best fit this circumstance.

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 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 use of TDI. Bourgeois and Messerlin (1998), examining the record over the period 1980-1997, found no correlation between the initiation of the cases in the EU and the business cycle. Jallab, Sandretto and Gbakou (2006), examining the filing record over the period 1990-2002, similarly find no 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.

Following Knetter and Prusa (2003), we use a negative binomial regression model to study the relationship between EU TDI filings and macroeconomic variables. These relationships are examined on both an aggregate and bilateral basis:

- EU aggregate filings: annual filings over the period 1995-2010 are estimated as a function of the EU real exchange rate, cumulative EU real GDP growth in the three-year period preceding the year of initiation, and world real GDP growth over the same period;
- EU bilateral filings: annual bilateral filings over the period 1995-2010 are estimated as a function of the bilateral real exchange rate, cumulative EU real GDP growth in the three-year period preceding the year of initiation, and world real GDP growth over the same period.

Aggregate filings

Table 5.1 presents the data for the analysis of aggregate filings. Table 5.2 presents the correlation coefficients between the variables. The data suggest that the relationship between filings and macroeconomic developments is rather weak. The number of filings over the years 1995-2010 has almost no correlation with the value of the euro (correlation coefficient of 0.06), and only a moderately negative correlation with EU real GDP growth (correlation coefficient of -0.25) and with world GDP growth (correlation coefficient of -0.35). Accordingly, weak results are to be expected from regression analysis using these variables.

Table 5.1: Aggregate filings and macroeconomic factors, 1995-2010

Year	AD initiations at t (number)	EU RER (t-1) (index, 2000 = 100)	EU GDP growth t-4 to t-1 (%)	World GDP growth 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 Bown (2010). (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's World Economic Outlook database.

Table 5.2: Correlation coefficients between filings and macroeconomic factors, 1995-2010

	Number of Initiations at t	EU RER (t-1)	EU GDP t-4 to t-1	World GDP t-4 to t-1
Number of Initiations at t	1.00			
EU RER (t-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

Source: Calculations by the authors.

To explore the relationship between aggregate filings and the macroeconomic factors, aggregate filings are regressed on the following variables in models A1 through A5:

- A1: the EU real exchange rate in the year prior to initiation.
- A2: EU real GDP growth in the three years prior to initiation.
- A3: World real GDP growth in the three years prior to initiation.
- A4: the EU real exchange rate and EU real GDP growth rate.
- A5: the EU real exchange rate and world real GDP growth rate.

The nature of the data did not allow a regression with all three explanatory variables included at the same time. This restriction was also present in the Knetter and Prusa (2003) study.[15]

Table 5.3 reports the incidence rate ratios (IRR) associated with the parameter estimates in these five regressions. The IRR is the change in the number of initiations predicted by the model when the explanatory variable (the exchange rate or cumulative real growth rate as the case may be) is

[15] This may reflect collinearity between EU and world real GDP growth, as suggested by the correlation coefficients in Table 5.2.

one unit above its mean value. Overall, the results are very weak, which is possibly due to the small number of observations. The results may be summarized as follows:

- The IRR for the EU real exchange rate is statistically insignificant in each regression in which it is included and is extremely unstable in its value across regressions (with values of 4.2 in regression A1, 0.38 in regression A2, and 28.61 in regression A5), permitting no inference whatsoever as to the possible role of real exchange rate fluctuations on TDI filings.
- The IRR for EU real growth is stable but statistically insignificant; the coefficient value implies a decrease in filings of about 6% to 8% for a 1% increase in three-year cumulative growth in EU real GDP, consistent with expectations as regards the direction of change.
- The IRR for the world real growth rate is also stable and borders on being statistically significant; the coefficient value implies a decrease in filings of about 8% to 9% for a 1% increase in three-year cumulative growth in world real GDP, which suggests that stronger growth abroad reduces import pressures in the EU, consistent with expectations.

Table 5.3: Impact of macroeconomic factors on aggregate filings

	A1			A2			A3			A4			A5		
	IRR	Z-score	P>|z|	IRR	Z-score	P>|z|	IRR	Z-score	P>|z|	IRR	Z-score	P>|z|	IRR	Z-score	P>|z|
EU RER (t-1)	4.2	0.29	0.78							0.38	-0.18	0.86	28.61	0.73	0.47
EU GDP t-4 to t-1				0.94	-1.05	0.29				0.92	-1.02	0.31			
World GDP t-4 to t-1							0.92	-1.72	0.08				0.91	-1.84	0.07

Notes: See Table 5.1.

In short, there is no compelling evidence that aggregate filings in the EU are influenced to any statistically significant degree by macroeconomic conditions.

