

US–Stainless Steel (Mexico)

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Abstract: The *US–Mexico Stainless-Steel* dispute presents two interesting questions. First, what role does and should *stare decisis* (precedent) play in the WTO dispute-resolution system? Second, are there circumstances under which exceptional methodologies, i.e. ‘zeroing’, can better achieve the stated objectives of the agreement than the standard methodologies explicitly stated in the agreement? We argue that the institutional structure and foundational norms of the WTO imply the need for Panels to be bound by the prior decisions of the Appellate Body. Our economic analysis describes the costs and benefits of legal systems with and without precedent. Regarding methodology, we argue that any analysis of the suitability of a methodology (i.e. ‘zeroing’) must be undertaken jointly with an analysis of the underlying objective of the agreement (i.e. remedying injury). We conclude that, under limited circumstances, the ‘zeroing’ methodology is more effective at remedying injury than the ordinary methodology outlined in the Anti-Dumping Agreement.

1. Introduction

Background

On 26 May 2006, Mexico requested consultations with the United States (US) regarding how the US was calculating dumping margins.¹ The parties held consultations on 15 June 2006, but the dispute could not be resolved. On 12 October 2006, Mexico requested the Dispute Settlement Body (DSB) to establish a Panel to

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¹ Consultations were requested pursuant to Article 4 of the Understanding on Rules and Procedures Governing the Settlement of Dispute (DSU), Article XXII of the GATT 1994, and Article 17 of the Agreement on Implementation of Article VI of the GATT 1994 (Anti-Dumping Agreement).

examine the matter.² The Panel was established on 26 October 2006. Several countries retained their rights to participate in the Panel as third parties.³ The Panel met with the parties in May and July of 2007.

Issues

Mexico argued that the US was using an incorrect method of calculating margins of dumping. US law requires the Department of Commerce (USDOC) to use so-called ‘Zeroing Procedures’, which, Mexico claimed, meant that they were calculating margins that did not fully reflect export prices above normal value. This was because, Mexico argued, of ‘the non-inclusion in the numerator of the weighted average dumping margin calculations of the results of comparisons where the export price exceeds the normal value, when such results are aggregated in the calculation of the margins of dumping for the product under consideration as a whole’.⁴ In essence, the US is treating negative results as zero, which conflicts with a number of the US’s WTO obligations.

This argument focused on two specific complaints (their ‘as such’ claims). First, Mexico disagreed with how zeroing procedures were used in ‘model zeroing in investigations’ – where the weighted-average normal value is compared with the weighted-average export price. Mexico argued that this method is inconsistent with Articles VI:1 and VI:2 of the GATT 1994, Articles 2.1, 2.4, 2.4.2, and 18.4 of the Anti-Dumping Agreement, and XVI:4 of the WTO Agreement. Second, Mexico also disagreed with the use of the procedures in ‘simple zeroing in periodic reviews’ – periodic reviews where the weighted-average normal value is compared with individual export transactions. Mexico argued this was in conflict with Articles VI:1 and VI:2 of the GATT 1994, Articles 2.1, 2.4, 9.3, and 18.4 of the Anti-Dumping Agreement, and Article XVI:4 of the WTO Agreement.

In addition to these two ‘as such’ claims, Mexico also challenged how the USDOC was using zeroing procedures in the investigation and five periodic reviews on ‘Stainless Steel Sheet and Strip in Coils from Mexico’⁵ (their ‘as applied’ claim). It claims that this method was inconsistent with Articles VI:1 and VI:2 of GATT 1994, Articles 2.1, 2.4, 2.4.2, and 18.4 of the Anti-Dumping Agreement, and Article XVI:4 of the WTO Agreement.

The US responded by arguing that the ‘as such’ claims should be dismissed because zeroing procedures are not mandatory under US law. Further, even if zeroing procedures were being used, they were not prohibited in periodic reviews by the Anti-Dumping Agreement. This argument also applies to the ‘as applied’

² Pursuant to Articles 4 and 6 of the DSU, Article XXIII of the GATT 1994, and Article 17 of the Anti-Dumping Agreement.

³ Chile, China, the European Communities, Japan, and Thailand.

⁴ Panel Report, WT/DS344/R, page 2.

⁵ *Stainless Steel Sheet and Strip in Coils from Mexico*, 64 FR 30790 (USDOC) (8 June 1999), subsequently amended as *Stainless Steel Sheet and Strip in Coils from Mexico*, 64 FR 40560 (USDOC) (27 July 1999). See Panel Report, WT/DS344/R, page 2.

claim, although the US did acknowledge that model zeroing took place in the *Stainless Steel Sheet* investigation.

The third parties also contributed submissions. There was generally a consensus regarding model zeroing in investigations. Chile argued that the zeroing methodology was already found to be inconsistent with the WTO in previous Appellate Body decisions, and that therefore the Anti-Dumping Agreement should be amended to reflect this so future adjudication could be avoided. China argued that the use of zeroing is inconsistent with Articles 2.1, 2.4.2, and 2.4 of the Anti-Dumping Agreement, and that the Panel should follow the line of precedent and accept Mexico's claims. The EC submission argued that previous Panel and Appellate Body decisions had already produced a clear line of jurisprudence prohibiting zeroing. Even though *stare decisis* did not in principle apply to international tribunals, and there is no rule requiring WTO Panels to follow previous AB decisions, the EC argued that precedent should be given significant weight, because this provides 'security and predictability to the multilateral trading system'. Japan echoed these concerns, and argued that zeroing is prohibited. Thailand also argued that zeroing is inconsistent with GATT 1994 and the Anti-Dumping Agreement.

The third parties were also in substantial agreement that simple zeroing in periodic reviews was not permitted, and the arguments they made above largely apply in the simple-zeroing case as well.

Key findings of the Panel

The Panel issued its Report on 20 December 2007.⁶ They issued a number of key findings.

Model zeroing in investigations

The Panel looked at the model-zeroing and simple-zeroing claims in turn. They began with the model-zeroing claim. First, they concluded that Mexico presented sufficient evidence to demonstrate 'the existence of the *Model Zeroing Procedures* under US law as of the date of establishment of this Panel'.⁷

Second, in response to the American argument that they had ceased using model zeroing, the Panel concluded that the US had, in fact, ceased to use the procedures.⁸ Third, the Panel considered whether they should make recommendations on an expired measure, and concluded that there would be no point in making a recommendation relating to a measure that no longer exists.⁹

⁶ WT/DS 344/R. The *standard of review* used is set out in Article 11 of the DSU (the standard of review for WTO panels in general). Article 17.6 of the Anti-Dumping Agreement sets out the special standard applicable to disputes under the Anti-Dumping Agreement. In terms of the *rules of treaty interpretation* employed, Article 3.2 of the DSU incorporates Articles 31–32 of the Vienna Convention. The *burden of proof* is on the party making the complaint to establish a *prima facie* case, and the respondent must prove any evidence they are using in response.

⁷ Panel Report, WT/DS 344/R, page 17.

⁸ Panel Report, WT/DS 344/R, page 18.

⁹ Panel Report, WT/DS 344/R, page 19.

Fourth, the Panel considered whether model zeroing is WTO-inconsistent. They concluded that model zeroing in investigations is inconsistent ‘as such’ with Article 2.4.2 of the Anti-Dumping Agreement, and therefore it is inconsistent ‘as applied’ in the *Steel* case.¹⁰

Simple zeroing in periodic reviews

Next, the Panel considered the claims regarding simple zeroing in periodic reviews. First, they concluded that Mexico presented sufficient evidence to demonstrate the existence of the simple-zeroing procedures under US law.¹¹ Second, and crucially, the Panel concluded that simple-zeroing procedures ‘as such’ are *not* inconsistent with the WTO.¹² This is in spite of previous Appellate Body cases that had found the practice WTO-inconsistent.¹³ The Panel justified this move by interpreting the relevant treaty provisions¹⁴ and an examination of the potential consequences of a general prohibition on zeroing.¹⁵

Issues on appeal

Mexico appealed the Panel’s decision. They argued that the Panel erred in finding that simple zeroing in periodic reviews is not, as such, WTO-inconsistent, and requested a reversal of the Panel’s decision by the Appellate Body and a finding that the practice was prohibited. Mexico supported this claim by arguing that (a) dumping cannot be defined in terms of a specific product/category, as it was here;¹⁶ (b) the Panel erred by concluding that anti-dumping measures are concerned with the pricing behaviour of importers in relation to individual import transactions;¹⁷ (c) the Panel erred in concluding that the existence of a ‘prospective normal value’ system supports the view that anti-dumping duties can be calculated on a transaction-specific basis;¹⁸ (d) the Panel’s findings that the results are supposedly mathematically equivalent are irrelevant;¹⁹ and (e) the Panel improperly justified its conclusions on the grounds of ‘undesirable results’.²⁰ The US argued in response that, for five reasons, Mexico’s interpretation contradicts the plain text of the agreements.²¹

Second, Mexico argued that the Panel erred in finding that simple zeroing in periodic reviews is not, as such, inconsistent with Article 2.4 of the Anti-Dumping Agreement, because of the arguments made in *US–Zeroing (Japan)* – that the

10 Panel Report, WT/DS 344/R, page 23.

11 Panel Report, WT/DS 344/R, page 29.

12 Panel Report, WT/DS 344/R, page 45.

13 Panel Report, WT/DS 344/R, page 32.

14 Panel Report, WT/DS 344/R, pages 32–44.

15 Panel Report, WT/DS 344/R, pages 44–45.

16 AB Report, WT/DS 344/AB/R, page 5.

17 AB Report, WT/DS 344/AB/R, page 6.

18 AB Report, WT/DS 344/AB/R, pages 6–7.

19 AB Report, WT/DS 344/AB/R, page 7.

20 AB Report, WT/DS 344/AB/R, page 8.

21 AB Report, WT/DS 344/AB/R, pages 11–15.

procedure is inherently biased.²² The US responded by challenging Mexico's interpretation of 'fair comparison'.²³

Third, Mexico argued that simple zeroing as applied in periodic reviews should be found inconsistent with the WTO as well, because of the arguments set out above.²⁴ The US argued in response that the Panel's initial reasoning was correct.²⁵

Fourth, Mexico argued that the Panel acted inconsistently with Article 11 of the DSU by refusing to follow AB precedent, particularly given that one party (the US) remained the same.²⁶ The US contended that prior cases aren't binding.²⁷

Appellate Body disposition

i. Did the Panel err in finding that 'simple zeroing in periodic reviews' is not, as such, inconsistent with Articles VI:1 and VI:2 of the GATT 1994 and Articles 2.1 and 9.3 of the Anti-Dumping Agreement?

