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DISTRUST AND BARRIERS TO INTERNATIONAL TRADE IN FOOD PRODUCTS: AN ANALYSIS OF THE US-POULTRY DISPUTE

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Distrust and barriers to international trade in food products: an analysis of the *US - Poultry* dispute

Christophe Charlier

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Abstract

The *US - Poultry* dispute arbitrated by the WTO, opposing China to the US, was raised by the US decision to stop equivalence regime procedures for Chinese poultry. The Panel found that this decision was not compatible with the SPS Agreement's exigencies requiring a risk assessment centered on the Chinese poultry products, and contradicted MFN obligation of the GATT 1994 Agreement. The possibility that the reasoning of the Panel in this dispute was based on the reasoning developed in earlier SPS cases suggests that this dispute doesn't provide new perspectives for SPS cases. However, considering the dispute in the context of a *trust* game, this paper argues that the *US - Poultry* case is original. It provides an interpretation showing that a risk assessment focusing on the social and institutional conditions of the implementation of a country's safety regulation should be considered a proper way to defend impeding a national equivalence regime. This conclusion is reinforced by the economic analysis of MFN treatment in the dispute.

Key Words: WTO, SPS Agreement, MFN, Non-tariff Barrier to trade, Product safety, China.

JEL codes: F130, F590, K320, K330.

1 Introduction

Is the *United States - Certain Measures Affecting Imports of Poultry from China* (*US - Poultry*) case,[1] arbitrated by the Dispute Settlement Body of the World Trade Organization (WTO), simply one more (i.e. unoriginal) sanitary and phytosanitary (SPS) dispute? A rapid reading of the Panel's report and the possibility that the reasoning of the Panel in this dispute was based on the reasoning of other Panels and the Appellate Body (AB) on previous SPS cases can give this impression. Regan (2012)'s analysis of this dispute shows however that novel issues could have been raised by the case: the Panel for the first time was confronted with a country-specific SPS measures and had to deal with an equivalence regime. Regan (2012) clearly shows however that these issues were not discussed by the Panel.

This dispute opposes the People's Republic of China (China) as complainant to the United States (US) as defendant and responds to Section 727 of the Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act (AAA) of 2009 (Section 727). Section 727 states that "None of the funds made available in this Act may be used to establish or implement a rule allowing poultry products to be imported into the United States from the People's Republic of China." This section has the effect of impeding China's exports of poultry products to the US. The equivalence based regime for obtaining permission to import poultry and poultry products into the US is intended to apply on a country-by-country basis and is overseen by an agency of the USDA - the Food Safety Inspection Service (FSIS). The equivalence regime is implemented as soon as a country applies for permission to import. The FSIS determine the equivalence of the applicant country's inspection system with the US system, based on documentation (review and evaluation of the country's laws and regulations) and an on-site audit (evaluation of the implementation of the regulatory regime).[2] If the country is deemed eligible, the FSIS publishes successively a draft rule proposing that the applicant country be considered eligible as an exporter of poultry products, and a final rule allowing the importation of poultry products from certified establishments in the applicant country. The applicant country is required to certify those establishments that satisfy the equivalent sanitary requirements, to list them, and to communicate this information to the FSIS. The entire process, from document review to certification of eligible establishments, has to be repeated annually.

China applied for initial equivalence determination in April 2004 in order to export poultry products to the US. A first on-site audit was carried out by the FSIS in December 2004. The report of the FSIS was delivered in May 2005 and pointed to "a number

[1] Dispute DS 392.

[2] Report of the Panel, para. 2.11.

of deficiencies in some processing and slaughter plants".[3] Two more on-site audits were conducted in July and August 2005 and the final report of the FSIS delivered in November 2005 proposed to "add China to the list of countries eligible to export processed poultry products to the United States, provided that the poultry products processed in certified establishments in China came from poultry slaughtered in the United States or certified establishments in other countries eligible to export poultry to the United States".[4] In June 2006, the FSIS determined that "China's inspection system for slaughtered poultry was preliminarily equivalent pending further evaluation through the rulemaking process".[5] However Section 733 of the AAA of 2008 and Section 727 of the AAA of 2009 impeding the FSIS from using funds to establish or implement a rule enabling China to export poultry products into the US, created a dead end to the equivalence determination requested by China.[6]

The claims from China concern only Section 727. This Section was accompanied by a Joint Explanatory Statement (JES) explaining its purpose.[7] The JES pointed out that Congress had "very serious concerns about contaminated foods from China" and wanted to know whether the revision to the Chinese food safety law in February 2009 was sufficient to mitigate these concerns. China claimed that section 727 was an SPS measure that arbitrarily discriminates among Members (Article 2.3 and 5.5 of the SPS Agreement and Article I:1 of the GATT 1994), that is more trade restrictive than necessary (Article 6.6 of the SPS Agreement), that is not scientifically based (Articles 2.2, 5.1, and 5.2 of the SPS Agreement), that implies unjustifiable delay to the poultry import authorization (Article 8 of the SPS Agreement), that represents a violation of the Most-Favored Nation (MFN) principle (Article I:1 of the GATT 1994), and that imposes unjustifiable quantitative restrictions on poultry exports from China (Articles 4.2 of the Agreement on Agriculture

[3]Report of the Panel, para. 2.17.

[4]Report of the Panel, para. 2.18.

[5]Report of the Panel, para. 2.22.

[6]Section 727 concerned only China and funds could be used by the FSIS to establish rules with other countries.

