

# The "Equivalence Standard" under Art. 22.4 DSU: A "Tariffic" misunderstanding?

----- preliminary draft, please do not quote or cite -----

## A Synopsis the Argument

This paper poses an attempt to provide a structured law & economics (L&E) approach to the "equivalence standard" in WTO arbitrations under Art. 22.4 DSU. This approach so far has been wanting in WTO scholarship and – more importantly – in the practice of DSB Arbitrators. Art. 22.7 DSU mandates the Arbitrator to "determine whether the level of [suspension of concessions or other obligations, henceforth SCOO] is equivalent to the level of nullification or impairment [N&I]". Decomposing systematically this standard into its constituent parts and assessing what tasks it imposes on the Arbitrator – quantification of the level of N&I according to the nature and intensity of the offending measure; quantification of the level of SCOO according to nature, form and intensity of remedial action; ensuring equivalence – we make four observations:

First, under the current practice of WTO arbitrations there does not exist anything remotely close to an equivalence standard. Arbitrators have not fulfilled their mandate of safeguarding equivalence between N&I and SCOO. To this very day all Arbitrators have refused to engage in any serious effort to address in a meaningful manner the quantification and operationalization the level of SCOO. Worse even, the little substance that Arbitrators have provided on the calculation of the level of SCOO was rather counterproductive and reduced equivalence of the levels of N&I and SCOO to a mere game of chance.

Second, as a consequence of Arbitrators' denial to address the quantification of SCOO, what Arbitrators really have been doing in Art. 22.6 arbitrations so far was to quantify the level of trade damages suffered. Unfortunately, they did so in a chronically flawed manner, committing two systemic errors: 1) That of using of the wrong damage measure, or baseline counterfactual with which the actual situation of the complainant was compared with; and 2) that of utilizing the wrong metric to proxy the unobservable damages suffered by the complaining party. More precisely, under the current practice, Arbitrators construct a counterfactual situation that would exist if the illegality were removed after the reasonable period of time (RPT). This counterfactual may be apt to re-establish the *status quo ante* the breach, yet it is not able to compensate the Complainant for its true damage suffered from the breach of the contract. Constructing a counterfactual apposite to re-establish the *status quo ante* the breach (also called "reliance damages") poses grave practical and methodical problems. Contract theory would rather mandate that N&I be calculated based on a counterfactual that puts the injured party in as good a position as it had been if the violating party had performed as promised (so-called expectation damages). As for finding the right metric to proxy trade damages, N&I is best measured in terms of the

economic losses sustained by the complaining Member in the affected sector(s) – not as direct trade blocked, the way Arbitrators are currently measuring the counterfactual.

Third, as long as DSB arbitrations only dealt with market-access related infringements confined to one sector at issue, the Arbitrators’ systemic calculation error was a mere nuisance. With the advent of the *US – Antidumping Act of 1916* case (DS 136), however, this tariff-centric (“tariffic”) logic of calculating N&I collapsed: Direct trade damages are conceptually inept to deal with cross-sectoral and/or non-market access-related violations of the WTO. They are an imprecise and usually under-compensatory approximation to economic harm suffered by the Complainant. No arbitration under DSU-Article 22.4 so far has challenged this flawed quantification standard to calculate N&I, but the Arbitration Report of *US – Section 110(5)*, an *ad hoc* arbitration under Art. 25.3 DSU is a silver line on the horizon. The Arbitrator there refrained from using trade effects and even used something like expectation damages as a baseline counterfactual.

Fourth, in order to truly fulfill the equivalence standard, Arbitrators will have to enter the virgin territory of quantifying and operationalizing SCOO. They notably can do so without interfering with the *nature* or *form* of retaliation chosen by the injured party (as Art. 22.7 DSU demands). The complaining Member may just as well prescribe its preferred modalities or policy-mix of SCOO – a minor *ad valorem* tariff hike in a number of sectors, prohibitive tariffs on targeted products, suspension of intellectual property rights, etc. Yet it is for the Arbitrator to assign the *intensity* of such action. Importantly, equivalence between the level of N&I and SCOO can be established without using the identical *form* and *intensity* to counter the detrimental effect as was applied in the offending measure: Having “monetized” both the level of damage suffered and of remedy granted *according to the same quantification methodology* suffices to make different actions equivalent (of equal value). Hence, although N&I may have caused by an infringement of some intellectual property right (measured in terms of economic losses suffered), the level SCOO can well occur in terms of an erection of a retaliatory tariff.

It is hoped that this paper contributes to a better understanding of the logic of damages and indemnity in the WTO system, and how equivalence between these two can be achieved.

## B Introduction: A L&E Approach to the Equivalence Standard of Art. 22.4 DSU

Enforcement is a crucial component of every contract.<sup>1</sup> The WTO, like any other contract, is staffed with a remedial regime aimed at establishing a fair and just relationship between injury and punishment. As is well known, the “Dispute Settlement Understanding” (henceforth DSU) regulates the process of litigating and arbitrating and how contractual breach is to be sanctioned.<sup>2</sup> Most violations of the WTO contract fall under the “equivalence standard” of Art. 22.4 of the

---

<sup>1</sup> In fact, contractual enforcement is a *sine qua non* of contracts, since it gives effect to mutual commitments and deters defection. Without enforcement, a contract is likely to break down, or, more probable, will not be concluded in the first place (see WTO 2007, section III.E for an exhaustive introduction of enforcement).

<sup>2</sup> More precisely, the WTO deals with issues of enforcement mainly in Arts. XXIII GATT/GATS and the DSU, although some Agreements feature their own dispute settlement clauses (e.g. the Agreement on Safeguards and Countervailing Measures (SCM); or the Agreement on Agriculture).

DSU, where it is stated that “[t]he level of the suspension of concessions or other obligations authorized by the DSB shall be *equivalent* to the level of the nullification or impairment.”<sup>3</sup>

When the framers of the WTO Agreement authorized the Arbitrator<sup>4</sup> with establishing and safeguarding this equivalence standard in Art. 22.7 DSU,<sup>5</sup> they may have thought that this was a straightforward task. At face value, the equivalence standard consists of three components:

1. Determine whether the amount of nullification or impairment (N&I) proposed by the complaining party is equivalent to the level of N&I of benefits accruing to this Member under the relevant WTO Agreements as a result of the Respondent’s failure to bring its inconsistent measure into conformity with its obligations. If this is not the case, establish the level of N&I, i.e. assess the detrimental effects on the complaining party that a violation of WTO rules causes;
2. Establish the level of suspension of concessions or other obligations (SCOO), i.e. assess the detrimental effect that retaliation causes on the injurer (the responding party);
3. Safeguard equivalence between the levels of N&I and SCOO.

Yet, as is well known and as this paper will argue, the devil lies in the detail, and the practice of arbitrations in the last 13 years has shown that operationalizing the equivalence standard has not been a straightforward exercise, and not one that Arbitrators mastered with distinction.

This paper will present a systematic law & economics (L&E) examination of the calculation of trade damages and remedies in the WTO. A structured and coherent approach to the “equivalence standard” under Art. 22.4 DSU so far has been wanting in the WTO literature,<sup>6</sup> and in the practice of DSB Arbitrators. This paper will lay out which choices contracting parties generally have in choosing a remedial regime, and give a practical and theoretical assessment of these different options. We will discuss what remedial regime rational contracting parties of a trade agreement can be assumed to craft, and what tasks this imposes on Arbitrators. We will then compare these theoretical findings with the Arbitrators’ practice in the WTO. It will be argued that Arbitrators have failed to fulfill their mandate of safeguarding the equivalence standard, because they assumed a “hands-off” approach to the calculation of SCOO. Instead, Arbitrators merely quantified the level of N&I, leaving the decision over the level of SCOO to the complaining party. In addition, the manner, in which the Arbitrators calculated the level of N&I was systemically flawed: it was under-compensatory for the complaining parties, arbitrary in its choice of counterfactuals, and inept to address violations of non-market access WTO entitlements.

---

<sup>3</sup> The alternative standard to equivalence is that of “appropriateness”, as spelled out in Art. 4.10 of the Subsidies and Countervailing Measures Agreement (SCM). When retaliating against prohibited subsidies, complaining parties are allowed to enact “appropriate”, rather than “substantially equivalent” countermeasures. Three arbitrations under the provision of Art. 4.10 SCM have so far been concluded (*Brazil – Aircraft*, *Canada – Aircraft*, *US – FSC*; WT/DS 46, 70, 108).

<sup>4</sup> Footnote 16 of the DSU clarifies that “[t]he expression “arbitrator” shall be interpreted as referring either to an individual or a group or to the members of the original panel when serving in the capacity of arbitrator.”

<sup>5</sup> “The arbitrator [...] shall determine whether the level of such suspension is equivalent to the level of nullification or impairment” (Art. 22.7 DSU).

<sup>6</sup> Some exceptions here are the works of Sebastian 2007, Spamann 2006 and to some extent Lawrence 2003.

The paper will proceed in a straightforward fashion. Decomposing the WTO's equivalence standard into its constituent parts, Section C will deal with the law & economics aspects of the calculation of N&I; Section D is concerned with the L&E of the calculation of SCOO; and Section E will assess ways of safeguarding the equivalence between those two components. Section will draw conclusions and lay out a tentative agenda for reform.

## C Calculating the Level of Nullification and Impairment

In this section, we will examine L&E aspects of damage assessment in the WTO. We will examine theoretical aspects of violation of a trade agreement (such as the WTO), and what principal options contracting parties have when choosing damage benchmarks, measurement proxies for and scope of N&I. We will then proceed to compare these benchmarks with the set of choices that WTO Arbitrators took when they established their interpretation of the level of N&I.

As a matter of principle, injury is a function of *nature* and *intensity* of harm suffered by a victim party (here, the Complainant). If one is to assess the detrimental effects suffered by a WTO Complainant from a violating measure, one has to grasp just which contractual commitment is being violated by a measure in question, and the extent to which this was done.

### ***C.1. Nature of Injury***

Since a contractual violation (partially) undoes the underlying contract, the *nature* of harm incurred by the victim is intricately intertwined with the *nature* of the contract *per se*. Applied to the WTO treaty, this means any measurement of N&I presupposes a clear understanding of the reasons why sovereign countries decided to cooperate in trade affairs in the first place, as well as the nature of WTO commitments exchanged by contracting parties in pursuit of these contracting objectives.

Without going into great detail and siding with Irwin and Mavroidis (2008) and WTO (2007), we believe that the WTO Agreement is a “mixed motive game” (Mavroidis 2007, chapter 1.2.5) of a number of quite heterogeneous countries. Signatories to the WTO were probably motivated by an array of (partially conflicting) economic and non-economic contracting objectives. By signing up on this trade agreement, governments may have wished to promote peace and stability in their regions, propel their power rank in the international system, attract foreign direct investment, fight unemployment, mitigate the influence of special interest groups, or stop trade partners from engaging to excessive “beggar-thy-neighbor” policies. This multitude of objectives has given rise to a number of mutual rights and obligations, contractual commitments or entitlements. Without claiming to be exhaustive, we distinguish at least three different groups of entitlements that WTO Members agreed to exchange: (i) the reciprocal market access entitlement; (ii) various minimum-standard entitlements; and (iii) auxiliary entitlements.<sup>7</sup>

---

<sup>7</sup> The interested reader is referred to Pauwelyn (2006), Schropp (2008a, 2007).

- (i) **The reciprocal market access entitlement.** This entitlement is a WTO Member's right to compete fairly in the goods and services markets of its trade partners – up to the degree granted by each of them. The market access entitlement forms the backbone of the GATT and the GATS. It is composed of *substantive* and *contracting* obligations (see Schwartz 1992). The *substantive* WTO obligations define the reciprocal trade liberalization commitments in form of tariff cuts and service concessions in the four GATS service modes of supply. Substantive trade liberalization concessions form the core of any trade agreement. The level of market access is equivalent to the size of the promise – the number of sectors and the degree of market-opening signatories agree to be bound to. It lies in the contractual nature of the WTO that the trade entitlement is *reciprocally owed*.<sup>8</sup> Yet the market access entitlement consists of more than just substantive commitments to trade liberalization. Integrated into the market access entitlement are *contracting* provisions aimed at maintaining and stabilizing the initially agreed-upon mutual trade balance.<sup>9</sup>
- (ii) **Minimum-standard entitlements.** The bilaterally owed market access entitlement is crucial, albeit not the only commitment exchanged in the WTO contract. As Pauwelyn (2006 at footnotes 91 and 93) aptly states, there are other *non-market access*-related entitlements in the WTO which are inexplicable by the logic of reciprocal tariff concessions alone.

*Minimum standard entitlements*, or *positive integration* norms, as they could also be termed, are contractual concessions that oblige every participating WTO Member to adhere to an agreed core set of legal standards and to abide by the same “rules of the game”. The objective of these minimum-standard provisions is to reap positive concessions from every participating Member (e.g. de Bièvre 2004). Often, positive integration rules mandate the introduction of certain institutional features and procedures – independently of the state of implementation in other countries.<sup>10</sup> Examples for minimum standard entitlements can be found most poignantly

---

<sup>8</sup> Each contracting party enters into a bilateral trade liberalization deal with every other WTO Member, and fixes its level of market access depending on the access to foreign markets it is granted in return. For mercantilist or welfare-economic reasons, it is in the interest of every trade negotiator to extract the most extensive trade concessions possible from other contracting parties and to “give away” as few concessions as possible (Bagwell and Staiger 1999, Bagwell *et al.* 2002, Bagwell and Staiger 2002). Whether or not an accord between parties *A* and *B* frustrates previous market access commitments of another third party *C* is *a priori* irrelevant to the governments of Members *A* and *B*, as long as doing so does not affect their respective utilities. The market access obligation is consequently organized in a web of bilateral deals. Despite the most-favored nations obligation of Arts. I GATT and II GATS (rules geared towards reducing transaction costs and negative spillovers), the right to trade is not owed to the collective membership, but *directly* to every signatory.

