A-580-876
Remand
CAFC 2020-1857
Public Document
E&C/OII: Team

Stupp Corp. et al. v. United States
Consol. Court No. 15-00334 (CIT October 8, 2021)

FINAL RESULTS OF REDETERMINATION PURSUANT TO COURT REMAND

I. SUMMARY

The Department of Commerce (Commerce) prepared these final results of redetermination pursuant to the October 8, 2021 remand order of the U.S. Court of International Trade (the Court), as modified by October 29, 2021 scheduling order, issued in *Stupp Corp. et al. v. United States,* Consol. Court No. 15-00334 (*Stupp III*), for further proceedings consistent with the opinion issued by the U.S. Court of Appeals for the Federal Circuit (CAFC or Federal Circuit).[1] This action arises out of the final determination in the less-than-fair-value (LTFV) investigation of welded line pipe from the Republic of Korea,[2] which included an affirmative finding of sales at LTFV for the SeAH Steel Corp. (SeAH) and Hyundai HYSCO. The CAFC affirmed, in part, and vacated and remanded, in part, the Court's decision in *Stupp I*,[3] in which this Court had sustained certain aspects of Commerce's *Final Determination* and differential pricing analysis, including the Cohen's *d* test, and its finding that Commerce's differential pricing analysis, including its

[1] *See Stupp Corp. v. United States*, 5 F.4th 1341 (Fed. Cir. 2021) (*Stupp II*).
[2] *See Welded Line Pipe from the Republic of Korea: Preliminary Determination of Sales at Less Than Fair Value and Postponement of Final Determination*, 80 FR 29620 (May 22, 2015) (*Preliminary Determination*), and accompanying Preliminary Decision Memorandum (PDM); *see also Welded Line Pipe from the Republic of Korea: Final Determination of Sales at Less Than Fair Value*, 80 FR 61366 (October 13, 2015) (*Final Determination*), and accompanying Issues and Decision Memorandum (IDM); and *Welded Line Pipe from the Republic of Korea: Amended Final Determination of Sales at Less Than Fair Value*, 80 FR 69637 (November 10, 2015) (*Amended Final Determination*).

application of the Cohen's *d* test, was a reasonable interpretation of the statute. However, the CAFC remanded for further explanation Commerce's application of the Cohen's *d* test, as part of its differential pricing analysis, to SeAH's U.S. sales data because the application may have violated certain statistical criteria which SeAH asserted are associated with the proper application of the Cohen's *d* test. In *Stupp III*, this Court has now remanded this issue to Commerce based on the CAFC's holding in *Stupp II*.

Upon reconsideration of the record evidence and the Court's remand order, Commerce has further explained that the statistical criteria asserted by SeAH are not relevant to Commerce's use of the Cohen's *d* test. Accordingly, no changes have been made to SeAH's estimated weighted-average dumping margin from the *Final Determination*.

II. LEGAL FRAMEWORK

Pursuant to section 777A(d)(1)(A) of the Tariff Act of 1930, as amended (the Act), in an investigation, Commerce calculates a company's weighted-average dumping margin using one of two "standard comparison methodologies" by comparing either the weighted-average normal value with the weighted-average U.S. price (the average-to-average, or A-to-A, method)[4] or the transaction-specific normal value with the transaction-specific U.S. price (the transaction-to-transaction, or T-to-T, method).[5]

Section 777A(d)(1)(B) of the Act provides that Commerce may use an "alternative comparison methodology" based on the comparison of the weighted-average normal value with the transaction-specific U.S. price (the average-to-transaction, or A-to-T, method).[6] In order to use an alternative comparison methodology based on the A-to-T method, the statute sets out two

[4] *See* 19 CFR 351.414(b)(1).
[5] *See* 19 CFR 351.414(b)(2).
[6] *See* 19 CFR 351.414(b)(3).

requirements: (i) there exists a pattern of prices that differ significantly for comparable merchandise among purchasers, regions or time periods ("pattern" requirement); and (ii) Commerce explains why such differences cannot be taken into account when using a standard comparison methodology ("meaningful difference" requirement). Accordingly, both requirements must be satisfied in order for Commerce to consider the application of an alternative comparison methodology based on the A-to-T method.

Section 771(35)(A) of the Act defines the dumping margin as "the amount by which the normal value exceeds the {U.S. price}," *i.e.*, the result of an A-to-A, T-to-T, or A-to-T comparison. When such comparisons are made, the U.S. prices and normal values are defined by product and other characteristics of the U.S. sale (*e.g.*, level-of-trade)[7] to ensure a fair comparison of U.S. price with normal value.[8]

Section 771(35)(B) of the Act defines the weighted-average dumping margin as "the percentage determined by dividing the aggregate dumping margins … by the aggregate {U.S. price}." Thus, the individual comparison results must be aggregated to calculate a company's overall weighted-average dumping margin.

Prior to the enactment of the URAA,[9] a company's weighted-average dumping margin was calculated using the A-to-T method in either an investigation or a review.[10] Further, when aggregating individual comparison results, negative comparison results were "zeroed" such that non-dumped sales were not allowed to offset the positive comparison results for dumped sales.[11]

[7] *See* 19 CFR 351.414(d).
[8] *See* section 773(a) of the Act.
[9] *See* Uruguay Round Agreements Act, 121(9), 101(d)(7), Pub. L. No. 103-465, 108 Stat 4809 (1994) (URAA).
[10] *See Union Steel v. United States*, 713 F.3d 1101, 1104 (Fed. Cir. 2013) (*Union Steel*).
[11] *See, e.g., Timken Co. v. United States*, 354 F.3d 1334, 1342 (Fed. Cir. 2004); *Corus Staal BV v. Dept of Commerce*, 395 F.3d 1343, 1345-46 (Fed. Cir. 2005); and *U.S. Steel v. United States*, 621 F.3d 1351, 1362 (Fed. Cir. 2010) (*U.S. Steel*).

With the enactment of the URAA, the standard comparison methodology in an investigation, pursuant to section 777A(d)(1)(A) of the Act, was normally the A-to-A method, which introduced the concern of "targeted" or masked dumping. The SAA[12] describes "targeted" or masked dumping when "an exporter may sell at a dumped price to particular customers or regions, while selling at higher prices to other customers or regions."[13] In other words, dumping could be masked when lower prices would be "offset" by higher prices within the weighted-average U.S. price. As explained by the SAA, section 777A(d)(1)(B) of the Act provided an alternative comparison methodology based on the A-to-T method to address such concerns. Further, the SAA recognizes that "Commerce will proceed on a case-by-case basis, because small differences may be significant for one industry or one type of product, but not for another."[14] The SAA links the pattern requirement to identifying circumstances within the exporter's U.S. pricing behavior "where targeted dumping may be occurring."[15] The meaningful difference requirement establishes whether masked dumping is actually present in the respondent's pricing behavior and to what extent dumping has been masked or concealed by the use of a standard comparison methodology.

After the enactment of the URAA, concerns of masked dumping were raised as a result of the change from the use of the A-to-T method to Commerce's application of the A-to-A method under section 777A(d)(1)(A) of the Act.[16] Even though, at that time, the calculation of a weighted-average dumping margin included zeroing[17] when aggregating the individual average-to-average comparison results, dumping could still be masked within the weighted-average U.S.

---

[12] *See* Statement of Administrative Action Accompanying the URAA, H.R. Doc. 103-316, vol. 1 (1994) (SAA).
[13] *Id.* at 842.
[14] *Id.* at 843.
[15] *Id*.
[16] *See Notice of Preliminary Determination of Sales at Less Than Fair Value and Postponement of Final Determination: Certain Pasta from Italy*, 61 FR 1344 (January 19, 1996).
[17] *See Union Steel*, 713 F.3d at 1104.

price. With the subsequent adoption of the *Final Modification for Investigations* in 2006,[18] Commerce changed its practice to not include zeroing in the calculation of the weighted-average dumping margin in an investigation. Finally, with the later adoption of the *Final Modification for Reviews* in 2012,[19] the same concerns of masked dumping were extended to reviews, most importantly for administrative reviews where the assessment of antidumping duties is determined.

As described in the SAA, the potential for masked dumping is when a company's pricing behavior in the U.S. market results in the dumping of certain sales which are then masked by other non-dumped sales (*i.e.*, "targeted" pricing or sales). This pricing behavior may mask dumping when the low U.S. prices are offset by higher U.S. prices, either within the weighted-average U.S. price, or when the comparison results are aggregated and the comparison results for non-dumped sales offset the comparison results for dumped sales. Such pricing behavior in the U.S. market does not negate the injury caused to domestic producers by the individually dumped sales. The remedy of such injury embodies the purpose of the antidumping statute, *i.e.*, to remedy the injury caused by unfair trade.[20]

Commerce's approach for addressing the two statutory requirements for using an alternative comparison methodology has changed over time since the enactment of the URAA. The approaches used by Commerce to address the statutory requirements have been the "Pasta

---

[18] *See Antidumping Proceedings: Calculation of the Weighted-Average Dumping Margin During an Antidumping Investigation; Final Modification*, 71 FR 7772 (December 27, 2006) (*Final Modification for Investigations*) (Use of offsets for non-dumped sales when using a standard comparison methodology in an LTFV investigation).

[19] *See Antidumping Proceedings: Calculation of the Weighted-Average Dumping Margin and Assessment Rate in Certain Antidumping Duty Proceedings; Final Modification*, 77 FR 8101 (February 14, 2012) (*Final Modification for Reviews*).

[20] *See Koyo Seiko Co., Ltd. v. United States*, 20 F.3d 1156, 1159 (Fed. Cir. 1994) ("The purpose of the antidumping statute is to protect domestic manufacturing against foreign manufacturers who sell at less than fair market value. Averaging U.S. prices defeats this purpose by allowing foreign manufacturers to offset sales made at less-than-fair value with higher priced sales. Commerce refers to this practice as 'masked dumping.' By using individual U.S. prices in calculating dumping margins, Commerce is able to identify a merchant who dumps the product intermittently—sometimes selling below the foreign market value and sometimes selling above it. We cannot say that this is an unfair or unreasonable result." (internal citations omitted)).

Test,"[21] the "P/2 Test,"[22] the "Nails Test"[23] and now the "Differential Pricing Analysis,"[24] the last two of which were in response to the United States coming in compliance with adverse World Trade Organization (WTO) rulings resulting in the *Final Modification for Investigations* and the *Final Modification for Reviews*, respectively. In the *Final Modification for Reviews*, the United States changed its practice in reviews (*e.g.*, an administrative review) of an antidumping duty order to apply the WTO-consistent method as was set forth for an LTFV investigation in the *Final Modification for Investigations*. Consequently, the concern of addressing masked dumping was expanded to the annual administrative reviews which include the critical purpose of determining the assessment of antidumping duties.

After publishing the *Final Modification for Reviews* in 2012, Commerce replaced the Nails Test with the Differential Pricing Analysis in 2013, which included several conceptual changes. First, the Differential Pricing Analysis would be applied in each investigation or administrative review to consider whether the A-to-A method would conceal masked dumping. Further, the Differential Pricing Analysis would more explicitly address the provisions of the WTO Antidumping Agreement,[25] which are also reflected in the U.S. statute through enactment

[21] *See Borden, Inc. v. United States*, 23 CIT 372, Slip Op. 99-50 (CIT June 4, 1999).
[22] *See Notice of Final Determination of Sales at Less Than Fair Value: Coated Free Sheet Paper from the Republic of Korea*, 72 FR 60630 (October 25, 2007), and accompanying IDM.
[23] *See Certain Steel Nails from the People's Republic of China: Final Determination of Sales at Less Than Fair Value and Partial Affirmative Determination of Critical Circumstances*, 73 FR 33977 (June 16, 2008), and accompanying IDM; and *Certain Steel Nails from the United Arab Emirates: Notice of Final Determination of Sales at Not Less Than Fair Value*, 73 FR 33985 (June 16, 2008), and accompanying IDM.
[24] *See Xanthan Gum from Austria: Final Determination of Sales at Less Than Fair Value*, 78 FR 33354 (June 4, 2013), and accompanying IDM; *Xanthan Gum from the People's Republic of China: Final Determination of Sales at Less Than Fair Value*, 78 FR 33351 (June 4, 2013), and accompanying IDM; *see also Polyester Staple Fiber from Taiwan: Preliminary Results of Antidumping Duty Administrative Review*; 2011-2012, 78 FR 17637 (March 22, 2013), and accompanying PDM; and *Polyester Staple Fiber from Taiwan: Final Results of Antidumping Duty Administrative Review; 2011–2012*, 78 FR 38938 (June 28, 2013).
[25] *See* Agreement on Implementation of Article VI of the General Agreement on Tariffs and Trade (1994) (Antidumping Agreement)

of the URAA, both of which include the pattern requirement and the meaningful difference requirement.

The Differential Pricing Analysis is composed of two parts, which address the statutory pattern and meaningful difference requirements, respectively: (1) the Cohen's *d* and ratio tests; and (2) the meaningful difference test. In *Stupp II*, the CAFC has detailed the Differential Pricing Analysis and how it addresses the pattern and meaningful difference requirements of the statute,[26] which is not repeated here. We note, however, that it appears that the CAFC panel in *Stupp II* may have misunderstood the mechanics of the ratio test.[27] The ratio test, which calculates the ratio of the U.S. sales whose prices differ significantly (*i.e.*, pass the Cohen's *d* test) to all U.S. sales, is based on the value of those sales and not on the number of observations. Thus, the ratio test is based on the ratio of the total value of U.S. sales which pass the Cohen's *d* test to the total value of all U.S. sales.[28]

III. BACKGROUND

In the *Final Determination*, Commerce calculated the weighted-average dumping margin for SeAH based on the mixed alternative comparison methodology.[29] SeAH challenged the *Final Determination* before this Court, which affirmed several aspects of Commerce's *Final Determination* in *Stupp I*. Upon appeal, the CAFC affirmed each part of *Stupp I* except for the Cohen's *d* test, which the CAFC, in *Stupp II*, vacated, in part, and remanded for further consideration.

[26] *See Stupp II*, 5 F.4th at 1346-48.
[27] *Id.*, 5 F.4th at 1347 ("Commerce counts the number of observations within each product group that were tagged as 'passing,' and applies what it calls a 'ratio test' to the results…").
[28] See *Preliminary Determination* PDM at 7-8.
[29] *Id.* at 9; *see also Final Determination* IDM at 4, unchanged in *Amended Final Determination*.

On October 8, 2021, this Court remanded *Stupp II* to Commerce to address the questions and concerns raised therein by the CAFC.[30] In the proceeding before the CAFC, SeAH introduced references to a number of documents which were not on the record of either the underlying LTFV investigation or *Stupp I*. Accordingly, Commerce directed SeAH to place this information on the record of this redetermination since the CAFC had explicitly relied on them in *Stupp II* in rendering its decision and those documents were not on the record of either the investigation, *Stupp I*, or *Stupp II*. Further, Commerce afforded other interested parties the opportunity to provide rebuttal new factual information.[31] On November 12, 2021, SeAH submitted the requested information.[32] On November 19, 2021, Welspun Tubular LLC (Welspun), a domestic interested party, submitted rebuttal new factual information.[33]

SeAH argued before the CAFC that the data used in the Cohen's *d* test require certain conditions in order for the results to be meaningful. Specifically, SeAH asserted that the data within the test and comparison groups must be "normally distributed, of sufficient size, and of roughly equal variances."[34] As a result of SeAH's arguments, the CAFC has remanded these concerns about the application of the Cohen's *d* test where the data, in general, being compared "are small, are not normally distributed and have disparate variances."[35] The CAFC questioned "whether Commerce's application of the Cohen's *d* test to the data in this case violated the assumptions of normality, sufficient observation size, and roughly equal variances associated with

[30] *See Stupp III*.
[31] *See* Commerce's Letter, "Remand Redetermination in the Less-Than-Fair-Value Investigation of Welded Line Pipe from the Republic of Korea," dated October 29, 2021.
[32] *See* SeAH's Letter, "Remand Redetermination in the Less-Than-Fair-Value Investigation of Welded Line Pipe from Korea – Submission of Publications Requested in the Department's October 29 Letter," dated November 12, 2021 (SeAH Documents).
[33] *See* Welspun's Letter, "Welded Line Pipe from Korea: Submission of Information to Rebut, Clarify, or Correct SeAH Steel Corporation's November 12, 2021 Submission," dated November 19, 2021.
[34] *See Stupp II*, 5 F.4th at 1357.
[35] *Id*.

that test."[36] Accordingly, the CAFC remanded this issue to Commerce to explain whether the described statistical criteria for the examined data were satisfied in this investigation, or whether these limits are required when Commerce uses the Cohen's *d* test and specifically whether the distinction between a population or sampled data plays a role in whether the statistical criteria asserted by SeAH are relevant.

The CAFC has remanded for further explanation the application of a narrow aspect of the Differential Pricing Analysis, the Cohen's *d* test, and whether, as alleged by SeAH, certain statistical criteria must be addressed for the underlying data. Specifically, based on excerpts from certain texts and articles regarding the concept of "effect size" and the application of effect size in the field of statistics, the CAFC questioned "whether Commerce's application of the Cohen's *d* test to the data in this case violated the assumptions of normality, sufficient observation size, and roughly equal variances associated with that test."[37] The CAFC remanded for Commerce to explain "whether the limits on the use of the Cohen's *d* test prescribed by professor Cohen and other authorities were satisfied in this case or whether those limits need not be observed when Commerce uses the Cohen's *d* test in less-than-fair-value adjudications."[38] In particular, the CAFC invited Commerce "to clarify its argument that having the entire universe of data rather than a sample makes it permissible to disregard the otherwise-applicable limitations on the use of Cohen's *d* test."[39]

[36] *Id.*, 5 F.4th at 1360.
[37] *Id*.
[38] *Id.*
[39] *Id.*

IV. ANALYSIS

Section 777A(d)(1)(B) of the Act does not specify a particular methodological approach to determine whether the pattern or meaningful difference requirements have been satisfied in order to apply an alternative comparison methodology based on the A-to-T method. In exercising its discretion under the statute, Commerce developed a Differential Pricing Analysis, which has been generally sustained by the courts.

For the reasons explained below, Commerce finds that the three statistical criteria identified by SeAH (*i.e.*, normality of distribution, number of observations, and homogeneity of the variances) are not relevant to Commerce's Cohen's *d* test. These statistical criteria do not serve as the basis for Dr. Cohen's thresholds which are used to interpret the calculated value of effect size (*i.e.*, the Cohen's *d* coefficient). Further, the academic literature, which the CAFC referenced, address circumstances which are outside of the context in which Commerce utilizes its Cohen's *d* test. Specifically, when applying the Cohen's *d* test, these three statistical criteria are relevant when using a sample of data to ensure that the sample statistically represents the entire population of data (*i.e.*, the statistical significance of the analysis), but they are not relevant because the Cohen's *d* test examines the entire population.