[7]The JES states that "There remain very serious concerns about contaminated foods from China and therefore the bill retains language prohibiting FSIS from using funds to move forward with rules that would allow for the importation of poultry products from China into the U.S. It is noted that China has enacted revisions to its food safety laws. USDA is urged to submit a report to the Committees on the implications of those changes on the safety of imported poultry products from China within one year. The Department is also directed to submit a plan for action to the Committees to guarantee the safety of poultry products from China. Such plan should include the systematic audit of inspection systems, and audits of all poultry and slaughter facilities that China would certify to export to the U.S. The plan also should include the systemic audit of laboratories and other control operations, expanded port-of-entry inspection, and creation of an information sharing program with other major countries importing poultry products from China that have conducted audits and plant inspections among other actions. This plan should be made public on the Food Safety and Inspection Service web site upon its completion".

and XI:1 of the GATT 1994).

Regan (2012) shows that as soon as Section 727 was recognized as an SPS measure, application of the fundamental obligation to decide any constraining SPS measure on the base of a scientific risk evaluation[8] was required by the Panel following the actions of other Panels and the AB in previous SPS disputes.[9] Yet, in the face of this requirement, the JES accompanying Section 727 can hardly be considered a scientific evaluation. Instead of presenting a risk assessment supporting the need for Section 727, the US presented a series of scientific information from various sources (international organizations, government bodies, academia) pointing to failures of China's food safety system, and food safety crises. Avian flu was highlighted as a serious concern by the US,[10] but the argumentation also underlines the series of food safety crises faced by China, and especially the melamine crisis.[11] In the opinion of the US, these several crises demonstrate the incapacity of China to control implementation of its sanitary regulation.[12] This failure created exceptional circumstances that are beyond the scope of the usual FSIS approval procedures. Section 727 was therefore defended as a necessity in such a context.[13]

The economic stakes of the dispute are not very important. Commenting on China's accession to the WTO, Fuller, Beghin, Fabiosa, Fang, Matthey, and DeCara (Fuller et al.) prognosticated that China should not have a comparative advantage in livestock production because of production land scarcity (for food crops). Phytosanitary problems were also reported as a serious potential hindrance to exports.[14] In 2010, China's exports of poultry products represent only 4% of the global exports, far behind the levels of Brazil (35.8%) and the US (35.5%). However, because of high levels of internal consumption (15.6% of the global consumption against 19.7% for the US), China is the second world poultry producer, with 15.5% of the total production, behind the US (23.5% of total production). Neither China nor the US imports much poultry (respectively 3.8% and 0.5% of overall imports).[15]

However, a more critical analysis of the dispute is interesting for two reasons. First,

[8]The scientific justification of SPS trade restrictive measures is an important characteristic of the SPS Agreement. As pointed out by Hudec (2003), focusing on the scientific justification of a regulation goes beyond the 'traditional' goal of eliminating discrimination. As a consequence, the primacy given to scientific principles has been debated in the literature (See e.g. Howse (2000), Trebilcock and Soloway (2005) and Epps (2008)) and has fueled strong opposition by some civil society stakeholders.

[9]The literature on both legal and economic aspects has tried to grasp the construction of the WTO Dispute Settlement Body's doctrine according to how the Panel and the AB reached their decisions on successive SPS disputes. See e.g. Pauwelyn (1999) and Trebilcock and Soloway (2005).

[10]Report of the Panel, para. 4.152.

[11]Report of the Panel, para. 4.154.

[12]Report of the Panel, para. 4.153.

[13]Report of the Panel, para. 7.329.

[14]See also Dong and Jensen (2007) on that issue.

[15]Source: USDA (2011).

the 'scientific-based' viewpoint according to which any restrictive SPS measure shall be justified by a specific risk assessment, has been defended by the US in past emblematic WTO trade disputes. The *EC - Hormones* case and the *EC - Approval and Marketing of Biotech Products* case[16] are examples. As a consequence, the position of the US on the *US - Poultry* case may appear singular. Second, the concern on the capacity of China to control implementation of its sanitary regulation clearly shows that distrust is the main reason for Section 727 in the US defense: "the question of enforcement is of particular importance in the context of an equivalency regime where the United States must rely on China to enforce its laws to ensure that the poultry it is exporting to the United States is safe".[17] Of course, the possibility that Section 727 was a pure protectionist measure should not be discarded in a context of growing agricultural protectionism.[18] Regan (2012) discussing this issue shows, however, that the US Congress' motivation was not so obvious since important US interest groups were publicly against Section 727. The paper will not explore this issue more deeply. The question addressed is rather how to deal with trust in SPS disputes.

Exploring the issue of trust contributes to the discussion of the economic rationales of the Panel's decision in the *US - Poultry* case. It also provides an interesting view of SPS disputes since, as we will show, trust cannot be reduced to a simple situation of risk generally discussed in these disputes. The economic literature underlines the efficiency-improving property of trust in contexts where the level of trust differs across nations. Trust is generally conceived as the capacity of individuals in the same economic system to sustain cooperation. It has been analyzed in an important strand in the literature on bilateral relations, using game theory (e.g. see Kreps (1990), Dasgupta (2008), James (2002)). In a context of asymmetric information that can be opportunistically exploited by one or both parties, trust is conceived as enabling parties to avoid inefficient non-cooperative issues. This capacity is an element of social capital (Sobel (2002) for a critical survey) and substitutes for strong enforcement mechanisms (Bohnet et al. (2001)). This literature deals primarily with inter-personal trust. An important part of this work focuses on institutional trust and organizations such as firms (Sako and Helper (1998)) as well as States. Guiso et al. (2009), for example, find that bilateral trust is a determinant of cross-country trade. Finally there is a growing literature that complements this view and focuses on the link between institutional quality (contract enforcement, law enforcement, property rights, ratification of international convention, and the like) and international trade. Anderson and Marcouiller (2002) show that insecure importer institutions (e.g. created by corruption) constitute significant informal impediments to international trade. Berkowitz et al. (2006) examine how the quality of exporter institutions affects trade. Nunn (2007) and

[16] See Prévost (2007) for an analysis.

