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Point 10 of the agenda

Joint Forest Sector Questionnaire (JFSQ) – data validation rules and checks
Preliminary version February 2023

Eurostat – Unit E2

Forestry statistics and accounts working group

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Quetelet Room

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Introduction

The Joint Forest Sector Questionnaire (JFSQ) collects data on removals, production and trade of wood and wood products. Statistics are collected annually and the collection is co-ordinated by four international organisations: Eurostat, UNECE, FAO and ITTO (International Tropical Timber Organisation).

The JFSQ consists of three sets of tables, one common to all countries worldwide (JQ1, JQ2 and JQ3), one specific to Europe (Removals, EU1, EU2, ECE-EU) and one specific to the ITTO (ITTO1 and ITTO2 and ITTO3). Eurostat collects all three sets of tables. Out of these, some tables refer to production (Removals, JQ1 and EU2), others to trade data (JQ2, ECE-EU, EU1). Production figures are reported in physical units while trade data presents its value as well. Physical quantities are volume and mass depending on the product, while the monetary unit is the national currency of the country. Each table asks for data for two consecutive years. Eurostat collects all tables in an electronic format in one excel file with different sheets for each table. We are responsible for collecting data from the 27 EU member states and 4 EFTA countries.

The shape and content of tables are agreed by a common body of the four international organisations and sent out to the countries to be filled in by their nominated national correspondents. The owner's right and thus the quality assurance of the data supplied lays with the data provider. Eurostat only collects the data, runs some cross checking and makes it available to the large public via its website and its publications. Eurostat also forwards the collected data to UNECE who runs further checks before supplying it to FAO. This manual intends to present the data processing workflow at Eurostat.

The validation report contains the results of the checks where an issue was found: either a warning or an error. Warnings will be sent to the countries and they will be asked to doublecheck and confirm the data. Errors have to be revised, otherwise the data will not be accepted.

Structure of the document

The aim of this document is to provide a compilation of rules and checks for the validation of data reported in the Joint Forest Sector Questionnaire (JFSQ) by countries to Eurostat.

The document is structured as follows:

- **Part 1: Built in checks that can be found in the questionnaire to be used by the compilers before submitting data to Eurostat (pre-validation)**
- **Part 2: Checks that are performed by Eurostat's validation tool and offer either a warning or an error message**
 - 2.1. Examines the content of cells in the questionnaire (data cells, cells intended for flags, confidentiality and negative values) without considering the relationship with the content of other cells.
 - 2.2 Includes internal consistency checks within JFSQ tables – these apply in instances where a relationship between variables is defined exactly by an arithmetic formula
 - 2.3. Includes internal consistency checks between JFSQ tables – these apply when there are different codes for the same product in different tables
 - 2.4. Includes plausibility checks (apparent consumption and time series)
 - 2.5. Includes checks for completeness

The SQL-based validation is performed in Eurostat's internal database after data upload. The output of this step is the validation (and revision) report, sent to countries via email.

PART 1: Built-in checks

1.1. Empty cells

This is the first check that is introduced to each sheet. Correspondents are requested to fill in every single cell with figures – text in the cells can't be interpreted. To check completeness, at the bottom of each table there is a counter for the empty cells.

To fill:	13	0
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As long as there are empty cells, the check-cell in the bottom is red and shows the number of missing datapoints found. Before moving forward please check whether you can provide further datapoints. If data are not available, leave the cell empty.

1.2. Sums of the sub items

This check applies to every table/sheet and it is also checked during validation by MDT. It checks whether the declared total of the sub items equals the real sum of them. It is also accepted that the declared total is larger than the sum of the subtotals.

				Country:	Date:	Check Table			
EU JQ1 OB FOREST SECTOR QUESTIONNAIRE Removals				0	0				
Official Address (in full):				Telephone:	E-mail:	Please verify, if there's an error!		Discrepancies	
				0	0				
Product Code	Product	Unit	Year 1 2020 Quantity	Year 2 2021 Quantity	Product Code	Product	Unit	2020 Quantity	2021 Quantity
ROUNDWOOD REMOVALS OVERBARK					ROUNDWOOD REMOVALS OVERBARK				
1	ROUNDWOOD (WOOD IN THE ROUGH)	1000 m ³ ob	1000		1	ROUNDWOOD (WOOD IN THE ROUGH)	1000 m ³ ob	Error	OK
1.1	WOOD FUEL (INCLUDING WOOD FOR CHARCOAL)	1000 m ³ ob	500		1.1	WOOD FUEL (INCLUDING WOOD FOR	1000 m ³ ob	OK	OK
1.1.C	Coniferous	1000 m ³ ob			1.1.C	Coniferous	1000 m ³ ob		
1.1.NC	Non-Coniferous	1000 m ³ ob			1.1.NC	Non-Coniferous	1000 m ³ ob		
1.2	INDUSTRIAL ROUNDWOOD	1000 m ³ ob	700		1.2	INDUSTRIAL ROUNDWOOD	1000 m ³ ob	OK	OK
1.2.C	Coniferous	1000 m ³ ob			1.2.C	Coniferous	1000 m ³ ob	OK	OK
1.2.NC	Non-Coniferous	1000 m ³ ob			1.2.NC	Non-Coniferous	1000 m ³ ob	OK	OK
1.2.NC.T	of which: Tropical	1000 m ³ ob			1.2.NC.T	of which: Tropical	1000 m ³ ob	OK	OK
1.2.1	SAWLOGS AND VENEER LOGS	1000 m ³ ob			1.2.1	SAWLOGS AND VENEER LOGS	1000 m ³ ob	OK	OK
1.2.1.C	Coniferous	1000 m ³ ob			1.2.1.C	Coniferous	1000 m ³ ob		
1.2.1.NC	Non-Coniferous	1000 m ³ ob			1.2.1.NC	Non-Coniferous	1000 m ³ ob		
1.2.2	PULPWOOD, ROUND AND SPLIT	1000 m ³ ob			1.2.2	PULPWOOD, ROUND AND SPLIT	1000 m ³ ob	OK	OK
1.2.2.C	Coniferous	1000 m ³ ob			1.2.2.C	Coniferous	1000 m ³ ob		
1.2.2.NC	Non-Coniferous	1000 m ³ ob			1.2.2.NC	Non-Coniferous	1000 m ³ ob		
1.2.3	OTHER INDUSTRIAL ROUNDWOOD	1000 m ³ ob			1.2.3	OTHER INDUSTRIAL ROUNDWOOD	1000 m ³ ob	OK	OK
1.2.3.C	Coniferous	1000 m ³ ob			1.2.3.C	Coniferous	1000 m ³ ob		
1.2.3.NC	Non-Coniferous	1000 m ³ ob			1.2.3.NC	Non-Coniferous	1000 m ³ ob		