Bilateral filings

Following Knetter and Prusa (2003), the relationship amongst the above variables is next explored at the bilateral level. The dataset now includes the number of filings per year and per filing country, bilateral real effective exchange rates (from the US Department of Agriculture Economic Research Service), EU real GDP growth, and exporting country real GDP growth (from the IMF online statistical database). The number of observations in this data set increases to 672. Six regression models are developed in which bilateral filings are regressed on:

- B1: the relevant bilateral real exchange rate in the year prior to initiation.
- B2: EU real GDP growth in the three years prior to initiation.
- B3: the relevant exporting country real GDP growth in the three years prior to initiation.
- B4: the relevant bilateral real exchange rate and EU real GDP growth rate.
- B5: the relevant bilateral real exchange rate, EU real GDP growth rate, and exporting country real GDP growth rate.
- B6: the same variables as in model B5 but including exporting country fixed effects.

The inclusion of country fixed effects in the sixth model was motivated by findings that stronger growth in the exporting country was associated with more filings, contrary to expectations. This appeared to be driven by the surging exports from emerging market economies that were generating import pressures in industrialized countries – and filings in the EU. Accordingly, the positive coefficient was apparently picking up a secular "surge" effect rather than the cyclical effect that the regression was designed to capture. Including country fixed effects controls for this "surge" factor. The results are set out in Table 5.4.

Table 5.4: Impact of macroeconomic factors on bilateral filings

	(B1)			(B2)			(B3)		
	IRR	Z-score	P>|z|	IRR	Z-score	P>|z|	IRR	Z-score	P>|z|
RER (t-1)	1.55	0.93	0.35						
EU GDP t-4 to t-1				0.94	-1.66	0.10			
TGDP t-4 to t-1							1.04	6.06	0.00

	(B4)			(B5)			(B6)		
	IRR	Z-score	P>|z|	IRR	Z-score	P>|z|	IRR	Z-score	P>|z|
RER (t-1)	1.41	0.72	0.47	0.93	-0.13	0.89	0.90	-0.22	0.82
EU GDP t-4 to t-1	0.95	-1.55	0.12	0.93	-1.92	0.05	0.92	-2.68	0.01
TGDP t-4 to t-1				1.04	5.97	0.00	1.00	0.39	0.70

Notes: See Table 5.1. Note that the bilateral regressions were run using different "EU group" definitions for the construction of the EU real exchange rate and growth rate to control for the expanding membership of the Union over the estimation period. The results were qualitatively similar.

In summary:

- The IRR for the exchange rate continues to be consistently statistically insignificant and unstable across regressions. It is not possible to draw any inference regarding the impact of exchange rate fluctuations on bilateral filings.
- The effects of the EU growth rate are of the same magnitude as before but now become borderline significant in some regressions; a 1% increase in cumulative EU real growth in the preceding three-year period reduces filings by 5% to 8%.
- In regressions without fixed effects, origin country growth has a positive and statistically significant effect on filings, albeit a small one (a 1% increase in the exporting country growth rate increases EU TDI filings by 4%). However, this effect disappears in the fixed effects regression (B6) which controls for the "surge" factor; in this regression there is no effect of exporting country real GDP growth on filings.
- As expected, countries such as China, India, Korea, Taiwan and Thailand show a fixed effect that is statistically significant at the 1% level.

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

- The real exchange rate has no identifiable, statistically significant effect on EU filings, whether the relationship is analyzed on an aggregate filings basis or on a bilateral filings basis. This result differs from the findings of Knetter and Prusa (2003) over the 1980-98 period. One possible explanation is that the introduction of the euro may have blurred the relationship.

- EU real growth appears to have a modest but statistically significant impact on filings: in the regression with fixed effects, a 1% decrease in 3-year real GDP growth leads to an 8% increase in the number of filings. This result is consistent with expectations and in line with the findings of Knetter and Prusa.
- There is no reliable evidence that the number of initiations is affected by GDP growth in the exporting country; once the "surge" effect is controlled for, the IRR for exporting country GDP growth falls to 1.00, implying no impact. 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 highly significant. The issue of the effect of "surge" economies on EU TDI practice is revisited in section 7 below.

