

## D EMPIRICAL EVIDENCE

The premise of this Report is that trade contingency measures are a necessary part of any trade agreement. The flexibility granted by these instruments allows countries to make greater liberalization commitments since they realize that they can temporarily be relieved of such commitments under difficult circumstances – whether home-grown or the consequence of the policies of other countries. In the absence of such measures, countries might not even contemplate signing new trade agreements or entering into new rounds of negotiations. Previous sections have reviewed the theoretical literature that could provide support for this view and marshalled the arguments accordingly.

In this section, we turn to the empirical literature and examine whether it supports the proposition that contingency trade measures are introduced in a trade agreement to facilitate trade liberalization or whether it shows that these measures give countries an opportunity to backslide on negotiated commitments.

The Report has identified the circumstances when there is an economic rationale to use trade remedies. In general, these include situations when there is a sudden increase in competitive pressure from foreign imports. The second question that this section addresses is whether flexibilities are used to manage difficult situations arising from increased import competition or whether they become tools for protection. Finally, economic theory stresses that there are costs associated with the use of contingency measures. Temporary protection may have negative effects on competition and on a country's overall welfare. This section reviews the estimates of the size of these costs.

At the outset, it should be noted that there has been significantly more research carried out on anti-dumping (AD) activity than on any other trade contingency measure, and more research on the United States than on any other country. This uneven emphasis will be reflected in the contents of this section. There is an obvious need to widen the range of empirical research beyond AD activity and beyond the experience of the United States.

Before turning to the three issues identified above, the section begins by describing some of the available data on the contingency trade measures

and other flexibilities that are the subject of this Report. It portrays patterns and trends in the use of the various forms of flexibilities. It also highlights some of the limitations of the data, and the need for better, more timely and comprehensive notifications by WTO members.

### 1. PATTERNS AND TRENDS IN THE USE OF CONTINGENCY MEASURES

#### (a) Available databases and sources of data

There are six measures that are considered in detail in this Report: AD measures, countervailing duties (CVDs), safeguards, modification of concessions in WTO agreements, increases in applied tariffs up to the maximum agreed ceiling – or binding – and the use of export taxes. There are databases or data sources corresponding to each of the measures that are either maintained by the WTO Secretariat or by external sources.

##### *i) Anti-dumping database*

The empirical analysis on anti-dumping measures undertaken in this Report has relied on data compiled by the WTO Secretariat and by others (see below). It consists of notifications received from WTO members/GATT contracting parties of anti-dumping initiations and final measures from 1979 to 2007. The data also include a list of the affected members/contracting parties.

It should be noted that recent years have seen a concerted effort, largely involving academics, to develop databases on worldwide AD activity. The most detailed global anti-dumping database is that developed by Bown (2007). It draws on previous efforts by Blonigen (2008), Prusa (2001), Miranda et al. (1998) and Zanardi (2004b).

Bown's database contains detailed data on anti-dumping measures for 19 WTO members, which collectively make up a substantial fraction of the cases worldwide.<sup>1</sup> It goes beyond the information available from WTO notifications. Among other information, the database includes: the Harmonized System (HS)<sup>2</sup> codes of the products under

investigation; the identities of the domestic firms that have initiated AD actions as well as the foreign firms that are the subject of AD actions; the level of the dumping margin (i.e. the difference between the export price and the normal price in the exporter's domestic market) found by investigating authorities; the provisional and final AD measures (specifying whether they are duties or price undertakings); and the dates when the provisional and final AD measures were imposed.

#### *ii) CVDs database*

The database, compiled by the WTO Secretariat, contains information on countervailing duty initiations and final measures notified from 1974 to 2007, the reporting WTO members, the affected members and the HS codes of the products concerned.

#### *iii) Safeguards database*

The WTO Secretariat's database contains information on safeguard initiations and final measures notified by WTO members from 1995 to 2007. A total of 40 members have notified safeguard initiations and measures since the establishment of the WTO. The database also classifies by HS "chapter" or section the products which were subject to safeguard initiations and measures.

#### *iv) Renegotiations database*

The WTO Secretariat's database catalogues 335 cases of multilateral negotiations initiated by 58 GATT contracting parties/WTO members from 1948 to 2007. It contains data on the member/contracting party initiating the renegotiation (under GATT Article XXVIII), the product(s) covered by the renegotiation, the official document numbers, the previous level of concession, the proposed modification of the concession, whether the renegotiations were successfully concluded and any agreement on compensation. The database only provides a general description of the product(s) involved in the renegotiation; however, in many cases, it has been possible to match product descriptions to the corresponding chapter or section of the HS nomenclature.

#### *v) Export taxes*

Information on export taxes was collected from the WTO's Trade Policy Reviews (TPRs) published

between 1995 and 2008. There are two main problems with the classification of information extracted from the TPRs. The first is related to the frequency of TPRs, which for individual WTO members depends on their shares in world trade.<sup>3</sup> This review mechanism implies that there is more information for some countries than for others. In order to allow for comparison across countries and across products, we have used, for each country, information drawn from the latest TPR available.

The second problem is the varying degree of detail at which information on the product level is reported. In order to allow for a comparison across products and not to lose too much information, we collected data at the HS 2002 two-digit classification level. This enabled us to analyze the intensity of use of export taxes. At times, however, only a general description of the product subject to an export tax is provided and no corresponding HS 2002 two-digit code could be assigned to it.<sup>4</sup> Finally, export taxes on re-exported goods, statistical charges, guarantee funds, stamp duties, re-export taxes, income taxes, corporation taxes, automation fees, exit duties, export development charges and consent fees were not taken into account.

#### *vi) Tariffs*

To assess how frequently governments take advantage of the incomplete coverage of their tariff bindings and the binding overhang (i.e. the gap between a member's bound and applied tariffs – see Section C.4) to raise their tariffs, we used the CAMAD database.<sup>5</sup>

CAMAD contains applied tariff rates at the national level for selected countries and years. To facilitate comparisons, we aggregated all the tariff information to the six-digit level of the Harmonized System. Because we were interested in changes in tariffs between two consecutive years, we could only use a subset of the database which contains up to about 70 countries depending on the years and up to 11 years (1996 to 2006) depending on the countries. The size of the samples thus varies considerably across years. This must be kept in mind when interpreting the results (see Table 3 below).

Note also that the initial database was split into two parts according to the nomenclature used. From 1996 to 2002, products were classified using the Harmonized System 1996 and from 2002 onwards

the Harmonized System 2002 was used. In order to get a global picture, we merged those two parts, keeping the initial nomenclature. Finally, non *ad valorem* tariffs were dropped in order to avoid confusing changes in prices with changes in tariffs.

### vii) Caveats

Before describing the pattern that emerges from the data, it is essential to recognize several important shortcomings of the databases used in this section.

There is a paucity of information on anti-dumping, CVD and safeguard initiations and measures prior to the 1980s. The description of the patterns and trends is therefore largely drawn from experience since the 1980s, which may not give a complete picture. Taking AD measures as an example, although the conventional view is that few anti-dumping cases existed prior to 1980, Irwin (2005) has shown that this is incorrect in the case of the United States. He found that AD filings were quite

pronounced during the late 1930s, even rivalling the large number of US cases in the early 1980s and 1990s. In addition, there was a steady and fairly substantial stream of US cases from the mid-1950s until the mid-1960s.

Furthermore, almost all of the information is on the number of initiations and measures. While this is important, it is equally vital to know how much trade they affect and how large the duties are. Certainly, there is a lot of information to suggest that, on average, trade remedy duties are many times greater than applied MFN rates (i.e. non-discriminatory tariffs) (Prusa, 2001). Box 12 attempts to provide some information on the magnitude of AD duties.

With respect to changes in the binding overhang, this section is only able to analyze changes to applied tariffs made from 1995 onwards. Finally, it has not been possible systematically to track WTO members' use of export taxes over time.

### Box 12 Anti-dumping duties

Bown's global anti-dumping (AD) database contains information on both provisional and final anti-dumping duties. We utilize information from this database to indicate the magnitude of these duties for frequent users of AD measures and how they compare with applied MFN rates.

It is important to start with some qualifications about the data in Bown's database. First, many AD tariffs are specific duties. Second, many are specified as ranges (e.g. 20 per cent to 50 per cent) rather than a given *ad valorem* rate. Finally, there are many missing data. Even though we are unable to employ the specific duties and the duties given as ranges, there are enough observations of *ad valorem* AD duties to construct statistically useful indicators of the average for some but not all countries. For example, the table below does not contain estimates of AD duties for Australia and India, even though these countries are major users of anti-dumping measures.

The average anti-dumping duties applied by developed and developing countries are shown in the table below. The average applied MFN rates for all products from 1996 to 2007 for these countries are also shown for reference. Some tentative conclusions can be drawn. First, there is considerable variation in the average AD duties applied by WTO members. They range from 12 per cent to 90 per cent. Second, developing countries apply higher AD duties than developed countries. Third, AD duties are significantly higher than the average applied MFN rates of members (although it should be noted that the AD duties cover a longer period starting from 1980 and are concentrated in certain sectors). For most of the members listed in the table, average AD duties are twice as high as applied MFN rates; for some members they are as much as eight times higher than average applied MFN rates.

**Table: Average AD duties for selected users (in per cent)**

Users	Average AD duties (1980-2005) <sup>a</sup>	Average applied MFN rates (All products) (1996-2007)
<i>Developed</i>		
Canada	12.1	4.2
EC	17.6	6.4
United States	41.4	5.2
<i>Developing</i>		
China	21.4	13.8
Mexico	89.5	15.8
Indonesia	21.5	8.5
Korea, Rep. of	27.4	12.6
Peru	30.9	10.9
South Africa	29.1	7.0
Turkey	29.1	12.9

<sup>a</sup> There is considerable variation in the period for which data on AD duties is available for each country. The period of coverage is 1985-2005 for Canada; 1987-2005 for the EC; 1980-2005 for the United States; 1997-2005 for China; 1987-2003 for Mexico; 1996-2004 for Indonesia; 1986-2004 for Rep. of Korea; 1992-2002 for Peru; 1992-2004 for South Africa; and 1990-2004 for Turkey.

Source: Bown (2007) and WTO Integrated Database (IDB).

## (b) Trends

Information about the use of measures over time is available for AD, CVD and safeguard initiations and measures, renegotiations and the use of binding overhangs. It has not been possible to obtain time series observations on the application of export taxes by WTO members. The sub-section on trends focuses on two key questions. First, has the use of these measures grown, declined or remained the same over time? Second, to what extent can the changing pattern over time be consistent with the use of these instruments as tools of flexibility?

For example, is the global business cycle closely linked with the frequency of their use, with the number of trade contingency actions rising during

periods of economic weakness? Does previous or ongoing trade liberalization lead to greater use of contingency instruments?<sup>6</sup> The answers provided here are based on aggregate data and on a descriptive analysis of the information. Sub-sections 2 to 4 review more country-specific and measure-specific studies that arrive at far more definitive conclusions about the nature of the measures.

### *i) AD duties, CVDs and safeguard measures*

For the most part, we shall rely on the frequency or number of anti-dumping, CVD and safeguard initiations and measures as indicators. Box 13 provides some cautionary notes about relying exclusively on the number of trade remedy actions.

#### Box 13

##### Cautionary note on relying on the number of initiations/measures

###### *Use of other instruments of flexibility*

The increase in the total number of AD investigations/measures has to be seen in the light of the use of other trade policy measures as instruments of flexibility. Up to the late 1950s, quantitative restrictions, licensing requirements, and foreign exchange controls had been widespread. Combined with the still substantial amount of tariff barriers,

they may have made the use of AD/CVD/safeguard actions by GATT contracting parties largely irrelevant. Over time, those measures were eventually eased or eliminated. Tariffs were also reduced through successive rounds of multilateral trade negotiations and through unilateral market opening. Politically sensitive sectors, such as agriculture and textiles and clothing, were also brought under GATT rules. This suggests that because of continued trade liberalization and the elimination of traditional

instruments of protection, the more frequent use of AD/CVD/safeguard actions by an increasing number of WTO members today may constitute the substitution of one set of instruments of flexibility for another.

#### *More trade means more frequent use of contingency measures*

Since 1979, the value of world exports has risen by an average of 7.1 per cent per annum. This is more than twice the annual rate of growth of AD initiations (3.3 per cent per annum) over the same period. The rate of expansion of world trade was also about one percentage point higher than the annual growth in global AD measures (6.5 per cent per annum). Thus, the number of measures per dollar of trade may have actually declined over the years. Of course, this point obscures the fact that trade contingency measures are not targeted evenly against countries. As pointed out later in this section, a number of developing Asian countries have been subjected to a significant share of anti-dumping actions.

#### *EU enlargement*

The steady enlargement of the European Union over the last few decades has reduced the possible number of AD/CVD/safeguard measures being taken by individual countries.

The numbers of schedules of commitments and administrations have consequently been reduced and trade within the EU is no longer subject to these trade policy measures. It is noteworthy that many AD/CVD/safeguard measures were previously taken against WTO members which are now EU members or no longer centrally planned economies.

#### *Differences in restrictiveness*

Relying on the number of initiations or measures gives equal weight to all cases even though the final duties may differ substantially from one case to the other. In anti-dumping, for example, the number of measures does not indicate what dumping margin was found and whether the duty that the authorities levy corresponds to the full dumping margin or only a part of it.