[17] Report of the Panel, para. 4.156.

[18] Anderson (2010).

Ranjan and Lee (2007) more specifically study how better contract enforcement enhances international trade. In an incomplete contract framework, Levchenko (2007) proposes institutional differences as a source of comparative advantage.

All these views of trust and institutional quality were constructed outside the problem of non-tariff barriers to international trade, which are at stake in the *US - Poultry* dispute. Nevertheless, lessons can be learnt from this economic literature. In this paper we develop an economic analysis of the *US - Poultry* case in order to underline the importance of trust in the dispute (as it implicitly appears in the US's allegations). We show that taking account of trust gives another perspective on the dispute where *discrimination*, rather than *scientific justification* (as it is used in the Panel's reasoning), is highlighted. More generally, this study puts light on how trust could be considered within the SPS Agreement. Our economic analysis of this dispute proceeds as follows. Section 2 presents a theoretical framework in order to show why trust is important for the case under study, and how it can be distinguished from risk. Section 3 shows that in this framework an equivalence regime like the FSIS procedures can be conceived as an implicit contract enabling trade. Then, the analysis focuses on distrust as a justification for Section 727, and establish the conditions under which this measure can be considered as discriminating. This issue is further explored in section 4 where the economic analysis is extended to MFN treatment. Section 5 concludes the paper.

2 The problem of trust

Presentation of the *US - Poultry* case from a legal perspective shows clearly that the Panel's main line of argument was whether Section 727 was based on a risk assessment or not. More precisely, an evaluation of the risk presented by Chinese poultry products, concluding that these products are dangerous, was required in order to justify Section 727. In the face of this claim, the US only opposed general studies and information pointing out that China has serious sanitary problems and problems over containing corruption and implementing safety regulation. Obviously these arguments cannot be considered as a risk assessment and do not apply specifically to Chinese poultry products. However, they show that the US consider that the Chinese sanitary safety system's reliability is weak and that the US does not trust it, and refused (with Section 727) Chinese poultry product as a result. The issue of trust appearing in the US defense does not surface in the Panel's analysis of the case which invariably points to the need for a risk assessment centered on Chinese poultry products. This dialogue of the deaf is transversal to the entire Panel report. We believe that herein lies the originality of this case. Can mistrust in the capacity of China to correctly implement the required safety system be reduced easily to a problem of risk presented by Chinese poultry products? If not, can we expect a different

interpretation of the case (and even different conclusions) than that given by the Panel in its report? In order to discuss these issues the dispute is interpreted from an economic perspective using the game theoretic framework derived from Dasgupta (2008) in order to study trust in economic transactions.

Two variations of a trust game are presented in order to oppose what we might call the Panel's and the US's views on the *US - Poultry* dispute. Note that in both variations the FSIS equivalence procedures are not introduced. This will be done in the next section. The possibility of exchange is represented in a game where the US and China play sequentially. In this stylized representation, the absence of trade yields 0 for both countries. This case is considered the *status quo ante* situation. We suppose that in the presence of the WTO, international trade should be implemented as soon as it yields positive expected payments for both countries. On the contrary, a protective measure is allowed if trade leads to a negative expected payment (a player refuses trade). We focus on expected payments rather than *certain* payments in order to take into account the sanitary risk of the good exchanged as required by the Panel in the *US - Poultry* case.

In a first step, the US decides to allow (trust) or not poultry products imports from China. If the US does not trust China (as with Section 727) the game ends and both countries earn 0. If the US trusts China, believing that Chinese authority will succeed in implementing proper sanitary measures, China then has to choose between investing or not in sanitary control. Two variations of this game illustrate the divergence between the US and the Panel on the ways of seeing the context of the dispute. In both games payments and probabilities are supposed to be common knowledge.

The first variation of the trust game is constructed with the aim of illustrating the Panel's view on the dispute (Figure 1 in the annex provides a tree representation of this game). In this game, Chinese poultry products' risk has to be demonstrated in order to impede trade. We suppose then that when China invests in sanitary control, no sanitary problem appears, and the US and China gain respectively $\alpha > 0$ and $\beta - c > 0$ from trade.[19] When China does not invest, a sanitary problem (the event S) can arise with probability p. In that case, the US and China gain respectively $-\gamma$ and μ. The payment of the US is supposed to be negative because of the sanitary problem.[20] We suppose that the payment of China is such that $0 < \mu \leq \beta$, because of the negative effects of sanitary incidents on China's reputation. However, the payment for China is supposed to be lower when sanitary control is implemented because of the cost c that must be supported: $\mu > \beta - c$.[21] Under this assumption China is incited to avoid sanitary control when trade is allowed (the US's

[19]This assumption that no risk appears following Chinese investment is clearly simplistic. A proper investment in sanitary control should ideally permit a level of risk acceptable from the US point of view.