Below, Commerce provides further explanation regarding the application of the Cohen's *d* test in determining whether the A-to-A method is appropriate to calculate a respondent's weighted-average dumping margin. First, Commerce describes the role of effect size as a measure of significance in the Differential Pricing Analysis and explains the distinction between statistical and practical significance. Next, Commerce examines the role of the U.S. price data and the importance that these data encompasses the entire universe of data. Third, Commerce addresses SeAH's alleged data requirements in relation to Dr. Cohen's thresholds and the

literature cited by the CAFC. Lastly, Commerce discusses the distortions alleged to exist when prices are within a narrow range and demonstrates how the use of Dr. Cohen's thresholds as part of the Differential Pricing Analysis interpret the significance of differences in prices.

1. Effect Size as a Measure of Significance; Distinction Between Statistical and Practical Significance

The purpose of the Cohen's *d* test is to evaluate the extent by which the prices to a particular purchaser, region, or time period differ significantly from the prices of all other sales of comparable merchandise. The Cohen's *d* coefficient is a recognized measure of effect size which gauges the extent of the difference between the means of two groups.[40] The Cohen's *d* coefficient, as a measure of effect size, provides "a simple way of quantifying the difference between two groups and has many advantages over the use of tests of statistical significance alone."[41] Further, the Cohen's *d* coefficient "quantifies the size of the difference between two groups, and may therefore be said to be a true measure of the significance of the difference."[42] The precise purpose for which Commerce relies on the Cohen's *d* test is to satisfy the statutory language to measure whether a difference in prices is significant.

There are two separate concepts and measurements when analyzing whether the means of two sets of data are different. In *The Essential Guide to Effect Sizes*,[43] Dr. Ellis explains the concept of "effect size" by asking the question "So What?," citing Dr. Cohen that the "primary product of a research inquiry is one or more measures of effect size, not *p* values {*i.e.*, statistical

[40] *See generally* Cohen, Jacob, *Statistical Power Analysis for the Behavior Sciences*, Second Edition, Lawrence Erlbaum Associates (1988) (*Cohen*) (included in SeAH Documents at Attachment 1).
[41] *See* Coe, Robert, "It's the Effect Size Stupid: What Effect Size Is and Why It Is Important," paper presented at the Annual Conference of the British Educational Research Association (September 2002) (*Coe*) at 1 (included in SeAH Documents at Attachment 3).
[42] *Id.* at 7.
[43] *See* Ellis, Paul D., *The Essential Guide to Effect Sizes: Statistical Power, Meta-Analysis, and the Interpretation of Research Results*, Cambridge University Press, 2010 (*Ellis*) (included in SeAH Documents at Attachment 6).

significance}."[44] Dr. Ellis distinguishes effect size from the concept of statistical significance: "A statistically significant result is one that is unlikely to be the result of chance. But a practically significant result is meaningful in the real world."[45]

The first measurement, when these two sets of data are samples of a larger population, is whether this difference is statistically significant, as measured, for example, by a t-test.[46] This will determine whether this difference rises above the sampling error (or in other words, noise or randomness) in selecting the sample. When the t-test results indicate that the difference is statistically significant (*i.e.*, the null hypothesis is false), then these results rise above the sampling error and are statistically significant.

The second measurement is whether there is a practical significance of the difference between the means of the two sets of data, as measured by an "effect size" such as the Cohen's *d* coefficient. As noted above, this measures the real-world relevance of this difference "and may therefore be said to be a true measure of the significance of the difference."[47] The effect size, which is measured by the Cohen's *d* test, is the basis for Commerce's determination of whether prices in a test group differ significantly from prices in a comparison group.

It is critical to understand that Commerce's Differential Pricing Analysis uses the Cohen's *d* test to measure the *practical* significance of the difference in the actual real-world pricing, rather than *statistical* significance. Accordingly, "Effect size quantifies the size of the difference between two groups, and may therefore be said to be a true measure of the significance of the difference."[48]

---

[44] *Id.* at 3 (*quoting* Cohen, Jacob (1990), "Things I have learned (so far)," American Psychologist, 45(12): 1304–1312).
[45] *Id.* at 3-4.
[46] *See Cohen* at 19.
[47] *See Coe* at 7.
[48] *Id*.

The measurement of practical significance, for researchers and non-specialists alike, "is essential to the interpretation of a study's results,"[49] and can rely on "an estimation of one or more *effect sizes*:"[50]

> An effect size refers to the magnitude of the results as it occurs, or would be found, in the population. Although effects can be observed in the artificial setting of a laboratory or sample, effect sizes exist in the real world.[51]

Dr. Ellis further states that using the entire population is the best way to measure an effect size, but it is usually not feasible, which leads to the use of an estimate of the effect size based on sampled data:

> The best way to measure an effect is to conduct a census of an entire population but this is seldom feasible in practice. Census-based research may not even be desirable if researchers can identify samples that are representative of broader populations and then use inferential statistics to determine whether sample-based observations reflect population-level parameters.[52]

When the results of the analysis are based on sample-based observations, a researcher must consider the statistical significance of the results along with the practical significance of the results. To distinguish the difference between statistical significance and practical significance, Dr. Ellis states:

> It is quite possible, and unfortunately quite common, for a result to be statistically significant and trivial. It is also possible for a result to be statistically nonsignificant and important. Yet scholars, from PhD candidates to old professors, rarely distinguish between the statistical and the practical significance of their results. [53]

[49] *See Ellis* at 5 (emphasis added).
[50] *Id.* at 4 (emphasis in original).
[51] *Id.* at 4-5.
[52] *Id.* at 5.
[53] *Id.* at 4.

Accordingly, as recognized by Dr. Ellis, the results of an analysis may have statistical and/or practical significance, but these two distinct measurements of significance are independent of one another.

In conducting its Differential Pricing Analysis in the broader context of a dumping analysis, Commerce is not engaged in an analysis of sampled data that would require an analysis of statistical significance, but, rather, is concerned with measuring the practical significance of price differences among purchasers, regions, or time periods. As we explain, below, Commerce's dumping analysis relies on the entire universe or population of sales, which obviates the need for an analysis of statistical significance and the related underlying statistical criteria.

2. Application of the Cohen's *d* Test to the Entire Population of U.S. Sale Price Data Rather Than a Sample

Commerce's dumping analysis assesses the pricing behavior of the respondent in the U.S. market. The U.S. sale prices on which this analysis is based constitutes the entire population of sales data and is not a sample of a respondent's sales data (*i.e.*, the data are for *all* sales in the United States of subject merchandise by a company during the period of investigation (POI) or review). The basis for this analysis is the respondent's U.S. sales of the subject merchandise for a given period of time. By definition, these U.S. sales comprise the universe of sales on which the respondent's weighted-average dumping margin depends. The Differential Pricing Analysis examines all sales to determine whether the A-to-A method is the appropriate approach on which to base this calculation. Therefore, in the context of the calculation of the weighted-average dumping margin, the data used are not a sample, but rather constitute the entire population of a respondent's sales of subject merchandise during the period under examination for the calculation of the weighted-average dumping margin.

The Cohen's *d* test evaluates the extent to which the net U.S. prices to a particular purchaser, region, or time period differ from the net U.S. prices of all other sales of comparable merchandise. In the pattern requirement, the statute requires Commerce to consider whether U.S. prices for comparable merchandise to a particular purchaser, region, or time period (*i.e.*, the test group) differs significantly from the U.S. prices to other purchasers, regions, or time periods (*i.e.*, the comparison group). As such, the statute has refocused Commerce's analysis to calculate the respondent's weighted-average dumping margin from the pricing behavior of the respondent in the U.S. market to consider, when addressing the pattern requirement, the pricing behavior to the test group separate from the pricing behavior to the comparison group. Accordingly, the sales to the test group and the sales to the comparison group are not sampled and each constitutes separate populations of sale prices, each of which represents all of the sales of the comparable merchandise to each group. Accordingly, the sales to each of these two groups, the test and comparison groups, themselves constitute the full population of data in the context of the calculation of the mean, standard deviation, and Cohen's *d* coefficient for the purpose of the pattern requirement.

The statistical criteria observed in academic literature (such as the number of observations, a normal distribution and approximately equal variances) are related to the statistical significance of sampled data and establish the reliability of an estimated parameter (*e.g.*, mean) based on the sample data to be within a determined confidence interval of the actual parameter.[54] For example, with an established confidence level (*e.g.*, 95 percent), there is a given risk (*e.g.*, 5 percent) that the actual parameter of the population is not within the confidence interval surrounding the estimated parameter. However, for the Cohen's *d* test applied in the context of the Differential Pricing Analysis, there is no estimation of the parameters (*i.e.*, mean, standard deviation, and

[54] *See, e.g., Ellis* at 17-21.

effect size) of the test or comparison group as the calculation of these parameters is based on the complete universe of sale prices to the test and comparison groups. Unlike with a sample of data where the estimated parameters will change with each sample selected from a population, each time these parameters would be calculated as part of Commerce's Cohen's *d* test, the exact same results would be found because the calculated parameters are the parameters of the entire population and not an estimate of the parameters based on a sample. Accordingly, the means, standard deviations, and Cohen's *d* coefficients calculated for SeAH are not estimates with confidence levels or sampling errors associated with sampled data, but, rather, are the actual values which describe SeAH's pricing behavior. Consequently, the statistical significance of the results of the Cohen's *d* test is not relevant in Commerce's application of the differential pricing methodology, which measures practical significance.

3. Dr. Cohen's Thresholds Are Derived from Real-World Observations and Are Not Tied to Statistical Criteria

The CAFC has previously affirmed the use of Dr. Cohen's large, 0.8, threshold as a measure of significance in the difference in prices.[55] In its opinion, however, the CAFC expressed concern that the conditions asserted by SeAH may "undermine the usefulness of the interpretive cutoffs,"[56] *i.e.*, the large 0.8 threshold used in the Cohen's *d* test to determine that the price difference is significant. However, the academic literature does not diminish the logic or relevance of Commerce's application of the Cohen's *d* test or the use of the large 0.8 threshold.

[55] *See Mid Continent Steel & Wire, Inc. v. United States*, 940 F.3d 662, 673 (Fed. Cir. 2019) ("Commerce reasoned that even a small absolute difference in the means of the two groups can be significant (for the present statutory purpose) if there is a small enough dispersion of prices within the overall pool as measured by a proper pooled variance or standard deviation; the 0.8 standard is "widely adopted" as part of a "commonly used measure" of the difference relative to such overall price dispersion; and it is reasonable to adopt that measure where there is no better, objective measure of effect size. We agree with the Trade Court that this rationale adequately supports Commerce's exercise of the wide discretion left to it under {section 777A(d)(1)(B) of the Act}" (citation omitted)).
[56] *See Stupp II*, 5 F.4th at 1357.

As stated above, the purpose of the Cohen's *d* test is to determine the significance of the difference in the prices between a given purchaser, region, or time period and all other sales of the comparable merchandise. The Cohen's *d* coefficient is calculated as the ratio of the difference in the mean prices of the test and comparison groups, and the variance of the underlying prices,[57] such that the variance serves as the "yardstick" by which to measure the significance of the difference. There are many approaches to the calculation of the yardstick,[58] of which Commerce has relied upon a pooled standard deviation based on a simple average of the variances of the test and comparison groups.[59]

Once the size of the effect, *i.e.*, the Cohen's *d* coefficient, has been calculated, such measurements "must be interpreted to extract meaning."[60] Dr. Ellis provides three avenues by which one may interpret the measurements of effect size: context, contribution to knowledge, and Dr. Cohen's thresholds.[61] Dr. Cohen established thresholds for evaluating the magnitude of the effect size which are "easy to grasp" and "are sufficiently grounded in logic for Cohen to hope that his cut-offs 'will be found to be reasonable by reasonable people.'"[62] Despite some criticism of Dr. Cohen's thresholds, they are nevertheless widely accepted.[63]

Dr. Cohen established operational definitions of a small, medium, and large effect to describe the magnitude of the effect size based on the difference in the means.[64] These are

---

[57] *Id.*, 5 F.4th at 1346.
[58] *See, e.g., Ellis* at 10; and *Cohen* at 44.
[59] In *Stupp II*, 5 F.4th at 1359, fn. 15, the CAFC took notice of the ongoing litigation in *Mid-Continent* concerning the calculation of the pooled standard deviation. *See Mid Continent Steel & Wire, Inc. v. United States*, No. 21-1747 (Fed. Cir. 2021) (*Mid-Continent*). Although the plaintiff in *Mid-Continent*, as here, asserts that Commerce's application of the Cohen's *d* test erroneously concludes that there exists a pattern of prices, the issue in *Mid-Continent* involves the appropriate formula to calculate the pooled standard deviation and not whether the characteristics of the data groups causes the calculated Cohen's *d* coefficient to be inflated.
[60] *See Ellis* at 32.
[61] *Id.* at 35.
[62] *Id.* at 41 (citation omitted).
[63] *Id.* at 40 ("Cohen's cut-offs provide a good basis for interpreting effect size and for resolving disputes about the importance of one's results.").
[64] *See Cohen* at 24-27.

derived from real-world observations where the observed effect size is 0.2, 0.5 or 0.8 and are not dependent on the statistical criteria cited by the CAFC. For the "large" 0.8 threshold, Dr. Cohen described the effect as the difference in IQ of a PhD graduate and a college freshman, the difference in IQ between a college graduate and a student with only a 50-50 chance of passing high school, or the difference in height between 13 and 18 year-old girls.[65] This level of difference was selected by Commerce as a conservative standard to determine that the observed price differences are significant since this threshold is "grossly perceptible and therefore {represents} large differences."[66] Commerce could have also used the medium 0.5 threshold as it "is conceived as one large enough to be visible to the naked eye."[67] However, Commerce elected to use the most conservative, large threshold to provide the strongest evidence that the observed prices differed significantly.

Since, as discussed above, Dr. Cohen's thresholds are operational and not based on a statistical analysis, the concerns about the statistical criteria do not impact the usefulness of the thresholds. These thresholds are derived from real-world observations and, thus, are not tied to any particular statistical criterion such as normality of distribution or approximately equal variances. In general, each of the quotations to the literature concern either the potential inaccuracies in the estimate of effect size which is based on a sample of data, or the analysis of the sampled data to be able to visualize the difference in the means between the sampled data sets. In the Cohen's *d* test, because the data in the test and comparison groups use the full population and are not based on samples within the population, such additional analysis is not relevant because the test and comparison groups are not determined based on controlled random and

[65] *See Cohen* at 27; *see also Ellis* at 41.
[66] *See Cohen* at 27.
[67] *Id.* at 26.

independent samples of a population. Rather, the results of the Cohen's *d* test are based on the entire population of sale price data for comparable merchandise for the test and comparison groups as discussed above.

4. Statistical Criterial in Academic Literature Are Not Relevant to the Cohen's *d* Test

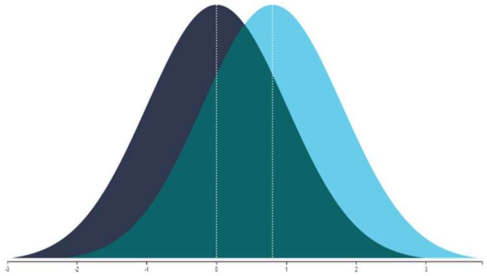
The CAFC ordered Commerce to provide further explanation regarding three statistical criteria, which SeAH argued must be met for the application of the Cohen's *d* test in the context of the Differential Pricing Analysis. However, as explained above, these assumptions relate to measuring the statistical significance of the difference in the means when using samples, whereas Commerce utilizes the Cohen's *d* test to measure the practical significance of difference in the means when using the entire population of data rather than samples.

The CAFC's first concern, based on Dr. Cohen's work, is that "we maintain the assumption that the populations being compared are normal and with equal variability, and conceive them further as equally numerous."[68] However, the context of this quotation is better understood when the entire sentence is viewed:

> If we maintain the assumption that the populations being compared are normal and with equal variability, and conceive them further as equally numerous, it is possible to define measures of nonoverlap (U) associated with *d* which are intuitively compelling and meaningful.[69]

[68] See *Stupp II*, 5 F.4th at 1357 (citation omitted).
[69] *See Cohen* at 21.

In this analysis, Dr. Cohen is considering the extent that two compared sets of sampled data do not overlap one another. Below is a common approach to visualize the difference between two hypothetical sets of data:



In this illustration, the closer together the two bell curves, the smaller the difference in the means, the smaller associated effect size, and the smaller the non-overlap area (*i.e.*, the area under one curve and not under the other). Conversely, the further apart the two bell curves, the greater the difference in the means, the larger the associated effect size, and the larger the non-overlap area. In order to quantify the amount of non-overlap, one must know the areas under each bell curve which requires the statistical criteria cited by Dr. Cohen and questioned by the CAFC. However, these measurements of non-overlap in statistical analysis involving sampled data do not define the real-world observed differences used by Dr. Cohen to define the small, medium, and large thresholds, as discussed above.

Similarly, the CAFC's first citation to *Grissom*,[70] that the "usual interpretation … of estimating the percentile standing …with the supposed normal distribution … would be invalid,"[71] also involves a similar analysis concerning the overlap of the two compared sets of sampled data. Figure 3.1 graphically demonstrates the percent of the comparison group whose

[70] *See* Grissom, Robert J. and Kim, John J., *Effect Size for Research, Univariate and Multivariate Applications*, Second Edition, San Francisco State University (2012) (*Grissom*) (included in SeAH Documents at Attachment 2).
[71] *See Stupp II*, 5 F.4th at 1358 (quoting *Grissom* at 66).

values are less than the mean of the test group (μ_e).[72] Similar to Dr. Cohen's calculation of non-overlap of two sets of data, the calculation of the "percentile standing" of 84 percent requires the assumptions that the two sets of data be normally distributed and have equal variances. Without the assumptions of normality and equal variances, the area beneath the curve of the control group that is less than the mean of the experimental group could not be quantified (*i.e.*, the "density function" permits the calculation of 84 percent of the control group (the area under the curve) is less than the mean of the experiment group). This, however, does not impact Commerce's application of the Cohen's *d* test.

The second citation to *Grissom*[73] must also be taken in its complete context:

> Glass *et al.* (1981) suggested the use of Equations 3.1 and 3.2 because treatment can affect variances and, therefore, cause heteroscedasticity. However, *if the two populations that are being compared are assumed to have equal variances*, then a better estimate of the denominator of a standardized difference between population means can be made if one pools the data from both samples to estimate the common σ {*i.e.*, the standard deviation of a population} instead of using s_b {*i.e.*, the standard deviation of sample data b} that is based on the data of only one sample.[74]

Equations 3.1 and 3.2 define the denominator of the effect size as the standard deviation of the control (*i.e.*, comparison) group, whereas Dr. Grissom is stating that, in the situation involving sampling where the variances are equal, the denominator can be an average of the two variances.[75] This does not indicate that the use of the calculated standard deviations distorts the calculation or estimation of the effect size, but only suggested an alternative approach to calculate the denominator of the "*d*" coefficient in Dr. Grissom's equations.[76]

---

[72] *See Grissom* at 62.
[73] *See Stupp II*, 5 F.4th at 1358 (quoting *Grissom* at 68).
[74] *See Grissom* at 68 (emphasis as quoted in *Stupp II*).
[75] Although if the variances are equal between the test and comparison groups, then presumably the average of these two values would be the same as the value of the standard deviation for either group.
[76] *See Grissom* at 63 (the "*d*" coefficient is equal to the ratio of the difference in the means of the sampled data of the experimental and control groups divided by the standard deviation of the sampled data of the control group).