1.3. Apparent consumption

This is a check routine of the physical quantities and is based on the assumption that

$$\text{PRODUCTION} + \text{IMPORT} \geq \text{EXPORT.}$$

The check considers figures in JQ1 and JQ2. The checking table is on the JQ2 sheet column AQ-AS.

Whenever a negative apparent consumption is calculated it becomes highlighted. For most cases the solution is to increase the production side, except for big differences when traded quantities must be inspected as well. Correction is done when apparent consumption becomes zero.

For any negative number you can confirm as correct, please give an explanation in columns AT-AU. The check is also carried out in MDT and the results will be shown in the validation report.

This table highlights discrepancies between production and trade. For any negative number, indicating greater net exports than production, please verify your data!

Country: 0

Product code			Apparent Consumption		Related Notes	
			2020	2021	2020	2021
1	ROUNDWOOD (WOOD IN THE ROUGH)	1000 m ³ ub	1,017	0		
1.1	WOOD FUEL (INCLUDING WOOD FOR CHARCOAL)	1000 m ³ ub	680	0		
1.1.C	Coniferous	1000 m ³ ub	0	0		
1.1.NC	Non-Coniferous	1000 m ³ ub	0	0		
1.2	INDUSTRIAL ROUNDWOOD	1000 m ³ ub	-120	0	?	
1.2.C	Coniferous	1000 m ³ ub	0	0		
1.2.NC	Non-Coniferous	1000 m ³ ub	0	0		
1.2.NC.T	of which: Tropical	1000 m ³ ub	0	0		
2	WOOD CHARCOAL	1000 t	0	0		
3	WOOD CHIPS, PARTICLES AND RESIDUES	1000 m ³	0	0		
3.1	WOOD CHIPS AND PARTICLES	1000 m ³	0	0		
3.2	WOOD RESIDUES (INCLUDING WOOD FOR AGGLOMERATES)	1000 m ³	0	0		
4	RECOVERED POST-CONSUMER WOOD	1000 t	0	0		
5	WOOD PELLETS AND OTHER AGGLOMERATES	1000 t	0	0		
5.1	WOOD PELLETS	1000 t	0	0		
5.2	OTHER AGGLOMERATES	1000 t	0	0		

1.4 Industrial roundwood balance

The check examines whether there is enough industrial roundwood available in the country (either produced or imported) to produce the declared amount of industrial roundwood products (agglomerates, sawnwood, veneer, plywood, particle board, fibreboards, pulp).

Available industrial roundwood is calculated by production and net import. The amount of wood necessary to produce the declared amount of products listed under 'Solid wood' is calculated in m³. In order to do this, the conversion factors indicated on the right side in green were used. You can check the formulas behind each cell for the exact equations.

Industrial Roundwood Balance

test for good numbers, missing number, bad number, negative number

		2020	2021	% change	
Roundwood	Industrial roundwood availability	2,467	340	-86%	Conversion factors m ³ of wood in m ³ or t of product Solid wood equivalent
	Recovered wood used in particle board	8	4	-45%	
Solid Wood	agglomerate production	45	22	-51%	2.4
	Sawnwood production	16	3	-81%	1
	veneer production	12	4	-67%	1
	plywood production	1	2	100%	1
	particle board production (incl OSB)	22	12	-45%	1.58
	fibreboard production	65	1	-98%	1.8
	mechanical/semi-chemical pulp production	12	1	-92%	2.5
	chemical pulp production	23	2	-91%	4.9
	dissolving pulp production	44	4	-91%	5.7
Availability	Solid Wood Demand	682	118	-83%	
	Difference (roundwood-demand)	-675	-113	-83%	positive = surplus
	gap (demand/availability)	72%	65%		Negative number means not enough roundwood available

Positive number means more roundwood available than demanded

% of particle board that is from recovered wood **35%**
share of agglomerates produced from industrial roundwood residues **100%**
usable industrial roundwood - amount of roundwood that is used, remainder leaves industry **98.5%**

The balance is given in the cells with bold figures. If it is negative, it still can mean that there had been stocks in the country that could not be included in the calculations. If the balance is negative for several consecutive years, please revise the figures. This check is not included in the validation report, it is only included in the questionnaire to give you a warning.

