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**COMMENTS ON THE DEPARTMENT'S PROPOSED
MODIFICATION TO THE ARM'S LENGTH TEST
FOR ANTIDUMPING PROCEEDINGS
(67 Fed. Reg. 53339)**

**SUBMITTED ON BEHALF OF
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STEEL CORPORATION, SUMITOMO METAL INDUSTRIES, LTD.,
KOBE STEEL, LTD., AND NISSHIN STEEL CO., LTD., AND JAPAN
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INTRODUCTION

On August 15, 2002, the U.S. Department of Commerce published a request for public comment on a proposed modification of its practice of determining whether sales to affiliated parties are made in the ordinary course of trade and thus may be used in calculating normal value in antidumping proceedings.¹ The Department is revising its methodology in response to findings of the World Trade Organization's dispute settlement body that the current test violates provisions of the WTO Antidumping Agreement.² To remedy these inconsistencies, the Department proposes to replace its existing practice known as the "99.5 percent" test with another standard rule that excludes sales to affiliates that are priced at less than or equal to 98 percent or greater than or equal to 102 percent of sales to unaffiliated parties.

On behalf of Nippon Steel Corporation, NKK Corporation, Kawasaki Steel Corporation, Sumitomo Metal Industries, Ltd., Kobe Steel, Ltd., and Nisshin Steel Co., Ltd., and the Japan Iron and Steel Federation, we hereby submit comments on the proposed revisions to the Department's arm's length test. We respond to the Department's proposed methodology, as well as its criticisms of other alternatives.³ We first discuss conceptual flaws with the proposed methodology, as well as real-world problems with this approach. Finally, we make several recommendations. In particular, we suggest changes to the Department's proposal, but also recommend that the Department permit alternative tests where warranted.

¹ *Antidumping Proceedings: Affiliated Party Sales in the Ordinary Course of Trade*, 67 Fed. Reg. 53339 (Aug. 15, 2002).

² *Id.* at 53339-40.

³ *Id.* at 53340-41.

I. THE PROPOSED ARM'S LENGTH DOES NOT RESOLVE ALL DISTORTIONS

A. The Proposed Methodology

The Department's request for comments revised the current arm's length test, previously known as the "99.5 percent" test. The proposed rule provides that for each affiliated customer, the Department compares total sales prices to the customer (weight-averaged by CONNUM) to sales prices to unaffiliated customer (weight-averaged by CONNUM) of identical merchandise and calculates a percentage price difference or ratio for each CONNUM-specific comparison. The CONNUM-specific ratio results are aggregated for each affiliated customer by calculating a customer-specific total weighted-average affiliated/unaffiliated price ratio. If the customer-specific affiliated/unaffiliated ratio is less than or equal to 98 percent or greater than or equal to 102 percent, the Department will reject *all sales* to that affiliated customer as not at arm's length and will exclude them from further analysis.

If the Department is unable to compare the mean price of a certain CONNUM sold to an affiliated customer to the mean price for the identical merchandise as sold to an unaffiliated customer, the Department excludes *all sales of that CONNUM to the affiliated customer* from the analysis by setting the affiliated customer-specific percent ratio to missing (.). In another variation of the test, the Department adheres to basically the same methodology. However, if it is unable to compare the mean price *for any CONNUM sold to a affiliated customer* to the mean price for the identical merchandise as sold to an unaffiliated customer, the Department makes an adverse assumption and considers *all sales of the CONNUM* to the affiliated customer to have the worst possible percentage ratio by setting the CONNUM-specific percent ratio to zero (0).⁴

⁴ This portion of the methodology is not addressed in the proposed rule, but is derived from the Department's current 99.5 percent rule. We assume that the Department would continue to apply this assumption with its proposed rule.

Note also that the difference between the two approaches is at what point the Department applies its adverse assumption. In the first example, the Department sets the *customer-specific* ratio to missing. In the second example, the Department sets the *CONNUM-specific* ratio to zero.

B. Conceptual Flaws With The Proposed Methodology

The quantitative basis of the Department's current test is the calculation of CONNUM-specific and affiliated customer-specific percent ratios. Unfortunately, the proposed 98/102 percent test is too narrow and therefore does not adequately recognize variability within a respondent's data. The ratio's failure to capture actual pricing practices produces results that distort commercial reality and lead to the inappropriate rejection of bona fide arm's length sales.