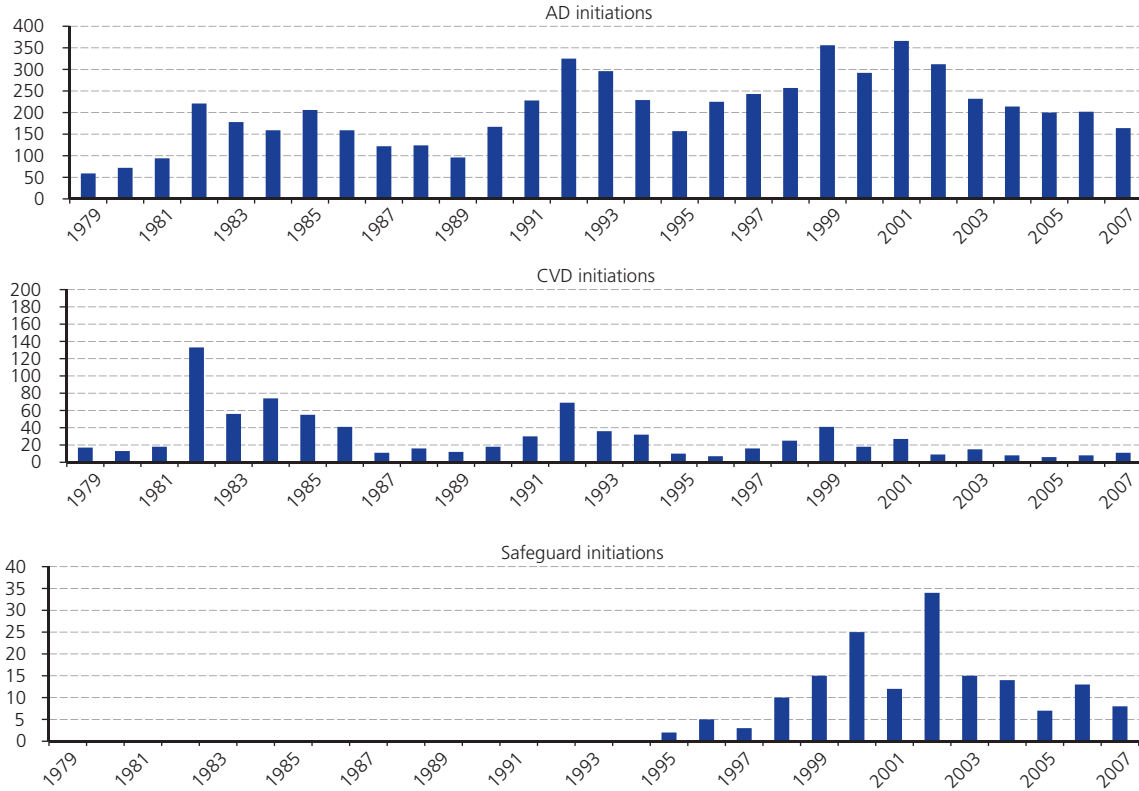
Another difficulty is that the product subject to a trade contingency measure may differ in economic importance, depending on its volume and value, which country is applying the measure, and who the supplier is.

Irwin (2005) has distinguished between the number of cases and the number of commodities/tariff lines affected. In many cases there are several companies affected by one tariff line. Therefore, counting cases by company or by commodity can give a different picture.

Varying patterns can be observed in the use of trade contingency measures over time (see Chart 3 and Chart 4). There has been a pronounced increase in the frequency of anti-dumping initiations (and measures), with some tapering off after the global slowdown in 2001-02. There appears to be a reduction, for the most part, in the recourse to countervailing actions, particularly compared with the 1980s. There is far less information about safeguard actions (only available from 1995 to 2007) so any conclusions about trends should be treated with some caution. Having said that, there is nevertheless a distinct increase in the frequency of cases, which is probably related to the global downturn in 2001-02, and an equally sharp reduction in the number of cases afterwards.

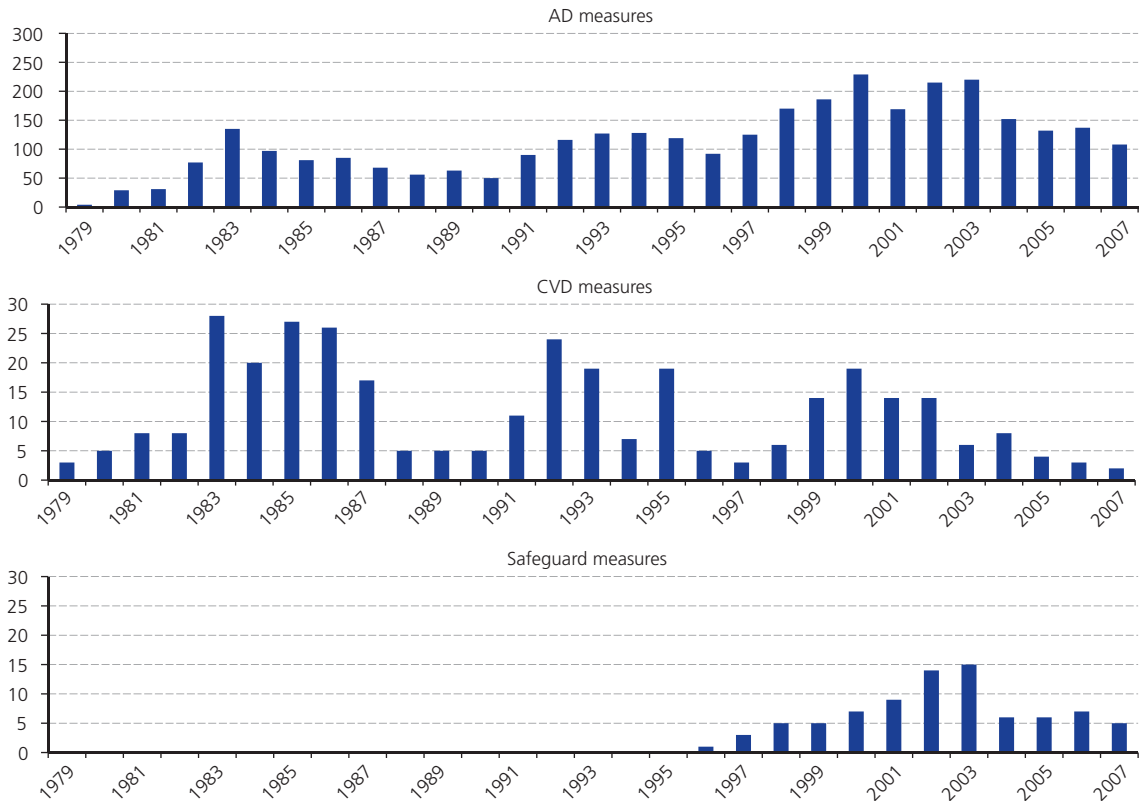
There could be any number of reasons for the increase in the application of trade contingency measures. Many countries that did not have laws on these measure have enacted legislation on trade remedies in recent years. This may, in part, explain why the increase in the use of trade remedies has come from non-traditional users, primarily developing countries. The reduction in tariffs worldwide, from bilateral, regional, plurilateral and multilateral initiatives, have made countries more open and more vulnerable to disruptions arising from foreign trade (Tharakan, 1995). Finally, the impressive growth in global trade in the past three decades means that there is simply a lot more imports that could be the subject of trade contingency action.

**Chart 3**  
Annual initiations of AD, CVD and safeguard investigations



Source: WTO Secretariat.

**Chart 4**  
Annual number of new AD, CVD and safeguard measures



Source: WTO Secretariat.

The data show a far greater reliance by countries on anti-dumping measures than either CVDs or safeguards. On average, countries initiate 205 AD, 26 CVD and 12 safeguard investigations per year; they also apply, on average, 113 AD, 11 CVD and 7 safeguard measures annually. It should be noted of course that simply counting the number of safeguard investigations and measures would tend to underestimate the number of countries they impact since such actions will apply in a non-discriminatory way, while in the AD/CVD context each country/product combination counts as a separate investigation and measure. Some of the possible factors affecting countries' choices among these measures were discussed in Section C.

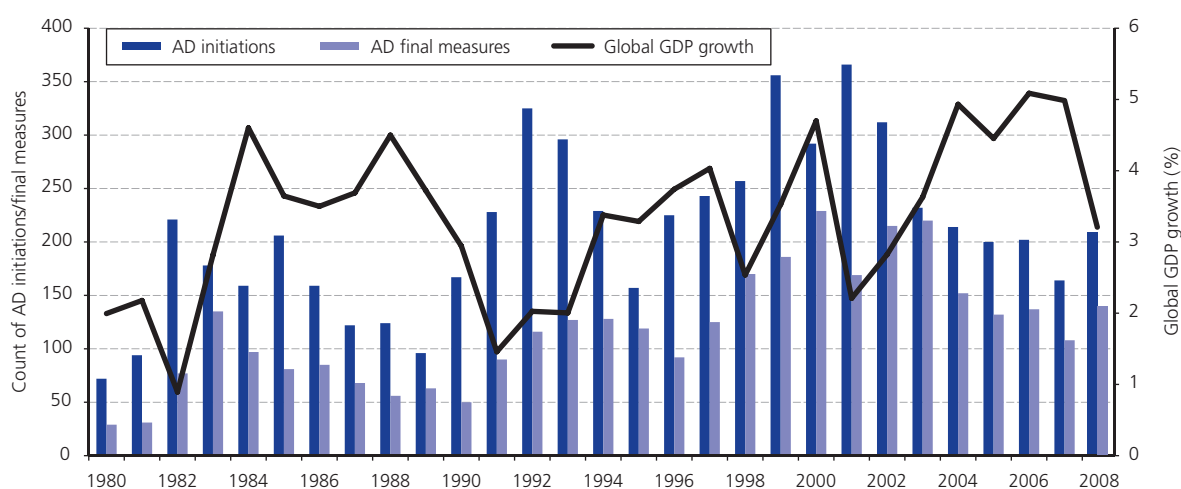
The possible link between trade contingency measures and the level of macroeconomic activity has been noted in several places in this Report. For example, Section B argued that trade contingency measures can be seen as tools for economic adjustment, enabling affected industries to deal more efficiently with the effects of unforeseen external economic events (shocks). In the discussion below, a number of papers cited are able to link countries' recourse to AD action to changes in GDP and the real exchange rate. Thus, within the growth trend noted above, there may be cyclical forces at work which also affect how frequently trade contingency measures are used.

Chart 5 illustrates the pattern for all the countries which, according to the WTO anti-dumping

database, had at least one AD initiation from 1979 to 2008. Thus, it goes beyond the countries for which the link between AD and macroeconomic conditions was documented by existing empirical studies. The chart plots the frequency of AD initiations against global GDP growth over the past three decades. In general, the use of AD initiations rises during slowdowns in the global economy. This is particularly evident during severe downturns: in 1980-82 (recession and the debt crisis); 1991-92 (economic contraction and the Iraq war); 1997-98 (Asian financial crisis); and 2001-02 (bursting of the dotcom bubble and the terrorist attacks on 11 September). With these data, there is some statistical evidence of a negative relationship between global AD activity and macroeconomic conditions, but not all evidence supports this.<sup>7</sup>

The current global economic crisis provides another opportunity to examine the link between anti-dumping actions and the business cycle. In 2008, the number of AD initiations increased by 28 per cent compared with 2007. Eighteen WTO members reported initiating a total of 208 new investigations compared with 163 initiations reported for 2007. The number of new measures applied also increased by about the same rate in 2008. A total of 15 members reported applying 138 new AD measures, 29 per cent higher than the 107 new measures reported for 2007.

**Chart 5**  
**Trade contingent measures and the global business cycle**



Note: Global GDP growth is from the IMF World Economic Outlook database (April 2009).

Source: WTO Secretariat.

ii) Renegotiations

Chart 6 shows the pattern of requests since 1948 for GATT Article XXVIII renegotiations of WTO members' schedules of commitments. The chart only reflects the number of requests from members and does not take into account the number of products for which modification of concessions is being requested. Requests for modification of concessions appear to have been more frequent during the early years of the GATT and seem to have dropped off after the mid-1980s. Given that use of GATT Article XXVIII is just one of a set of trade contingency measures, this decline needs to be examined in light of whether other measures were consequently used more frequently. The decline may reflect the growing attractiveness of other trade contingency measures.

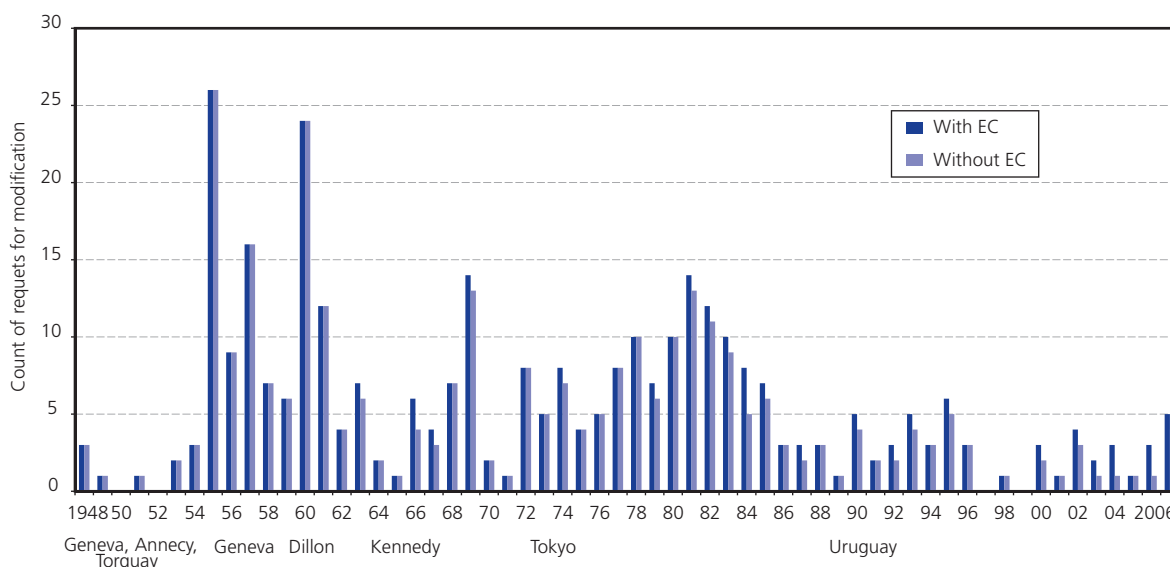
A large number of the requests for renegotiations have come from the European Communities. For the purpose of the chart, the requests of the EC in its earlier forms (EC-6, EC-9, EC-12, EC-15 and EC-25) have been added together but the requests made by its member states before joining the EC are counted separately.<sup>8</sup> Since it is possible that the number of such requests is related to the process of European integration, Chart 6 shows the data with and without the EC requests. Overall, there does not appear to be much of a difference in the pattern over time, whether the EC requests are included or not.

There has been little empirical work attempting to explain the use of GATT Article XXVIII by WTO members. One of the rare studies is by Bown (2004b), who examines members' choice between GATT-legal measures (which includes renegotiations) and GATT-illegal measures for implementing protection. Bown concludes that a member will choose a GATT-legal measure, such as renegotiations, over a GATT-illegal measure only if it faces a credible threat of retaliation with the latter choice. However, the study does not address the protection offered by GATT Article XXVIII compared with other GATT-legal trade contingency measures, such as safeguards.

One reason for the large number of requests for renegotiations is that WTO members may be guilty of making an over-optimistic assessment of their ability to implement commitments agreed to during the round of multilateral trade negotiations. Some of the market access commitments may turn out to entail industry adjustment costs of a magnitude that makes it impossible for that member to implement them.