6 RETALIATORY MOTIVES FOR TDI

In this section, we consider the evidence for and against retaliatory motives in TDI use. A specific form of strategic use of TDI is to retaliate against countries that impose measures on domestic industries' exports. With the spread over the past few decades of TDI use beyond the traditional core users, the possibility of "tit-for-tat" retaliatory TDI actions has clearly increased. Concern about retaliation has been expressed bluntly by EU complainants in some TDI cases (e.g., in the recent expiry review in *Magnesia bricks*, the Union producers requesting the review, who are heavily dependent on the supply of a major raw material from China, requested anonymity out of concern for possible retaliatory action.)[16]

And indeed, the EU appears to have been the target of retaliatory TDI measures in at least some instances. For example, following the initiation of a dumping investigation by the EU into fasteners imported from China on 9 November 2007, Chinese fastener producers filed a dumping case against the EU on 1 December 2008. The EU final determination on 26 January 2009 was followed shortly by the initiation of an investigation by the Chinese authorities into fastener imports from the EU on 25 March 2009. This case has been interpreted as clearly retaliatory in nature (see, e.g., Cherniak 2009). Shortly after China imposed provisional duties, the EU requested consultations at the WTO in respect of the Chinese action. Another case of apparent retaliation involved cargo scanning equipment. In its 2010 Annual Report on third party use of TDI against the EU (European Commission 2010a), the Commission noted that a Chinese investigation into X-ray security scanning equipment initiated in October 2009 concerned a product similar to the product subject to an AD investigation initiated by the EU against China, i.e. cargo scanning equipment. Moreover, the Chinese complainant was the same producer affected by the EU investigation, and the named EU exporter was the complainant in the EU's investigation (the Commission diplomatically described this circumstance as "remarkable" rather than "retaliatory").

[16] OJ L 166/1 (termination of expiry review), 25.06.2011, at recital 11.

Another clear-cut recent example of retaliation, this time not involving the EU, was China's response to the Obama Administration's decision on 11 September 2009 to institute safeguard measures on light truck and automobile tires from China for three years. Three days later, on 14 September 2009, China announced that it was launching AD and AS investigations into imports of chicken meat and automobile parts produced in the USA; the investigation happened to target an exactly equivalent volume of imports. US industry charged that the Chinese investigation was "obviously in direct retaliation for the US action in putting tariffs on tires made in China" (Johnson and Becker 2010).

The question of the extent to which retaliation has motivated TDI actions has been addressed in the economic literature. To briefly summarize the main results, 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 US industry is influenced by the threat of foreign retaliation in its decision of which foreign countries to name in their AD petitions, and that US authorities' decisions are influenced by the threat of foreign retaliation. 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. Abrami and Zheng (2010) examine the common assumption that China's use of TDI is primarily for strategic purposes, including retaliation against countries taking TDI actions against its own exports (they conclude otherwise). Thus, the literature appears to consider retaliation to be a 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 has been 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; see Blonigen and Bown 2003). In either case, if TDI actions are retaliatory in nature, the economic impact analysis becomes significantly more complicated.

Table 6.1 shows the number of cases brought against EU Member States by countries with data in the World Bank's Global Antidumping Database (Bown 2010) and compares those totals to the number of cases brought by the EU against those countries.

Examining the pattern of use of AD measures by the EU against countries that have targeted EU Member States with their own AD measures, in aggregate there is no apparent evidence that TDI is used by the EU 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 and raises questions about the framing of the issue in the literature. For example, the Prusa and Skeath retaliation model allows the two EU actions against Australia, which has filed 117 AD actions against the EU, to be interpreted as retaliation; similarly some of the 38 cases mounted by the EU against Japan might be classified as retaliation for the single case filed by Japan. The massive differential in cases for and against on a bilateral basis is illustrated by the fact that four

countries (Australia, Canada, Argentina and Israel) alone mounted a total of 268 cases with the EU only mounting five "in response" over the timeframe covered by the World Bank dataset.[17]

Table 6.1: EU AD compared to AD 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: Authors' calculations based on Bown (2010).

The lack of any semblance of balance on a bilateral basis in TDI cases is inconsistent with game theoretic models that suggest immediacy of response is needed in order to establish credibility of threat (e.g., see Feinberg and Reynolds 2006: 879). Moreover, it 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.

[17] Note that the fact that AD 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.

7 TDI AS INSURANCE

This section considers TDIs as "surge" protectors to attenuate the impact on the EU economy of disruptive change in the global economy. The WTO safeguards instrument allows Members to temporarily restrict imports of a product in cases where a surge in imports injures or threatens to seriously injure a domestic industry.[18] An import "surge" is defined as an increase in imports in either absolute or relative terms (e.g., if the share of imports increases in a shrinking market). As well, the GATT has included, from the beginning, provisions to renegotiate commitments.

Nonetheless, it has been widely argued that TDIs are used in lieu of safeguards to deal with import surges (e.g., Stiglitz 1997), because the design of TDIs makes them more attractive to both governments and industry than the safeguards instrument. In contrast to AD and AS 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 AD and AS measures, the 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 *de facto* role of TDIs as safeguard policy since the 1980s is elaborated in Finger, Ng and Wangchuk (2001).