For example, as illustrated below, even if a foreign manufacturer sells from a price list and *charges exactly the same price for a CONNUM to both affiliated and unaffiliated customers*, the proposed arm's length test will distort this commercial reality and actually result in a ratio less than 98 percent.

Hypothetical Scenario: The Respondent's Sales Prices are Identical to Both Affiliated and Unaffiliated Customers

| | To Unaffiliated Customers | | To the Affiliated Customer | |
|------------|---------------------------|----------|----------------------------|----------|
| | Price | Quantity | Price | Quantity |
| Quarter 1 | 100 | 40 | 100 | 90 |
| Quarter 2 | 110 | 65 | 110 | 70 |
| Quarter 3 | 110 | 70 | 110 | 65 |
| Quarter 4 | 120 | 90 | 120 | 40 |
| Mean Price | 111.89 | | 108.11 | |
| PCT Ratio | 96.36% | | | |

Under the above scenario, the percent ratio falls below 98 percent simply because the quantities in different periods of time vary. All sales therefore would fail the arm's length test even though the prices charged to affiliated and unaffiliated customers were exactly the same. By simply calculating the ratio between two mean prices and applying a restrictively narrow range, the Department's proposed test does not account for pricing practices that are otherwise clearly at arm's length.

C. Real-World Flaws With The Proposed Test

The Department selected a fixed range of 98-102 percent of prices to unaffiliated customers. A wider range ? preferably a 90-110 percent range ? would better reflect commercial reality. Ten percent price differences normally occur in the real business world. Customers with strong bargaining power can easily obtain 5-7 percent discounts. Volume discounts often exceed 5 percent. Indeed, if the subject merchandise is tailor-made, such as heavy industry machinery or bearings, the price of exactly the same products differ by more than 10 percent among customers. A 90-110 percent range would better account for this commercial reality.

II. ADDITIONAL REVISIONS TO THE DEPARTMENT'S PROPOSED METHODOLOGY WOULD IMPROVE THE FAIRNESS AND RELIABILITY OF THE TEST

Some additional adjustments to the Department's proposed approach would cure the fundamental problems with the 98/102 percent rule. First, as discussed above, a 90/110 percent rule would be more appropriate, disregarding only those sales to affiliates that are truly dissimilar from unaffiliated transactions. Second, for CONNUMs that are sold only to affiliated or unaffiliated customers, the Department currently assumes that these sales are not arm's length. Rather, the Department should adopt a fairer methodology for such sales. Third, alternative approaches should be permitted, placing the burden on respondents to justify use of other methods. Fourth, the Department should consider applying the arm's length test only where actual control exists between affiliates. And, fifth, once a methodology is selected, the Department should apply that same methodology in the original investigation and subsequent administrative reviews to ensure fair and consistent analysis throughout a case. We discuss each below.

A. Base the Arm's Length Test on a Range of 90-110 Percent

As demonstrated above, the Department's proposed 98/102 percent rule is too narrow because it disregards sales that are otherwise based on sound commercial practices. A price swing of only 2 percent does not account for common pricing practices (with affiliated *and* unaffiliated customers), such as large customer and volume discounts that are often as much as 10 percent of the initial price. Rather than base the proposed rule on such commercial realities, the Department selected an arbitrary percentage range that unfairly narrows the band of sales to affiliates that would pass the test. The Department itself noted that one of its goals was to ensure that the revised arm's length test was not overly restrictive.⁵ To avoid unnecessarily disregarding bona fide sales to affiliated resellers, the Department should adopt a test that keeps sales to affiliates that are priced at more than or equal to 90 percent or less than or equal to 110 percent of prices to unaffiliated customers.