There have been eight successful rounds of multilateral negotiations since the founding of the GATT: Geneva (1947), Annecy (1949), Torquay (1950), Geneva (1956), Dillon (1960-61), Kennedy (1963-67), Tokyo (1973-79) and the Uruguay Round (1986-94). Chart 7 plots the relationship between the number of

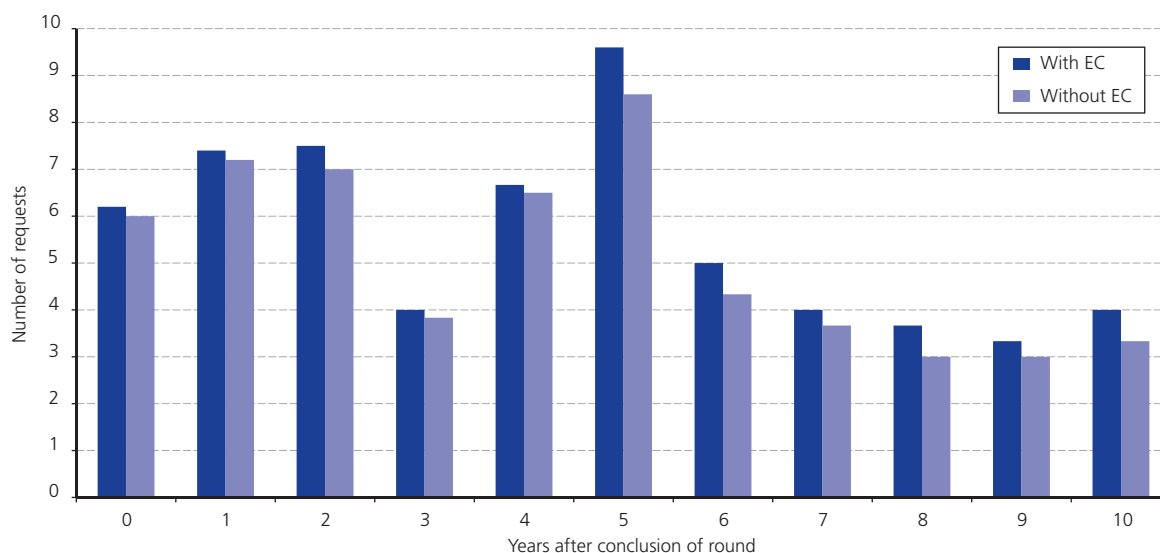
Chart 6  
Number of Article XXVIII requests, by year



Note: For the European Communities, requests made by EC-6, EC-9, EC-12, EC-15 and EC-25 are summed up but the requests made by its member states before joining the EC are counted separately.

Source: WTO Secretariat.

Chart 7  
Number of Article XXVIII requests after round of negotiations



Note: For the European Communities, requests made by EC-6, EC-9, EC-12, EC-15 and EC-25 are summed up but the requests made by its member states before joining the EC are counted separately.

Source: WTO Secretariat.

requests for modifications of commitments and the number of years after the conclusion of each of these multilateral trade rounds. The chart shows that on the year that a multilateral trade round is concluded there is an average of 6.2 requests for renegotiations. One year after the conclusion of a round, this rises to an average of 7.4 requests.

The chart also reveals that the average number of requests for renegotiation of commitments subsequently peaks five years after a successful round, and then declines in subsequent years. This pattern in the data holds whether the EC is included or not. The data support the hypothesis that the demand for flexibility rises after a successful round of multilateral trade negotiations as countries discover that they may have promised too much and need to reverse some of their commitments made even before they are implemented.

### *iii) Using the flexibility available in schedules of commitments*

As discussed in Section C, governments may be in a position to raise their tariffs without violating their WTO commitments if they have not bound all their tariff lines and/or if there is a gap between their applied rate and their bindings – or agreed ceilings. Whether governments make use of this flexibility, or prefer to use other flexibilities, when they want to raise their level of protection in reaction to an

external event, depends on a number of factors. This sub-section examines how often governments have raised their tariffs in the past ten years. In doing this, the assumption is that the tariffs that were raised were either unbound or that the tariff binding allowed the applied tariff to be raised.

Countries may have many reasons to raise their tariffs. They may, for instance, have to raise them when they join a customs union and the common external tariff is higher than their pre-custom union tariff. Or, they may prefer to raise tariffs because they lack the necessary capacity to comply with the procedural requirements for the use of anti-dumping, safeguards or CVDs. In other words, the tariff increases identified in this sub-section should not all be interpreted as a use of the flexibility available in tariff bindings for contingency protection purposes. The objective here is to present the facts more than to interpret them.

Table 3 shows how many countries (for which data are available) have increased their tariffs and how many tariffs (as measured by the six-digit classification of products in the Harmonized System) have increased. This information is shown by year and by size of the tariff increase. Given that the number of countries for which data are available varies across years, this information is indicated in the first row. The variation in the size of the sample prohibits comparisons across years. The second row

**Table 3**  
**Number of tariff increases: selected members and selected years**

	1996- 1997	1997- 1998	1998- 1999	1999- 2000	2000- 2001	2001- 2002	2002- 2003	2003- 2004	2004- 2005	2005- 2006
Sample size (number of WTO members)	19	22	24	37	44	40	46	35	58	72
Total number of positive tariff increases	2473	16174	23050	5896	4777	2587	3178	4825	8195	3452
Number of countries with positive tariff increases	15	17	20	31	37	28	20	28	49	50
Ranges (in percentage points)										
10 ≤ Δt < 15 number of cases	20	168	666	950	223	95	618	294	2508	763
number of countries	5	10	10	17	20	17	10	21	28	30
15 ≤ Δt < 20 number of cases	7	33	25	24	103	61	153	187	527	116
number of countries	4	6	5	11	15	8	8	17	25	10
Δt ≥ 20 number of cases	17	50	294	60	528	748	17	40	230	448
number of countries	5	5	4	8	14	11	6	9	18	7

Source: Based on WTO data, 1996-2006.

shows the total number of products (according to six-digit sub-headings) which experienced a tariff increase over two consecutive years, while the third row shows how many countries increased tariffs for at least one product sub-heading. Between 2005 and 2006, for instance, 50 countries out of a total of 72 for which data are available raised tariffs on 3,452 product sub-headings. The remaining rows indicate the number of countries and the number of tariff lines which increased and by how much. For example, out of the total of 72 countries, seven increased tariffs for at least one product sub-heading by 20 percentage points or more between 2005 and 2006. Taken together, these seven countries raised the tariffs of 448 six-digit product sub-headings by 20 or more percentage points.

The figures suggest that the number of tariff increases has been significant in the last decade. Between 2005 and 2006, the year for which the largest set of data is available (72 countries), a total of 3,452 tariff increases were made. Most of the increases were smaller than 10 percentage points. However, 35 of the 72 countries increased some tariff(s) by 10 percentage points or more.<sup>9</sup> For 763 product sub-headings, an increase of at least 10 but less than 15 percentage points was made, while 116 increases were larger or equal to 15 but smaller than 20 percentage points. A total of 448 were equal to or larger than 20 percentage points. The total of more than 560 tariff increases equal to or exceeding 15 percentage points made by 72 WTO members between 2005 and 2006 compares with a

total of approximately 200 anti-dumping initiations or less than 150 AD final measures, and only a few safeguards or countervailing duties in 2005 or 2006.

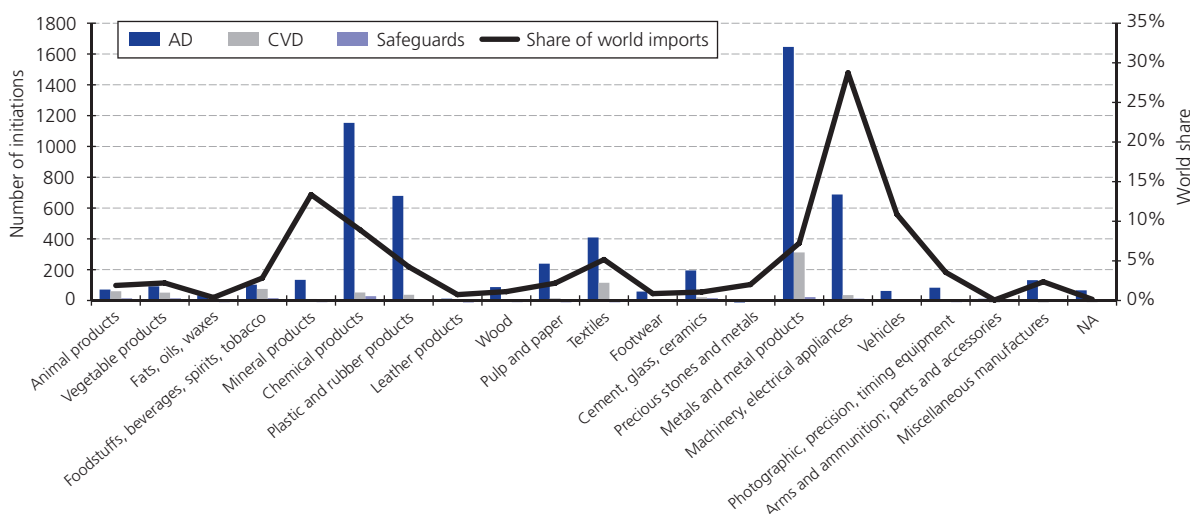
### (c) Sectoral pattern

#### *i) AD measures, CVDs and safeguards*

The evidence shows that anti-dumping measures, CVDs and safeguards are concentrated in certain sectors: metals and metal products, chemical products, plastic and rubber products, machinery and electrical appliances, and textiles and textile articles (see Chart 8). Metals and metal products (27.6 per cent of all AD initiations) and chemical products (19.4 per cent of all anti-dumping initiations) accounted for nearly half of all AD initiations over the last 29 years (1979-2007).

One plausible explanation for this sectoral distribution is that it is due to a sector's relative importance in world trade. This turns out not to be the case since the frequency of the measures against the most targeted sectors is disproportionate to those sectors' share of world trade. For example, metal and metal products and chemical products, which together account for nearly half of all AD initiations, made up only 7.2 per cent and 8.9 per cent respectively of world imports during the 2000-07 period (see Chart 8). It is likely that those industrial characteristics which have been identified in the theoretical literature discussed in Section C and those that will be discussed below

**Chart 8**  
**Number of initiations and world import share, by HS section**

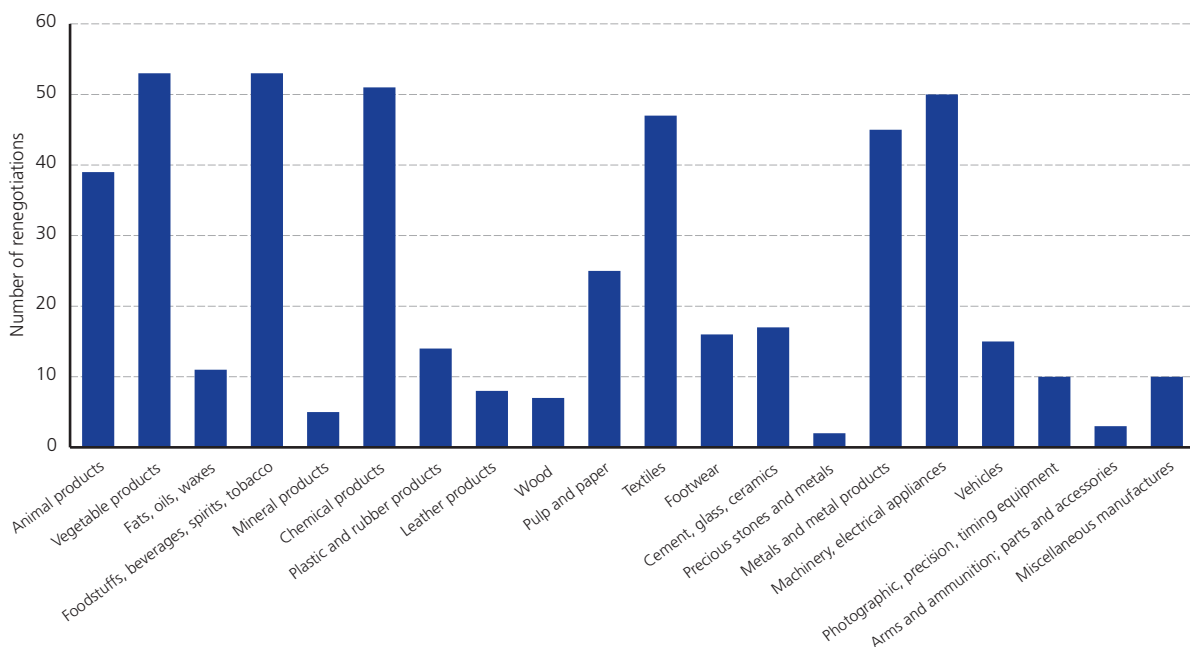


Note: Period of coverage: (1) Anti-dumping: 1979-2007; (2) Countervailing: 1975-2007; (3) Safeguards: 1995-2007.  
 Source: WTO Secretariat; UN COMTRADE.

better explain the sectoral pattern of the measures. These industrial characteristics include the presence of economies of scale, susceptibility to business cycle downturns, capital intensity of the industry, exposure to trade (both on the import and export

side) and the political importance of the sector as measured, for example, by the size of employment. Many of these features appear to characterize the sectors which are the most frequent object of AD measures, CVDs and safeguard actions.

**Chart 9**  
**Number of renegotiations, by HS section**



Note: For the European Communities, requests made by EC-6, EC-9, EC-12, EC-15 and EC-25 are summed up but the requests made by its member states before joining the EC are counted separately.  
 Source: WTO Secretariat.

*ii) Renegotiations*

There is a greater diversity of sectors involved in renegotiations, although those sectors frequently targeted by AD, CVD and safeguard actions, such as metal and metal products, chemical products, plastic and rubber products, machinery and electrical appliances, and textiles and textile articles, figure prominently as well (see Chart 9).

As mentioned earlier in this section, modification of concessions may present a way for WTO members to undo commitments that, in the light of time and new circumstances, could not be implemented by the member. One of the major breakthroughs of the Uruguay Round was to put agricultural trade more firmly under multilateral rules. Given that this was the first time that tariff bindings would be applied in any significant manner to agricultural products and also given the difficulty encountered by members in negotiating market access commitments, it would not be surprising if some of the initial commitments would subsequently have to be renegotiated. This turns out to be the case. From 1995 to 2007, there were 32 requests for modifications of concessions. Of these, 28 requests were in whole or in part concerned with agricultural products as defined in the Agreement on Agriculture.<sup>10</sup> This appears to confirm the role that modification of concessions plays as an instrument of trade flexibility.

