

**U.S. BUSINESS CONFIDENTIAL INFORMATION (BCI) REDACTED;  
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***European Communities and Certain Member States –  
Measures Affecting Trade in Large Civil Aircraft:  
Recourse to Article 22.6 of the DSU by the European Union***

**(DS316)**

**RESPONSES OF THE UNITED STATES  
TO THE SECOND SET OF QUESTIONS FROM THE ARBITRATOR**

December 14, 2018



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<i>Canada – Aircraft Credits and Guarantees (22.6)</i>	Decision by the Arbitrator, <i>Canada – Export Credits and Loan Guarantees for Regional Aircraft – Recourse to Arbitration by Canada under Article 22.6 of the DSU and Article 4.11 of the SCM Agreement</i> , WT/DS222/ARB, 17 February 2003
Compliance Appellate Report	Appellate Body Report, <i>European Communities and Certain Member States – Measures Affecting Trade in Large Civil Aircraft – Recourse to Article 21.5 of the DSU by the United States</i> , WT/DS316/AB/RW and Add.1, adopted 28 May 2018
Compliance Panel Report	Panel Report, <i>European Communities and Certain Member States – Measures Affecting Trade in Large Civil Aircraft – Recourse to Article 21.5 of the DSU by the United States</i> , WT/DS316/RW and Add.1, adopted 28 May 2018, as modified by Appellate Body Report WT/DS316/AB/RW
Original Appellate Report	Appellate Body Report, <i>European Communities and certain member States – Measures Affecting Trade in Large Civil Aircraft</i> , WT/DS316/AB/R, adopted 1 June 2011
Original Panel Report	Panel Report, <i>European Communities and certain member States – Measures Affecting Trade in Large Civil Aircraft</i> , WT/DS316/R, adopted 1 June 2011, as modified by Appellate Body Report WT/DS316/AB/R
<i>US – 1916 Act (22.6)</i>	Decision by the Arbitrator, <i>United States – Anti-Dumping Act of 1916, Original Complaint by the European Communities – Recourse to Arbitration by the United States under Article 22.6 of the DSU</i> , WT/DS136/ARB, 24 February 2004
<i>US – Upland Cotton (22.6 II)</i>	Decision by the Arbitrator, <i>United States – Subsidies on Upland Cotton – Recourse to Arbitration by the United States under Article 22.6 of the DSU and Article 7.10 of the SCM Agreement</i> , WT/DS267/ARB/2 and Corr.1, 31 August 2009

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## **Introduction**

1. In its response to the first set of questions from the Arbitrator, the EU presented a 57-paragraph rebuttal to the U.S. written submission to make points that it considered relevant to its direct responses to questions 4, 8, 9, 10, 11, 12, 13 14, 15, 21, and 23.<sup>1</sup> The United States does not consider that the Arbitrator's questions invited such responses. By the same token, the United States considers that the Arbitrator's second set of questions does not invite generalized rebuttal of points made in the parties' written submissions or responses to the first set of questions. In light of that understanding, the United States has not sought to rebut earlier statements of the EU except as relevant to the specific questions asked by the Arbitrator. Therefore, silence with regard to any statements made by the EU should not be taken as agreement with a position advanced by the EU. The United States looks forward to providing a rebuttal at the appropriate time.

### **1.1 Factual and general questions**

#### **Question 52 (EU)**

**With reference to section IX.B.1.c.iii of the European Union's written submission, and in particular footnote 272 and paragraph 254, could the European Union please clarify whether it is arguing that *all* data submitted in Exhibits USA-12 (HSBI) through USA-16 (HSBI) are unreliable because the United States did not submit the primary-source documents from which the data in those exhibits were obtained, or that only *certain* data therein are unreliable due to the specific issues raised in paragraphs 250 and 252–253? If it is the latter, please identify the relevant data.**

#### **Question 53 (US)**

**With reference to paragraph 230 of the United States' written submission, could the United States please answer the following questions:**

- a. How are payments from non-US LCA customers made to Boeing in connection with LCA sales accounted for in US balance-of-payments records? Please consider records kept by the US Census Bureau and the US Bureau of Economic Affairs in your answer. Please discuss payments due upon order, PDPs, and payments due upon delivery.**

2. In U.S. International Economic Accounts: Concepts and Methods, the U.S. Bureau of Economic Analysis (BEA) describes prepayment by customers for goods and services not yet provided as trade credits and advances, a type of debt instrument within the Financial Accounts of the balance-of-payments (BOP) records.<sup>2</sup> Payments due upon order and pre-delivery payments ("PDPs") are a type of prepayment, and as such are captured in this category, as a trade credit and advance at the time the payment is made.

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<sup>1</sup> EU FWS, para. 1-47.

<sup>2</sup> *U.S. International Economic Accounts: Concepts and Methods*, U.S. Department of Commerce, Bureau of Economic Analysis, para. 9.27 (Exhibit USA-32) (available at <https://www.bea.gov/resources/methodologies/us-international-economic-accounts-concepts-methods>).

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3. At the time the aircraft is exported from the United States, the U.S. Census Bureau (Census) captures the entire value of the aircraft as a goods export. Census describes this as follows: “The value shall be the selling price (or the cost, if the goods are not sold), plus inland or domestic freight, insurance, and other charges to the U.S. seaport, airport, or land border port of export.”<sup>3</sup> BEA uses goods export data, as reported by Census, to produce goods export data in their BOP records.

4. Thus, in the period in which an aircraft is exported, the BOP records of the United States capture the total amount of revenue associated with the sale of that aircraft – *i.e.*, payment upon order, PDPs, and amount paid upon delivery. When the aircraft is recorded in the BOP as a goods export the trade credit and advance debit is removed from the financial account.

**b. How does Boeing account for and characterize payments made by LCA customers to Boeing in connection with LCA sales in its public financial statements? Please discuss payments due upon order, PDPs, and payments due upon delivery in your answer.**

5. In its most recent annual report (for 2017), Boeing described its revenue recognition policies for large civil aircraft (“LCA”) sales as follows: “We recognize sales for commercial airplane deliveries as each unit is completed and accepted by the customer. Sales recognized represent the price negotiated with the customer, adjusted by an escalation formula as specified in the customer agreement.”<sup>4</sup> Thus, in the period in which an aircraft is delivered, Boeing recognizes the total amount of revenue associated with the sale of that aircraft, even though it will have received PDPs (including initial deposit paid upon order) prior to delivery.

6. PDPs are typically based on [BCI].<sup>5</sup> The difference between the net delivery price and PDPs paid is due at delivery of the aircraft. PDPs are accounted for on Boeing’s consolidated statements of financial position as a reduction to inventory (Inventories, net of advances and progress billings) except where PDPs exceed inventory at which point they are reported as a liability (Advances and billings in excess of related costs).<sup>6</sup>

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<sup>3</sup> “Value,” U.S. Census Bureau website, Common Trade Definitions (Exhibit USA-33) (available at <https://www.census.gov/foreign-trade/reference/definitions/index.html#V>).

<sup>4</sup> Boeing Annual Report 2017, p. 53 (Exhibit USA-34) (emphasis added).

<sup>5</sup> Boeing e-mail from [BCI] (Dec. 13, 2018) (Exhibit USA-35(BCI)).

<sup>6</sup> Boeing Annual Report 2017, p. 57 (Exhibit USA-34) (“We net advances and progress billings on long-term contracts against inventory in the Consolidated Statements of Financial Position. Advances and progress billings in excess of related inventory are reported in Advances and billings in excess of related costs.”). *See also* Boeing e-mail from [BCI] (Dec. 13, 2018) (Exhibit USA-35(BCI)).

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**Question 54 (both parties)**

**With reference to, *inter alia*, paragraphs 135–136 of the United States' written submission, and paragraph 152 of the European Union's written submission, could the parties please address whether the Arbitrator should value the relevant adverse effects: (i) based exclusively on the value of *goods* flows (e.g. counterfactual US LCA exports); (ii) based exclusively on *revenue* flows (e.g. monies that Boeing would receive under a counterfactual LCA sales order from the LCA customer, including monies received if an LCA order is cancelled in whole or in part and one or more aircraft are not delivered); or (iii) some combination of (i) and (ii)? In your answers, please consider not only the types of serious prejudice at issue in these proceedings, but the other kinds of adverse effects and serious prejudice found in Articles 5 and 6 of the SCM Agreement.**

7. The Arbitrator's valuation of the adverse effects determined to exist should be guided by the text of the *Agreement on Subsidies and Countervailing Measures* ("SCM Agreement") and the findings adopted by the Dispute Settlement Body ("DSB"). When adverse effects take the form of serious prejudice, the task is to calculate the value to the Member's interests of the relevant Article 6.3 market phenomenon. Thus, where the market phenomena is significant lost sales, the relevant task is to measure the value of the lost sales.

8. The EU erroneously asks the Arbitrator to deviate from this task, however, in paragraph 152 of its written submission. The EU argues that the Arbitrator should be valuing "trade effects," and then further argues that "adverse effects in the December 2011 to December 2013 period result in actual trade effects not at the time of order, but when an LCA is delivered."<sup>7</sup> But the SCM Agreement is clear that the countermeasures are to be commensurate with the adverse effects determined to exist, not the EU's concept of trade effects. Therefore, when valuing instances of "adverse effects in the December 2011 to December 2013 period," where significant lost sales were found on the basis of orders, there is no basis to focus on associated deliveries in subsequent years.

9. Instead, the correct approach for valuing a sale found to be "lost" in 2012, is to do just that – calculate the value in 2012 of the "lost sale." Articles 5 and 6 of the SCM Agreement concern adverse effects to the interests of a Member. Therefore, while revenue flows between and among private parties may be good evidence of (or proxies for) certain values, they are not themselves the correct measure of adverse effects.

10. The present value of counterfactual goods flows – where present value represents the value at the time the relevant Article 6.3 market phenomena occurred – may be a useful approach to valuing significant lost sales. This does not mean, however, that the focus with respect to significant lost sales should be on aircraft deliveries rather than orders. In this dispute, based on the record facts, in all four previous reports, orders (without deliveries) were considered sufficient to establish significant lost sales. It is the lost sale, which occurred at the time of the

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<sup>7</sup> EU Written Submission, para. 152.