B. Address CONNUMs That Are Sold Only to Affiliated or Unaffiliated Customers

Under the current arm's length test, the Department essentially penalizes a respondent that does not sell the same product (CONNUM) both to the affiliated and unaffiliated customers. Generally, the Department will only conduct an arm's length test if sales made to the affiliated customers are of the same CONNUMs as sales made to unaffiliated customers. If there are CONNUMs sold to an affiliated customer but not to an unaffiliated customer, the current arm's length test simply ignores sales of these products. And if the sales to the affiliated customer only consist of products not also sold to unaffiliated customers, the Department simply assumes that all sales made to the affiliated customer fail the arm's length test.

The Department does not propose to change this aspect of the arm's length calculation methodology. However, the Department's approach is distortive by making an unjustifiable assumption that sales of the particular CONNUM were not made at arm's length.

⁵ *Antidumping Proceedings: Affiliated Party Sales in the Ordinary Course of Trade*, 67 Fed. Reg. at 53340.

We suggest that the Department adopt a fairer methodology. We propose that if the Department adopts its current proposal, it should revise the programming language to set the ratio to 100, which is in the middle of the fixed percent band, to be averaged with other CONNUMs.⁶ Doing so would avoid using an unwarranted adverse assumption that these sales are outside the ordinary course of trade.

C. Permit Alternative Methodologies That Are Reasonable And Easy To Administer

As with the current arm's length test, the Department proposes utilizing a single revised methodology *in all cases*. In some cases, a mechanical percentage ratio may be too inflexible, ignoring underlying data on the record. We believe that a better approach would be to allow more refined arm's-length tests to be employed if (1) specifically requested by respondent and (2) demonstrated to be easy to administer. If the respondent fails to demonstrate the reasonableness and administerability of the alternative test, then the Department may revert to its proposed use of a fixed percent range.

In its request for comments, the Department noted that other alternative approaches were considered, including automatic exclusion of all affiliated party sales, statistical testing (*e.g.*, standard deviation, difference in means, and nonparametric tests), a broader-band test, and a quantity-cushion test.⁷ The Department should not summarily dismiss other options to the proposed rule. For example, during the underlying hot-rolled steel investigation, one of the respondents recommended applying an arm's length test based on the statistical concept of standard deviation.⁸ As explained in **Attachments 1-3**, a standard deviation based test perhaps

⁶ For purposes the standard deviation test discussed below, we suggest setting the standard deviation to zero or equivalent to prices to unaffiliated customers.

⁷ *Antidumping Proceedings: Affiliated Party Sales in the Ordinary Course of Trade*, 67 Fed. Reg. at 53340-41.

⁸ During the course of the hot-rolled steel antidumping investigation which precipitated the Government of Japan's WTO appeal of the Department's arm's length test, NKK Corporation demonstrated that a standard deviation based test was more appropriate than the Department's test. NKK used data on the record to show that (1) the Department's test does not adequately consider the variability of pricing data, which a standard deviation test is designed to evaluate; (2) standard deviation is a widely accepted and reliable statistical tool; and (3) a standard deviation based test is ease to administer requiring essentially the same level of detail currently used in the Department's SAS programming. We respectfully request that when the Department reexamines the dumping

like other alternative approaches ? may be a better indicator of outlier transactions that should be excluded from the dumping calculation. Respondents would be free to argue that other tests may also be reasonable and equally easy to administer, on a case-by-case basis.

D. The Department Should Consider Applying the Arm's Length Test Only to Sales With Affiliated Companies Where Actual Control Exists

Currently, the Department applies the statutory standard for affiliation to determine when the arm's length test is applied to sales to affiliated resellers. The standard is rather low, assuming that only 5 percent of common ownership (among other things) is indicative of control between companies. However, in the context of the arm's length test ? with which the Department attempts to evaluate how companies use affiliations to manipulate prices ? a higher standard of affiliation may be appropriate. For example, many countries' accounting and financial standards assume control where one company holds more than 50 percent of the voting rights of another, requiring consolidation of the affiliate in the parent company's financial statements.

Similarly, the Department could assume that affiliates with cross-ownership of more than 50 percent are within the respondent's control. Affiliates with cross-ownership of less than 50 percent would be presumptively independent (absent other evidence to the contrary). The arm's length test therefore would be appropriate only where control exists to ensure that the parent is not using sales to the affiliate to undermine the dumping calculation.