The AB concluded that simple zeroing is, as such, inconsistent with Article VI:2 of the GATT 1994 and Article 9.3 of the Anti-Dumping Agreement, because simple zeroing results in an anti-dumping duty that exceeds an exporter's margin of dumping which operates as the ceiling for the amount of anti-dumping duty that can be levied in respect of the sales made by an exporter.²⁸

ii. Did the Panel err in finding that the USDOC did not act inconsistently with Articles VI:1 and VI:2 by using simple zeroing in the five periodic reviews?

The AB concluded, again, that simple zeroing in periodic reviews is, as such, inconsistent with Article VI:2 of the GATT 1994 and Article 9.3 of the Anti-Dumping Agreement, for the same reasons, and therefore reversed the Panel on this issue.²⁹

iii. Did the Panel err in finding that 'simple zeroing in periodic reviews' is not, as such, inconsistent with Article 2.4 of the Anti-Dumping Agreement and, consequently, in finding that the USDOC did not act inconsistently with that provision in the five periodic reviews at issue in this dispute?

Since the Panel's finding that simple zeroing was not inconsistent with Article 2.4 was based on the same erroneous findings that their other conclusions were based on, the AB reversed these findings of the Panel as well.³⁰

22 AB Report, WT/DS 344/AB/R, page 9.

23 AB Report, WT/DS 344/AB/R, pages 15–16.

24 AB Report, WT/DS 344/AB/R, page 9.

25 AB Report, WT/DS 344/AB/R, page 16.

26 AB Report, WT/DS 344/AB/R, page 10.

27 AB Report, WT/DS 344/AB/R, page 17.

28 AB Report, WT/DS 344/AB/R, page 58.

29 AB Report, WT/DS 344/AB/R, page 59.

30 AB Report, WT/DS 344/AB/R, pages 60–61.

iv. Did the Panel fail to fulfill its obligations under Article 11 of the DSU by making findings that contradict those in previous Appellate Body reports adopted by the DSB?

The AB noted that ‘[t]he Panel’s failure to follow previously adopted Appellate Body reports addressing the same issues undermines the development of a coherent and predictable body of jurisprudence’.³¹ Further, the AB noted that it was ‘deeply concerned about the Panel’s decision to depart from well-established Appellate Body jurisprudence clarifying the interpretation of the same legal issues. The Panel’s approach has serious implications for the proper functioning of the WTO dispute settlement system.’³² However, the AB did not find a violation of Article 11, since the underlying defect of the Panel’s approach was its erroneous interpretations of the law, which the AB had already reversed, thereby adequately remedying this defect.

2. Legal issues in the appeal

Are Panels bound by Appellate Body rulings?

The Panel below in this dispute had explicitly rejected the prior jurisprudence of the Appellate Body on zeroing. This explicit refusal to follow the approach of prior adopted AB rulings raised in a particularly direct and acute way the issue of ‘vertical’ stare decisis in the WTO dispute settlement system.

The AB first opined on ‘vertical’ stare decisis in its *Shrimp/Turtle* 21.5 ruling. There the AB noted:

Malaysia [the Appellant] also objects to the frequent references made by the Panel to our reasoning in our Report in *United States – Shrimp*. The reasoning in our Report in *United States – Shrimp* on which the Panel relied was not *dicta*; it was essential to our ruling. The Panel was right to use it, and right to rely on it. Nor are we surprised that the Panel made frequent references to our Report in *United States – Shrimp*. Indeed, we would have expected the Panel to do so. The Panel had, necessarily, to consider our views on this subject, as we had overruled certain aspects of the findings of the original panel on this issue and, more important, had provided interpretative guidance for future panels, such as the Panel in this case ... (para. 108). In this respect, we note that in our Report in *Japan–Taxes on Alcoholic Beverages*, we stated that:

Adopted panel reports are an important part of the GATT *acquis*. They are often considered by subsequent panels. They create legitimate expectations among WTO Members, and, therefore, should be taken into account where they are relevant to any dispute.

31 AB Report, WT/DS 344/AB/R, page 67.

32 AB Report, WT/DS 344/AB/R, page 68.

This reasoning applies to adopted Appellate Body Reports as well. Thus, in taking into account the reasoning in an adopted Appellate Body Report – a Report, moreover, that was directly relevant to the Panel’s disposition of the issues before it – the Panel did not err. The Panel was correct in using our findings as a tool for its own reasoning. (paras. 108–109)

Later, in *US–Oil Country Tubular Goods Sunset Reviews*, the Appellate Body held that ‘following the Appellate Body’s conclusions in earlier disputes is not only appropriate, but is what would be expected from panels, especially where the issues are the same’ (para. 188).

In the present dispute, the AB reaffirmed its approach to ‘vertical’ stare decisis in these rulings. The AB held:

Dispute settlement practice demonstrates that WTO Members attach significance to reasoning provided in previous panel and Appellate Body reports. Adopted panel and Appellate Body reports are often cited by parties in support of legal arguments in dispute settlement proceedings, and are relied upon by panels and the Appellate Body in subsequent disputes. In addition, when enacting or modifying laws and national regulations pertaining to international trade matters, WTO Members take into account the legal interpretation of the covered agreements developed in adopted panel and Appellate Body reports. Thus, the legal interpretation embodied in adopted panel and Appellate Body reports becomes part and parcel of the *acquis* of the WTO dispute settlement system. Ensuring ‘security and predictability’ in the dispute settlement system, as contemplated in Article 3.2 of the DSU, implies that, absent cogent reasons, an adjudicatory body will resolve the same legal question in the same way in a subsequent case. (para. 160)

In the hierarchical structure contemplated in the DSU, panels and the Appellate Body have distinct roles to play. In order to strengthen dispute settlement in the multilateral trading system, the Uruguay Round established the Appellate Body as a standing body. Pursuant to Article 17.6 of the DSU, the Appellate Body is vested with the authority to review ‘issues of law covered in the panel report and legal interpretations developed by the panel’. Accordingly, Article 17.13 provides that the Appellate Body may ‘uphold, modify or reverse’ the legal findings and conclusions of panels. The creation of the Appellate Body by WTO Members to review legal interpretations developed by panels shows that Members recognized the importance of consistency and stability in the interpretation of their rights and obligations under the covered agreements. This is essential to promote ‘security and predictability’ in the dispute settlement system, and to ensure the ‘prompt settlement’ of disputes. The panel’s failure to follow previously adopted Appellate Body reports addressing the same issues undermines the development of a coherent and predictable body of jurisprudence clarifying Members’ rights and obligations under the covered agreements as contemplated under the DSU. Clarification, as envisaged in Article 3.2 of the DSU, elucidates the scope and meaning of the provisions of the covered agreements in accordance with customary rules of interpretation of public

international law. While the application of a provision may be regarded as confined to the context in which it takes place, the relevance of clarification contained in adopted Appellate Body reports is not limited to the application of a particular provision in a specific case. (para. 161)

We are deeply concerned about the Panel's decision to depart from well-established Appellate Body jurisprudence clarifying the interpretation of the same legal issues. The Panel's approach has serious implications for the proper functioning of the WTO dispute settlement system, as explained above. Nevertheless, we consider that the Panel's failure flowed, in essence, from its misguided understanding of the legal provisions at issue. Since we have corrected the Panel's erroneous legal interpretation and have reversed all of the Panel's findings and conclusions that have been appealed, we do not, in this case, make an additional finding that the Panel also failed to discharge its duties under Article 11 of the DSU. (para. 162)

In a subsequent case, *US–Continued Zeroing*, a Panel had occasion to interpret and apply the above holding of the AB. The Panel first of all said that it found the previous Panel rulings that had differed from the AB analysis of the same issues to be 'persuasive'. However, it was now, however reluctantly, required to follow the approach of the AB. The Panel considered that, while it was required, due to the considerations regarding 'expectations' and the stability and predictability of the system, to give weight to prior AB rulings, nevertheless that 'we do not consider that the development of binding jurisprudence is a contemplated element to enable the dispute settlement system to provide security and predictability to the multi-lateral trading system' (para. 7.179). The Panel went on to formulate its own test for the precedential weight of AB rulings: 'a panel cannot simply follow the adopted report of another panel, or of the Appellate Body, without careful consideration of the facts and arguments made by the parties in the dispute before it. To do so would be to abdicate its responsibilities under Article 11. By the same token, however, neither should a panel make a finding different from that in an adopted earlier panel or Appellate Body report on similar facts and arguments without careful consideration and explanation of why a different result is warranted, and assuring itself that its finding does not undermine the goals of the system' (para. 7.180). Applying its own test, the Panel held that, even if there were good reasons to deviate from the AB jurisprudence on the substance, the systemic goal of 'prompt settlement of disputes' would be undermined by doing so. The Panel observed that the AB had repeatedly reversed the Panels on these issues. The implication was that it would be perfectly legitimate for the Panel to deviate from the AB's jurisprudence, but that, since the AB would simply overrule the Panel once again, as a practical matter, the only result of such a deviation would be to delay a final settlement of the particular dispute, thus frustrating the 'prompt settlement' goal. In other words, the Panel obstinately could not accept that the AB is a genuine higher court, with superior legitimacy as such to the Panel in its role as interpreter of the law. Nor that the AB has *Competenz-Competenz* to decisively

rule on systemic issues such as the relationship of the AB to other WTO institutions, such as Panels.