<sup>9</sup> Examples for *contracting* provisions are non-discrimination stipulations (e.g. Art. I and III GATT); a prohibition of quantitative restrictions (e.g. Art. XI GATT); codes of conduct detailing how to deal with non-tariff barriers (e.g. Art. III GATT, or the Agreements on Subsidies and Countervailing duties, Technical Barriers to Trade, or Rules of Origin). Explicit exceptions to the right to compete in foreign markets also form part of the trade entitlement (such as Arts. IV, XVII, XXIV GATT, or the “Enabling Clause”), as do waivers (e.g. Art. IX of the Marrakech Agreement).

<sup>10</sup> Positive integration norms are based on a “thou shalt...” (prescriptive) logic, whereas negative integration norms are based on a “thou shalt not...” (prohibitive) logic. Positive norms mandate the establishment of a certain result or effect, while negative norms prohibit certain behavior or outcomes. Take the TRIPS Agreement: Part II (Arts. 9-40) is entitled “Standards concerning the availability, scope and use of Intellectual Property Rights”. These articles lay down for each intellectual property right in succession, what the applicable minimum standards for protection are, and to what extent – and how – Member countries are required to comply with them.

in the multilateral TRIPS and ILP Agreements.<sup>1112</sup> The so-called new issue areas of the WTO may be seen as accords based on a motivation quite distinct from the reciprocal exchange of market access.<sup>13</sup>

What sets minimum-standard entitlements apart from the bilaterally owed market access entitlement is that the former are owed to the contracting community as a whole, i.e. they clearly have a *multilateral* ambit. Their *erga omnes partes* logic is distinct from a bilateral ambit:<sup>14</sup> With reciprocal entitlements, the *rights* of one contracting party constitute the *obligations* of the other. A multilateral entitlement, on the other hand, is not exchanged on a *quid pro quo* basis; it is *owned by* the entire membership, as well as *owed to* the WTO community as a whole. If a Member violates its multilateral entitlement to, say, supply patent protection and establish a functioning patent office under TRIPS, this Member impairs the competitive opportunities of all other Members. It brings down the general level of operations and harms the system as a whole.

**(iii) Auxiliary entitlements.** The WTO also comprises a vast number of auxiliary entitlements – social ordering devices that supply the trade agreement with a fundamental structure necessary to facilitate the underlying exchange that the substantive entitlements circumscribe. Auxiliary entitlements are also phrased as positive *erga omnes partes* norms and rarely leave any degrees of freedom to transactors; they oblige all contracting parties to the same degree. We propose to distinguish four types of basic auxiliary entitlements in the WTO: (i) procedural rules;<sup>15</sup> (ii)

---

<sup>11</sup> The acronyms stand for “Agreement on Trade-Related Intellectual Property Rights”, and “Agreement on Import Licensing Procedures”, respectively. Note, however, that that other Agreements, such as the “Agreement on Technical Barriers to Trade”, and the “Agreement on Sanitary and Phytosanitary Measures”, the “Agreement on Government Procurement”, or the “Agreement on Rules of Origin” also contain numerous positive integration norms.

<sup>12</sup> The acronyms stand for the “Agreement on Subsidies and Countervailing Measures”, the “respectively.

<sup>13</sup> Other “new WTO issues”, such as competition, investment, trade facilitation, labor and environment, belong to the same category of positive integration rules. These new issues have not yet been cast into WTO Agreements, but have been on the bargaining table for some time (for in-depth introduction into new trade policy issues, see Hoekman and Kostecki 1995, Jackson 1997, pp. 305-18, Trebilcock and Howse 2006).

<sup>14</sup> Multilateral obligations are sometimes called *obligations erga omnes partes* (cf. Pauwelyn 2001), since they are owed to the entire membership. This nomenclature, however, may be perceived as misleading, because *as a matter of positive law* (by virtue of Art. 3.4 DSU), WTO rights and obligations are *de iure* applicable to *all* WTO Members. Based on this insight, some scholars have argued that reciprocity and bilateral market access-related rights and obligations are a thing of the past, and that all contemporary WTO-legal obligations have a multilateral ambit (e.g. Pauwelyn 2000, Charnovitz 2001; 2002a, Jackson 2004). We beg to differ: As we explained in footnote 8 above, the *logic* of the market access entitlement is inherently bilateral, even though it is *de iure* owed to the all WTO Members. We will hence use the terminology *erga omnes partes* only for those entitlements that logically have a multilateral ambit.

<sup>15</sup> The WTO knows a whole range of procedural rules that delineate organizational issues, such as time-lines (e.g. those laid down in Arts. 4, 8, 16, 17, 20 and 22 of the DSU), rules of decision-making (Art. IX of the Marrakech Agreement), voting and selection procedures (e.g. Art. 8.4 DSU on dispute panel composition), disclosure requirements (such as those in Art. XXIV.7 GATT, or Arts. 3, 4, 10 or 25 of the DSU), or general provisions of *modus operandi* (such as Arts. XXII, XIV and XV of the Marrakech Agreement on *accession, acceptance, entry into force and deposit, and withdrawal*, respectively).

transparency entitlements;<sup>16</sup> (iii) obligations owed to the Institution;<sup>17</sup> and (iv) “external” entitlements.<sup>18</sup>

The reader may prefer a different classification of the various WTO entitlements, yet one thing seems evident: The WTO probably is a *multi-objective*, certainly however a *multi-entitlement* treaty, and any calculation of injury or damage that does not take into consideration the *nature* of the entitlement that is being violated by an offending measure is prone to produce serious flaws: An infringement of a reciprocal market-access entitlement is likely to provoke quite a different set of detrimental effects on complaining parties than a breach of an *erga omnes partes* commitment.<sup>19</sup> The significance of this categorization of the *nature* of injury will hopefully become clearer later on in the paper.

## **C.2 Intensity of injury**

If one is to assess the degree, or intensity, of injury caused by the violation of a certain contractual entitlement, one has to take into closer consideration two basic issues: (i) the specification of a proper baseline or appropriate counterfactual; and (ii) finding the adequate scale and scope, i.e. the right unit of measurement in which to quantify N&I and the right mix of effects to consider.

### **C.2.1 Constructing the right counterfactual**

Quantification of damage stemming from contractual violation necessarily involves the comparison between an *actual* situation – the world as it exists today in the presence of a continuing violation, and a *hypothetical* situation of what the world could look like in absence of that unlawful measure at issue. In principle, contracting parties can choose between different counterfactual scenarios against which to compare the actual violation-ridden situation. We want to distinguish between three different scenarios that have received wide attention in the L&E

---

<sup>16</sup> Transparency obligations are scattered across WTO Agreements. Their objective is to reduce unnecessary search and error costs in connection with economic exchange. See Wolfe’s 2003 or WTO 2007, chapter II.C.5.

<sup>17</sup> Examples for obligations owed to the Institution are yearly financial contributions by Members to the WTO or the obligation to assign trade experts to serve on dispute panels.

<sup>18</sup> External entitlements delineate contractual freedom in the WTO. International trade has crucial ties to many other activities of international concern (Pauwelyn 2003). Hence, PIL is the relevant “playground”, or domain in which WTO Members are free to contract. Of special importance are peremptory norms of international law (*ius cogens*), which have acceptance among the international community of states as a whole, not for WTO Members only. Unlike norms of customary international law which can be modified by mutual consent or subsequent practice, WTO Members must not “contract around” *ius cogens* norms.

literature (e.g. Shavell 1980, Rogerson 1984, Shavell 1984, Cooter and Eisenberg 1985, Edlin and Reichelstein 1996, Mahoney 1999, Masten 1999):

- a) the construction of the hypothetical situation that would exist if the illegality were removed (so-called *reliance* measure of damage calculation);
- b) the construction of the hypothetical situation that would exist if the initial deal had never contained the obligation that was withdrawn by the responding Member in the first place (*restitution* measure);
- c) the construction of the hypothetical situation that would exist if the illegality had never been committed and the injurer had always performed according to the contract (*expectation* measure)

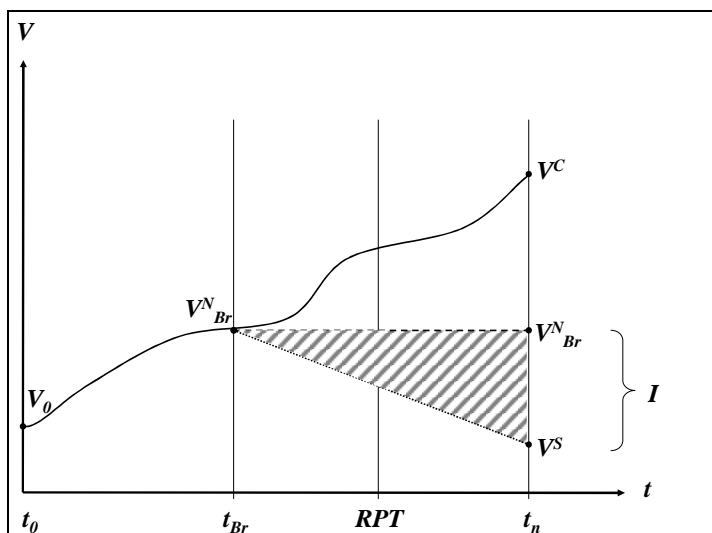
These three counterfactual scenarios differ significantly in the resulting amount of N&I to which the complaining party will be authorized to retaliate.

#### A *The reliance measure*

The *reliance* remedy measure hypothesizes a world that would exist if the illegality were removed once and for all. Such a counterfactual demands the level of damages to be sufficient to restore the victim's *status-quo ante* the breach (Mahoney 1999, Mahlstein and Schropp 2007). To see the implications of this applied to the WTO context, consider Figure 1. This figure represents a stylized cooperation scenario between two contracting parties, seen from the point of view of an injured party.

---

<sup>19</sup> To see the logical and practical differences between a market-access related and an *erga-omnes-partes* related violation, consider the *Norway – Trondheim Toll Ring* case from 1991 (a GATT dispute). Norway failed to respect its transparency obligations under the GPA, because the municipal authorities in Trondheim assigned un-notified public works to a Norwegian company. This infringement of the GPA transparency provisions may have led to damage. Yet, who was harmed by the measure and how to quantify such damages? Note that in principle *any* company operating in the relevant field and originating from a GPA signatory country could have won the contract bid. Hence, *any* supplier could have successfully litigated against Norway (cf. Mavroidis 1993). Contrast this with the illegal erection of country A against country B: The impact of the offending measure can readily be assessed due to the bilateral nature of the market-access entitlement.



**Figure 1: Reliance damages as baseline for the calculation of N&I**

Suppose a trade agreement between two countries,  $C$  (for complainant) and  $R$  (for respondent). At some point in time ( $t_0$ ), the two countries decide to conclude a trade-liberalization treaty, because both countries realize that they could benefit from economic efficiencies generated from market-opening, rule of law, specialization gains, and trading activity. The vertical axis of Figure 1 plots the complainant's welfare level ( $V$ ), the horizontal axis is a time ray. Point  $V^0$  marks the welfare level in the non-cooperative past in absence of a contract.<sup>20</sup> As time goes by, this mutual trade liberalization contract reaps the hoped for efficiencies, and hence welfare gains. Signatory  $C$  benefits from a productive exchange of goods and services with  $R$ .  $C$ 's welfare level is dependant on the frequency of interactions, the depth and breadth of initial trade liberalization commitments, and the quality of the institutional design agreed to *ex ante*, i.e. at the time of the conclusion of the contract.

At some point in time ( $t_{Br}$ ), the respondent  $R$  – for whichever reasons – commits a breach of the contract (suppose a protectionist tariff hike or tariff-equivalent red-tape measure).  $C$  suffers damage from this violation and initiates a trade dispute. Time passes as the litigation proceeds through the different dispute stages, while  $C$  continues to suffer injury from the offending measure. At present ( $t_n$ ), the complainant's welfare level be  $V^S$  – instead of  $V^C$ , the welfare level that  $C$  would enjoy under continuing performance on the part of signatory  $R$ .

Assuming that the two contracting parties have agreed on the design of a remedial regime such that N&I is calculated according to *reliance* damages, A WTO Arbitrator is mandated to construct a counterfactual situation that would exist if the illegality were removed at  $t_{Br}$ , and starting from at  $t_n$  full cooperation were to resume on the same level as before the breach. It is important to notice that all the gains from continued cooperation that would have been reaped between  $t_{Br}$  (the time of the violation) and  $t_n$  (the present) are not taken into account. The time lapsed between  $t_{Br}$  and  $t_n$  is essentially treated as if it had not happened, or as if no contractual exchange had occurred meanwhile and hence no trade efficiencies realized. In other words, with respect to the violated

<sup>20</sup> Note that point  $V^0$  represents the Nash-level of cooperation, which is the degree of cooperation with no contract in place. The cooperation at the Nash-level may well be positive and different from a zero transaction-level.

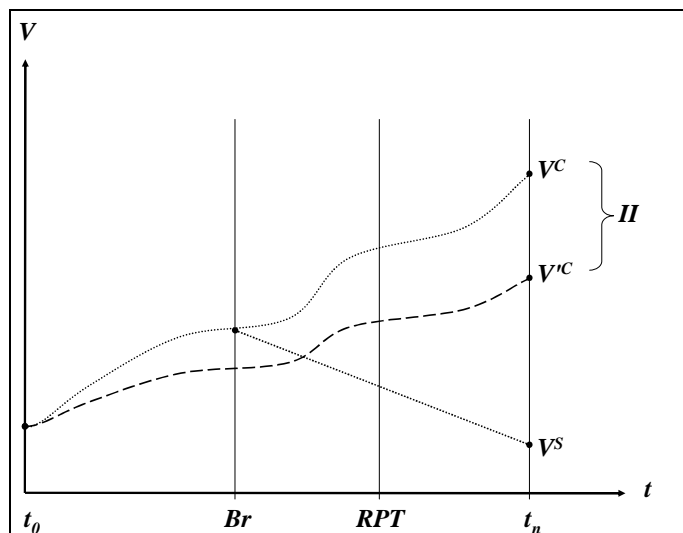
obligation the Arbitrator essentially is tasked with constructing the Nash-payoff at the time of the violation ( $V_{Br}^N$ ), and to calculate the injury as the difference between the complainant's actual welfare level  $V^S$  and the constructed welfare level  $V_{Br}^N$ . Taking into consideration the time lapsed between the breach yields a level of damage in the amount of the hatched triangle.