We note that the statute does not mandate use of an arm's length test to decide whether sales to affiliated parties should be disregarded for purposes of calculating normal value. Section 773(a)(5) authorizes the Department to use downstream sales of affiliated parties, but does not require use of such sales in every instance. Section 773(a)(1)(B)(i) establishes that only those sales in the ?ordinary course of trade? may be used as the basis of normal value. Admittedly, sales to affiliated parties may not always fit this description, but the provision does

margins in the hot-rolled steel case, it revisit NKK's arguments and consider applying its proposed methodology.

not address affiliated parties specifically. Therefore, it is within the Department's discretion to determine when application of the arm's length test is appropriate.

For purposes of its final rule on the arm's length test, we urge the Department to consider requiring application of the test only to affiliates with which the respondent has cross-ownership of 50 percent or more. This rule is consistent with the intent of the statute and the Department's practice with respect to affiliated customers.

E. The Department Should Apply the Same Test for Original Investigations and Subsequent Administrative Reviews

The Department's request for comments did not indicate whether the same test would be applied in investigations and subsequent administrative reviews. In other instances (*e.g.*, the *de minimis* standard), the Department applies a different rule at different phases of the same case. However, some predictability should be assured by explicitly stating that the same test would be applied throughout a case (*i.e.*, investigations and reviews) absent a showing that a change is warranted.

* * * *

We appreciate the opportunity to comment on the Department's proposed modification to its practice concerning sales to affiliated home market customers. If you have any questions about these comments, please contact one of the undersigned.

Respectfully submitted,

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Corporation, Kawasaki Steel Corporation,
Sumitomo Metal Industries, Ltd., Kobe
Steel, Ltd., and Nisshin Steel Co., Ltd., and
the Japan Iron and Steel Federation

ATTACHMENT 1:
Discussion of an Alternative Arm's Length
Test Based on Standard Deviation

Discussion of an Alternative Arm's Length Test Based on Standard Deviation

One respondent in the underlying antidumping investigation of hot-rolled steel from Japan proposed an alternative methodology for determining which affiliated party sales were at arm's length. The proposed test was based on the statistical concept of standard deviation. A key question that the arm's length test is meant to answer is the degree of pricing variability. If all the prices to unaffiliated customers are consistently at 100, it might make sense to say that a price to an affiliated customer of 85 is somehow suspect. Yet if the prices to unaffiliated customers for the same product vary from 90 to 100, it makes no logical sense to say that a price to an affiliated customer of 98 is somehow suspect, whatever the average price to unaffiliated customers.

The conceptual problem is quite common, and statisticians have a basic concept to address this issue: standard deviation.⁹ This statistical measure captures both the frequency and magnitude of the variation from mean. Specifically, the standard deviation is the square root of the variance or, if the deviation from the mean is calculated for each value in the database, the standard deviation is the mean of these deviations. If only 1 transaction out of 100 departs from the mean, the standard deviation will be quite small. As more transactions depart from the mean, and as the magnitude of the departures grows, the standard deviation grows.

The standard deviation of the mean reflects the range or spread of prices. Statistically, approximately 68 percent of all observations on which an average is based fall within plus or minus one standard deviation from the mean. About 95 percent fall within two standard deviations, and roughly 99 percent are within three.

Statisticians would normally suggest a two standard deviation test. When testing hypotheses, statisticians normally want to be quite confident before rejecting a hypothesis. By convention, statisticians use a 95 percent confidence test. Mathematically, this degree of confidence works out to approximately two standard deviations.¹⁰ The basic concept is quite simple: if one is going to conclude that a particular number is statistically different from another number, the number being tested should be pretty far away from the base line number. Applied to the arm's length test, this concept means that one should not conclude that an affiliated party price is not at arm's length unless the affiliated party price is sufficiently different than the unaffiliated party benchmark price.

Sufficiently is not a subjective concept. Statisticians routinely use the two standard deviation test, which allows them to say with 95 percent confidence that a conclusion is true. Yet, in the underlying proceeding, the respondent proposed only a one standard deviation test to be more conservative. Using a one standard deviation test would mean that a smaller degree of deviation (one rather than two standard deviations) from the mean unaffiliated party price would be sufficient to invalidate an affiliated party price. This proposal is consistent with

⁹ See generally T. Wonnacott & H. Wonnacott, *INTRODUCTORY STATISTICS FOR BUSINESS AND ECONOMICS* 24-25 (2d Ed. 1977).