Analysis

In *Shrimp/Turtle 21.5*, the AB arguably avoided the distinctive issue of ‘vertical’ stare decisis by relying on its discussion of ‘horizontal’ stare decisis in *Japan–Alcohol*. Thus, the AB considered the basis for giving precedential weight to prior AB rulings as the same as that with respect to prior adopted GATT and WTO Panel rulings, namely ‘legitimate expectations’. Perhaps because it was not faced with a direct affront to its authority by a Panel in that case, the AB did not expound on the distinctive role of the Appellate Body in the dispute settlement system, i.e. as a body that has the power definitely to reverse or modify any Panel ruling that is appealed to it. In the present dispute, we find for the first time an explicit treatment of the ‘hierarchical’ character of the dispute settlement system and the consciousness that the Panels and the AB perform ‘distinct roles’ in that system. The AB expresses, albeit in a very terse way, the notion that appellate review in the WTO was intended not only as a means of correcting error, or a ‘second opinion’, but at achieving a unified jurisprudence. Besides referring to the AB’s power to reverse or modify Panel rulings, and the general notion that the purpose of the dispute settlement system includes the clarification of the law, the AB said little if anything about other features that point to its function as a ‘high court’ for the WTO. This especially goes to the question of *Competenz-Competenz*, i.e. to why the AB should be able to *decide* matters that go to the relationship of the AB to other institutions in the WTO. As with other cases that pose this kind of question, such as *India–BOP* and *Turkey–Textiles* (where the issue was justiciability of matters where a WTO committee has a decision-making role), the AB displays little awareness of the *Competenz-Competenz* character of the issue. Here one might contrast the approach of the Appeals Chamber of the ICTY in the case of *Tadic v. Prosecutor*, for example, which considered at some length the significance of a *judicial* function having been conferred on the tribunal, and the notion that there are powers ‘incidental’ to such a function.

Unlike the Panel in *US–Continued Zeroing*, one should not misrepresent the issue at stake as whether there is *de jure* stare decisis, i.e. binding jurisprudence, in the WTO system. Even in systems that are characterized as having such jurisprudence, it is recognized that the values that support stare decisis must be balanced with other values that may, on occasion, dictate the overruling of a previous decision, e.g. manifest injustice or a fundamental shift of social values, or decisive changes in underlying facts or realities presupposed by the ruling in question (see the US Supreme Court ruling in *Planned Parenthood v. Casey*). Conversely, in legal systems where there is no *de jure* stare decisis a rigid conception of the rule of law may lead to slavish following of past decisions, with indifference to counter-vailing values. What is really at stake in the stand off between the Panels and the

Appellate Body is the stature and authority of the AB as the judicial organ or judicial function of the WTO.

It is probably correct for several reasons to conclude that there is no *de jure* stare decisis in the WTO system; thus the AB's reluctance to insist on such a proposition is understandable. First of all, it is traditionally understood that, in international law, the rulings of courts and tribunals are only supplementary or secondary sources of international law (see ICJ Statute Article 38). This may be shifting with the increasing judicialization of international law and politics, for example, the now pervasive resort to prior decisions of courts and tribunals to prove, or even evolve, custom, and also with the functioning of appellate review itself in regimes such as the ICTY and ICTR as well as the WTO.

In fact, the Appeals Chamber of the ICTY has a well-developed doctrine of stare decisis (horizontal and vertical), despite the constitutive instrument of the tribunal being silent on stare decisis. In *Aleksovski*, where the ICTY first considered the issue of stare decisis,³³ the Appeals Chamber emphasized the importance of vertical stare decisis as an essential aspect of assuring the predictability and certainty of the application of the law, and as necessary to achieving fair treatment where like cases are treated alike.³⁴ It is also a basic feature of common-law systems and, while not a formal principle of civil-law systems, a functional one, and therefore should be applied.³⁵ At the same time, the Appeals Chamber stated that, in exceptional circumstances, the first instance could depart from precedent when there are 'cogent reasons in the interests of justice' and when the case is not similar.³⁶ These *exceptions* or *limits* on stare decisis are broadly consistent with the way it is practiced in domestic legal systems; this is to be contrasted with the Panel approach in *US–Continued Zeroing*, which suggests that the first instance should *routinely* consider whether or not appellate precedent is to be followed, and that not following such precedent only requires 'careful consideration and explanation of why a different result is warranted' – i.e. any reason will do, 'cogent reasons *in the interests of justice*' (emphasis added) are not required.

In the case of the WTO system, the WTO Agreement provides a political mechanism for authoritative interpretations of the covered Agreements and thus suggests that, as a matter of institutional separation of powers, even Appellate Body interpretations are not binding jurisprudence in a 'constitutional' sense.

But even in a system without such a formally binding jurisprudence, the reasons for a tribunal of first instance routinely deferring to the interpretative authority of the system's high court may be compelling.

33 *Prosecutor v. Zlatko Aleksovski*, Opinion and Judgement, Case No. IT-95-14/1-A (24 March 2000), available at <http://www.icty.org/x/cases/aleksovski/acjug/en/ale-asj000324e.pdf> (last visited 27 October 2009). This was the first case of the ICTY to consider the stare decisis issue. Tyner (2006) at 860.

34 *Prosecutor v. Zlatko Aleksovski*, Opinion and Judgement, Case No. IT-95-14/1-A at 47–48.

35 *Prosecutor v. Zlatko Aleksovski*, Opinion and Judgement, Case No. IT-95-14/1-A at 47.

36 Geert-Jan Alexander Knoops (2005).

To see this is the case in the WTO, we need to consider more institutional features of the system and the Panels and the AB specifically than the AB has been prepared to discuss. The AB represents and expresses the rule of law as a core value of the WTO system in a way that the Panel process does not, and cannot as currently constituted. The Panel process manifestly lacks, at least in practice, the rule-of-law quality of independence from political influence, including perceived influence. The parties to a particular dispute still retain in practice considerable influence over who are the panelists in that dispute. The panelists in turn typically remain government functionaries during their tenure as panelists, even if they are supposed to decide independently. Furthermore, it is widely known that the WTO Secretariat itself plays a major, behind-the-scenes role in shaping Panel rulings – a role quite different from the transparent, institutionally distinct, advisory role of the Advocate-General in ECJ proceedings for instance. Panelists are appointed *ad hoc*, dispute by dispute; dissatisfying a state that is a major user of the WTO dispute settlement system, or the Secretariat, may well lead to an individual never again being considered as a panelist in a future dispute. This provides a further avenue for political pressure on panelists.

Unlike the case of panelists, with respect to the Appellate Body, the credentials required for Members by the DSU itself seem designed specifically to facilitate the creation of a genuine jurisprudence, not merely satisfactory settlements of individual disputes. These are: ‘The Appellate Body shall comprise persons of recognized authority, with demonstrated expertise in law, international trade and the subject matter of the covered agreements generally. They shall be unaffiliated with any government’ (Art. 17.3). The requirement of ‘recognized authority’ is in itself significant: it suggests that the architects of the system were intending to ensure the kind of legitimacy that a high court demands. ‘Demonstrated expertise in law’ reminds us that *panelists* are often not jurists at all, let alone legal ‘experts’. Finally, the stipulation that the Appellate Body members be ‘unaffiliated with any government’ indicates awareness that the judicial function demands a distance from interested politics that goes significantly beyond what is asked of panelists. In sum, the qualifications for AB Members differ from those for panelists significantly, and indicate the difference between what is required for dispute resolution on the one hand and what is expected of a high court on the other. There are further institutional features of appellate review at the WTO that should also be considered. First of all, appeal is of right. No leave is required and no vetting process is entailed. In such a system, there is an automatic and effective remedy for the failure of a Panel to follow previous AB decisions – appeal to the AB itself. It is difficult to imagine that the architects of such a system could have believed other than that AB jurisprudence would be controlling. Consider by contrast a different sort of ‘second instance’ – annulment proceedings in ICSID investor-state arbitration. There, the jurisdiction of the ‘second instance’ is limited to controlling certain kinds of abuses or dysfunctions of the ‘first instance’ – excess of jurisdiction, absence of reasons, bias. Provided an Annulment Committee remains within

such a constrained jurisdiction, one would not expect a unified substantive jurisprudence as an intended outcome from a review procedure of this nature.

The collegiality practices of the AB – all cases are discussed among all the seven Members – further reinforce the sense that the AB has a systemic jurisprudential role distinct from that of Panels. The AB is able to see the implications of a legal interpretation in one case and in one context for many other situations and contexts.

Since, as already noted, there is an effective remedy where a Panel fails to follow the AB, namely an appeal as of right to the AB, what is one to make of the defiant attitude of the Panels in the zeroing cases? Is this high-minded civil disobedience or quixotic tilting at windmills? Perhaps it is neither. Instead, it may well be a subtle and corrosive attempt to undermine the distinctive judicial stature of the AB. Why, in the presence of such defiance, would the AB do anything but reaffirm its previous holdings? This would only happen if the AB understood the defiance as an intimidating message from powerful quarters within the WTO of dissatisfaction with its operations, and were capable of being influenced by such intimidation.

This is actually consistent with the explanation of the Panel in *US–Continued Zeroing* as to why it was going to give up and follow the AB. Perhaps revealing too much of its motivations for its own good, the Panel noted the failure of previous Panels to get the AB to back down: ‘7.181 As discussed above, we share a number of concerns raised by the panel in *US–Stainless Steel (Mexico)*, particularly with regard to the US mathematical equivalence argument. We recognize, however, that the Appellate Body in its report reversed the panel’s findings and this report gained legal effect through adoption by the DSB. We note that this continues a series of consistent recommendations made by the DSB over the past several years following reports that addressed the same issues based largely on the same arguments.’

A major lesson here for the Appellate Body is that, if it is to preserve its own legitimacy, it must never change its mind, for such a change of mind will almost automatically be viewed as a concession to pressure from elsewhere in the system. In the *EC–Asbestos* case, the AB established a procedure for the submission of amicus briefs that caused considerable discontent among many WTO Members. When, in the end, the AB decided not to grant leave to file to any of the applicants, it was widely interpreted as having given in to such pressure, and here the AB did not reverse itself on any finding of law – arguably, it was simply reaction to a situation where none of the applications suggested the brief in question would offer new arguments beyond what the parties had pleaded. This has implications for *horizontal* stare decisis. By not reversing itself, the AB enhances or protects its own legitimacy as an independent judicial body. There is a downside here in the kind of challenge to its authority that the AB has faced in the zeroing cases. It would be good if the AB had the space to be able, in some instances, to reconsider and even reverse its prior jurisprudence, without thereby risking a loss of legitimacy. Sometimes jurisprudence needs to evolve by such a transparent break with the *acquis* – the US Supreme Court case of *Lawrence v. Texas* is perhaps a case in

point (the Court had to recognize explicitly that criminalization of sodomy could not be reconciled with the values of a fully evolved liberal democracy).

3. Economic issues

Dumping, injury, and zeroing in the Anti-Dumping Agreement

The Anti-Dumping Agreement does not prohibit dumping, i.e. selling at a price, P_x , that is less than a good's normal value (NV). It prohibits dumping *if dumping causes injury to the domestic import-competing sector*.³⁷ The agreement allows the imposition of an anti-dumping duty that *just remedies any injury* and specifies that anti-dumping duties should be no higher than the minimum necessary to offset injury.³⁸ An important economic issue in the *US–Mexico Stainless Steel* case was: does zeroing help a country fulfill the intent of the Anti-Dumping Agreement, to offset injury to the domestic import-competing industry caused by dumping?