As cited by the CAFC, Professor Coe states that "the interpretation of the 'standardized mean difference' measure of effect size {(*e.g.*, Cohen's *d*)} is very sensitive to violations of the assumptions of normality,"[77] including where "interpretation of effect sizes in terms of percentiles is very sensitive to violations of this assumption {of a normal distribution}."[78] This involves the same issue raised with respect to sampled data discussed in *Cohen* and *Grissom* above, that the interpretation of the effect size, based on non-overlap or standing percentile, must necessarily be based on a normal distribution to permit the calculation of the percentages in those analyses. Further, Professor Coe discusses the issue of a non-normal distribution within the context of sampled data and its potential impact on the estimation of effect size when the effect size is identical.[79] In Professor Coe's example, as with the hypothetical sample data in *Grissom*, 84 percent of the data in the comparison group with a normal distribution is less than the mean of the test group, but with the non-normal distribution, 97 percent of the data in the comparison group is less than the mean of the test group. Because these two comparisons both have an effect size of one, the effect size of the data with a non-normal distribution is underestimated since the difference in the means, as seen in Figure 3(b), is greater than the data with a normal distribution in Figure 3(a). Thus, the effect size of the non-normal distribution, equal to one, underestimates the actual difference in the means. This suggests that a non-normal distribution has the opposite effect from SeAH's allegation that estimated effect size is positively biased, and resolves the concerns expressed by the CAFC about finding "false positives." If anything, this aspect of the Cohen's *d* coefficient makes it less likely that Commerce's methodology will result in finding prices that differ significantly among purchasers, regions, or time periods. Moreover, when using

[77] *See Stupp II*, 5 F.4th at 1358 (quoting *Coe* at 14).
[78] *See Coe* at 5.
[79] *Id.* at 12-13 ("The interpretations of effect-sizes given in Table I {*i.e.*, standing percentiles} depend on the assumption that both control and experimental groups have a 'Normal' distribution").

the entire population as opposed to a sample, the issue concerning an inherent bias in an estimated effect size is no longer relevant.

The CAFC also references Dr. Lane's online text concerning the interpretation of effect size.[80] Dr. Lane's statement is simply a recognition, as discussed above, that the measure of effect size uses the variability of the underlying data to determine the yardstick by which the difference in the means is measured:

> When the effect size is measured in standard deviation units as it is for Hedges's *g* and Cohen's *d* {*i.e.*, both different measures of effect size}, it is important to recognize that the variability in the subjects has a large influence on the effect size measure. Therefore, if two experiments both compared the same treatment to a control but the subjects were much more homogeneous in Experiment 1 than in Experiment 2, then a standardized effect size measure would be much larger in the former experiment than in the latter.[81]

In other words, the variability in the data (*i.e.*, variance) is the yardstick by which the difference in the means is measured. For a given difference in the means, the effect size is smaller when the variability in the underlying data is larger; conversely, the effect size is larger when the variability in the underlying data is smaller.

The CAFC also identifies a concern regarding a conclusion by Dr. Algina and his co-authors[82] that:

> After simulating Cohen's *d* on various data that followed a mixed-normal distribution, *e.g.*, a heavy-tailed distribution, they concluded that Cohen's *d* was not robust to mixed-normal distributions, and that applying Cohen's *d* to such data caused serious flaws in interpreting the resulting parameter.[83]

---

[80] See *Stupp II*, 5 F.4th at 1358.
[81] *See* Lane, David, *et al.*, *Introduction to Statistics*, Online Edition, Chapter XIX, Part 3: "Difference Between Two Means" (included in SeAH Documents at Attachment 4).
[82] *See* Algina, James, Keselman, H.J., and Penfield, Randall D., "An Alternative to Cohen's Standardized Mean Difference Effect Size: A Robust Parameter and Confidence Interval in the Two Independent Groups Case," Psychological Methods, Volume 10, Number 3, pp. 317-328 (2005) (*Algina*) (included in SeAH Documents at Attachment 5).
[83] *See Stupp II*, 5 F.4th at 1358.

The purpose of the *Algina* paper is to propose for specific circumstances an alternative formula to calculate effect size based on the difference of the means,[84] analogous to those proposed by Glass and Hedges as different approaches to quantify the variations in the data. As a result of their analysis, the authors ask:

> Why then is δ so much smaller for the mixed normal distributions? The answer is that because the mixed normal distribution is a heavy-tailed distribution and there are more scores in the tails than one would find in a normal distribution, the standard deviation, which is very sensitive to the tails of a distribution, is quite large. This, in turn, reduces δ.[85]

The situation addressed here is the same as that discussed in *Coe* concerning a heavy-tailed distribution. As noted in *Coe* and *Algina*, this results in an estimated effect size that *understates* the magnitude of the difference in the means, which contradicts SeAH's claim that violations of its alleged statistical criteria result in false positives. Further, this does not impact Dr. Cohen's definition of his thresholds, which are based on real-world observations.

Dr. Johnson Ching-Hong Li further analyzed the robustness of six proposed alternative approaches to Dr. Cohen's *d* coefficient.[86] The CAFC noted the conclusion of Dr. Li's analysis that:

> Li concluded that Cohen's *d* "was found to be inaccurate when the normality and homogeneity-of-variances assumptions were violated in this study, thereby severely affecting the accuracy of *d* in evaluating the true {effect size} in the research literature."[87]

Again, the inaccuracies identified by Dr. Li, as well as others, involve "the accuracy of *d* in evaluating the true {effect size}" where "*d*" is the estimated Cohen's *d* coefficient of the

---

[84] *See Algina* at 317 ("The authors argue that a robust version of Cohen's effect size constructed by replacing population means with 20% trimmed means and the population standard deviation with the square root of a 20% Winsorized variance is a better measure of population separation than is Cohen's effect size.").
[85] *Id.* at 319.
[86] *See* Li, Johnson Ching-Hong, "Effect Size Measures in a Two-Independent Samples Case with Nonnormal and Nonhomogeneous Data," Behavior Research 48, pp. 1560-1574, Springer (2016) (*Li*) (included in SeAH Documents at Attachment 7).
[87] *See Stupp II*, 5 F.4th at 1358 (quoting *Li* at 1571).

sampled data in comparison with the actual value of the Cohen's *d* coefficient for the population. In Commerce's Cohen's *d* test, Commerce *does not estimate* the Cohen's *d* coefficient in the Cohen's *d* test, but *calculates the actual* Cohen's *d* coefficient based on the entire population of sale prices, not on a limited sample of the sale price data. Thus, the concerns raised by Dr. Li and others are not germane to the results of Commerce's Cohen's *d* test.

Lastly, the CAFC returns to *Grissom* with the concern that:

> Both Cohen's *d* and Glass's d_G have some positive bias (*i.e.*, tending to overestimate their respective parameters), the more so the smaller the sample sizes and the larger the effect size in the population." An upward bias might produce more "passing" results under the Cohen's *d* test, which would tend to exaggerate dumping margins.[88]

As discussed above, Commerce's Cohen's *d* test *does not estimate* the Cohen's *d* coefficient, let alone overestimate it, but rather *calculates the actual* Cohen's *d* coefficient based on the entire population of sale prices. Accordingly, there is no bias, positive or negative, in the results of Commerce's Cohen's *d* test. Additionally, as discussed below, the results of the Cohen's *d* test determine whether the requisite prices differ significantly among purchasers, regions, or time periods, and do not "exaggerate dumping margins."

5. Interpretation of the Results of the Cohen's *d* Test

The CAFC also raises a concern about a situation when the prices in a test group "hover around the same value."[89] The CAFC proposes a hypothetical example:

> Consider, for example, ten purchasers of a product, each of which purchases five units. Assume that the per-unit sales prices for a particular purchaser are not normally distributed and are all the same, or nearly the same (*e.g.*, $100.01, $100.01, $100.01, $100.01, and $99.99). Assume further that the per-unit sales prices across the entire set of purchasers are also very similar, falling within a relatively small range (such as between $99.92 and $101.01).

[88] *Id.*, 5 F.4th at 1359 (quoting *Grissom* at 70).
[89] *Id.*

> As the variance within each test group approaches zero, the denominator in the Cohen's *d* equation is greatly reduced and … the resulting effect-size parameter is increased, tending to artificially inflate the dumping margins for a set of export sales prices that has minimal variance.[90] An objective examiner inspecting those export sales prices would be unlikely to conclude that they embody a "pattern" of prices that "differ significantly."
>
> Although the problem in that situation is a function of Commerce's use of the simple average pooled standard deviation, our concern is also related to the number of observations being compared and the distribution of those observations—requiring larger test groups tends to decrease the likelihood that a test group would have sales prices with near-zero variance, and requiring normality also tends to decrease that likelihood as the number of observations increases.[91]

Underpinning this concern of the CAFC appears to be the continued supposition that not adhering to the statistical criteria asserted by SeAH will have "some positive bias … tending to overestimate {the} respective parameters."[92]

First, we offer the following observation regarding the CAFC's statement that, "{a}s the denominator is reduced, the resulting effect size parameter is increased, tending to artificially inflate the dumping margins for a set of export sales prices that has minimal variance."[93] The term "dumping margin" means the amount by which the normal value exceeds the export price or constructed export price (*i.e.*, the U.S. price) of the subject merchandise. The Cohen's *d* test only examines the relationship of prices of the subject merchandise within the U.S. market and does not examine whether the U.S. price is at less than normal value. The magnitude of the Cohen's *d* coefficient, or whether it is small, medium, or large, does not involve the comparison of U.S.

---

[90] The CAFC also includes the specific assumption that, as the variance of the test group approaches zero, the value of the denominator approaches one half of the standard deviation of the comparison group. As discussed above, the specifics on the formula for the denominator is the subject of *Mid-Continent*; however, the general proposition is true that as the variance of either or both the test and comparison groups is made smaller and smaller, the denominator will be reduced and the calculated effect size will increase. Also, as discussed above, this is the overall premise of effect size based on the difference of the means, that the significance of the difference between the means of the two groups is based on the variation of the underlying data.

[91] *See Stupp II*, 5 F.4th at 1359.

[92] *Id.* (quoting *Grissom* at 70).

[93] *Id*.

price with normal value, and, therefore, it is unrelated to and cannot create dumping margins. Whether U.S. prices are dumped, *i.e.*, at less than normal value, is not part of the Cohen's *d* test. Rather, the Cohen's *d* test is part of Commerce's analysis to determine whether there is a pattern of prices that differ significantly in the U.S. market. Whether prices differ significantly between purchasers, regions, or time periods in the U.S. market does not change whether dumping exists due to SeAH's overall U.S. pricing behavior when the U.S. price is compared with normal value. It is also important to recognize that when U.S. prices differ significantly, it does not mean that the U.S. prices passing the Cohen's *d* test are dumped. In fact, U.S. sale prices that pass the Cohen's *d* test may not be dumped at all when those prices are greater than the normal value. Thus, there is no basis to conclude that the approach used to consider whether U.S. price differences are significant can artificially inflate the dumping margins. Further, as noted above, Commerce has had several approaches to examine the pattern requirement, most notably the Nails Test, which would not change whether masked dumping is present as a result of SeAH's U.S. pricing behavior. The fact that U.S. prices differ does not necessarily mean that dumping is being masked or even that the U.S. sale prices are dumped. Thus, there is no logical basis to conclude that the approach used to consider whether U.S. price differences are significant, *i.e.*, the Cohen's *d* test, could "artificially inflate the dumping margins."

For SeAH, this means that its estimated weighted-average dumping margin from the *Final Determination*, 2.53 percent, was not created because of the Cohen's *d* test. It is mistaken to infer that an analysis of any differences in SeAH's U.S. prices, *i.e.*, the Cohen's *d* test, results in excessive dumping margins. SeAH's U.S. pricing behavior, along with any dumping of subject merchandise in the U.S. market, was determined by SeAH's pricing decisions in both the U.S. and home market, not the Cohen's *d* test. As noted above, dumping is measured by comparing

U.S. price with normal value for each U.S. sale, and the results of this comparison are not measured by Commerce's use of the Cohen's *d* test. The Cohen's *d* test only indicates that U.S. prices, whether dumped or not, vary significantly amongst themselves in the U.S. market. In this instance, the analysis and results of the Cohen's *d* test has no bearing on the amount of dumping found to exist for SeAH.

Second, as discussed above, the parameters (*e.g.*, mean, standard deviation, effect size) calculated in the Cohen's *d* test are not estimates of the parameters based on sampled data from a larger population. The values of parameters based on sampled data will change with each sample of data drawn from a population; thus, such parameters estimate the values of the actual parameters of the population data. Such estimates may be biased, upward or downward, based on the characteristics of the sampled data. For example, the fat-tailed, non-normal distribution discussed in *Coe* underestimates the significance of the difference in the means in Figure 3(b) vis-à-vis Figure 3(a).[94] However, Commerce's application of the Cohen's *d* test does not rely on sampled data or on estimated parameters, but rather calculates the actual parameters, including the Cohen's *d* coefficient, of the U.S. prices which reflects the actual measure of the significance of the difference in prices between the test and comparison groups.

Furthermore, Dr. Cohen's thresholds are not based on the statistical criteria discussed in *Stupp II*, but rather are based on real-world observations by Dr. Cohen, which may be "large enough to be visible to the naked eye"[95] for the medium threshold or "grossly perceptible and therefore large differences"[96] for the large threshold. In the context of a statistical analysis, beyond establishing the statistical significance of a given sample of data, Dr. Cohen also must

[94] *See Coe* at 12-13.
[95] *See Cohen* at 26.
[96] *Id.* at 27.

rely on SeAH's assumptions to calculate the proportion of non-overlap, similar to *Coe*'s and *Grissom*'s calculation of percentile standing. However, none of these interpretations of the Cohen's *d* coefficient of 0.8 or greater represents a "grossly perceptible and therefore large difference."

As discussed by Dr. Ellis, the task of a researcher is to interpret the magnitude of the calculated effect size,[97] of which Dr. Cohen's thresholds are one widely accepted approach. For a given estimated effect size, *Coe* demonstrates how a fat-tailed distribution of sampled data exhibits a much larger difference in the means vis-à-vis a sample of data with a normal distribution; in other words, the fat-tailed distribution may *undervalue* the significance of the effect, especially as seen as the proportion of the non-overlap of the two distributions of sampled data. Similarly, one can picture a thin-tailed distribution of sampled data with the opposite impact. This appears to be the basis for the CAFC's example where it is assumed that data that "hover around the same value," *i.e.*, data with a small variance is not normally distributed. However, there is no correlation between the variance of data and whether it is normally distributed. This is plainly demonstrated in Professor Coe's example where the normally distributed data has a standard deviation of one and the non-normally distributed data has a standard deviation of 3.3.[98] Thus, data with a standard deviation of 1, 3.3, or 0.1 may or may not be normally distributed; whether a sample of data is normally distributed is not dependent on the variation within the data.

Nonetheless, to address the CAFC's concern that prices that "are all the same or nearly the same" may invalidate the interpretation of the results of the Cohen's *d* test, Commerce analyzed the extreme situation from the hypothetical scenario discussed in *Stupp II* where all prices to each

[97] *See Ellis* at 32-42.
[98] *See Coe* at 12.

purchaser are identical and where there are two purchasers, A and B (there could be more purchasers, but limiting the example to two purchasers will simplify this discussion). All sales to purchaser A are priced at $100, and all sales to purchaser B are priced at $101, within the range of the CAFC's example. In this situation, the standard deviation of the prices to each purchaser is zero (*i.e.*, the "denominator is reduced" to the lowest value possible), the number of sales to each purchaser is not material (there could be two sales to one purchaser and 200 sales to the other purchaser), the prices to each customer are not normally distributed (as assumed in the example), and the resulting Cohen's *d* coefficient is infinite (*i.e.*, d=$1÷0).

If Commerce were to apply its Differential Pricing Analysis to this hypothetical example, then Commerce's analysis would not have resulted in the application of an alternative calculation methodology. The pattern requirement requires that Commerce first define "significant" and then identify prices that differ significantly. Although there are many possible definitions of significance ranging from qualitative to quantitative measures, based on the concept of effect size, Commerce has defined significance based on the result of the Cohen's *d* test. In the above example, when the prices are uniform to each purchaser and when these two prices differ, the difference is significant because the Cohen's *d* coefficient is infinite, *i.e.*, "large." This is consistent with the analyses by Dr. Cohen and others who visualize the effect size based on the non-overlap of the two sets of data. In this example, there is no overlap of the two groups of prices at all. Indeed, Professor Coe concludes that "if there were no overlap at all … then this would seem like a very substantial difference."[99] Therefore, by this definition, the prices differ significantly. However, the meaningful difference requirement, discussed in the following

[99] *Id.* at 2.

paragraph, imposes a contextual interpretation on the results of the Cohen's *d* test that there also be meaningful amount of masked dumping that the A-to-A method cannot account for it.

In general, there are five scenarios to describe the possible relationship between a difference in U.S. prices and normal value.[100] Of these five scenarios, there is only one that will result in a "meaningful difference" according to the Differential Pricing Analysis: where the normal value falls within the range of U.S. prices and where the difference between normal value and U.S. prices are large enough that there is "a non-*de minimis* amount of dumping, but there is also a meaningful amount of offsets to impact the identified amount of dumping under the A-to-A method with offsets."[101] In the above example, if the normal value is less than $100, then no sales are dumped; and if the normal value is greater than $101, then all sales are dumped. In either scenario, there is no meaningful difference when the overall dumping margin is calculated using the A-to-A method or the A-to-T method. When the normal value is within the range of U.S. prices, the maximum amount of an individual dumping margin will be where the normal value is $101, and the individual dumping margin for a sale to purchaser A will be one percent, which is below the *de minimis* threshold in an LTFV investigation. For all sales to purchasers A and B, if the quantity sold to each is identical, then the maximum weighted-average dumping margin will be one half of one percent. Thus, there can be no meaningful difference where the *de minimis* threshold, which in an LTFV investigation is two percent. Consequently, one could conclude in the context of the Differential Pricing Analysis that, although there are significant price differences based on the Cohen's *d* test, those price differences in U.S. prices are not meaningful

[100] *See, e.g., Certain Hot-Rolled Steel Flat Products from Japan: Final Determination of Sales at Less Than Fair Value and Final Affirmative Determination of Critical Circumstances*, 81 FR 53409 (August 12, 2016) (*Japan HR*), and accompanying IDM at 31-34.
[101] *See Japan HR* IDM at 33.

and the results of the Differential Pricing Analysis, even in this extreme hypothetical example, would not permit the application of an alternative comparison methodology.