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order, that is to be valued. Therefore, if “value of good flows” is used, it should be the “present” value of the associated flows of goods. And caution should be taken to ensure that the form of adverse effects that appears in the text (in this case, significant lost sales) is being valued, rather than some other non-textual concept, consistent with the findings adopted by the DSB.

11. Other forms of adverse effects would work the same way. If price suppression were found in a particular period, one would quantify the amount that the price was suppressed in that period as a result of the subsidies. This would mean taking the difference between the actual price and the counterfactual price, and multiplying that difference by the volume of goods associated with the suppressed price in the relevant period. The key, again, is that the form of adverse effects identified in the SCM Agreement – price suppression – is being valued, rather than some non-textual concept.

**Question 55 (both parties)**

**With reference to, *inter alia*, paragraphs 240 and 151 of the European Union's written submission, could the parties please explain whether Airbus/Boeing are insured against the risk of complete or partial cancellation of an order by their airline customers? If so, please describe the key terms of these insurance policies.**

12. [BCI]<sup>8</sup>

**1.2 Questions relating to the economic methodologies proposed by the parties**

**1.2.1 Generally**

**Question 56 (EU)**

**With reference to paragraph 105 of the European Union's written submission, the European Union argues that "as the adverse effects found to exist are specific and finite, so too must the countermeasures afforded to the United States be specific and finite". Could the European Union please elaborate on why it considers that the adverse effects found to exist are "finite"?**

**Question 57 (EU)**

**With reference to paragraphs 108–109 of the United States' written submission, concerning numbers of A380 aircraft ordered and/or delivered at various times, could the European Union please respond to the arguments contained therein?**

**Question 58 (US)**

**With reference to, *inter alia*, paragraphs 126, 138, 158, 223, and 237 of the United States' written submission, could the United States please clarify why, if the Arbitrator should seek the "least speculative" information to value the adverse effects determined to exist, the**

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<sup>8</sup> Boeing e-mail from [BCI] (Dec. 13, 2018) (Exhibit USA-35(BCI)).

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**Arbitrator should use only the information that "the parties knew" at the time of the orders representing the lost sales, and disregard later-in-time information regarding the evolution of the lost sales such as: (i) the cancellation of the 2012 Transaero A380 order; and (ii) how relevant escalation formulae [BCI] over time?**

13. The United States understands the question to imply that contracted deliveries (*i.e.*, deliveries scheduled for the future at the time of order) and [BCI] escalation factors may involve some uncertainty. However, uncertainty is not speculation as the United States used that term in its written submission. Rather, the United States refers to speculation by the parties in this dispute and, ultimately, the Arbitrator. Thus, consistent with past arbitration decisions, the United States is asserting a preference for verifiable facts over unverifiable speculation.<sup>9</sup>

14. Whether to use scheduled deliveries or [BCI], as opposed to [BCI] deliveries or actual escalation factors at the time of delivery is a separate question informed by different legal considerations. The Arbitrator's task is to determine whether the proposed countermeasures are commensurate with the degree and nature of the adverse effects determined to exist. Therefore, the correct valuation of those instances of adverse effects should focus on the basis for the determination of the existence of adverse effects. The DSB determined the existence of adverse effects in the form of significant lost sales based on orders. For this reason, the valuation should be based on the same evidence that formed the basis of the significant lost sales determination – orders. Otherwise, it would not be valuing "the degree and nature of the adverse effects determined to exist."

15. The United States clarifies that its focus on what "the parties knew" at the time of orders derives from the fact that the findings were based on the orders. Had the findings incorporated post-order facts deemed to be relevant to the adverse effects determination, there would be no reason (or basis) to ignore those facts and related findings in this arbitration. But, again, the adopted adverse effects findings were based on orders and, as a factual matter, were not affected by consideration of any sort of post-order facts related to those orders.

16. With respect to the cancellation of the 2012 Transaero A380 order, the United States recalls that the task is to determine whether countermeasures are commensurate with the degree and nature of the adverse effects determined to exist, not reassess the adverse effects determined to exist. The adopted findings include that four (4) A380 orders represent significant lost sales to the U.S. LCA industry.<sup>10</sup> The cancellation occurred after the end of the compliance proceeding reference period. Therefore, it was not part of the record and did not form any part of the basis of the adverse effects determination. Accordingly, consideration of the cancellation now would be to, in effect, consider an appeal or re-litigation of the adverse effects determined to exist based on a new factual record. That is beyond the scope of the Arbitrator's role.

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<sup>9</sup> See *US – 1916 Act (22.6)*, para. 5.54.

<sup>10</sup> Compliance Appellate Report, para. 5.731, Table 12; Compliance Panel Report, Table 19.

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17. Consideration of how the relevant escalation formulae [BCI] over time is different because this is a factor that was introduced in this arbitration as relevant to the valuation exercise, and is not related to the underlying adverse effects determination. Therefore, considering information after the end of the compliance proceeding reference period would not constitute reconsideration of an adopted finding.

18. However, for [BCI] of the lost sales transactions, deliveries were not scheduled to begin prior to 2018.<sup>11</sup> And [BCI] of aircraft associated with the orders were scheduled for delivery in 2018 or subsequent years.<sup>12</sup> For all such undelivered aircraft, there is no possible way to use an [BCI] escalation factor, because [BCI].<sup>13</sup> The only option for these aircraft is to use the escalation factors [BCI].

19. It is not necessary to substitute the [BCI] escalation factors for those aircraft for which estimated delivery dates have already past. It would be somewhat complicated to do so, the difference between the [BCI] escalation factor and the [BCI] escalation factor is likely to be small, and this would apply to only some of the ordered aircraft. Therefore, this is not necessary to confirm that the countermeasures are “commensurate” with the adverse effects determined to exist.

**Question 59 (US)**

**With reference to paragraph 101 of the United States' written submission, could the United States please cite the paragraph(s) of the decision in *US – Upland Cotton (Article 22.6 – US II)* where "the arbitrator considered that yearly payments led to adverse effects year after year" in deciding to authorize annually recurring countermeasures?**

20. The arbitrator did not explicitly consider that the yearly payments lead to adverse effects year after year in deciding whether or not to authorize annual countermeasures. However, the United States inferred the rationale from the nature of the adverse effects determined to exist in that dispute. The arbitrator stated:

We note in this respect that wherever the level of countermeasures is determined in the form of a fixed amount to be applied on an annual basis, it is inherent in this approach that this amount will not exactly track the future evolution of the situation in consideration of the actual level of payments to occur in the future under the subsidies at issue. Yet, the United States takes no issue with this approach as a matter of principle. The fact that the actual level of future payments

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<sup>11</sup> See U.S. Written Submission, para. 225.

<sup>12</sup> See U.S. Written Submission, para. 225.

<sup>13</sup> See Response of the United States to Question 33 from the Arbitrator, paras. 51-56. The United States uses the following format to cite to responses to questions from the Arbitrator: “US RAQ #” or “EU RAQ #”.

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under the programs may be uncertain to date cannot in itself be an obstacle to calculating a level of countermeasures to be applied.<sup>14</sup>

21. Thus, the arbitrator implied that the level of payments, at least in part, determines the adverse effects. And the arbitrator did so in the context of discussing a fixed level of countermeasures to be applied on an annual basis. The best reading of this passage is that the annual countermeasures reflect continued adverse effects caused by continued payments.

22. As the United States has noted, the EU’s objection to annual countermeasures flies in the face of nearly every Article 22.6 decision to date.<sup>15</sup> In fact, no arbitrator has rejected a party’s request for annual countermeasures.<sup>16</sup>

**Question 60 (both parties)**

**With reference to paragraphs 42–43 of the Methodology Paper, paragraph 4 of Exhibit USA-5 (BCI), Exhibits USA-12 (HSBI) through USA-16 (HSBI), and paragraph 256 of the European Union's written submission, could the parties please provide further explanations as follows:**

**a. What considerations go into the selection of a specific escalation formula for use in a given Airbus/Boeing LCA sales contract? Are escalation formulae subject to negotiations between Airbus/Boeing and customers? Why do LCA sales contracts' escalation formulae reference [BCI]? Insofar as they are used, how are [BCI] on certain indices and the [BCI] attributed to [BCI] determined?**

23. The escalation formula for a given Boeing LCA sales contract is determined by [BCI].<sup>17</sup>

24. Boeing [BCI].<sup>18</sup>

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<sup>14</sup> *US – Upland Cotton (22.6 II)*, note 44.

<sup>15</sup> See *US RAQ 21*, para. 45.

<sup>16</sup> The two disputes in which the arbitrator’s decision did not provide for annual countermeasures or suspension of concessions or obligations were *Canada – Aircraft Credits and Guarantees (22.6)* and *US – 1916 Act (22.6)*. In the former, the measure was transaction-specific and Brazil only requested suspension with respect to the relevant transactions. See *Canada – Aircraft Credits and Guarantees (22.6)*, para. 3.33 (“Brazil chose to request...countermeasures...strictly proportional to the value of just one of the contracts won by Bombardier with prohibited subsidies.”). In the latter, the EC requested authorization to adopt an equivalent regulation to the 1916 Act against imports from the United States. See *US – 1916 Act (22.6)*, paras. 2.6-2.10.

<sup>17</sup> Boeing e-mail from [BCI] (Dec. 13, 2018) (Exhibit USA-36(BCI)).

<sup>18</sup> Boeing e-mail from [BCI] (Dec. 13, 2018) (Exhibit USA-36(BCI)).

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25. Specifically, [BCI].<sup>19</sup> [BCI].<sup>20</sup>
26. Thus, [BCI]. The United States is providing [BCI].<sup>21</sup>
27. Boeing [BCI].<sup>22</sup>
28. Boeing [BCI].<sup>23</sup>
- b. Are there any specific escalation formulae that are used more often than others in LCA sales contracts? In particular, do escalation formulae tend to rely on a particular price index more often than they do on others?**
29. [BCI],<sup>24</sup> and [BCI].<sup>25</sup>
- c. What is the function of [BCI] escalation rates as they exist at the time of order? Are PDPs and delivery payments based on such [BCI] data such that, for example, the customer knows the dollar amount that will be due upon delivery at the time of order, or are the PDPs and delivery payments calculated on the basis of the [BCI] escalation rate (i.e. the escalation rate calculated on the basis of the [BCI] of the price indices) that exists [BCI] of payment of PDPs and delivery payments?**
30. Please see the U.S. response to Question 33 from the Arbitrator’s previous questions. To summarize [BCI].
- d. How are the price indices [BCI]?**
31. Boeing [BCI].<sup>26</sup>

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<sup>19</sup> Boeing e-mail from [BCI] (Dec. 13, 2018) (Exhibit USA-36(BCI)); Boeing Escalation Slide (Exhibit USA-37(BCI)).