Previous economic analyses of zeroing cases have explained why various methodologies that incorporate zeroing in the calculation of the dumping margin are unreasonable, unfair, and/or inconsistent with normal practices in econometrics. Prusa and Vermulst (2009) offer an excellent assessment of the ways in which methodologies that utilize zeroing result in anti-dumping duties that are too high. However, this literature has largely ignored the relationship between the extent of dumping and the extent of injury. Given that the stated purpose of the agreement is to offset injurious dumping, it seems logical that an economic assessment of methods for calculating dumping margins should include an analysis of how much injury the duty determined under each method is able to remedy.³⁹ If a method employed in the dumping determination is systematically associated with anti-dumping duties that *more than compensate injury* and that create super-normal gains for the domestic industry, this calls into question the suitability of that methodology as a remedy for injurious dumping.

We consider a simple example of 'ordinary dumping' and a simple example of 'targeted dumping'. Both examples involve at least one episode of dumping in which the export price is below normal value and evidence that the domestic industry is injured by dumping in the sense that it receives a level of producer's surplus that is lower than it would have been if the exporter had not dumped.

The ordinary dumping example satisfies the legal requirements for margin calculation under the standard methods of Article 2.4.2, commonly referred to as the weighted-average-to-weighted-average (W-W) and the transaction-to-transaction (T-T) methods. The targeted-dumping example is constructed so that the legal

37 Article VI:I of the GATT 1994. Articles 5.2 and 5.6 of the Anti-Dumping Agreement.

38 The AB notes this in paragraph 93 of the Appellate Report WT/DS 334/AB/R. Article 11.1 sets out the overarching principle that '[a]n anti-dumping duty shall remain in force only as long as and to the extent necessary to counteract dumping which is causing injury'.

39 The standard practice in the US is to conduct dumping and injury analyses separately. The argument presented here does not challenge the practice of a bifurcated analysis.

requirements of the exceptional method of Article 2.4.2, the weighted-average-to-transaction method (W-T), are satisfied.

The analysis of these two stylized examples illustrates the extent to which weighted-average anti-dumping duties and ‘zeroed’ anti-dumping duties remedy injury to domestic producers caused by dumping. We show that zeroed anti-dumping duties are excessive under ordinary dumping; they overcompensate the domestic industry. Interestingly, zeroed anti-dumping duties are necessary to fully remedy the injury caused by a stylized, yet highly plausible, case of targeted dumping.

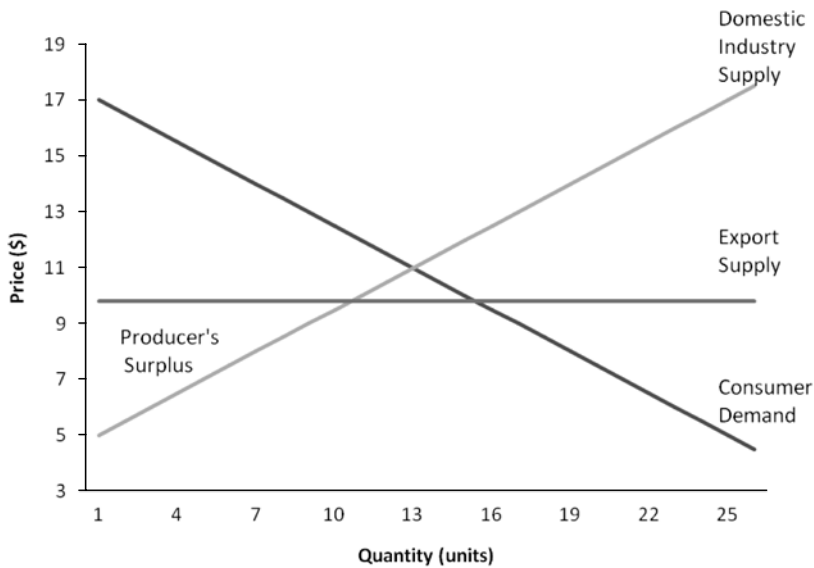
This positive economic analysis of Article 2.4.2 (on the calculation of dumping margins) and Article 11.1 (on the remedy of injury) demonstrates that the exceptional method for the calculation of dumping margins under Article 2.4.2 (the weighted-average-to-transaction method) is not *inutile* in the legal sense. The analysis shows that forcing mathematical equivalence between the ordinary methods (W-W or T-T) and the exceptional method (W-T) could undermine the intent of the agreement – to remedy injury caused by dumping – by under-compensating a domestic industry injured by targeted dumping.

In the examples presented, different remedies are necessary to offset injury under ordinary and targeted dumping.⁴⁰ This occurs because ordinary dumping is modeled as having only a transitory effect on the welfare of the domestic industry. Targeted dumping, in contrast, is a response by a foreign firm to an information problem. The act of targeted dumping permanently changes the nature of competition in the domestic market and leads to a persistent loss of welfare for the domestic industry.

The Appellate Body’s report in *US–Mexico Stainless Steel*, paragraphs 92–96, touches on the idea that a legal review of methodologies specified in Articles 2.4.2 should be informed by and integrated with a review of the agreement’s intent, to remedy injury. In a series of disputes over zeroing, the US has repeatedly put forward legal arguments that when a methodology is not explicitly prohibited by the agreement, deference should be given to national authorities. However, the legal-economic argument developed here counters that. If an economic analysis can show that a particular methodology systematically violates the agreement’s intent, it seems reasonable to disallow that particular methodology. To clarify, the point is not that the Anti-Dumping Agreement prohibits zeroing. Rather, for cases in which zeroing (or any methodology) fulfills the intent of the agreement, it should be allowed. However, a methodology should not be utilized as a standard practice if it systematically undermines the intent of the agreement. This suggests

⁴⁰ To be precise, a normative welfare analysis of each example, ordinary and targeted dumping, would find that an anti-dumping duty reduces welfare relative to free trade. Thus, the optimal policy in both cases is no duty. However, a positive analysis of the Anti-Dumping Agreement, which is only concerned with the welfare of import-competing producers, finds that different methodologies for calculating dumping margins are required to remedy injury under the two different cases.

Figure 1. Industry Supply, Consumer Demand and Export Supply in Country A



that the use of zeroing by the US might be reasonable in exceptional cases of targeted dumping, but not as a normal practice for cases of ordinary dumping.

Ordinary dumping

Consider an exporter who produces a good which is a perfect substitute for the domestically produced good of Country A. The domestic industry is competitive and industry supply is upward-sloping with data on quarterly domestic-industry output given by Figure 1. The product under question is a normal good with downward-sloping consumer demand in each quarter given in Figure 1. The exporter offers as many units of the good as consumers will demand at some price, P_x , which can change in each quarter of the year.⁴¹ That is, export supply is perfectly elastic at the exporter's offered price.

In the first year that the exporter sells its good in Country A, it offers a different price in each quarter and supplies as many units as consumers demand at the

⁴¹ In this simple example, we abstract away from the reason for the price variation but assume that the exporter is not varying the price for reasons related to strategic competition. The underlying assumption is that the export price is changing in response to changes in a stochastic variable. For example, the export-pricing rule could be to charge a constant mark-up over marginal cost. If marginal cost varies over time, so will the export price. Alternatively, export-price variation might arise in response to changes in economic conditions in the foreign firm's own market as in papers by Staiger and Wolak (1992 and 1994) and Crowley (2008 and 2009).

Table 1. Export prices and sales volumes in year 1

Transaction date	Exporter's offered price (P_x)	Exporter's normal value (NV)	Total quantity demanded (Q_d)	Quantity supplied by domestic industry (Q_s)	Imports (M)	Surplus of the domestic industry (PS)
Year 1 Q1	\$8/unit	\$10/unit	18	6	12	\$9
Year 1 Q2	\$11/unit	\$10/unit	12	12	0	\$36
Year 1 Q3	\$6/unit	\$10/unit	22	2	20	\$1
Year 1 Q4	\$10/unit	\$10/unit	14	10	4	\$25

offered price. For simplicity, we assume that the exporter's home market price (normal value) is \$10/unit throughout the year.⁴² Table 1 summarizes the total quantity sold to consumers in Country A, the quantity sold by the domestic industry in Country A, and the quantity sold by the exporter (imports) in each quarter. The producer's surplus of the domestic industry is total revenues in the industry, less the cost of production. This 'producer's surplus' is the economist's standard measure of economic welfare in an industry.⁴³

Dumping margins and injury under ordinary dumping

The concept of 'injury' to an industry is difficult for economists to precisely define and measure. Legally, injury comprises multiple factors that describe an industry. Typically, injury is regarded as increasing with reductions in profits, sales, and employment.⁴⁴ Theoretically, we can define injury as the loss of producer's surplus, or economic welfare, in the domestic industry, relative to what it would have been if dumping had not occurred. In this example, the domestic industry would receive producer's surplus of \$25 if the exporter sets its export price equal to normal value. Thus, the injury to the domestic industry from any dumped sale by the

⁴² This simplifying assumption implies that normal value and dumping margins will be the same under the W-W and the T-T methodologies and allows us to focus on the relationship between dumping and injury.

⁴³ If input prices are constant, producer's surplus is equivalent to economic profits. If not, it includes gains to factors of production (Deardorff, 2005).

⁴⁴ In this example, any reduction in the export price, fair or unfair, will result in fewer sales by the domestic producer and a lower level of producer's surplus. This simply means that both fair market competition with a low-priced foreign competitor and dumping by a foreign competitor will result in injury. What distinguishes 'injurious dumping' from injury under fair market competition is normal value, the level of the exporter's price in its own market. The arbitrariness of 'normal value', a concept that does not derive from normative welfare analysis, has been addressed in previous ALI case studies of zeroing (Janow and Staiger, 2003; Bown and Sykes, 2008; Prusa and Vermulst, 2009). This paper conducts a positive analysis of producer's surplus and injurious dumping given the arbitrarily derived legal definition of normal value.