### B The Restitution Measure

The *restitution* damage measure re-establishes the *status quo ante* the *contract* with respect to the measure in question (Mahoney 1999). The level of N&I must be sufficient to restore the Nash-level that persisted before the contract in the non-cooperative past with respect to the violated commitment. In other words, restitution damages aim at reconstructing what the contract would look like if the offending measure in question had *never* been part of the initial deal. If restitution were the contracting parties' choice of damage measures, the WTO Arbitrator would be given the task of comparing reality to a counterfactual situation that would exist if the initial trade agreement had never contained the offending measure in the first place. To wit, the Arbitrator is to reestablish the *status quo ante* the contract net of the withdrawn contractual provision or in other words to *rebalance* the trade contract *at a lower level* of cooperation. To be sure, if the trade concession that the responding party withdrew due to its violation had not been part of the initial trade deal, the complaining party would not have made as extensive trade liberalization commitments as it did in reality. Had the Complainant known that the withdrawn measure was not part of the initial deal, it would have made less deep trade liberalization commitments from the start. The contract consequently would have featured fewer mutual commitments, less depth and breadth, and therewith yielded less trade efficiencies.

Note that reestablishing the *status quo ante* the contractual obligation basically means that the Arbitrator is charged with replicating what Members do when one requesting Member asks to modify its concessions under Arts. XXVIII GATT or XXI GATS.

The outcome of calculating N&I according to the restitution measures is illustrated in Figure 2:



**Figure 2: Restitution damages as baseline for the calculation of N&I**

Under a restitution scenario, the Arbitrator assesses how the absence of the withdrawn concession would have changed the content of the initial trade deal at time  $t_0$ . In essence, he is tasked with

retracting (or retrofitting) the signatories' cooperative zeal *without* the offending measure and its reciprocal commitment on the part of the complaining party, and how cooperation would have played out during the entire contract history. This hypothetical situation is then compared to  $C$ 's payoff under the counterfactual of continued cooperation under the real contract at the present  $t_n$ . In other words, the Arbitrator ought to compare  $V^C$  and  $V^{C'}$ . The net present value of the difference between the hypothetical welfare levels  $V^{C'}$  and  $V^C$  then makes up the injury suffered by the complaining party.

### C      *The Expectation Measure*

*Expectation* damages are a counterfactual that according to a world in which the victim of a contractual violation is compensated for all efficiency losses suffered by it due to the measure in question. It is the calculation of that amount which puts the complainant in as good a position as it would have been had the injuring party performed according to its contractual obligations. Expectation damages are equivalent to the *replacement value* that exactly makes the victim indifferent between the injurer's performance and his default.<sup>21</sup> Expectation damages are essentially what is called "commensurate damages" in game theory: They insure the victim against any dynamics that unfold *ex post*.<sup>22</sup>

To see the difference between reliance, restitution and expectation, consider Figure 3: The Arbitrator is essentially charged with retracting the efficiency path of cooperation that existed before the violating measure. Starting from  $t_{Br}$ , he constructs the efficiency path of the trading agreement up to the present  $t_n$ . At that time, he compares the hypothetical cooperation level  $V^C$  with the actual level  $V^S$ .

---

<sup>21</sup> In other words, expectation damages aim to reconstruct what the world would look like if the measure in question had never been committed.

<sup>22</sup> The difference between expectation and reliance damages is that reliance compensates the victim for direct harm suffered, but leaves aside other effects and foregone opportunities. Mavroidis (2000 at p. 800) argues that expectation damages are strictly higher than *damnum emergens* (direct harm suffered). Rather, they must be interpreted as *lucrum cessans*: All further efficiency costs (opportunity costs or losses in value-added) caused by the partial breach of the agreement over and above direct effects must be indemnified. To be sure, it is exactly these contractual efficiency gains that motivated transactors to conclude the contract in the first place (see also Schropp 2005 at footnote 10 and accompanying text).

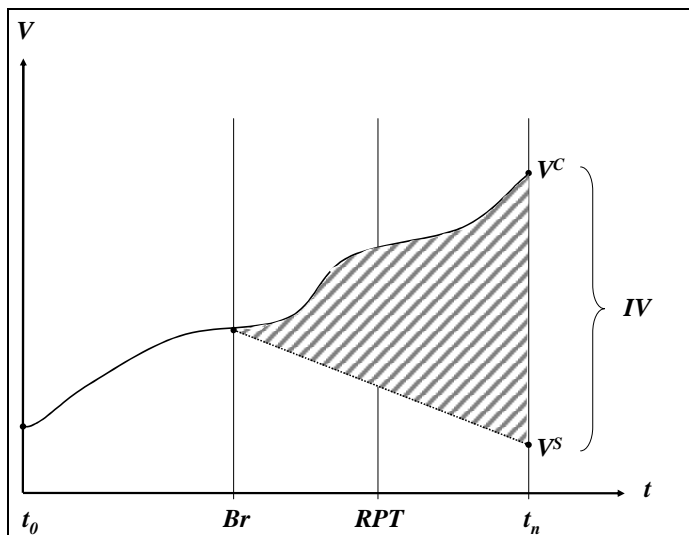


Figure 3: Expectation damages as baseline for the calculation of N&I

Figure 4 compares the three different calculation methods of N&I: All three hypothetical scenarios are rebalancing exercises of sorts: Reliance rebalances according to the pre-breach Nash-level with respect to the violated obligation, expectation rebalances mutual commitments as if breach had never happened, and restitution rebalances mutual obligations on a lower level as if the offending measure had never been part of the original deal.

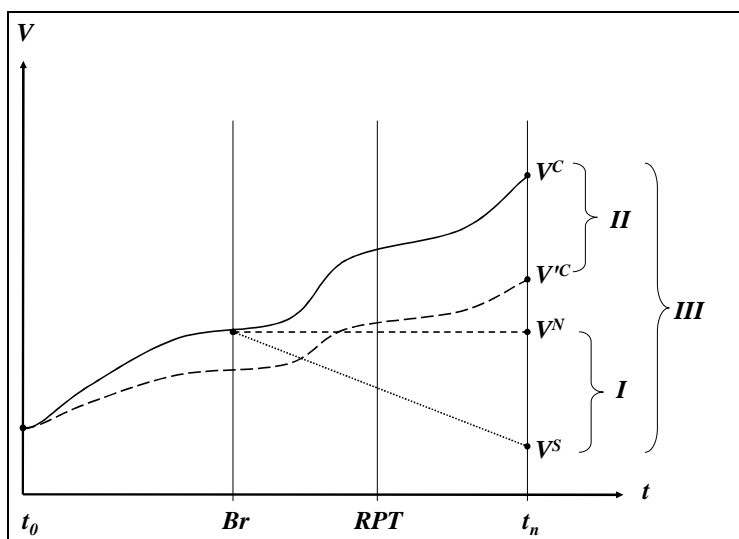


Figure 4: Comparing reliance (I), restitution (II) and expectation damages (III)

By definition, the reliance measure is significantly smaller than expectation damages: Reliance is constructed using a counterfactual apt to compensate the complaining party for direct harm suffered, but leaves aside efficiency effects and foregone opportunities, such as transactional efficiency gains that would have accrued in the case of normal contractual performance. To be sure, it is exactly these contractual efficiency gains that motivated transactors to conclude the contract in the first place.

Comparing the restitution counterfactual to reliance or expectation damages is considerably more difficult, since doing so essentially means comparing different contracts: The restitution counterfactual constructs a novel, less cooperative contract. Whether or not restitution damages are

higher or lower than reliance damages cannot be generalized, since the restitution damage is forward-looking (net present value of the difference between cooperative payoffs under the real and hypothetical trade contract), whereas reliance and expectation damages are inherently backward-looking.

Let us now compare these three calculation methods from a L&E perspective: Which of these three options would rational contracting parties opt for and fix contractually (if they hadn't forgotten to specify it, like the framers of the WTO did)? In our assessment, we distinguish between *systemic* and *practical* evaluation criteria:

From a *systemic* point of view there is little doubt that expectation damages are the calculation benchmark of choice for rational and forward-looking signatories to a trade agreement: Modeling the WTO as a fully non-contingent tariff liberalization contract where contingencies (or "states of nature") are asymmetrically revealed, Mahlstein and Schropp (2007) prove game-theoretically, what Dunoff and Trachtman (1999), Sykes (2000), and Schwartz and Sykes (2002a) had already conjectured: Trade damages amounting to the expectation measure Pareto-dominate all other damage awards. Only N&I calculated as expectation damages yields the right incentives for contracting parties to liberalize optimally *ex ante*, and to default optimally *ex post*. Trade agreements staffed with an expectation damages rule are able to replicate the outcomes of the hypothetical contracting ideal of the complete contingent contract, and thereby fulfill the criteria of "efficient breach".<sup>23</sup> Both reliance and restitution damages *under-compensate* the complaining party, because they do not indemnify it for the entire injury suffered. This, in turn, invites excessive *breach* by Members in violation of the Agreement, because they are not forced to internalize all the injury they are causing and hence benefit from abrogating their *ex ante* commitments inefficiently often. *Ex ante*, that is, before the conclusion of the contract, those WTO Members expecting to ever become an injured party during the course of the contract react by liberalizing inefficiently little compared to what would be welfare-optimal.

From a *practical* point of view, it seems to us that expectation damages also prevail over both the restitution and reliance as the right counterfactual to construct in order to calculate N&I: It is probably fair to say that calculating N&I according to the restitution measure overburdens any Arbitrator, no matter what his level of sophistication and economic expertise. For one, quantifying the *status quo ante* the *contract* net of the withdrawn commitment requires the construction of not *one* counterfactual, but of *two*: The welfare level yielded in the normal course of action of the contract ( $V^C$  in Figure 4), and what the original contract would have looked like if the reciprocal level of concession had been reduced by both the withdrawn commitment and the offsetting reciprocal commitment on the part of the complainant ( $V^C$ ). As mentioned above, the Arbitrator in

---

<sup>23</sup> The efficient "breach" hypothesis, as formulated by contemporary WTO literature, can be summarized as follows: "There are circumstances where breach of contract is more efficient [for the general welfare of contracting parties] than performance, and the law ought to facilitate breach in such circumstances." Dunoff and Trachtman 1999, p. 31. "According to the concept of 'efficient breach' [...] a contract breach allows the breaching party to pay damages to redress the harm (loss of profit, etc.) without performing its obligations under the contract. In most cases, the nonbreaching party will be made 'whole' and, in some cases, even better-off. Thus, the breaching party has the option of refusing further performance if its compensation fully

essence would need to engage in the same exercise as Members that are modifying their schedules under Arts. XXVIII GATT or XXI GATS: He would have to divine which concession or bundles of concessions the complaining party would have initially traded in for the respondent's right to drop the very concession it violated later on. What's more, the Arbitrator then would be tasked to sketch the efficiency trajectory that this hypothetical contract would have taken from the beginning of the contract up to the present. This demanding task would then be topped off with a net present value calculation of the difference between the hypothetical gains of the actual contract ( $V^C$ ) with the hypothetical gains of the hypothetical contract ( $V^C$ ). Somewhere along this process, the Arbitrator would most certainly be confronted with vehement opposition of both litigating parties: Not only would the Arbitrator most likely "get it wrong", i.e. construct a counterfactual contract that parties would not have concluded; in addition, both parties would have an incentive to misrepresent reality *ex post facto* by stating that the withdrawn commitment would have been worth much more or much less in terms of reciprocal concessions at the conclusion of the contract.

When comparing the practicality of the reliance scenario to the expectation measure of quantifying N&I, we would to point out the following: The reliance measure basically constructs the hypothetical of what the world would look like if the illegal measure had been withdrawn at some point in time in the past. Yet, just *how* should the illegality be withdrawn? Isn't there a multitude of ways how the Respondent could bring its violating measure into compliance and therewith re-establish a *status quo ante* the breach? The responding Member could withdraw the offending measure, say, a discriminatory treatment of imports, or it could seize the discrimination by banning all goods – imported and domestic alike – that display a certain feature. Alternatively, it could replace the illegal measure with an alternative sanitary or phytosanitary regulation.<sup>24</sup> Depending on which scenario one constructs and underlies, the quantification of damages will differ tremendously.<sup>25</sup>

Compare the issue of multiple competing counterfactuals with the situation under the expectation method of damage calculation: For expectation damages, the relevant counterfactual is the construction of a hypothetical world that would exist if *both* contracting parties had continued to perform according to the initial agreement. As long as there is a reasonable certainty of what exactly the illegal measure at issue is, the task for the Arbitrator is relatively straightforward: He is to extrapolate welfare levels and cooperation gains from the pre-breach past into the present, in order to fabricate one single expectation counterfactual: What would the Complainant's welfare

---

protects the nonbreaching party's reasonable economic expectations from performance of the contract" Jackson 2004, p. 122.

<sup>24</sup> See e.g. the Panel in the *US – Superfund* case that noted that several different ways could be adopted to bring the disputed measure (here, a tax on gasoline) in conformity with Art. III GATT, including an increase in the tax imposed on US products to bring it in line with the tax imposed on foreign products, or a reduction in the tax imposed on foreign products to bring it in line with the US internal level. According to the Panel, "each of these solutions would have different trade results and it is *therefore logically not possible to determine the [...] trade impact between the present tax and one consistent with Art III.2 [GATT]*" (para 5.1.9, emphasis added).