*iii) Export taxes*

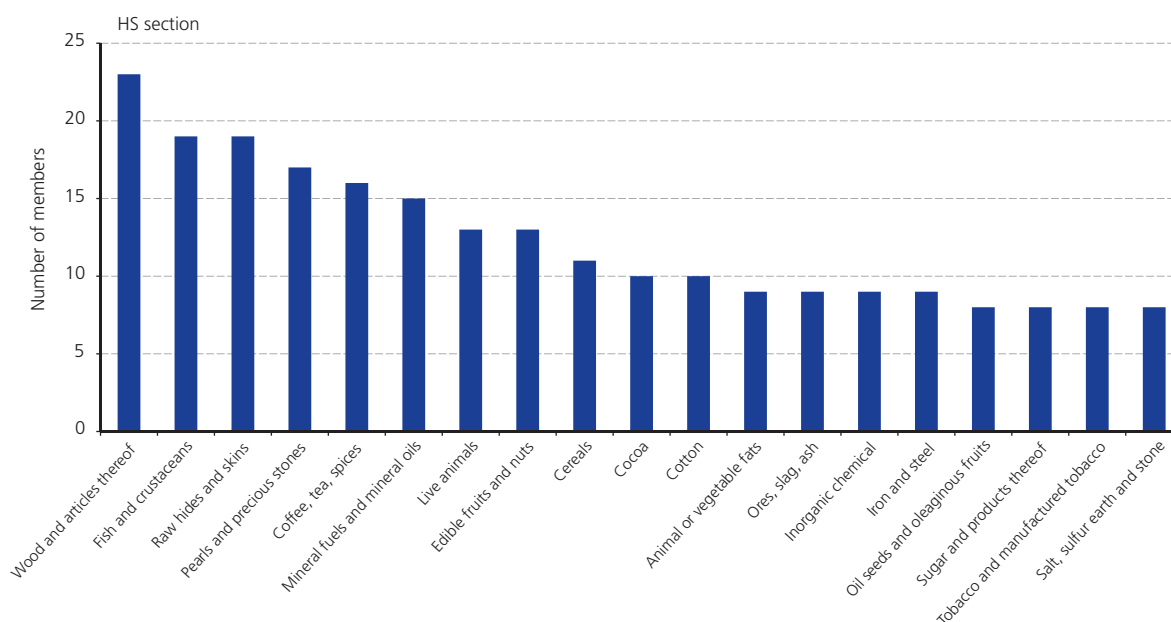
Export taxes are mainly imposed on forestry products, fishery products, hides and skins products, gold and precious stones, agricultural products, such as sugar, coffee and cocoa, mineral and metal products and cereals (see Chart 10). The sectoral pattern is different from that observed for AD measures, CVDs and safeguards.

The data collected from the WTO's Trade Policy Reviews published between 1995 and 2008 show that most WTO members applying export taxes do so quite narrowly. There are only a few countries that apply export taxes on products covered by more than 10 HS chapters (out of a total of 99 HS chapters). The vast majority of members apply export taxes on less than five HS chapters. Of these, 18 members apply export taxes on only one product.

*iv) Tariff increases*

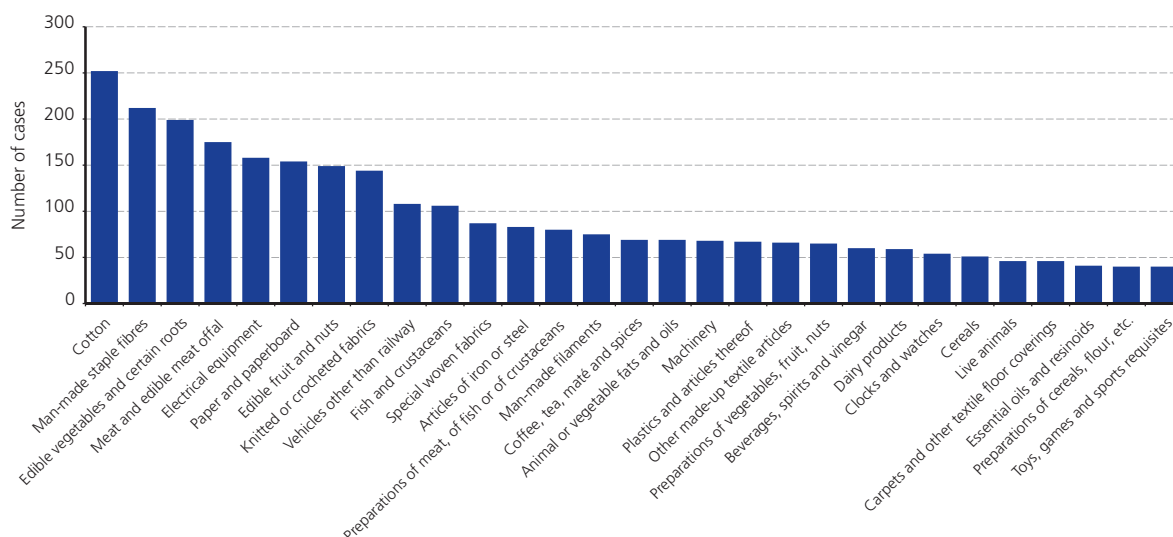
The distribution of tariff increases across product groups is relatively even compared with that of AD measures. From 1996 to 2006, tariff increases larger than 15 percentage points have been made at least once to products in 87 of the 97 HS chapters. Chart 11 shows the 30 chapters with 40 or more tariff increases larger than 15 percentage points. Among the chapters with the highest incidence of tariff increases are both agricultural and non-agricultural

**Chart 10**  
**Number of members applying export taxes, by HS chapter**



Source: WTO Trade Policy Reviews various publications (1995-2008).

**Chart 11**  
**Number of cases of tariff increases of at least 15 percentage points, by product, 1996-2006**



Note: Only chapters for which the number of cases of at least 15 percentage points is more than 40 are shown.  
 Source: WTO Secretariat.

products. Metals and metal products and chemical products, which accounted for nearly half of the anti-dumping cases in the last 30 years, do not figure prominently in the list of chapters with the highest incidence of tariff increases.

**(d) Country pattern**

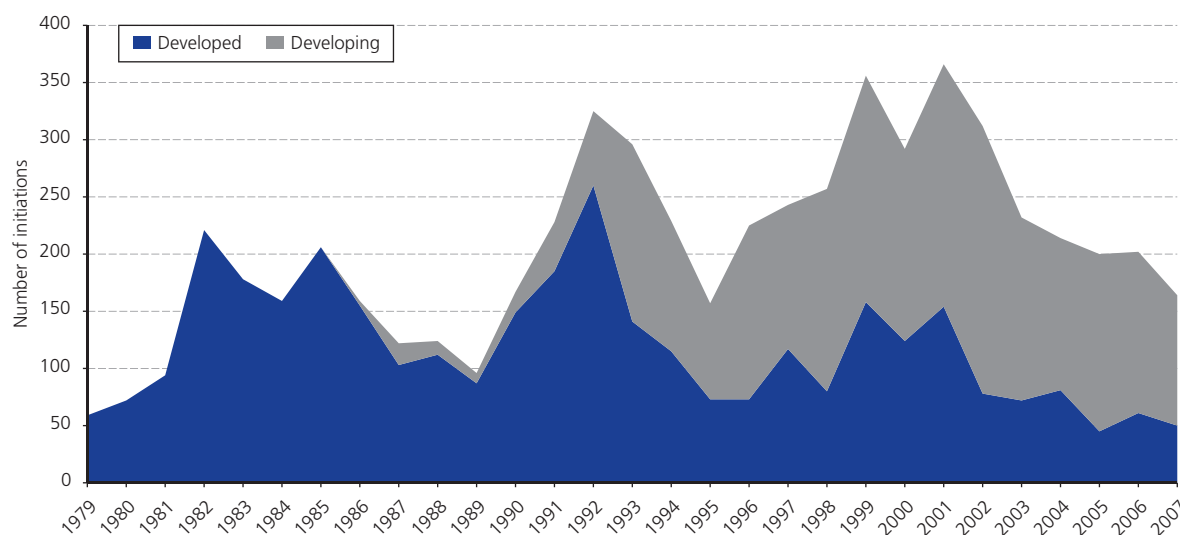
*i) Anti-dumping actions*

Prior to the 1990s, developed countries (primarily Australia, Canada, European Communities and the

United States) were responsible for up to 97 per cent of all AD initiations and 98 per cent of all measures (see Chart 11). However, from the 1990s onwards, developing countries became more active users of AD measures. Since 1 January 1995, they have accounted for 64 per cent of all AD initiations and two-thirds of AD measures. The top five developing countries using AD measures are India, Argentina, Mexico, South Africa and Brazil.

This change in the composition of the users of AD actions was also accompanied by a transformation in the make-up of the countries targeted by AD

**Chart 12**  
**AD initiations, by level of development**



Source: WTO Secretariat.

**Table 4**  
**Number of AD initiations, by user and target, 1995-2007**

Users	Targets		Total
	Developed	Developing	
Developed	262	904	1,166
Developing	566	1,488	2,054
Total	828	2,392	3,220

Source: WTO Secretariat.

petitions. Prior to the 1990s, developed countries were the target of nearly 57 per cent of AD initiations. From the mid-1990s onwards, developing countries became the object of more than 74 per cent of the initiations. From 1995 to 2007, the top five targeted members were China, Republic of Korea, Chinese Taipei, Indonesia and India. The large part of this growth arose from the actions of developing countries themselves. From 1979 to 89, only a total of 13 AD investigations were initiated by developing countries against other developing countries. However, since 1995, a total of 1,488 petitions have been initiated by developing countries against imports from other developing countries (see Table 4).

#### *ii) CVDs and safeguards*

Developed countries are the major users of countervailing duties while developing countries are the principal targets of such measures (see Table 5). This general pattern holds for both the GATT (pre-1995) and WTO periods (post-1995). Developed countries account for 73 per cent of all initiations and 86 per cent of all measures. Developing countries are the subject of 66 per cent

of all countervailing initiations and 61 per cent of all countervailing measures.

The pattern of use is completely opposite in the case of safeguards. Since the establishment of the WTO, developing countries have been responsible for 88 per cent of all safeguard initiations and 89 per cent of all safeguard measures (see Table 6).

Chart 13 shows the WTO members who have been frequently involved in GATT Article XXVIII renegotiations. As explained earlier, the number of requests for renegotiations does not take into account the number of products that are subject to the request for modification of concessions and not much can be inferred from it in terms of the number of tariff lines that were renegotiated. The top five members for requesting renegotiations are South Africa, Australia, New Zealand, the EC and the United States. The figure for the EC includes all the requests made by the EC as it expanded its membership over time, i.e. requests made by EC-6, EC-9, EC-12, EC-15 and EC-25 are added together but the requests made by its member states before joining the EC are counted separately.

**Table 5**  
**Number of CVD initiations, by user and target, 1975-2007**

Users	Targets		Total
	Developed	Developing	
Developed	228	387	615
Developing	57	172	229
Total	285	559	844

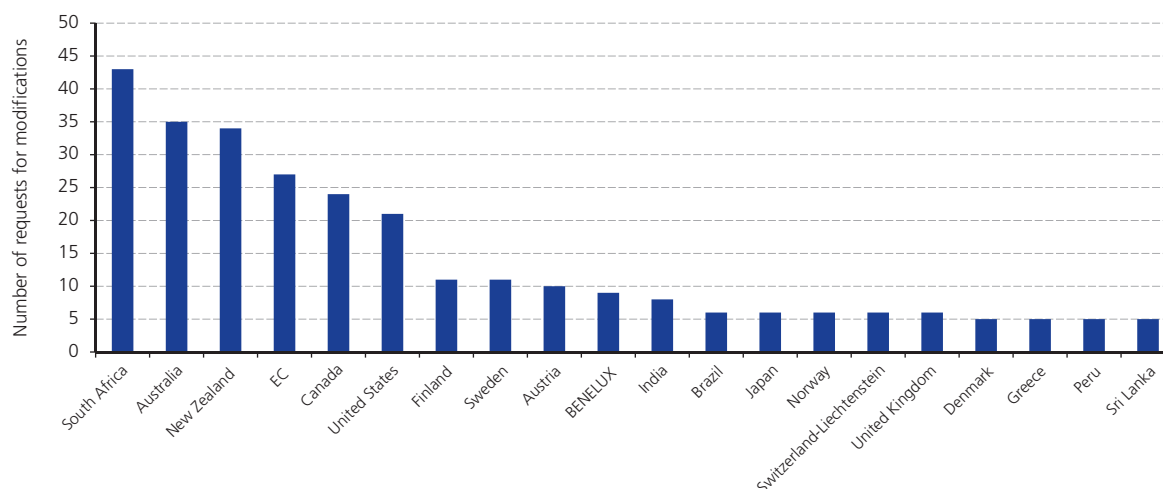
Source: WTO Secretariat.

**Table 6**  
**Safeguard initiations, by user and target, 1995-2007**

Users	Initiations	Measures
Developed	20	9
Developing	143	74
Total	163	83

Source: WTO Secretariat.

**Chart 13**  
**Number of requests for renegotiations, by member**



Note: For the European Communities, requests made by EC-6. EC-9, EC-12, EC-15 and EC-25 are summed up but the requests made by its member states before joining the EC are counted separately.

Source: WTO Secretariat.

### *iii) Export taxes*

Export taxes are mainly used by developing and least-developed countries (LDCs). Of the 23 LDCs reviewed in terms of Trade Policy Reviews, 18 imposed export duties, 38 of the other 70 developing countries renewed taxed exports, while only five out of 30 OECD countries used them. Table 7 reports some of the major users of export taxes in terms of the number of products at HS2 level, according to TPRs.

### *iv) Tariff increases*

It is important to re-emphasize that because of the incompleteness of the data, figures should be interpreted with great care. Among the countries for which tariff data were available for at least two consecutive years from 1996 to 2006, 70 raised the tariff of at least one product subheading by more than 15 percentage points. Chart 14 shows the number of tariff increases larger than 15 percentage points for those countries with more than 20 such increases from 1996 to 2006. The six countries with the largest number of tariff increases in this data set

are all African countries. It is apparent that this list differs quite significantly from the list of new users of anti-dumping actions.

There are two possible interpretations of the findings. One is that the use of tariff increases is for different reasons than those motivating anti-dumping protection. An alternative interpretation is that the countries that chose to raise their tariffs have done so for the same reasons as the new users of AD actions, but that it is less costly for them to increase tariffs than to establish and administer an anti-dumping system.

## **(e) Summary**

While some caution is warranted in interpreting the data, for the most part the findings are consistent with the notion that some contingency measures are used as tools of flexibility. The frequency of anti-dumping actions, countervailing duties and safeguards seems to be linked to changes in the business cycle. For instance, there is some statistical evidence of an increase in global AD activity during macroeconomic downturns.