Table 2. Export prices, dumping margins, and injury to the domestic industry in year 1

Transaction date	Exporter's offered price (P_x)	Exporter's normal value (NV)	Dumping margin (DM)	Imports (M)	Injury to the domestic industry
Year 1 Q1	\$8/unit	\$10/unit	\$2	12	\$16
Year 1 Q2	\$11/unit	\$10/unit	–\$1	0	\$0
Year 1 Q3	\$6/unit	\$10/unit	\$4	20	\$24
Year 1 Q4	\$10/unit	\$10/unit	\$0	4	\$0

exporter is \$25 (the surplus it would have received at the lowest non-dumped price) less the producer surplus received when dumping occurs. If the exporter's price is above normal value and producer's surplus is above the minimal level of \$25, then no injurious dumping has occurred. Table 2 summarizes the extent of domestic injury associated with dumping. The key point of the table is that with downward-sloping demand and upward-sloping industry supply, the extent of domestic injury increases as the margin of dumping increases.

What is the extent of injury when the dumping margin is negative? When the exporter offers a price of \$11 in Country A, the domestic industry receives \$36 of producer's surplus or \$11 more than it would have received under the tougher level of fair competition implied by the lowest possible fair export price (i.e. \$10). As there is no concept of negative injury in the GATT, we assign an injury level of \$0 when the export price is \$11. As a final observation on Table 1, we note that the average level of producer's surplus is \$17.75 per quarter in the absence of any government response to dumping. Although the Anti-Dumping Agreement does not refer to an industry's average level of welfare over time, this measure is sometimes relevant for economic assessment. If the economic welfare of an industry is highly volatile, but the average level of welfare is high, this is of less concern to an economist than a situation in which the average level of economic welfare of an industry falls dramatically and irreversibly in response to an episode of dumping.

The ideal anti-dumping duty for remedying injury under ordinary dumping

Next, suppose that in year 2, the government of Country A could impose a unique anti-dumping duty on each transaction that was just sufficient to eliminate injury. What would this ideal transaction-specific anti-dumping duty be? Conceptually, the intent of the Anti-Dumping Agreement implies that we would set the duty on each dumped transaction to just offset injurious dumping. The ideal transaction-specific duty should ensure that the exporter's duty-inclusive price in Country A be at least normal value and that domestic producer's surplus be at least the level

Table 3. Imports and producer's surplus under an ideal transaction-specific anti-dumping duty

Trans. date	Exporter's offered price (P_x)	Dumping margin (DM)	Trans-specific AD duty ($TSADD$)	Price incl. of TSADD (P_d)	Total quantity demanded (Q_d)	Quantity supplied by domestic industry (Q_s)	Imports (M)	Surplus of the domestic industry (PS)
Year 2 Q1	\$8	\$2	\$2	\$10	14	10	4	\$25
Year 2 Q2	\$11	-\$1	\$0	\$11	12	12	0	\$36
Year 2 Q3	\$6	\$4	\$4	\$10	14	10	4	\$25
Year 2 Q4	\$10	\$0	\$0	\$10	14	10	4	\$25

obtained when the export price is equal to normal value.⁴⁵ Table 3 presents a baseline ideal anti-dumping policy that fully achieves the Anti-Dumping Agreement's intent of just eliminating injurious dumping and providing a level of welfare to producers that is exactly what they would have received if the exporter had charged a price equal to normal value.

Under this ideal policy, domestic producers receive a minimum level of surplus, \$25, in all quarters. The average level of producer's surplus is \$27.75 per quarter, dramatically larger than the \$17.75 per quarter that is received under intermittent dumping in year 1.

The weighted-average anti-dumping duty and injury under ordinary dumping

Consider next what happens to sales and domestic producer's surplus if an anti-dumping duty equivalent to the weighted-average dumping margin obtained from year 1 data were applied to every transaction in year 2 regardless of the actual extent of dumping. This is a feasible, implementable anti-dumping policy available to a government that does not have sufficient data in real time to impose the ideal transaction specific anti-dumping duty from Table 3. The weighted-average dumping margin based on data from year 1 is \$2.89 for each imported unit. The sales and producer's surplus obtained if the exporter offers the same prices in each quarter of year 2 as it did in year 1 are reported in Table 4.⁴⁶

⁴⁵ Economists' objections to anti-dumping policy in general is based on the policy's failure to consider consumer's welfare. In this example, consumer welfare is harmed in quarters 1 and 4 when the anti-dumping duty is imposed relative to what it would have been under free trade.

⁴⁶ Observe that when the exporter persists in offering its year 1 prices in year 2, it sells only 0.44 units at the duty-inclusive price of \$10.89 in quarter 1 and 8.44 units at the duty-inclusive price of \$8.89 in quarter 3. If the Country A government recalculated the dumping margin in year 2, it would obtain a weighted-average dumping margin of \$3.90/unit to impose on imports in year 3. This example clearly highlights how the use of the W-W method with historical data can generate a dumping margin that drifts up over time under normal downward-sloping import demand. Eventually, the exporter will be priced out of the Country A market.

An alternative pricing scheme by the exporter is relevant to consider. Suppose the exporter raised its export price to \$10 in all quarters of year 2. Under this pricing scheme, the exporter's price inclusive of the

Table 4. Imports and producer's surplus under a weighted-average anti-dumping duty

Trans.date	Exporter's offered price (P_x)	Wtd-avg. dumping margin (WDM)	Exporter's price incl. of WDM ($P_x + WDM$)	Dom. price (P_d)	Total quantity demanded (Q_d)	Quantity supplied by dom industry (Q_s)	Imports (M)	Surplus of the domestic industry (PS)
Year 2 Q1	\$8	\$2.89	\$10.89	\$10.89	12.22	11.78	0.44	\$34.69
Year 2 Q2	\$11	\$2.89	\$13.89	\$11	12	12	0	\$36
Year 2 Q3	\$6	\$2.89	\$8.89	\$8.89	16.22	7.78	8.44	\$15.13
Year 2 Q4	\$10	\$2.89	\$12.89	\$11	12	12	0	\$36

Under the weighted-average anti-dumping duty, the domestic industry receives windfall gains to welfare in quarters 1 and 4. The table reports that the level of producer's surplus in quarters 1 and 4 is considerably greater than the baseline non-injured level of welfare of \$25/quarter. Moreover, the average level of surplus over all four quarters is \$30.45, greater than the average level of surplus of \$27.75 obtained under the ideal transaction-specific duty.

The 'zeroed' anti-dumping duty and injury under ordinary dumping

How does zeroing affect sales and domestic producer's surplus? Under a rule to throw out transactions in which the export price is above normal value, only the transactions from quarter 1 and quarter 3 of year 1 are used to construct the weighted-average dumping margin. This implies an anti-dumping duty of \$3.25/unit on all imports in year 2. Table 5 presents the consequences of a dumping margin with zeroing.

In Table 5, the weighted-average anti-dumping duty under zeroing creates levels of producer's surplus in quarters 1 and 4 that are excessive relative to the ideal transaction-specific anti-dumping duty that would just offset injury. Moreover, the level of producer's surplus in the first quarter is excessive relative to that under the implementable weighted-average anti-dumping duty. The average level of

duty would be \$12.89 and its sales in Country A would fall to zero. The firm is immediately and forever shut out of the Country A market at a price equal to normal value under the weighted-average anti-dumping duty. If the exporter offers a price equal to normal value, no sales will occur. Thus, once the weighted-average anti-dumping duty is imposed, the government will never observe sales occurring at non-dumped prices. The Country A government can make a reasonable argument during sunset reviews that the threat of dumping persists. This illustrates one of the concerns that Blonigen and Park (2004) discuss in their study of the dynamic pricing behavior of foreign firms under the US system of administered review. Under a broad set of import demand functions, it might be impossible for a foreign exporter found guilty of dumping to ever see its duty reduced, even if it makes a good-faith effort to raise its export price to normal value.

Table 5. Imports and producer's surplus under a 'zeroed' anti-dumping duty

Trans.date	Exporter's price (P_x)	Zeroed dumping margin (ZDM)	Exporter's price incl. of ZDM ($P_x + ZDM$)	Dom. price (P_d)	Total quantity demanded (Q_d)	Quantity supplied by dom. industry (Q_s)	Imports (M)	Surplus of the domestic industry (PS)
Year 2 Q1	\$8	\$3.25	\$11.25	\$11	12	12	0	\$36
Year 2 Q2	\$11	\$3.25	\$14.25	\$11	12	12	0	\$36
Year 2 Q3	\$6	\$3.25	\$9.25	\$9.25	15.5	8.5	7	\$18.06
Year 2 Q4	\$10	\$3.25	\$13.25	\$11	12	12	0	\$36

welfare over four quarters is \$31.52, the highest yet relative to the non-injured level of welfare of \$25.

Dumping margins and injury under ordinary dumping: conclusions

Thus far, two concerns have been expressed. First, with downward-sloping demand and perfectly elastic export supply, any method of calculating a dumping margin that involves an averaging on historical data is biased toward excessive injury remediation relative to the injury remediation obtained under an ideal policy in which the anti-dumping duty raises the consumer price of an imported good to the exporter's normal value. Second and more importantly for the case under consideration, the use of zeroing in the calculation of the dumping margin exacerbates this problem.

In summary, the first point is that, under ordinary dumping, the use of zeroing in the construction of a dumping margin is objectionable on the grounds that it more than offsets injury. Given that the intent of the Anti-Dumping Agreement is to permit anti-dumping duties that just offset injury, a methodology that systematically creates super-normal gains for the industry seems to be fundamentally at odds with the agreement.

The Appellate Body Report is to be commended for its discussion and analysis in paragraphs 92–96 in which it argues that the economic intent of the agreement, to remedy 'injurious dumping', cannot be ignored in a review of the methodology employed by a member country.

Targeted dumping

Does allowing for zeroing in the construction of a dumping margin fulfill the intent of the Anti-Dumping Agreement to remedy the injury caused by targeted dumping? Or is it excessive?

Some arguments in favor of zeroing draw an analogy to speeding or shoplifting. A man caught driving 20 miles per hour above the speed limit or with \$20 of stolen

merchandise in his bag cannot point to the previous occasions on which he drove five miles per hour under the speed limit or paid top dollar for a purchase to absolve himself of a punishment. Why should episodes of dumping be treated differently?

The economist's objection to zeroing is that it creates a punishment that is excessive relative to the harm created by the episode of dumping. As the examples in the previous section illustrated, with downward-sloping demand, a weighted-average dumping margin will result in an anti-dumping duty that is most heavily weighted by the most egregious episodes of dumping. With margins based on historic, rather than real-time data, the policy is biased toward overcompensating the domestic industry for any injurious dumping. In these situations, the practice of zeroing exacerbates this bias.