The extent to which TDIs serve as a preferred form of surge protection is, however, difficult to establish. Historically, safeguard measures were provided for 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 of such actions (Bown and Crowley 2005: Table 1). As well, the GATT has included, from the beginning, provisions to renegotiate commitments.

The more frequently used tools to manage import surges in the pre-WTO era were "grey area" measures. These were variously labeled as voluntary export restraints (VERs), voluntary restraint agreements (VRAs), and orderly marketing arrangements (OMAs). Other informal measures were also used. With the entry into force of the WTO Agreement in 1995, new grey area measures were banned and in-force measures 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.

[18] GATT Article XIX – Safeguards.

Many suspect that the action simply shifted over to AD/AS measures. This is indeed plausible. In the pre-WTO era, almost half of the AD and AS 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 AD and AS measures. By the same token, there was no obvious discontinuous surge in AD actions when grey area measures were banned.

The history of use of grey area measures is of interest in analyzing the *de facto* role of TDIs because of the blurred distinction and because the use of the latter instruments was documented and discussed more or less openly. In particular, the motives for use of grey area measures were discussed at length in the 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.[19]

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.[20]

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.[21]

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[19] 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.

[20] See MTN.GNG/NG9/W/6, dated 16 September 1987. Notable by its omission from both the GATT list and the summary by Coleman and Yoffie is the case of semiconductors. The US-Japan rivalry in this sector resulted in a series of VERs adopted by Japan and eventually in the bilateral US-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 external monitoring was not consistent with the GATT but upheld the measures to open the Japanese market. For a discussion of this episode see Flamm and Reiss (1993).

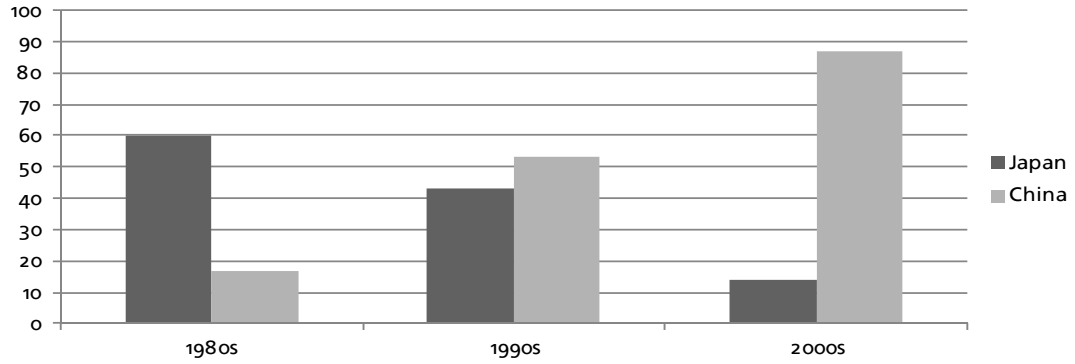
[21] The list is as follows: Apples (five EEC measures in respect of five countries); Automobiles (four EEC measures on behalf four EEC members in respect of automobile imports from Japan); Black and white TVs from Korea; Certain electronic piezoelectric quartz watches with digital display; Certain Fabrics; 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

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 this paper is that the word "dumping" appears only twice in the WTO 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.

Exporting countries that accepted VERs offered a number of reasons why they found it preferable to enter into an agreement rather than insist 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 GATT-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 of the rapidly growing East Asian countries into what had previously been largely a North Atlantic trading system. 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 and China in particular, since data for US actions for the early 1980s are most easily available (Figure 7.1).

Figure 7.1: US AD Cases versus Japan and China, 1980s, 1990s, and 2000s, number of cases

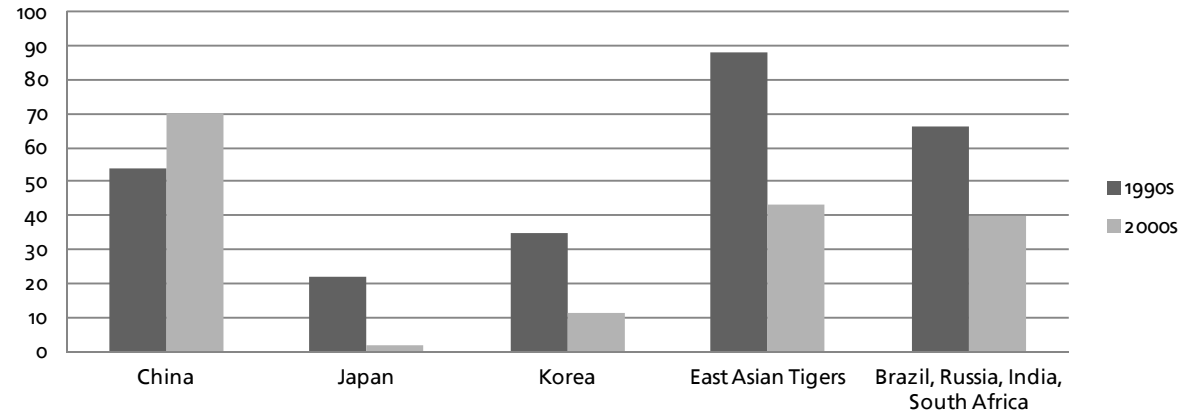


Source: Bown (2010: GAD-USA).

