



UNITED NATIONS
DEPARTMENT OF ECONOMIC AND SOCIAL AFFAIRS
STATISTICS DIVISION

**Expert Group on International Merchandise Trade Statistics
Second meeting
New York, 3-6 November 2009**

Quantity information of UN Comtrade

UNSD Report

New York, October 2009

I. Introduction

1. Data records in UN Comtrade allow two values for quantity information: Supplementary Quantity and Net weight. The unit of measurement for supplementary quantity is based on twelve WCO units of measurement which are described below:

Table 1: WCO units of measurement

Abbreviation	Description
m²	Area in square metres
1000 kWh	Electrical energy in thousands of kilowatt-hours
m	Length in metres
u	Number of items
2u	Number of pairs
l	Volume in liters
kg	Weight in kilograms
1000u	Thousands of items
u(jeu/pack)	Number of packages
12u	Dozen of items
m³	Volume in cubic meters
carat	Weight in carats

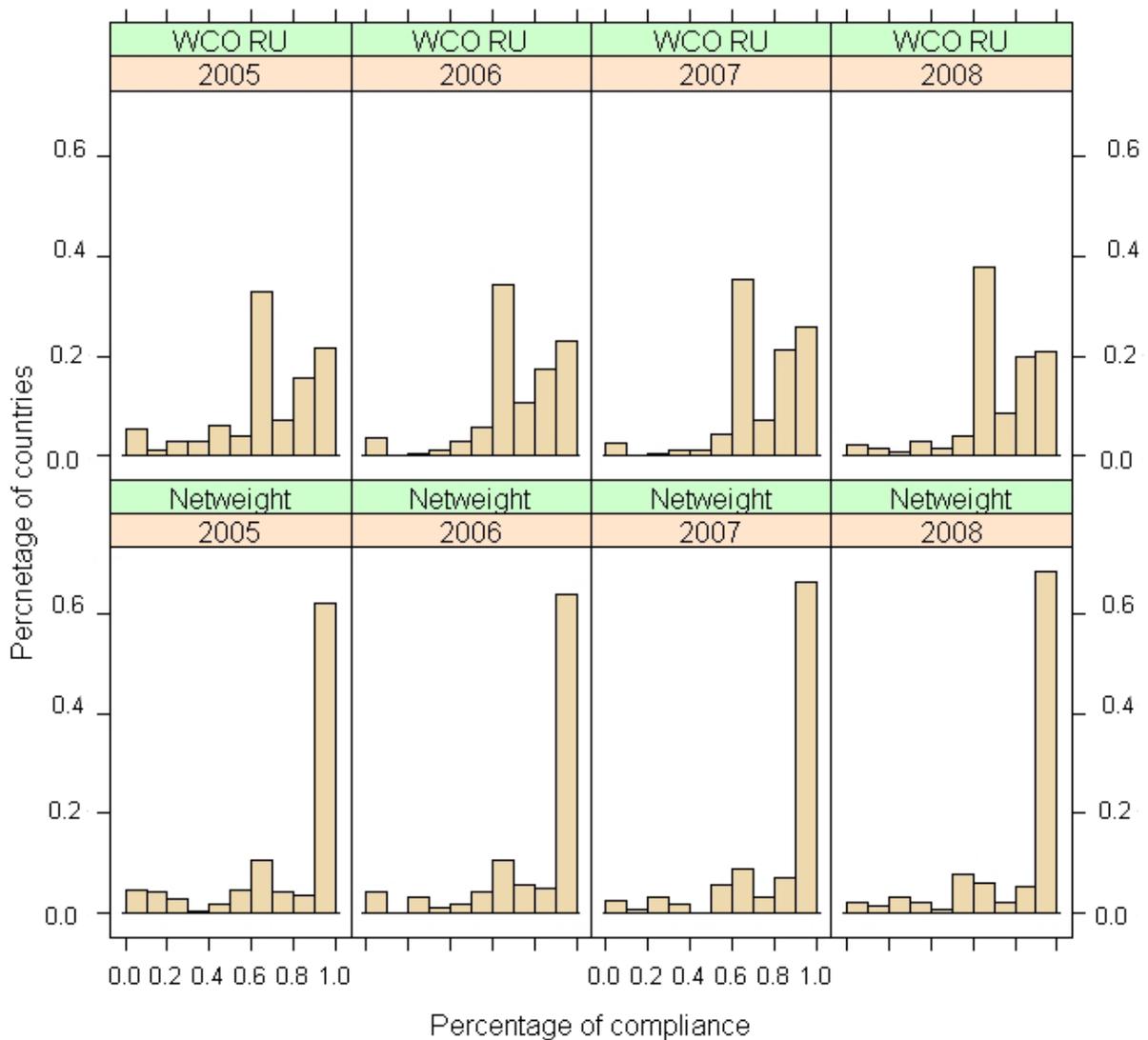
2. In general, almost all countries report net weight and the supplementary quantity for at least some of their data. If a country reports more than one supplementary quantity only one will be selected.
3. For each HS subheading WCO recommends a specific unit of measurement. During data processing, reported quantities which are non-compliant with the WCO Recommended Unit (WCO RU) for that specific HS subheading or non-reported will be estimated (see part III for details). Those trade data records with estimated net weight and/or supplementary quantity are clearly flagged and footnoted in UN Comtrade.