<sup>20</sup> Boeing e-mail from [BCI] (Dec. 13, 2018) (Exhibit USA-36(BCI)); Boeing Escalation Slide (Exhibit USA-37(BCI)).

<sup>21</sup> [BCI] (Exhibit USA-38(BCI)); [BCI] (Exhibit USA-39(BCI)); [BCI] (Exhibit USA-40(BCI)); [BCI] (Exhibit USA-41(BCI)). [BCI].

<sup>22</sup> Boeing e-mail from [BCI] (Dec. 13, 2018) (Exhibit USA-36(BCI)).

<sup>23</sup> Boeing e-mail from [BCI] (Dec. 13, 2018) (Exhibit USA-36(BCI)).

<sup>24</sup> Boeing e-mail from [BCI] (Dec. 13, 2018) (Exhibit USA-36(BCI)). For an example of this, see [BCI].

<sup>25</sup> Boeing e-mail from [BCI] (Dec. 13, 2018) (Exhibit USA-35(BCI)). For an examples of this, see [BCI].

<sup>26</sup> Boeing e-mail from [BCI] (Dec. 13, 2018) (Exhibit USA-35(BCI)).

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**Question 61 (both parties)**

**With reference to, *inter alia*, paragraphs 225, 304, and 309 of the European Union's written submission, could the parties please explain what are the aspects of LCA sales contracts that most significantly determine the price of LCA stipulated therein, other than the LCA model being sold (e.g. identity of customer, geographic region in which customer is located, delivery time slots, order size, etc.)?**

32. Many factors can affect aircraft pricing, and each LCA sale tends to involve a unique mix of relevant factors. Accordingly, it is difficult or impossible to identify and rank factors in a way that will be true for all sales of the same LCA model.<sup>27</sup> That said, it is possible to identify some of the factors that can be relevant, as discussed below.

33. ***Identity of customer:*** Strategically significant customers [BCI].<sup>28</sup>

34. ***Pre-existing contractual rights and practices:*** If a customer is exercising an option or a purchase right to order additional aircraft pursuant to an existing sales agreement, the pricing for the model will have already been set. [BCI].<sup>29</sup>

35. ***Competitive pressure from Airbus:*** While Boeing's competition with Airbus essentially permeates the global market, [BCI].<sup>30</sup>

36. ***Order size:*** [BCI].<sup>31</sup>

37. ***Features:*** Customers vary in terms of the level of optional features that they select for the same model, and this can cause the delivered price to vary by [BCI].<sup>32</sup>

38. ***Geographic region:*** This can sometimes be a factor. [BCI].<sup>33</sup>

39. It is neither necessary nor appropriate to attempt to account for such factors in a manner beyond what is already reflected in the U.S. methodology. In valuing four of the five lost sales transactions, the U.S. methodology uses actual Boeing comparator orders from the same customer involved in the lost sale transaction within one to two years of the lost sale. The prices for those comparator orders also reflect the features the customer selected for the closest Boeing

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<sup>27</sup> Boeing e-mail from [BCI] (Dec. 13, 2018) (Exhibit USA-35(BCI)).

<sup>28</sup> Boeing e-mail from [BCI] (Dec. 13, 2018) (Exhibit USA-35(BCI)).

<sup>29</sup> Boeing e-mail from [BCI] (Dec. 13, 2018) (Exhibit USA-35(BCI)).

<sup>30</sup> Boeing e-mail from [BCI] (Dec. 13, 2018) (Exhibit USA-35(BCI)).

<sup>31</sup> Boeing e-mail from [BCI] (Dec. 13, 2018) (Exhibit USA-35(BCI)).

<sup>32</sup> Boeing e-mail from [BCI] (Dec. 13, 2018) (Exhibit USA-35(BCI)).

<sup>33</sup> Boeing e-mail from [BCI] (Dec. 13, 2018) (Exhibit USA-35(BCI)).

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model, which is a good proxy for the features the customer would have selected if it had ordered additional aircraft of the same type in the counterfactual.

40. In terms of order size, the comparator order size was identical to the orders in the Singapore, Transaero, and United lost sales, while the Cathay comparator order featured follow-on 777-300ER orders from a major 777-300ER customer [BCI], as opposed to an isolated sale of three aircraft. [BCI], the United States valued the Emirates lost sale using a [BCI].

41. Thus, the U.S. methodology for valuing lost sales duly accounts for the factors listed above, including customer identity, geographic region, features, and past contracting practices. The United States is not aware of any method that would better account for factors that might affect counterfactual Boeing prices.

42. As for the impedance calculation, the adjusted U.S. methodology values counterfactual deliveries exclusively according to 747-8I prices to Lufthansa, a world-renowned airline, the launch customer for the 747-8I, and by far the biggest customer for that model to date. In effect, the U.S. methodology assumes that *all* counterfactual deliveries would be on the same terms as those provided to its most important actual 747-8I customer. The United States is not aware of any other available method for valuing impedance that is based on real-world, contemporary delivery price data, is as conservative, and is as capable of accounting for factors that might influence pricing.

**Question 62 (both parties)**

**With reference to section IX.A.1 of the European Union's written submission, and paragraphs 129 and 160–162 of the United States' written submission, could the parties please clarify whether and how the following issues are relevant in the context of avoiding any "double counting":**

**a. With respect to the United "lost sale", United Airlines is a US customer, and under Article 6.3(a) and (b) "impedance" occurs with respect to "the market of the subsidizing Member" and "exports ... from a third country market", respectively?**

43. This does not present an issue of double counting. As the United States explained previously, the DSB did not base its findings on instances of adverse effects that are overlapping or duplicative. The U.S. methodology values those non-overlapping instances of adverse effects, finding that the LA/MSF subsidies caused adverse effects of more than \$21.2 billion (in 2013 dollars over a 25-month basis, or \$10.2 billion annually (in 2013 dollars)).<sup>34</sup> That is the annual measure of non-overlapping, non-duplicative adverse effects that the subsidies cause. Therefore, utilizing this figure for future years in which countermeasures will be applied does not risk

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<sup>34</sup> See Revised Aggregation of Adverse Effects Determined to Exist by Year (Exhibit USA-28(HSBI)).

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double-counting. Rather, it accurately reflects – and therefore is commensurate with – the adverse effects determined to exist.

44. Of course, even under the EU's flawed theory, the United lost sale would not pose a risk of double-counting. SCM Agreement Article 6.3(a) covers displacement or impedance of imports into the subsidizing Member's market – which in this case is the EU market. Article 6.3(b) covers displacement of exports to a third country market, which covers any market outside of the United States and the EU. Article 6.3 does not list displacement or impedance of deliveries in the affected Member's market – here, the U.S. market – as one of the cases that give rise to serious prejudice. Therefore, even under the EU's theory, the United sale could not overlap with impedance under Article 6.3(a) or (b).

**b. A scenario in which the Arbitrator values the Transaero "lost sale" taking into account the fact that the order was cancelled, i.e. recognizing that no deliveries would result from the order?**

45. As stated in the preceding subpart of this response, the Arbitrator can value all instances of impedance and significant lost sales, including the Transaero lost sale, during the December 2011 – 2013 period with no risk of double-counting. To ignore the Transaero lost sale, in whole or in part, would be undercounting, as discussed further in the U.S. responses to Questions 58 and 73.

### **1.2.2 Lost Sales**

#### **Question 63 (EU)**

**With reference to paragraph 37 of the Methodology Paper, could the European Union please provide: (i) the "delivery schedule agreed upon between Airbus and each of the five relevant customers at the time of order"; (ii) any subsequent alterations to those delivery schedules; and (iii) the actual delivery dates of the Airbus LCA associated with those orders insofar as the aircraft have been delivered?**

#### **Question 64 (EU)**

**With reference to paragraph 192 of the United States' written submission, could the European Union please respond to the United States' assertions that "delivery dates are only relevant to the number of years of discounting from delivery year to order year for each aircraft" and that "the difference of an extra year or two of discounting would have only a tiny effect"?**

#### **Question 65 (EU)**

**With respect to paragraph 210 of the United States' written submission, concerning the European Union's argument that the United States "ignores the learning curve effects from its additional deliveries in the counterfactual", could the European Union please respond to the arguments contained therein?**



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**Question 66 (EU)**

**With reference to Table 1 of the European Union's written submission, could the European Union please further explain as follows:**

- a. How was the size of Boeing's Cathay Pacific order ([BCI] aircraft) determined in light of information provided in Exhibit USA-5 (BCI) (referencing [BCI] aircraft)<sup>35</sup>?**
- b. What is the "delivery position" of the [BCI] aircraft in Cathay Pacific's order?**

**Question 67 (EU)**

**With reference to paragraph 246 of the European Union's written submission, concerning potential adjustments to the prices found in Boeing's "comparator orders", could the European Union please provide the downward-adjusted "per aircraft" prices with detailed explanations as to how they have been calculated?**

**Question 68 (EU)**

**With reference to paragraph 246 of the European Union's written submission, could the European Union please address how the counterfactual delivery prices of the 747-8I aircraft that would have been ordered by Emirates (had Boeing won that "lost sale") and scheduled to be delivered in the years thereafter should be calculated based on the "per aircraft" price paid by Lufthansa for 747-8I aircraft in 2013?**

**Question 69 (US)**

**With reference to paragraph 51 of the Methodology Paper, paragraphs 265 and 275 of the European Union's written submission, and paragraphs 227–230 of the United States' written submission, could the United States please clarify why the discount rate should be calculated from the perspective of the United States government, rather than from the perspective of Boeing, when the United States government is not party to the LCA sales contracts from which the value of the LCA is derived, and thus the United States government is making no investment and taking no risk *vis-à-vis* the relevant transaction?**

46. Article 5 of the SCM Agreement frames WTO inconsistency in terms of “adverse effects to the interests of other Members” and “serious prejudice to the interests of another Member.” Of course, the Member in question here is the United States. Accordingly, the proper approach is to value from the perspective of the United States the instances of significant lost sales and impedance in the December 2011 – 2013 period. Therefore, once values for each of the aircraft associated with lost sales is determined in respective delivery year dollars, the calculation of the present value should reflect the rate at which the United States values present economic activity (at the time of the order) over future economic activity. In other words, the proper discount rate is the interest rate on U.S. sovereign debt.