1.5. Zero trade value / quantity

This routine applies to the trade sheets (JQ2, ECE-EU and EU1) where both physical quantity and value is requested. The assumption here is that whenever one of these two parameters is declared its counterpart must also differ from zero. The set of check tables to consider are called ZERO CHECK and are on the far right of the main table.

ZERO CHECK 1 - if no value please CHECK

0 both VALUE and quantity reported ZERO
 ZERO Q quantity ZERO when VALUE is reported
 ZERO V Value ZERO when quantity is reported
 NO Q no quantity reported
 NO V no value reported
 REPORT no figures reported

Threshold 2

Product code	Product	Value per unit	I M P O R T		E X P O R T		Column1	Column2
			2020	2021	2020	2021	IMPORT	EXPORT
1	ROUNDWOOD (WOOD IN THE ROUGH)	NAC/m ³	1	1	1	1	ACCEPT	ACCEPT
1.1	WOOD FUEL (INCLUDING WOOD FOR CHARCOAL)	NAC/m ³	1	1	NO Q	1	ACCEPT	CHECK
1.1.C	Coniferous	NAC/m ³	NO V	1	1	1	CHECK	ACCEPT
1.1.NC	Non-Coniferous	NAC/m ³	1	1	1	1	ACCEPT	ACCEPT
1.2	INDUSTRIAL ROUNDWOOD	NAC/m ³	1	1	1	1	ACCEPT	ACCEPT
1.2.C	Coniferous	NAC/m ³	1	ZERO Q	ZERO V	1	CHECK	CHECK
1.2.NC	Non-Coniferous	NAC/mt	0	0	0	0	ACCEPT	ACCEPT
1.2.NC.T	of which: Tropical	1000 m ³	0	0	0	0	ACCEPT	ACCEPT
2	WOOD CHARCOAL	1000 m ³	REPORT	REPORT	REPORT	REPORT	CHECK	CHECK
3	WOOD CHIPS, PARTICLES AND RESIDUES	1000 m ³	REPORT	REPORT	REPORT	REPORT	CHECK	CHECK

If both value and quantity are reported to be nonzero, the check table produces '1', and both import and export figures are accepted. Whenever there is a warning, the check table alerts with a message:

- ZERO Q – when both *value* and *quantity* are declared, but *quantity* is zero, *value* nonzero
- ZERO V – when both *value* and *quantity* are declared, but *quantity* is nonzero, *value* zero
- NO Q – when *quantity* is missing
- NO V – when a *value* is missing
- REPORT – both *quantity* and *value* are missing
- 0 – when both value and quantity are zero (there is nothing to do).

In practice, the first two messages may occur and need to be solved. To make them more visible these cells change colours as well. The solution to this error could be:

- To give estimates using the unit price of the previous/next year,
- In case of JQ2 or EU1 to use the unit price of the same product from the other trade table,
- To use COMEXT/COMTRADE unit price

1.6. Trade unit price fluctuation

This applies to the ECE-EU species trade sheet. It is next to the unit price table to ease the judgement.

It checks changes of the unit price from one year to the next. The routine runs separately for each flow (IMPORT and EXPORT) in two columns. Whenever a unit price of a year multiplied with a threshold is higher than a the unit price of the other year the alert message "CHECK" appears for that flow. The basic setup for the threshold is 2 but it can be freely changed.

Check Table

Zero check - if no value please CHECK

0 both VALUE and quantity reported ZERO
 ZERO Q quantity ZERO when VALUE is reported
 ZERO V Value ZERO when quantity is reported
 NO Q no quantity reported
 NO V no value reported
 REPORT no figures reported

Threshold 2

Classification	Classification	Product	Value per unit	IMPORT		EXPORT		Unit price check	
				2020	2021	2020	2021	IMPORT	EXPORT
4403.11/21/22/23/24/25/26		Industrial Roundwood, Coniferous	NAC/m ³	50	5	50	47	CHECK	ACCEPT
4403.23/24		Fir/Spruce (<i>Abies spp., Ficea spp.</i>)	NAC/m ³	48	5	48	48	CHECK	ACCEPT
	4403.23.10	sawlogs and veneer logs (<i>Abies alba, Ficea abies</i>)	NAC/m ³	48	48	48	48	ACCEPT	ACCEPT
	4403.23.30	pulpwood and other industrial roundwood (<i>Abies alba, Ficea abies</i>)	NAC/m ³	48	45	48	46	ACCEPT	ACCEPT
4403.21/22		Pine (<i>Pinus spp.</i>)	NAC/m ³	48	49	48	49	ACCEPT	ACCEPT
	4403.21.10	sawlogs and veneer logs (<i>Pinus sylvestris</i>)	NAC/m ³	REPORT	REPORT	REPORT	REPORT	CHECK	CHECK
	4403.21.30	pulpwood and other industrial roundwood (<i>Pinus sylvestris</i>)	NAC/m ³	REPORT	REPORT	REPORT	REPORT	CHECK	CHECK

The solution to this error is to correct mainly quantities as the reliability of values is much higher.

1.7. Cross-table compliance

There are certain products that must be identical or must have a certain relation in different tables:

- Roundwood overbark figures must be higher than roundwood underbark figures. A built in check is included in the *Removals* table.
- Roundwood production is declared both in *JQ1* and in the *EU2 Removals* table. A built in check is included in the *ECE-EU Species table* to check for total roundwood being equal in both tables. Coniferous roundwood and non-coniferous roundwood are not checked at the moment.
- Trade for certain products are declared both in the *JQ2* trade table, and also in the *ECE-EU species table*:
 - o Coniferous and non-coniferous industrial roundwood
 - o Coniferous and non-coniferous sawnwood

Please see the details below:

- Overbark - Underbark relation

The *Removals over bark* table includes a check for overbark – underbark relation. Overbark figures are divided by underbark production figures of the *JQ1* table. If the quotient is higher than 1, it is accepted, if not, the cell turns red.