<sup>25</sup> Sebastian (2007) puts it in cautious legalese: "The key point here is that the determination of the extent of detrimental effect resulting from a violation is a comparative exercise that requires the adoption of a baseline. *Because there are no clear governing principles, the choice of this baseline could be controversial [...]* All calculations of detrimental effects suffer from a certain degree of arbitrariness." (p. 351, 353; see also Spamann 2006 at pp. 52).

level be today if the Respondent had always performed according to its initial contractual obligations; note well that any discussion of the choice of counterfactual is largely futile.

To conclude this subsection: Finding the relevant baseline, or counterfactual, with which to compare the current situation is a crucial decision to make for contracting parties to a trade agreement. The choice of counterfactual has a tremendous impact on the functioning of a trade regime, both from a systemic and a practical point of view. Using expectation damages as a counterfactual against which to measure the actual situation seems to dominate other institutional arrangements. Cognizant of the fact that N&I will be measured in terms of expectation damages, signatories to a trade agreement are prone to liberalize optimally *ex ante* and to refrain from excessive breach *ex post*. In addition, expectation damages relieve the Arbitrator from having to make more or less arbitrary choices between a multitude of different counterfactual scenarios.

### **C.2.2 Different Standards of Measuring N&I: Issues of Scale and Scope**

Knowing with which counterfactual the actual violation-ridden situation shall be compared with is a valuable first step in a damage calculation. However, further issues arise. In principle, damage suffered from contractual breach is not only profoundly *subjective* to the victim, it is also *private information* to the affected party. This results in several problems: First, for any damage calculation to work, the Arbitrator should be aware of the *identity* of the concerned party. In case of a trade agreement, is the injured party the international trading system, society at large, the government, or companies in the affected sector? Second, should *non-economic* dimensions such as emotional, cultural, societal, physical distress play any role and thus be integrated in a damage assessment?<sup>26</sup> Third, self-revelation of actual damage by the affected party is not an option, since this inevitably would invite moral hazard problems. Due to hidden knowledge, victims of contractual breach are bound to overstate their actual harm so as to clock up any damage award. Nothing in the text of the DSU reveals anything about how deal with above issues, and how trade damages shall be measured. Art. 22.4 DSU merely talks of a Member's "benefits" nullified or impaired, but remains mute about whose benefits exactly are to be taken into consideration and which unit of measurement best proxies these foregone benefits.

Since the text of the DSU is hardly helpful, let us go back to theory: What could a reliable proxy for the unobservable N&I be? Which metric best captures the actual harm suffered by a complaining party, is readily calculable, and is fungible, in the sense that it can be transposed into a remedy (read: SCOO)? In order to "monetize", i.e. monetarily quantify the injury suffered by the complaining Member, issues of scale and scope are important:

---

<sup>26</sup> When it comes to considering *non-economic* effects, we concur with standing case-law that WTO arbitrations are to deal exclusively with economic issues. It is probably fair to say that the WTO is an economic contract and its "currency" therefore also is profoundly economic. See the Arbitrator in *EC – Bananas III (US) (Article 22.6)* at para. 6.10: "[A] Member's *potential interest* in trade in goods or services and its interest in a determination of rights and obligations under the WTO Agreements are each sufficient to establish a right to pursue a WTO dispute settlement proceeding. However, a Member's *legal interest* in compliance by other Members does *not*, in our view, automatically imply that it is entitled to obtain authorization to suspend concessions under Article 22 of the DSU." See also *US – Byrd* at footnote 53.

As for the “*scale*”, or unit of measurement, in which “benefits” lost can be quantified, at least three different metrics have been suggested (Bernstein and Skully 2003, Breuss 2004, Trachtman 2006, Sebastian 2007):

- First, injury can be measured in terms of a “trade effects test”, which measures trade flows blocked, transactions lost, or turnover not realized. Measuring blocked trade is a fairly straightforward exercise, in which the Arbitrator assesses the quantity, or volume, of lost sales suffered by the complainant, priced in world prices for that good or service (e.g. Keck 2004).
- A second way of calculating injury is “lost profit”. Here, the Arbitrator would assume that the injured party could market its products somewhere else, albeit under less favorable conditions. The complainant foregoes profits by market-closing behavior of the respondent, which are measured as “deadweight loss” triangles in international economics (Bernstein and Skully 2003). Economists favor this way of measuring N&I, because it comes closest to their efficiency-driven worldview.
- A third variant of measurement is economic gains and losses sustained by the complaining party. This measure is considerably broader than both previous ones in that it includes deadweight losses and direct trade blocked, but it also integrates other economic costs connected with losing existing markets and winning alternative ones, such as switching costs, transportation costs, information gathering costs, marketing costs, or costs of finding new outlets.

Concerning the “*scope*”, or level of ambition, contracting parties may agree to only look at *direct* effects in the affected sector, or *indirect* effects accruing in the entire economy of a Complainant or other third-country markets. To be sure, market-closing behavior by one country in a particular sector may well provoke so-called trickle-down or spillover effects in upstream or downstream industries within the domestic economy of a complaining party. The United States in *EC – Bananas III*, for example, claimed damage in its domestic services sector stemming from the EC’s ban of *Ecuadorian* bananas. Indirect effects can also occur in unaffected third-country markets. For example, the EC in *US – Byrd (Continued Dumping and Subsidy Offset Act of 2000)* (Article 22.6) claimed that the United States’ disbursements of antidumping and countervailing duty tariffs to its domestic operators crowded out European exports in other third-country markets.<sup>27</sup>

Figure 5 summarizes the possible standards of measuring N&I that contracting parties can choose in a 2x3 matrix.

---

<sup>27</sup> In the requesting parties’ view, “any analysis of trade effects should take into account the trade effects on the world market” (Arbitrator’s Report *US – Byrd* at para. 3.128).

Scope Scale	Direct (sectoral)	Indirect (economy- wide)
<b>Trade blocked (lost turnover)</b>	Blocked market access (volume effects)	Worldwide price- and volume effects
<b>Efficiency- losses (lost profits )</b>	Deadweight loss (partial equilibrium)	Deadweight loss (general equilibrium)
<b>Economic losses</b>	Economic gains/losses in sector	Economy-wide gains/losses

**Figure 5: Different standards of measuring the intensity of N&I**

Let us now compare the six alternative ways of measuring N&I from a systemic and a practical point of view: From a systemic point of view a holistic examination of economy-wide indirect effects would yield the most accurate results, if the Arbitrator managed to perform a clear-cut *ceteris paribus* calculation, in which he would manage to isolate and precisely separate effects caused by the violation from the “white noise” caused by the normal course of economic activity. The problem with integrating indirect effects, however, is one of accuracy. The more sectors are integrated into the Arbitrator’s “but for” analysis, the more difficult it gets to assign economic effects to the injury, rather than to other social, economic, or political shocks. Clinical separation of injurious effects from other economic effects is notoriously difficult, and the Arbitrator would commit a serious error if he attributed a certain economic effect to the offending measure while it really was caused by the business-cycle, normal competition, a demand crisis or exchange-rate volatility.<sup>28</sup> Litigating parties in the WTO have shown a preference for curbing the Arbitrator’s opportunities to “address effects that are too remote or speculative” (Arbitrator Report *US – Byrd* at para. 3.129).<sup>29</sup> Therefore, it is probably apposite for Arbitrators to isolate the sector in question (in case the dispute only pertains to a single goods or services sector), and to assess the effects in that affected industry, even though doing so indubitably comes at a cost of accuracy.

---

<sup>28</sup> Very understandably, Arbitrators are keen on avoiding *Type-I errors* (false positives), but in return are prone to commit *Type-II errors* (false negatives): A *Type-I error* in this setting occurs whenever the Arbitrator attributes a particular effect to the Respondent’s violation when in fact the effect is due to another cause or normal economic activity. In *Type-II errors*, the same Arbitrator refuses to subject a particular effect to the responding party’s actions, when in fact, these actions are at the core of a negative effect on the complaining party. The costs associated with each type of error may vary, but with a view to the amicability and stability of the entire dispute settlement system, it is probably the right choice to have the Arbitrator avoid excessive attribution of damage to the Respondent. Otherwise, inappropriate damage-attribution may cause a souring the atmosphere of cooperation system. WTO Members, instead of using the DSB in good faith, may enact retaliatory antidumping measures, or enter into retaliatory litigation. Alternatively, they may engage in *extra-contractual* means of retribution and/or aggressive self-help behavior: They may opt for bilateral resolution outside the WTO forum, seek retaliation outside the trade realm (e.g. political coercion), or engage in unilateral retaliation (e.g. *Section 301 of the U.S. Trade Act of 1974*).

<sup>29</sup> See also Arbitration Report in *US – 1916 Act* at para. 5.57 (citing the Arbitrators’ Report in *EC – Hormones* at para. 77): “We therefore proceed to consider the level of nullification and impairment in the present case, while avoiding claims that are ‘too remote’, ‘too speculative’ or ‘not meaningfully quantified’.”

As for the choice of metric, Bernstein and Skully (2003, pp. 389) rightly contend that focusing uniquely on *lost profits* yields too small an amount to indemnify the injured Complainant, and to deter injuring parties from violating the WTO Agreement: Calculating uniquely economic deadweight losses may satisfy a general welfare-economic view on the global trading system, but this metric ultimately lacks realism. Not only does it assume perfect markets, infinitely elastic supply, no income and substitution effects, a partial-equilibrium optic, etc. Also, it examines gains and losses from a detached, macro-economic, and worldwide position, and thereby fails to attribute gains and losses to the different litigating parties: A loss of market share and competitive sales by a complaining party involves unrequited and unilateral transfer of resources from the Complainant to the Defendant. Calculating deadweight losses may only proxy well the resulting damage to the Complainant in the special case, where a trade barrier is erected in form of quotas (quota rents then go to the Complainant), and where alternative markets are readily available to the complaining Member without it having to incur any additional costs, such as product-switching costs, logistics costs, marketing costs, lost scale economies, etc.

Using trade effects (blocked trade) as a proxy for N&I accruing to a Complainant has three significant drawbacks: 1) it may *overstate* damage to the injured party, where alternative markets and outlets are available; 2) it *understates* injury in comparison to broader economic losses; and 3) it can only deal with traditional market access barriers such as tariffs, quotas and other import restrictions, but breaks down as a metric for measuring violation of other non-market access obligations.

- First, calculating trade blocked through an offending measure is apt to overstate the true damage whenever the injured party can find alternative outlets for its goods and services. If the product at issue is in high demand and reasonably commoditized, the real damages accruing to the Complainant may be much lower than foregone sales revenue.
- However, second, there may be other situations where trade blocked, i.e. turnover not generated, only partly covers the true harm suffered by the complaining party. A Complainant may face other economic costs, such as product switching costs, logistics, warehousing, etc. Moreover, the complaining party foregoes exactly those economic gains for which it concluded the trade agreement in the first place, namely efficiencies from economic transactions, i.e. trade efficiencies.
- Third, and most importantly, blocked trade as a metric for trade damage only applies to those violations that involve a partial closing of market access. Whenever one WTO Member, through a violating measure, forestalls reciprocal market access (be it in form of tariffs, red-tape measures or quantitative restrictions), damage in form of blocked trade can be quantified. But what about all the other non-market access entitlements that form a large part of WTO obligations (see subsection C.1 above)? Trying to quantify N&I caused by a defection from an unreciprocated, multilateral entitlement by way of trade blocked must be seen as a futile task. It is hard to see how any rebalancing of mutual rights and obligations can be achieved through analysis of blocked trade in situations where positive, non-reciprocated commitments, such as a minimum standard obligations are infringed upon (think of a Respondent's failure to establish a

patent office; cf. e.g. Pauwelyn 2000, p. 342, Jackson 2004, pp. 121).<sup>30</sup> In sum, as soon as a treaty obligation is violated that is not based on bilateral market access commitments, the “trade effects” approach falters.

Using a unit of measurement based on broader economic effects in the industry at issue may remedy the three above-mentioned shortcomings in connection with the calculation of N&I based on trade effects:<sup>31</sup> First, economic gains/losses can avoid the pitfall of overestimating damage in case alternative markets have been found for the complaining Member’s goods and services. Alternative markets and additional sales are economic gains that have to be juxtaposed to economic losses involved in finding, capturing and marketing those new outlets, plus all the excess production that cannot be marketed. Second, an economic gains and losses test integrates all those actually incurred economic costs that a mere trade blocked methodology ignores (switching costs, information gathering costs, logistics, warehousing, etc.). Third, an economic effects test can deal with non-market access-related infringements, such as violations of patent protection or copyright standards. Finally, a broader economic effects metric is comprehensive in the sense that a pure trade effects test forms a subset of it.

Summing up the last two subsections on the theory of calculation of N&I in trade agreements: When it comes to assessing as accurately as possible the damage incurred by an injured Complainant, the aspects of *nature* and *intensity* of the violation are crucial components to take into consideration. Any quantification of intensity must contain an appropriate counterfactual or baseline of comparison on the one hand, and deal with issues of scale and scope on the other hand. For the case of a damage calculation in a trade agreement such as the WTO, we have attempted to show that for systemic and practical reasons the *expectation* damage measure is the incentive-compatible quantification option. Calculating expectation damages Pareto-dominates both the *reliance* and the *restitution* scenario. We have further pointed out that although desirable, indirect effects that a violation provokes in other sectors, to other domestic constituencies, and in third markets are too remote and too speculative, and therefore prone to conflicts between Members and even a loss of faith in the international trading system. Finally, we argued that the right proxy, or metric, for nullification and impairment is the *economic gains and losses test*, which considers economic consequences of violating measures in the affected industry/industries of the complaining country. This test not only examines *trade blocked*, but also *lost profits* and other

---

<sup>30</sup> Jackson (*ibid.*) notes: “[H]ow does one quantify a breach of a DSU norm? Rebalancing in any objective and meaningful way seems to be a fallacy in the light of the shifting perspective of the GATT/WTO system away from more quantifiable norms, such as tariff norms, toward broader rules that should arguably be shaped so as to provide benefits to all sides, not just a reciprocal ‘swap’”. See also our discussion around footnote 19 above.