Are there circumstances in which zeroing or a similar practice would be justified? The language of the exceptional method of Article 2.4.2 provides a hint. Exceptional methods for calculating dumping margins are permitted: 'if the authorities find a pattern of export prices which differ significantly among different purchasers, regions, or time periods, and if an explanation is provided as to why such differences cannot be taken into account appropriately by the use of a weighted-average-to-weighted-average or transaction-to-transaction comparison'.

In international trade, targeted dumping can occur when a foreign producer offers a generous new-customer-discount in an export market. Discounts offered to the new customers of a foreign producer would seem to satisfy the legal requirements for targeted dumping. Suppose a foreign producer targets new customers as the recipients of dumped merchandise. Repeat customers, who have bought the foreign-produced item on at least one previous occasion, are offered and purchase the foreign-produced good at the normal price that prevails in the exporter's own market. This pattern of pricing, discounts for new customers and no-discounts for repeat customers, would be apparent in any review of the exporter's sales records.

This type of pricing strategy, the new-customer-discount, is a normal practice for any producer that needs to address a particular information problem – its potential customers do not have sufficient information about the quality (or some other attribute) of its good to actually buy the good at its non-discounted price.⁴⁷

47 The problem of asymmetric information between producers and consumers regarding product quality plagues many markets; used cars and mortgage-backed securities are famous examples. However, even products like cellphones or sneakers can embody an informational asymmetry. For these goods, the customer learns about the product's quality (or the match of the product's attributes to those desired by the consumer) only through the use of the product. In this context, incentives like new-customer price discounts or money-back guarantees can be highly effective at expanding a producer's market share.

A market with an information problem: product quality is difficult to observe

For concreteness, consider the market for widgets in Country B. Consumers have normal downward-sloping demand for two varieties of widgets: high quality and low quality. A consumer cannot substitute the low-quality widget for the high-quality widget, but the reverse is possible. The problem a consumer faces in purchasing a widget is that the widget's quality is difficult to verify *ex ante*. Quality can only be observed if the consumer purchases and uses the good. We assume that each producer completely specializes in the production of high- or low-quality widgets. Thus, once a consumer has purchased one widget from a particular producer and observed the quality of that purchase, she correctly infers the quality of all future purchases from that producer. We consider an extreme case of information-sharing: no consumer who purchases the good from a specific producer is able to share with other consumers any information about the quality of that producer's widget.⁴⁸

On the production side, each producer of widgets chooses a production technology, high or low quality, and produces only widgets of that quality. Although the technology to produce the low-quality widget exists in Country B, domestic producers have some cost (e.g. labor) that is too high to profitably produce and sell the low-quality variety. Thus, all domestic producers specialize in high-quality widgets and consumers correctly perceive that any domestically produced widget is high quality. The quarterly domestic industry supply of high-quality widgets is upward sloping and is graphed in Figure 2.

Historically, the technology for high-quality widget production was not available outside Country B and foreign producers specialized in low-quality widget production. Consumers in Country B correctly inferred that all foreign-produced widgets were low quality. The production of low-quality widgets was (and is) highly competitive so that supply of low-quality widgets was (and still is) perfectly elastic at \$9.00/unit.

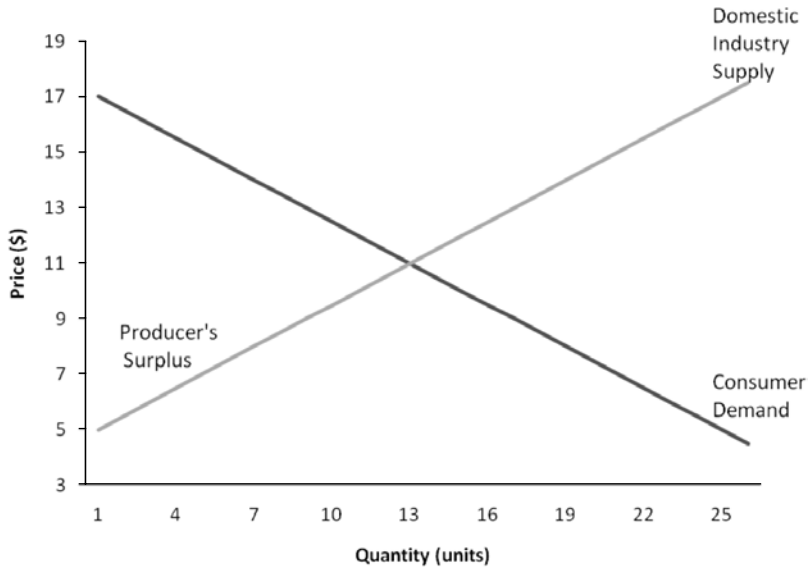
Before the dissemination of the high-quality production technology to foreign countries, the equilibrium in Country B's high-quality widget market was given by Figure 2.

In the absence of any sales by a high-quality foreign producer, domestic consumers demand and domestic producers sell 12 units of high-quality widgets per quarter at a price of \$11/unit. From this we can calculate that domestic producer's surplus is \$36 per quarter in the absence of foreign competition (see Table 6, row 1).

In the low-quality widget market, demand is such that domestic consumers purchase four widgets per quarter from low-quality foreign producers for

⁴⁸ An alternative extreme case of complete information sharing in which a single sale to a single consumer informs all market participants about a product's quality would yield similar qualitative results. A weighted-average dumping margin would be too small to remedy injury effectively while a 'zeroed' anti-dumping duty could.

Figure 2. Industry Supply and Consumer Demand for the high-quality good in Country B



\$9.00/widget. As there are no domestic producers of low-quality widgets, domestic producer's surplus in this market is always zero and we can dispense with any concerns of injury in this market under dumping.

A foreign producer targets new customers to receive dumped merchandise

In this environment, what happens when a foreign producer acquires the technology for producing high-quality widgets?⁴⁹ Suppose a new foreign producer, *High Quality Inc.*, completely specializes in the production of high-quality widgets and sells these widgets in its own market for \$10/unit. When *High Quality Inc.* tries to enter the high-quality widget market in Country B, it confronts a dominant stereotype held by Country B consumers that foreign-produced widgets are low quality. The asymmetric information problem means that a potential customer must buy at least one *High Quality Inc.* widget before it recognizes it as a high-quality widget and values it accordingly. Thus, if *High Quality Inc.* offers its widgets for sale in Country B at \$10/unit, no potential customer will purchase it. With low-quality widgets available at \$9.00/unit and customer perceptions that all

⁴⁹ Schott (2008) provides a detailed empirical analysis of changes in the variety and quality of goods imported into the US from China and a number of developed countries over a long time horizon. He finds that countries at lower stages of development export a wide variety of goods that are similar, but lower in quality than those exported by more developed countries. Moreover, he finds evidence that the developing countries export higher quality goods over time.

Table 6. Sales volumes and producer's surplus in high-quality widgets under different scenarios

Scenario	Exporter's offered price (P_x)	Exporter's normal value (NV)	Total quantity demanded (Q_d)	Quantity supplied by domestic industry (Q_s)	Imports (M)	Surplus of the domestic industry (PS)
Prior to foreign entry	N.A.	N.A.	12	12	0	\$36
Attempted foreign entry with info prob.	\$10/unit	\$10/unit	12	12	0	\$36
Foreign entry if no info problem	\$10/unit	\$10/unit	14	10	4	\$25
After targeted dumping ceases	\$10/unit	\$10/unit	14	10	4	\$25

foreign-produced widgets are low quality, there is no demand for the output of *High Quality Inc.* in Country B at \$10/unit. (See Table 6, row 2).

In the absence of an information problem, if *High Quality Inc.* offered unlimited quantities of its widgets at a fair, non-dumped price of \$10/unit, the equilibrium in Country B in each quarter would be characterized by a domestic price of \$10/unit, domestic consumption of 14 units, domestic industry sales of 10 units, imports from *High Quality Inc.* of 4 units, and \$25 of producer's surplus for the domestic industry (see Table 6, row 3). Although the information problem precludes this outcome, it provides one benchmark against which we could judge policy responses.

As a solution to its information problem, *High Quality, Inc.* could offer a new-customer discount in which any Country B consumer who has never purchased a good from *High Quality Inc.* would be offered 1 unit at a price of \$9. If that customer wanted to make additional purchases, *High Quality Inc.* would offer an unlimited quantity at \$10/unit. In the short run, this discount creates a bifurcation in the market for high-quality widgets between 'informed' and 'uninformed' consumers. Once a consumer in Country B has bought a *High Quality Inc.* widget, he would be unwilling to pay more than \$10 for a high-quality widget made by any producer. Table 7 presents a possible evolution of prices and sales of high-quality widgets by *High Quality Inc.*⁵⁰

⁵⁰ In this table, the assumption is that each consumer who buys a *High Quality Inc.* widget at the low-quality price of \$9 in quarter t , demands one high-quality widget at a price of \$10 in each subsequent quarter. Over the course of four quarters, every potential Country B consumer (of a high-quality widget at a price of \$10) has attempted the purchase of a low-quality widget, but received a *High Quality Inc.* widget under the discount program instead. With the discount program beginning in the first quarter of year 1, all potential consumers of high-quality widgets are fully informed about the quality of *High Quality Inc.* by the first quarter of year 2.

Table 7. Export prices, dumping margins, and sales to the domestic industry under targeted dumping

Transaction date	Exporter's discount price (Pdisc)	Exporter's repeat customer price (Px)	Exporter's normal value (NV)	Dumping margin (DM) for dumped imports	Dumped Imports (Mdump)	Fairly priced imports (Mfair)
Year 1 Q1	\$9	\$10	\$10	\$1	4	0
Year 1 Q2	\$9	\$10	\$10	\$1	4	4
Year 1 Q3	\$9	\$10	\$10	\$1	4	4
Year 1 Q4	\$9	\$10	\$10	\$1	2	4
Year 2 Q1	N.A.	\$10	\$10	\$0	0	4
All future dates	N.A.	\$10	\$10	\$0	0	4

Under this strategy, *High Quality Inc.* is engaging in targeted dumping to new customers, but is charging the legally ‘fair’ normal value to repeat customers. By the first quarter of year 2, each of the 14 potential customers of high-quality widgets at the price of \$10 will know that the desired product can be obtained from *High Quality Inc.* for \$10. Thus, Country B consumers will refuse to pay the domestic producers’ higher price of \$11 for a high-quality widget. In order to survive, domestic producers will lower their prices to \$10. Those that cannot profitably sell at \$10 will exit the market. The long-run equilibrium in the high-quality widget market, after dumping by *High Quality Inc.* has ceased, is reported in row 4 of Table 6.