¹⁰ See Wonnacott & Wonnacott, at Ch. 9; see also D. Gujarati, *BASIC ECONOMETRICS* 80-87 (1978).

the Department's concern about overly broad tests.¹¹ A one standard deviation test is more conservative than accepted statistical tests and therefore further restricts the range of sales that pass.

Finally, and perhaps most importantly, we recognize the Department's need for a test that is ease to administer. **Attachment 2** provides a more detailed discussion of an arm's length test based on standard deviation, complete with a flow chart of the underlying logic. **Attachment 3** hereto takes this explanation one step further, and provides SAS programming code to implement a revised arm's length test. As these exhibits show, only a few methodological steps are involved and the test itself would involve no more SAS code than that which already exists for the current and proposed tests.

¹¹ See *Antidumping Proceedings: Affiliated Party Sales in the Ordinary Course of Trade*, 67 Fed. Reg. at 53340-41.

ATTACHMENT 2:

Methodology for a Standard Deviation Based Arm's Length Test

Standard Deviation Based Arm's Length Test - Details of the Methodology

A standard deviation based test would involve only four basic methodological steps. Each step is described in detail in the narrative below. To assist in better understanding the proposed methodology, a flow chart is also provided, which corresponds to each step discussed below. In addition, each step is identified in the sample computer programming contained in **Attachment 2**. This alternative methodology more accurately identifies sales that are and are not arm's length through the reliance on CONNUM-specific results and a far more effective and statistically proven quantitative comparison.

Step-by-Step Description

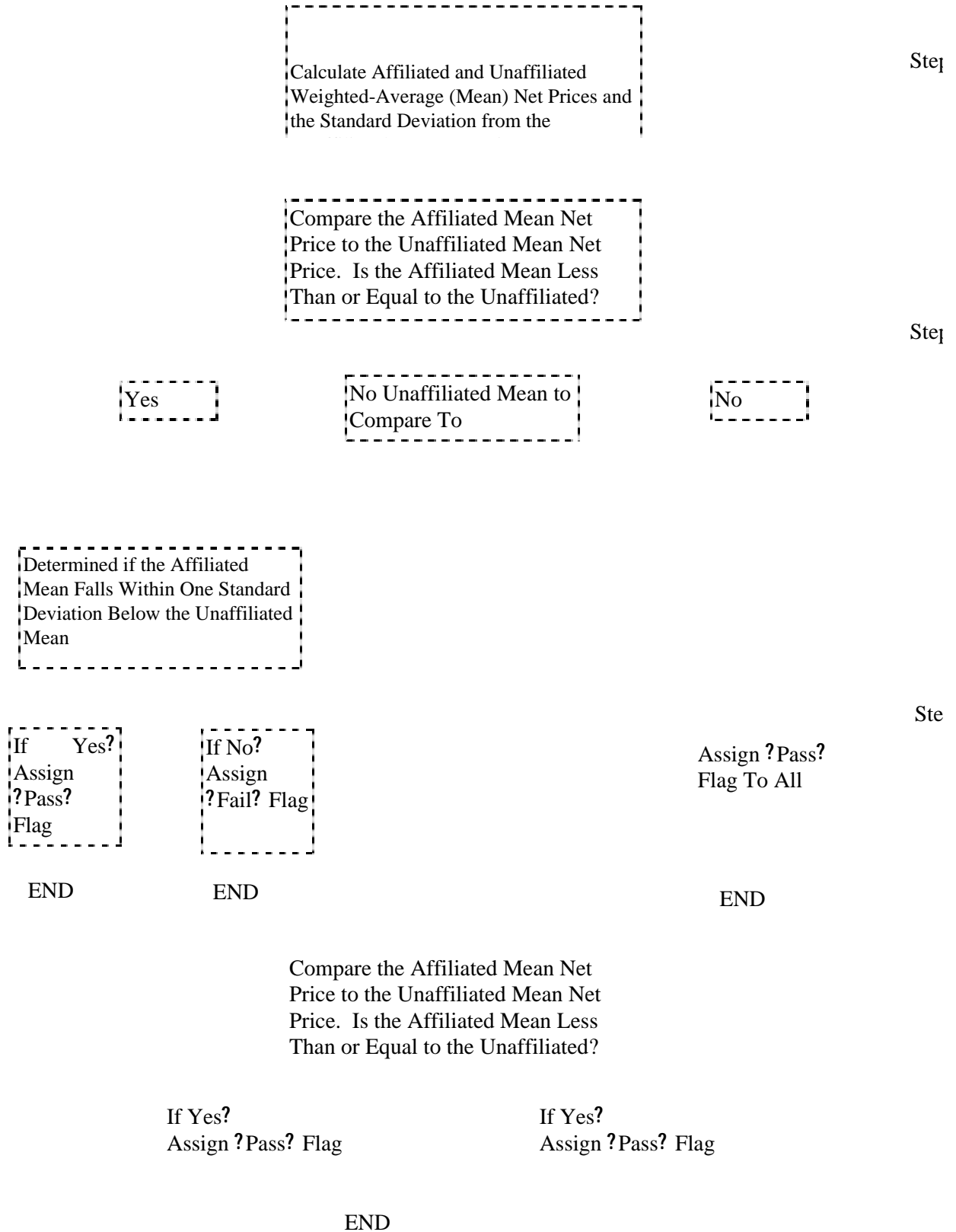
Step 1: This alternative test first involves, for each CONNUM, the calculation of weighted-average (or mean) net prices on a customer and CONNUM-specific basis for all affiliated sales and on a CONNUM-specific basis for sales to all unaffiliated customer. This is identical to the net price calculations performed in the Department's current test. Unlike the Department's current test, however, the calculation of the standard deviation from the unaffiliated mean is also calculated. (While this calculation is needed for only certain comparisons, it is calculated in the beginning for programming efficiency purposes.)