Even though the calculated results for a respondent involve complexities in calculating and aggregating individual dumping margins, Commerce's actual application of the Cohen's *d* test in the context of the Differentia Pricing Analysis resulted in the application of an alternative comparison methodology to a relatively small number of respondents. The significance of the price differences which exist within a company's pricing behavior in the U.S. market will limit the application of an alternative comparison methodology to situations only where masked dumping meaningfully impedes the A-to-A method from calculating an accurate weighted-average dumping margin. For calendar year 2015, the year in which the *Final Determination* was published, for all published final determinations in LTFV investigations,[102] Commerce calculated final rates for 18 companies.[103] Of those 18 respondents, Commerce applied an alternative comparison methodology to four companies, including SeAH in the *Final Determination*. This means that only 22 percent of respondents with calculated rates had their weighted-average dumping margin calculated using an alternative comparison methodology. Further, of the 14 companies whose rates were based on the A-to-A method, two of the calculated rates were zero. Similar overall results were repeated in calendar year 2021 where Commerce applied an alternative comparison methodology for 15 companies (21 percent of the total) and applied the A-to-A method for 58 companies, eight of which had a zero rate.[104]

Therefore, the CAFC's concern that groups with small variations in prices or a small sample size result in "false positives" or "artificially {inflated} dumping margins" is not borne

[102] *See* Attachment I to these final results of redetermination.
[103] This excludes rates calculated based on section 776 of the Act (*i.e.*, total adverse facts available).
[104] *See* Attachment II of these final results of redetermination.

out by the data regarding the real-world application of the Cohen's *d* test in the context of the Differential Pricing Analysis. Using Dr. Cohen's thresholds is a reasonable approach to interpret whether the difference in the prices is significant and the further interpretation of the difference in the prices in the context of the calculation of dumping margins ensures the reasonable and limited application of the alternative comparison methodology.

V. INTERESTED PARTY COMMENTS

On March 8, 2022, Commerce released the draft results of redetermination to all interested parties and invited parties to comment.[105] On March 18, 2022, and March 23, 2022, respectively, we received timely-filed comments from Welspun and SeAH.[106] Welspun supports Commerce's further explanation in the Draft Results concerning Commerce's Cohen's *d* test and whether certain statistical criteria are applicable to Commerce's analysis, and agrees that no changes should be made to SeAH's weighted-average dumping margin. SeAH's comments are summarized below.

Issue 1 – New Factual Information

SeAH's Comments

Commerce has introduced new factual information and analysis as part of its Draft Results concerning its use of the Differential Pricing Analysis and the resulting comparison methodology which was used for the respondents in final determination for LTFV investigations published in calendar years 2015 and 2021 (*i.e.*, Attachments 1 and 2, respectively). Both Commerce's analysis as well as the underlying data constitute new factual information. SeAH acknowledges Commerce's authority to place new factual information on the record of a proceeding; however, Commerce must also permit interested parties the opportunity to submit additional factual information to rebut, clarify or correct the new record information.

Commerce's analysis injected into the Draft Results constitutes new factual information. In the underlying LTFV investigation, Commerce rejected SeAH's similar analysis of record data

[105] *See* "Draft Results of Redetermination Pursuant To Court Remand, *Stupp Corp. et al. v. United States* Consol. Court No. 15-00334 (CIT October 8, 2021)," issued March 8, 2022 (Draft Results).

[106] *See* Welspun's Letter, "Comments on Draft Results of Redetermination Pursuant to Court Remand in Stupp Corp. et al. v. United States, Consol. Court No. 15-00334," dated March 18, 2022. SeAH originally filed its comments on March 21, 2022; however, Commerce rejected SeAH's submission because it contained new factual information and permitted SeAH to redact and refile its response. *See* SeAH's Letter, "Redacted Comments on Draft Redetermination on Remand," dated March 23, 2022 (SeAH Comments).

as new factual information. Both the CIT and the CAFC affirmed Commerce's authority to reject SeAH's analysis.[107]

Further, the data included in Attachments 1 and 2 on which Commerce's analysis is based constitutes new factual information. Simply because this information reflects prior Commerce determinations does not mean that this data is not new factual information. These determinations do not reflect a practice or policy of Commerce, and these data are "materials 'in the public domain' {which}constitute factual information that must be submitted on the record in accordance with the procedures and deadlines set forth in the Department's regulations."[108]

Commerce rejected SeAH's request that interested parties be permitted the opportunity to submit new factual information to rebut, correct, or clarify the data included in Attachments 1 and 2 that Commerce placed on the record and Commerce's analysis of that information. Accordingly, Commerce cannot rely on this information or its analysis of that information in its redetermination.

Commerce's Position:

Contrary to SeAH's claims, Attachments 1 and 2 of the Draft Results do not contain new factual information. Attachments 1 and 2 of the Draft Results list Commerce's LTFV determinations published in calendar years 2015 and 2021, respectively.[109] For ease of presentation, these Attachments list the *Federal Register* citation and publication date for each of these determinations, along with other identifying information such as case number, country, product, and company name, as well as the comparison methodology and weighted-average dumping margin calculated for each company.[110] The courts and Commerce routinely rely on, reference, and discuss court cases and Commerce's prior administrative determinations, including the calculation methodologies and rates from such determinations.[111] Both the courts, the agency, and interested parties may properly rely on Commerce's published administrative determinations without any requirement for such published determinations to be placed on the administrative

[107] *See* SeAH Comments at 2-3 (citing to *Stupp I* and *Stupp III*).
[108] *Id.* at 3 (*citing* to *Stupp I* and *Stupp III*).
[109] *See* Draft Results at Attachments 1 and 2.
[110] *Id*.
[111] *See, e.g., Nexteel Co. v. United States*, 5 F.4th 1334 (Fed. Cir. 2022) ("Commerce's countervailing duty determinations have consistently found that Korean electricity prices are set in accordance with market principles and thus that Korean steel producers have not benefited from government involvement in Korean electricity pricing.") (citing various court cases that upheld Commerce's factual findings in numerous prior determinations that electricity prices in Korea are set in accordance with market principles).

record. Conceptually, Commerce's approach is no different from stating a proposition in the narrative, while citing and discussing the relevant *Federal Register* notices that support the proposition. In fact, while criticizing Commerce, SeAH itself relies on findings in Commerce's prior administrative determinations. For example, SeAH cites Commerce's prior administrative determination regarding steel pipe from Vietnam, arguing that Commerce previously found "that sellers are unlikely to set their prices using random number generators."[112] To the extent that SeAH disagrees with Commerce's analysis of its prior determinations or even with the prior determinations themselves, SeAH was free to include in its comments on the Draft Results the appropriate citations and discussion of any of Commerce's determinations that detracts from Commerce's analysis.

Further, Commerce's analysis of its prior determinations on page 32 of the Draft Results does not transform the agency's prior determinations into new factual information on the record of this redetermination. In the course of an antidumping or countervailing duty proceeding, Commerce is the administering authority responsible for analyzing record factual information, *i.e.*, weighing the evidence on the record, including analysis of legal arguments, and evidence or facts, including numerical data. Interested parties have an opportunity to comment on such determination. Thus, we do not need to reach the issue of whether Commerce's analysis of its prior determinations is legal, factual, or numerical in nature. SeAH was given an opportunity to comment on all aspects of the Draft Results, including Commerce's analysis on page 32. In fact,

[112] *See* SeAH Comments at 19 (where SeAH cites Commerce's final determination in the LTFV investigation of Circular Welded Carbon-Quality Steel Pipe from Vietnam: *Circular Welded Carbon-Quality Steel Pipe from the Socialist Republic of Vietnam: Final Determination of Sales at Less Than Fair Value*, 77 FR 64483 (October 22, 2012) (*CWP from Vietnam*), and accompanying IDM).

SeAH has availed itself of the opportunity to comment on this aspect of Commerce's Draft Results (*i.e.*, Attachments 1 and 2) by attempting to rebut it in its comments.[113]

Finally, SeAH's reliance on the CAFC's and the Court's decisions affirming Commerce's rejection of new factual information previously submitted by SeAH is misplaced. SeAH submitted untimely filed new factual information consisting of new databases which it generated by manipulating existing record evidence.[114] Similarly, the academic materials that SeAH attempted to submit to support its arguments constituted new factual information that was not previously on the record.[115] Accordingly, "Commerce reasonably determined that SeAH's submissions provide statements of fact and data to rebut the application of Commerce's differential pricing analysis and constitute factual information."[116] In contrast, unlike SeAH's submission of manipulated data which constituted new factual information for the record of the review of which it then also submitted analysis, here, Commerce referenced information in its prior administrative determinations and provided analysis of this information without manipulating the data from these determinations. The information from these administrative determinations is not new factual information, unlike that which SeAH submitted and Commerce rejected, and therefore Commerce continues to rely on its analysis of this information in this redetermination.

Issue 2 – Whether Commerce's Determination of Significance Is Based on Chance

SeAH's Comments

Dr. Cohen clearly intended for his "*d* test" and its associated thresholds "to be used to determine the 'power' of an experiment consisting of {the} comparison of samples"[117]

[113] *Id.* at 35-36.
[114] *See Stupp I*, 359 F. Supp. 3d 1293, 1301 (CIT 2019) ("To create the two databases, SeAH manipulated existing record evidence. As a result, the databases yielded new output. It was logical for Commerce to consider these new outputs as data intended to rebut the existing record evidence.").
[115] *Id*.
[116] *Id*.; *see also Stupp II*, 5 F.4th 1341, 1349-50 (Fed. Cir. 2021).
[117] *See* SeAH Comments at 6.

irrespective of whether those thresholds were based on real-world observations. "Nothing in Professor Cohen's work, or in any of the other materials cited by the Department, suggested that his *d* test would be valid as a measure of the effect size for real-world populations that did not satisfy 'the assumptions of normality, sufficient observation size, and roughly equal variances associated with that test.'"[118]

1. Statistical Significance

In its Cohen's *d* test, Commerce has failed to account for the possibility that it could find that a pattern may exist simply by chance as a result of random fluctuations.[119] Commerce's measurement of effect size does not address its "statutory obligation to distinguish between price differences that constitute a 'pattern' and price differences that simply occur by chance."[120] Commerce must establish a causal relationship of how the observed outcome relates to the expected outcome, to find a real pattern of differences.

For example, two individuals have a coin flipping contest in which each flips a coin four times and, for each toss which comes up heads, the individual wins $100. If one player wins $300 and the second player wins $100, then the difference in each players per-flip winnings differs by a large amount (*i.e.*, the Cohen's *d* coefficient is greater than the 0.8 large threshold). Thus, there is a "practical significance" in the difference in these results; however, there is no "statistical significance" because the results arise out of chance. "In order to conclude that there is a causal relationship between the player's identity and the outcome, the likelihood of the result, and not just the practical effect, must be considered."[121]

Dr. Cohen's development of "effect size" was to assess "whether an observed effect was the results of some underlying causal relationship or instead the result of chance,"[122] or in other words whether it "permitted the researcher to reject the 'null hypothesis' that the observed results was generated by chance."[123] Dr. Cohen demonstrated that "effect size" could be converted into a measurement of "power" and that this conversion depends on the three statistical criteria. When the three statistical criteria are met then the observed effect, *i.e.*, the rejection of the null hypothesis, was not the result of chance. Therefore, it is impossible to separate "practical significance" as measured by "effect size" from "statistical significance."

2. References

Nonetheless, it its Draft Results, Commerce asserts that it must only consider "effect size" to demonstrate that a "pattern" exists and that "statistical significance" is not relevant. Commerce's reliance on Dr. Ellis is misplaced and does not permit a distinction between a result

---

[118] *Id.*.
[119] *Id.* at 6-7 (quoting the *Final Determination* IDM at 20 ("a 'pattern of prices that differ significantly among purchasers, regions or time periods' means that {Commerce} is examining the extent to which the prices, when ordered by purchaser, region or time period, exhibit differences which have meaning, which have or may have influence or effect, which are noticeably or measurably large, and which may be beyond something that occurs by chance....")).
[120] *Id.* at 8 (quoting again the *Final Determination* IDM at 20).
[121] *Id*.
[122] *Id*.
[123] *Id.* at 9.

by chance and an actual causal relationship.[124] Further, Dr. Ellis provides an example based on a hypothetical Alzheimer's study which highlights the difference between a result by chance and a result based on an actual causal relationship.[125] Significance testing is used to prevent a Type I error "where an effect caused by chance is wrongly attributed to some causal factor."[126] Indeed, Dr. Ellis states that "despite its many limitations significance testing persists because it provides a basis for checking that our results obtained from samples are not due to random fluctuations in the data."[127]

Dr. Ellis further confirms the importance of "the 'power' of any statistical test to determine whether a real effect exists."[128] The "practical significance" is inadequate to demonstrate whether the causal relationship actually exists. Dr. Cohen, likewise, confirms the importance of statistical "power." Dr. Ellis did not view "practical significance" in isolation to be an adequate substitute for Dr. Cohen's "power" analysis.

3. Normal Distribution

The normal distribution is a probability function[129] which is uniquely defined by two parameters: the mean and the standard deviation. The probability function, as represented by the familiar bell curve, simplifies statistical calculations such as the proportion of the data which may fall within a given distance from the mean, as measured by the number of standard deviations. For example, 68.27 percent of the data will fall within one standard deviation of the mean. Further, 57.6 percent, 38.3 percent and 15.9 percent of the data will fall, respectively, within 0.8, 0.5 and 0.2 standard deviations of the mean. Conversely, when data is not represented by a normal distribution, the calculation of the proportion of the data which lies within a certain distance of the mean are not possible.

Dr. Cohen developed his *d* coefficient as a measure of statistical "power" to determine the likelihood that the observed effect rejected the null hypotheses, *i.e.*, that "the variable being tested actually had no effect."[130] Dr. Cohen's calculation of statistical "power" depends upon the normal distribution of the data; otherwise, a researcher cannot determine whether the observed effect is not the result of chance.

4. Small Number of Observations

Commerce's assertion in the Draft Results that a small number of observations only impacts sampling error ignores the possibility that the observed results may also vary with some degree of randomness where "*within-group* variations may outweigh *between-group* differences."[131] "If the outcomes within a population are themselves the result of a random

[124] *Id.* at 11 (quoting *Ellis* at 3-4).
[125] *Id.* (quoting *Ellis* at 4).
[126] *Id.* at 12.
[127] *Id.* (quoting *Ellis* at 48).
[128] *Id.* at 12-13 (quoting *Ellis* at 48-52 (In rejecting the null hypothesis, two possible errors may arise – type I (*i.e.*, false positive) error or a type II (*i.e.*, false negative) error. "Statistical power describes the probability that a test will correctly identify a genuine effect.")).
[129] *Id.* at 14 (citing Karris, Steven T., *Mathematics for Business, Science, and Technology*, Orchard Publications, 2007 (*Karris*) (included in SeAH Documents at Attachment 11), at 10-28, formula 10.77).
[130] *Id.* at 17.
[131] *Id.* (emphasis in original).

process, the mean and standard deviation of the population are likely to vary with each additional iteration, often by a considerable amount, until a sufficient number of iterations have occurred."[132]

For example, in the Stone Age there are two 13-year old girls and two 18-year old girls where the heights of each group *should be* normally distributed and the 18-year old girls *should be* taller than the 13-year old girls. However, since the heights of children can vary greatly, when "paleolithic Dr. Cohen" assesses the difference in the heights of two 13-year old girls and two 18-year old girls, he very well may conclude that the 13-year old girls are taller than the 18-year old girls. However, as the population of girls grows and as more generations are considered, "paleolithic Dr. Cohen" may observe that "the actual population statistics are likely to converge on the theoretical model"[133] that 18-year old girls are taller than 13-year old girls. Accordingly, "With a small number of data points, the variations within the group may have a larger impact on the observed characteristics of the two sub-groups than the expected differences between the average characteristics of each group."[134]

Although Commerce has previously stated that an exporter is unlikely to set its prices randomly,[135] prices may be impacted by more than the identity of the purchaser, timing of the sale or the region in which the sale is made. For example, foreign exchange rates or input prices may fluctuate randomly. Further, individual negotiations between parties may introduce other random factors. Accordingly, random price variations may distort the comparison of prices between different purchasers, regions or time periods especially when there is a small number of sales in the groups being compared.

5. Academic References

Commerce states in its Draft Results that none of the academic references in *Stupp II* limit Commerce's use of the Cohen's *d* test because the three statistical criteria only apply when a sample of data is present. However, none of the academic texts support the conclusion of the Draft Results that the three statistical criteria can be ignored when a population is being examined. SeAH states that:

> All of the relevant texts indicate that Cohen's *d* can be used in statistical analysis only when Professor Cohen's assumptions are satisfied. The Draft Redetermination's attempt to distinguish those texts is, in the end, nothing more than an admission that the DPA is not using Professor Cohen's "effect size" thresholds in the manner that any statistician or academic researcher would use them.[136]

Further, the Draft Results ignores the concept of statistical "power." Dr. Cohen's incorporated his *d* coefficient to determine whether to reject the null hypothesis at a given level of statistical significance. Dr. Cohen's calculation of "power" is based on the assumptions that the underlying data is normally distributed with equal variances and are explicitly dependent upon the probabilities inherent in a normal distribution. Absent such known properties, Dr. Cohen's

---

[132] *Id.* at 18.
[133] *Id.* at 19.
[134] *Id*.
[135] *Id.* (citing *CWP from Vietnam* IDM at 20).
[136] *Id.* at 21.

concept of statistical "power" cannot be calculated. Therefore, Dr. Cohen's *d* coefficient "cannot be used to determine the likelihood that a given observation occurred by chance, and not as a result of a pattern, when the assumptions underlying his analysis are not met."[137]

Commerce's Position:

Commerce uses effect size as included in its Cohen's *d* test to determine whether prices differ significantly among purchasers, regions and time periods. Both Dr. Cohen and Dr. Ellis specifically describe the purpose of effect size and clearly delineate the role of statistical significance, practical significance and power analysis as a tool to evaluate research data. In addition, the role of inferential statistics, which is dependent on the three statistical criteria at issue, applies to determining whether an estimated statistic (*e.g.*, the mean) is representative of a population's parameter within a given probability or confidence interval. It is important to distinguish the three statistical criteria, which ensure that a sample statistic is a representative estimate of the parameter of an entire population, from situations where the entire population is considered and, thus, there is no need to make an estimate or ensure that a statistic based on sampled data is representative of the parameter based on the population data. In addition to Dr. Cohen and Dr. Ellis, the other academic scholars, whose writings are also part of the record of this redetermination, support these concepts and together present a framework which is consistent with Commerce's application of the Cohen's *d* test.