Importantly, the four episodes of dumping, in quarters one through four of year 1, have permanent effects. Because the targeted dumping informed customers about an identical, but cheaper product, the Country B high-quality widget market became more competitive. Essentially, the episodes of dumping that facilitated *High Quality Inc.*’s entry into the Country B market caused a permanent reduction in the economic welfare of domestic producers from \$36 per quarter to \$25 per quarter.

Should this reduction in the welfare of domestic producers be considered ‘injury caused by dumping’? Or is it reasonable to attribute this injury to another cause? One view would hold that the cause of the welfare loss is the higher level of competition in the Country B market that exists in the wake of the new-customer discount. This view would hold that competition, not dumping, is the cause of the injury. However, others could reasonably counter that *but for* the targeted dumping, the baseline level of welfare in the industry would have been \$36 per quarter forever. Under this criterion, it seems reasonable to conclude that the injury is caused by the targeted dumping.

The weighted-average anti-dumping duty and injury under targeted dumping

Suppose that at the beginning of year 2, the Country B government decided to impose an anti-dumping duty on imports from *High Quality Inc.* If they calculated

Table 8. Imports and producer's surplus under weighted-average anti-dumping duties

Trans. date	Exporter's offered price (P_x)	Dumping margin (DM)	Exporter's price incl. of DM ($P_x + DM$)	Dom. price (P_d)	Total quantity demanded (Q_d)	Quantity supplied by dom. industry (Q_s)	Imports (M)	Surplus of the domestic industry (PS)
Year 2 Q1	\$10	\$0.54	\$10.54	\$10.54	12.92	11.08	1.84	\$30.69
Year 2 Q2	\$10	\$0.54	\$10.54	\$10.54	12.92	11.08	1.84	\$30.69
Year 2 Q3	\$10	\$0.54	\$10.54	\$10.54	12.92	11.08	1.84	\$30.69
Year 2 Q4	\$10	\$0.54	\$10.54	\$10.54	12.92	11.08	1.84	\$30.69
Year 3 Q1	\$10	\$0	\$10	\$10	14	10	4	\$25
Year 3 Q2	\$10	\$0	\$10	\$10	14	10	4	\$25
Year 3 Q3	\$10	\$0	\$10	\$10	14	10	4	\$25
Year 3 Q4	\$10	\$0	\$10	\$10	14	10	4	\$25

the dumping margin by applying the weighted-average-to-weighted-average methodology on data from year 1, the anti-dumping duty for year 2 would be \$0.54 on each imported unit. If *High Quality Inc.* continues to offer a price of \$10 to all repeat customers in year 2, the domestic price under the anti-dumping duty would rise to \$10.54 in all quarters. Producer's surplus in all quarters of year 2 would be only \$30.69, considerably lower than the \$36 per quarter that the industry would have received *but for* the targeted dumping by *High Quality Inc.* (See Table 8).

Let's assume that the Country B government conducts an annual review and uses transactions data from year 2 to construct the weighted-average dumping margin for year 3. Under this common scenario, the anti-dumping duty would fall to \$0 per unit by year 3 because *High Quality Inc.* offered no discounts to new customers in year 2. The welfare of the domestic industry would be further reduced to \$25 per quarter. Although there was no dumping by *High Quality Inc.* in year 2, the effects of its entry persist into all future periods as a permanent reduction in industry welfare.

The 'zeroed' anti-dumping duty and injury under targeted dumping

If the Country B government interpreted *High Quality Inc.*'s new-customer discount as a pricing pattern that warranted the use of the exceptional method under Article 2.4.2, it could calculate the dumping margin under a rule to 'zero out' all non-dumped transactions from year 1. This would yield an anti-dumping duty of \$1 for each imported unit in year 2. Given the conditions of supply and demand in Country B's market for high-quality widgets, this is a prohibitive tariff that would restore to Country B the competitive conditions that would have ensued *but for* *High Quality Inc.*'s targeted dumping. Producer's surplus would return to its baseline 'non-injured' level. See Table 9.

Table 9. Imports and producer's surplus under 'zeroed' anti-dumping duties

Trans. date	Exporter's offered price (P_x)	Dumping margin (DM)	Exporter's price incl. of DM ($P_x + DM$)	Dom. price (P_d)	Total quantity demanded (Q_d)	Quantity supplied by dom. industry (Q_s)	Imports (M)	Surplus of the domestic industry (PS)
Year 2 Q 1–Q 4	\$10	\$1.00	\$11.00	\$11	12	12	0	\$36

The evolution of the dumping margin and industry welfare in year 3 would depend on two factors: (1) how the Country B government treated the threat of continued dumping and (2) the ability of Country B consumers to remember a producer's quality over long periods of time.

If *High Quality Inc.*'s absence from the Country B market leads consumers to forget that *High Quality Inc.* makes high-quality widgets, then the only way in which *High Quality Inc.* can reenter the Country B market is through a second round of targeted dumping. Then there would be a real threat of injurious dumping. The Country B government could prevent this injury by maintaining the duty of \$1/unit in year 3. Alternatively, if Country B chose to not impose an anti-dumping duty in the face of this threat, the cycle of *High Quality Inc.*'s entry through targeted dumping followed by a duty to remedy injury could be repeated indefinitely.

If Country B consumers had long memories, then *High Quality Inc.* would not need to dump its product in order to reenter the market in year 3. In this case, there is no threat that dumping would recur. But, reentry at a fair market price of \$10/unit would cause injury to domestic producers. It is not entirely clear what options are available to Country B's government in these circumstances. The use of an anti-dumping duty in the absence of any real threat of continued dumping seems questionable. However, because there is a real threat of injury that would be the direct result of dumping that occurred during year 1, one could argue that the continuation of the prohibitive anti-dumping duty is permitted under the Anti-Dumping Agreement.

Dumping margins and injury under targeted dumping: conclusions

Under the Anti-Dumping Agreement, the new-customer discount is a targeted dumping strategy that results in permanent injury to the domestic industry in Country B. In response to this, the use of zeroing in the calculation of the dumping margin is necessary to fully offset the injury to the domestic industry. In this example, it is the only method that generates a sufficiently large duty to remedy the injury suffered by domestic producers. Interestingly, given the parameters of supply and demand in this example, the presence of an information problem renders the ordinary anti-dumping duty (from the W-W or T-T methods) ineffective at

remedying injury. The analysis herein shows that the exceptional method is not *inutile*; its value derives from the fact that, by not being mathematically equivalent to the ordinary methods, it is the only method that can restore the domestic economy to the state it would have been in had the targeted dumping never occurred.

To the extent that a perception of low quality is a prototypical problem for a firm entering a high-income market from a low- or middle-income country, the stylized example presented here might be, rather than exceptional, a highly relevant empirical phenomenon.

As a final point, we offer some thoughts on the normative welfare consequences of zeroing in dumping cases. In the targeted-dumping example, the foreign pricing strategy of the new-customer discount is a practice that economists widely regard as a normal and fair aspect of market competition. Because this discount allowed consumers to learn about the quality of the foreign-produced variety, it created more intense market competition that permanently reduced the welfare of the domestic producers. Normative welfare economics does not prescribe any policy response to this situation. Rather, it recognizes this more intense competition as the source of improved aggregate welfare in Country B.

Economically speaking, the concern lies not in the application of the law, but with the law itself. As the example illustrates, the Anti-Dumping Agreement could be construed to prohibit the use of large price discounts by new market entrants. In other words, the Agreement deters pro-competitive pricing. A normative analysis of economic welfare would find that the use of the exceptional method in the targeted-dumping example presented here reduces both the national welfare of Country B (under which producers would gain at the expense of consumers) and of the world. While it might be possible to identify cases in which anti-dumping duties have a favorable effect on aggregate economic welfare, they fail to do so in the cases considered here.

The economics of stare decisis

The economics literature on the efficiency of stare decisis in a domestic setting is divided into two broad classes of models that emphasize different types of uncertainty. All papers begin with the premise that insufficient information at the time a statute or contract is written necessitates an incompleteness in the law or contract. The law cannot fully describe what action should be taken by agents or by the court in every possible state of the world. The role of the legal system is to fill these gaps in the law with rulings issued by judges. The problem of economic analysis is to determine the extent to which a legal system is able to achieve socially optimal outcomes that leave all parties with the highest possible level of welfare.

To evaluate the economic efficiency of stare decisis as part of a legal system, begin with a simple world in which a legislature enacts a law at time zero. For concreteness, following Gennaioli and Schleifer (2007a and 2007b), suppose the law is a simple tort regarding the liability of a dog biting a man. At time zero, the

legislature cannot foresee every possible relevant empirical criteria in every possible future case, so the enacted law is vague on numerous empirical dimensions. After enactment of the vague law, in each subsequent period, a case may be brought before a judge who must assign blame.⁵¹

The socially optimal law involves balancing the costs to the owner of restraining the dog and the costs to others of being bitten. Ideally, the law should induce owners of more aggressive dogs to make greater efforts to restrain their dogs than owners of gentler dogs. Thus, the socially optimal law should condition on criteria that are relevant to aggressive behavior. However, at time zero, legislators may not know which empirical criteria determine aggressiveness (size of the dog, color of the dog, congestion of a locality, weather, etc.). Thus, the law is by necessity vague.

Gennaioli and Schleifer (2007a) analyze a legal system in which a judge creates law by conditioning his judgment on an empirical basis that is, until that point in time, vague and in which judges in all future cases are obligated to rule in the same way with respect to that empirical criterion. Any case that comes before a judge has several empirical dimensions along which the judge could potentially institute a bright-line rule. Gennaioli and Schleifer assume that in hearing a case, a judge has two options: he can abide by the criteria laid out in prior cases or he may issue a new ruling by ‘distinguishing’ the current case from prior cases along one relevant empirical dimension that prior cases have left vague. They find that this system can facilitate the evolution of the law toward a social optimum over time.