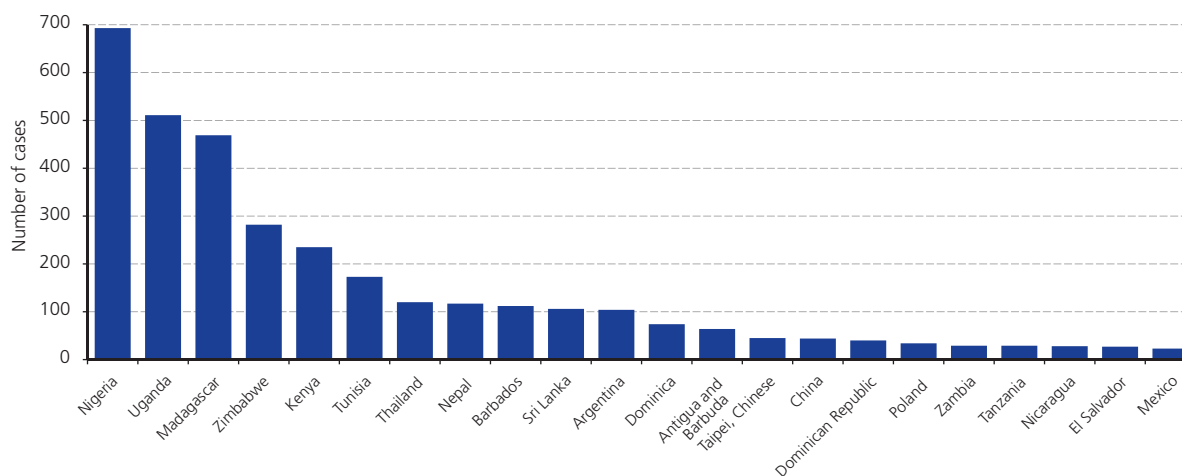
**Table 7**  
**Number of products subject to export taxes as reported in TPRs 1995-2008, selected countries**

Argentina	22	Guyana	7
Sri Lanka	10	Thailand	7
Mexico	8	Mongolia	7
China	8		

Source: TPRs 1995-2008.

Note: Only products listed in the TPRs that could be associated to a HS2 category are taken into account.

Chart 14  
Number of cases of tariff increases of at least 15 percentage points, by country, 1996-2006



Note: Only countries for which there are at least 20 cases of tariff increases of at 15 percentage points or more are shown.

Source: WTO Secretariat.

The frequency of renegotiations of commitments rises after a successful round of multilateral trade negotiations. This is consistent with the explanation that countries only discover belatedly that they are unable to implement their new market access commitments. The large number of requests for modification of agricultural market access commitments after the Uruguay Round, when agriculture was brought more firmly under trade rules, provides further support for this explanation.

The evidence is less clear for increases in tariffs. The sectoral pattern of the tariff increases (while remaining beneath the bound rates) is less concentrated in sectors such as steel and chemicals where anti-dumping action is more frequent. Finally, while export taxes may be used to deal with contingencies such as increases in prices or inflation, their use is often due to other public policy goals, such as generating tax revenues, supporting downstream industries and achieving non-economic objectives.

## 2. CONTINGENCY MEASURES AND THE MULTILATERAL TRADING SYSTEM

A central theme of this Report is the employment of trade contingency measures by countries as a tool of temporary protection to enable them to address circumstances<sup>11</sup> that are unpredictable at the time when a trade agreement is signed. The theoretical literature reviewed in Section B.1 suggests that these flexibilities work as an escape clause that

maintains the overall stability of the world trading system, allowing governments to undertake deeper commitments and reducing the economic and political costs of signing the agreement.

However, economic theory also points to the risk that if the rules for flexibilities are too loose, they can undermine the commitment role of a trade agreement and lead to members backsliding in terms of their commitments. Unfortunately, there is not much empirical literature testing the proposition that trade contingency measures are employed primarily to facilitate further trade liberalization. Much more research, whether it be of a quantitative or qualitative nature or focused on developed or developing countries, needs to be undertaken to see whether trade contingency measures have played this role or not.

One widely noted study is by Finger and Nogués (2006), who examine the experience of seven Latin American countries (Argentina, Brazil, Colombia, Chile, Costa Rica, Mexico and Peru) with trade liberalization and trade contingency measures (see Box 14). Their overall assessment of these seven cases is that the possibility of anti-dumping actions and safeguards was politically necessary to obtain support for liberalized trade policies. In other words, the creation of trade defence mechanisms was often part of the grand bargain to obtain industry acquiescence to liberalization. Once in place, the mechanisms served as a means to deal with protectionist pressures that would otherwise have grown into large-scale threats against the whole policy of trade openness. Furthermore, the

mechanisms contributed to maintaining openness to international trade and to preventing any erosion in the liberalization that was achieved.

To guard against the potential abuse of trade contingency measures, Finger and Nogués point to provisions such as the lesser duty rule and national interest clause that were introduced by some of the Latin American countries in their anti-dumping law. The first provision would require that any anti-dumping duty be lower than the dumping margin (i.e. the difference between the export price and the normal price in the exporter's domestic market) calculated by investigating authorities if such a lower duty is adequate to remove the injury to domestic industry.

The second provision would allow the deciding authority to take no anti-dumping measure or to modify the measure, even if dumping and injury to domestic industry were found, if the larger national interest would thereby be better served by it. Some governments supplemented their safeguard processes with requirements for an adjustment plan and an economic report that quantifies the impact of the requested restriction on final and intermediate consumers and the public interest. The economic report allowed a broader appreciation of the benefits and costs of safeguard protection, not just to domestic industry, but to all affected sectors. Box 14 examines in more detail some of the case studies reported in that volume.

#### Box 14

#### The use of contingency measures in Latin America: evidence based on country case studies

The 1990s saw an increase in the use of trade remedies, especially anti-dumping actions, by developing countries. In particular, many Latin American countries began introducing trade remedy legislation and started using these measures intensively. The experience of these countries in the use of trade contingency measures is particularly interesting because it illustrates the role of these policies during liberalization processes.

Many Latin American countries embarked on the process of trade liberalization during the late 1980s or early 1990s. Argentina and Brazil combined a process of unilateral liberalization started at the end of the 1980s with the creation of a customs union (Mercosur) with Paraguay and Uruguay, which entered into force in 1994. Mexico consolidated its trade reforms initiated in 1983 by signing the North American Free Trade Agreement (NAFTA) with the United States and Canada.

In the case of Argentina, Brazil and Mexico, trade liberalization was part of wider macroeconomic reforms that included stabilization programmes to control inflation associated with pegged or fixed exchange rates, general deregulations of domestic markets in the form of privatization and reduction in controls on capital flows. All three countries had laws concerning trade contingency measures (in particular, anti-dumping actions) in place at the start of their liberalization processes. However, those laws were usually not in line with WTO regulations and did not include safeguards.

The situation changed in the mid-1990s with reforms in AD laws and the introduction of safeguard provisions. In Argentina, the number of AD petitions increased progressively from 1992 onwards, following the same evolution as imports into the country, and climbed again with the entry into force of Mercosur. In Brazil and Mexico, the use of AD started in 1988 and 1987 respectively and reached its maximum in terms of number of initiations in 1993. In all three countries, AD measures were much more extensively used than safeguard measures.<sup>12</sup>

According to Finger and Nogués, the increasing use of AD actions after committing to tariff reductions supports the idea of contingency measures acting as a means to mitigate domestic forces opposed to liberalization by granting temporary protection to sensitive sectors. Without a political promise that domestic industry would be provided the protection that trade agreements allow against “unfair” competition, industry would not have accepted liberalization.

The authors point to other salutary effects from the use of trade remedies. The administrative content of the rules provided the basis for Latin American leaders to change the culture of decision-making from one based on relationships to one based on transparent and objective processes. Trade remedy authorities in these countries often exploited the discretion in the rules not to grant protection even though the standards would have been met. In other words, the rules would have

justified protection in more cases than actual protection was provided.

Finally, Finger and Nogués emphasize that the trade liberalization achieved was not reversed as in previous economic crises. To them, this

indicated that in countries such as Argentina the possibility of using contingency measures may have contributed to the determination of successive governments not to reverse the hard-won achievement of trade liberalization.

The conclusions from the Finger and Nogués (2006) study do not go unchallenged. Miranda (2007) has argued that the experiences of Latin American countries in administering anti-dumping law as part of trade reform programmes were far from consistently positive. Many of the trade remedy measures applied by Latin American countries were challenged at the WTO and found to be inconsistent with WTO requirements.

The argument that flexibilities are required by countries when they commit to further trade liberalization is also compatible with the evidence that the great majority of regional trade agreements

allow the use of AD actions, CVDs and safeguards concerning intra-regional trade. As discussed in Box 15, the few preferential trade agreements which have abolished AD, countervailing or safeguard measures are characterized by deeper integration and a greater degree of coordination or harmonization of their “behind-the-border” policies. This does not imply that the demand for flexibility vanishes as preferential trade agreements achieve deeper integration. Rather, it seems to suggest that deeper forms of integration may require a different set of contingency measures. For example, the structural funds in the EU are one such measure.

#### Box 15

##### Contingency measures in preferential trade agreements (PTAs)

There is very little empirical research on the use of trade contingency measures in PTAs. The available databases on contingency trade measures described in the previous section do not usually indicate whether the action taken against a particular country is a “global”, “regional” or “bilateral” action. Hence it is not possible to ascertain if a particular contingency measure has been taken as a result of increased price and import competition from a PTA partner. Furthermore, some of the measures that are the subject of this Report, such as the binding overhang (i.e. the gap between a member’s bound and applied tariffs), have a meaning only within the framework of the multilateral trading system and have no direct counterpart in free trade agreements.

The notion of “binding overhang” is unique to the GATT and the WTO where market access commitments in merchandise goods by members are expressed in terms of bound rather than applied duties.<sup>13</sup> In free trade agreements, the parties are required to eliminate applied tariffs, although there may be important sectors which are exempt from the requirement and there may be a prolonged period of transition.

Estevadeordal et al. (2009) analyze the market access provisions in 50 of the main PTAs around the world, examining not only tariffs, but a host of other market access related measures, such as non-tariff measures (NTMs), special regimes, rules of origin (RoO), customs procedures and so-called “other” measures. They find that PTAs are able to eliminate duties on 90 per cent of tariff lines by the tenth year of implementation of the agreement. Trade-weighted measures of the depth of liberalization yield similar results. However, there are some parties to PTAs (in general, developing countries) and sectors, such as agriculture, textiles and apparel, and footwear, that do not achieve the benchmark.

The matter may be more complex in the area of trade in services. Similar to merchandise goods, the market access commitments of WTO members under the General Agreement on Trade in Services (GATS) are “bindings” and do not necessarily reflect the actual policy regime applying to the services sector.<sup>14</sup> With respect to free trade agreements, it is possible to broadly distinguish between three approaches to services liberalization that are followed.

One track is the “positive list” approach (such as the GATS) where liberalization applies only to scheduled sectors, and parties further specify the market access and national treatment commitments they will offer to their PTA partners’ service suppliers. The other track is the “negative list” approach in which services sectors are liberalized unless otherwise indicated through lists of reservations for existing non-conforming measures and for future measures, although the study by Roy et al. (2007) suggests that many PTAs using this approach simply bind their existing services regimes. The third track involves a mixture of the two approaches in which some sectors are liberalized following the negative list approach, while other sectors are liberalized following the positive list approach.

A fairly large number of PTAs continue to approach services liberalization using the positive list approach. For example, the study by Roy et al (2007) referred to earlier reviews of the services provisions in 32 PTAs that have been concluded since 2000. It finds 12 PTAs in their sample with a positive list approach, and another four which adopt a mixture of the two approaches. Fink and Jansen (2009) also identify a significant number of PTAs in the Asia-Pacific region with a positive list or hybrid approach to services liberalization. Stephenson and Prieto (2002) find a greater preponderance of negative list approaches to services liberalization in the Americas, reflecting the large number of PTAs that Canada, Chile, Mexico and the United States have signed with countries of the region and their preference for the negative list approach.

The distinction between the scheduled and applied services regime and the notion of an overhang can still be meaningfully applied to free trade agreements which pursue the positive list approach, or a hybrid of the two approaches, to services liberalization. There is useful information that can be inferred from how the overhang is utilized by the parties to the free trade agreement as a tool for flexibility. To our knowledge, however, no research has looked at the question of how the overhang is used in services agreements in PTAs, and whether they are used as a tool to respond to unanticipated events. Again, there is very little information about the treatment of export taxes in PTAs,

although Deese and Reeder (2007) point out that United States’ free trade agreements specifically prohibit export taxes.

There is some research on the nature of contingency trade rules in regional trade agreements. Teh et al. (2009) map the AD, countervailing and safeguard provisions in 74 PTAs and find that the great majority of the PTAs continue to allow the use of trade remedies regarding intra-regional trade.<sup>15</sup> Only nine PTAs have managed to abolish AD actions; five PTAs have done away with countervailing measures; and another five PTAs have disallowed safeguard actions against PTA partners. This seems consistent with the argument that flexibility is required by countries when they commit to further trade liberalization.

However, when the authors test what factors explain why some PTAs are able to dispense with contingency trade measures, they find that these PTAs have a larger share of intra-regional trade and “deep integration”. This refers both to the depth and breadth of liberalization achieved among the members of a regional arrangement and the degree of coordination or harmonization of their policies.<sup>16</sup> Preferential arrangements that create a political or monetary union would represent deep integration. So too would agreements that create a common market through free movement of goods, capital and labour. Deep integration would include the adoption of harmonized or common behind-the-border measures, such as standards, sanitary and phytosanitary measures, and competition policy. Thus, it would appear that beyond a certain point, deeper market integration favours the abandonment of trade contingency measures.

This does not mean that the demand for flexibility vanishes as regional trade agreements achieve deeper integration. Rather, what appears to happen is that deeper integration calls for a different set of instruments to achieve flexibility. De Araujo et al. (2001), for example, have argued that the implementation of common macro- and micro-economic policies in the EC reduced the social and political cost related to the removal of AD actions. They point to the role that resources transferred to new member states (structural funds) played in easing the need for AD as a trade adjustment measure. Thus, there is likely to be a set of flexibility measures that will correspond

to the degree of integration that is achieved by a regional or bilateral trade agreement.

In the same way that the members of the GATT abandoned the old instruments of flexibility, such as exchange rate controls, quantitative restrictions, balance of payments safeguards,

voluntary export restraints, through successive rounds of multilateral trade negotiations and expanded the areas covered by trade rules, so too is it likely that the more integrated regional agreements will replace the current set of contingency measures with a different set of flexibility instruments.

A number of more formal (econometrically-based) papers have attempted to address the question of whether trade contingency measures facilitate more liberalization or whether they are a way for countries to backslide on negotiated commitments. However, these papers do not allow us to answer directly the question of whether contingency measures are introduced by countries in a trade agreement so that they can undertake deeper commitments. To answer this question, the case of trade agreements with contingency measures would need to be compared with the case of trade agreements without trade contingency measures.

Instead, as discussed in Box 15, existing trade agreements have eliminated some but not all forms of flexibilities to address contingency situations. For this reason, econometrically-based studies frame the question of the trade-off between commitments and flexibilities in different ways. Focusing on anti-dumping actions, the first two papers under consideration examine whether the use of contingency measures or the existence of AD laws, respectively, leads to future tariff reductions. A second set of papers asks whether past trade liberalization leads to a future increase in the use of trade contingency measures.