for industrial purposes; Video tape recorders (four measures, all against Japan); and Yarn of synthetic fibers. See Spec(82)18/Rev.3 dated 22 May 1984.

The pattern for the EU is far less clear as data for the full period are not available on the World Bank's Global Antidumping database – the EU data are available for only 1987 and onwards. 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 fell off in the 2000s against the other surging major emerging markets, namely Brazil, Russia, India and South Africa (Figure 7.2).

Figure 7.2: EU TDI initiations versus dynamic emerging market economies, 1990s, and 2000s, number of cases



Source: Bown (2010: GAD-EU).

Taking all the evidence into account, this comparison suggests that, in the 2000s, EU TDI measures were used to deal with the frictions emanating from China's surge, in lieu of the diplomatic measures used to help manage the integration of the other dynamic East Asian economies in previous decades. This historical perspective suggests that the rise in the use of TDIs in recent decades was transitory and not a trend.

This issue has important implications for how TDIs are evaluated. A general argument in support of TDIs is that they act as an insurance policy that allows countries to take on deeper commitments in trade negotiations than they would otherwise be 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." (2006: 573; internal references omitted).

Dam (1970) observes that the inclusion of TDIs in GATT rules from the beginning greatly increased the extent of liberalization achieved in the early GATT rounds by diffusing 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[22] and on the part of WTO Members against China, was also contingent on the inclusion of special contingent protection measures.[23]

Compelling evidence for this role of TDIs is provided by India's record. In the early 1990s, in the context of a balance of payments crisis, India 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 TDIs.[24] The heaviest use of TDIs was during the initial period of reforms when 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 TDIs.[25]

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

> "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" (2003: 751).

Again, when the assumption of perfectly functioning and complete markets and full information 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 AD and AS measures 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:

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[22] For example, Erixon, Messerlin and Sally (2008: 5) observe that, in 2005, China "reported that 1,416 national standards had been abolished as a result [of WTO accession commitments.]"

[23] China's WTO Accession Protocol includes special provisions allowing the use, with essentially full flexibility, of the "non-market economy" status in AD 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 USA); see Bown (2007: note 27).

[24] In fact, the World Bank's Antidumping Database (Bown 2010) lists 629 individual cases initiated by India since mid-1992, just ahead of the USA 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.

[25] 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 TDIs largely offsetting the gains from liberalization, rather than enabling the liberalization that did take place.

> "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 Regulation 519/94 of 7 March 1994" (Part IV, paragraph 18).

A major part of that regulation concerned itself with contingent protection (safeguards and surveillance).

In China's WTO accession, it was however the USA 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 US-China WTO Market Access Agreement of 15 November 1999.

In summary, the negotiating history of major trade liberalization initiatives makes clear that across-the-board liberalization in the absence of perfect knowledge about the possible consequences in terms of trade pressures depends on the availability of contingent protection. Economic theory demonstrates that such an insurance role is welfare enhancing. The history of use of grey area measures in the pre-WTO period as successive waves of trade liberalizing initiatives were being implemented to manage excessive pressures in a context where the trade flows were not characterized as "unfair" but simply disruptive makes clear that that they were clear substitutes for TDIs. This history provides the linchpin that allows the identification of the on-going use of TDIs in ways that are strikingly similar to the pattern of use of grey area measures in the absence of recourse to the latter measures with the management of excessive pressures of adjustment related to the on-going liberalization of trade and deepening integration of economies under globalization. While the use of TDIs may be defended as welfare enhancing on these grounds, with the individual instances of application of measures analogous to claims on a pre-existing insurance policy, the design of trade defense laws and the emphasis on "unfair" trade in their justification, makes them ill-suited for this role.[26]

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 their 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

[26] Finger and Zlate (2003) observe that: "GATT/WTO rules offer a number of provisions that might be described as escape valves, antidumping has become by far the most frequently used one. Yet as a tool to help governments to maintain a political momentum toward openness, antidumping has few of the qualities of a good management tool."