Product Code	Product	Unit	2020 CF	2021 CF
OVERBARK/UNDERBARK CONVERSION FACTORS				
1	ROUNDWOOD (WOOD IN THE ROUGH)	m ³ /m ³	0.968	#DIV/0!
1.1	WOOD FUEL (INCLUDING WOOD FOR CHARCOAL)	m ³ /m ³	1.091	#DIV/0!
1.1.C	Coniferous	m ³ /m ³	#DIV/0!	#DIV/0!
1.1.NC	Non-Coniferous	m ³ /m ³	#DIV/0!	#DIV/0!
1.2	INDUSTRIAL ROUNDWOOD	m ³ /m ³	1.100	1.100
1.2.C	Coniferous	m ³ /m ³	1.200	1.200
1.2.NC	Non-Coniferous	m ³ /m ³	#DIV/0!	#DIV/0!
1.2.NC.T	of which: Tropical	m ³ /m ³	#DIV/0!	#DIV/0!
1.2.1	SAWLOGS AND VENEER LOGS	m ³ /m ³	#DIV/0!	#DIV/0!
1.2.1.C	Coniferous	m ³ /m ³	#DIV/0!	#DIV/0!
1.2.1.NC	Non-Coniferous	m ³ /m ³	1.100	1.100
1.2.2	PULPWOOD, ROUND AND SPLIT	m ³ /m ³	1.200	1.200
1.2.2.C	Coniferous	m ³ /m ³	#DIV/0!	#DIV/0!
1.2.2.NC	Non-Coniferous	m ³ /m ³	1.100	1.100
1.2.3	OTHER INDUSTRIAL ROUNDWOOD	m ³ /m ³	1.200	1.200
1.2.3.C	Coniferous	m ³ /m ³	#DIV/0!	#DIV/0!
1.2.3.NC	Non-Coniferous	m ³ /m ³	1.100	1.100

- JQ and EU tables, reported production and trade figures

The table for this check is in the far left of *ECE-EU Species* table. It refers to certain products only.

Product Code	Classification HS2007	Classification CN2007	Product	Unit of Quantity	PRODUCTION		I M P O R T				E X P O R T				
					2020	2021	2020		2021		2020		2021		
					Quantity	Quantity	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	
1	4401.1112 44.03		Roundwood production	1000 m ³	JQ1	330	0								
					EU2	0	0								
					diff	330	0								
1.2.C	4403.11212 22324252 5		Industrial Roundwood (wood in the rough), Coniferous	1000 m ³	JQ2	0	0	0	0	0	0	0	0	0	0
					ECE/EU	1,000	50,000	1,100	5,200	1,000	50,000	1,100	52,003		
					diff	1,000	50,000	1,100	5,200	1,000	50,000	1,100	52,003		
1.2.NC	4403.21114 99133949 59697989 9		Industrial Roundwood (wood in the rough), Non-Coniferous	1000 m ³	JQ2	1,000	89,003	1,090	80,000	510	45,100	430	40,000		
					ECE/EU	1,000	89,000	1,090	80,000	500	45,000	430	40,000		
					diff	1	3	0	0	10	100	0	0		
6.C	4406.1191 4407.1121 9		Sawnwood, Coniferous	1000 m ³	JQ2	0	0	0	0	0	0	0	0	0	
					ECE/EU	0	0	0	0	0	0	0	0	0	
					diff	0	0	0	0	0	0	0	0		
6.NC	4406.2232 4407.2122 52927192 99132939 40500000		Sawnwood, Non-coniferous	1000 m ³	JQ2	0	0	0	0	0	0	0	0		
					ECE/EU	0	0	0	0	0	0	0	0		
					diff	0	0	0	0	0	0	0	0		

In the example above:

- roundwood production was reported in the JQ1 table, but not in the EU2 table. The difference is shown and highlighted in magenta.
- Coniferous industrial roundwood trade was reported in ECE/EU table, but not in the JQ2 table.
- Non-coniferous roundwood trade was reported in both JQ2 and ECE/EU Species table, but slightly different figures for 2020. The difference is shown and highlighted with magenta.

Whenever the declared values in the two tables are different, their corresponding cells turn magenta. In such cases we prioritize the data declared in the JQ1 against the one from EU2. Nevertheless, please correct the figures so that they are identical.

Part 2. Validation rules in MDT

For validation rules listed in Part 2, the following attributes are presented:

- Check name in coded format
- Description
- Sheetname, that appears in the validation report
- Threshold, if applicable
- Validation outcome, which can have three possible outcomes:
 - **PASS** – data meet the condition of the validation check, i.e. no issues detected and no action needed from the reporting country.
 - **WARNING** – thresholds have been exceeded; i.e. the reporting country has to confirm the data and briefly explain for what reasons (e.g. country-specific circumstances) data do not confirm with pre-agreed rules and thresholds. Data may be accepted based on the explanation.
 - **ERROR** – data do not conform with well-established accounting / mathematical rules; i.e. the reporting country has to correct and resubmit the data.