[20]If it was positive, no justification for a measure constraining trade would be justifiable.

[21]Without this assumption, China would be automatically incited to invest in sanitary control and the US's concern would be unfounded.

concern in the dispute). Since the US knows this best answer of China, it should not allow trade. The equilibrium of the game will therefore be the *ex ante* situation of no trade. This issue corresponds to a situation where both parties are free to choose their best strategies. The rule of free trade focusing on expected payments potentially implies a different result. This rule indeed places the US in a situation where the risk caused by Chinese poultry products has to be demonstrated, as required by the Panel. If the US is convinced that China avoids control of its poultry products, the US must demonstrate that the exchange brings a negative expected payment so that impeding trade is preferred (and justified):

$$(1-p)\,\alpha - p\gamma < 0$$

For that, and with $\alpha > 0$, the US has to show that the probability that Chinese poultry products are unsafe is sufficiently high:

$$p > \frac{\alpha}{\alpha + \gamma} \tag{1}$$

This reasoning leads to the conclusion that the US can legitimately decide not to trust China and impede poultry imports from this country. The result (corresponding to the equilibrium) is not an optimum and is dominated by $(Trust, Control)$ where both countries earn positive payments from trade. However, if for given $\alpha > 0$ and γ, the value of p is such that condition (1) is not respected (the US expected payment is positive), prohibiting Chinese poultry products imports would not be justified. The outcome (*Trust*, *Do not Control*) is an optimum *ex post* only if no sanitary problem occurs.

This variation of the trust game stresses one particular element important to the Panel's reasoning: a risk assessment specifically addressing Chinese poultry is required in order to legitimate a constraining measure for international trade.[22] In this view, the probability p (and therefore the risk assessment) concerns the occurrence of a sanitary problem (the event S) directly affecting the sanitary quality of the Chinese poultry products. Two remarks are appropriate here. The first is that the idea of trust is not very important in this framework. Williamson (1993) speaks about "calculative trust" in such contexts where what matters is a question of risk: agents have to be aware of the possible outcomes and their associated probabilities and decide to enter into exchange only if the expected net gain is positive. In this view, trust would appear to be a useless concept. This of course gives weight to the Panel's decision to focus on risk. The second remark is

[22]The representation inevitably conceives risk assessment as a quantitative evaluation of the probability p of a sanitary accident. This is clearly simplistic since the SPS exigencies are not so demanding when 'food-borne' risk is at stake. The AB on the *EC - Hormones* case, stressed that such a quantitative requirement for the risk assessment has no basis in the SPS Agreement. This idea resurfaced in decisions on various subsequent SPS disputes.

that the rule implying that the US should allow trade as soon as $p < \alpha/(\alpha + \gamma)$ exposes this country to realization of the sanitary risk (the issue (*Trust*, *Do not Control*, *S*)). This outcome is not a Pareto optimum *ex post*. The idea that this situation should be preferred to the other, non-optimal, one corresponding to no trade is clearly questionable and points to the need for an evaluation criterion which the optimality does not supply. The problem underlined is resolved with science within the SPS Agreement.

The second variation of the trust game is constructed with the aim of illustrating the US's view on the *US - Poultry* dispute where trust is more well-founded (Figure 2 in the annex provides a tree representation of this game). As in the first variation the US has to decide whether to allow or not imports of poultry products from China. If the US does not trust China the game ends and payments corresponding to the *status quo* are realized. If the US trusts China an exogenous hazard becomes relevant for the US:[23] China is politically and administratively able to implement effective sanitary control with probability $(1 - q)$. This hazard represents the US questioning in the dispute on the effectiveness of the revision in Chinese food safety laws and regulations in the face of evidence of severe failures (have efforts been expended in order to be able to enforce safety regulations?). This hazard does not *directly* concern the Chinese's control decision or the risk attached to poultry products, but addresses China's ability to enforce its safety regulation. Two possibilities emerge: China's type is H (China is able to implement its sanitary regulation) or $\overline{H}$ (China faces difficulties implementing its sanitary regulation). In both cases China has to choose between controlling or not. We suppose that when China controls, the gain of the US is equal to α. When it does not, the US's payment is γ.[24] The payment of China associated with controlling depends on the capacity to enforce safety regulation (its type): When China's type is $\overline{H}$ the cost of controlling is θ whereas when its type is H the cost of controlling is ρ. It is supposed that $\theta > \rho$. A simple interpretation of this assumption is that controlling costs less when efforts have been expended in order to be able to enforce safety regulations.

The payment of China associated with not controlling depends also on the capacity to enforce safety regulation: When China's type is $\overline{H}$ the payment for no control is $\overline{\mu}$ whereas when its type is H the payment for no control is μ. An important assumption of this game is that: $\overline{\mu} > \beta - \theta$ whereas $\mu < \beta - \rho$.[25] When China can enforce its safety regulation, control is more profitable than no control, whereas when China faces difficulties

[23] Following Harsanyi (1967) a fictional move by nature (N) is introduced in step 2 in order to describe a game of incomplete information as a game of imperfect information.

[24] For simplicity we do not consider that a sanitary problem can appear with probability p as a second hazard when China does not control (as in the first variation of the trust game). This could be done but would not change our interpretation.