SeAH has failed to identify a single passage in the academic literature which supports its argument that the three statistical criteria limit the usefulness of the results of Commerce's Cohen's *d* test or limit the use of Dr. Cohen's thresholds to interpret the calculated effect size because the analysis is based on the full population, rather than a data sample of an entire population. SeAH summarily dismisses Commerce's discussion in the Draft Results and declares

[137] *Id*.

that all "of the relevant texts indicate that Cohen's *d* can be used in statistical analysis only when Professor's Cohen's assumptions are satisfied."[138] Instead of addressing the substance of the Draft Results, SeAH attempts to conflate and misrepresent the purpose of the different steps of Commerce's Differential Pricing Analysis and asserts that it is subject to chance or random fluctuations which allegedly require the application of certain limitations inherent to statistical analysis of samples, such as demonstrating a normal distribution, equal variances, and a sufficient sample size. However, SeAH's contentions are misplaced. Commerce's dumping analysis examines the entire universe of data or population of prices of a respondent, including all of its sales of subject merchandise in the U.S. market and the Differential Pricing Analysis examines all U.S. sales used in Commerce's dumping analysis. A respondent does not set its prices based on random chance (such as flipping a coin or throwing dice), but rather prices its goods based on market conditions, pricing strategies and arm's-length negotiations with its customers.

SeAH misunderstands and confuses the purpose of the Cohen's *d* test as a component of the Differential Pricing Analysis when SeAH equates the Cohen's *d* test with a demonstration that a pattern of prices exists.[139] The Cohen's *d* test evaluates the extent to which the net prices to a particular purchaser, region, or time period differ from the net prices of all other sales of comparable merchandise. As recognized by the CAFC, the sole purpose of the Cohen's *d* test is to determine whether, for comparable merchandise, the prices to a given purchaser, region, or time period differ significantly, or not, from the prices to other purchasers, regions or time periods.[140] When prices that differ significantly have been found, Commerce applies the ratio test

[138] *Id.*
[139] *See, e.g.,* SeAH Comments at 10.
[140] *See Stupp II*, 5 F.4th at 1347 (When the sale prices in the test group pass the Cohen's *d* test, then "Commerce deems the sales prices in the test group to be significantly different from the sales prices in the comparison group." (internal citation omitted)).

to establish the proportion of sales which pass the Cohen's *d* test to determine whether a pattern exists for the respondent. Further, if a pattern exists, then the ratio test will also specify the appropriate application of the A-to-T method as a possible alternative comparison methodology.[141] Only if a pattern is found will Commerce then consider whether there is a meaningful difference in the weighted-average dumping margin calculated using the standard A-to-A method and the weighted-average dumping margin calculated using the appropriate alternative comparison methodology. If a meaningful difference is found, then Commerce will determine whether to apply a standard or alternative comparison methodology to determine the margin of dumping for the respondent. Because SeAH misunderstands that the purpose of the Cohen's *d* test is to evaluate the extent to which one group of prices differs from the net prices of all other sales of comparable merchandise, SeAH appears to argue that Commerce cannot "satisfy its statutory obligation to demonstrate that a 'pattern' exists that is not simply the result of random fluctuations by considering only 'effect size,' and not statistical significance." [142] However, as explained earlier, the existence of a pattern is determined by a different test, the ratio test, rather than the Cohen's *d* test.

When examining whether there is a difference in the means between two groups, the standard null hypothesis is to test whether this difference is zero. When the null hypothesis is rejected, there is a statistical significance in the difference in the means between the two groups. When examining a difference in the means of two groups of sampled data to test the null hypothesis, the "test is the t-test" and the associated t-distribution.[143] The assumptions underlying the t-distribution are that the data groups are normally distributed and have equal variances,

[141] *Id.*, 5 F.4th at 1347; *see also Preliminary Determination* PDM at 7-8.
[142] *See* SeAH Comments at 10.
[143] *See Cohen* at 19, *see* also *Ellis* at 4.

although moderate departures from these assumptions do not necessarily impact the results.[144] Further, in evaluating whether to accept or reject the null hypothesis, the possibility of a type I error (false positive) or a type II error (false negative) are dependent on the accepted probability established as in the significance criterion.[145] However, these assumptions are only necessary when dealing with statistical samples or sampled data, whereas the application of the Cohen's *d* test in Commerce's Differential Pricing Analysis does not involve samples or estimates, but rather involves the entire population of prices, which obviates the need for these assumptions to measure the statistical significance of the difference in the means.

To determine the "degree of departure from the null hypothesis" the difference in the means is "expressed in the measurement unit of the dependent variables by dividing it by the (common) standard deviation of the measures in their respective populations," *i.e.*, the effect size.[146] Dr. Ellis describes the difference between statistical significance and practical significance as follows:

> In most research methods courses students are taught how to test a hypothesis and how to assess the statistical significance of their results. But they are rarely taught how to interpret their results in ways that are meaningful to nonstatisticians. Test results are judged to be significant if certain statistical standards are met. But significance in this context differs from the meaning of significance in everyday language. A statistically significant result is one that is unlikely to be the result of chance. But a practically significant result is meaningful in the real world. It is quite possible, and unfortunately quite common, for a result to be statistically significant and trivial. It is also possible for a result to be statistically nonsignificant and important. Yet scholars, from PhD candidates to old professors, rarely distinguish between the statistical and the practical significance of their results. Or worse, results that are found to be statistically significant are interpreted as if they were practically meaningful. This happens when a researcher interprets a statistically significant result as being "significant" or "highly significant."[147]

---

[144] *See Cohen* at 19.
[145] *Id.* at 4-5, *see also Ellis* at 48-52.
[146] *See Cohen* at 20.
[147] *See Ellis* at 3-4.

Professor Coe, as noted in the Draft Results, highlights effect size as "a simple way of quantifying the difference between two groups and has many advantages over the use of tests of statistical significance alone."[148] Further, Professor Coe emphasizes that "{e}ffect size quantifies the size of the difference between two groups, and may therefore be said to be a true measure of the significance of the difference."[149]

SeAH conflates the concepts of statistical significance and practical significance, insisting that "it is not possible to divorce 'effect size' (as defined by Professor Cohen) from the concept of statistical significance."[150] Further, SeAH erroneously equates statistical significance with demonstrating that an observed result, in particular the effect size, is not simply a chance occurrence or random fluctuation, where significance testing is to determine whether the calculated statistic based on sampled data accurately estimates the parameter of the full population within the established confidence intervals. SeAH implies that "chance" or "random fluctuations" could invalidate an observed result, where this is nothing more than the consequence of possible sampling error where the actual parameter falls outside of the confidence interval of the calculated statistic. However, when Commerce applies the Cohen's *d* test, Commerce uses it to evaluate the difference between two groups of prices, each of which constitute the full populations of the sale prices of comparable merchandise, to the test group and to the comparison group. Because the prices to each group encompass the full population of prices of comparable merchandise to each group, the parameters calculated are the actual values of those parameters and the sampling error is zero. Further, as explained above, a respondent does not set its pricing by a chance occurrence or in a random manner. Accordingly, SeAH's concerns about chance or

[148] *See Coe* at 1.
[149] *Id.* at 7.
[150] *See* SeAH Comments at 10.

randomness in the context of evaluating the difference in prices between two groups are misplaced.

SeAH offers a hypothetical example which purports to demonstrate that determining whether prices differ is analogous to a game where players flip a coin and examine whether the difference in the results of each player's coin tosses are statistically or practically significant. However, this hypothetical example is based on a flawed premise that price setting by exporters is akin to tossing a coin, which will land on heads or tails, and that determining price is based on a random chance. Certainly, the result of each coin toss is based on chance, but this has no relevance to SeAH's or any other company's pricing behavior. A company's pricing behavior in a market economy has nothing to do with chance, including the U.S. prices established by SeAH during the POI. A company's pricing behavior is foundationally based on corporate strategies and goals, including maximizing profit, within the bounds of supply and demand in the marketplace. Thus, the differences in a company's prices do not reflect chance, but the company's market research, corporate practice and priorities, resulting in deliberative pricing decisions. This is further supported by record evidence, which demonstrates, for example, that SeAH is involved to a high degree in market research.[151] Accordingly, SeAH's implication that its, or any company's, prices are determined by chance, and that this would invalidate the results of Commerce's Cohen's *d* test without further statistical analysis to account for such chance or random fluctuations, is without merit.

SeAH cites an additional example provided by Dr. Ellis concerning the effectiveness of medical treatment of Alzheimer's patients. In the study of Alzheimer's patients, the researcher concludes that there is no statistical significance of the results, yet there is a practical significance

[151] *See* SeAH's Letter, "Section A Response of SeAH Steel Corporation," dated January 14, 2015 at Appendix A-5.

of the medical treatment. SeAH concludes that simply because "an effect is observed does not mean that the observed 'effect' could not have arisen by chance."[152] Nonetheless, Dr. Ellis concludes, when the size of the observed effect is interpreted based on Dr. Cohen's thresholds:

> The group receiving medication scored on average 13 points higher on an IQ test than the control group. Given that the standard deviation of IQ scores in the population is about 15 points, this difference is equivalent to ad of .87 (or 13/15). As this exceeds the recommended cut-off of .80, the observed difference indicates a large effect adding weight to the idea that additional drug trials are warranted.[153]

Therefore, when an observation is based on sample data, in contradiction to SeAH's argument that for an observation to be practically significant it must also be statistically significant, the effect of the medical treatment in the study of Alzheimer's patients was practically significant, even though the results are not statistically significant. Consequently, the conclusion was that the medical treatment warranted further investigation based on practical significance despite the observed effects of such treatment not being statistically significant. The concept of practical significance is not dependent on a finding of statistical significance as alleged by SeAH. Nonetheless, with Commerce's application of the Cohen's *d* test, as already discussed, statistical significance is not even relevant since the Cohen's *d* test is based on full populations of data and therefore the calculated results include no intrinsic sampling error in the results. Further, even if the prices underpinning Commerce's Cohen's *d* test were a sample from a larger population, the differences in prices could exhibit a practical significance with no statistical significance.

Further, SeAH's claims that Commerce must provide a causal relationship or link for the observed effect is unfounded. Section 777A of the statute does not impose a causation requirement for determining whether prices differ significantly. Nor does the academic literature suggest that a "practical" difference in the means is subject to a causation requirement. If the

[152] *See* SeAH Comments at 12.
[153] *See Ellis* at 40-41.

respondent's prices to purchaser A differ significantly as a matter of "practical significance" from prices to all other purchasers, neither the statute nor academic literature require an additional step of demonstrating an element of causation. Further, the CAFC has found that Commerce is not required to identify a reason or cause for this observation, but only that such price differences are found as a result of a company's pricing behavior in the U.S. market.[154] The reasons for the company's pricing behavior are not relevant for determining that prices differ significantly, which is determined by the application of the Cohen's *d* test, and that those significantly different prices constitute a pattern, which is determined by the ratio test. Accordingly, no identification of a cause is required to further explain and justify the finding of a pattern of prices that differ significantly.

SeAH also connects the idea of a chance occurrence or random fluctuations with the concept of sampling error. However, sampling error is not the result of chance, as in a coin toss, but is the result of the sampling of a subset of data from a full population and the fact that a statistic based on that sampled data (*e.g.*, the mean) differs from the actual parameter of the population. The sampling error represents the uncertainty that the estimated statistic does not provide an estimate of the population parameter within the established confidence interval. The confidence intervals are based on the significance criteria which define the probability of the estimate not reflecting the value of the population's parameter. As discussed in the Draft Results, SeAH's U.S. price data to which the Cohen's *d* test is applied are not sampled data, but rather represent the full populations of data for each test and comparison group. Consequently, no

[154] *See JBF RAK LLC v. United States*, 790 F.3d 1358, 1368 (Fed. Cir. 2015) ("{Section 777A(d)(1)(B) of the Act} does not require Commerce to determine the reasons why there is a pattern of export prices for comparable merchandise that differs significantly among purchasers, regions, or time periods,").

sampling error is involved in Commerce's analysis and conclusion as to whether there exists a pattern of prices that differ significantly.

SeAH also links chance to the difference in results between data with "small populations" and "large populations" and argues that the Draft Results "ignore{} the possibility that, for the entire population as a whole, the observed outcomes are likely to vary with some degree of randomness."[155] SeAH's argument is illogical, for if one calculates the mean price of a "small population" and then calculates the mean price of a "large population," the difference in the two means is due to the fact that the data underlying each calculated mean are different. Nonetheless, SeAH offers a hypothetical example regarding the heights of teenage girls that lived in the Stone Age for it "may help to illustrate the issue."[156]

SeAH's example simply illustrates that calculating results on two different "populations" of data will naturally lead to different results. SeAH's conclusion that the difference in the results is related to the fact that the first population has fewer observations than the second population is illogical. Each group of teenage girls, whether at the dawn or at the end of the Stone Age, includes different individuals. The cause for the difference in the results is not the number of observations, but rather the fact that two different populations were examined. If the girls whose heights were examined truly constitute full populations of all teenage girls at the time that their heights were measured, then there is no sampling error and no probability that the calculated effect size is not accurate. It is objectively correct that the observed differences in the height of individuals included in that population are accurate. If the differences in the heights were significant, as a measure of practical significance, it is accurate to conclude that the difference in the heights of the two groups of individuals during that period of time is significant. Applying the

[155] *See* SeAH Comments at 17.
[156] *Id.* at 18.

test to a different population of data could lead to a different result when the underlying data are different.

When Commerce applies the Cohen's *d* test, it applies the test to the full population of a respondent's prices for comparable merchandise during a particular period of investigation or review, and its conclusions regarding whether prices differ significantly is necessarily limited to that specific population during that specific period. Similar to SeAH's "Paleolithic Dr. Cohen" finding different results due to the evolution of hominoids over the course of the Stone Age, Commerce's determinations may also change in future administrative reviews as SeAH's pricing behavior evolves over time. However, no matter how many times one were to apply the Cohen's *d* test to SeAH's U.S. prices during the POI, each time the test would produce the same, identical results as the results in the *Final Determination*. SeAH's hypothetical scenario is engineered to be flawed from its conception and misleadingly concludes that there is some inherent chance or random fluctuations in Commerce's approach. SeAH does not accurately reflect Commerce's application of the Cohen's *d* test.

Moreover, SeAH's argument that Commerce's analysis must include a measure of statistical "power" is irrelevant. It is true that "Professor Cohen intended {his} thresholds to be used to determine the 'power' of an experiment consisting of the comparisons of samples,"[157] as this is the purpose of his academic text,[158] which focusses on research involving sampled data. However, as noted above by Dr. Ellis, "the best way to measure an effect is to conduct a census of an entire population,"[159] and Commerce's Cohen's *d* test, and in fact the Differential Pricing Analysis, is not based on sampled data. As discussed in the Draft Results, the U.S. price data

[157] *Id.* at 5-6.
[158] *See Cohen* at 1.
[159] *See Ellis* at 5.

used in the Differential Pricing Analysis generally, and in the Cohen's *d* test specifically, include the full population of U.S. sale prices. SeAH has not contested this fact, let alone provided evidence or argument to the contrary. Thus, Commerce's calculation of the Cohen's *d* coefficient is not an estimate of the population's actual measure of effect size, but in fact the Cohen's *d* coefficient *is the actual value* of that parameter. As a result, each time the Cohen's *d* test is performed in the Differential Pricing Analysis with respect to the same test and comparison groups, the results are always the same. Inferential statistical analysis, which depends upon the distribution of the data, the variance of the data, and the sample size, is not relevant. Consequently, there is no chance that these results are somehow inaccurate or unrepresentative of SeAH's U.S. pricing behavior.

Lastly, SeAH has failed to rebut the explanations provided by Commerce in the Draft Results which address the CAFC's citations to the academic literature in *Stupp II*. Commerce presented an explanation for the issues raised in each of the CAFC's citations demonstrating why the three statistical criteria at issue do not impact Commerce's application of the Cohen's *d* test. Rather than meaningfully address Commerce's explanations, SeAH simply asserted that "{a}ll of the relevant texts indicate that Cohen's *d* can be used in statistical analysis only when Professor Cohen's assumptions are satisfied" and speculated with no factual basis that Commerce's application of the Cohen's *d* test to evaluate the significance of the differences in U.S. prices is based on random chance. However, Commerce's application of the Cohen's *d* test to measure the significance of price differences does not involve statistical analysis of sample data, nor does Commerce base its analysis of the significance of price differences on a chance or random fluctuations in the data.

Issue 3 – Whether Normal Distribution Is an Assumption Required For the Application of Dr. Cohen's Thresholds

SeAH's Comments

Commerce contends in the Draft Results that Dr. Cohen's thresholds are based on "real-world phenomena" regardless of the distribution of the data underlying the analysis. However, the data included in Dr. Cohen's real-world observations, *i.e.*, the height of teenage girls or the IQ of various groups of individuals, are normally distributed.[160] Nothing in Dr. Cohen's text or the other academic literature suggest that Dr. Cohen's thresholds may be applied to data with differing characteristics.

Given that Dr. Cohen's intended use of his *d* coefficient as part of a statistical "power" analysis requires that the three statistical criteria be satisfied, there is no basis for extending Dr. Cohen's thresholds to an analysis of other types of data. SeAH's price data are not normally distributed, do not have equal variances, and do not have a sufficient number of data points.[161] Consequently, Dr. Cohen's thresholds are not applicable in Commerce's analysis.

Commerce's Position:

As discussed in the Draft Results and in the preceding issue, Commerce's application of the Cohen's *d* test involves the full population of U.S. sale price data and is not based on sampled data. Consequently, inferential statistics are not relevant to the results of Commerce's analysis. Further, a statistical power analysis would not be appropriate because the Commerce's Cohen's *d* test is not being applied to sampled data from a larger population.

In describing statistical power, Dr. Ellis states:

> Every statistical test has a unique level of power. Other things being equal, a test based on a large sample has more statistical power (or is less likely to fall prey to Type II error) than a test involving a small sample. But how large should a sample be? If the sample is too small, the study will be underpowered, increasing the risk of overlooking meaningful effects.[162]

As with all inferential statistics, the purpose is to evaluate whether the estimated results based on the sampled data represent the full population within the given defined probability. Yet, SeAH

[160] *See* SeAH Comments at 23 (citing Starnes, Daren S., Yates, David S., and Moore, Dan, *Statistics Through Applications*, W. H. Freeman and Company, 2009 (included in SeAH Documents at Attachment 13)).
[161] *Id.* at 25.
[162] *See Ellis* at 52.

seeks to impose limitations that exist to ensure that a sample accurately estimates the entire population in the context of the Cohen's *d* test that Commerce applies to the entire population of U.S. prices and, thus, does not involve samples or estimates.