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<sup>35</sup> But see United States' written submission, paras. 203–204 (referring to [BCI] relevant LCA).

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**Question 70 (US)**

**With reference to paragraph 37 of the Methodology Paper, and paragraph 188 of the United States' written submission, could the United States please explain the following:**

- a. **how, for each of the orders at issue, the estimates for the delivery schedules take into account Boeing's understanding of "customer's fleet activity and planning (including past and anticipated future aircraft disposals and additions), Airbus's past deliveries and known scheduled deliveries to that customer (including deliveries of Airbus aircraft ordered in the lost sales at issue), and airline and LCA industry practices in general"?**
- b. **what information and analytical steps were used by Boeing to estimate the delivery schedule that Airbus and the customer agreed to at the time of order?**

47. The United States responds to both subparts of this question together.

48. Generally, Boeing's delivery schedule estimates started with information from news sources available at the time of the relevant orders, including information on the number of firm orders and, to the extent available, the beginning and ending years of scheduled deliveries pursuant to the order. From this, Boeing personnel used their experience and customer and industry knowledge to estimate a realistic delivery schedule in terms of the number of aircraft to be delivered each year from the initial delivery year through the end of the delivery stream.<sup>36</sup> Below, the United States explains how Boeing did this for each of the five Airbus orders at issue.

49. ***Cathay Pacific (2012 order for 10 A350 XWB-1000s)***: Boeing's analysis began with information about Cathay Pacific's A350 XWB delivery schedule disclosed in the airline's briefings to analysts. Specifically, in its June 28, 2012 Analyst Briefing, Cathay Pacific disclosed commitments to take delivery of 38 A350-900s: two in 2015 (separately disclosed as leased from International Lease Finance Corp. ("ILFC")); ten in 2016; ten in 2017; 12 in 2018; and four in 2019. In its November 27, 2013 Analyst Briefing, Cathay Pacific disclosed commitments to 22 A350-900s (reduced from 38 by 16 orders converted to orders for the A350 XWB-1000), with 12 A350-900 deliveries in 2016 and ten in 2017. At the same time, the airline also disclosed a total of 26 A350-1000s to be delivered as follows: six in 2018, 10 in 2019, and 10 in 2020.

50. [BCI].<sup>37</sup>

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<sup>36</sup> See Boeing e-mail from [BCI] (Dec. 13, 2018) (Exhibit USA-42(BCI)).

<sup>37</sup> Boeing e-mail from [BCI] (Dec. 13, 2018) (Exhibit USA-42(BCI)).

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51. ***Transaero (2012 order for 4 A380s)***: Boeing’s analysis began with news sources stating that delivery of the four A380s purchased by Transaero would begin with two deliveries in 2015. From this, Boeing personnel [BCI].<sup>38</sup>

52. ***Singapore Airlines (2013 order for 30 A350 XWB-900s)***: Boeing’s analysis began with its understanding that Singapore Airlines already had 40 outstanding A350 XWB-900 orders prior to its 2013 order for 30 A350 XWB-900s, which included orders for a “regional” version of that model. Based on news sources, Boeing understood that those 40 orders were originally scheduled to begin deliveries starting in 2015, and Boeing estimated that those deliveries would occur [BCI]. Boeing also considered July 2013 news sources stating that, after A350 XWB production delays, the first of the 70 total A350 XWB-900 orders would be delivered starting in 2016. Boeing [BCI].<sup>39</sup>

53. ***United Airlines (2013 order for 10 A350 XWB-1000s)***: Boeing’s analysis began with United’s public disclosures that it had entered into an agreement with Airbus to substitute 25 existing A350 XWB-900 orders into orders for A350 XWB-1000s, and to order 10 new A350 XWB-1000s, and that its orders for 787-10s and A350 XWB-1000s would be delivered over the 2018 – 2024 period. The agreement with Boeing for 787-10s, [BCI]. Boeing also noted that, in its 2012 annual report (pre-dating the aforementioned conversions), United had disclosed a commitment to take delivery of the originally ordered 25 A350 XWB-900s over the 2013 – 2020 period. [BCI].

54. Given the available information, Boeing concluded [BCI].<sup>40</sup>

55. ***Emirates (2013 order for 50 A380s)***: Boeing’s analysis began with news sources stating that Emirates would take delivery of 50 new A380s from 2016. At that time, Emirates had approximately half of the A380 orders on backlog. At the time, Boeing [BCI].<sup>41</sup>

**Question 71 (US)**

**With reference to paragraph 193 of the United States' written submission, concerning Boeing's ability to make counterfactual deliveries of 747-8I aircraft in accordance with certain delivery schedules, could the United States please indicate what Boeing's "pre-A380 {747 production rate} levels" were?**

56. By “pre-A380 {747 production rate} levels,” the United States refers to 747 production rates in the 1990s, which were much higher than those Boeing experienced since the A380’s

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<sup>38</sup> Boeing e-mail from [BCI] (Dec. 13, 2018) (Exhibit USA-42(BCI)).

<sup>39</sup> Boeing e-mail from [BCI] (Dec. 13, 2018) (Exhibit USA-42(BCI)).

<sup>40</sup> Boeing e-mail from [BCI] (Dec. 13, 2018) (Exhibit USA-42(BCI)).

<sup>41</sup> Boeing e-mail from [BCI] (Dec. 13, 2018) (Exhibit USA-42(BCI)).

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launch. Those pre-A380 production rates are a good indication of Boeing’s counterfactual ability to meet demand for VLA deliveries in the absence of LA/MSF’s product effects.

57. The A380 was launched in 2000. Airbus won A380 launch orders from major VLA customers Emirates, Qantas, and Singapore Airlines that were found to constitute significant lost sales caused by LA/MSF subsidies in the original proceeding.<sup>42</sup>

58. In the 1990 – 1999 period leading up to the A380’s launch, Boeing produced and delivered 481 747 aircraft of all variants.<sup>43</sup> Over that ten-year period, annual 747 production levels ranged from 70 aircraft per year in 1990 to 25 in 1995, and the annual production rate averaged 48.1 aircraft per year.<sup>44</sup>

59. After the A380’s launch in 2000, 747 annual production soon tapered off as Boeing worked through its backlog of orders for existing 747 variants and transitioned to the 747-8I; Boeing produced only 8 747s in 2009 and zero in 2010.<sup>45</sup>

60. From the 747-8’s entry into service in 2011 through October 2018, Boeing has produced and delivered a total of 129 747-8s (comprising both the 747-8I passenger variant and the 747-8F freighter).<sup>46</sup> Over that period of seven-plus years, annual 747-8 production levels ranged from 31 aircraft per year in 2012 to 9 in 2011 and 2016 (and 5 in partial-year 2018).<sup>47</sup> The annual 747-8 production rate averaged 16.1 per year, or less than two-thirds of Boeing’s lowest annual production 747 level during the 1990-1999 period (i.e., 25 aircraft in 1995).<sup>48</sup>

61. The table below shows that, if the A380 deliveries supporting the impedance findings in the compliance appellate report are added to Boeing’s actual 747-8 deliveries over the 2011-2013 period, each of the annual counterfactual production figures is well below the 747 production high of 70 aircraft during the 1990 – 1999 period, and the counterfactual average annual production of 37 aircraft per year is also well below the 1990 – 1999 average of 48.1 aircraft per year.

	<b>2011</b>	<b>2012</b>	<b>2013</b>	
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<sup>42</sup> See Original Appellate Report, paras. 1228, 1414(p); Original Panel Report, para. 7.1845.

<sup>43</sup> See Boeing Historical Deliveries through October 2018, Boeing website (Exhibit USA-43).

<sup>44</sup> See Boeing Historical Deliveries through October 2018, Boeing website (Exhibit USA-43).

<sup>45</sup> See Boeing Historical Deliveries through October 2018, Boeing website (Exhibit USA-43).

<sup>46</sup> See Boeing Historical Deliveries through October 2018, Boeing website (Exhibit USA-43).

<sup>47</sup> See Boeing Historical Deliveries through October 2018, Boeing website (Exhibit USA-43).

<sup>48</sup> See Boeing Historical Deliveries through October 2018, Boeing website (Exhibit USA-43).

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Actual 747-8 Deliveries <sup>49</sup>	9	31	24	<b>11-13 Avg.</b>
Counterfactual Additional 747-8I Deliveries <sup>50</sup>	4	23	20	
<b>Total Counterfactual 747-8 Deliveries</b>	<b>13</b>	<b>54</b>	<b>44</b>	<b>37</b>

**Question 72 (US)**

**With reference to footnote 213 of the United States' written submission, concerning the assumptions that the United States generally used in its methodology, could the United States please clarify what conservative assumptions it made that "reduce{d} the proposed level of countermeasures over other possible approaches"?**

62. At many points, the United States has chosen a more conservative assumption despite the existence of possible alternatives that would have resulted in a higher level of countermeasures. To illustrate this, the United States discusses below six methodological choices it made that reduced the level of countermeasures over other possible approaches.

63. *First*, the United States restricted its valuation of adverse effects to the aircraft values associated with the significant lost sales and impedance determined to exist. The United States excluded other values implied by such lost sales and impedance. For example, when a manufacturer sells LCA to a customer, it assures itself sales of replacement parts that are specific to the relevant LCA model. LCA sales or deliveries to a customer also increase the likelihood that the same customer orders additional aircraft in the future. The expected value of follow-on trade in goods is potentially calculable, but the United States has not endeavored to include any such values in its present calculations and proposed countermeasures.

64. *Second*, in valuing lost sales, the United States assumed that the delivery year price reflected the value of the good. However, Boeing and Airbus often require a substantial portion of the total net aircraft price to be paid prior to delivery. As a previous question from the Arbitrator implied, the United States could have discounted these PDPs from the year they were made to the order year, and only discounted the portion of the price paid upon delivery from the delivery year to the order year. Because much of the aircraft price would have been subjected to fewer years of discounting, this would have resulted in a higher order year value. However, the United States used the delivery year price and discounted it in its entirety from the delivery year to the order year.