[25] Note that the situation where $\overline{\mu} = \mu$ could have been considered without consequences on the results as soon as $\beta - \theta < \mu < \beta - \rho$. However, the assumption $\overline{\mu} \neq \mu$ is interesting in the next section.

implementing its sanitary regulation, it does not choose to control. The US knows that the best answer of China if it allows trade will depend on its type. To decide whether to allow trade or not, the US has to form a belief regarding China's type (it believes that China's type is H with a probability $(1-q)$). The expected payment of choosing to allow imports of Chinese poultry products is: $(1-q)\,\alpha - q\gamma$. In order to justify a refusal to import Chinese poultry products the US has to demonstrate that its expected payoff is negative or that the probability q that China is not able to correctly enforce its safety regulation is sufficiently high:

$$q > \frac{\alpha}{\alpha + \gamma} \tag{2}$$

The perspective given by the second variation of the trust game is therefore different from the first variation. The idea of trust is more substantial since the US's belief about China's type is decisive. The requirement of a risk assessment is now centered on the probability q and should take into account elements enabling qualification of the capacity of China to enforce its safety regulation. The risk of Chinese poultry products is not directly at stake in this risk assessment contrary to what is required in the Panel's variation of the trust game.

Our interpretation of the *US - Poultry* case, using two game trees, underlines that the Panel had a restrictive view of the dispute. Asking for an assessment of the risk presented by Chinese poultry products ignores two linked characteristics of this dispute. First, it is a problem of trust that is at stake as far as the US's expressed fears are concerned. The Panel ignored an important idea according to which trust is seen as permitting trade or making it easier. This idea forms a point of departure of the economic literature highlighted in the introduction to this paper. In a situation of asymmetric information between seller and buyer, trust is seen as cementing the exchange. Once poultry imports are permitted, the US has to rely on a trust-based relation. Trust therefore is a substitute for strong enforcement mechanisms.[26] Second, the US's fears primarily relate to systemic deficiencies in China's sanitary control system rather than to the poultry products. The consequence of the second characteristic is straightforward: asking for a risk assessment limited to the poultry products is not enough. This needs to be complemented by a risk assessment focusing on the systemic failures identified in the US claims and a description of the ways these failures could affect the safety of poultry products.[27] The required risk assessment is directly anchored in social sciences. What should matter is rather the assessment of the Chinese sanitary regulation, of the conditions of its implementation, of the potential consequences for poultry's sanitary safety, and of the capacity (or incapacity) of the FSIS procedures to handle the problem as underlined in the following discussion.

[26] See Bohnet et al. (2001)

[27] Note that neither of these assessments has been furnished by the US in the dispute.

3 Trust and equivalence regime

Does the interpretation of the *US - Poultry* case developed in section 2 account for the US position in the dispute? The remaining discussion shows that a positive answer to this question requires a demonstration regarding the FSIS procedures' properties that the US did not furnish. First, note that the JES given by the US to explain Section 727 can hardly be considered an evaluation of the risk represented by q. The US did not furnish a risk assessment of the systemic deficiencies in the Chinese sanitary control system in order to uphold their mistrust. Furthermore, if the US did not trust China because $q > \frac{\alpha}{\gamma+\alpha}$, it should be ready to invest a positive amount in order to discriminate between the two types H and $\overline{H}$. Refusing to invest in such a situation results in the *status quo* and a zero payment for the US. Investing might allow the US to discover that China is of type H and gain α from the exchange that would take place in this situation. Note that China should also be ready to invest in order to make trade possible. When exchange takes place a type H gains $\beta - \rho$ (choosing C) while a type $\overline{H}$ gains $\overline{\mu}$ (choosing $\overline{C}$). As a consequence, when China is able to implement its safety regulation (type H) it should be ready to pay up to $\beta - \rho$ to establish its reputation and fulfill the US's sanitary requirements, while when it is not able (type $\overline{H}$) it should be ready to pay up to $\overline{\mu}$ to make trade possible. We don't know however if maintaining reputation has more value for China when controlling the implementation of the sanitary regulation is possible (i.e. if $\beta - \rho$ exceeds $\overline{\mu}$).[28]

The FSIS procedures can be seen as the 'institutional support' for this willingness to invest in the creation of good conditions for future poultry trade. Deciding to interrupt it with Section 727 would therefore seem at odds and the demonstration of its incapacity to handle the circumstances presented by China must be demonstrated in this case. To present this idea formally, we suppose that China is of type $\overline{H}$. This case forms the most difficult situation for the FSIS procedures. The trust game can be simplified and represented (Figure 3) as a one-sided prisoner dilemma with an equilibrium $\left(\overline{T}, \overline{C}\right)$.

The FSIS procedures are not represented by this game. However, in the absence of an international institution able to control its implementation, the FSIS procedures can be considered to be an implicit contract[29] (i.e. self-enforcing) between the US and China modifying the payments from the game as in Figure 4, and creating incentives to trust so that (T, C) becomes a Nash equilibrium.

In this game, f is the investment that both parties have to realize in order to run the FSIS procedures.[30] A supplementary cost e is introduced and is supported by the

[28] The importance of the assumption $\overline{\mu} \neq \mu$, is clear here. With $\mu \neq \mu$ and $\mu < \beta - \rho$, China could reveal its type H investing $\beta - \rho$.

[29] Since there is no International Court able to monitor its implementation. See James (2002).

[30] We suppose that both parties face the same cost. This assumption might not hold since as underlined before the countries differ in their willingness to invest in these procedures.