II. Compliance with IMTS recommendation on Quantity Measurement

4. The recommendation in *International Merchandise Trade Statistics, Concepts and Definitions* (IMTS, Rev.2, paragraph 133) states that:
 - a) Countries use the WCO standard units of quantity when collecting and reporting international merchandise trade on the basis of the Harmonized System;
 - b) In the case of the HS headings (subheadings) where the standard unit is other than weight, a weight also be collected and reported;
 - c) Weight figures be reported on a net weight basis;

- d) Countries that use units of quantity other than the WCO standard units provide the conversion factors to the standard units in their statistical nomenclatures.
5. The compliance of countries with this recommendation is shown in Graph 1 below for the reporting years 2005-2008.¹ For a country to have 100 percent compliance means that supplementary quantity and net weight is available for all HS subheadings where applicable. Graph 1 shows on the horizontal axis the percentage of compliance (in categories 0-10, 10-20 etc.), which is the percentage of records for which quantity and net weight is reported, and on the vertical axis the percentage of countries which fall into a particular compliance category.

Graph 1: Quantity Compliance of countries (Histogram) for 2005 to 2008



¹ This report is based on the detailed (6-digit) data in the original reported HS classification of all reporters, all partners (except partner World) and trade flows for the years 2005 to 2008 as available on UN Comtrade.

6. The histograms are skewed to the right for the supplementary quantity (WCO RU) and net weight, implying that in general most countries comply with the recommendations to provide information on the supplementary quantity and net weight for most of their data. The noticeable difference is that for net weight around 60 percent of the reporting countries have a very high compliance rate (90%-100%) but that for the supplementary quantity only about 20 percent of countries reach such a compliance rate. There is no significant improvement over time for neither, WCO recommended unit and net weight compliance.

III. Quantity estimation of UN Comtrade

7. Starting in 2006 with data of the reporting year 2005, detailed trade data submitted by countries are processed using a processing system which estimates non-reported or non-compliant supplementary quantity and non-reported net weight.²
8. For the reporting years 2005 to 2008 the quantity estimation increased the total number data records (all reporters) that comply with the WCO recommended unit and net weight from 73.7% to 93.2% and from 77.5% to 98.1% respectively.³ Estimation provides better quantity information to most end users. However, other users prefer to have only quantities reported by countries. This can be easily achieved as each data record contains a flag that clearly identifies estimated quantity.

Table 2: Quantity Compliance before and after estimation

	Before Estimation	After Estimation
WCO RU Compliance	73.7%	93.2%
Weight Compliance	77.5%	98.1%

9. The quantity estimation of UN Comtrade processing uses in the following sequence:
 - a) Estimation using empirical conversion factors, such as provided by FAO (CFA);
 - b) Estimation using partially reported quantity and/or net weight (WUV);
 - c) Estimation using Standard Unit Values (SUV).

² In addition, up to June 2009, the processing system also estimated a limited number of values for the supplementary quantity and net weight which were considered as extreme based on their associated unit value. For detailed information regarding the estimation methodology, please refer to the forthcoming background paper on Quantity and Weight data in UN Comtrade.

³ Annex I provides information on the reporting of supplementary quantity and net weight by HS chapters.