> 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 TDIs 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, given due weight, works partly, wholly or more than wholly to offset the deadweight welfare loss from imposition of TDI duties measured by the Harberger triangles. 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 measures.[27] Accordingly, in considering motives, it is possible that an unstated consideration for EU policymakers is an implicit difference in weighting of narrowly

[27] 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.

borne welfare losses associated with factor income impacts and widely spread, shallow welfare gains for consumers.

The communitarian test developed by Hutton and Trebilcock arguably can serve as a stand-in for the appropriate but impossible weighted welfare calculation under the surplus test: that is, in those instances where significant negative impacts on individual communities would be avoided by application of TDI protection, it is plausible to infer that greater weights should be given to the narrowly felt and deep negative effects than on the broadly felt and shallow consumer benefits. 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.[28] That is, the impacts must clearly go beyond the private 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.

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%.

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[28] 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.

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%). We also 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.[29]

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.[30] 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 five 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 five 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 8.1.

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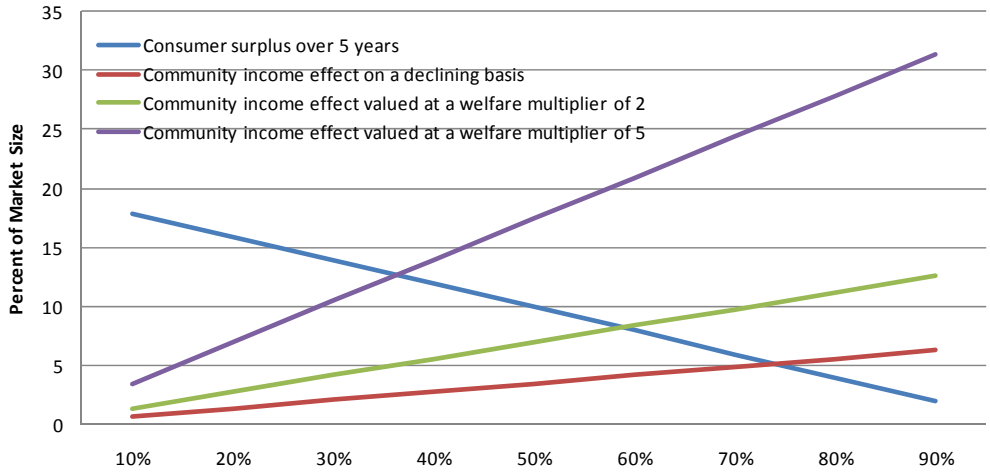
[29] See for example, Vasiljevic and Govorušic (2009). This study estimated multipliers for three communities in Serbia: 2.51, 1.81 and 1.75 for an average of 2.02. Acconcia, Corsetti and Simonelli (2011) find local spending multipliers of 1.8 to 2.0 taking into account dynamic effects; in their case,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

[30] 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.

Figure 8.1: 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.

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 TDIs; for example, in two cases that the Commission terminated on public interest grounds where the EU market share was minimal, *CDRs,* 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%,[31] 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 TDIs for a range of cases.

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

[31] See OJ L 305/15, 04.11.2006 (termination of *CDRs*) and OJ L 293/7, 24.10.2006 (termination of *DVDs*).

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 measures. 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.

Based on the above arguments, we apply a communitarian test to the EU TDI cases initiated in the period 2005-2010. The objective is twofold: to identify the extent to which this consideration qualifies the *ex post* evaluation of TDI 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.

It is not straightforward to apply a communitarian test for TDIs. 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. Very much depends on the context of the community – and these contexts are highly heterogeneous.

Consistent with the approach taken by Hutton and Trebilcock, we apply a series of "screens" to rule out cases where communitarian concerns would not be of major concern. A total of 63 EU TD cases initiated in the period 2005-2010 are examined. First, we apply a preliminary set of screens at the industry level:

1. The case was terminated. 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.
2. A large number of EU producers are involved, spread across a large number of EU Member States. In such cases, the impacts of dumped or subsidized imports are 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 evaluate each instance.
3. Industry concentration is low. In such cases, trade impacts are likely to be diffuse as well.

In all, 16 cases are screened out on the first test. Of these cases, however, 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;[32] *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*) is left 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.

An additional seven cases could be excluded on the basis of highly dispersed EU production as per the second screen.

In some cases the extent of dispersion of EU production (screen 3) is less clear. For these cases, a similar procedure was followed as in the competition policy analysis: measures of industry concentration (HHIs) were constructed, using available information from the case documentation. 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, minimum and maximum HHIs were calculated for the questionable cases. Another 19 cases were excluded as unlikely to have sufficient concentration of impact to make communitarian concerns an important factor in the welfare calculation as the maximum HHI reading was 0.18 or less.