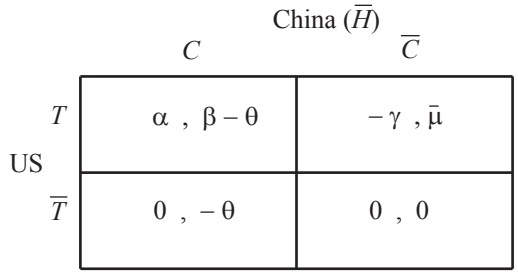

Figure 3: The trust game when China is of type $\overline{H}$

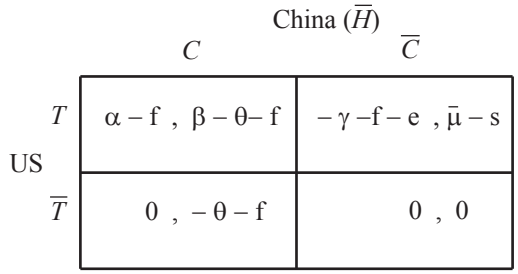

Figure 4: The trust game with the FSIS procedures

US to inflict a cost s on China if it does not fully cooperate in the FSIS procedures. This sanction can take the form of delaying the FSIS procedures.[31] (T, C) will be an equilibrium, together with $\left(\overline{T}, \overline{C}\right)$,[32] if two conditions hold:

$$\alpha - f \geq 0 \tag{3}$$

$$\beta - \theta - f \geq \overline{\mu} - s \Leftrightarrow s - f \geq \overline{\mu} - (\beta - \theta) \tag{4}$$

Under these conditions the FSIS procedures can be considered as building trust. Choosing to stop the FSIS procedures with Section 727 can have two explanations in this framework for the US. The first is that this interruption would be seen as a result of the

[31] In self-enforcing agreements this sanction is normally determined using repeated games and taking the form of refusal to deal with the other party in the next period (see Telser (1980) for an example). In such a perspective FSIS procedures should be considered as an institution enabling the US to ban poultry imports as soon as lack of control is detected.

[32] Note that both countries will face the existence of mixed strategy equilibria. If t is the probability that the US will trust China and if $\widetilde{t}$ the probability that China cooperates, the US will have an incentive to trust and China will have an incentive to cooperate if China believes $t \geq \frac{\theta+f}{s-(\overline{\mu}-\beta)}$ and the US believes $\widetilde{t} \geq \frac{f+e-\gamma}{\alpha+e-\gamma}$.

coordination problem revealed by the existence of multi equilibria. Note that this explanation would be rather weak since the equilibrium (T, C) is strictly Pareto dominant; a property that can be used by both countries to coordinate. The second one would be to show that the FSIS procedures with China do not implement a self-enforcing agreement characterized by conditions (3)-(4). Conditions (3) and (4) depend on the FSIS procedures cost compared to trade gains for both parties. Condition (4) expresses the idea that the sanction s should be sufficiently high, i.e. above a minimum depending on the cost f and the difference in China's payments associated with no control and controlling. This line of defense requires that the exceptional circumstances presented by China (i.e. the difference in China's payments $\overline{\mu} - (\beta - \theta)$) that the usual FSIS procedures are unable to cope with (i.e. f and s), are demonstrated by the US in the case presented (i.e. $s - f$ cannot be large enough compared to $\overline{\mu} - (\beta - \theta)$).

The JES accompanying Section 727 cannot be considered a demonstration of this kind. The exceptional circumstances presented by the control of the Chinese sanitary regulations are not firmly demonstrated. Furthermore no element that leads to the conclusion that the FSIS procedures could not cope with these circumstances is presented. Section 727 can hardly be defended in light of the analysis developed in this paper and is considered a discrimination. Note that in order to reach this conclusion, we make no reference to the requirements of the SPS Agreement. The FSIS procedures and Section 727 are considered in light of the equivalence regime framework as unsuccessfully required by the US. An important feature of this interpretation is that risk assessment should take specific account of the Chinese implementation of the poultry safety regulation *as well as* the effectiveness of the FSIS procedures in the circumstances presented by China.

4 The MFN treatment

The Panel found that Section 727 was incompatible with MFN. MFN with National Treatment provision, is a primary nondiscrimination principle. It stops Members from discriminating among like products from certain other Members. *Likeness* of products is therefore a central issue in interpreting MFN status in a dispute. Views on likeness vary depending on the type of dispute. The survey by Horn and Mavroidis (2001) shows that likeness is usually understood using the classification of products provided with the Harmonized System if border measures such as tariffs are concerned, or using a 'market test' such as 'consumer reaction' or 'cross-price elasticity' if domestic measures are at stake. A tariff classification defining similar goods for customs purposes or economic rationales are used therefore to define like products. In front of the MFN violation allegation, the US defended Section 727 claiming that the hypothesis of products likeness was not verified with Chinese poultry products because of the deficiencies of the Chinese sanitary security

system.[33] The differential treatment of poultry products implied by Section 727 would not be not based on origin but on differences in safety standards. This argument however was not supported by a risk assessment. This placed the Panel in a position to consider poultry products from China and from other Members as "hypothetical like products". Once likeness was acknowledged, Section 727 was found to impose origin-based discrimination since it enforces origin-based restriction. This restriction removes the opportunity to access the US's market and was therefore considered as prejudicial.[34]