<sup>31</sup> It may be argued that not only economic gains and losses in the affected industry should be taken into consideration, but the general welfare in the entire economy, including consumers, importers, and other economic actors (see especially Breuss 2004, Trachtman 2006). As we stated above, indirect effects to other economic actors and other sectors may be accurate, but at the same time very difficult to separate from the normal activity in a globalized economy (see Araki 2004, Keck 2004, Kohler 2004 in reaction to Breuss 2004). The question effectively becomes: Where do you draw the line? Whose benefits do you include: consumers, policymakers, customs officials, importers, import-competing industries, exporters, downstream suppliers, upstream buyers, overseas subsidiaries? Any cut-off point here is arbitrary, and therefore we propose a simple and intuitive cut-off point in the form of the affected industry.

economic cost and benefit categories that a victim Member incurs in case of any violation of the WTO Agreement.

An important issue to mention here is that the choice of counterfactual and the choice of metric are not entirely independent factors: The expectation damages counterfactual, for example, cannot be constructed by means of a trade effects test as a measurement unit of trade damages. As the next subsection will show, WTO Arbitrators – in absence of any precise guidance by the framers of the WTO – have opted to interpret Art. 22.4 DSU as a mandate to calculate N&I by taking reliance damages as a baseline, and direct trade damages as the measurement unit.

### ***C.3 An Assessment of the Calculation of N&I in past WTO Arbitrations***

The first WTO arbitrations that were charged with the task of calculating N&I under the purview of Art. 22.4 DSU were all cases dealing with traditional market access barriers such as tariffs, quotas, and other import restrictions. This prompted the Arbitrators in *EC – Bananas III (22.6) (US)*, *EC – Bananas III (22.6) (Ecuador)*, *EC – Hormones (22.6)(US)* and *EC – Hormones (22.6) (Canada)* to construct the reliance damage measure as the baseline hypothetical, and to measure N&I in terms of direct trade effects of the violation. In light of the insights gathered so far, in the following two sub-sections we wish to raise two issues with the Arbitrators’ practice of calculating N&I: First, using reliance damages as the baseline against which to compare the complaining parties’ actual situation resulted in under-compensation of the complaining parties, and in problem of having to choose between competing counterfactuals of “withdrawal of the measure at issue”. Second, applying the *direct trade effects test* seemed to have established itself as the one-size-fits-all approach of measuring trade damages. With the advent of *US – Antidumping Act of 1916* case this tariff-centric (“tariffic”) logic of calculating N&I should have been called into question, since direct trade damages are conceptually inept to deal with cross-sectoral and/or non-market access-related violations. However, Arbitrators have yet to engage in a proper discussion of alternatives to the trade effects test.

#### **C.3.1 Using the reliance damages counterfactual is flawed**

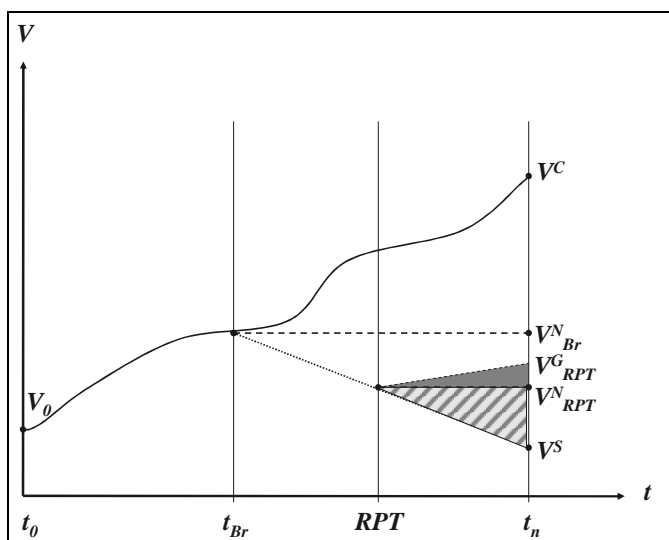
All arbitrations under Art. 22.4 DSU so far have calculated *prospective* damages amounting to direct trade effects (Mavroidis 2000 at pp. 774, Charnovitz 2002b at p. 418, Hudec 2002, p. 86, Lawrence 2003, p. 37, WTO 2004 at § 243; see also Grané 2001, Anderson 2002, Schwartz and Sykes 2002b, Araki 2004, Breuss 2004, Keck 2004, Kohler 2004, Schropp 2005, Spamann 2006, Trachtman 2006).<sup>32</sup> Although the prospective nature of damages is not put down *expressis verbis*

---

<sup>32</sup> The possible exception being the Arbitrator in *US – 1916 Act*, who didn’t find any N&I at all (more on *US – 1916 Act*).

in any WTO provision,<sup>33</sup> Arbitrators have decided to calculate N&I *not* from the time when an illegality was committed, but from the end of the “reasonable period of time” (RPT).<sup>34</sup>

WTO Arbitrators therewith have interpreted Art. 22.4 DSU so as to roughly imply a counterfactual scenario apt to re-establish the *status quo ante* the breach (Mavroidis 2000, Lawrence 2003, Breuss 2004, Spamann 2006): In constructing a counterfactual situation that would prevail if the illegality were removed, WTO arbitrators have awarded damages that are apt to restore the trade level that would exist, had the injurer brought his contravening measure into conformity after the RPT (Sebastian 2007, p. 351). Hence, the current system of contractual remedies is probably best characterized as a remedy short of reliance damage measure.<sup>35</sup> Figure 6 illustrate the Arbitrators’ practice (compare with Figures 1-4):



**Figure 6: The calculation baseline according to WTO Arbitrators’ practice**

WTO Arbitrators have essentially tried to calculate the difference between the Complainant’s actual situation and a hypothetical situation that would prevail if the illegality were removed (in some way or other) after the RPT. They thereby refused to consider retroactivity, indirect effects, efficiency losses, and litigation costs.<sup>36</sup> However, what the Arbitrator did try to do when

<sup>33</sup> Bronckers/van den Broek (2005, p. 103) or Grané (2001, p. 768) claim that the *prospective* nature of WTO remedies is justified by virtue of Article 19.1 DSU. Mavroidis (2000 at p. 789, 2007 at p. 584), however, does not detect any constraint on *retroactive* remedies as a matter of positive DSU law, and sides with the *Australia – Automotive Leather II* panel report (§§6.26).

<sup>34</sup> Prospective damages means that damages awards are future-oriented (see e.g. Pauwelyn 2000, Grané 2001, see e.g. Bronckers and van den Broek 2005, Spamann 2006): Injury is calculated *not* from the time when an illegality was committed, but from the end of the RPT.

<sup>35</sup> We say “roughly” and “short of” the reliance damage measure, because the prospective nature of arbitration award renders impossible the exact re-establishment of the status quo of the market access balance as it existed before the breach. The remedy applied by WTO arbitrators fails to compensate the victim for direct trade damages incurred between the enactment of the measure in question and the lapse of the RPT (cf. for example Pauwelyn 2000).

<sup>36</sup> The Arbitrator in *EC – Bananas III (Ecuador) (Article 22.6 –EC)* thereby set the precedent, denying the United States indemnity for lost profits resulting from the EC banana importing regime which *inter alia* harmed the Mexican banana industry, a major consumer of U.S. fertilizer (WT/DS 27 at §§6.12-14). A direct outcome of the discussion on indirect benefits is the decision by the Arbitrator in the same case to compute only *value added* when calculating the level of nullification and impairment (at §§6.18). The Arbitrator in

constructing his counterfactual, was to integrate some kind of market-growth potential in the affected markets.<sup>37</sup> Hence, using our previous illustration, Figure 6 shows that the Arbitrators seemed to have constructed a baseline hypothetical which amounts to a level of N&I consisting of the *status quo ante* the RPT (hatched triangle), plus a market-growth component (solid grey triangle).

We have two concerns about the use of the reliance counterfactual used by the Arbitrators:

First, taking reliance damages as the baseline counterfactual, and taking the end of the RPT as starting-point of damage-calculation results in an under-compensatory benchmark. It has been noted above that calculating damages according to a hypothetical *status quo ante* the breach is under-compensatory for the injured party (Schropp 2008b).

Second, by opting for the reliance scenario with which to compare reality, WTO Arbitrators have had to struggle with selecting an appropriate counterfactual that best describes the situation that would prevail if the illegality were removed. The *US – Gambling (Article 22.6)* case thereby is an instructive example. There, after having realized that the United States could have brought its illegal ban on internet horse-race gambling into compliance in at least three different ways (e.g. by legalizing all forms of internet gambling, by banning all internet gambling, or by legalizing all internet gambling *on horse races*), the Arbitrator constructed the lukewarm concept of a “plausible or reasonable counterfactual” (*ibid.* paras. 3.26-3.40).<sup>38</sup> This somewhat blurry concept of reasonableness of counterfactual prompted a dissenting opinion from one of the three Arbitrators (*ibid.* paras. 3.62-73), who rightly pointed out that “reasonableness” can be seen from at least two perspectives – the point of view of the Complainant and that of the Respondent. While the majority of the Arbitrators constructed a counterfactual they deemed reasonable from the Respondent’s perspective (“a reasonable counterfactual must take into account [...the Respondent’s] policy objectives”, *ibid.* at para. 3.51), the dissenting Arbitrator begged to differ and stated:

“[I]n the circumstances of this case, it was not unreasonable for [the Complainant] to base its counterfactual on an assumption that [the Respondent] would open its market to the cross-border provision of [all] remote gambling services. Such an assumption is fully compatible with the nature of the Appellate Body’s findings in this case [...I]n a situation where different means of compliance might form the basis of a counterfactual in order to determine the level of nullification and impairment of benefits, the complaining party would not be prevented from selecting a counterfactual that may lead to a higher level of nullification and impairment than others, provided that such counterfactual is reasonable” (*ibid.* paras. 3.67 and 3.70).

---

*US – 1916 Act (EC) (Article 22.6 – US)* made it clear that legal fees paid cannot form part of the calculation of nullification and impairment (para. 5.76).

<sup>37</sup> For example, the Arbitrator in *EC – Bananas (Ecuador) (Article 22.6)* at para. 169 assumed that “Ecuador’s banana exports to the EC would increase to the level of its best-ever exports during the past decade, that the share of those bananas distributed by Ecuadorian service suppliers would rise to 60 percent, and that the proportion of those distributed bananas for which Ecuadorian service suppliers are given import licenses would rise to 92 percent.”

<sup>38</sup> The Arbitrator stated (*ibid.* paras. 3.25-3.26): “The Member concerned may have had a range of WTO-consistent options at its disposal to choose from to ensure compliance. *It is not for us to speculate on what might have been the “most likely” scenario.* Nonetheless, the counterfactual should, in our view, reflect at least a plausible or ‘reasonable’ compliance scenario.” See also *EC – Bananas III (Ecuador) (Article 22.6)* at paras. 166-170

Our point here is that whatever counterfactual the Arbitrator will choose as the right hypothetical for withdrawal of the measure in question, it will always have to confront the criticism of having overstepped the line between arbitration and arbitrariness. If, however, the Arbitrator chose the expectation damage counterfactual, the only right counterfactual would be the Complainant's welfare level under continuing and incessant cooperation by the Respondent.

### **C.3.2 Using direct trade damages as the unit of measurement is flawed**

Up to this very day, all arbitrations except for *US – 1916 Act* measured detrimental effect caused by violation in terms of the trade foregone due to the ban's continued existence.<sup>39</sup> Measuring N&I as direct trade effects was an unfortunate choice by Arbitrators for at least two reasons.

First, doing so does not reflect the true harm suffered by complaining Members, as was discussed above. The use of direct trade effects may be a reflection of the fact “that trade loss is generally more directly identifiable and quantifiable and that, in such context, arbitrators preferred to rely on verifiable figures” (Arbitrator Report *US – Byrd* at para. 3.39). Yet, as we argued *supra*, it may miss the mark of indemnifying the Complainant for the real economic harm suffered from a violation of the WTO Agreement.

Second, it is said that when all you have is a hammer, everything you see looks like a nail. The issue, hence, that we have with the way the Arbitrators calculated N&I in the first four 22.6-arbitrations is that they set a myopic and non-sustainable precedent. *Bananas*, and *Hormones* were cases dealing with traditional market access barriers such as tariffs, quotas, and other import restrictions. Measuring trade damages in terms of direct trade effects may not be a perfect proxy, but it works for market-access restrictions. Yet, as was stated above, direct trade damages are conceptually inept to deal with cross-sectoral and/or non-market access-related violations of the WTO.

The advent of the *US-Antidumping Act of 1916* case should have marked the end of this tariff-centric (“tariffic”) logic of calculating N&I as a one-size-fits-all proxy. Yet no deeper discussion over different calculation methods emerged.<sup>40</sup> On the positive side, the Arbitrator in its Report on *US – 1916 Act* (at para. 7.2) recognized that the application of the 1916 Act (judicial decision or forced settlements) did not automatically restrict trade and that he therefore saw the need to examine broader “economic effects” of the measure at issue. He explicitly acknowledged that there exists an alternative to direct trade effects.<sup>41</sup> Unfortunately, the Arbitrator talked the talk, but

---

<sup>39</sup> In *EC – Bananas (US)*, the Arbitrator measured benefits nullified or impaired amounting to losses in US exports of goods and losses by US service suppliers in services supply (see Arbitrator Report at para. 6.12), in *EC – Bananas (Ecuador)*, as losses by Ecuador of actual trade and potential trade opportunities in bananas and loss of actual and potential distribution service supply (see Arbitrator Report at footnote 52). In *EC – Hormones (US)* and (*Canada*), N&I was calculated as foregone US/Canadian exports of hormone-treated beef and beef products (see Arbitrator Reports at para. 41 and 40, respectively). *US – Gambling* measured N&I as trade in remote gambling on horse races blocked by the United States (Arbitrator Report at para. 3.25).