Gennaioli and Schleifer refer to the process of abiding by previously decided cases and issuing different rulings only when it is possible to introduce a new empirical criterion as the *ratio decidendi* in a case as ‘distinguishing’. If other empirical dimensions are relevant to achieving a socially efficient outcome, then a process in which judges are bound by *stare decisis* and gradually complete the gaps in the law by distinguishing (that is, adding a new bright-line rule in each subsequent case that is heard), can never achieve full efficiency. They point out that when relevant empirical dimensions are added to the body of law sequentially through a series of cases, the ultimate ‘evolved’ law is likely to be inferior to the fully optimal law that would condition on every possible relevant criterion from time zero. However, the beauty of *stare decisis* is that it moves the law toward a social optimum precisely when the fully optimal law is not feasible.

Stare decisis is desirable from an efficiency perspective for a number of reasons. By clarifying the law over time, it induces welfare-enhancing behaviors from agents without imposing unnecessary costs. In the dog-biting-a-man example, owners of aggressive dogs will come to understand that they must use leashes or suffer penalties, while owners of dogs that are widely regarded as mild-mannered

⁵¹ The vague law described here embodies aspects of both the discretionary contract and the vague contract in Maggi and Staiger (2008) discussed below.

will not be excessively burdened by leash requirements. This process of judge-made law will likely take place more rapidly than any legislative refinement of the law and any gaps in the law will likely prioritize the most salient circumstances.

However, these benefits come at a cost – the loss of flexibility. A critical assumption in the Gennaioli and Schleifer model is that a judge cannot make a rule that is a function of all relevant empirical dimensions at one point in time. This proxies for the idea that initial cases may not have the same important aspects as those that arise in later cases. A judge deciding a case in period $t + 1$ might face what she regards as a unique case – a confluence of factors lay the fault with one party, but applying previously decided rules would assign blame to the other party. *Stare decisis* imposes two restrictions – backward and forward inflexibility in the law’s interpretation with regard to specific empirical criteria. A general economic principle is that multidimensional rules are more efficient than unidimensional rules. For a judge deciding a case in period $t + 1$, backward inflexibility implies that she must apply all the unidimensional bright-line rules from prior decisions to her current case. The option of distinguishing the law along a new empirical dimension might be undesirable if the only reasonable criterion along which this case may be distinguished from previous cases introduces an efficiency-reducing constraint on future cases. Because of the forward inflexibility of *stare decisis*, the judge may foresee that future justice is impaired by replacing vagueness in the law with a bright-line rule that moves the law away from the social optimum. The sequential way in which the law develops brings with it constraints on judicial discretion that can put the law on a track that will never reach the social optimum.

The same model is used by Gennaioli and Schleifer (2007b) to show that overruling introduces volatility into the law and that in a system where overruling is common, the law rarely converges to the social optimum. An additional concern with excessive overruling that is not addressed by Gennaioli and Schleifer has to do with the overall validity of the legal system in the eyes of its participants. When judges are not bound by precedent and issue opposite rulings in similar cases, these conflicting decisions can undermine agents’ confidence in the fairness of the legal system. This could potentially lead to the system’s collapse.

Gennaioli and Schleifer do not simultaneously analyze the two practices of distinguishing and overruling so we do not know what interesting results might obtain when the two practices interact within a system of law.

A second vein in the literature that compares case- and statute-law systems focuses on the timing on information revelation and its relationship to *ex ante* and *ex post* efficient decisions by judges. Anderlini *et al.* (2008) compare the efficiency of statute law to case law. The key distinction they model is the extent of judicial discretion to respond to the specific facts of a case in issuing a ruling. In the statute-law system, judges have no discretion to create new law, but must rigidly implement what the statute says with respect to the facts of a case; that is, the judge enforces rules that are *ex ante* efficient. This system is inflexible, but the upside is that the law is time consistent. The economy is largely free of moral-hazard

problems that could arise if agents think that the court will bail them out of sticky situations.

In contrast, in a case-law system, benevolent judges have the freedom to issue rulings that take into account information that was not available to the parties at the time they entered into a contract. In rendering his decision, the judge can myopically fine-tune the law to the realized state of the world. At first blush, this makes the case-law system appear more efficient. However, the ruling is only *ex post* efficient in that specific case. More generally, this fine-tuning of the law to information that was not initially available introduces a time-consistency problem. Actors in the economy come to understand that benevolent judges will help them out when they get themselves into trouble. This leads to an increase in moral-hazard problems in the future.

The time-consistency problem is mitigated by what Anderlini *et al.* call *the dynamics of precedents*. Essentially, if a judge in a case-law system is forward-looking and issues a ‘tough’ ruling, he can constrain other judges to do the same in future cases. Agents come to see that judges will enforce *ex ante* efficient contracts and the temptation to engage in reckless behaviors subsides. Interestingly, in a model that is starkly different from Gennaioli and Schleifer (2007a), Anderlini *et al.* obtain a similar result – the case-law system with binding precedents cannot achieve full efficiency. Despite this, they conclude that a case-law system with binding precedents yields higher levels of welfare than a statute-law system when the rate of legal innovation is sufficiently high.

In contrast to the economic analyses of *stare decisis* written by economists, an earlier economic analysis by Kornhauser (1989) uses three criteria of traditional concern to lawyers – fairness, competency, and predictability – to assess *stare decisis* in four simple models that emphasize different sources of judicial error.

Kornhauser concludes that *stare decisis* is desirable for a court system characterized by judges with different values (biases) because it promotes fairness. Interestingly, Gennaioli and Schleifer’s (2007a) paper is simply a more formalized version of Kornhauser’s model of legal errors via changing values. Whereas Kornhauser showed that *stare decisis* promotes fairness, Gennaioli and Schleifer show that social welfare is promoted via fairness when *stare decisis* in the legal system is characterized by distinguishing. However, when the level of judicial bias is sufficiently high and judges have the ability to overrule prior rulings that they dislike, Gennaioli and Schleifer (2007b) show that the system is unfair and inefficient.

Kornhauser persuasively argues that predictability in the law generated by *stare decisis* is beneficial because under it agents can form correct expectations about future legal obligations. Indeed, this, as we have noted earlier in the paper, appears to be the principal rationale of the Appellate Body in its first attempt to articulate at least a *de facto* *stare decisis* practice in the WTO (*Japan–Alcohol*). In a similar manner, Anderlini *et al.* (2008) use what lawyers refer to as a unitary model to demonstrate that *stare decisis* promotes efficiency by correcting a time-consistency

problem. In essence, these later papers in the economics literature use the basic ideas in Kornhauser. However, rather than focusing on Kornhauser's ultimate legal criteria for evaluating the principle, the economics papers show that Kornhauser's legal criteria of fairness and predictability are the paths through which social welfare is maximized.

Overall, the law-and-economics literature on binding precedents concludes that *stare decisis* is a desirable feature for a purely domestic legal system. The question that arises is: how applicable are these findings to international public law and, specifically, the functioning of international trade law and dispute resolution?

The problem of a domestic legal system – a statute and a court system – is to constrain the behaviors of private agents in a socially optimal way. Agents that wish to pursue their own narrow self-interest are constrained by a court system that seeks to facilitate private interactions that are mutually beneficial.

The problem of a trade agreement is different. The agents that wish to pursue their own self-interest are governments that recognize that by restricting their own discretion to pursue self-interested policies, they can improve the well-being of their neighbors and, through reciprocal treatment, improve their own lot. In all states of the world, governments have an incentive to pursue self-interested policies, but the gains from these policies can vary with the realized state. The mechanism design challenge is to construct a contract- and dispute-resolution system that generates the highest welfare for all contracting governments over the broadest possible set of states of the world. Two problems are present. First, it is costly to foresee and describe all possible states. Second, information about the realized state (or social welfare under the realized state) is difficult for all parties and any arbiter to observe and verify.

The first problem necessitates an incomplete contract. The second implies that the potential gains from cheating on the agreement will vary with the arbiter's ability to observe information. A recent important contribution by economists that specifically addresses the role of the Dispute Settlement Body (DSB) in adjudication at the WTO is Maggi and Staiger (2008). They argue that a trade agreement and its dispute settlement process should be analyzed as a unified system.⁵²

They compare three types of incomplete trade agreements: (1) a discretionary contract, (2) a vague contract, and (3) a rigid contract. These different types of contracts imply different roles for an activist adjudicating body. It can (1) fill the gaps in a discretionary contract, (2) interpret a vague contract, or (3) modify a rigid contract.⁵³

In a static analysis, Maggi and Staiger conclude that a discretionary contract with a gap-filling Dispute Settlement Body (DSB) is optimal when the DSB's

⁵² The alternative of a legal system in which a statute-creating legislature and an adjudicating court are independent of and distinct from the parties to a contract is considered by Anderlini *et al.* (2008).

⁵³ Note that the first role is similar to the practice of distinguishing described by Gennaioli and Schliefer while the third role was found by Anderlini *et al.* to be undesirable in a dynamic model because of associated moral-hazard problems.

rulings are sufficiently accurate or well informed. When the accuracy of the DSB's rulings is low, the optimal system is a vague or rigid contract and a non-activist DSB. Finally, when the observability of information falls in an intermediate range, a vague contract and an interpretive DSB is best.

Maggi and Staiger's analysis is pessimistic about the merits of *stare decisis* in international trade law. This somewhat surprising result arises because the DSB, after observing the true state of the world, does not know what policy is globally optimal with perfect accuracy. This lack of accuracy induces perverse behavior. Self-interested governments have a greater incentive to try to game the system under a precedent-setting DSB; importers try to get away with protectionist policies that are not justified and exporters file disputes against protectionist policies that are merited. Maggi and Staiger observe that precedent will simultaneously create welfare gains by reducing duplicative litigation costs. The resolution of this empirical tradeoff depends on the quality of the information available to the DSB. Maggi and Staiger (2008) conclude that the costs of *stare decisis* outweigh the gains when the DSB has access to better information.

In summary, the economics literature on *stare decisis* is divided. The conclusions drawn from each analysis depend critically on the information problems present in the system under examination. The economic model that best fits the features of the WTO system, Maggi and Staiger (2008), concludes that binding precedent in the dispute-resolution system is likely welfare-reducing under a realistic assumption about the quality of available information. This surprising result obtains because precedent induces socially undesirable and inefficient behavior on the part of contracting parties. Interestingly, the inclusion of binding precedent in court systems modeled by Gennaioli and Schleifer (2007a), Anderlini *et al.* (2008), and Kornhauser (1989) induces more socially desirable behaviors and leads to better outcomes. This suggests that the empirical question to address in evaluating legal systems is how binding precedent affects the behavior of agents over time.

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