A differential treatment does not imply automatically discrimination however. Paraphrasing Hudec (2003) we have to show that something is wrong with differential treatment to call it discrimination. The economic framework presented above can be extended to provide an understanding of discrimination in this dispute. For this, we consider three countries A, B and C. A imports poultry products while B and C are potential exporters. A implements equivalence procedures before allowing imports. This equivalence regime should be able to consider products with different risk levels and ensure that progress through the procedures means that every product meets a minimum safety standard. Thus, the 'hypothetical like products' assumption can be made because both products of B and C have to meet the requirement of A's equivalence procedure. We consider A's incentive to discriminate in a Nash equilibrium, that is, in a situation where countries B and C cannot affect A's policy through offers of concessions or threats of retaliation (Schwartz and Sykes (1996)). Whatever the comparative risks of the poultry products exported by B and C, impeding implementation of the equivalence procedures with one of the exporters (e.g. C) creates an asymmetry between the two countries. This first conclusion does not equate with discrimination. It needs to be extended. Maintaining the equivalence procedures with B may allow B to be identified as trustworthy ($q \leq \frac{\alpha}{\alpha+\gamma}$) and may result in imports from this country to be approved. In this case, both A and B have invested in the creation of a trading relation through implementation of the equivalence regime required by A. Importantly, in this understanding, the investment of the importing country A is the counterpart of the investment of the exporting country B. Impeding the equivalence procedures with C breaks this possibility. If C still invests (like B) in control of the sanitary security of its poultry industry with the aim of being able in the future to export to A, this investment has no counterpart. C's investment nevertheless participates in the creation of future trade which benefits A. Impeding the equivalence procedures for C blocks reciprocity and allows A to take advantage of this relation. This does not apply to B, which is open to reciprocity. The asymmetry between B and C can therefore be considered discriminating. Note that the difference in safety among products does not contribute to this conclusion.

[33] Report of the Panel, para. 7.421.

[34] Report of the Panel, paras. 7.439 and 7.440.

Is this discrimination defensible? Since A's investment in its equivalence regime implementation with B creates reciprocity, one way to defend a break in this investment with C is to demonstrate that A's investment does not create reciprocity with C and as a result is useless. This can be done by demonstrating that A's equivalence regime cannot handle the specificity of country C's food safety system. This feature was proposed in our interpretation of the *US - Poultry* case considering the SPS claims. We show a new rationale in the context of the economic interpretation of MFN status for the idea that the risk assessment in this dispute should focus on the implementation of the poultry safety regulation by China (and the way poultry can be affected), *and* the effectiveness of the FSIS procedures in the circumstances presented by this country.

5 Conclusion

The Panel reasoning in the *US - Poultry* dispute was in line with precedent decisions in SPS cases, pointing out the need for a scientific justification of the SPS constraining measure. This invariability however impeded the Panel from achieving a complete appreciation of the defense presented by the US which pointed concerns about deficiencies in the Chinese sanitary security system. This paper discussed the case from an economic perspective apart from the Panel's reasoning. For this purpose, the concern over *trust* expressed by the US on the capacity of China to implement its safety regulation is at the center of the interpretation. In this analysis, the *US - Poultry* case is described using game theory terms. Trust is considered in an asymmetrical relationship between two parties: the first party (the US) has to choose to enter an economic relationship (accept Chinese poultry products) without knowing whether the second party (China) will honor its part of the relationship (correctly implement the US's sanitary requirements). The equivalence regime is introduced in this framework as an *implicit contract* permitting to avoid the absence of trade. An important feature of this interpretation of the case is that the scientific assessment delivered to give reason for impeding an equivalence regime with one country should take specific account of the difficulties this country has implementing its safety regulation, as well as the limits of the equivalence regime in these circumstances. This indicates that Section 727 could be considered legitimate (i.e. non-discriminating) if the US demonstrated (which it did not) first, that the sanitary requirements used with other poultry exporting WTO Members cannot be correctly implemented by China because of systemic failures in the implementation of its sanitary regulations, and second, that the US equivalence regime cannot deal with these exceptional circumstances. Finally, we extended the analysis to the case of MFN treatment in order to assert discrimination. It showed that the US equivalence regime can be seen as a framework in which trading partners invest in order to facilitate future trade. If the US ceases to invest with China

only (as in the case of Section 727), reciprocity breaks down and China, in maintaining its investment, creates good conditions for future trade benefits the US. The only way to justify such asymmetrical treatment should be here again to demonstrate that the FSIS procedures are useless in front of the systemic deficiencies in China's sanitary control.

The question of the compatibility of the interpretation given to the *US - Poultry* dispute with the dispositions of the SPS Agreement is beyond the scope of the economic analysis developed in this paper. If the connection between the 'institutional risk' put forward and the risk presented by poultry products is not clearly established, the scientific evidences delivered would probably not be recognized as a proper risk assessment by the Panel. The kind of risk assessment to be conducted under the SPS Agreement is defined in Annex A[35] of this Agreement and is clearly centered on the products only.[36] However, the AB on *EC - Hormones* found that:[37] "there is nothing to indicate that the listing of factors that may be taken into account in a risk assessment of Article 5.2 was intended to be a closed list. It is important to bear in mind that the risk that is to be evaluated in a risk assessment under Article 5.1 is not only risk ascertainable in a science laboratory operating under strictly control conditions, but also risk in human societies as they actually exist, in other words, the actual potential for adverse effects on human health in the real world where people live and work and die." What exactly is intended by "risk in human society" is not defined. Neither are the other factors that could be considered in a risk assessment. However, this finding of the AB may open the way to the interpretation of the *US - Poultry* dispute we give in this paper.