2.1. Checking the cell content: flags, confidentiality, negative values

Check name	QC_FLAGS_01_01
Description	This page shows issues where combination of flag codes is forbidden in production
Sheetname	Footnotes 1
Threshold	NA
Notification	Warning

Check name	QC_FLAGS_01_02
Description	Combination of flag codes forbidden for obs_value = 0 in production
Sheetname	Footnotes 2
Threshold	NA
Notification	Warning

Check name	QC_FLAGS_01_03
Description	Combination of flag codes forbidden for obs_value = NULL in production (Flags without figures are not allowed)
Sheetname	Footnotes 3
Threshold	NA
Notification	Warning

Check name	QC_FLAGS_01_04
Description	Combination of flag codes forbidden for obs_value = any value not equal to zero in production
Sheetname	Footnotes 4
Threshold	NA
Notification	Warning

Check name	QC_FLAGS_01_P_Flag
Description	Provisional flag from previous data collections (Please note that flags are deleted after one year)
Sheetname	
Threshold	NA
Notification	Warning

Check name	QC_CONFID_02
Description	Confidential values in one unit must be confidential or not available in all other units
Sheetname	Confidentiality 1
Threshold	NA
Notification	Warning

Check name	QC_SELECT_WHERE_NEG_VAL
Description	Negative values are not allowed.
Sheetname	Negative values 1
Threshold	NA
Notification	Warning

2.2. Internal consistency checks defined by an arithmetic formula

Check name	QC_JFSQ_BRKDOWN_01_TOTAL_THS_NAC_OPER
Description	The declared total cannot be smaller than the sum of coniferous and non-coniferous subitems (1000_NAC) TOTAL >= CONIF + NCONIF
Sheetname	Internal consistency 1
Threshold	1 THS_NAC
Notification	Error

Check name	QC_JFSQ_BRKDOWN_01_TOTAL_THS_M3_OPER
Description	The declared total cannot be smaller than the sum of coniferous and non-coniferous subitems (1000_M3) TOTAL >= CONIF + NCONIF
Sheetname	Internal consistency 2
Threshold	1 THS_M3
Notification	Error

Check name	QC_JFSQ_BRKDOWN_01_TOTAL_THS_T_OPER
Description	The declared total cannot be smaller than the sum of coniferous and non-coniferous subitems (1000_T) TOTAL >= CONIF + NCONIF
Sheetname	Internal consistency 3
Threshold	1 THS T
Notification	Error

Check name	QC_JFSQ_BRKDOWN_01_CONIF_THS_NAC_OPER
Description	The declared coniferous total cannot be smaller than the sum of coniferous subitems CONIF >= C_FIR + C_PIN + C_NSP (1000_NAC)
Sheetname	Internal consistency 4
Threshold	1 THS NAC
Notification	Error

Check name	QC_JFSQ_BRKDOWN_01_CONIF_THS_M3_OPER
Description	The declared coniferous total cannot be smaller than the sum of coniferous subitems CONIF >= C_FIR + C_PIN + C_NSP (1000_M3)
Sheetname	Internal consistency 5
Threshold	1 THS M3
Notification	Error

Check name	QC_JFSQ_BRKDOWN_01_NCONIF_THS_NAC_OPER
Description	The declared non-coniferous total cannot be smaller than the sum of non-coniferous subitems $NCONIF \geq NC_OAK + NC_BEE + NC_BIR + NC_MAP + NC_CHE + NC_ASH + NC_POP + NC_EUC (1000_NAC)$
Sheetname	Internal consistency 7
Threshold	1 THS NAC
Notification	Error