Step 2 and 3: The affiliated and unaffiliated mean prices are compared, and based on the outcome of that comparison, three different methodologies are applied. First, if the affiliated mean for the CONNUM is greater than the unaffiliated mean, the sales of the CONNUM to the affiliated customer are clearly at arm's length and a "Pass" flag is assigned to that CONNUM for that affiliated customer in step 3. If there is no unaffiliated mean to compare to (*e.g.*, the CONNUM was not sold to unaffiliated customers) Step 2 and 3 are skipped and the sales are addressed in Step 4. Finally, if the affiliated mean is less than the unaffiliated mean, it is determined if the affiliated mean falls within one standard deviation below the unaffiliated mean. If yes, the sales prices for that CONNUM to the affiliated customer are statistically comparable to the unaffiliated sales prices and, as sales at arm's length are flagged with "Pass." If no, the sales of the CONNUM to the affiliated customer are not at arm's length and are flagged with "Fail."

Step 4: This step deals with the application of facts available when one or more, but not all of CONNUM-specific mean prices for the affiliated customer could be compared to an unaffiliated mean. Rather than apply an adverse facts available, the Department would consider the record and the results for other CONNUMs sold to the affiliated customer. To do so, the total quantity of sales to the affiliated customer passing the test (flagged "Pass") and the total quantity of sales to the affiliated customer failing the test (flagged "Fail") be compared, and whichever is higher, dictates the results for these uncomparable CONNUMs.

Using the flag variable, the results of the test for each CONNUM as sold to each affiliated customer are merged back on to the original home market sales data. Then, after a few lines of coding, for each affiliated customer, those sales with a "Pass" flag are retained in the analysis while all "Fail" flags are rejected.