The above three criteria together screen out 42 of the 63 cases under examination. The remaining 21 cases all involve a relatively small number of firms with establishments in 65 municipalities. For these, factors are considered 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. Two such characteristics in particular are considered, which provide additional screens.

4. The establishment carries out headquarter functions. Headquarter functions often include research and development and other support services for a larger group of establishments. Accordingly, a headquarter operation is much less likely to be shut down than a branch plant or subsidiary.
5. The firm has a diversified product base. 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.

[32] Neither the initiation nor the termination reports listed the community producers; however, these were named in another AD case, *Silicon carbide*; see OJ L232/1, 25.08.2006.

The HQ/branch status of an establishment is determined from the firm's published documentation as is the extent of product diversification. These screens eliminate 21 of the 65 firm-municipality cases, which still leaves 44 instances of possible communitarian concern in 15 TDI cases to consider.

6. Next, the size of the community involved is considered. For this purpose, cases are identified in which the firm involved is based in an Urban Audit Core City.[33] 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 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, those cases are excluded 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. This leaves 39 firm/community cases to be considered.

What further guidance can be brought to bear in terms of how to take communitarian impacts into account? Four criteria are suggested that can help screen out cases where communitarian concerns may not warrant intervention:

7. The domestic (EU) industry share in the market for the like goods is very low or very high. 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 measures 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).
8. The employment/population ratio in the affected region is above average. The higher this ratio (e.g., compared to the EU average), the less the community is dependent on the existing jobs and the lower the negative externalities for a given direct shock from a plant closure on the surrounding community.
9. The unemployment rate in the affected region is below average. The lower the unemployment rate in a region (again, compared to the EU average), the lower would be the job transition costs for laid-off workers and the lower the negative externalities for a given direct shock from a plant closure on the surrounding community.

[33] 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

10. The firm is part of a recognized cluster. In dynamic clusters, the constant cycle of firm creation and destruction means that workers let go by one firm can find equivalent employment at a new start-up or existing competitor which facilitates job transition for workers with industry-specific skills.

Applying these screens to the 39 communitarian cases that have passed the previous screens, 15 can be screened out on the basis of low EU market shares (below 30%); seven are screened out because EU firms have a high market share (over 80%); and 11 are screened out because they feature a combination of relatively high employment ratios and relatively low unemployment rates. None were screened out on the basis of being part of a recognized cluster.[34] This leaves only eight instances in four TDI cases where a clear-cut communitarian case could be made on static welfare grounds alone for the use of TDI. The full set of screens is reported in Annex Tables A3-A10.

On the basis of the above analysis, communitarian concerns would appear to figure prominently only in a relatively small number of TD cases. At the same time, in a welfare analysis of the use of TDI, these are important considerations.

9 DISCUSSION AND CONCLUSIONS

The pattern of TDI use by the EU has been examined through a number of analytical lenses.

- As an international trade analogue for domestic competition policy.
- As a macroeconomic buffer.
- As a tool of industrial policy.
- As a retaliatory mechanism to protect EU exporter interests.
- As the policy tool of choice to deliver insurance against excessive trade pressures.
- As protection for vulnerable communities from disruptive change emanating from the trading system.

Most of these motivations can be read, at least in some cases, into the EU's use of TDIs. At least one case since 2005 and possibly several others appear to be plausible instances where the stated policy rationale of countering anti-competitive practices of foreign firms could be invoked. There is also some weak evidence that TDIs serve to buffer cyclical downturns, that the EU's discretion in applying TDI measures is more likely to be exercised in cases where complaining industries have stronger revealed comparative advantage, suggesting the influence of industrial policy considerations, and that the EU's use of TDIs was justified if not necessarily motivated by communitarian welfare considerations in at least a handful of cases. While there is evidence for apparent retaliation against the EU for using TDIs, the evidence does not suggest that the EU's

[34] In one instance the establishment was part of a non-recognized cluster – this was a firm in Lutherstadt-Wittenberg (Piesteritz), which was part of the local AgroChemistry Park. The case was *Melamine* from China.

use of TDIs has involved strategic retaliation. Overall, these theories are only faintly echoed in EU TDI practice.

This leaves unexplained the apparent inconsistency between the observed behavior of the EU to drive towards a more liberalized trading regime with the simultaneous recourse to contingent 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 effects of TDIs.

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. Consistent with the general literature on insurance, trade defense as the instrument to instantiate an implicit insurance contract is welfare enhancing.