Check name	QC_JFSQ_BRKDOWN_01_NCONIF_THS_M3_OPER
Description	The declared non-coniferous total cannot be smaller than the sum of non-coniferous subitems $NCONIF \geq NC_OAK + NC_BEE + NC_BIR + NC_MAP + NC_CHE + NC_ASH + NC_POP + NC_EUC (1000_M3)$
Sheetname	Internal consistency 8
Threshold	1 THS M3
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_NCONIF_THS_NAC_OPER
Description	The declared non-coniferous item cannot be smaller than the declared tropical item (1000_NAC)
Sheetname	Internal consistency 10
Threshold	1 THS NAC
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_NCONIF_THS_M3_OPER
Description	The declared non-coniferous item cannot be smaller than the declared tropical item (1000_M3)
Sheetname	Internal consistency 11
Threshold	1 THS M3
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_RW_OB_THS_NAC_OPER
Description	The declared roundwood (overbark) total cannot be smaller than the sum of roundwood (overbark) subitems $RW_OB \geq RW_FW_OB + RW_IN_OB (1000_NAC)$
Sheetname	Internal consistency 13
Threshold	1 THS NAC
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_RW_OB_THS_M3_OPER
Description	The declared roundwood (overbark) total cannot be smaller than the sum of roundwood (overbark) subitems $RW_OB \geq RW_FW_OB + RW_IN_OB (1000_M3)$
Sheetname	Internal consistency 14
Threshold	1 THS M3
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_RW_IN_OB_THS_NAC_OPER
Description	The declared industrial roundwood (overbark) total cannot be smaller than the sum of industrial roundwood (overbark) subitems $RW_IN_OB \geq RW_IN_LG_OB + RW_IN_PW_OB + RW_IN_O_OB (1000_NAC)$
Sheetname	Internal consistency 16
Threshold	1 THS NAC
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_RW_IN_OB_THS_M3_OPER
Description	The declared industrial roundwood (overbark) total cannot be smaller than the sum of industrial roundwood (overbark) subitems $RW_IN_OB \geq RW_IN_LG_OB + RW_IN_PW_OB + RW_IN_O_OB$ (1000_M3)
Sheetname	Internal consistency 17
Threshold	1 THS M3
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_RW_THS_NAC_OPER
Description	The declared roundwood total cannot be smaller than the sum of roundwood subitems $RW \geq RW_FW + RW_IN$ (1000_NAC)
Sheetname	Internal consistency 19
Threshold	1 THS NAC
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_RW_THS_M3_OPER
Description	The declared roundwood total cannot be smaller than the sum of roundwood subitems $RW \geq RW_FW + RW_IN$ (1000_M3)
Sheetname	Internal consistency 20
Threshold	1 THS M3
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_RW_IN_THS_NAC_OPER
Description	The declared industrial roundwood total cannot be smaller than the sum of industrial roundwood subitems $RW_IN \geq RW_IN_LG + RW_IN_PW + RW_IN_O$ (1000_NAC)
Sheetname	Internal consistency 22
Threshold	1 THS NAC
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_RW_IN_THS_M3_OPER
Description	The declared industrial roundwood total cannot be smaller than the sum of industrial roundwood subitems $RW_IN \geq RW_IN_LG + RW_IN_PW + RW_IN_O$ (1000_M3)
Sheetname	Internal consistency 23
Threshold	1 THS M3
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_EU2_1_THS_NAC_OPER
Description	Removals by type of ownership - declared total cannot be smaller than the sum of subitems $EU2_1 \geq EU2_1_1 + EU2_1_2 + EU2_1_3$ (1000_NAC)
Sheetname	Internal consistency 25
Threshold	1 THS NAC
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_EU2_1_THS_M3_OPER
Description	Removals by type of ownership - declared total cannot be smaller than the sum of subitems $EU2_1 \geq EU2_1_1 + EU2_1_2 + EU2_1_3$ (1000_M3)
Sheetname	Internal consistency 26
Threshold	1 THS M3
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_ST_1_2_THS_NAC_OPER
Description	Species trade - declared total cannot be smaller than the sum of subitems ST_1_2 >= ST_1_2_1 + ST_1_2_2 (1000_NAC)
Sheetname	Internal consistency 28
Threshold	1 THS NAC
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_ST_1_2_THS_M3_OPER
Description	Species trade - declared total cannot be smaller than the sum of subitems ST_1_2 >= ST_1_2_1 + ST_1_2_2 (1000_M3)
Sheetname	Internal consistency 29
Threshold	1 THS M3
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_CHP_RES_THS_NAC_OPER
Description	The declared total of chips and residues cannot be smaller than the sum of chips and residues CHP_RES >= CHP + RES (1000_NAC)
Sheetname	Internal consistency 31
Threshold	1 THS NAC
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_CHP_RES_THS_M3_OPER
Description	The declared total of chips and residues cannot be smaller than the sum of chips and residues CHP_RES >= CHP + RES (1000_M3)
Sheetname	Internal consistency 32
Threshold	1 THS M3
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_PEL_AGG_THS_NAC_OPER
Description	The declared total of pellets and other agglomerates cannot be smaller than the sum of pellets and other agglomerates PEL_AGG >= PEL + AGG (1000_NAC)
Sheetname	Internal consistency 34
Threshold	1 THS NAC
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_PEL_AGG_THS_T_OPER
Description	The declared total of pellets and other agglomerates cannot be smaller than the sum of pellets and other agglomerates PEL_AGG >= PEL + AGG (1000_T)
Sheetname	Internal consistency 36
Threshold	1 THS T
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_PN_THS_NAC_OPER
Description	The declared total of wood-based panels cannot be smaller than the sum of plywood, fibreboard, particle board, OSB and others PN >= PN_PY + PN_PB + PN_FB (1000_NAC)
Sheetname	Internal consistency 37
Threshold	1 THS NAC
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_PN_THS_M3_OPER
Description	The declared total of wood-based panels cannot be smaller than the sum of plywood, fibreboard, particle board, OSB and others PN >= PN_PY + PN_PB + PN_FB (1000_M3)
Sheetname	Internal consistency 38
Threshold	1 THS M3
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_PN_PB_THS_NAC_OPER
Description	Particle board, OSB and others cannot be smaller than OSB PN_PB >= PN_PB_OSB (1000_NAC)
Sheetname	Internal consistency 40
Threshold	0 THS NAC