Methodological Flow of the Alternative Arm's-Length Test



ATTACHMENT 3:

Programming Code for a Standard Deviation Based Arm's Length Test

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```
*****;  
**Programming Code for a Standard Deviation Based Arm's Length Test**;  
*****;
```

```
*****;  
***RATHER THAN ENCOMPASSING A SEPARATE PROGRAM, THE ARMS LENGTH CODE**;  
***WOULD BE INSERTED RIGHT AFTER THE CALCULATION OF HM NET PRICE AND**;  
***RIGHT BEFORE THE COST TEST, AS DEMONSTRATED BELOW ***;  
*****;
```

```
*****;  
***ARMS LENGTH TEST ****;  
*****;
```

```
DATA HMAFFIL HMUNAFFL;  
    SET HM;  
    IF CUSRELH='I' THEN OUTPUT HMUNAFFL;  
    ELSE OUTPUT HMAFFIL;
```

RUN;

```
PROC SORT DATA HMAFFIL;  
    BY CUSCODH CONNUMH;
```

RUN;

```
PROC MEANS NOPRINT DATA = HMAFFIL;  
    BY CUSCODH CONNUMH;  
    VAR NETPRIH;  
    WEIGHT QTYH;  
    OUTPUT OUT = TOTAFFIL (DROP=FREQ_ _TYPE_)  
    N = RELOBS SUMWGT = AFFQTY MEAN = AFFNETPR;  
    RUN;
```

```
PROC PRINT DATA = TOTAFFIL (OBS = &PRINTOBS);  
TITLE3 'WA AFFILIATED NET PRICES BY CUSTOMER AND PRODUCT';  
RUN;
```

```
PROC SORT DATA = TOTAFFIL;  
    BY CONNUMH;
```

RUN;

```
*****;  
**CALCULATE WEIGHT AVERAGE NET PRICES AND STANDARD**;  
**DEVIATION FOR EACH UNAFFILIATED CUSTOMER CONNUM ***;  
*****;
```

```
PROC SORT DATA = HMUNAFFL;  
    BY CONNUMH;  
    RUN;
```

```
PROC MEANS NOPRINT VARDEF=WEIGHT DATA = HMUNAFFL NOPRINT;  
    BY CONNUMH;
```

```

VAR NETPRIH;
WEIGHT QTYH;
OUTPUT OUT = TOTUNAFI (DROP = _FREQ_ _TYPE_)
          N = UNROBS SUMWQT = UNAFFQTY MEAN = UNANETPR VAR=VARIANCE;
RUN;

DATA TOTUNAFI;
SET TOTUNAFI;
STDDEV=SQRT(VARIANCE);
RUN;

PROC PRINT DATA = TOTUNAFI (OBS=&PRINTOBS);
TITLE3 "WA UNAFFILIATED NET PRICES AND STANDARD DEVIATION BY PRODUCT";
RUN;

*****;
MERGE TOGETHER AVERAGE AFFILIATED AND UNAFFILIATED NET PRICES FOR
AFFILIATED CUSTOMERS
*****;

DATA HMMATCH HMNOMTCH;
MERGE TOTAFFIL (IN=IN_AFF) TOTUNAFI (IN = IN_UNAF);
BY CONNUMH;

IF IN_AFF AND IN_UNAF THEN DO;
MATCH = 'YES';
OUTPUT HMMATCH;
END;
ELSE
IF IN_AFF AND NOT IN_UNAF THEN DO;
MATCH = 'NO';
OUTPUT HMNOMTCH;
END;
RUN;

PROC PRINT DATA = HMMATCH (OBS &PRINTOBS);
TITLE3 'MATCHED AFFILIATED AND UNAFFILIATED PRICES';
RUN;

PROC PRINT DATA = HMNOMTCH (OBS = &PRINTOBS);
TITLE3 'AFFILIATED PRICES WITHOUT MATCHING UNAFFILIATED PRICES';
TITLE4 'DUE TO LACK OF SALES TO UNAFFILIATED CUSTOMERS';
RUN;

*****;
***ASSIGN FLAG VARIABLE TO AFFILIATED ***;
***CONNUMS THAT WERE ALSO SOLD TO ***;
***UNAFFILIATED CUSTOMERS ***;
*****;

DATA HMMATCH;
SET HMMATCH;
IF AFFNETPR GE (UNANETPR-STDDEV)

```

```
& AFFNETPR LE (UNANETPR+STDDEV)
THEN FLAG='PASS';
ELSE FLAG='FAIL';
RUN;
```

```
*****;
**CALCULATE THE TOTAL QTY OF SALES      ***;
**TO EACH AFFILIATED CUSTOMER          ***;
**WHICH PASSED AND FAILED THE TEST     ***;
*****;
```