Further, the assumptions of normal distributions and equal variances, which are theoretical ideals, are part of such calculations as non-overlap or percentile standing as presented in the academic literature and addressed in the Draft Results. *Cohen* provides the calculation of non-overlap to provide an understanding of the relationship between two normal distributions with equal variances which represent the two sets of data and the proportion which is not in common to both distributions.[163] Similarly, *Grissom* provides a similar understanding based on the percentile standing as the proportion of the comparison group which is less than the mean of the test group.[164] Each of these calculations are theoretical in nature because of the necessary assumption of normality and equal variances which enable the calculation of percent non-overlap or the percentile standing. However, neither the measure of non-overlap nor the measure of percentile standing is used in the definition of Dr. Cohen's thresholds.

Dr. Cohen specified no limitations for the use of his proposed thresholds to the interpretation of the calculated value of effect size.[165] To the contrary, as discussed in the Draft Results, Dr. Cohen's thresholds are "operational definitions," where, for example, the large threshold represents a difference which is "grossly perceptible."[166] SeAH has failed to identify anything in the academic literature on the record which supports its argument that any of the "limits" restrict the calculation of the Cohen's *d* coefficient or detract from its interpretation based on Dr. Cohen's thresholds.

[163] *See Cohen* at 21-23.
[164] *See Grissom* at 62-63.
[165] *See Cohen* at 24-27.
[166] *Id.* at 27.

Issue 4 – Whether Commerce's Cohen's *d* Test Can Generate False Positive Results

SeAH's Comments

Separate from its questions about the need for the three statistical criteria, the CAFC expressed concerns that the Cohen's *d* test could generate "arbitrary results when applied to data with a small number of observations or small price differences."[167] While Commerce does not address the specific hypothetical situation considered by the CAFC, Commerce does examine an "even more extreme" example which does not dispute the contention that a comparison of data with a small difference and small number of sales yields a "false-positive" result. However, Commerce contends that this causes no harm because the meaningful difference test results in no meaningful difference in the comparison of the calculated weighted-average dumping margins.

For an example of such a "false-positive" result, assume that there are two customers to whom four sales are made, each priced at $100, except for one sale to the first customer which, "due to random fluctuations," is priced at $99.999. The difference in the average prices between the two customers is $0.00025, yet according to Commerce's Cohen's *d* test, this difference is significant, *i.e.*, greater than the 0.8 threshold, with a Cohen's *d* coefficient of 0.81650. Thus, an "insignificant difference" in the prices is found to have "practical significance" which results in a "false-positive" conclusion.

When Commerce then applies its ratio test, this false-positive result, when combined with the results for other sales, whether the sales are dumped or not, can result in Commerce using an alternative comparison methodology because a meaningful difference is found. Expanding the preceding example, assume that there are sales of a second product to the same two customer where the prices do vary to each customer, but where there is no difference in the mean prices to each customer. Therefore, there is no difference in the prices, but some individual sales to each customer are dumped, and others are not. When these results are combined in the ratio test, the overall results indicate that a pattern exists because the sales of the first product cause the ratio test to find that a pattern exists. Then, in the subsequent meaningful difference test, there is a meaningful difference in the amount of dumping found because of the sales of the second product. Thus, the false-positive results of the Cohen's *d* test in this example lead to the use of an alternative comparison methodology.

SeAH's actual U.S. sales data confirms that Commerce's analysis have found patterns "that are not actually apparent in the data."[168] For customer 102020 and product control number (CONNUM) 1-03-03-06-1, Commerce found a certain relationship between the prices to this customer when compared with the prices to all other customers and because the calculated Cohen's *d* coefficient exceeded the large 0.8 threshold, the sales to customer 102020 of CONNUM 1-03-03-06-1 pass the Cohen's *d* test. The graphical representations of the underlying data visually demonstrates that the two groups have significantly different variances and are not normally distributed. In fact, the plot actually shows a relationship between the prices on the same date differs from the relationship found by Commerce. "In such circumstances, reliance on a *d* statistic calculated under false assumptions to find a pattern that is not actually discernible in the data cannot be reconciled with the evidence on the record."[169]

[167] *See* SeAH Comments at 26.
[168] *Id.* at 30.
[169] *Id.* at 34.

Commerce's Position:

In general, SeAH's comments and its hypothetical example demonstrate a fundamental misunderstanding of how each step of the Differential Pricing Analysis works, and SeAH attempts to impose additional artificial requirements that are not provided in the statute. SeAH disagrees with how the Cohen's *d* test and the general definition of effect size defines whether a difference in the means is significant. However, in challenging the application of the Cohen's *d* test, SeAH inexplicably faults Commerce for "reliance on a *d* statistic calculated under false assumptions to find a pattern."[170] However, Commerce applies the Cohen's *d* test for a different purpose from establishing the existence of a pattern. Commerce applies the Cohen's *d* test to determine whether prices differ significantly. The existence of a pattern is established through a different test, the ratio test, which assesses whether the extent of prices that differ significantly constitute a pattern.

In the first step of its Differential Pricing Analysis to address the statutory requirements, the Cohen's *d* test is used to determine whether prices differ significantly between the test and comparison group. Commerce examines the difference in the mean prices of the test and comparison groups. To evaluate whether this difference is significant, Commerce relies on the concept of effect size, which quantifies the magnitude of the effect relative to the spread or variance of the prices in each group.[171] The calculated effect size, *i.e.*, the Cohen's *d* coefficient, is then interpreted based on thresholds proposed by Dr. Cohen and which have been widely adopted. When the calculated Cohen's *d* coefficient meets Dr. Cohen's large threshold, the difference in the prices between the test and comparison group are found to be "significant."

[170] *Id.* at 34.
[171] *See Cohen* at 20 ("This is accomplished by standardizing the raw effect size as expressed in the measurement unit of the dependent variable by dividing it by the (common) standard deviation of the measures in their respective populations, the latter also in the original measurement unit.").

Although Commerce could apply a different approach, such as using qualitative factors such as those in Webster's definition of "significant,"[172] or comparing the difference in the means to the absolute pricing level of the merchandise (as seemingly argued by SeAH), Commerce finds its use of the concept of effect size and the Cohen's *d* test to be objective and reasonable.

The concept of effect size takes into account the language of the SAA, which states "Commerce will proceed on a case-by-case basis, because small differences may be significant for one industry or one type of product, but not for another."[173] When the variation in prices is used to gauge whether the difference in prices is significant, then the "yardstick" used to measure the difference are the prices themselves. When there is a large variation in the prices within the groups of prices, then it requires a larger difference in the mean prices to find that the difference is significant than if the variation in the prices within the groups of prices were small, which would require a smaller difference in the mean prices to find the same level of significance. Thus, the difference is measured specific to the industry, product, and the individual company because it is based on the prices of the industry, product, and company themselves whose difference is being gauged.

Commerce disagrees with SeAH's argument that the Cohen's *d* test generates a "false positive" result when the data has "insignificant price differences," and that this is demonstrated by Commerce's "extreme" example.[174] SeAH simply disagrees with the definition of "significant" which in the Differential Pricing Analysis is defined by the measurement of the difference of the mean prices by the yardstick based on the variation of the prices in the test and comparison groups, and that the threshold for a "significant" difference is the "large" threshold

[172] *See Final Determination* IDM at 20.
[173] *See* SAA at 843.
[174] *See* SeAH Comments at 26.

put forth by Dr. Cohen. The CAFC expressed its concern for "sales prices that hover around the same value" where "the variance within each test group approaches zero" and as "the denominator is reduced, {and} the resulting effect-size parameter is increased, tending to artificially inflate the dumping margins for a set of export sales prices that has minimum variance."[175] As previously discussed, the purpose of the Cohen's *d* test is to examine whether the difference in the prices is significant, and this has no relationship as to whether these prices are below normal value, *i.e.*, dumped. As such, the Cohen's *d* test does not result in a finding of dumping, nor does it "artificially inflate the dumping margins." Further, Commerce's "extreme" example considered the situation where the variance is zero, *i.e.*, where "the per-unit sales prices for a particular purchaser are not normally distributed and are all the same,"[176] and its impact on the conclusions of the Cohen's *d* test and the Differential Pricing Analysis as a whole. In the Draft Results, Commerce found that the Cohen's *d* test found that the prices differed significantly, and that the ratio test found that a pattern existed, but that the meaningful difference test could not find a meaningful difference such that the A-to-A method would be able to account for such differences.

We note that CAFC's hypothetical example does not contain specific data for prices to other purchasers and only provides a general range of such prices without greater specificity. To consider further the CAFC's hypothetical example, Commerce assigned prices to each customer within the range that the CAFC specified:

> Assume that the per-unit sales prices for a particular purchaser are not normally distributed and are all the same, or nearly the same (*e.g.*, $100.01, $100.01, $100.01, $100.01, and $99.99). Assume further that the per-unit sales prices across the entire set of purchasers are also very similar, falling within a relatively small range (such as between $99.92 and $101.01).[177]

[175] *See Stupp II*, 5 F.4th at 1359.
[176] *Id*.
[177] *See Stupp II*, 5 F.4th at 1359.

Accordingly, Commerce constructed five prices for Purchasers 2-10 following the same pattern as for the prices to Purchaser 1 in the CAFC's framework for the hypothetical example. The details of the Cohen's *d* test and the ratio test are presented in Attachment 3, where a pattern of prices is found to exist. For the meaningful difference test, the normal value must be defined. When the normal value is equal to the largest individual U.S. price, there will be no meaningful difference in the A-to-A method when compared to the A-to-T method (*i.e.*, the amount of masked dumping is zero). When the normal value is equal to the average U.S. price in the A-to-A method, then the masked dumping will be at its maximum. We conservatively used such normal value that would result in the maximum amount of masked dumping, but even such amount in this example would not result in finding that the A-to-A method could not account for such differences, because the difference between the standard and alternative methodologies is not meaningful as both rates are *de minimis*. Accordingly, the results of the Differential Pricing Analysis, when applied in the hypothetical scenario that the CAFC offered, would be to use the standard A-to-A method to calculate the company's weighted-average dumping margin because the meaningful difference requirement was not satisfied. This is the same conclusion as the conclusion from Commerce's more "extreme" example.

In rejecting Commerce's conclusion, SeAH proposes its own hypothetical example which includes the sale of two products to two customers, which purportedly demonstrates how the "false positive" result of sale prices with small differences would result in a finding of dumping. However, the application of the Differential Pricing Analysis to SeAH's hypothetical data is erroneous. When SeAH applies the meaningful difference test (*i.e.*, calculates the overall weighted-average dumping margin for both products), SeAH only includes the sale prices for Product 2 and excludes the sale prices for Product 1. SeAH's approach is contrary to

Commerce's practice as required by the statute. Commerce's application of the Differential Pricing Analysis to SeAH's hypothetical data is included in Attachment 4. The conclusion for SeAH's hypothetical example, when the Differential Pricing Analysis is applied properly, is the same as for the CAFC's hypothetical example and for Commerce's "extreme" example, *i.e.*, it does not result in the application of the alternative calculation methodology. In light of the results of the application of Commerce's Differential Pricing Analysis to each of these hypothetical examples, we find that SeAH's purported concerns about the so-called "false positives" are exaggerated and are contrary to how Commerce's Differential Pricing Analysis operates.

In SeAH's hypothetical example, SeAH associates the small price differences with "a small number of observations" which SeAH asserts may be "due to random fluctuations."[178] Neither are relevant to the issue of small price differences. First, the statute does not require that a certain number of observations be present in the test group or that the difference in prices must be statistically significant. We decline to artificially create additional requirements that Congress did not include in the statute. Second, small price differences can arise independent of the number of observations in either group of data, *i.e.*, the test or comparison group of prices. The difference in the mean prices can be small whether the test or comparison group include two sale prices or two thousand sale prices. Third, as discussed above, "random fluctuations" or chance are not considered as a factor to discount a respondent's reported prices or price adjustments. The purpose of the Differential Pricing Analysis is to determine whether the A-to-A method is the appropriate comparison methodology to calculate a company's weighted-average dumping margin. Accordingly, all U.S. prices and adjustments used to determine the net U.S. price for comparison with the normal value are relevant for determining whether those net U.S. prices

[178] *See* SeAH Comments at 26.

differ significantly. While some of these values may not be fully under the control of the seller (*e.g.*, exchange rates or how long a customer takes to pay for the merchandise), each of these values are used for calculating the net U.S. price for comparison with the normal value; therefore, they are also relevant to the examination of whether these same U.S. prices differ significantly.

Further, SeAH misleadingly labels the results of its example as a "false-positive." The purpose of the Cohen's *d* test is to evaluate the extent by which the prices to a particular purchaser, region, or time period differ significantly from the prices of all other sales of comparable merchandise. The analysis involves the entire population and does not involve samples or estimates. As discussed above, a "false-positive," or type I error, occurs when the null hypothesis is rejected based on sample data when the null hypothesis is actually true based on the full population of data. First, neither the Cohen's *d* coefficient calculated in SeAH's example nor the Cohen's *d* coefficients calculated in the Cohen's *d* test represent estimates of the actual effect size, but each is the actual effect size. Second, as discussed above, the significance of the difference is measured based on the variances of the data in the two compared groups. If the variances are small, then a small difference in the means will be determined to be more significant than when the variances are larger. To label this result as "false-positive" does not render the variances inaccurate or erroneous. SeAH's argument simply displays a disagreement with the definition of the significance of the measured difference.

SeAH's support for the alleged "false-positive" result is unavailing. First, a "visual examination of the diagram,"[179] perhaps based on the construct that one will know it when one sees it, is inadequate when analyzing detailed data involving complex calculations. Second, when SeAH examines the second plot in comparison with the first, SeAH concludes that the results

[179] *Id.* at 32.

contradict the results of the first plot "made on the same date."[180] However, each comparison of U.S. prices is either among purchasers, among regions, or among time periods; SeAH's analysis inappropriately combines purchaser and time periods into a single comparison, which is inconsistent with Commerce's methodology. Accordingly, the conclusions drawn are incorrect and have no bearing on Commerce's methodology.

Issue 5 – Whether Two Years of Commerce's Determinations Reasonably Reflect Commerce's Practice

SeAH's Comments

Commerce's analysis of its own determinations from 2015 and 2021 does not demonstrate "that groups with small variations in prices result in 'false positives' or 'artificially {inflated} dumping margins.'"[181] Further, it is not even evident that the two years which Commerce selected to analyze are representative of its practice and may in fact be outliers, where other years would reveal different results. Nonetheless, Commerce's conclusion is not demonstrative "without knowing what the outcome of a mathematically-correct analysis of alleged 'patterns' in the U.S. price data would have been."[182] "{T}he {Differential Pricing Analysis} is no more probative of the existence of a pattern than a simple roll of the dice."[183] Further, what Commerce has found for other respondents has no bearing on whether Commerce's application of the Differential Pricing Analysis to SeAH has satisfied the statutory requirements which permit Commerce to use an alternative comparison methodology.

Commerce's Position:

Commerce agrees with SeAH that the results found for other companies in other LTFV investigations have no bearing on the results found for SeAH in the *Final Determination*. Nonetheless, the broad picture of Commerce's determinations supports the earlier conclusion that the Differential Pricing Analysis is reasonable in that it compares the frequency of where an alternative comparison methodology is applied to the frequency of where the standard comparison methodology is applied. Commerce applied the standard comparison methodology as a result of

[180] *Id.* at 33.
[181] *Id.* at 35 (quoting Draft Results at 32).
[182] *Id.* at 35.
[183] *Id.* at 35.

its Differential Pricing Analysis in the vast majority of cases in calendar years 2015 and 2021. Commerce selected calendar year 2015, as that is the year in which the *Final Determination* was published, and calendar year 2021, as that is the most recently completed year. We disagree with SeAH's unsupported argument that two years of Commerce's determinations are not reasonably reflective of its practice and are outliers. In fact, the results in calendar year 2015 are consistent with the results in calendar year 2021. Further, SeAH's claim that other years could reveal different results is speculative. SeAH's speculation is not a sufficient basis to disregard the results of the application of Commerce's Differential Pricing Analysis in calendar years 2015 and 2021. SeAH had opportunity to comment on Commerce's analysis in the Draft Results and provided no such rebuttal analysis on Commerce's determination in other years as it alleges in its comments.

The purpose of the Differential Pricing Analysis, like the other approaches before it such as the Nails Test, is to consider whether the A-to-A method applied to all U.S. sales is the appropriate comparison methodology to calculate a respondent's weighted-average dumping margin. In each of the three hypothetical examples discussed in the preceding section, which were focused on the existence of small price variances in the groups, the ultimate outcome was the application of Commerce's standard comparison methodology. First, the Cohen's *d* test found that prices differ significantly; second, the ratio test found the existence of a pattern; and third, the meaningful difference test found no meaningful difference such that the A-to-A method would be used to calculate the weighted-average dumping margin. In the first step, as discussed above, the Cohen's *d* test examines whether the prices differ "significantly." SeAH simply does not like the definition of "significant" difference in the prices where the difference is reasonably measured relative to the variance in the prices within the test and comparison groups, and that Dr. Cohen's

large, 0.8, threshold is used to determine whether a difference is "significant" or not. As noted in the Draft Results, the CAFC held that this approach is reasonable.[184]

In the second step, Commerce applies the ratio test to determine whether there exists a pattern of prices that differ significantly. Specifically, Commerce examines the extent of the sales where prices differ significantly as the ratio of the value of sales whose prices differ significantly to the value of all sales. The CAFC held that "Commerce's ratio test reasonably implements the statutory requirement that Commerce determine where there is 'a pattern of export prices' 'differ{ing} significantly among purchasers, regions, or periods of time' before selecting the average to transaction method.[185] Even though the CAFC has already sustained Commerce's ratio test in this very case, SeAH objects that Commerce includes sales "that 'pass' the Cohen's *d* test, without considering whether those transactions are dumped or not."[186] As a consequence, in SeAH's example, a pattern is found to have existed which leads to the application of an alternative comparison methodology. However, there is no statutory requirement that Commerce must consider whether sales in the test group are dumped, *i.e.*, less than normal value. Section 777A(d)(1)(B) of the Act explicitly provides for "a pattern of export prices (or constructed export prices) for comparable merchandise that differ significantly among purchasers, regions, or periods of time." The statute does not contemplate that this determination includes a comparison with normal value, as in the calculation of dumping margins.[187] Moreover, masked dumping involves

[184] *See Mid Continent Steel & Wire, Inc. v. United States*, 940 F.3d 662, 673 (Fed. Cir. 2019) ("Commerce reasoned that even a small absolute difference in the means of the two groups can be significant (for the present statutory purpose) if there is a small enough dispersion of prices within the overall pool as measured by a proper pooled variance or standard deviation; the 0.8 standard is "widely adopted" as part of a "commonly used measure" of the difference relative to such overall price dispersion; and it is reasonable to adopt that measure where there is no better, objective measure of effect size. We agree with the Trade Court that this rationale adequately supports Commerce's exercise of the wide discretion left to it under {section 777A(d)(1)(B) of the Act}" (citation omitted)).
[185] *See Stupp II*, 5 F.4th at 1355.
[186] *See* SeAH Comments at 28.
[187] *See* section 771(35) of the Act ("The term 'dumping margin' means the amount by which the normal value exceeds the export price or constructed export price of the subject merchandise.").

both dumped sales and those sales that are not dumped, which are the very sales which mask dumping.[188] The statute only provides for comparisons of U.S. price "among purchasers, regions, or time periods" which, accordingly, is the approach in the Cohen's *d* test to determine whether differences in prices are significant. Further, the ratio test accumulates the value of the U.S. sales which pass the Cohen's *d* test, and consistent with the statute, this is not limited to U.S. sales which are dumped.