Taking macroeconomic conditions, initial tariff levels both at the national and sectoral level, and industry and country characteristics into account, Moore and Zanardi (2009) test whether past anti-dumping activity (either initiations or final measures) leads to or increases the likelihood of future reductions in applied tariffs.<sup>17</sup> They look at the experience of a sample of 23 developing countries from 1988 to 2004. The countries accounted for the large majority of all AD actions by developing countries during this period.

The authors find that the evidence for these countries is not supportive of the safety valve argument, i.e. that protectionist pressures can be contained by the possibility of using trade remedies in the future. Past use of AD actions is not associated with further

tariff reductions. Instead, it may have led to less rather than more trade liberalization. As the authors note, however, these results must be treated with caution as they do not take into account the value of trade affected in each AD case and are sensitive to the assumptions underlying the specification of the empirically estimated equation.

Kucik and Reinhardt (2008) empirically test what they call the “flexibility hypothesis” in the context of the GATT/WTO negotiations. This hypothesis states that the opportunity provided by flexibility provisions (contingency measures such as safeguards, anti-dumping activity and CVDs) to escape obligations incorporated in multilateral agreements, without having to face excessive retaliation from trade partners, may encourage signatories to engage in deeper commitments and sustain them over time. In their empirical work, they examine four testable predictions: a country joining the GATT/WTO will be more likely to create (and use) a domestic AD mechanism; a country with a domestic AD mechanism will be more likely to join the GATT/WTO; having an AD mechanism will prompt a country to agree to lower tariff bindings than it otherwise would, when it joins the GATT/WTO; and having an AD mechanism will prompt a country to sustain lower applied tariffs than it otherwise would, after it joins the GATT/WTO. They find support for all four hypotheses in their empirical tests.

As noted above, a second approach to the problem is to examine post-liberalization use of trade-contingency measures. All of the studies to be reviewed find an increase in the use of anti-dumping actions in the aftermath of trade liberalization. The study by Feinberg and Reynolds (2007) looks at the pattern of AD activity and reductions of bound tariffs under the Uruguay Round for a sample of 24 countries. They find that, at least for the developing countries in their sample, tariff reductions agreed to under the Uruguay Round not only increased the likelihood of a country using AD protection, but also the total number of AD petitions.<sup>18</sup> Had tariffs not been

reduced by the Uruguay Round, they estimate that AD cases would have been 23 per cent less from 1996 to 2003. They interpret this increased frequency in filings as the means used by a developing country to compensate for the trade liberalization it has agreed to undertake within a WTO agreement.

However, other economists provide a different interpretation of the increased frequency of anti-dumping cases following trade reform. Moore and Zanardi (2008) examine the experience of 29 developing and seven developed countries from 1991 to 2002. In the case of several developing countries which are frequent users of AD action, they find evidence of a “substitution effect”, where trade contingency measures take the place of previous tariff protection. Their argument is that countries reduce their level of tariff protection only to subsequently claw it back through more frequent use of trade contingency measures. They find no similar statistically significant “substitution effect” for other developing countries or for the seven developed countries.

The study by Bown and Tovar (2008) focuses on India, noting that it underwent major trade reform at the beginning of the 1990s and that it had subsequently resorted to intensified use of safeguards and anti-dumping activity. The study sought to identify the reasons for Indian safeguard and AD actions. It found that even taking other factors into account, products that underwent larger tariff cuts as a consequence of the trade reform were, by the early 2000s, subject to an increase in the use of safeguards and AD measures. The study interprets this as evidence of a country finding its trade liberalization commitments too deep to sustain.

To sum up, there is case study evidence of links between contingency measure legislation, its use and the extent that a country has agreed to liberalize its commitments. The argument that contingency measures are needed to encourage countries to undertake deep trade liberalization is also compatible with the existing studies on contingency measures in preferential trade agreements. Evidence based on econometric analysis is, however, ambiguous. While some recent studies provide support for the view that trade flexibilities allow for more trade liberalization commitments (by showing that the adoption of AD law and the use of AD measures are associated with further liberalization), other studies cast doubts on these conclusions. Much more research is needed on whether trade contingency measures have enabled countries to commit to further trade liberalization.

### 3. FACTORS EXPLAINING THE USE OF TRADE CONTINGENCY MEASURES

This section will survey the available empirical literature to ascertain whether contingency measures are being used to respond to economically difficult situations arising from increased import competition. Thus it focuses on the factors that explain countries’ use of these measures. These factors can be grouped into four broad categories: changes in the business cycle and real exchange rate; industry characteristics; the existence of trade contingency legislation; and differences in trade contingency practices by national authorities. While there is evidence that anti-dumping, countervailing and safeguard actions are associated with increased economic difficulties faced by domestic industry, other factors are linked to the characteristics of the industry and national practices.

#### (a) Macroeconomic factors

A number of papers have shown how the frequency of trade contingency measures is linked to reductions in overall demand and changes in the real exchange rate. In an anti-dumping investigation, the petitioning domestic industry has to demonstrate that dumping is taking place and that it has suffered material injury as a consequence. A decrease in the level of domestic economic activity makes it more likely for domestic industry to suffer reductions in sales, profits and employment, all of which make it easier to prove injury. However, real exchange rate changes have opposing impacts on the dumping margin (i.e. the difference between the export price and the normal price in the exporter’s domestic market) and injury to domestic industry.

When the domestic currency undergoes a real exchange rate appreciation, the general response of a foreign exporter servicing the domestic market is to lower the domestic currency price of its exports.<sup>19</sup> This will enhance the competitiveness of exports against domestic industry and make an injury finding more likely. However, this price response implies that the foreign exporter has increased the domestic currency price of shipments to the domestic market relative to its home market by less than the appreciation of the domestic currency, reducing the likelihood of a dumping finding. A real exchange rate depreciation will have the opposite effect, making it easier to show dumping

but increasing domestic industry's competitiveness against imports and making injury less likely.

Leidy (1997) investigates whether domestic macroeconomic conditions influence the pressures for firms to seek anti-dumping and countervailing protection using United States' data from 1980 to 1995. The evidence suggests that such pressures have advanced during macroeconomic downturns and receded with higher levels of resource utilization. The simplest specification of the model he employs indicates that a one percentage point increase in the US unemployment rate results in an expected 54 additional AD and/or CVD petitions in the first year. The conclusion that administered protection ebbs and flows with the state of the economy is fully supported by a variety of alternative specifications of the model he employs.

Feinberg (1989) examines the relationship between real exchange rate changes and anti-dumping filings in the United States from 1982 to 1987. He finds evidence that real exchange rate depreciation of the dollar against the yen led to an increase in AD filings by US firms against Japanese imports. Given the opposing effects of real exchange rate changes on dumping and injury findings, his result suggests that the impact on the dumping margin outweighs the impact on injury to domestic industry. However, he finds no link between US dollar depreciation and AD filings against imports from Brazil, Mexico or the Republic of Korea.

The Leidy (1997) and Feinberg studies only looked at the experience of the United States. A later study by Knetter and Prusa (2003) extends the country coverage to include the other "traditional users" of anti-dumping activity – Australia, Canada and the EU. They expect to find that a decline in domestic GDP leads to an increase in AD filings, since a decrease in GDP makes it more likely that domestic firms perform poorly and therefore increases the chances of finding material injury. Also, a weak domestic economy might lead foreign firms to reduce prices on shipments to the importing country, which increases the likelihood of a dumping finding.

As for foreign GDP, the relationship is more ambiguous. A weak foreign economy may lead foreign firms to lower their prices. This may cause material injury to domestic firms, but since they might lower their prices to all destinations, the effect on the probability of dumping depends on

the method used (price or production cost criteria). Knetter and Prusa find that the number of AD filings increases as the petitioning country's real GDP declines. They estimate that a one-standard deviation fall in domestic real GDP increases AD petitions by 23 per cent. However, they uncover no statistically significant link between AD filings and the foreign country's GDP growth.

With respect to real exchange rate changes, in contrast to Feinberg, the authors find that real exchange rate appreciation is associated with more AD initiations, with a one-standard deviation real appreciation of the domestic currency increasing AD filings by a third. Thus, their results suggest that in the case of real exchange rate changes, the effect on injury to domestic industry is greater than the effect on the dumping margin.

Given the growing importance of developing countries in anti-dumping filings, studies have begun to explore the role of macroeconomic conditions in explaining their AD initiations. Niels and Francois (2006) study Mexico's experience with AD protection between 1987 and 2000 and conclude that pressures for AD protection are influenced by macroeconomic factors. Specifically, they find that the number of AD complaints in Mexico increases when its real exchange rate appreciates or its current account deficit widens, and when manufacturing output slows down.

Aggarwal (2004) examines the anti-dumping history of 99 countries from 1980 to 2000. His sample includes OECD members, non-OECD developed countries, and upper-income, middle-income and lower-income countries. He concludes that while domestic macroeconomic factors (measured by the lag in the growth rate in industrial value added) are important for developed countries, they turn out not to matter for developing countries. Rather, AD actions in developing countries appear to be a response to rising trade pressures and to tariff rate reductions. Developing countries that are in the process of lowering their tariff barriers tend to be active users of AD measures.

## (b) Industry characteristics

This sub-section attempts to find answers to two related questions. First, what economic characteristics of an industry make it more likely to seek the use of trade contingency measures? Second, what features of an industry (economic or otherwise) make

investigating authorities more willing to allow it to use such measures? In the case of anti-dumping, which is the measure that has received the most research attention, the main reasons for filing petitions seem to be the level of imports, the size of employment and the capital intensity of the industry (Blonigen and Prusa, 2003). Recent studies have also highlighted the export orientation of domestic industry as a factor that determines the frequency of AD filings.

With respect to the factors that make investigating authorities more willing to allow domestic industry to make use of trade contingency measures, economic factors such as a reduction in profits or increasing imports are important but a “political” element reflecting the size or importance of the affected industry appears to play a role in determining the frequency of AD filings.

The seminal work by Finger et al. (1982) on administered protection distinguished between the “low” (technical) and “high” (political) tracks of deciding on AD, countervailing and safeguard cases in the United States. Low-track cases are decided according to technical criteria established by law, administrative regulations and precedent. Higher-track cases are less circumscribed by rules and regulations and require a decision by government officials entrusted with discretionary authority, but who are subject to political accountability. The authors differentiate between international and domestic political influences on administered protection.

The size of the domestic industry and the degree of industry concentration indicate its political importance. These factors have a significant impact on the probability of a positive finding. The share of exports that go to the investigated country and whether it is a developed country indicate that country’s political clout. A low share of exports and developing country status reduces the likelihood of trade contingency measures being applied to the investigated country.

Finger et al employ the capital-labour ratio, average wage, the presence of economies of scale and the number of products under investigation to represent the technical factors. They find that US decisions on the existence of dumping were explained by the technical-track factors, while decisions on injury to domestic industry were best explained by the political-track factors.

Hansen (1990) analyzes the factors determining AD activity, CVDs and safeguards granted by the United States International Trade Commission (ITC). Unlike earlier studies, she accounts for both the probability of industry filing for protection (the demand from domestic industry for contingency measures) and the probability of obtaining the protection (use of contingency measures by the government).

Hansen finds that industries with higher levels of imports have a higher probability of filing for protection while industries with already high tariff rates and with growing employment are less likely to seek the use of trade contingency measures.<sup>20</sup> She finds that the probability of the ITC granting the contingency protection increases with the size of the US trade deficit, the size of the domestic industry as measured by employment, change in the industry’s employment and other factors that take account of the industry’s political power and influence.<sup>21</sup>

Baldwin and Steagall (1994) examine the economic factors that best explain the material/serious injury to domestic industry and the reason for decisions of the ITC in anti-dumping, countervailing and safeguard cases.<sup>22</sup> Their empirical study covers 1980 to 1990 for AD and countervailing cases, and 1974 to 1988 for safeguard cases.

With respect to AD and countervailing decisions, the authors find four common factors explaining ITC decisions: a measure of import penetration (ratio of imports to consumption); recent changes in capacity utilization; recent increases in “unfair” (dumped or subsidized) imports; and whether the products have been the subject of previous AD or CVD investigations. In addition, a decline in employment tends to increase the chances of the ITC finding injury to domestic industry in CVD cases. In safeguard cases, affirmative decisions tend to be associated with a downward trend in industry profits and employment and short-term reductions in macroeconomic activity (real GNP). While the authors judge that most of these factors measure the relationship between injury to domestic industry and the causes specified in US legislation, there are some factors such as the import penetration ratio and the level of employment which may not.

Sabry (2000) studies the industry characteristics associated with anti-dumping filings and the outcome of AD actions (positive final ruling by the ITC).<sup>23</sup> He finds that the probability of an industry filing an AD case increases with the degree of

import penetration, the level of concentration in the industry and the rate of capacity utilization. The likelihood of an affirmative outcome becomes greater as the import penetration ratio increases and as capacity utilization and demand prior to the anti-dumping filing decline.

Going beyond the US case, Tharakan and Waelbroeck (1994) compare the dumping/ countervailing duty and injury determinations of the EU with the United States and find that there is broad similarity between the EU and the US patterns. They analyze the relative importance of the technical and political tracks in the EU's AD/CVD decisions using similar variables as in Finger et al. (1982).<sup>24</sup> In line with the US pattern, they find that the technical factors dominate the EU's anti-dumping decisions while the political factors are more important in the EU's determinations of injury to domestic industry.

Finally, it turns out that the export orientation of domestic industry has an impact on the frequency of AD petitions. In a situation where firms in the domestic industry may be competing with the foreign firm in a third market, a successful anti-dumping initiation filed by domestic industry against the foreign firm may divert the latter's sales to the third market and harm the exports of domestic firms to the third market. If the profits of domestic firms are reduced to a greater extent by competition in the third market than in the domestic market, the domestic firms may be willing to forego recourse to AD protection (Furusawa and Prusa, 1996).

Alternatively, domestic and foreign firms may be competing in each other's market, as in the reciprocal dumping model of Brander and Krugman (1983). The greater the share of imports and the lower its exposure to retaliation, the more likely a firm will be to file an anti-dumping case (Blonigen, 2000). The chances of being subject to retaliation are greater when the firm has significant exports to the same country against which it is petitioning. The study by Blonigen (2000) finds that the threat of retaliation significantly lowers the likelihood of US AD initiations against imports from Australia and New Zealand.<sup>25</sup>

### (c) National practices

Research has also focused on studying the practices followed by the authorities responsible for trade

contingency measures. The literature suggests that while multilateral agreements have increased the uniformity of these measures, there are nevertheless significant differences concerning which measures are chosen, the likelihood of positive findings and the impact of the measures.