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<sup>49</sup> See Boeing Historical Deliveries through October 2018, Boeing website (Exhibit USA-43).

<sup>50</sup> These data are sourced from the A380 delivery data in Table 13 of Compliance Appellate Report. See Compliance Appellate Report, paras. 5.732, Table 13.

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65. *Third*, when discounting future deliveries to value lost sales, the United States used the interest rate on a 10-year U.S. Treasury bond. However, the time between order and scheduled delivery is almost universally less than 10 years. The yields on shorter-term bonds during 2012 and 2013 were lower than the yield on the 10-year bond during the same period, and lower yields result in a higher discounted present value, which would mean a higher level of countermeasures. Thus, by using the rate on the 10-year bond rather than the rate on a shorter bond, the United States has employed a conservative methodology.<sup>51</sup>

66. *Fourth*, for any year in which the United States will apply countermeasures, the United States proposes to use the PPI figure for the preceding year rather than the year of application. Thus, for 2018, the formula would use the 2017 PPI figure instead of the 2018 PPI figure. Because there is very rarely deflation from one year to the next, this will generally result in a lower level of countermeasures.

67. *Fifth*, the United States assumed that, absent the subsidies, Boeing would have sold – and in the case of impedance, delivered – the same number of aircraft that Airbus actually sold to the customers in question and delivered to the relevant country markets. In other words, the United States assumed that the number of Boeing 747-8Is in the counterfactual matched the number of A380s in reality. Thus, the United States opted not to make an adjustment for the larger seating capacity of the A380, which would support a reasonable inference that a greater number of 747-8Is would be necessary to provide VLA customers with the same level of passenger capacity.

68. In standard seating configurations, the 747-8I only seats 405-467 passengers, whereas the A380 seats 525-555 passengers.<sup>52</sup> Therefore, it requires about five (5) 747-8Is to provide the same number of seats as four (4) A380s. Where the customer purchased, or took delivery of, the A380 due, in part, to its larger seating capacity, it is likely that in at least some circumstances the customer would have ordered more total aircraft so that the number of seats it could offer passengers more closely matched the demand it expected.

69. *Sixth*, [BCI] resulted in a lower level of proposed countermeasures.<sup>53</sup>

**Question 73 (US)**

**With reference to paragraph 271 of the European Union's written submission, could the United States please respond to the assertion that "a proper discount rate contains {the} three important elements" listed in items (i)–(iii) in that paragraph (i.e. opportunity cost for waiting, inflation, and risk of default)?**

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<sup>51</sup> See US RAQ 37, para. 72.

<sup>52</sup> Compliance Panel Report, para. 6.1373, Table 18.

<sup>53</sup> See U.S. Written Submission, paras. 248, 253-254; Revised 747-8I Global Delivery Prices for 2012 and 2013 (Exhibit USA-26(HSBI)); Revised Calculation of 2011 747-8I Delivery Prices (Exhibit USA-27(HSBI)).

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70. Before addressing the Arbitrator’s question, it is useful to specify the distinct roles that escalation and discounting play in the U.S. methodology. “Escalation” refers to the escalation clauses included in Boeing’s contracts that determine the nominal price of an aircraft in a given year based on a base price as of an earlier year. Escalation is conceptually distinct from discounting, a calculation to reflect the fact that economic activity in the future is worth less to the United States, the party whose interests are at issue, than economic activity today. The concept underlying the discounting (or net present value) calculation is straightforward: economic actors, including businesses and governments, place more value on immediate benefits than on future benefits. The mechanics of the U.S. methodology rely on these concepts.

*Using escalation to determine the value of an aircraft*

71. The value of an aircraft is the price that a customer would agree to pay Boeing under a contracted order for LCA. Suppose, as in the example provided in the U.S. response to Question 33, that a contract with Boeing specifies that:

- The [BCI] price of an aircraft is \$90 in base-year dollars in year X when the aircraft is ordered.
- The aircraft is scheduled to be delivered in year X+5.
- The contract requires one PDP<sup>54</sup> of 5 percent in year X+3.
- The escalation factor for year X+5 is 1.11, so that the delivery gross price is  $\$90 * 1.11 = \$100$ .
- The customer pays  $5\% * \$100 = \$5$  in year X+3 and the remaining  $\$100 - \$5 = \$95$  upon delivery in year X+5.

72. In this example, the price of the aircraft is \$100. Failing to apply the escalation formula would result in an incorrect price for the aircraft because \$100 is the contractually specified price. Again, it is important to note that escalation is entirely independent of any discounting considerations.

73. The United States notes that, in an approach that focused entirely on revenues to Boeing, the payments of \$5 and \$95 would be the nominal values of cash flows occurring respectively in the years X+3 and X+5.

*The discount factor*

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<sup>54</sup> The U.S. response to Question 33 of the Arbitrator’s first set of questions provides an overview of the typical payment structure specified in Boeing’s contracts.

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74. The discount factor represents the extent to which future economic value is discounted relative to present economic value. For each aircraft ordered in the December 2011 – 2013 period for scheduled delivery in a subsequent year, the U.S. methodology calculates the price in the delivery year pursuant to the contractual escalation formula. The resulting LCA price is then subject to discounting to estimate the value of that aircraft – which is expressed in delivery year dollars – to the party experiencing adverse effects to its interests – the United States – as of the year of the order (*i.e.*, when the sale was “lost”).

75. In practice, the discount factor usually is calculated as the reciprocal of the interest rate most appropriate for application to the situation. Thus, if the appropriate interest rate is 5 percent, the discount factor for one year in the future is  $\frac{1}{1.05} = 0.9524$ . In other words, if the interest rate is 5 percent, \$1.00 one year from today is worth \$0.9524 today.

76. To be conservative, and because the purpose of the U.S. calculation is to calculate the value of the aircraft rather than payment streams received by Boeing, the United States discounts the entire \$100 value from year X+5. In that case, the present value of the contract in year X would be  $\$100 * 0.9524^5 = \$78.36$ . Discounting the entire price of the aircraft from the delivery year represents the *lowest* present value of the good under the contract.

77. Note again that escalation is independent of discounting considerations. Escalation merely determines the nominal value of a good based on Boeing’s contracts. Discounting determines the value to the United States of the lost sale, where the sale was lost several years before the delivery date for which the nominal value of the aircraft is expressed.

78. In response to the Arbitrator’s question, the United States agrees broadly that, in discounting for the purpose reflected in the U.S. methodology, the discount rate will reflect and embody a number of economic considerations, which include (i) the opportunity cost of waiting and (ii) expected inflation.

79. It is widely accepted that the interest rate on U.S. sovereign debt reflects both the value that the United States ascribes to economic activity today rather than tomorrow and expectations for inflation in the United States, as well as various other economic considerations. The EU concurs, as it notes that the interest rate on U.S. 10-year Treasury Bond captures elements (i) and (ii) above from the perspective of an investor lending money to the United States Government.<sup>55</sup>

80. The United States does not agree that a discount rate should include a risk of default. As stated elsewhere, it is improper to revise the adopted findings as to which orders constitute

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<sup>55</sup> See EU Written Submission, para. 275.



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significant lost sales in the December 2011 – 2013 period.<sup>56</sup> The compliance panel found that “all of the orders identified in Table 19 represent ‘significant’ ‘lost sales’ to the United States LCA industry.”<sup>57</sup> The compliance appellate report affirmed that “the orders identified in Table 19 in the twin-aisle LCA market represent significant lost sales to the US LCA industry,”<sup>58</sup> and that “the orders identified in Table 19 of the Panel Report in the VLA market represent ‘significant lost sales’ to the US LCA industry.”<sup>59</sup> Table 19 of the compliance panel report lists, for each customer, the number of orders.<sup>60</sup> So too do Tables 10 and 12 of the compliance appellate report, which summarize the lost sales claims in the twin-aisle and VLA markets, respectively.

81. For example, Table 19 of the compliance panel report (as well as Table 10 of the compliance appellate report) indicates that the number of orders associated with the Singapore Airlines lost sale is 30. Therefore, the adopted findings clearly include that 30 A350XWB-1000 orders by Singapore Airlines “represent significant lost sales to the US LCA industry.”<sup>61</sup> Reducing the countermeasures according to any risk of default to capture cancellations would be amending the adverse effects determined to exist rather than determining whether proposed countermeasures are commensurate with them.

82. Moreover, even in a setting where the possibility of cancellation could properly be considered, the method proposed by the EU in its response to Question 29 is flawed in several respects. The EU starts with Boeing’s net orders in a given year, which is equal to the gross (or total) orders in that year minus cancellations in that year. It divides the net orders for a given year by the gross orders in that year to determine a year-specific “cancellation rate.”<sup>62</sup> It then averages Boeing’s cancellation rates for 2007 – 2011 to determine an average cancellation rate of 17.3 percent.<sup>63</sup> The EU next converts that 17.3 percent cancellation rate into an annual cancellation rate of 2.3 percent, based on the assumption of an eight-year lag between order and

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<sup>56</sup> See Compliance Appellate Report, Table 10 (identifying “number of orders” for 2012 and 2013 that constitute “lost sales”), para. 5.715.

<sup>57</sup> Compliance Panel Report, para. 6.1798.

<sup>58</sup> Compliance Appellate Report, para. 5.716.

<sup>59</sup> Compliance Appellate Report, para. 5.731.

<sup>60</sup> See also Compliance Appellate Report, para. 5.655 (noting that Table 19 of the compliance panel report “recorded orders of Airbus LCA by eight airlines in 2012 and 2013, including the sales of 271 single-aisle LCA, 50 twin-aisle LCA, and 54 VLA”).

<sup>61</sup> Compliance Appellate Report, para. 5.716.

<sup>62</sup> EU Written Submission, para. 430, Table 7; Boeing cancellation rates (Exhibit EU-81).

<sup>63</sup> EU Written Submission, para. 431, Table 7.

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delivery.<sup>64</sup> Finally, the EU adds the 2.3 percent to other components it alleges should be included in the discount rate to arrive at an overall annual discount rate.<sup>65</sup>

83. The EU’s approach contains numerous flaws. First, its calculation systematically inflates the annual cancellation rate by incorrectly dividing the net orders in a given year by the gross orders in the same year. Second, it derives its annual rate based on a period that is not indicative of the likelihood of cancellation of aircraft ordered in 2012 or 2013. Finally, it incorporates the cancellation rate into the discount rate, which both is conceptually wrong and introduces unnecessary randomness. The United States elaborates on each below.