In the third step, Commerce applies the meaningful difference test to determine whether the A-to-A method can account for such differences where dumping is masked.[189] Commerce measures the extent that the A-to-A method cannot account for such difference by considering the amount of masked dumping which would exist when the A-to-A method is used vis-à-vis when an alternative comparison method is used based on the A-to-T method. The CAFC held that, "At the very least, we cannot say that Commerce's meaningful difference analysis is unreasonable – intuitively, an analysis that compares the methodologies as they would ultimately be applied 'makes sense.'"[190] Further, "We agree that Commerce's chosen methodology reasonably achieves the overarching statutory aim of addressing targeted or masked dumping."[191] Accordingly, when the A-to-A method yields a *de minimis* rate and an alternative comparison method does not yield a *de minimis* rate, or when the relative difference between the two rates is

---

[188] One of the changes that was implemented with the Differential Pricing Analysis over the Nails Test was the recognition that the sale prices which create masked dumping are not only lower priced sales, which may be dumped, but also higher prices sales, which may offset lower priced sales. SeAH's argument, to require that U.S. sales whose prices differ significantly also be dumped, to would thwart this change and ignore the possible impact of higher priced sales to mask dumping. Accordingly, requiring that U.S. sale prices also be dumped would not only be inconsistent with the statute but would also be inconsistent with Commerce's stated purpose of the Differential Pricing Analysis to implement section 777A(d)(1)(B) of the Act.

[189] *See Apex Frozen Foods Private Ltd. v. United States*, 862 F.3d 1337, 1341-42 (Fed. Cir. 2017) ("The statutory exception exists to address 'targeted' or 'masked' dumping." "The driving rationale behind the statutory exception is that targeted dumping is more likely to be occurring where there is a 'pattern of export prices . . . for comparable merchandise that differ significantly among purchasers, regions, or periods of time.'" (citations omitted)).

[190] *Id.*, 862 F.3d at 1349.

[191] *Id.*

at least 25 percent, Commerce finds that the A-to-A method cannot account for such differences, and an alternative comparison methodology based on the A-to-T method may be warranted to calculate a company's weighted-average dumping margin.

In the fourth step, if Commerce has found that both the pattern requirement and the meaningful difference requirement provided in section 777A(d)(1)(B)(i) and (ii) of the Act have been satisfied, then the statute provides that Commerce "may" apply the A-to-T method pursuant to section 777A(d)(1)(B) of the Act. As demonstrated by Commerce's accumulated determinations in 2015 and 2021, Commerce's reliance on an alternative comparison methodology has been judicially applied.

Under the Differential Pricing Analysis, SeAH's U.S. sale prices may differ significantly, and given the circumstances of other prices, Commerce may or may not find that a pattern exists. Further, even if SeAH's U.S. prices exhibit a pattern of prices that differ significantly, given other circumstances about the relationship of SeAH's U.S. prices with normal value, there may or may not be a meaningful amount of masked dumping. Lastly, with the evidence that a pattern exists, and that meaningful masked dumping is present, Commerce will decide which comparison methodology to apply to calculate SeAH's weighted-average dumping margin. Commerce's use of the Differential Pricing Analysis is a deliberative, sequential, and reasonable approach to consider all of the known circumstances concerning a company's sales in the U.S. market to determine an appropriate and accurate assessment of that company's dumping.

VI. FINAL RESULTS OF REDETERMINATION

Consistent with the instructions of the Court and CAFC, Commerce has further explained that its application of the Differential Pricing Analysis, including the Cohen's *d* test, is reasonable. The statistical criteria are not relevant to the Differential Pricing Analysis because the

calculated parameters, including the Cohen's *d* coefficient, are not estimates based on sampled data, but rather are the actual parameters based on the entire universe of sale price data. Likewise, Dr. Cohen's thresholds are not based on the alleged statistical criteria but, rather, on real-world observations. Further, the citations to the literature, which discuss the statistical criteria at issue, relate to a different context, which is inapplicable to Commerce's application of the Cohen's *d* test in its Differential Pricing Analysis. Finally, Commerce's interpretation of the calculated effect sizes, using both the large 0.8 threshold developed by Dr. Cohen as well as the context of Differential Pricing Analysis, is a reasonable approach to address the statutory requirements which permit the application of an alternative comparison methodology pursuant to section 777A(d)(1)(B) of the Act.

4/4/2022

X 

Signed by: RYAN MAJERUS

Ryan Majerus
Deputy Assistant Secretary
for Policy and Negotiations

Attachment I

U.S. Less-Than-Fair-Value Investigations
Final Determinations - Calendar Year 2015

			Preliminary		Final		Amended Final			Comparison	Final
Case Number	Country	Product	FR Pub Date	FR Citation	FR Pub Date	FR Citation	FR Pub Date	FR Citation	Company	Method	Rate
A-570-014	China	53-Foot Domestic Dry Containers	11/26/2014	79 FR 70501	4/17/2015	80 FR 21203			Singamas	A-to-A	111.22
A-570-014	China	53-Foot Domestic Dry Containers	11/26/2014	79 FR 70501	4/17/2015	80 FR 21203			China-Wide Entity (CIMC)	A-to-A	107.19
A-580-874	Korea, Rep	Steel Nails	12/29/2014	79 FR 78051	5/20/2015	80 FR 28955			Daejin Steel	A-to-A	11.80
A-580-874	Korea, Rep	Steel Nails	12/29/2014	79 FR 78051	5/20/2015	80 FR 28955			Jinheung Steel	A-to-A	0.00
A-557-816	Malaysia	Steel Nails	12/29/2014	79 FR 78055	5/20/2015	80 FR 28969			Inmax	AFA	39.35
A-557-816	Malaysia	Steel Nails	12/29/2014	79 FR 78055	5/20/2015	80 FR 28969	6/16/2015	80 FR 34370	Region International	A-to-T	2.66
A-557-816	Malaysia	Steel Nails	12/29/2014	79 FR 78055	5/20/2015	80 FR 28969			Tag Fasteners	AFA	39.35
A-523-808	Oman	Steel Nails	12/29/2014	79 FR 78034	5/20/2015	80 FR 28972			Oman Fasteners	A-to-A	9.10
A-583-854	Taiwan	Steel Nails	12/29/2014	79 FR 78053	5/20/2015	80 FR 28959			Quick Advance	A-to-A	0.00
A-583-854	Taiwan	Steel Nails	12/29/2014	79 FR 78053	5/20/2015	80 FR 28959			PT Enterprises	mixed	2.24
A-552-818	Vietnam	Steel Nails	12/29/2014	79 FR 78058	5/20/2015	80 FR 29622			Region International	AFA	323.99
A-552-818	Vietnam	Steel Nails	12/29/2014	79 FR 78058	5/20/2015	80 FR 29622			United Nail Products	AFA	323.99
A-570-016	China	Passenger Vehicle and Light Truck Tires	1/27/2015	80 FR 4250	6/18/2015	80 FR 34893	8/10/2015	80 FR 47902	Giti Tire	A-to-A	30.74
A-570-016	China	Passenger Vehicle and Light Truck Tires	1/27/2015	80 FR 4250	6/18/2015	80 FR 34893			Sailun Group	A-to-A	14.35
A-570-018	China	Boltless Steel Shelving Units	4/1/2015	80 FR 17409	8/26/2015	80 FR 51779			Zhongda	A-to-A	17.55
A-201-845	Mexico	Sugar	11/3/2014	79 FR 65189	9/23/2015	80 FR 57341			FEESA	A-to-A	40.48
A-201-845	Mexico	Sugar	11/3/2014	79 FR 65189	9/23/2015	80 FR 57341			GAM Group	A-to-A	42.14
A-580-876	Korea, Rep	Welded Line Pipe	5/22/2015	80 fR 29620	10/13/2015	80 FR 61366	11/10/2015	80 FR 69637	Hyundai HYSCO	A-to-T	6.23
A-580-876	Korea, Rep	Welded Line Pipe	5/22/2015	80 fR 29620	10/13/2015	80 FR 61366			SeAH Steel	mixed	2.53
A-489-822	Turkey	Welded Line Pipe	5/22/2015	80 FR 29617	10/13/2015	80 FR 61362			Borusan Istikbal	AFA	22.95
A-489-822	Turkey	Welded Line Pipe	5/22/2015	80 FR 29617	10/13/2015	80 FR 61362			Borusan Mannesmann	AFA	22.95
A-489-822	Turkey	Welded Line Pipe	5/22/2015	80 FR 29617	10/13/2015	80 FR 61362			Cayirova/Yucel	A-to-A	22.95
A-489-822	Turkey	Welded Line Pipe	5/22/2015	80 FR 29617	10/13/2015	80 FR 61362			Toscelik	A-to-A	6.66
A-570-020	China	Melamine	6/18/2015	80 FR 34891	11/6/2015	80 FR 68851			Allied	AFA	363.31
A-570-020	China	Melamine	6/18/2015	80 FR 34891	11/6/2015	80 FR 68851			Golden Elephant	AFA	363.31
A-570-020	China	Melamine	6/18/2015	80 FR 34891	11/6/2015	80 FR 68851			Xinji Jiuyuan	AFA	363.31
A-274-806	Trinidad & Tobago	Melamine	6/17/2015	80 FR 34621	11/6/2015	80 FR 68846			MHTL	A-to-A	172.53

Attachment II

U.S. Less-Than-Fair-Value Investigations
Final Determinations - Calendar Year 2021