#### *i) Changing practices over time*

Prior to the 1970s, anti-dumping investigations in the United States were handled by the US Treasury. Irwin (2005) has found that most of these investigations were dismissed by the US Treasury as lacking evidence of dumping. By contrast, he notes that since the Department of Commerce took over responsibility for anti-dumping investigations virtually all petitions have been able to prove dumping and have moved on to the next stage of the process, i.e. determining whether injury to domestic industry has taken place.

Blonigen (2006) notes that the dumping margin (i.e. the difference between the export price and the normal price in the exporter's domestic market) calculated by the US Department of Commerce (DOC) rose from an average of 15.5 per cent in the early 1980s to an average of 63 per cent by 2000. During the same period, the proportion of cases in which the US International Trade Commission (ITC) found material injury to domestic industry rose from 45 per cent to 60 per cent. He concludes that changing DOC practices have played the major role in raising dumping margins.

Hansen and Prusa (1996) study the impact of the 1984 amendment to the US AD/CVD law. This required the ITC to add together – or “cumulate” – imports from different sources when evaluating the existence of material injury to domestic industry. Prior to this, if more than one country was named in a case, the ITC could choose whether to consider the countries' imports separately or collectively. Using data on cases filed between 1980 and 1988, the authors find that “cumulation” increased the probability of an affirmative injury decision by 20 to 30 per cent.<sup>26</sup>

#### *ii) Differences across countries*

Studies of the anti-dumping practices by ten WTO members that are major users of AD actions – Australia, Brazil, China, the EC, India, Indonesia, Mexico, South Africa, Thailand and the United

States – were summarized by Horlick and Vermulst (2005). They identify a number of problem areas in AD practice covering both procedural and substantive issues.

*Procedural issues:* The authors find that in some countries too much information is treated as confidential. This leaves parties involved in an investigation without a meaningful way to defend their interests. In other countries, there is a perceived lack of sufficient disclosure of the essential facts that have led investigating authorities to apply contingency measures. In certain countries, there was a lack of administrative or judicial review of decisions reached by anti-dumping authorities.

*Substantive issues:* The authors highlight the large degree of discretion exercised by national authorities in deciding on a range of important issues. These include the use of constructed normal values in the absence of actual data deemed adequate for the purpose, the treatment of non-market economies and how injury to domestic industry, dumping margins and the causes of injury are determined. The authors also point out that too much confidentiality in authorities' decision-making has caused problems, such as delays in taking decisions and lack of clarity.

Blonigen and Prusa (2003) further highlight a number of salient AD practices where countries differ substantially. These include price undertakings by exporters in lieu of anti-dumping measures, the use of provisional measures, and the lesser duty rule, which stipulates that the anti-dumping duty be lower than the dumping margin if the lower duty is adequate to remove the injury to domestic industry. Their paper finds that price undertakings are more commonly used by some WTO members (e.g. Australia and the EC) than by others (e.g. Canada and the United States).

Papers by Vandenbussche and Waughy (2001), Veugelers and Vandenbussche (1999) and Moore (2005) have identified a number of potential pitfalls regarding price undertakings. These include anti-competitive effects that are worse than even voluntary export restraints (VERs) in the presence of Bertrand duopoly<sup>27</sup> and a loss in product-quality leadership by the domestic industry.

Blonigen and Prusa note that most WTO members require a preliminary determination of injury to

domestic industry before collecting duties, but that many more recent users of anti-dumping start collecting duties a few days after the authorities have accepted the AD petition. They also emphasize how countries differ in whether the AD duty levied is equal to or less than the calculated dumping margin (the lesser duty rule).<sup>28</sup> Canada and the United States mandate that the anti-dumping duty should be equal to the calculated dumping margin. However, Argentina, Australia, Brazil and the EC impose an AD duty that is less than the dumping margin if a lesser duty is adequate to remove the injury. The lesser duty rule is further discussed in Finger and Nogués (2006) in the context of the Latin American experience with trade reform and the use of trade contingency measures (see Box 14).

Finally, Finger et al. (1982) notes that the United States' most "political" trade remedy measure is safeguards. This is because a recommendation to take a safeguard measure must be made by the US President, while both anti-dumping and countervailing actions only need to be decided by the federal bureaucracy. As they emphasize, decisions taken by civil servants minimize the political nature of making a decision. This may explain why there are more AD and CVD filings than safeguards in the United States.

#### (d) Trade remedy law

Section C referred to a rich vein of economic research that has provided new insights into how the presence of trade remedy laws could alter the pricing and output behaviour of domestic and foreign firms, lead to collusion among firms and to other types of strategic interaction. This sub-section focuses on empirical studies that look at whether the withdrawal of trade remedy cases is a sign of collusion and how trade remedy law affects the strategic behaviour of governments. Empirical research that touches on how the existence of trade remedy law affects firms' behaviour is covered in sub-section 4.

Staiger et al. (1994) provides empirical evidence on the collusive use of United States anti-dumping law. According to the model by Prusa (1992) (see Box 5 in Section C), the AD investigation process allows domestic firms to use the threat of AD duties against their foreign rivals and to agree a trade-restrictive arrangement with foreign firms. The agreement is subsequently implemented once the domestic firm

withdraws the AD petition. Prusa's (1992) model implies that a withdrawn petition could have lasting effects on imports if the investigation process allows foreign and domestic firms to coordinate output or prices subsequently. However, the study by Staiger et al. (1994) finds little evidence that withdrawn petitions lead to restricted trade.

A later study by Taylor (2004) arrives at a similar result. He analyzes the effects of anti-dumping cases initiated from 1990 to 1997 that ended in withdrawn petitions without a suspension agreement or VER. He uses monthly import data to estimate the price and quantity effects of the withdrawn cases. He finds that withdrawn petitions do not lead to a decrease in the quantity nor increase in the price of the imports in question. Since withdrawn cases do not have significant trade effects, he concludes that withdrawn petitions are not a sign of collusion among firms.

There is some evidence that being the target of trade contingency measures can trigger the adoption of contingency laws and retaliatory actions by the targeted countries. Vandenbussche and Zanardi (2008) reviewed the pattern of countries' adoption of anti-dumping laws from 1980 to 2003. They tested various hypotheses that may explain why countries adopted such laws and why they did so at a particular point in time. Their findings are consistent with the notion that adoption of AD law is a form of retaliation. The total number of AD actions that a country has been subjected to strongly affects the probability of its adoption of AD law.

There is a similar finding in political science literature. Among the findings in the paper by Kucik and Reinhardt (2008) is that retaliation is one of the main reasons for countries' adoption of AD law.<sup>29</sup> Examining data on 137 countries from 1981 to 2003, they confirm that a country that has been repeatedly targeted by other countries' AD actions has a strong incentive to establish and use an AD mechanism of its own.

Going beyond the adoption of AD laws, Prusa and Skeath (2002) find evidence that strategic considerations are an important explanation for AD actions taken between 1980 and 1998.<sup>30</sup> They discover that countries file about half of their cases against countries that had previously used AD actions against them, suggesting a type of retaliatory behaviour. This proportion is slightly

lower for traditional users (predominantly the EU, the United States, Canada and Australia) but slightly more for new users. Feinberg and Reynolds (2006) also test whether AD filings are motivated by retaliation. Using data on AD filings and measures for 41 countries from 1996 to 2003, they examine the pattern of AD filings in specific industries and countries compared with past AD actions by the target country in that particular industry and for other industries. They find evidence of retaliation as a motive for AD filings.

These results raise the concern that retaliatory anti-dumping activity may lead to a vicious cycle of more AD action. To counter such a possibility, Vandenbussche and Zanardi (2008) recommend revising WTO rules on AD to rule out retaliatory use of AD measures. On the other hand, the rising threat of retaliatory AD actions may have an eventual dampening effect on AD activity. Blonigen and Bown (2003) test the deterrent hypothesis in the case of the United States and find that the threat of retaliation substantially reduced US AD activity from 1980 to 1998. However, the study by Feinberg and Reynolds (2006) discussed above, which covers a larger sample of countries (41) but a shorter period of time, does not find a deterrent effect caused by the threat of AD retaliation. More research on this is needed to see whether these conflicting results could be resolved.

#### 4. THE ECONOMIC IMPACT OF CONTINGENCY MEASURES

As discussed, empirical evidence shows that trends and patterns in the use of some forms of contingency measures – namely, safeguards, AD actions and CVDs – are compatible with the argument that these measures act as a safety valve in circumstances when governments may otherwise be tempted to renege on previous commitments. This is an important benefit of such measures. However, economic theory stresses that there are also costs associated with the use of contingency measures.

Economic theory highlights that contingency measures may affect domestic and foreign economies in many ways. The mere threat of contingency measures may affect companies' behaviour and thus market outcomes even if the relevant legal instruments are not actually used. Once they are used, i.e. when protection is provided, the effects of contingency measures on domestic industry and on foreign and domestic economies is not necessarily

straightforward to predict. Anti-dumping duties can, for instance, lead to unintended market effects that dilute the trade protection effect, such as tariff jumping (i.e. if foreign producers establish a production facility within the domestic economy in order to avoid the AD duty) and trade diversion (i.e. a situation where imports from countries targeted by contingency measures are replaced by imports from other countries). The duties can also hurt domestic consumers because they raise domestic prices.

Most empirical studies on the economic impacts of contingency measures examine only one of the channels mentioned above. Therefore, an overall assessment of the economic impact of the use of contingency measures is difficult. Furthermore, the bulk of the empirical literature focuses on individual measures, in particular anti-dumping measures, and due to data availability there is a predominance of empirical studies on the United States and the European Union.<sup>31</sup>

### (a) Producers' adjustments to anti-dumping legislation

In countries with anti-dumping legislation, AD procedures typically involve the calculation of dumping margins.<sup>32</sup> The further the export market price is below the home market price, the more likely that investigating authorities will find that exporters are dumping and the more likely that AD measures are put in place.

Economists have argued that foreign firms, being aware of the role of dumping margins, may alter their pricing behaviour in order to avoid AD duties. Empirical research on the United States has confirmed that this is indeed the case. Herander and Schwartz (1984), for instance, find that a higher probability of being subject to AD filings decreases foreign firms' dumping margin, where dumping margins are measured as the percentage difference between the price charged by the foreign firm in its home market and the price it charges in the US market, using export prices as the base. Staiger et al. (1994) find that the mere filing of an AD case leads to a decrease in imports and increase in domestic production. Domestic production also increases when authorities rule that dumping is taking place but do not impose a duty because foreign producers enter into price undertakings with the importing country authorities.

To avoid anti-dumping measures, foreign firms may also decide to invest directly and produce in economies equipped with AD or safeguard laws rather than to export to those countries. This phenomenon is sometimes referred to as "*quid pro quo* FDI". Blonigen and Feenstra (1997) find some evidence that the threat of contingency measures has had an impact on the levels of Japanese FDI into the United States, in particular non-acquisition FDI. The increase in FDI has been greater in response to the threat of safeguards than to the threat of AD measures.

### (b) Effects of contingency measures

While the previous sub-section has highlighted that the mere presence of contingency law may affect the strategic behaviour of domestic and foreign firms, this sub-section focuses on the effects of using contingency measures.

#### *i) Trade diversion*

Contingency measures are typically used to reduce imports. If only one or a small group of exporting countries are targeted, as in the case of anti-dumping measures, this action may lead to trade diversion, i.e. a situation where imports from countries targeted by protection are replaced by imports from other countries. Trade diversion would lessen the ability of contingency measures to reduce overall imports. In addition, trade diversion entails costs as "efficient imports" are replaced by imports from less efficient producers in third countries that are not subject to the contingency measures.

The empirical literature has analyzed this potential for trade diversion. The paper by Krupp and Pollard (1996), for instance, focuses on anti-dumping cases in the United States' chemical industry filed from 1976 to 1988. In about half of the cases they examined, imports targeted by AD action fell during the investigation, and this was especially true for the cases that ended in anti-dumping measures being taken. In about half of the cases, imports not targeted by an AD investigation rose during the investigation period, and in more than half of the cases these imports rose after the conclusion of the case.

Prusa (1997) extends the analysis beyond US chemical imports and finds evidence of substantial trade diversion in manufacturing, with the value of

non-named imports rising by 20 per cent one year after the case and over 40 per cent after five years. However, studies focusing on the EU appear to reach a somewhat different conclusion.

The study by Konings et al. (2001) analyzes the pattern of import flows of “named” versus “non-named” importers in EU anti-dumping cases initiated between 1985 and 1990. They find that trade diversion in the EU arising from AD actions is low. They conjecture that this may be due to: (i) lower market concentration levels in Europe; (ii) lower AD duties, as a result of injury margin protection, as opposed to the US system of protection based on the dumping margin – these lower duties limit the advantage enjoyed by foreign firms not subject to the duties; and (iii) greater uncertainty regarding the actual levels of protection in the EU in comparison with the United States. Focusing on India, Ganguli (2008) finds that AD duties reduce the overall level of imports, despite evidence of an increase in imports from countries not subjected to AD duties.

Evidence of trade diversion as a result of contingency measures has been found for AD action, countervailing duties and safeguards. A study focusing on the United States (Bown, 2004a) finds even stronger trade-diverting effects resulting from the use of safeguards in the steel sector in 2002 than from the AD/CVD measures applied in the same sector in the 1990s. One reason for this result advanced in the study is that even though safeguards are in principle applied on a non-discriminatory MFN (most-favoured nation) basis, there is scope for discrimination in the form of exceptions – for example, Preferential Trade Agreement (PTA) partners, developing countries and certain categories of products/firms.

The importance of trade diversion appears to differ across sectors. While research on trade in manufactured products in the United States has shown that trade diversion is significant, a recent paper studying US agricultural AD and CVD cases from 1980 to 2005 (Carter and Gunning-Trant, 2007) finds that for agricultural products targeted by trade contingency measures, trade diversion is relatively unimportant. In the specific cases covered by the study, proximity to the market is vital. This makes a single exporting country a relevant source of imports, thus minimising trade diversion.

Discriminatory contingency measures may also distort a foreign country’s exports to third markets.

Bown and Crowley (2007b) study the effects of the use by the United States of anti-dumping duties on Japanese exports of roughly 4,800 products into 37 countries between 1992 and 2001. They find that import restrictions applied by the United States deflected Japanese exports to third countries and also reduced overall exports of the affected products.

In particular, the authors estimate that US AD duties led to a 5 per cent to 7 per cent increase in Japanese exports to the average third country market (trade diversion) as well as a 5 per cent to 19 per cent decrease in Japanese exports of the product subject to AD duties to the average third country market (trade deflection). The quantification of the trade-diverting effects of contingency measures is important as they may potentially trigger follow-up use of AD duties in other countries.