84. First, the EU miscalculates the supposed annual cancellation rates by dividing the net orders (*i.e.*, gross orders minus cancellations) in a given year by the gross orders in that same year. This assumes that the number of (gross) orders in a given year is the universe of orders that may be cancelled in that year. However, that assumption is wrong. In any given year, not only could an order placed in that year be cancelled, but an order from a previous year that is already in Boeing’s backlog at the beginning of the year could be cancelled.

85. Second, the EU calculates an “average cancellation rate” by averaging the annual “cancellation rates” it calculated for 2007 through 2011. But obviously the “cancellation rates” from 2007 – 2011 are not indicative of the likelihood that an aircraft ordered in 2012 or 2013 would be cancelled prior to its delivery date. Cancellations in 2012 and the subsequent years would reflect that. The EU provides annual cancellation rates for 2012 – 2017, but does not use them. Instead it opts for the cancellation rates from past years in which the orders at issue would not have been subject to potential cancellation. This period is particularly inappropriate because it covers the years in and following the Great Recession.

86. Therefore, if one were going to calculate an average cancellation rate from annual cancellation rates, one clearly should use the 2012 – 2017 rates, rather than the 2007 – 2011 rates. The EU’s use of the latter results in an average cancellation rate that is more than three times the 2012 – 2017 average (17.3 percent vs. 5.2 percent).

87. Third, the EU’s assertion that a discount rate here must include a risk of cancellation is both unsupported and needlessly introduces technical deficiencies. The EU’s basis for suggesting that a proper discount rate includes a risk of contractual default as one of three important components, is a citation, without explanation, to a working paper that has not been published in a peer-reviewed publication and that the EU does not submit in evidence.<sup>66</sup> The

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<sup>64</sup> EU Written Submission, paras. 431-432.

<sup>65</sup> EU Written Submission, para. 433.

<sup>66</sup> EU Written Submission, 271, note 294 (citing, but not submitting as an exhibit, Damodaran, Aswath, “Estimating Risk Free Rates,” *Working Paper*, Stern School of Business, New York University (See <http://people.stern.nyu.edu/adamodar/pdfiles/papers/riskfree.pdf>)).

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United States has obtained a copy of that paper, which deals with estimating risk-free rates for use as benchmarks for investment analysis. It does not state that a present value calculation should include a risk of contractual default, nor does it state that a discount rate should include the three elements listed by the EU.

88. From a technical standpoint, by using a cancellation rate as a component of the discount rate – rather than, for example, using a survival rate to adjust the nominal delivery-year value prior to discounting – the EU is forced to derive an annual value that can be compounded.<sup>67</sup> This requires knowing over how many years the annual rate will get compounded. In its illustration, the EU assumes an average “time lag” between order and delivery of eight years.<sup>68</sup>

89. But the time lag between an order and one delivery will not necessarily be the same as the time lag between an order and a second delivery. In other words, there is no one average time lag that would be appropriate to apply to all order-delivery combinations. There is no reason to introduce this randomness. A more accurate approach would instead use a survival rate based on the probability that an expected delivery in Boeing’s backlog would be cancelled in any given year, where the product of year-specific survival rates was used to adjust the delivery-year value prior to discounting. Thus, even if one were to improperly attempt to factor the risk of cancellation into a valuation of the adverse effects determined to exist, the EU’s use of a risk of cancellation as a component in a discount rate should not be adopted.

**Question 74 (US)**

**With reference to Table 1 of the European Union's written submission, could the United States please provide: (i) the delivery schedule agreed in each of the "comparator orders" (including the [BCI]); (ii) any subsequent alterations to those delivery schedules; and (iii) the actual delivery dates of the relevant Boeing LCA insofar as the aircraft have been delivered?**

90. The United States provided items (i) and (iii) in Exhibit USA-29(HSBI), which was submitted in response to the Arbitrator’s first set of questions.<sup>69</sup> The United States is providing a new exhibit that modifies Exhibit USA-29(HSBI) to include the information requested in item (ii) of this question, *i.e.*, subsequent alterations of those delivery schedules.<sup>70</sup>

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<sup>67</sup> The value ultimately subjected to compounding is a survival rate. A survival rate is the inverse of a cancellation rate. Thus, the EU suggests an annual cancellation rate of 2.3 percent. This would reflect an annual survival rate of 97.7 percent.

<sup>68</sup> EU Written Submission, para. 432 (emphasis added).

<sup>69</sup> See Boeing Contracted Delivery Schedules and Actual Delivery Information for “Comparator” Orders (Exhibit USA-29(HSBI)).

<sup>70</sup> See Boeing Contracted Delivery Schedules, Delivery Schedule Changes, and Actual Delivery Information for “Comparator” Orders (Exhibit USA-44(HSBI)).

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**Question 75 (US)**

**With reference to Exhibit USA-24 (BCI), could the United States please indicate how many of the [BCI] ordered by Transaero Airlines in [BCI] were delivered?**

91. [BCI] of the 747-8I aircraft ordered by Transaero Airlines were delivered to Transaero.<sup>71</sup>

**Question 76 (US)**

**With reference to the PPI described in Exhibit USA-21, could the United States please indicate whether this is an "Industry Classification" "structure"? Or does the PPI include "Commodity Classification" and/or "FD-ID data" (see Exhibit USA-20)?**

92. The PPI data utilized by the United States in its time consistency adjustment calculations are based on "Industry classification." The data are published at <https://www.bls.gov/ppi/#data>. The PPI for "Aircraft Mfg-Civilian Aircraft" included in this site and utilized by the United States is an "Industry Classification" rather than a "Commodity Classification" and as such is not structured within the commodity-based "FD-ID data." This is the correct measure as it captures the changes in prices received for the civilian aircraft manufacturing industry's output, sold outside the industry, or in this case civilian aircraft.

**Question 77 (both parties)**

**With respect to paragraph 352 and footnote 370 of the European Union's written submission, and paragraph 225 of the United States' written submission, could the parties please provide [BCI] of the [BCI] and the [BCI] for the years 2018 to 2026, and explain how such [BCI] were calculated?**

93. The United States was unable to identify any [BCI].

94. With respect to [BCI]. The United States is providing [BCI].<sup>72</sup> [BCI].<sup>73</sup>

95. [BCI].<sup>74</sup> [BCI].<sup>75</sup>

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<sup>71</sup> See Boeing Contracted Delivery Schedules and Actual Delivery Information for "Comparator" Orders (Exhibit USA-29(HSBI)).

<sup>72</sup> See Boeing e-mail from [BCI] (Dec. 13, 2018) (Exhibit USA-36(BCI)).

<sup>73</sup> Boeing Escalation Slide (Exhibit USA-37(BCI)).

<sup>74</sup> See [BCI] (Exhibit USA-45) (note that [BCI]); [BCI] (Exhibit USA-46).

<sup>75</sup> Boeing e-mail from [BCI] (Dec. 13, 2018) (Exhibit USA-35(BCI)).

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**Question 78 (both parties)**

**With respect to paragraphs 267, 269, and 271–272 of the European Union's written submission, could the parties please answer the following questions:**

- a. Regarding list item (i) in paragraph 271 of the European Union's written submission, could the parties please comment on the notion of why Boeing must be "compensated" for "delayed receipt of sales revenue" when the terms of LCA sales contracts expressly provide for the timing of payments? If Boeing were not sufficiently compensated under the terms of the contract, why would Boeing have committed itself to the contract at all?**

96. As the United States has explained, the purpose of discounting in the U.S. methodology is to account for the fact that the value of economic activity in the future is worth less than the value of the same economic activity today. The purpose of the discounting in the U.S. calculation is not to “compensate” Boeing for “delayed receipt of sales revenue.”

97. If one did not discount to calculate the value to the United States of a lost sale where the value of the aircraft is expressed in later-year dollars, and the objective were instead simply to value the lost sale from Boeing’s perspective at the time of order, then there would be no reason to escalate the base year price to the delivery month and then discount it. The calculation would proceed by multiplying the number of aircraft ordered by the order year price. The order year price would be equal to the base price if the order year is the base year. If the base year precedes the order year, the base price would have to be escalated to the order year using the contractual escalation formula.

- b. Regarding list item (ii) in paragraph 271 of the European Union's written submission, could the parties please explain why the escalation formulae in LCA sales contracts inadequately address the need to adjust future payments under the contract for inflation such that a discount rate must further account for inflation issues?**

98. The discount rate is intended to calculate the “present value” to the United States in the order year of a nominal value of an aircraft in the year of delivery. If viewed from Boeing’s perspective, which is how it would seem that a “need to adjust future payments under the contract for inflation” would arise, then there is no need to “further account for inflation issues.” Indeed, there is no need to escalate the base price out to the delivery year and then back to the order year in the first place. The Arbitrator could simply determine the order year value of the sale by using the base price if the base year is the order year, or by escalating the base price to the order year if they differ. The order year value would then just be multiplied by the number of aircraft ordered.

- c. Regarding list item (iii) in paragraph 271 of the European Union's written submission, could the parties please explain whether and how LCA sales contracts address situations involving "contractual default" (especially as the term relates to order cancellation)? Insofar as they do so, could the parties please explain whether a discount rate would need to further account for such issues?**

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99. As explained in the U.S. response to Question 43, [BCI].<sup>76</sup> In any event, the United States has explained previously, including in response to Questions 58 and 73 above, why it would be neither necessary nor appropriate for a discount rate to account for the possibility of order cancellation, and that reasoning applies to a cancellation involving “contractual default.”

**d. In light of your answers to subparagraphs (a)–(c), could the parties please explain whether it would ever be appropriate to apply a discount rate in such a way that it would yield a base-year dollar value for a given LCA that differs from the base-year dollar value assigned to that LCA in the relevant LCA sales contract?**

100. As the United States has explained, the discount rate serves a different purpose than the escalation factor – namely, to calculate the present value *to the United States* of an aircraft value figure expressed in subsequent year dollars.<sup>77</sup>

101. If that were ignored, and the valuation exercise were considered exclusively from Boeing’s perspective, then there would be no reason to use an escalation factor or a discount rate. The Arbitrator could simply use the order year price of the aircraft. Where the base year is the same as the order year, the value would be the base price. Where the base year precedes the order year, the base price would still need to be escalated to the order year using the contractual escalation formula.