<sup>40</sup> In *US – 1916 Act* the EC and Japan had successfully attacked a US regulation that threatened to sanction the import of dumped goods with criminal charges and provided compensation payments for injured US businesses. Although the 1916 Act had played little role in trade practice, the EC and Japan had pointed to numerous forced settlements between EC/Japanese importers and US firms under the threat of litigation.

<sup>41</sup> See also the Arbitration Report in *US – Byrd* at paras. 3.39-3.40.

did not walk the walk; the rhetoric of “economic effects” remained lip service (see Jürgensen 2005, Spamann 2006). The Arbitrator neither engaged in a discussion of the nature of the entitlement infringed upon by the United States, nor in a thorough examination of the economic consequences of the measure at issue. Instead of looking for ways of quantifying the economic harm of forced settlements and suppressed economic activity on the complaining parties, the Arbitrator awarded the EC the right to suspend obligations and concessions *only* if and when future judgments against or settlements accepted by EC exporters would disclose the amount that EC exporters would have to pay (*ibid.* paras. 8.1-8.2).<sup>42</sup>

Thus, WTO Arbitrators have yet to engage in a proper discussion of alternatives to the trade effects test. A positive outlier in this list of “tariffic misunderstandings” of calculating N&I is the *US – Section 110(5)* case, which perceptively was conducted under an *ad hoc* Arbitration (Art. 25 DSU).<sup>43</sup> The Arbitrator’s Report is an interesting and refreshing departure from both the trade effects approach and from the use of the dubious reliance counterfactual. Instead of calculating direct trade effects, the Arbitrator was cognizant of the *nature* of the entitlement at issue, namely the reciprocal IP right and collected economic gains and losses. And instead of trying to construct a counterfactual amounting to reliance damages, the Arbitrator put the complaining party in as good a position as it had been, had the Respondent performed according to the terms of the TRIPS Agreement (expectation damages): More precisely, the Arbitrator counted only those royalty payments that would actually have been collected by economically rational EC rights holders, net of collection costs (Arbitrator Report at para. 3.3).

## D Calculating the Level Suspension of Concessions or Other Operations

The calculation of harm or damage is only the first step in contractual enforcement. Once parties (or in their stead the Arbitrator) have an idea of the level of N&I, they can move on to determine the remedial action. Remedies, or enforcement instruments, are as varied as contracts underlying them. Contractual remedies can range from physical (incarceration), economic (penalty fees), to emotional (reputation loss, withdrawal of affection) measures. The WTO knows various remedies (bring measure in compliance, tariff compensation, retaliation) and many more have been suggested (monetary compensation, suspension of certain Membership rights, multilateral

---

<sup>42</sup> Two circumstances make us believe that the Arbitrator did not seriously engage in an economic gains/losses test: First, he refused to consider clearly attributable litigation costs resulting from forced settlements. Second, the reason why payments and forced settlements were so hard to measure, was that American parties to these settlements objected to disclosure of the settlement terms, including the amount of money the importers agreed to pay (*ibid.* paras. 6.8-6.9). The Arbitrator could have used his discretion to draw *adverse inferences*, when it became clear that the responding party is stonewalling the process (note that a DSB panel in the recent *Turkey – Rice* case [DS 334] did exactly that). Even though settlement payments were undisclosed, the Arbitrator would not have overstepped its mandate if he had constructed an economic model to calculate these payments. It is not unfathomable for an Arbitrator to make conjectures and rely on outside expertise, either, as the *US – Gambling* case showed, where he relied on datasets from the World Bank and other organizations (Arbitrator Report, section III.D).

<sup>43</sup> In this case, bars, restaurants and small retail establishments below a certain threshold size are exempted from royalty payments to copyright holders of music. The United States and the EC decided to call on the Arbitrator to put a price tag on the nullification and impairment suffered by EC right holders.

sanctions, e.g.).<sup>44</sup> However, the ultimate enforcement instrument in the WTO is suspension of concessions or other obligations (SCOO), also known as “retaliation” or “trade sanctions”, which is regulated in Article 22 of the DSU.

### ***D.1 Theoretical Aspects of Calculating the Level of SCOO***

Rational and forward-looking signatories to a trade agreement should be expected to provide an Arbitrator with clear and unambiguous instructions of how he is to calculate the level of countermeasures that is to be awarded to a Complainant in response to a nullification or impairment of its benefits. Needless to say, the fact that the drafters of the WTO Agreement have missed a good opportunity to specify these instructions, is rather problematic. Let us move from the DSU text to a more theoretical deliberation of how rational contracting parties would design a system of SCOO. This will serve us as a benchmark against which to measure the actual WTO Arbitration practice in that area.

Contractual remedies in the WTO, just like in any other contract, are a function of three constituent parameters: *nature, form; intensity*. Applied to the context of the WTO, these components can be explained as follows: The *nature* of a retaliatory action is the specification, which contractual entitlement, or obligation, is targeted and suspended by the successful Complainant in response to the violation found to be in existence (a market-access, minimum-standard, or auxiliary entitlement). The *form* of SCOO indicates the modalities of retaliation: The product coverage (sectors, sub-sectors, specific obligations) and the type of suspension (*ad valorem* or *specific* tariff, copyright infringements or royalty payment suppression, etc.). The *intensity* of SCOO, finally, specifies the *degree* to which obligations are suspended or withdrawn – it is the calculative benchmark of retaliation.

The party engaging in SCOO (or in its stead, the arbitrator) ought to have a clear idea of the expected impact of its proposed actions, i.e. what negative effects its remedial measures will be causing to the injuring Member. To that end, it is of importance that any calculation of the remedial action follow a methodology that *exactly mirrors* the one utilized in the calculation of trade damages. Otherwise one ends up comparing apples and oranges and any talk of “equivalence” of the N&I and SCOO must remain a distant ideal. In other words, the manner in which trade damage is measured in terms of applicable counterfactual, scale (metric) and scope of effects must also guide the determination of retaliatory action.<sup>45</sup>

---

<sup>44</sup> Several reform proposals of the remedy regime in the WTO have been tabled, including making tariff compensation mandatory and automatic (Meltzer Commission to the US Congress [International Financial Institutions Advisory Commission Report, March 2000], Lindsey *et al.* 1999, Pauwelyn 2000, Charnovitz 2001; 2002a; 2002b, Roitinger 2004, pp. 188); suspension of Membership rights, such as the right to attend meetings, to participate in decisions, to use the DSM or other WTO provisions or to receive technical assistance (Charnovitz 2001, Lawrence 2003, chapter 5); collective retaliation (Maggi 1999, Pauwelyn 2000); tradable remedies (Bagwell *et al.* 2005, and Limao and Saggi 2006); monetary fees (WTO 2004, Bronckers and van den Broek 2005, Davey 2005), etc.

<sup>45</sup> To give a practical example, to have in place a methodology of measuring the level of N&I using a direct trade effects amounting to the Complainant’s expectation damages, while measuring SCOO in terms of retaliatory tariffs collected by the complainant (a direct economic gain) would be profoundly flawed. For all intents and purposes, those two numbers would bear no logical resemblance; as stated above, this would be comparing apples and oranges. Note that this rather strange retaliation strategy was requested by the EC in *US – Byrd* (see Arbitrator Report at para. 4.6).

This simple insight of mirror methodology, however, does *not* mean that complaining parties cannot suspend different obligations in a different format and to a different degree than the violation they were exposed to. As long as the monetized dollar-amount awarded is based on the same calculation standard or methodology, Complainants should be granted some leeway in selecting their retaliatory strategy of choice. In other words, not the *measures* of N&I and SCOO should be identical, it should be the methodologies of calculating their respective level.

Yet, our conjecture of mirror methodology reveals the profound myopia of using the *trade effects metric* as the proxy of choice to measure N&I: If signatories measure trade damages narrowly in terms of blocked trade flows, they restrict *retaliatory action* to the same metric, i.e. reduction of market access by the complaining party vis-à-vis the Respondent. This considerably limits the maneuvering space of the Complaint, since it essentially forestalls all kinds of suspension of non-market access entitlements. To wit, measuring N&I by using trade flows blocked makes suspension of intellectual property rights difficult: Either you leave the terrain of comparability, which makes retaliation arbitrary, or you jettison the possibility of cross-retaliation.

When putting SCOO to practice, a pertinent question to ask is, what latitude should Complainants be granted in the retaliation process? Should it fall upon the Arbitrator alone to decide over *nature*, *form*, and *intensity* of retaliation? We note here that it doesn't matter who chooses *nature* and *form* of retaliation (and rational parties will probably let the litigating parties negotiate over this issue, and – in case of disagreement – leave the ultimate decision to the complaining party), as long as the determination of the *intensity* of the measure resides with a neutral third party, such as the Arbitrator. If a complaining party wants to erect 5% *ad valorem* tariffs on all goods in the HS 52-category, this should be fine – as long as the *level* or *degree* of this retaliatory action – measured in identical terms as the level of trade damages suffered – is equivalent (or appropriate, as the case may be) to the initial offending measure. If the Complainant favors a different policy mix of minor tariff hikes, prohibitive tariffs and suspension of intellectual property rights, this again should be within its discretion, as long as the competence to assign the *intensity* of such action resides with the Arbitrator.

## ***D.2 The WTO experience: Calculating SCOO in previous WTO Arbitrations***

We can detect two major flaws in the way the so far five Article 22.6-arbitrations have dealt with ways of calculating the level of SCOO. First and foremost: Arbitrators haven't really dealt with the calculation of remedies; instead they adopted a complete hands-off approach to the level of SCOO. As we will show, with this attitude Arbitrators belied their mandate, because equivalence of two items presupposes an occupation with both sides of the equation. Neglect of one frustrates the concept of equivalence. Second, in instances where the Arbitrators did say something about the level of SCOO, their comments were counterintuitive and at times counterproductive.

### **D.2.1 The Arbitrators' "Hands-Off" Approach to Calculating the Level of SCOO**

All Arbitrators, without exception, have categorically refused to engage in any deliberations over the calculation of the level of SCOO. Exemplarily for virtually all Arbitrators, we cite the Report in *EC – Hormones (US/Canada) (Article 22.6)* (at paras. 18, 19; emphasis added):

“Arbitrators are explicitly prohibited from ‘examin[ing] the nature of the concessions or other obligations to be suspended’ (other than under Articles 22.3 and 22.5). On these grounds, we cannot require that [the Complainant] further specify the nature of the proposed suspension [...]. In case a proposal for suspension were to target, for examples, only biscuits with a 100 per cent tariff *ad valorem*, it would not be for the arbitrators to decide that, for example, cheese and not biscuits should be targeted; that a 150 per cent tariff should be imposed instead of a 100 per cent tariff; or that tariff increases should be levied on a product weight basis, not *ad valorem*. All of these are qualitative aspects of the proposed suspension touching upon the “nature” of concessions to be withdrawn. They fall outside the arbitrators’ jurisdiction”.

This Arbitrator hereby bases his statements on his interpretation of Article 22.7 DSU, which reads in pertinent parts:

“The arbitrator [...] shall not examine the nature of the concessions or other obligations to be suspended but shall determine whether the level of such suspensions is equivalent to the level of nullification or impairment.”

This interpretation of Art. 22.7 DSU, if not legally erroneous, at the very least is logically and hence systemically misguided:

First, to our mind, the Arbitrator’s interpretation of Art. 22.7 DSU confuses *nature/form* with *intensity* of retaliation. The Complainant, after having won a DSU litigation, may very well be free to choose the policy-mix with which it enacts its righteous remedy. It may choose the *nature* of the entitlements it wishes to suspend, it may even proceed with selecting the sectors, industries, and products target; it should even be free to select the *modalities* of its retaliatory action – without the interference of the Arbitrator. However, as we stated above, once the complaining party submits its retaliation list, the competence to determine the *intensity* of such action should reside with a neutral third party, i.e. the Arbitrator. And nothing, to our mind, in the language of Art. 22.7 DSU would preclude the Arbitrator from doing just that. The Arbitrator in *US – 1916 Act (Article 22.6)* therefore may be right in stating that “the arbitrators do not have the jurisdiction to approve the adoption of *measures* [in the sense of policy choices] by the complaining party” (para. 5.42), yet the conclusions he draws from that, are wrong.<sup>46</sup>

Second, next to a semantic confusion of *form* and *intensity*, it is logically and systemically erroneous for all Arbitrators to have steadfastly refused to engage in any quantification of SCOO. The Arbitrators therewith not only have obliterated their mandate, but in essence abandoned the equivalence standard under Art. 22.4 DSU. If a judge, asked to establish and safeguard the equivalence between the impact of the offending measure and the level of retaliatory action, refuses to calculate the value of the right-hand side of the equation (the retaliation), the entire calculation must necessarily break down. Without any treatment of the right-hand side of an

---

<sup>46</sup> The Arbitrator in *US – Gambling (Article 22.6)* seemed to have understood this: “[O]ur mandate does not allow us [...] to consider the ‘nature’ of the obligations to be suspended. We understand this to mean that we may not question the complaining party’s choice of specific obligations to be suspended (other than in the context of considering a claim that the principles and procedures of Article 22.3 have not been followed) and that *we must assess the level of the proposed suspension, rather than its form, against the level of nullification and impairment*” (Arbitrator Report at para. 5.9, emphasis added). Unfortunately, in no way did the Arbitrator act according to this insight in due course of the *Gambling* proceedings.

equation, the equality-sign is worthless.<sup>47</sup> Thus, by refusing to deal with the quantification of SCOO in a meaningful manner, WTO Arbitrators have a) violated their mandate under Art. 22.7; b) unduly reduced their job to calculating the level of N&I only; and c) stripped the equivalence standard of any meaning.