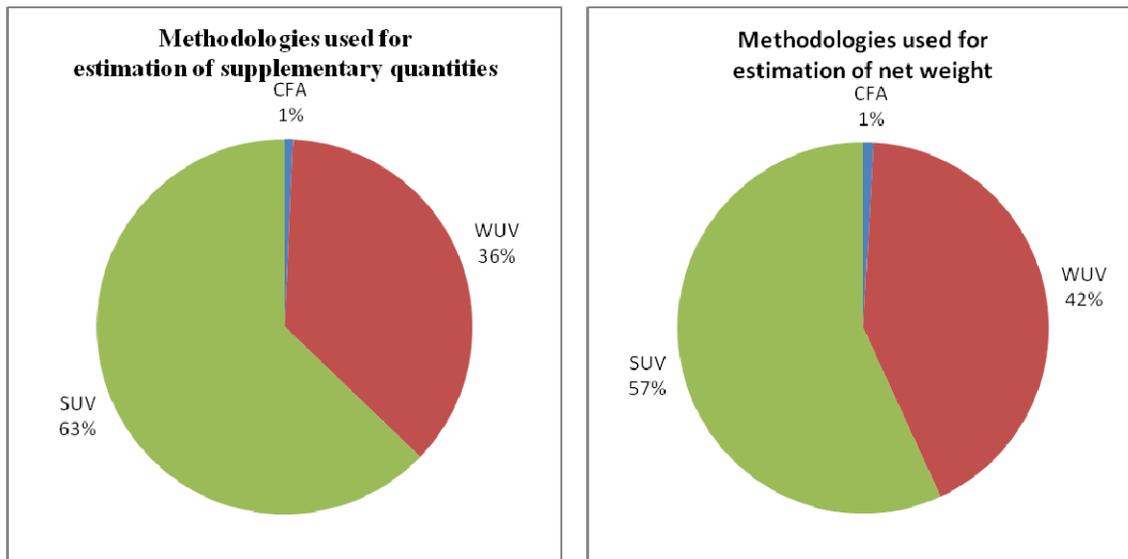
10. For the reporting years 2005 to 2008 the supplementary quantity was estimated for 10.4 million records and net weight was estimated for 10.9 million records (around 19.9% and 20.8% of records respectively).⁴ Table 3 below shows the estimated data broken down by year.

Table 3: Quantity Compliance before and after estimation

	Total Records	Estimated Supp. Quantity	Estimated Net Weight
2005	12,639,631	26.4%	24.1%
2006	13,389,197	23.2%	22.5%
2007	13,902,625	13.8%	16.9%
2008	12,739,720	16.5%	19.7%
05-08	52,671,173	19.9%	20.8%

11. Graph 2 below shows with what method the supplementary quantity and net weight were estimated. The estimation method which uses empirical conversion factors (CFA) was used the least and estimation method using Standard Unit Values (SUV) was used the most. The estimation method which uses partially reported quantity (WUV) was more frequently used to estimate net weight than supplementary quantity.

Graph 2: Quantity Estimation by method



⁴ This includes also a limited number of records (0.2 to 0.4 percent) for which the supplementary quantity and net weight was reported but where the associated unit value was considered as outside the acceptable range and hence the quantity information replaced with an estimate. This practice has been discontinued (see also previous footnote).

Annex I: Percentage of supplementary quantity and net weight reported by HS Chapters
(bottom 10% is highlighted in yellow)