**Question 79 (both parties)**

**In light of your answers to the previous question and its sub-parts, and your answers to Questions 30, 32–34, and 42 in the first set of questions sent to the parties on 16 November 2018, could the parties please clarify whether the following approach to determining the present value of base-year prices referenced in a given LCA sales contract would be appropriate:**

- a. For counterfactual payments to the US LCA industry that *would* have already occurred before present day, applying an appropriate escalation formula to the amount of such payments up to present day; and**
- b. for counterfactual payments to the US LCA industry that would *not* yet have been made by present day but would be made to the US LCA industry in the future under a given counterfactual sales contract, applying an appropriate escalation formula to the amount of such payments up to present day with a possible adjustment downwards accounting for the risk of cancellation of the relevant order?**

102. The approach put forward in this question does not reflect the concepts captured by the U.S. methodology – namely determining the price of an aircraft, which pursuant to contractual terms is subject to escalation and is expressed in delivery year dollars, and discounting the

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<sup>76</sup> Boeing E-mail regarding First Set of Arbitrator Questions (Exhibit USA-30(HSBI)).

<sup>77</sup> See U.S. Written Submission, paras. 229-230; US RAQ 37, paras. 69-70.

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delivery year price of the aircraft to calculate the present value to the United States of the sale at the time that sale was “lost.”

103. The chapeau of the question indicates that the purpose of the proposed approach is to “determine the present value of base-year prices referenced in a given LCA sales contract.” To calculate the present (2018) value of base-year prices, the U.S. Producer Price Index for Aircraft Manufacturing of Civilian Aircraft (“PPI”) is the appropriate tool, for the reasons the United States has explained previously.<sup>78</sup>

104. Subparts (a) and (b) are both stated in terms of “payments.” This suggests that the objective is to calculate the current value (in 2018) of counterfactual received and expected revenue from Boeing’s perspective (*i.e.*, payments Boeing would have already received in the counterfactual and payments it would expect to receive in the future in the counterfactual). To “apply {} an appropriate escalation formula to the amount of such payments,” one would first have to calculate “the amount of such payments.” This would entail applying the PDP structure from a comparator order contract [BCI] to the estimated contracted delivery schedule in the sales that Airbus made and Boeing “lost.”

105. Pursuant to the contractual terms, counterfactual past payments in the form of PDPs (including initial deposits) would have been a percentage of the [BCI] delivery gross price. Counterfactual payments that Boeing would have received upon delivery would have been equal to the delivery gross price, which generally would reflect the contractual escalation factor as calculated at the time of delivery, minus concessions or discounts and minus PDPs associated with that order. These calculations would provide the nominal value of each past payment at the time Boeing would have received it.

106. The United States understands subpart (a) to envision using escalation formulae to escalate base-year prices to 2018. There is a conceptual flaw with this approach. It would use contractual escalation factors to escalate to the present day a payment already made in the past. The value in the present day of a payment received in 2015, for example, would be calculated using the general inflation rate between 2015 and the present day. But as escalation rates differ among contracts, using contractual escalation factors would mean that payments of the same amount at the same time by different customers would have different 2018 values.

107. Subpart (b) proposes applying an escalation factor to a future payment. As was the case for subpart (a), one would first need to calculate the amount of such payments. Because future payments necessarily relate to undelivered aircraft, all such payments would need to be based on the [BCI] escalation factors determined at the time of the order.

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<sup>78</sup> See US RAQ 38, paras. 73-79.

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108. With respect to discounting future payments downward to account for the risk of cancellation, as the United States has already explained in response to Questions 58 and 73, this would improperly revise the adverse effects determined to exist rather than quantify the adverse effects determined to exist. Likewise, failure to value counterfactual past payments from Transaero would represent an improper collateral attack on the findings adopted by the DSB.

109. The United States addresses a different reading of the question. If the focus on “payments” is abandoned, and subparts (a) and (b) distinguish only between delivered aircraft and undelivered aircraft, the following analysis would apply. With respect to subpart (a), it is not clear what the conceptual reason would be for using a contractual escalation factor to calculate a 2018 value of aircraft that was delivered in, for example, 2015. As stated above, the proper tool for this purpose would be PPI. It would make sense to use the contractual escalation factors to calculate an order year price where the base year and the order year differ. But once order year prices were determined, PPI should be used to calculate the 2018 value.

110. With respect to subpart (b) under this alternative reading, essentially the same would hold true. If the U.S. methodology were not followed, it would be better to apply PPI to order-year prices rather than base-year prices. That would mean using the contractual escalation formulae to calculate order year prices where the order year and base year differ. However, for the same reasons provided above, the use of discounting to account for the risk of cancellation would improperly revise the adverse effects determined to exist rather than quantify the adverse effects.

**Question 80 (both parties)**

**With respect to paragraph 188 of the United States' written submission, concerning the construction of Boeing's counterfactual delivery schedules for the "lost sales", could the parties please provide estimates of the delivery schedules that *Boeing* and its customers would likely have agreed to at the time of order for the Boeing equivalents of the aircraft contained in Tables 10 and 12 of the Appellate Body's report in the compliance proceeding?**

111. Consistent with the U.S. methodology of calculating proposed countermeasures, the best proxies for Boeing's counterfactual delivery schedules for the “lost sales,” are the delivery schedules that Airbus and the respective customers agreed to at the time the orders were placed (and the sales were lost). Because the United States does not have access to the actual contracted delivery schedules, the best evidence on the record is the Boeing estimates of those delivery schedules, which is what the United States has relied on in its calculations.<sup>79</sup>

**Question 81 (both parties)**

**With reference to Table 1 of the European Union's written submission, could the parties please explain whether it would be appropriate to use the delivery schedules and/or date of the actual delivery of LCA that were the subject of the "comparator orders", at least for the**

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<sup>79</sup> See U.S. Methodology Paper, paras. 37-39; Boeing Declaration, para. 5 (Exhibit USA-5(BCI)); US RAQ 40, para 84.



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**three comparator orders that pertain to the same number of aircraft as did the lost sale to which they are associated?**

112. As the United States indicated in response to Arbitrator Question 40(f), use of delivery schedules from the Boeing comparator orders would not be appropriate because these orders were made in a world in which Airbus made the sales that Boeing “lost” as a result of the subsidies. Therefore, they necessarily reflect the effect of each Airbus sale on the relevant customer’s fleet. The additional sales that Boeing would have made in the absence of the subsidies would complement the comparator sales, not be identical to them.

113. To use the delivery schedules in the comparator order would presume that the customer would have accepted delivery of two aircraft instead of one at each scheduled delivery. It is far more realistic and reasonable to use the estimated delivery schedule that Airbus and the customer agreed to at the time of order.

**Question 82 (both parties)**

**With reference to Exhibit USA-17 (HSBI), could the parties please explain to what specific orders the delivery-price data in this exhibit correspond?**

114. Exhibit USA-17 (HSBI) lists individual aircraft deliveries and their prices. Each line item contains [BCI]. The United States is providing in an exhibit specific order information corresponding to [BCI] and, therefore, each delivery listed in Exhibit USA-17 (HSBI).<sup>80</sup>

115. The table below shows the orders corresponding to the 747-8I deliveries made in 2012 and 2013:<sup>81</sup>

<b>Delivery year</b>	<b>[BCI]</b>	<b>No. of Deliveries</b>	<b>Customer</b>	<b>Order date</b>	<b>Order quantity</b>
2012	[ BCI ]	[ BCI ]	[ BCI ]	[ BCI ]	[ BCI ]
2012	[ BCI ]	[ BCI ]	Lufthansa	Dec-06	20
2012	[ BCI ]	[ BCI ]	[ BCI ]	[ BCI ]	[ BCI ]
2012	[ BCI ]	[ BCI ]	[ BCI ]	[ BCI ]	[ BCI ]
2012	[ BCI ]	[ BCI ]	[ BCI ]	[ BCI ]	[ BCI ]
2012	[ BCI ]	[ BCI ]	[ BCI ]	[ BCI ]	[ BCI ]
2012	[ BCI ]	[ BCI ]	[ BCI ]	[ BCI ]	[ BCI ]
2013	[ BCI ]	5	Lufthansa	Dec-06	20

<sup>80</sup> Boeing e-mail from [BCI] (Dec. 13, 2018) (Exhibit USA-35(BCI)).

<sup>81</sup>747-8I Global Average Delivery Prices (Exhibit USA-17(HSBI)); Boeing e-mail from [BCI] (Dec. 13, 2018) (Exhibit USA-35(BCI)).

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116. As is clear from the table, [BCI].

### **1.2.3 Impedance**

#### **Question 83 (EU)**

**With reference to paragraph 332 of the European Union's written submission concerning how to adjust 2012 delivery-year prices to represent 2011 delivery-year prices, could the European Union please explain what "appropriate escalation rate" should be used in order "to discount backwards the recalculated 2012 delivery price"?**

#### **Question 84 (EU)**

**With reference to paragraph 200, third bullet point, of the European Union's written submission, could the European Union please clarify what LCA model(s) Airbus would have offered in any "aggressive bidding in certain key campaigns", and to what specific campaigns this argument pertains?**

#### **Question 85 (EU)**

**With reference to paragraph 239 of the United States' written submission, could the European Union please respond to the United States' assertion that "even if the 747-8I strictly speaking could not have been delivered at the exact time of the estimated counterfactual delivery ... it would still make sense to use the 747-8I price to value the adverse effects determined to exist because there is no dispute that delivery of 747-8Is is possible in the years in which the countermeasures will be applied"?**

#### **Question 86 (US)**

**With reference to paragraph 244 of the United States' written submission, and paragraph 310 of the European Union's written submission, if the Arbitrator were to use the same methodology to value lost sales and impedance (i.e. using "comparator orders"), could the United States please provide the same information to value impedance as it used to value lost sales, i.e. pricing, order size, escalation rates and delivery schedule of comparable Boeing firm orders or [BCI] to the customers identified in Table 6 of the European Union's written submission?**

117. The United States has already provided [BCI] 747-8Is to Emirates in connection with the U.S. valuation of significant lost sales. The United States now provides exhibits containing

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additional information as requested.<sup>82</sup> Specifically, these exhibits include order information for 747-8I customers Lufthansa, Korean Air, and Air China. They also [BCI].<sup>83</sup>

**Question 87 (US)**

**With reference to paragraph 243 of the United States' written submission concerning Boeing's counterfactual production capacity for 747-8I aircraft, could the United States please clarify its statement that "the only potential import of any exercise would be to determine which minor model of the 747 Boeing would have delivered to the customer"?**

**a. To what "exercise" does this statement refer?**

118. "Exercise" refers to a calculation of the impedance value that somehow differed from the U.S. calculation.