#### *ii) Anti-competitive effects*

If anti-dumping duties succeed in reducing imports, there is less competition in the domestic market, and domestic firms have the possibility to increase their mark-ups. If this occurs, domestic consumers are hurt in two ways: they suffer from the loss of cheap imports from abroad and they are faced with higher prices due to domestic producers exploiting their market power. Konings and Vandebussche (2005) test whether AD protection affects the market power of import-competing domestic firms in the case of the EU. They find an increase in mark-ups of domestic firms after AD duties were imposed in all cases apart from “seamless steel tubes”, where following the use of AD measures the imports were mostly replaced by other countries.

In a study that focuses on the US steel industry, Blonigen et al. (2007) find that AD duties as well as safeguards and CVDs have had no impact on market power in that industry. However, voluntary export restraints (VERs) that act like quantity restraints (quotas) have led to mark-ups in the US steel industry. The effect of VERs is found to be significant and the authors cannot reject the hypothesis that firms colluded.

#### *iii) Tariff-jumping FDI*

The anti-competitive effect of AD duties is reduced if they lead to tariff jumping, i.e. if foreign producers establish a production facility within the domestic economy in order to avoid the AD duty.<sup>33</sup> While this

may benefit consumers, producers may be worse off. As discussed in Section C, some economists argue that tariff-jumping FDI may even be less desirable than dumped imports for domestic producers. Early papers focusing on Japanese FDI into the United States concluded that tariff-jumping FDI certainly takes place (Barrell and Pain, 1999; Blonigen and Feenstra, 1997; Belderbos, 1997; Belderbos and Sleuwaegen, 1998).

In a more recent paper, Blonigen (2002) uses data on FDI into the United States from various sources and uses firm and product data to examine changes in FDI in reaction to AD duties. He finds evidence of a tariff-jumping response to AD but at a more modest level than the findings in previous studies. Moreover, he finds that the main factor determining the probability of FDI is if the foreign firm is already a multinational and not from a developing country.

#### *iv) Catching-up and industry recovery*

It has often been argued that anti-dumping action is not really about protecting domestic markets from unfair imports, but rather an industrial policy tool in disguise. Konings and Vandebussche (2008) test this hypothesis by evaluating the impact of anti-dumping action on domestic firms' productivity. First, the authors establish that firms in protected industries have on average lower initial productivity than firms in sectors not involved in AD measures. Second, they find that on average a firm's productivity increases following the use of AD action, but this is not enough to close the gap with more productive firms. Moreover, firms with initial high productivity experience productivity losses due to AD action.

Safeguards are often implicitly meant to help targeted industries recover from economic difficulties. Liebman (2006) measures the impact of US safeguards on steel prices in 2002 to test whether these safeguards had the desired effect. He finds that other factors, such as positive macroeconomic conditions, increasing demand from China, and declining production capacity following bankruptcies and mergers, had a bigger impact than safeguards in leading to price increases and that these factors account for the industry's recovery. However, Liebman finds that AD duties had a positive and significant effect on prices.

#### *v) Overall effects*

Contingency measures not only affect domestic producers but also domestic consumers and government income. To the extent that these measures lead to higher domestic prices, consumers may be negatively affected. In order to measure the impact that contingency measures have on overall welfare, it is necessary to take into account all effects, i.e. including those on consumers.

One way to estimate the impact on overall welfare is to use computable general equilibrium models.<sup>34</sup> There are few studies that have followed this approach. One exception is Gallaway et al. (1999). This work shows that in spite of the minor volume of imports affected, the overall cost of such duties can be very large. In particular, the authors estimate that in 1993 the collective net economic welfare cost of the hundreds of active US AD/CVD orders amounted to US\$ 4 billion dollars.

Trade contingency measures applied to intermediate goods in a production process indirectly affect producers of the final goods. Using an econometric approach, Hughes et al. (1997) examine how AD filings have affected customers of domestic producers requesting protection. They find that import restrictions benefit domestic producers in the protected industry. However, they have conflicting findings regarding the impact that contingency measures have on the customers of the protected product.

According to neoclassical trade models, contingency measures benefit domestic producers at the expense of consumers, who have to contend with increased prices. In contrast, trade models that include strategic interaction show that if the contingency measures result in technological spillovers exist among producers, suppliers and customers, trade protection will improve the global competitiveness of related domestic industries, and therefore benefit both producers and consumers. To test this empirically, the authors use daily stock market data of semi-conductor producers and customers (firms that use semi-conductors as input). They studied the impact of 19 events related to anti-dumping filings that resulted in the 1986 United States/Japan semi-conductor trade accord. The authors find evidence that supports the strategic trade hypothesis. In other words, portfolios composed of both semi-conductor producers and semi-conductor consumers

had positive and significant unanticipated returns in response to the same specific events.<sup>35</sup>

## 5. CONCLUSIONS

Existing empirical literature on the economic impact of contingency measures is limited. While there is now greater interest in the use of these measures by developing countries, much of the literature has tended to focus on the use of anti-dumping measures in the United States and in the European Union.

A review of the available data on trade contingency measures suggests the need for better, more timely and comprehensive notifications by WTO members. Notwithstanding some of the gaps in the data, an examination of the patterns and trends in the use of anti-dumping action, countervailing duties, safeguards and modification of concessions is generally consistent with the use of these measures as tools of flexibility. The evidence is, however, less clear for tariff increases and the use of export taxes.

Does the empirical literature support the proposition that the existence of trade contingency measures allows countries to make deeper commitments to trade liberalization? Unfortunately, there is not much empirical literature testing this hypothesis. There is evidence from case studies that contingency measures have assisted some countries in their process of trade reform. However, the results from studies using more formal econometric analysis are ambiguous. Much more research is needed to examine whether contingency measures have enabled countries to commit to further trade liberalization.

Does the empirical literature support the proposition that trade contingency measures are used to manage difficult situations arising from increased import competition? There are hardly any empirical studies that look at this question in terms of tariff increases, modifications of concessions and the use of export taxes. Some support for the hypothesis comes from the empirical literature which shows that countries' use of anti-dumping action is explained by movements in the business cycle and the real exchange rate. There is also support from the

literature focusing on industry-level factors and evidence of injury to domestic industry. However, there may be other factors at work as well.

The empirical literature documents what appears to be a "political" element in determining whether contingency measures should be used. The decision-making process seems to reflect the size or importance of the affected industry. The empirical literature also points to strategic behaviour by firms and governments as reasons for anti-dumping actions. There are a number of differences in practices across countries on procedural and substantive matters that may affect which measure is chosen, the likelihood of positive findings regarding injury to domestic industry and the impact of the contingency measures.

Existing empirical evidence on the economic impact of adopting contingency measures shows that there are costs associated with the use of these measures, but the magnitude of these costs is uncertain.

Contingency measures can have a negative impact on domestic consumers because they result in higher domestic prices, either directly through the application of a measure or indirectly through its effect on domestic producers' market influence. Available studies estimate significant welfare costs from the application of anti-dumping measures and countervailing protection. However, the results from existing studies indicate that the effects of contingency measures on the market power of the import-competing industry differ by country.

There is no conclusive evidence that trade contingency measures are effective in reducing import competition or helping an industry in its restructuring or in catching up technologically. On the one hand, contingency measures will lead to imports from targeted countries being replaced by imports from other countries (trade diversion) and to foreign producers establishing a production facility within the domestic economy in order to avoid the anti-dumping duty (tariff jumping). On the other hand, other economic factors appear to be more important in promoting industrial recovery or accelerating technological catch-up.

## Endnotes

- 1 In alphabetical order, the members are: Argentina, Australia, Brazil, Canada, Colombia, China, Chinese Taipei, European Communities, India, Indonesia, Japan, Mexico, New Zealand, Peru, Republic of Korea, South Africa, Turkey, United States and the Bolivarian Republic of Venezuela. Collectively, they accounted for 91.2 per cent of all anti-dumping investigations conducted and 91.5 per cent of all anti-dumping measures applied from 1995 to 2004 (Bown, 2007).
- 2 The Harmonized Commodity Description and Coding Systems (HS) is a nomenclature developed by the World Customs Organization (WCO) for classifying internationally traded products. Currently, this nomenclature comprises about 5,000 commodity groups, each identified by a six-digit code, arranged in a hierarchy of headings, chapters and sections. The system is used by more than 200 countries and economies as a basis for their customs tariffs and for the collection of international trade statistics. For the purpose of this Report, the products that were the subject of renegotiations, trade contingency initiations and measures were classified based on the 21 sections of the Harmonized System.
- 3 Annex 3 of the Marrakesh Agreement states that: “The first four trading entities so identified (counting the European Communities as one) shall be subject to review every two years”. Currently, the first four trading entities are the European Communities, the United States, Japan and China. For the other WTO members, the procedure is as follows: “the next 16 shall be reviewed every four years. Other Members shall be reviewed every six years, except that a longer period may be fixed for least-developed country Members” (ibid).
- 4 For example, the 2008 TPR on Madagascar records an export tax on “mining product”. But there is no HS 2002 two-digit sector defined as mining product; therefore, this information was not included in the analysis. In addition, several countries applied a generalized export tax on all goods. They are recorded as applying an export tax on all 99 HS 2002 two-digit product categories.
- 5 The Common Analytical Market Access Database (CAMAD) is the result of a joint effort by the WTO, the United Nations Conference on Trade and Development (UNCTAD) and the International Trade Centre (ITC) to integrate their tariff data.
- 6 Section B.2 has provided a categorization of circumstances for which there are economic reasons to justify a temporary increase in tariffs. Two such circumstances are business cycle downturns and unforeseen costs of industry adjustment following trade liberalization.
- 7 Poisson and negative binomial regressions were run on the count of anti-dumping initiations as well as anti-dumping measures on global GDP growth. Only the Poisson regression of anti-dumping initiations on GDP growth was statistically significant and had the right (negative) sign.
- 8 The EC-6 refers to the original six signatories of the Treaty of Rome (Belgium, France, Germany, Italy, Luxembourg, Netherlands); EC-9 includes in addition Denmark, Ireland, and the United Kingdom; EC-12 adds Greece, Portugal and Spain; EC-15 adds Austria, Finland and Sweden; and EC-25 includes in addition Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovak Republic and Slovenia.
- 9 Note that the number of countries per range is not mutually exclusive and cannot simply be added together. For example, there are only 35 distinct countries, not 47, with tariff increases of 10 points or more in 2005-2006.
- 10 Annex I of the Agreement on Agriculture defines the scope of products (“agricultural products”) covered by that Agreement.
- 11 See Section B.2 for a categorization of these circumstances.
- 12 See data in Bown (2007).
- 13 Article II of GATT 1994 requires a member to accord to the commerce of other members treatment no less favourable than that provided for in its schedule of concessions. This schedule contains members’ tariff bindings.
- 14 GATS Article XVI stipulates that each member shall accord services and service suppliers of any other member treatment no less favourable than that provided for under the terms, limitations and conditions agreed and specified in its schedule of commitments. This schedule contains the market access and national treatment services bindings of members.
- 15 Another study that deals with the issue is the paper by Prusa and Teh (2006) which examines how the frequency of AD cases has been affected by the increasing number of preferential trade agreements.
- 16 The term “deeper” integration comes from Lawrence (1996), who uses it to refer to a process in which increased cross-border economic transactions between countries erode the traditional segmentation between areas of domestic policy-making and areas of international policies. See Hoekman (1998) as well.
- 17 The study is based on applied MFN tariffs at the three-digit ISIC (International Standard Industrial Classification) level.
- 18 The study does not mention whether the transition period for the implementation of commitments is taken into account.
- 19 In the general case, the foreign firm will not fully offset the relative cost change arising from the real exchange rate shock with the change in the mark-up.
- 20 The degree of concentration in the industry was not statistically significant in the equation of the demand for contingent protection.
- 21 As proxies for the political influence of the industry, Hansen uses information about party affiliation (Republican or Democrat), membership in the trade subcommittee of Ways and Means, and membership rank of the congressional representative of the district in which the industry is located.
- 22 The authors use probit models to ascertain the significance of a set of economic variables in affecting the likelihood of an affirmative ITC material/serious injury finding. They tried various specifications and report only the best regression results. A probit model is a statistical tool that estimates the probability of an event occurring, which in this example is an affirmative ITC injury finding, based on a set of explanatory variables. It assumes that this probability follows a normal distribution.
- 23 He also examines the determinants of the dumping margin calculated by the US DOC. This tends to increase with the dumping estimate reported by the petitioning industry, the capacity utilization rate and the import penetration ratio.
- 24 International political influence is measured by the share of exports that go to the investigated country and whether it is developed or not. Domestic political influence is indicated by industry concentration and industry size (measured by employment level or value added). The technical factors include capital intensity, average wage,

- existence of scale economies and the number of products covered by the investigation.
- <sup>25</sup> See also the discussion of “tit-for-tat” retaliation in sub-section (d) below.
- <sup>26</sup> The ITC’s decision-making process is modelled using a probit model with explanatory variables that include indicators (i.e. dummy variables) for the time period before and after the 1984 amendment, capacity utilization, change in shipments, import penetration, named country and industry-specific effects, and measures of political influence.
- <sup>27</sup> Under a Bertrand duopoly, two firms behave strategically and compete in price, choosing their respective prices simultaneously.
- <sup>28</sup> Article 9.3 of the AD Agreement only stipulates that the amount of the AD duty shall not exceed the margin of dumping.
- <sup>29</sup> As discussed later in the section, the paper’s central concern is not with retaliation but with the use of AD as a tool of flexibility that increases a country’s ability to accede to the WTO. However, in the process of statistically trying to establish this hypothesis, they include the retaliation motive as one of a set of other variables that may better help explain adoption of AD law.
- <sup>30</sup> Earlier papers by Finger (1993) and Prusa (2001) have noted similar behaviour.
- <sup>31</sup> See Blonigen and Prusa (2003) for a survey of the literature on the economic effects of anti-dumping activity.
- <sup>32</sup> See Section C.2. on the calculation of AD margins.
- <sup>33</sup> Vandebussche and Zarnic (2008) provide evidence that contingency measures indeed hurt targeted foreign producers. They study the effects of the 2002 US safeguards in steel on European firm’s mark-ups and find evidence that EU steel firms saw their mark-ups decrease due to US safeguards, this impact being stronger for single-product firms than multi-product firms.
- <sup>34</sup> See Piermartini and Teh (2005) for an introduction to computer general equilibrium models.
- <sup>35</sup> Also Feinberg and Kaplan (1993) focus on the relationship between upstream and downstream domestic producers, but they take neoclassical theory as a starting point. They argue that an AD or a CVD in the upstream market that increases input prices and thus costs for the downstream domestic firms will cause downstream producers to seek protection too, because it has a higher probability of proving injury and more to gain from import protection. Accordingly they test empirically whether AD/countervailing cases in the upstream sector have been followed by AD/countervailing cases in the downstream market and they find (weak) evidence that this has indeed been the case.