The absurd, and indeed perverse, consequences of the Arbitrators' hands-off approach to the quantification of SCOO are that there is nobody to check on what the retaliating Complainant is actually doing. And even if someone set out to do that, what methodology would s/he base her/his calculation on? There is absolutely *no* methodology in place to quantify SCOO in the first place! Thus, the best advice the Arbitrator can give to a Respondent suspecting to be victim of *over-retaliation*, is to start a novel litigation.<sup>48</sup> This situation emerged in the latest chapter of the *Hormones*-saga (*Canada/US – Hormones* Suspension, DS 320/321). This prompts us to make two observations:

- Firstly, starting a novel DSU dispute to counter *over-retaliation* simply cannot be what the framers of the WTO had in mind, since it defies the most fundamental principles of the WTO (stability and predictability of the world trading order, as instructed by Art. XVI of the WTO Charter and Art. 3.2 of the DSU).
- Secondly, with removing quantification of SCOO and equivalence from consideration, the inherent value of the Arbitrator calculating even the level of N&I is rather dubious. What good does it do to any litigating party to know what the Complainant suffered, if it remains blatantly ignorant of what that means in practical purposes? The complaining party really does not know how it may retaliate, because there is no metric to measure its actions; for the same reason, the Respondent won't know whether the Complainant *over-* or *under-retaliated*.

To summarize, by refusing to engage in any serious effort to address in a meaningful manner the quantification and operationalization of the level of SCOO, the Arbitrators practically defied the purpose of the entire quantification exercise mandated by Art. 22.4 DSU, and therewith have put a big question mark on their own role in the process.

## **D.2.2 The Arbitrators' Opinion on Calculating the Level of SCOO**

As we just showed, Arbitrators on all occasions have been quick to reject their mandate to quantify the level of SCOO, alleging to the prohibition to examine the *nature* of concessions or other obligations to be suspended. Yet, in various instances, the Arbitrator nevertheless felt he had to let slip in some comments on the calculation of SCOO. Some of these comments unfortunately were rather counterproductive. A very good example is given by the Arbitrator in *EC – Bananas III (US)* (Article 22.6) at para 7.1: In response to the requesting party's demand to integrate domestic

---

<sup>47</sup> For all intents and purposes it could be a “less-than” sign or a “greater-than” sign, how can one know if it is only the left-hand side is subject to scrutiny and quantification?

<sup>48</sup> Confer Arbitrator Report in *US – 1916 (Article 2.6)* at para. 3.20: “If, in the future, the [Complainant] is of the view that the actual application of the blocking regulation results in a situation where the suspension of obligations exceeds the level of nullification and impairment, the [Complainant] may have recourse to the appropriate dispute settlement procedures to address this issue.” See also the Arbitration Reports *EC – Hormones* (Art. 22.6) at paras. 139-165, *US – Byrd (Article 22.6)* at para. 4.27, and *US – Gambling (Article 22.6)* at para. 5.12.

firms' costs and profits in the calculation of the level of N&I, the Arbitrator stated that the "same basis" needed to be used for measuring the levels of SCOO *and* N&I, and that the basis for the former was the "gross value of imports." This statement contains two capital errors: First, it is not a systemic prerequisite that N&I and SCOO require an identical "basis". Second, even if the trade effects test is assumed to be the adequate approach to measuring N&I, the "*gross trade value*" (trade affected) is the wrong comparator against which to measure "trade blocked" by the offending measure. We explain in turn:

As we noted above, from a theoretical standpoint, it is not only unnecessary, but also counter-productive to demand the same "basis" for SCOO and N&I. The Arbitrator in *EC - Bananas* confused "basis" (i.e. comparator) with "quantification methodology". Requiring that violation of benefits in form of market-closing behavior be avenged only by yet another market-closing retaliation moves the idea of "equivalence" dangerously close to "identity". Yet, as the word *equivalent* already suggests, it is not necessary to punish a lost eye for another eye, and a tooth for a tooth. If there is in place a coherent methodology of calibrating, monetizing and quantifying trade damage and SCOO, a violation of *any* entitlement can be retaliated against by means of, say, a suspension of certain intellectual property rights. In other words, the appropriate comparator between the level of N&I and SCOO is a coherent methodology, and *not* an identical measure of retaliation. Quantification according to a logical consistent method hence ensures that trade damages and suspension are being calibrated into a fungible "currency", viz. dollar-equivalent amounts of N&I and SCOO.

Moving on to the second error mentioned above, indemnifying damage (measured in terms of *trade blocked*) by means of calculating *affected*, or *gross trade* is a profoundly asymmetrical definition of trade effects.<sup>49</sup> Arbitrators repeatedly have assumed that retaliation takes the form of a *prohibitive* 100% *ad valorem* tariff on targeted goods.<sup>50</sup> (Only as an aside, this is nothing short of prejudging the form and intensity of SCOO – something that Arbitrators otherwise have enjoined themselves from doing...) Yet, only if tariff retaliation is fully prohibitive, does *lost trade* really equal *affected trade*. In all other instances, *lost trade* is a subset of *affected trade*, and hence SCOO and N&I not equal. To see this, assume an original WTO violation in form of a 5% tariff hike affecting 100\$ worth of trade of good *x*. The *direct trade effect* of this measure suffered by the Complainant is 5\$ (we are neglecting tariff revenues paid by the Complainant's exporters here), the *affected trade* is 100\$. Receiving retaliation authorization for 5\$ worth of *affected trade* allows the Complainant to either erect a prohibitive tariff on good *y* and to block 5\$ worth of *y* produce (in which case *affected trade* equals *blocked trade*). Alternatively, the complaining party may want to institute a 5% tariff hike as retaliation. Yet, under the Arbitrators' conception of SCOO, the Complainant would only be allowed to leverage a 5% tariff on 5\$ worth of *affected* or *gross trade* – a measure that would only block 0.25\$ worth of trade flows stemming from the responding Member. Needless to say, such a retaliation award is vastly under-compensatory to the Complainant.

It is important to realize that *lost trade* is an effect, a transaction not made due to a measure of certain form and intensity, whereas *affected trade* or *gross value of trade* is a scope of application

---

<sup>49</sup> This section is inspired by Spamann (2006), section I.B and II.A.

<sup>50</sup> That this conjecture is pervasive among Arbitrators can be seen by comparing *EC - Hormones (US)* (Article 22.6) para. 13, *US – Byrd (Article 22.6)* at para. 4.11, or *Brazil – Aircraft (Article 22.6)*, at para. 4.2.

(Spamann 2006, p. 45) covering all transactions affected by a measure, i.e. the entire trade flow. Thus, the Arbitrators' notion of SCOQ as gross trade is profoundly myopic. True equivalence of N&I and SCOQ (measured in direct trade effects) can only be achieved in very special circumstances, namely when the offending measure is a traditional market-access violation, when the Complainant desires to retaliate with suspension of yet another market-access action, and when the Complainant wants to and succeeds in erecting prohibitive tariffs vis-à-vis the Respondent's goods or services. Under any other circumstances, equivalence will not occur. Hence, this approach of quantifying SCOQ as gross trade reduces equivalence of N&I and SCOQ to a mere game of chance.

To summarize, with their denial to tackle the task of quantifying SCOQ, WTO Arbitrators have failed to address their core mandate, namely to establish equivalence between the levels of N&I and SCOQ. The result of this refusal is that Arbitrators really only concern themselves with calculating the level of N&I (and with dubious success, as section C argued), leaving issues of *nature, form* and *intensity* of retaliation in the hands of the complaining party. Given that the Arbitrator occasionally did express his views on the quantification on SCOQ (views of dubious quality as was just opined and views that rarely played in favor of the complaining party), it is advisable for a successful Complainant not to lose a single word on how it intends to retaliate, and instead to remind the Arbitrator of standing jurisprudence that he refrain from taking any decision on the topic of SCOQ.<sup>51</sup>

#### D. Safeguarding Equivalence between N&I and SCOQ

Theoretically, once the level of N&I and SCOQ are calibrated such that both calculations are based on the same quantification methodology and have been accordingly "monetized", the task to safeguard equivalence is a mere formality: The complaining party requests authorization to suspend concessions or other obligations in a certain amount and suggests a certain policy mix. The Arbitrator then checks whether the requested amount truly is equivalent to the level of N&I and proceeds to fix the degree with which the Complainant may enact its requested retaliation (the Arbitrator thereby is mindful of the constraints posed by Art. 22.3 and 22.5 DSU).

One interesting issue with respect to equivalence has come up in course of the Arbitration in *US – 1916 Act*, where the European Communities requested authorization to enact "mirror legislation":<sup>52</sup> Do the levels of N&I and SCOQ have to be quantifiable at all, or may the Arbitrator refrain from quantifying either side of the equation, hoping that *identical* measures will yield *identical* outcomes? Here, we side with the Arbitrator that trade damage (and SCOQ) must be "meaningfully quantifiable" (Arbitration Report at para. 5.57) in "numerical or monetary terms"

---

<sup>51</sup> Antigua & Barbados have understood well these rules of the game. Cf. *US – Gambling (Article 22.6)* at para. 5.5: "Once Antigua is given authorization to suspend concessions or other obligations, and once the level of authorization is set, then Antigua will assess its alternatives. Antigua argues that the 'equivalence' is achieved by first setting the level of nullification and impairment and thereafter Antigua setting the SCOQ at the same level."

<sup>52</sup> With "mirror legislation", the EC had in mind to enact legislation identical to, and in some points less stringent than, the US Antidumping Act of 1916.

(*ibid.* para. 5.23), since only so can the Arbitrator determine the *level* of N&I and SCOO, respectively, and thus *equi-valence*. We believe that identical measures enacted by different signatories at different points in time can have strikingly different outcomes and that it is the Arbitrator's mandate to safeguard that the measure taken in response to a violation is neither under-compensatory, nor punitive.<sup>53</sup> However, he can only fulfill that job, if he finds ways to quantify and compare N&I and SCOO. Reliance on chance or hope thereby is not enough.

Theory of equivalence aside, equilibrating SCOO and N&I is a non-existent task in WTO Arbitrations. As was argued at length above, Arbitrators seem to only be talking about this task, but given that they have consistently refused to calculate the level of SCOO, they therewith could not give any meaning to the concept of equivalence.

## E Conclusions and Policy Reforms

The seven Arbitrations dealing with Art. 22.4 of the DSU (counting *EC – Hormones* and *EC – Bananas* as two arbitrations each) have displayed a number of systemic flaws: The equivalence standard between the level of N&I and SCOO, safeguarding which the Arbitrator is charged under Art. 22.7 DSU, is a fiction. All Arbitrators so far have shied away from quantifying the level of SCOO. Whenever the right-hand side of an equation remains an unknown, equality between the two sides is reduced to pure conjecture. Therefore, complaining parties are more or less unconstrained in the application of retaliatory actions.

All the Arbitrators really have been doing, was to calculate the level of N&I. They did so committing a series of errors:

- As a first error we mentioned that Arbitrators relied too heavily on “direct trade effects” metric for quantifying N&I. This “tariffic” logic may well function for market-access related violations, but it breaks down whenever other, non-market access entitlements are infringed upon. Also, since the same quantification methodology (counterfactual, metric and scope) should be used for the calculation of N&I *and* SCOO (so as to make them comparable and eventually equivalent), focusing on a trade effects test for N&I seriously limits the option space for later retaliation. It pigeonholes or predisposes the Arbitrator to using the same metric for the compilation of SCOO. But since trade effects are only applicable to market-access restrictions, the retaliatory option space for complaining parties is therefore unnecessarily narrowed down.
- The second consequential error of Arbitrators' quantification of N&I was that they used the wrong calculation baseline, or counterfactual. Instead of constructing an *expectation damage* counterfactual, the Arbitrators used a methodology that most closely resembles *reliance damages*.

Both errors resulted in a systematic *under-compensation* of complaining Members. This is critical for the system, because *under-compensation* invites for *over-breach* on the part of injuring

---

<sup>53</sup> The same actions and transactions can have different subjective value to individuals (this, in fact, is the very motivation for individuals to engage in economic transactions or trades in the first place). Therefore, imputing identical effects to identical measures is a profoundly flawed understanding of social interaction.

Members, and consequently is prone to seriously reduce Members' trade liberalization commitments in ongoing Trade Rounds: Any Member fearing to ever be a complaining party in an Art. 22.6 litigation will anticipate to be inadequately compensated for its suffered damage. The only rational behavior by this country in anticipation of this is to scale back cooperative ambition (Mahlstein and Schropp 2007, Schropp 2008a).

We have brought forth a long list of criticisms towards WTO Arbitrators' practice in cases under the purview of DSU 22.4. Whether or not the criticism is pertinent is a question for each reader to decide. Yet, what is the constructive reform agenda we have to offer? Thanks to the clean slate that the WTO drafters have left the Membership when it comes to the operationalization of trade sanctions, the good news for our agenda of reform is that it does not require any changes in the language of the DSU whatsoever. Since the WTO fathers have provided virtually no guidance for how to handle arbitrations, all our points of criticism can be addressed by changing the Arbitrators' interpretation of Art. 22 DSU. Hence, if our criticism has any relevance, the only policy reform that would be needed is rethinking of previous arbitration practice and consequently a renunciation of legal precedent.<sup>54</sup>

We believe that Arbitrators can do a much better job if they heed the following string of steps:

1. Be transparent about your choices: Arbitrators have become much better in explaining their reasoning. More transparency, however, would be highly welcome.
2. Avoid "tariffic" misunderstandings: Arbitrators should make efforts to be explicit about what is the entitlement infringed upon and what is the *nature* of the offending measure. Answering this question may provide initial clarity whether a trade effects test is applicable at all, and what alternative quantification methods could be called upon.
3. Face the trade-off between accuracy and speculation: Arbitrators should confront themselves with the following suite of questions: Given the nature of the offending measure, how can we calculate the *intensity* of the trade damage suffered by the complaining party – without having to be unduly speculative and considering claims that are too remote? What is the proper counterfactual against which to measure the current situation? What is the most adequate metric in which to measure N&I – and later on SCOO? When choosing the metric in which to measure N&I, how can we handle the trade-off between avoiding unfounded speculation (which speaks for straight-forward measurement units based on hard evidence), and the need choose proxies that not to be under- or over-compensatory?<sup>55</sup>
4. Enter the virgin territory quantification of retaliation: Arbitrators must imperatively start tackling the task of calculating the level of SCOO. Only so can they really determine

---

<sup>54</sup> Although dispute panels and the Appellate Body do not tire of pointing out that the WTO does not know *stare decisis* (cf. the Arbitrator in *US – Byrd* at footnote 53: "As a matter of fact, we do not consider previous arbitrations to be constitutive of 'subsequent practice' within the meaning of that concept under public international law (see Vienna Convention, Article 31.3(b)"), even non-lawyers have realized by now that dispute panels do cherish the concept of legal precedence.

equivalence with the level of N&I.