HS Chapter	WCO RU Compliance				Net Weight Compliance			
	2005	2006	2007	2008	2005	2006	2007	2008
01 Live animals and products	48.3	53.6	59.3	54.1	70.2	61.9	63.8	62.4
02 Meat and edible meat offal	92.9	92.7	96.8	91.6	92.9	92.7	96.8	91.6
03 Fish and crustaceans	89.6	91.5	94.3	91.1	89.6	91.6	94.3	91.1
04 Dairy produce; birds' eggs	90.3	91.3	94.6	90.7	90.3	91.3	94.6	90.7
05 Products of animal origin	77.8	78.3	82.5	77.4	82.5	83.0	87.6	82.8
06 Live trees and other plants	59.4	60.5	65.3	61.9	77.2	75.5	79.3	77.9
07 Edible vegetables	91.3	92.3	96.0	92.6	91.3	92.3	96.0	92.6
08 Edible fruit and nuts	91.2	91.9	96.2	92.0	91.2	91.9	96.2	92.0
09 Coffee, tea, maté and spices	85.2	89.2	93.3	90.6	85.2	89.2	93.3	90.6
10 Cereals	90.8	92.7	95.9	91.5	90.8	92.7	95.9	91.5
11 Milling industry product	91.3	92.8	95.9	92.5	91.3	92.8	95.9	92.5
12 Oil seeds	87.1	89.9	93.6	90.2	87.1	89.9	93.7	90.2
13 Lac; gums, resins	83.8	89.9	93.8	90.0	83.8	89.9	93.8	90.0
14 Vegetable plaiting materials	84.9	89.2	93.8	90.9	84.9	89.2	93.8	90.9
15 Animal or vegetable fats	91.0	92.7	95.2	91.7	91.0	92.7	95.2	91.7
16 Preparation of meat and fish	89.4	91.8	94.9	90.6	89.4	91.8	94.9	90.6
17 Sugars	87.4	90.9	94.3	90.4	87.4	90.9	94.3	90.4
18 Cocoa	90.2	92.6	95.6	92.0	90.2	92.6	95.6	92.0
19 Preparations of cereals	90.6	92.9	96.0	92.9	90.6	92.9	96.0	92.9
20 Preparations of vegetables	90.5	91.0	94.3	91.0	90.5	91.0	94.3	91.0
21 Misc. edible preparations	87.3	90.0	94.1	91.0	87.3	90.0	94.1	91.0
22 Beverages, spirits	62.4	65.7	72.2	71.0	60.6	60.1	64.1	63.7
23 Food industries waste	90.9	92.6	95.6	91.4	90.9	92.6	95.6	91.4
24 Tobacco	83.4	82.7	85.4	83.8	83.4	82.7	85.4	83.9
25 Salt and sulphur	90.2	92.3	95.2	92.2	90.2	92.3	95.2	92.2
26 Ores, slag and ash	93.7	93.6	95.3	90.7	93.7	93.6	95.3	90.7
27 Mineral fuels	85.5	86.1	89.3	86.2	85.3	85.9	88.7	85.5
28 Inorganic chemicals	84.2	87.3	91.6	87.5	85.1	87.9	92.1	88.1
29 Organic chemicals	81.1	85.4	90.6	86.3	81.4	85.8	90.7	86.4
30 Pharmaceutical products	75.5	81.8	86.3	82.5	75.5	81.8	86.3	82.5
31 Fertilisers	91.5	93.9	96.5	92.3	91.5	93.9	96.5	92.4
32 Tanning or dyeing extracts	84.4	89.1	92.4	89.6	84.4	89.1	92.4	89.6
33 Essential oils and resinoids	80.2	82.9	87.5	84.6	80.2	82.9	87.5	84.6
34 Soap, washing preparations	84.9	88.9	92.9	89.4	84.9	88.9	92.9	89.4
35 Albuminoidal substances	82.5	87.7	92.2	88.5	82.5	87.7	92.2	88.5
36 Explosives	82.1	85.2	88.4	83.9	82.2	85.2	88.4	83.9
37 Cinematographic goods	56.1	57.7	63.6	60.2	70.7	67.6	71.4	68.0
38 Misc. chemical products	85.5	89.0	93.1	88.9	85.5	89.0	93.1	88.9
39 Plastics and articles thereof	82.4	86.3	90.7	87.3	82.4	86.3	90.7	87.3
40 Rubber and articles thereof	72.5	76.4	82.6	79.2	76.3	77.6	82.1	79.2
41 Raw hides and skins	81.4	76.7	77.2	76.7	81.4	76.7	77.3	76.7
42 Articles of leather	58.4	62.3	67.9	64.5	65.6	67.6	72.4	70.4
43 Furskins and artificial fur	70.1	71.8	74.4	74.5	70.2	71.8	74.5	74.7
44 Wood and articles of wood	72.4	71.1	75.8	74.4	81.8	76.5	80.0	79.1
45 Cork and articles of cork	75.3	81.6	86.2	81.8	75.3	81.6	86.2	81.8