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_PN_PB_THS_M3_OPER
Description	Particle board, OSB and others cannot be smaller than OSB PN_PB >= PN_PB_OSB (1000_M3)
Sheetname	Internal consistency 41
Threshold	0 THS M3
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_PN_FB_THS_NAC_OPER
Description	The declared total of fibreboard cannot be smaller than the sum of hardboard, MDF and other hardboard PN_FB >= PN_FB_HB + PN_FB_MDF + PN_FB_O (1000_NAC)
Sheetname	Internal consistency 43
Threshold	1 THS NAC
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_PN_FB_THS_M3_OPER
Description	The declared total of fibreboard cannot be smaller than the sum of hardboard, MDF and other hardboard PN_FB >= PN_FB_HB + PN_FB_MDF + PN_FB_O (1000_M3)
Sheetname	Internal consistency 44
Threshold	1 THS M3
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_PL_THS_NAC_OPER
Description	The declared total of wood pulp cannot be smaller than the sum of mechanical, semi-chemical wood pulp and dissolving grades PL >= PL_MC_SCH + PL_CH + PL_DS (1000_NAC)
Sheetname	Internal consistency 46
Threshold	1 THS NAC
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_PL_THS_T_OPER
Description	The declared total of wood pulp cannot be smaller than the sum of mechanical, semi-chemical wood pulp and dissolving grades PL >= PL_MC_SCH + PL_CH + PL_DS (1000_T)
Sheetname	Internal consistency 48
Threshold	1 THS T
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_PL_CH_THS_NAC_OPER
Description	The declared total of chemical wood pulp cannot be smaller than the sum of sulphate and sulphite PL_CH >= PL_CH_SA + PL_CH_SI (1000_NAC)
Sheetname	Internal consistency 49
Threshold	1 THS NAC
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_PL_CH_THS_T_OPER
Description	The declared total of chemical wood pulp cannot be smaller than the sum of sulphate and sulphite PL_CH >= PL_CH_SA + PL_CH_SI (1000_T)
Sheetname	Internal consistency 51
Threshold	1 THS T
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_PL_CH_SA_THS_NAC_OPER
Description	Sulphate (chemical wood pulp) cannot be smaller than sulphate bleached PL_CH_SA >= PL_CH_SAB (1000_NAC)
Sheetname	Internal consistency 52
Threshold	0 THS NAC
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_PL_CH_SA_THS_T_OPER
Description	Sulphate (chemical wood pulp) cannot be smaller than sulphate bleached PL_CH_SA >= PL_CH_SAB (1000_T)
Sheetname	Internal consistency 54
Threshold	0 THS T
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_PLO_THS_NAC_OPER
Description	The declared total of other pulp cannot be smaller than the sum of pulp from fibres other than wood and recovered fibre pulp PLO >= PLO_NW + PLO_RC (1000_NAC)
Sheetname	Internal consistency 55
Threshold	1 THS NAC
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_PLO_THS_T_OPER
Description	The declared total of other pulp cannot be smaller than the sum of pulp from fibres other than wood and recovered fibre pulp PLO >= PLO_NW + PLO_RC (1000_T)
Sheetname	Internal consistency 57
Threshold	1 THS T
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_PP_THS_NAC_OPER
Description	The declared total of paper and paperboard cannot be smaller than the sum of graphic papers, sanitary and household papers, packaging materials and other paper and paperboard n. e. s. PP >= PP_GR + PP_HS + PP_PK + PP_O (1000_NAC)
Sheetname	Internal consistency 58
Threshold	1 THS NAC
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_PP_THS_T_OPER
Description	The declared total of paper and paperboard cannot be smaller than the sum of graphic papers, sanitary and household papers, packaging materials and other paper and paperboard n. e. s. PP >= PP_GR + PP_HS + PP_PK + PP_O (1000_T)
Sheetname	Internal consistency 59
Threshold	1 THS T
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_PP_GR_THS_NAC_OPER
Description	The declared total of graphic papers cannot be smaller than the sum of newsprint, uncoated mechanical and uncoated woodfree papers and coated papers PP_GR >= PP_GR_NP + PP_GR_MC + PP_GR_NW + PP_GR_CO (1000_NAC)
Sheetname	Internal consistency 61
Threshold	1 THS NAC
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_PP_GR_THS_T_OPER
Description	The declared total of graphic papers cannot be smaller than the sum of newsprint, uncoated mechanical and uncoated woodfree papers and coated papers $PP_GR \geq PP_GR_NP + PP_GR_MC + PP_GR_NW + PP_GR_CO$ (1000_T)
Sheetname	Internal consistency 62
Threshold	1 THS T
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_PP_PK_THS_NAC_OPER
Description	The declared total of packaging materials cannot be smaller than the sum of case materials, cartonboards, wrapping papers and other papers mainly for packaging $PP_PK \geq PP_PK_CS + PP_PK_CB + PP_PK_WR + PP_PK_O$ (1000_NAC)
Sheetname	Internal consistency 64
Threshold	1 THS NAC
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_PP_PK_THS_T_OPER
Description	The declared total of packaging materials cannot be smaller than the sum of case materials, cartonboards, wrapping papers and other papers mainly for packaging $PP_PK \geq PP_PK_CS + PP_PK_CB + PP_PK_WR + PP_PK_O$ (1000_T)
Sheetname	Internal consistency 66
Threshold	1 THS T
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_SW_THS_NAC_OPER
Description	The declared secondary wood products total cannot be smaller than the sum of secondary wood products $SW \geq SW_SN + SW_WR + SW_DM + SW_JN + SW_FU + SW_BL_W + SW_O$ (1000_NAC)
Sheetname	Internal consistency 67
Threshold	1 THS NAC
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_SP_THS_NAC_OPER
Description	The declared secondary paper products total cannot be smaller than the sum of secondary paper products $SP \geq SP_CM + SP_SCO + SP_HS + SP_PK + SP_O$ (1000_NAC)
Sheetname	Internal consistency 70
Threshold	1 THS NAC
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_SP_O_THS_NAC_OPER
Description	The declared total of other articles of paper or paperboard cannot be smaller than the sum of its subitems $SP_O \geq SP_O_PR + SP_O_AR + SP_O_FL$ (1000_NAC)
Sheetname	Internal consistency 73
Threshold	1 THS NAC
Notification	Error