**b. In this paragraph, is the United States suggesting that the A380 aircraft deliveries in the six geographic markets in which impedance was found could have been replaced by some version of the 747 other than the 747-8I? If so, what aircraft could that have been, and what is the basis for this argument in the findings of the panel and Appellate Body in the compliance proceedings?**

119. The United States made the statement in question as part of its rebuttal of the EU argument that all A380 deliveries in the December 2011 – March 2012 period must be ignored because the 747-8I was not first delivered until April 2012.<sup>84</sup> The United States provided several reasons why the EU's argument is erroneous.<sup>85</sup>

120. The United States then noted that, even assuming *arguendo* that the Arbitrator was precluded from including in its impedance calculation counterfactual 747-8I deliveries in this period, the correct approach would not be to ignore the A380 deliveries altogether. Rather, it would be to use another 747 variant.<sup>86</sup> This could be the 747-400 that preceded the 747-8I as Boeing's primary passenger aircraft offering in the VLA market and was last delivered in 2005.<sup>87</sup> There are no relevant findings in the first compliance proceeding concerning another 747 variant, which is understandable given "the Panel's analysis of the competitive dynamics in the VLA

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<sup>82</sup> See Lufthansa 747-8I Order Information (Exhibit USA-47(HSBI)); Korean Air 747-8I Order Information (Exhibit USA-48(HSBI)); Air China 747-8I Order Information (Exhibit USA-49(HSBI)); [BCI] (Exhibit USA-50(HSBI)); [BCI] (Exhibit USA-51(HSBI)); [BCI] (Exhibit USA-52(HSBI)). See also Boeing e-mail from [BCI] (Dec. 13, 2018) (Exhibit USA-35(BCI)).

<sup>83</sup> Boeing e-mail from [BCI] (Dec. 13, 2018) (Exhibit USA-35(BCI)).

<sup>84</sup> See EU Written Submission, para. 301.

<sup>85</sup> See U.S. Written Submission, paras. 238-243.

<sup>86</sup> See US Written Submission, para. 243.

<sup>87</sup> Boeing 747 deliveries (2000 – 2013), Excel download from Boeing website (Exhibit USA-53).

**U.S. BUSINESS CONFIDENTIAL INFORMATION (BCI) REDACTED;  
DOES NOT CONTAIN HIGHLY SENSITIVE BUSINESS INFORMATION (HSBI)**

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market show{ing that}, Boeing’s and Airbus’ respective product offerings – the 747-8 and the A380 – are sufficiently substitutable.”<sup>88</sup>

121. Finally, if the Arbitrator somehow were precluded from considering any 747 variant, it would still not be appropriate to ignore A380 deliveries when quantifying impedance. Rather, the best remaining alternative would be to value A380 deliveries as if they were Boeing 777-300ER deliveries.<sup>89</sup>

122. In sum, if the Arbitrator considers that it cannot quantify impedance based on the value of 747-8Is for the deliveries prior to April 2012, the Arbitrator would need to utilize one of a number of viable alternatives that do not involve the impermissible exclusion of A380 deliveries from the quantification of adverse effects.

**Question 88 (both parties)**

**With reference to paragraph 240 of the United States' written submission, could the parties please address whether and how Boeing's ability to deliver 747-8F aircraft in 2011 demonstrates that Boeing would have been able to deliver 747-8I aircraft before 2012, had Boeing faced greater demand for the 747-8I in the relevant counterfactual market situation?**

123. The 747-8F and 747-8I share many similarities. They are variants of the same aircraft design – the Boeing 747-8, the “latest evolutionary variant of the Boeing 747, with lengthened fuselage, redesigned wings, and improved efficiency.”<sup>90</sup> Both variants incorporate General Electric GEnx engines.<sup>91</sup> While each variant has unique aspects reflecting the different requirements for passenger and freighter aircraft, their designs are very similar overall.<sup>92</sup>

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<sup>88</sup> First Compliance Appellate Report, para. 5.740.

<sup>89</sup> See First Compliance Appellate Report, para. 5.735.

<sup>90</sup> Boeing 747 Family, Boeing website (Exhibit USA-54).

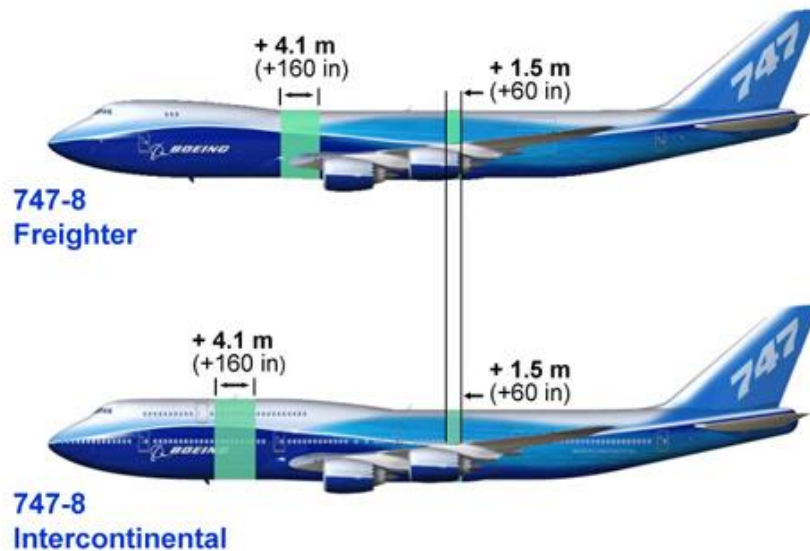
<sup>91</sup> See Boeing 747 Family, Boeing website (Exhibit USA-54).

<sup>92</sup> See Boeing 747 Family, Boeing website (Exhibit USA-54).

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124. The nine actual 747-8F deliveries in 2011 show that, even in the actual market situation affected by LA/MSF subsidies, Boeing was able to develop one 747-8 variant and enter it into service in 2011. Thus, Boeing’s 747-8 program had already begun production and deliveries of one variant in 2011; undue speculation is not necessary to conclude that, in the counterfactual scenario, Boeing could and would have advanced 747-8I entry into service by five months if the relevant customers demanded deliveries for VLA starting in December 2011.<sup>94</sup>

125. In fact, when Boeing announced its 747-8I launch order from Lufthansa in 2006, it scheduled 747-8I initial deliveries for 2010.<sup>95</sup> [BCI].<sup>96</sup> The situation would have been very different if Boeing had experienced the significantly greater demand for the 747-8I that it would have enjoyed in the counterfactual situation.<sup>97</sup>

126. In sum, Boeing’s actual 2011 747-8F deliveries show that counterfactual 747-8I deliveries starting as many as five months earlier were technologically possible. Considered together with the compliance findings, which would make slightly earlier deliveries economically justified, the 747-8F deliveries support the U.S. calculation that includes values for

<sup>93</sup> *Randy’s Journal*, Boeing Blog website (Oct. 16, 2006) (Exhibit USA-55)

<sup>94</sup> Boeing e-mail from [BCI] (Dec. 10, 2018) (Exhibit USA-56(BCI)).

<sup>95</sup> See *Boeing, Lufthansa Announce Order for 747-8 Intercontinental*, Boeing Press Release (Dec. 6, 2006) (Exhibit USA-57).

<sup>96</sup> Boeing e-mail from [BCI] (Exhibit USA-56(BCI)).

<sup>97</sup> Boeing e-mail from [BCI] (Exhibit USA-56(BCI)).

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four counterfactual 747-8I deliveries in December 2011 and another four in between January and March 2012.<sup>98</sup>

127. Finally, the United States again notes that, even if the Arbitrator did not think it was possible to assume counterfactual 747-8I deliveries prior to the model's actual first delivery, the result would be either to slightly push back the counterfactual VLA delivery dates until the 747-8I was available in the real world, or substitute the value of the VLA passenger model that preceded the 747-8I, the 747-400 (or if not the 747-400, the 777-300ER).

#### **1.2.4 Formula for adjusting countermeasures**

##### **Question 89 (EU)**

**With reference to paragraph 94 and footnote 118 of the Methodology Paper, and paragraph 345 of the European Union's written submission, could the European Union please confirm that the term "PPI for LCA Manufacturing" is a synonym of "PPI for Aircraft Manufacturing of Civilian Aircraft"? What is the position of the European Union with respect to the United States' claim in footnote 118 of the Methodology Paper that a PPI for VLA would not necessarily be "reliable" for purposes of time-consistency adjustment?**

##### **Question 90 (EU)**

**With reference to paragraph 342 and footnote 371 of the European Union's written submission concerning the selection of an appropriate discount rate, could the European Union please answer the following questions:**

- a. Is the LCA Manufacturer's WACC typically firm- or country-specific?**
- b. How was the 8.5% assumed value of the LCA Manufacturer's WACC computed?**
- c. Is the LCA Manufacturer's WACC available for Boeing for the relevant period?**

#### **1.2.5 Share of production value that is produced outside of the United States**

##### **Question 91 (EU)**

**With reference to paragraph 362 of the European Union's written submission, could the European Union please provide a list of "estimates regarding the percentage of value added by international suppliers {for Boeing LCA}, as reported by independent public sources"?**

##### **Question 92 (US)**

**With reference to paragraph 362 of the European Union's written submission, could the United States please provide data to "quantify the share that international inputs constitute as a fraction of overall delivery prices" of Boeing LCA?**

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<sup>98</sup> See EU Written Submission, para. 301.

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128. In its written submission, the United States explained why no basis exists to consider international inputs in determining whether the proposed level of countermeasures is commensurate with the adverse effects determined to exist.<sup>99</sup> Nothing has since changed to warrant a different conclusion.

129. That said, the United States provides as Exhibit USA-58(BCI) a November 2018 letter from Boeing to the U.S. Export-Import Bank providing foreign content percentages, based on average sales prices, for the Boeing models at issue, as well as other models.

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<sup>99</sup> See U.S. Written Submission, paras. 263-265.