Thereby, the Arbitrator may well leave it up to complaining party to determine *nature* and *form* of retaliation (keeping in mind the provisions of 22.3 and 22.5 DSU). However, once the policy-mix of retaliatory action is chosen by the Complainant, the competence of fixing the level of *intensity* or the *degree* with which retaliation can be applied must reside with the Arbitrator. Quantifying the intensity of SCOO is the mirror-image calculation of that of N&I: The Arbitrator must thereby use the same methodology, i.e. the same counterfactual, metric, and scope, so as to be consistent and to really make the two numbers comparable. Only with a coherent methodology can the two levels be called “of equal value”. Having “monetized” both the level of damage suffered and of remedy granted suffices to make these actions equivalent. Retaliatory action that uses a different policy-mix of *nature*, *form* and *intensity* than the original offending measure can therefore be permitted.

We are under no false hope that our proposal would mark a radical shift in the way arbitrations have been conducted in the past decade or so. We also acknowledge it is no small favor to ask of Arbitrators to get down to business and to start calculating the level of SCOO. The same goes for the calculation of expectation damages and quantification of broader economic gains and losses. Those are seriously difficult tasks. Tackling them would dramatically change the set of requirements needed from arbitration panels. At the end of the day, calculation of N&I and especially SCOO would become much more a technical and empirical task to be conducted by economic specialists.

Yet it would be imprudent to condemn the endeavor of properly quantifying and monetizing N&I and SCOO just because it seems challenging. If WTO arbitrators are not prepared to execute economic analyses of this kind today, the Membership should not lower its ambitions or jettison a reform agenda of Article 22.6 arbitrations altogether simply for reasons of practicality. Rather, Members should stock up the economic competence in the WTO Secretariat or allow for outside expertise.<sup>56</sup>

---

<sup>55</sup> In earlier sections, we have revealed our preference for choosing *direct economic gains and losses* as proxy for trade damage, but this may change from case to case.

<sup>56</sup> As Mavroidis 2000 at p. 769 states: “The fact, though, that full recovery [i.e. expectation damages] is, in practice, sometimes hard to calculate, does not render the reparation exercise meaningless [...] Although assessment of damages is the task of the judge, calculation of the damage is essentially a quantification exercise, that is, essentially the task of the economist” (see also Sapir and Trachtman 2008, Vandebussche 2008).

## References

- Anderson, K.** 2002. "Peculiarities of retaliation in WTO dispute settlement". CEPR Discussion Paper No. 3578
- Araki, I.** 2004. "Comment on Fritz Breuss 'WTO Dispute Settlement' " *Journal of Industry, Competition and Trade*, 4(4), pp. 345-64.
- Bagwell, K.; Mavroidis, P. C. and Staiger, R. W.** 2002. "It's a Question of Market Access." *American Journal of International Law*, 96(1), pp. 56-76.
- Bagwell, K.; Mavroidis, P. C. and Staiger, R. W.** 2005. "The Case for Tradeable Remedies in the WTO," S. Evenett and B. Hoekman (ed): *Economic Development and Multilateral Trade Cooperation*. Washington, D.C.: Palgrave/Mc Millan and World Bank, pp. 56-76.
- Bagwell, K. and Staiger, R. W.** 1999. "An Economic Theory of GATT." *American Economic Review*, 89(1), pp. 215-48.
- Bagwell, K. and Staiger, R. W.** 2002. *The Economics of the World Trading System*. Cambridge, MA: MIT Press
- Bernstein, J. and Skully, D.** 2003. "Calculating Trade Damages in the Context of the World Trade Organization's Dispute Settlement Process." *Review of Agricultural Economics*, 25(2), pp. 385-98.
- Breuss, F.** 2004. "WTO Dispute Settlement: An Economic Analysis of Four EU-US Mine Trade Wars." *Journal of Industry, Competition and Trade*, 4(4), pp. 275-315.
- Bronckers, M. and van den Broek, N.** 2005. "Financial Compensation in the WTO: Improving the Remedies of WTO Dispute Settlement." *Journal of International Economic Law*, 8(1), pp. 101-26.
- Charnovitz, S.** 2001. "Rethinking WTO Trade Sanctions." *American Journal of International Law*, 95(4), pp. 792-832.
- Charnovitz, S.** 2002a. "Should the Teeth Be Pulled? An Analysis of WTO Sanctions," D. L. M. Kennedy and J. D. Southwick (ed): *Political Economy of International Trade Law: Essays in Honor of Robert E. Hudec*. Cambridge, UK: Cambridge University Press, pp. 602-35.
- Charnovitz, S.** 2002b. "The WTO's Problematic 'Last Resort' Against Non-Compliance." *Aussenwirtschaft*, 57(IV), pp. 409-40.
- Cooter, R. and Eisenberg, M. A.** 1985. "Damages For Breach of Contract." *Californian Law Review*, 73(5), pp. 1432-81.
- Davey, W. J.** 2005. "The Sutherland Report on Dispute Settlement: A Comment." *Journal of International Economic Law*, 8(2), pp. 321-8.
- de Bièvre, D.** 2004. "Governance in International Trade: Judicialisation and Positive Integration in the WTO," *Preprints of the Max Planck Institute for Research on Collective Goods*. Bonn: Max Planck Institute for Research on Collective Goods, pp. 1-23.
- Dunoff, J. L. and Trachtman, J. P.** 1999. "Economic Analysis of International Law." *Yale Journal of International Law*, 24(Winter), pp. 1-55.
- Edlin, A. S. and Reichelstein, S.** 1996. "Holdups, Standard Breach Remedies, and Optimal Investment." *American Economic Review*, 86(3), pp. 478-501.
- Grané, P.** 2001. "Remedies Under WTO law." *Journal of International Economic Law*, 4(4), pp. 755-72.
- Hoekman, B. and Kostecki, M.** 1995. *The Political Economy of The World Trading System*. Oxford, UK: Oxford University Press.

- Hudec, R. E.** 2002. "The Adequacy of WTO Dispute Settlement Remedies: A Developing Country Perspective," B. Hoekman, A. Mattoo and P. English (ed): *Development, Trade and the WTO*. Washington, D.C.: World Bank, pp. 81-91.
- Irwin, D. A. and Mavroidis, P. C.** 2008. *The Genesis of the GATT*. Oxford: Oxford University Press
- Jackson, J. H.** 1997. *The World Trading System*. Cambridge, MA: MIT Press
- Jackson, J. H.** 2004. "International Law Status of WTO Dispute Settlement Reports: Obligation to Comply or Option to 'Buy Out'?" *American Journal of International Law*, 98(1), pp. 109-25.
- Jürgensen, T.** 2005. "Crime and Punishment: Retaliation under the World Trade Organization Dispute Settlement System " *Journal of World Trade*, 39.
- Keck, A.** 2004. "WTO Dispute Settlement: What Role for Economic Analysis?" *Journal of Industry, Competition and Trade*, 4(4), pp. 365-71.
- Kohler, W.** 2004. "The WTO Dispute Settlement Mechanism: Battlefield or Cooperation?" *Journal of Industry, Competition and Trade*, 4(4), pp. 317-36.
- Lawrence, R. Z.** 2003. *Crimes and Punishments? Retaliation under the WTO*. Washington, D.C.: Institute for International Economics
- Limao, N. and Saggi, K.** 2006. "Tariff Retaliation versus Financial Compensation in the Enforcement of International Trade Agreements". CEPR Working Paper Series no. 5560
- Lindsey, B.; Griswold, D. T.; A., G. M. and Lukas, A.** 1999. "Seattle and Beyond – A WTO Agenda for the New Millenium". CATO Center for Trade Policy Studies no. 8
- Maggi, G.** 1999. "The Role of Multilateral Institutions in International Trade Cooperation." *American Economic Review*, 89(1), pp. 190-214.
- Mahlstein, K. and Schropp, S. A. B.** 2007. "Optimal Design of Trade Policy Flexibility in the WTO". *Mimeo*.
- Mahoney, P. G.** 1999. "Contract Remedies: General," B. Bouckaert and G. de Geest (ed): *Encyclopedia of Law and Economics*. Ghent: Edward Elgar, University of Ghent, pp. 117-40.
- Masten, S. E.** 1999. "Contractual Choice," B. Bouckaert and G. de Geest (ed): *Encyclopedia of Law and Economics*. Ghent: Edward Elgar, University of Ghent, pp. 25-45.
- Mavroidis, P. C.** 1993. "Government Procurement Agreement; the Trondheim Case: The Remedies Issue." *Aussenwirtschaft*, 48(I), pp. 77-94.
- Mavroidis, P. C.** 2000. "Remedies in the WTO Legal System: Between a Rock and a Hard Place." *European Journal of International Law*, 11(4), pp. 763-813.
- Mavroidis, P. C.** 2007. *Trade in Goods*. Oxford, UK: Oxford University Press. Forthcoming (on file with the author)
- Pauwelyn, J.** 2000. "Enforcement and Countermeasures in the WTO: Rules are Rules - Toward a More Collective Approach." *American Journal of International Law*, 94(2), pp. 335-47.
- Pauwelyn, J.** 2001. "The Role of Public International Law in the WTO: How Far Can We Go?" *American Journal of International Law*, 95(3), pp. 535-78.
- Pauwelyn, J.** 2003. *Conflicts of Norms in Public International Law: How the WTO Relates to Other Rules of International Law*. Cambridge, U.K.: Cambridge University Press
- Pauwelyn, J.** 2006. "How Strongly *Should We* Protect and Enforce International Law?" *Mimeo*.
- Rogerson, W. P.** 1984. "Efficient Reliance and Damage Measures for Breach of Contract." *Rand Journal of Economics*, 15(1), pp. 39-53.
- Roitinger, A.** 2004. "The Institutional Design of Trade Policy Flexibility in the World Trade Order - Analysis and New Direction for Reform". *Thesis at Universität St. Gallen (HSG)*

- Sapir, A. and Trachtman, J. P.** 2008. "Subsidization, Price Suppression, and Expertise: Causation and Precision in Upland Cotton " *World Trade Review*, 7(1 (Special Issue)), pp. 183-209.
- Schropp, S. A. B.** 2005. "The Case for Tariff Compensation in WTO Dispute Settlement." *Aussenwirtschaft*, 60(IV), pp. 485-528.
- Schropp, S. A. B.** 2007. "Revisiting the 'Compliance-vs.-Rebalancing' Debate in WTO Scholarship: Towards a Unified Research Agenda". *Mimeo*.
- Schropp, S. A. B.** 2008a. *The Law & Economics of Trade Policy Flexibility and Enforcement in the WTO*. Cambridge, UK: Cambridge University Press (forthcoming)
- Schropp, S. A. B.** 2008b. "Trade Policy Flexibility and Enforcement in the WTO: Reform Agenda Towards an Efficient 'Breach' Contract". *Thesis at St. Gallen University (HSG)*
- Schwartz, W. F. and Sykes, A. O.** 2002a. "The Economic Structure of Renegotiation and Dispute Resolution in the WTO/GATT System". John M. Olin Law & Economics Working Paper no. 143
- Schwartz, W. F. and Sykes, A. O.** 2002b. "The Economic Structure of Renegotiation and Dispute Resolution in the WTO/GATT System." *Journal of Legal Studies*, 31(1), pp. 170-204.
- Sebastian, T.** 2007. "World Trade Organization Remedies and the Assessment of Proportionality: Equivalence and Appropriateness." *Harvard International Law Journal*, 48(2), pp. 337-82.
- Shavell, S.** 1980. "Damage Measures for Breach of Contract." *Bell Journal of Economics*, 11(2), pp. 466-90.
- Shavell, S.** 1984. "The Design of Contracts and Remedies for Breach." *Quarterly Journal of Economics*, 99(1), pp. 121-48.
- Spamann, H.** 2006. "The Myth of 'Rebalancing' Retaliation in WTO Dispute Settlement Practice." *Journal of International Economic Law*, 9(1), pp. 31-79.
- Sykes, A. O.** 2000. "The Remedy for Breach of Obligations under the WTO Dispute Settlement Understanding: Damages or Specific Performance?," M. Bronckers and R. Quick (ed): *New Directions in International Economic Law*. Kluwer Law International, pp. 347-57.
- Trachtman, J. P.** 2006. "Building the WTO Cathedral". *Mimeo*.
- Trebilcock, M. and Howse, R.** 2006. *International Trade Regulation* London, UK: Routledge
- Vandenbussche, H.** 2008. "Comment: Upland Cotton Case." *World Trade Review*, 7(1 (Special Issue)), pp. 211-17.
- Wolfe, R.** 2003. "Regulatory Transparency, Developing Countries and the WTO." *World Trade Review*, 2(2), pp. 157-82.
- WTO.** 2004. "The Future of the WTO – Addressing Institutional Challenges in the New Millennium," *Report by the Consultative Board to the Director-General Supachai Panichpakdi*. World Trade Organization. Geneva: WTO.
- WTO.** 2007. "World Trade Report 2007: Sixty Years of Multilateral Trading Order," Geneva: World Trade Organization.