```
PROC SORT DATA =HMMATCH;
BY CUSCODH FLAG;
RUN;
```

```
PROC MEANS NOPRINT DATA=HMMATCH;
BY CUSCODH FLAG;
VAR AFFQTY;
OUTPUT OUT=QTYCHK SUM=TOTQTY;
RUN;
```

```
PROC PRINT DATA=QTYCHK;
TITLE3 'TOTAL QTY PASS AND FAIL FOR EACH CUSCODH -
TO BE USED FOR FACTS AVAILABLE';
RUN;
```

```
DATA QTYCHK;
SET QTYCHK;
IF FLAG='PASS' THEN DO;
QTYPASS=TOTQTY;
END;
```

```
*****;
**USE TRANSPOSE TO INVERT DATA S0      ***;
**THAT QTY PASSING AND FAILING FOR      ***;
**EACH AFFILIATED CUSTOMER CAN BE MERGED***;
**WITH CONNUMS NOT SOLD TO UNAFFILIATED ***;
*****;
```

```
PROC TRANSPOSE DATA=QTYCHK OUT=QTY1 PREFIX=QPASS;
BY CUSCODH;
VAR QTYPASS;
RUN;
```

```
PROC TRANSPOSE DATA=QTYCHK OUT=QTY2 PREFIX=QFAIL;
BY CUSCODH;
VAR QTYFAIL;
RUN;
```

```
DATA QTY;
MERGE QTY1(IN=A) QTY2(IN=B);
BY CUSCODH;
IF A;
```

```

RUN;

DATA QTY(KEEP=CUSCODH QPASS QFAIL);
SET QTY;
IF QPASS1=. THEN QPASS1=0;
IF QPASS2=. THEN QPASS2=0;
IF QFAIL1=. THEN QFAIL1=0;
IF QFAIL2=. THEN QFAIL2=0;
QPASS=QPASS1+QPASS2;
QFAIL=QFAIL1+QFAIL2;
RUN;

PROC PRINT DATA=QTY;
TITLE3 'CHECK TRANSPOSE';
RUN;

PROC SORT DATA=HMNOMTCH;
BY CUSCODH;
RUN;

*****;
**MERGE UNMATCHED CONNUMNS **;
**WITH OVERALL PASS AND FAIL **;
**QTYS, TO DETERMINE FLAG **;
**BASED ON FACTS AVAILABLE **;
*****;

DATA HMNOMTCH NOCUST;
MERGE HMNOMTCH(IN=A) QTY(IN=B);
BY CUSCODH;
IF A AND B THEN DO;
IF QPASS GT QFAIL THEN FLAG='PASS';
ELSE IF QPASS LT QFAIL THEN FLAG='FAIL';
OUTPUT HMNOMTCH;
END;
ELSE IF A AND NOT B THEN OUTPUT NOCUST;
RUN;

*****;
**MATCHED AND UNMATCHED ***;
**CONNUMS WITH FLAG INFO IN ***;
**PREP FOR MERGE TO HM DATA ***;
*****;

DATA HMALL(KEEP=CUSCODH CONNUMH FLAG);
SET HMMATCH HMNOMTCH;
RUN;

PROC SORT DATA=HMALL;
BY CUSCODH CONNUMH;
RUN;

PROC PRINT DATA=HMALL;

```

```
TITLE3 'RESULTS FOR EACH CONNUM BY RELATED CUSTOMER CODE':  
RUN;
```

```
PROC SORT DATA=HM;  
BY CUSCODH CONNUMH;  
RUN;
```

```
DATA HM KEEPOUT;  
MERGE HM (IN=A) HALL (IN=B);  
BY CUSCODH CONNUMH;  
IF A AND NOT B THEN OUTPUT HM;  
ELSE IF FLAG='FAIL' THEN OUTPUT KEEPOUT;  
END;  
RUN;
```

```
*****;  
**THE HM DATABASE RESULTING ABOVE WOULD THEN ***;  
**BE CARRIED INTO THE NEXT STEP OF ANALYSIS ***;  
**      (THE COST TEST) ***;  
*****;
```