HS Chapter	WCO RU Compliance				Net Weight Compliance			
	2005	2006	2007	2008	2005	2006	2007	2008
46 Manufactures of straw	78.8	81.2	85.0	84.0	78.8	81.2	85.0	84.0
47 Pulp of wood	93.8	95.9	97.8	92.2	93.9	95.9	97.8	92.2
48 Paper and paperboard	84.1	88.3	92.4	88.9	84.1	88.3	92.4	88.9
49 Printed books, newspapers	71.7	78.1	83.0	80.1	71.7	78.1	83.1	80.2
50 Silk	72.2	70.4	74.0	70.5	72.2	70.4	74.0	70.5
51 Wool, animal hair	82.1	81.4	83.1	80.5	82.1	81.4	83.1	80.6
52 Cotton	78.5	75.8	78.0	75.8	78.5	75.8	78.1	75.9
53 Other textile fibres	79.6	78.3	81.7	79.6	79.6	78.3	81.8	79.6
54 Man-made filaments	80.3	78.8	82.0	79.5	80.3	78.8	82.1	79.5
55 Man-made staple fibres	80.3	77.1	79.8	77.3	80.3	77.1	79.8	77.4
56 Cordage, ropes and cables	82.2	87.4	91.8	87.6	82.2	87.4	91.8	87.6
57 Textile floor coverings	55.4	61.8	71.7	69.1	65.1	63.1	66.1	63.6
58 Special woven fabrics	74.6	77.9	81.1	78.1	74.6	77.9	81.1	78.1
59 Coated textile fabrics	76.5	77.0	81.3	78.5	78.2	78.5	82.8	80.2
60 Knitted or crocheted fabrics	82.4	87.3	86.1	82.1	82.4	87.3	86.1	82.1
61 Knitted articles of apparel	59.7	63.9	73.6	71.6	59.2	61.7	66.1	64.0
62 Not knitted apparel	60.8	64.6	73.4	71.6	64.9	65.1	69.3	66.8
63 Other textile articles	76.2	79.4	83.0	79.3	76.2	79.4	82.9	79.3
64 Footwear, gaiters	57.2	63.3	74.1	72.3	61.6	62.5	65.9	64.7
65 Headgear and parts thereof	66.0	68.7	72.6	70.7	67.9	69.7	72.7	71.0
66 Umbrella, walking-sticks	58.5	59.4	69.3	66.1	67.8	65.8	68.8	67.5
67 Prepared feathers and down	75.8	78.5	81.4	78.7	75.8	78.5	81.5	78.7
68 Articles of stone, plaster	83.4	84.6	88.4	86.2	83.4	84.6	88.5	86.2
69 Ceramic products	69.8	71.6	76.6	74.5	80.3	80.3	83.8	82.1
70 Glass and glassware	76.0	76.0	80.5	78.7	79.1	78.0	82.1	80.2
71 Natural or cultured pearls	66.9	71.9	77.5	74.5	64.5	69.6	73.6	70.3
72 Iron and steel	90.1	92.1	96.5	92.5	91.0	93.1	96.5	92.5
73 Articles of iron or steel	78.4	83.4	88.3	84.9	78.9	83.6	88.2	84.9
74 Copper and articles thereof	81.3	85.4	90.4	86.0	81.3	85.4	90.4	86.0
75 Nickel and articles thereof	80.9	86.6	90.5	84.6	80.9	86.6	90.5	84.6
76 Aluminum	84.1	87.5	91.1	87.3	84.1	87.5	91.1	87.3
78 Lead and articles thereof	84.9	88.4	92.4	89.6	84.9	88.4	92.4	89.6
79 Zinc and articles thereof	85.0	88.6	92.4	89.1	85.0	88.6	92.4	89.1
80 Tin and articles thereof	80.2	84.5	89.2	85.4	80.2	84.6	89.2	85.4
81 Other base metals	77.8	81.4	87.4	81.6	78.8	82.6	87.5	81.6
82 Tools of base metal	67.5	72.2	76.7	74.5	69.9	74.5	78.9	77.1
83 Misc. articles of base metal	77.2	81.9	87.0	83.5	77.2	82.0	87.0	83.5
84 Machinery appliances	53.4	56.4	63.3	59.0	70.4	70.1	73.4	72.0
85 Electrical machinery	52.4	57.7	65.7	61.6	62.8	65.0	70.5	68.5
86 Railway locomotives	69.4	69.4	74.6	72.9	77.9	73.1	77.2	75.7
87 Vehicles other than railway	67.1	69.9	75.3	71.7	76.6	73.2	76.3	74.1
88 Aircraft, spacecraft	70.7	72.9	77.4	70.5	74.8	72.1	74.6	69.3
89 Ships and boats	48.7	52.8	60.6	55.8	70.8	64.3	65.1	62.6
90 Optical, photographic	45.2	49.5	56.0	52.0	60.5	62.9	67.8	65.9
91 Clocks and watches	66.6	67.5	73.8	69.6	56.8	55.6	57.9	56.0
92 Musical instruments	50.7	53.6	60.8	55.2	66.9	66.3	68.4	66.3
93 Arms and ammunition	61.6	61.8	68.1	62.3	70.4	66.4	69.6	66.7
94 Furniture; bedding	54.4	57.1	58.1	54.3	75.9	77.2	79.7	78.3

HS Chapter	WCO RU Compliance				Net Weight Compliance			
	2005	2006	2007	2008	2005	2006	2007	2008
95 Toys, games	44.7	44.6	52.3	48.8	69.7	70.4	74.6	72.7
96 Misc. manufactured articles	57.4	61.0	66.4	63.6	67.4	69.7	73.9	72.5
97 Works of art	45.0	47.2	49.4	46.9	61.5	64.8	67.3	65.9