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[35] Risk assessment is defined as "The evaluation of the likelihood of entry, establishment or spread of a pest or disease within the territory of an importing Member according to the sanitary or phytosanitary measures which might be applied, and of the associated potential biological and economic consequences; or the evaluation of the potential for adverse effects on human or animal health arising from the presence of additives, contaminants, toxins or disease-causing organisms in food, beverages or feedstuffs". See Pauwelyn (1999) for a discussion.

[36] This impression is reinforced by the list of the factors to be taken into account in a risk assessment summarized in Article 5.2 of the SPS Agreement: "In the assessment of risks, Members shall take into account available scientific evidence; relevant processes and production methods; relevant inspection, sampling and testing methods; prevalence of specific diseases or pests; existence of pest- or disease-free areas; relevant ecological and environmental conditions; and quarantine or other treatment".

[37] *EC - Hormones*, Appellate Body Report, para. 187.

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Annex

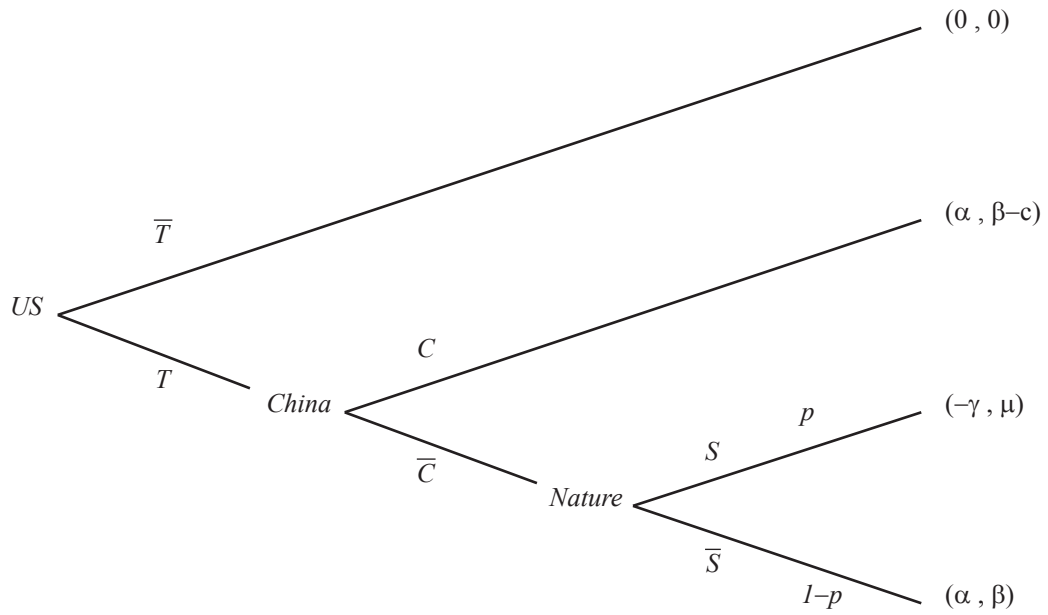

Figure 1: The Panel's variation of the trust game

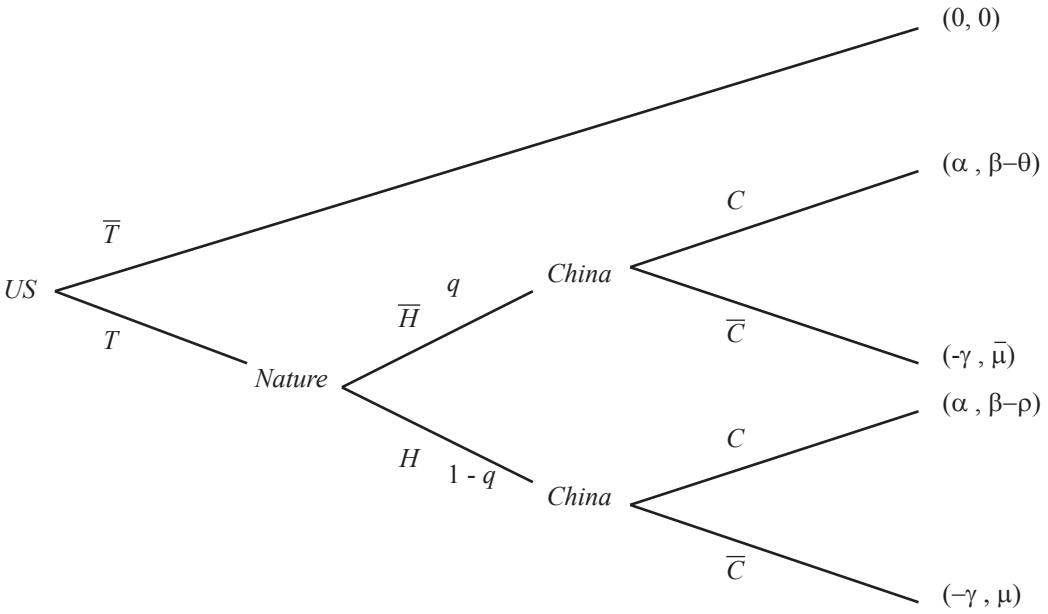

Figure 2: The US's variation of the trust game

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