In this regard, this study draws on the history of major liberalization episodes and notes the following facts:

- The sweeping tariff reforms of the postwar period were explicitly linked in the negotiating documentation to the availability of selective safeguards. This feature 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 made 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 to the WTO depended on a range of special safeguards.
- The pattern of use of TDIs against China in recent years mirrors the pattern of use of grey area measures in the pre-WTO period against the "surge" economies of the 1970s and 1980s – Japan and the other East Asian "Tigers".

On the basis of this strong circumstantial evidence, we conclude that, for the most part, a significant portion of 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 do not represent 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 AD is the instrument of choice to give effect to these insurance claims, rather than the formally proposed instruments (safeguards or Article XXVIII renegotiation of commitments), appears to reflect the design of the instruments but does not for the most part detract from the force of the argument.

This perspective on TDIs 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 TDIs, including its often random pattern of incidence. In our view, this is by far the strongest support for TDIs as currently practiced by the EU and globally. However, this conclusion also emphasizes that contingent protection under the WTO rules is not well framed, leaving 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. The main message is that there is a need for WTO reforms in this area that (a) encompass TDIs, safeguards (including the special safeguards negotiated in the context of China's accession to the WTO), and the Article XXVIII renegotiation provisions; and (b) revisit, critically, the effectiveness of substitution of poorly framed legal instruments for the diplomatic measures in use in the pre-WTO era.

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ANNEX

Table A1: Screening of EU AD cases for competition policy concerns

Year of Initiation of AD	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	Out			

Year of Initiation of AD	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
					envisaged but only two cooperated)				
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 cooperated)	Out			
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	Out			

Year of Initiation of AD	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	
					cooperating)							
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-methylethyl) Phosphate	China	1	In	potentially large	Out						
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	Ques-tion-able	Chinese share of EU imports in closest 6-digit sectors about 8-	Out	1 Union producer with 100% of Union production	In	Withdrawn due to working arrangement	Out

Year of Initiation of AD	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	
							10%					
2005	Ethyl Alcohol	Pakistan Guatemala	2	In	3 in Pakistan and 3 in Guatemala were investigated	In	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	2 cooperating exporters	In	Romania's share of EU imports less than 12%; therefore much smaller share of domestic market	Out	Complaint by the industry association CEFIC representing 100% of Union production; 4 named producers	In	Complaint Withdrawn	Out
2006	Cameras	japan	1	In	potentially large	Ques-tion-able	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	Ques-tion-able	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	Ques-tion-able	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	5 cooperating accounting for 100% of exports	In	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	Out	Complaint Withdrawn	Out

Year of Initiation of AD	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	
									producers; 7 sampled producers accounted for 70% of the market			
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 93% of imports	In	over 50%	In	31 producers, top two with 50% of Union production; pseudo-HHI =0.168	In	Affirmative	In
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; calculations by the authors.

Table A2: 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							0
AD.490	Seamless pipes and tubes, of iron or steel	730421	1							0
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			0
AD.502	Tungsten electrodes	851590	1							1
AD.505	Strawberries (frozen)	81110				1				1
AD.506	Ironing boards	392490				1				0
AD.506	Ironing boards	442190				1				0
AD.506	Ironing boards	732399				1				0
AD.506	Ironing boards	851679				1				0
AD.506	Ironing boards	851690		1						0
AD.507	Sweet corn (prepared or preserved in kernels)	200580		1						0
AD.508	Saddles	871495		1						1
AD.508	Saddles	871499				1				0
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				0
AD.514	Dihydromyrcenol	290522						1		0
AD.516	Ferro-silicon	720221				1				1
AD.516	Ferro-silicon	720229				1				0
AD.518	Coke (over 80mm)	270400			1					1
AD.519	Compressors	841440		1						1
AD.519	Compressors	841480	1							0
AD.520	Manganese dioxides	282010				1				0
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				0
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	0
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						0
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							0
AD.539	Cargo scanning systems	902219	1							1
AD.539	Cargo scanning systems	902229	1							0
AD.539	Cargo scanning systems	902780	1							1
AD.539	Cargo scanning systems	903010	1							0
AD.540	Molybdenum wires	810296				1				0
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 A3: 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 A4: 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 A5: 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 fibers 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 A6: 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 A7: 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 A8: 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 belonds 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

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 A9: 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 A10: 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

Year	Case	Exporter	Complainant	Community	Closest Major City (Eurostat: core city)	Jobs at risk	EU market share	Employment Ratio	U-rate ratio	Communitarian Cases
2006	Saddles	China	pph ABI sp.j.	Nasielsk, Poland Population: 7,000	Warszawa, Poland Population: 1,709,781: 42 km	NA	58% in the IP	1.03	1.46	In
2009	Polyester Yarn	China, Korea, Taiwan	Brilen SA	Barbastro, Spain Population: 16,486	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

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