			Preliminary		Final		Amended Final			Comparison	Final
Case Number	Country	Product	FR Pub Date	FR Citation	FR Pub Date	FR Citation	FR Pub Date	FR Citation	Company	Method	Rate
A-351-853	Brazil	Wood Mouldings and Millwork Products	8/12/2020	85 FR 48667	1/4/2021	86 FR 70			Araupel	A-to-A	0.00
A-570-117	China	Wood Mouldings and Millwork Products	8/12/2020	85 FR 48669	1/4/2021	86 FR 63	2/16/2021	86 FR 9486	Fujian Yinfeng	A-to-A	45.49
A-570-119	China	Vertical Shaft Engines 225cc to 999cc	8/19/2020	85 FR 51015	1/11/2021	86 FR 1936	3/4/2021	86 FR 12623	Loncin Motor	A-to-A	185.65
A-570-119	China	Vertical Shaft Engines 225cc to 999cc	8/19/2020	85 FR 51015	1/11/2021	86 FR 1936			Zongshen	A-to-A	336.26
A-570-121	China	Difluoromethane (R-32)	8/27/2020	85 FR 52950	1/19/2021	86 FR 5136			Taizhou Qingsong	A-to-A	161.49
A-570-121	China	Difluoromethane (R-32)	8/27/2020	85 FR 52950	1/19/2021	86 FR 5136			Zibo Feiyuan	A-to-A	221.06
A-570-122	China	Corrosion Inhibitors	9/10/2020	85 FR 55825	1/29/2021	86 FR 7532			Jiangyin Delian	A-to-A	130.52
A-570-122	China	Corrosion Inhibitors	9/10/2020	85 FR 55825	1/29/2021	86 FR 7532			Nantong Botao	A-to-A	139.41
A-570-131	China	Twist Ties	12/10/2020	85 FR 79468	2/22/2021	86 FR 10536			Zhenjiang Hongda	AFA	72.96
A-570-131	China	Twist Ties	12/10/2020	85 FR 79468	2/22/2021	86 FR 10536			Zhenjiang Zhonglian	AFA	72.96
A-580-907	Korea, Rep	Ultra-High Polyethylene	10/6/2020	85 FR 63095	2/25/2021	86 FR 11497			Korea Petrochemical	A-to-A	7.84
A-893-001	Bosnia & Herzegovinia	Silicon Metal	12/11/2020	85 FR 80009	2/26/2021	86 FR 11720			R-S So;ocpm D.O.O.	AFA	21.41
A-400-001	Iceland	Silicon Metal	12/11/2020	85 FR 80009	2/26/2021	86 FR 11720			PCC Bakki Silicon	AFA	47.54
A-851-804	Czech Rep	Seamless Standard, Line and Pressure Pipe	12/21/2021	85 FR 83059	3/5/2021	86 FR 12909			Liberty Ostrava	AFA	51.70
A-851-804	Czech Rep	Seamless Standard, Line and Pressure Pipe	12/21/2021	85 FR 83059	3/5/2021	86 FR 12909			Moravia Steel	AFA	51.70
A-525-001	Bahrain	Aluminum Sheet	10/15/2020	85 FR 65372	3/8/2021	86 FR 13331			Gulf Aluminum	A-to-A	4.83
A-351-854	Brazil	Aluminum Sheet	10/15/2020	85 FR 65363	3/8/2021	86 FR 13302			CBA	AFA	137.06
A-351-854	Brazil	Aluminum Sheet	10/15/2020	85 FR 65363	3/8/2021	86 FR 13302			Novelis	A-to-A	49.61
A-891-001	Croatia	Aluminum Sheet	10/15/2020	85 FR 65384	3/8/2021	86 FR 13312			Impol	A-to-T	3.19
A-729-803	Egypt	Aluminum Sheet	10/15/2020	85 FR 65382	3/8/2021	86 FR 13324			Egypt Alum	A-to-A	12.11
A-428-849	Germany	Aluminum Sheet	10/15/2020	85 FR 65386	3/8/2021	86 FR 13318			Hydro Aluminum	AFA	242.80
A-428-849	Germany	Aluminum Sheet	10/15/2020	85 FR 65386	3/8/2021	86 FR 13318			Novelis	A-to-A	49.40
A-484-804	Greece	Aluminum Sheet	10/15/2020	85 FR 65374	3/8/2021	86 FR 13300			Elval Hellenic	A-to-A	0.00
A-533-895	India	Aluminum Sheet	10/15/2020	85 FR 65377	3/8/2021	86 FR 13282			Hindalco	AFA	47.92
A-533-895	India	Aluminum Sheet	10/15/2020	85 FR 65377	3/8/2021	86 FR 13282			Manaksia	A-to-A	0.00
A-560-835	Indonesia	Aluminum Sheet	10/15/2020	85 FR 65356	3/8/2021	86 FR 13304			PT Alumindo	AFA	32.12
A-475-842	Italy	Aluminum Sheet	10/15/2020	85 FR 65342	3/8/2021	86 FR 13309			Laminazione Sottile	A-to-A	0.00
A-475-842	Italy	Aluminum Sheet	10/15/2020	85 FR 65342	3/8/2021	86 FR 13309			Profilglass	AFA	29.13
A-523-814	Oman	Aluminum Sheet	10/15/2020	85 FR 65340	3/8/2021	86 FR 13328			Oman Aluminum	A-to-A	5.29
A-485-809	Romania	Aluminum Sheet	10/15/2020	85 FR 65358	3/8/2021	86 FR 13320			Alro	AFA	37.26
A-801-001	Serbia	Aluminum Sheet	10/15/2020	85 FR 65386	3/8/2021	86 FR 13295			Impol	A-to-A	11.67
A-801-001	Serbia	Aluminum Sheet	10/15/2020	85 FR 65386	3/8/2021	86 FR 13295			Otovici Doo	AFA	25.84
A-856-001	Slovenia	Aluminum Sheet	10/15/2020	85 FR 65349	3/8/2021	86 FR 13305			Impol	A-to-A	13.43
A-791-825	South Africa	Aluminum Sheet	10/15/2020	85 FR 65351	3/8/2021	86 FR 13287			Hulamin	A-to-A	8.85
A-580-906	Korea, Rep	Aluminum Sheet	10/15/2020	85 FR 65354	3/8/2021	86 FR 13307			Novelis	A-to-A	0.00
A-469-820	Spain	Aluminum Sheet	10/15/2020	85 FR 65367	3/8/2021	86 FR 13298			Aludium Transformacion	AFA	3.80
A-469-820	Spain	Aluminum Sheet	10/15/2020	85 FR 65367	3/8/2021	86 FR 13298			Valenciana	AFA	24.23
A-583-867	Taiwan	Aluminum Sheet	10/15/2020	85 FR 65361	3/8/2021	86 FR 13293			CS Aluminum	A-to-A	17.50
A-489-839	Turkey	Aluminum Sheet	10/15/2020	85 FR 65346	3/8/2021	86 FR 13326			Assan	A-to-T	2.02
A-489-839	Turkey	Aluminum Sheet	10/15/2020	85 FR 65346	3/8/2021	86 FR 13326			Teknik	A-to-A	13.56
A-570-124	China	Vertical Shaft Engines 99cc to 225cc	10/21/2020	85 FR 66932	3/12/2021	86 FR 14077			Kohler Engines	A-to-A	374.31
A-570-124	China	Vertical Shaft Engines 99cc to 225cc	10/21/2020	85 FR 66932	3/12/2021	86 FR 14077			Zongshen	A-to-A	316.88
A-570-126	China	Non-Refillable Cylinders	10/30/2020	85 FR 68852	3/22/2021	86 FR 15188			Sanjiang	A-to-A	93.09
A-570-126	China	Non-Refillable Cylinders	10/30/2020	85 FR 68852	3/22/2021	86 FR 15188			Wuyi Xilinde	A-to-A	74.33
A-555-001	Cambodia	Mattresses	11/3/2020	85 FR 69594	3/25/2021	86 FR 15894	5/14/2021	86 FR 26460	Best Mattresses	A-to-A	52.41
A-560-836	Indonesia	Mattresses	11/3/2020	85 FR 69597	3/25/2021	86 FR 15899			Zinus Global	mixed	2.22
A-557-818	Malaysia	Mattresses	11/3/2020	85 FR 69574	3/25/2021	86 FR 15901			Delandis	AFA	42.92
A-557-818	Malaysia	Mattresses	11/3/2020	85 FR 69574	3/25/2021	86 FR 15901			Far East Foam	AFA	42.92
A-557-818	Malaysia	Mattresses	11/3/2020	85 FR 69574	3/25/2021	86 FR 15901			Vision Foam	AFA	42.92
A-801-002	Serbia	Mattresses	11/3/2020	85 FR 69589	3/25/2021	86 FR 15892			Healthcare Europe	A-to-A	112.11
A-549-841	Thailand	Mattresses	11/3/2020	85 FR 69568	3/25/2021	86 FR 15928			Nisco (Thailand)	AFA	763.28
A-549-841	Thailand	Mattresses	11/3/2020	85 FR 69568	3/25/2021	86 FR 15928			Saffron Living	A-to-A	37.48
A-489-841	Turkey	Mattresses	11/3/2020	85 FR 69571	3/25/2021	86 FR 15917			BRN Yatak	A-to-A	20.03
A-552-827	Vietnam	Mattresses	11/3/2020	85 FR 69591	3/25/2021	86 FR 15889			Ashley Group	A-to-A	144.92
A-552-827	Vietnam	Mattresses	11/3/2020	85 FR 69591	3/25/2021	86 FR 15889			Vietnam Glory	AFA	668.38
A-560-837	Indonesia	Prestressed Concrete Steel Wire Strand	11/19/2020	85 FR 73676	4/9/2021	86 FR 18495			PT Kingdom Indah	A-to-A	5.76
A-560-837	Indonesia	Prestressed Concrete Steel Wire Strand	11/19/2020	85 FR 73676	4/9/2021	86 FR 18495			PT Bumi Steel	AFA	72.28
A-475-843	Italy	Prestressed Concrete Steel Wire Strand	11/19/2020	85 FR 73679	4/9/2021	86 FR 18505			WBO Italcables	mixed	3.59
A-475-843	Italy	Prestressed Concrete Steel Wire Strand	11/19/2020	85 FR 73679	4/9/2021	86 FR 18505			CB Trafilati	AFA	19.26
A-557-819	Malaysia	Prestressed Concrete Steel Wire Strand	11/19/2020	85 FR 73685	4/9/2021	86 FR 18502			Kiswire	A-to-T	3.94
A-557-819	Malaysia	Prestressed Concrete Steel Wire Strand	11/19/2020	85 FR 73685	4/9/2021	86 FR 18502			Southern PC Steel	AFA	26.95
A-557-819	Malaysia	Prestressed Concrete Steel Wire Strand	11/19/2020	85 FR 73685	4/9/2021	86 FR 18502			Wei Dat Steel Wire	A-to-T	6.42
A-791-826	South Africa	Prestressed Concrete Steel Wire Strand	11/19/2020	85 FR 73674	4/9/2021	86 FR 18497			Scaw Metals	AFA	155.10
A-469-821	Spain	Prestressed Concrete Steel Wire Strand	11/19/2020	85 FR 73683	4/9/2021	86 FR 18512			TYCSA	A-to-A	14.75
A-723-001	Tunisia	Prestressed Concrete Steel Wire Strand	11/19/2020	85 FR 73681	4/9/2021	86 FR 18508			Maklada	A-to-A	30.58
A-823-817	Ukraine	Prestressed Concrete Steel Wire Strand	11/19/2020	85 FR 73688	4/9/2021	86 FR 18498			PJSC	A-to-A	19.30
A-427-831	France	Methionine	3/4/2021	86 FR 12627	5/17/2021	86 FR 26697			Adisseo	AFA	43.82
A-570-135	China	Certain Chassis and Subassemblies Thereof	3/4/2021	86 FR 12616	5/17/2021	86 FR 26694			CIMC	AFA	188.05
A-570-135	China	Certain Chassis and Subassemblies Thereof	3/4/2021	86 FR 12616	5/17/2021	86 FR 26694			Fuwa	AFA	188.05
A-570-129	China	Lawn Mowers	12/30/2020	85 FR 86529	5/20/2021	86 FR 27384			Nigbo Daye	A-to-A	98.73
A-552-830	Vietnam	Lawn Mowers	12/30/2020	85 FR 86534	5/20/2021	86 FR 27382			Ducar Technology	A-to-A	148.35
A-580-908	Korea, Rep	Passenger and Light Truck Tires	1/6/2021	86 FR 501	5/27/2021	86 FR 28569			Hankook	A-to-A	27.05
A-580-908	Korea, Rep	Passenger and Light Truck Tires	1/6/2021	86 FR 501	5/27/2021	86 FR 28569			Nexen	mixed	14.72
A-583-869	Taiwan	Passenger and Light Truck Tires	1/6/2021	86 FR 508	5/27/2021	86 FR 28563			Cheng Shin Rubber	A-to-T	20.04
A-583-869	Taiwan	Passenger and Light Truck Tires	1/6/2021	86 FR 508	5/27/2021	86 FR 28563			Nankang Rubber	A-to-A	101.84
A-549-842	Thailand	Passenger and Light Truck Tires	1/6/2021	86 FR 517	5/27/2021	86 FR 28548			LLIT	A-to-A	21.09
A-549-842	Thailand	Passenger and Light Truck Tires	1/6/2021	86 FR 517	5/27/2021	86 FR 28548	7/19/2021	86 FR 38011	Sumitomo Rubber	mixed	14.59
A-552-828	Vietnam	Passenger and Light Truck Tires	1/6/2021	86 FR 504	5/27/2021	86 FR 28559			Kenda Rubber	A-to-A	0.00
A-552-828	Vietnam	Passenger and Light Truck Tires	1/6/2021	86 FR 504	5/27/2021	86 FR 28559			Sailun	A-to-A	0.00
A-201-853	Mexico	Standard Steel Welded Wire Mesh	2/1/2021	86 FR 7710	6/23/2021	86 FR 32891			Aceromex	A-to-A	23.04
A-201-853	Mexico	Standard Steel Welded Wire Mesh	2/1/2021	86 FR 7710	6/23/2021	86 FR 32891			Deacero	AFA	110.42
A-557-820	Malaysia	Silicon Metal	2/1/2021	86 FR 7701	6/24/2021	86 FR 33224			PMB Silicon	A-to-A	12.27
A-469-823	Spain	Wind Towers	4/2/2021	86 FR 17354	6/25/2021	86 FR 33656			Vestas Eolica	AFA	73.00
A-552-831	Vietnam	Seamless Refined Copper Pipe and Tube	2/1/2021	86 FR 7698	6/24/2021	86 FR 33228			Hailiang Vietnam	mixed	8.35
A-580-909	Korea, Rep	Seamless Standard, Line and Pressure Pipe	2/10/2021	86 FR 8887	7/2/2021	86 FR 35274			ILJIN Steel	A-to-T	4.48
A-821-826	Russia	Seamless Standard, Line and Pressure Pipe	2/10/2021	86 FR 8891	7/2/2021	86 FR 35269			TMK	A-to-A	209.72
A-823-819	Ukraine	Seamless Standard, Line and Pressure Pipe	2/10/2021	86 FR 8889	7/2/2021	86 FR 35272			Interpipe	A-to-A	23.75
A-570-133	China	Certain Metal Lockers and Parts Thereof	2/11/2021	86 FR 9051	7/7/2021	86 FR 35737			Hangzhou Jusheng	A-to-A	0.00
A-570-133	China	Certain Metal Lockers and Parts Thereof	2/11/2021	86 FR 9051	7/7/2021	86 FR 35737			Zhejiang Xingyi	A-to-A	21.25
A-588-879	Japan	Methionine	3/4/2021	86 FR 12625	7/23/2021	86 FR 38983			Sumitomo Chemical	A-to-A	76.60
A-469-822	Spain	Methionine	3/4/2021	86 FR 12614	7/23/2021	86 FR 38985			Adisseo	A-to-A	37.53
A-831-804	Armenia	Aluminum Foil	5/4/2021	86 FR 23672	9/23/2021	86 FR 52882			Rusal Armenal	A-to-A	29.11
A-351-856	Brazil	Aluminum Foil	5/4/2021	86 FR 23678	9/23/2021	86 FR 52886			Arconic	AFA	63.05
A-351-856	Brazil	Aluminum Foil	5/4/2021	86 FR 23678	9/23/2021	86 FR 52886			CBA	A-to-A	13.93
A-523-815	Oman	Aluminum Foil	5/4/2021	86 FR 23681	9/23/2021	86 FR 52876			Oman Aluminum	A-to-A	3.89
A-821-828	Russia	Aluminum Foil	5/4/2021	86 FR 23683	9/23/2021	86 FR 52878			Rusal Armenal	AFA	62.18
A-489-844	Turkey	Aluminum Foil	5/4/2021	86 FR 23686	9/23/2021	86 FR 52880			Assan/Kabir/Ispak	A-to-T	2.28
A-428-850	Germany	Thermal Paper	5/12/2021	86 FR 26001	9/30/2021	86 FR 54152			Koehler	A-to-T	2.90
A-588-880	Japan	Thermal Paper	5/12/2021	86 FR 26011	9/30/2021	86 FR 54157			Nippon Paper	AFA	140.25
A-580-911	Korea, Rep	Thermal Paper	5/12/2021	86 FR 26007	9/30/2021	86 FR 54154			Hansol Paper	A-to-A	6.19
A-469-824	Spain	Thermal Paper	5/12/2021	86 FR 26003	9/30/2021	86 FR 54162			Torraspapel	AFA	41.45
A-533-897	India	Wind Towers	5/24/2021	86 FR 27829	10/13/2021	86 FR 56890			Vestas India	AFA	54.03
A-557-821	Malaysia	Wind Towers	5/24/2021	86 FR 27828	10/13/2021	86 FR 56894			CS Wind Malaysia	mixed	3.20
A-560-838	Indonesia	Polyester Textured Yarn	6/3/2021	86 FR 29742	10/25/2021	86 FR 58875			Polyfin Canggih	AFA	26.07
A-560-838	Indonesia	Polyester Textured Yarn	6/3/2021	86 FR 29742	10/25/2021	86 FR 58875			Asia Pacific Fibers	AFA	26.07
A-560-838	Indonesia	Polyester Textured Yarn	6/3/2021	86 FR 29742	10/25/2021	86 FR 58875			Mutu Gading Tekstil	A-to-A	7.47
A-557-823	Malaysia	Polyester Textured Yarn	6/3/2021	86 FR 29748	10/25/2021	86 FR 58869			Recron Malaysia	A-to-A	8.50
A-549-843	Thailand	Polyester Textured Yarn	6/3/2021	86 FR 29746	10/25/2021	86 FR 58883			Sunflag Thailand	A-to-A	14.47
A-549-843	Thailand	Polyester Textured Yarn	6/3/2021	86 FR 29746	10/25/2021	86 FR 58883			Jong Stit	AFA	56.80
A-552-832	Vietnam	Polyester Textured Yarn	6/3/2021	86 FR 29750	10/25/2021	86 FR 58877			Century	A-to-T	2.58

Attachment III

CAFC Stupp Hypothetical Example
(5 F.4th 1341, 1359)

Differential Pricing Analysis

Calculation Number 1 - Normal Value = Largest U.S. Prcie

Cohen's *d* Test

	Purchaser									
Sale	1	2	3	4	5	6	7	8	9	10
I	100.01	99.94	100.04	100.50	100.01	100.77	100.44	99.98	100.21	100.99
II	100.01	99.94	100.04	100.50	100.01	100.77	100.44	99.98	100.21	100.99
III	100.01	99.94	100.04	100.50	100.01	100.77	100.44	99.98	100.21	100.99
IV	100.01	99.94	100.04	100.50	100.01	100.77	100.44	99.98	100.21	100.99
V	99.99	99.92	100.06	100.48	99.99	100.79	100.42	100.00	100.19	101.01
Mean - Test Grp	100.0060	99.9360	100.0440	100.4960	100.0060	100.7740	100.4360	99.9840	100.2060	100.9940
Std Dev - Test Grp	0.0080	0.0080	0.0080	0.0080	0.0080	0.0080	0.0080	0.0080	0.0080	0.0080
Mean - Comp Grp	100.3196	100.3273	100.3153	100.2651	100.3196	100.2342	100.2718	100.3220	100.2973	100.2098
Std Dev - Comp Grp	0.3580	0.3503	0.3614	0.3642	0.3580	0.3299	0.3678	0.3558	0.3704	0.2766
Mean Diff	0.3136	0.3913	0.2713	0.2309	0.3136	0.5398	0.1642	0.3380	0.0913	0.7842
Pooled Std Dev	0.2532	0.2477	0.2556	0.2576	0.2532	0.2334	0.2602	0.2516	0.2619	0.1957
d Coefficient	1.2383	1.5796	1.0614	0.8962	1.2383	2.3129	0.6312	1.3432	0.3487	4.0081
	Pass	**Pass**	**Pass**	**Pass**	**Pass**	**Pass**	**Fail**	**Pass**	**Fail**	**Pass**

Ratio Test

U.S. Value Pass	500.03	499.68	500.22	502.48	500.03	503.87	0.00	499.92	0.00	504.97

Total U.S. Value Pass	4011.20
Total U.S. Value	5014.41
Ratio	**79.99%**

Confirms a Pattern of Prices that Differ Signficantly

Meaningful Difference Test

Normal Value	101.01

A-to-A Method

Avg U.S. Price	100.2882
Total Dumping	36.09
Total U.S. Value	5014.41
W-A Dump Marg	**0.7197%**

A-to-T Method

A-to-T Dumping Margins

	Purchaser									
Sale	1	2	3	4	5	6	7	8	9	10
I	1.00	1.07	0.97	0.51	1.00	0.24	0.57	1.03	0.80	0.02
II	1.00	1.07	0.97	0.51	1.00	0.24	0.57	1.03	0.80	0.02
III	1.00	1.07	0.97	0.51	1.00	0.24	0.57	1.03	0.80	0.02
IV	1.00	1.07	0.97	0.51	1.00	0.24	0.57	1.03	0.80	0.02
V	1.02	1.09	0.95	0.53	1.02	0.22	0.59	1.01	0.82	0.00

Total Dumping	36.09
Total U.S. Value	5014.41
W-A Dump Marg	**0.7197%**

No Meaningful Difference

CAFC Stupp Hypothetical Example
(5 F.4th 1341, 1359)

Differential Pricing Analysis

Calculation Number 2 - Normal Value = Average U.S. Prcie

Cohen's *d* Test

	Purchaser									
Sale	1	2	3	4	5	6	7	8	9	10
I	100.01	99.94	100.04	100.50	100.01	100.77	100.44	99.98	100.21	100.99
II	100.01	99.94	100.04	100.50	100.01	100.77	100.44	99.98	100.21	100.99
III	100.01	99.94	100.04	100.50	100.01	100.77	100.44	99.98	100.21	100.99
IV	100.01	99.94	100.04	100.50	100.01	100.77	100.44	99.98	100.21	100.99
V	99.99	99.92	100.06	100.48	99.99	100.79	100.42	100.00	100.19	101.01
Mean - Test Grp	100.0060	99.9360	100.0440	100.4960	100.0060	100.7740	100.4360	99.9840	100.2060	100.9940
Std Dev - Test Grp	0.0080	0.0080	0.0080	0.0080	0.0080	0.0080	0.0080	0.0080	0.0080	0.0080
Mean - Comp Grp	100.3196	100.3273	100.3153	100.2651	100.3196	100.2342	100.2718	100.3220	100.2973	100.2098
Std Dev - Comp Grp	0.3580	0.3503	0.3614	0.3642	0.3580	0.3299	0.3678	0.3558	0.3704	0.2766
Mean Diff	0.3136	0.3913	0.2713	0.2309	0.3136	0.5398	0.1642	0.3380	0.0913	0.7842
Pooled Std Dev	0.2532	0.2477	0.2556	0.2576	0.2532	0.2334	0.2602	0.2516	0.2619	0.1957
d Coefficient	1.2383	1.5796	1.0614	0.8962	1.2383	2.3129	0.6312	1.3432	0.3487	4.0081
	Pass	**Pass**	**Pass**	**Pass**	**Pass**	**Pass**	**Fail**	**Pass**	**Fail**	**Pass**

Ratio Test

U.S. Value Pass	500.03	499.68	500.22	502.48	500.03	503.87	0.00	499.92	0.00	504.97

Total U.S. Value Pass	4011.20
Total U.S. Value	5014.41
Ratio	**79.99%**

Confirms a Pattern of Prices that Differ Signficantly

Meaningful Difference Test

Normal Value 100.2882

A-to-A Method

Avg U.S. Price	100.2882
Total Dumping	0.00
Total U.S. Value	5014.41
W-A Dump Marg	**0.0000%**

A-to-T Method

A-to-T Dumping Margins

	Purchaser									
Sale	1	2	3	4	5	6	7	8	9	10
I	0.28	0.35	0.25	0.00	0.28	0.00	0.00	0.31	0.08	0.00
II	0.28	0.35	0.25	0.00	0.28	0.00	0.00	0.31	0.08	0.00
III	0.28	0.35	0.25	0.00	0.28	0.00	0.00	0.31	0.08	0.00
IV	0.28	0.35	0.25	0.00	0.28	0.00	0.00	0.31	0.08	0.00
V	0.30	0.37	0.23	0.00	0.30	0.00	0.00	0.29	0.10	0.00

Total Dumping	7.74
Total U.S. Value	5014.41
W-A Dump Marg	**0.1543%**

No Meaningful Difference

Attachment IV

SeAH Hypothetical Example
(SeAH Comments at 26-30)

Differential Pricing Analysis

Cohen's *d* Test

	Product 1		Product 2	
	Customer		Customer	
Sale	1	2	1	2
I	99.999	100.000	90.000	90.000
II	100.000	100.000	110.000	110.000
III	100.000	100.000		
IV	100.000	100.000		

Mean - Test Grp	99.999750	100.000000	100.000000	100.000000
Std Dev - Test Grp	0.000433	0.000000	10.000000	10.000000
Mean - Comp Grp	100.000000	99.999750	100.000000	100.000000
Std Dev - Comp Grp	0.000000	0.000433	10.000000	10.000000

Mean Diff	0.000250	0.000250	0.000000	0.000000
Pooled Std Dev	0.000306	0.000306	10.000000	10.000000
d Coefficient	0.8165	0.8165	0.0000	0.0000
	Pass	**Pass**	**Fail**	**Fail**

Ratio Test

U.S. Value Pass	400.00	400.00	0.00	0.00

Total U.S. Value Pass	800.00	
Total U.S. Value	1200.00	
Ratio	**66.67%**	**Confirms a Pattern of Prices that Differ Signficantly**

Meaningful Difference Test

Normal Value	100.00		100.00
A-to-A Method			
Avg U.S. Price	99.999875		100.000000
Total Dumping	0.001000		0.000000
Total U.S. Value	799.999000		400.000000
W-A Dump Marg		**0.0001%**	

A-to-T Method

A-to-T Dumping Margins

	Product 1		Product 2	
	Customer		Customer	
Sale	1	2	1	2
I	0.001000	0.000000	10.000000	10.000000
II	0.000000	0.000000	0.000000	0.000000
III	0.000000	0.000000		
IV	0.000000	0.000000		

Total Dumping	0.001000		20.000000
Total U.S. Value	799.999000		400.000000
W-A Dump Marg		**1.6668%**	**No Meaningful Difference**