2.3. Cross table consistencies: same concept, different codes.

Check name	QC_JFSQ_BRKDOWN_02_RW_EU2_1_THS_M3_OPER
Description	Roundwood figures from JQ and EU2 must be equal (1000_M3)
Sheetname	Cross-table consistency 4
Threshold	1 THS M3
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_RW_EU2_1_THS_M3_COMP
Description	Roundwood figures from both JQ and EU2 must be present (1000_M3)
Sheetname	Cross-table consistency 5
Threshold	NA
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_RW_EU2_1_THS_M3_CONF
Description	Roundwood figures from both JQ and EU2 must or must not be confidential (1000_M3)
Sheetname	Cross-table consistency 6
Threshold	NA
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_RW_IN_ST_1_2_THS_NAC_OPER
Description	Industrial roundwood figures from JQ and species trade must be equal (1000_NAC)
Sheetname	Cross-table consistency 10
Threshold	1 THS NAC
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_RW_IN_ST_1_2_THS_NAC_COMP
Description	Industrial roundwood figures from both JQ and species trade must be present (1000_NAC)
Sheetname	Cross-table consistency 11
Threshold	NA
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_RW_IN_ST_1_2_THS_NAC_CONF
Description	Industrial roundwood figures from both JQ and species trade must or must not be confidential (1000_NAC)
Sheetname	Cross-table consistency 12
Threshold	NA
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_RW_IN_ST_1_2_THS_M3_OPER
Description	Industrial roundwood figures from JQ and species trade must be equal (1000_M3)
Sheetname	Cross-table consistency 13
Threshold	1 THS M3
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_RW_IN_ST_1_2_THS_M3_COMP
Description	Industrial roundwood figures from both JQ and species trade must be present (1000_M3)
Sheetname	Cross-table consistency 14
Threshold	NA
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_RW_IN_ST_1_2_THS_M3_CONF
Description	Industrial roundwood figures from both JQ and species trade must or must not be confidential (1000_M3)
Sheetname	Cross-table consistency 15
Threshold	NA
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_SN_ST_6_THS_NAC_OPER
Description	Sawnwood figures from JQ and species trade must be equal (1000_NAC)
Sheetname	Cross-table consistency 19
Threshold	1 THS NAC
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_SN_ST_6_THS_NAC_COMP
Description	Sawnwood figures from both JQ and species trade must be present (1000_NAC)
Sheetname	Cross-table consistency 20
Threshold	NA
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_SN_ST_6_THS_NAC_CONF
Description	Sawnwood figures from both JQ and species trade must or must not be confidential (1000_NAC)
Sheetname	Cross-table consistency 21
Threshold	NA
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_SN_ST_6_THS_M3_OPER
Description	Sawnwood figures from JQ and species trade must be equal (1000_M3)
Sheetname	Cross-table consistency 22
Threshold	1 THS M3
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_SN_ST_6_THS_M3_COMP
Description	Sawnwood figures from both JQ and species trade must be present (1000_M3)
Sheetname	Cross-table consistency 23
Threshold	NA
Notification	Error

Check name	QC_JFSQ_BRKDOWN_02_SN_ST_6_THS_M3_CONF
Description	Sawnwood figures from both JQ and species trade must or must not be confidential (1000_M3)
Sheetname	Cross-table consistency 24
Threshold	NA
Notification	Error

Check name	QC_JFSQ_BRKDOWN_03_IMP_THS_NAC_OPER
Description	External EU import figures can not be higher than total import figures (1000_NAC) IMP >= IMP_XEU
Sheetname	Cross-table consistency 28
Threshold	0 THS NAC
Notification	Error

Check name	QC_JFSQ_BRKDOWN_03_IMP_THS_M3_OPER
Description	External EU import figures can not be higher than total import figures (1000_M3) IMP >= IMP_XEU
Sheetname	Cross-table consistency 29
Threshold	0 THS M3
Notification	Error

Check name	QC_JFSQ_BRKDOWN_03_IMP_THS_T_OPER
Description	External EU import figures can not be higher than total import figures (1000_T) IMP >= IMP_XEU
Sheetname	Cross-table consistency 30
Threshold	0 THS T
Notification	Error

Check name	QC_JFSQ_BRKDOWN_03_EXP_THS_NAC_OPER
Description	EU export figures can not be higher than total export figures (1000_NAC) EXP >= EXP_XEU
Sheetname	Cross-table consistency 31
Threshold	0 THS NAC
Notification	Error

Check name	QC_JFSQ_BRKDOWN_03_EXP_THS_M3_OPER
Description	EU export figures can not be higher than total export figures (1000_M3) EXP >= EXP_XEU
Sheetname	Cross-table consistency 32
Threshold	0 THS M3
Notification	Error

Check name	QC_JFSQ_BRKDOWN_03_EXP_THS_T_OPER
Description	EU export figures can not be higher than total export figures (1000_T) EXP >= EXP_XEU
Sheetname	Cross-table consistency 33
Threshold	0 THS T
Notification	Error

2.4. Plausibility checks

Check name	QC_JFSQ_BRKDOWN_03_EXP02_THS_M3_OPER
Description	Apparent consumption: Export should not be higher than the sum of import and production (1000_M3) EXP <= PRD + IMP
Sheetname	Apparent consumption 1
Threshold	0.001 THS M3
Notification	Warning

Check name	QC_JFSQ_BRKDOWN_03_EXP02_THS_T_OPER
Description	Apparent consumption: Export should not be higher than the sum of import and production (1000_T) EXP <= PRD + IMP
Sheetname	Apparent consumption 2
Threshold	0.001 THS T
Notification	Error

Check name	QC_PLAUSIBILITY_02
Description	Annual variation must not be higher than 50% (absolute value of the percentage)
Sheetname	Time series 1
Threshold	50%
Notification	Warning

2.5. Completeness

Check name	QC_EXIST_A_THEN_B_T
Description	Trade: Monetary value (1000 national currency) must be reported when 1000 tonnes are reported.
Sheetname	Trade consistency 1
Threshold	-
Notification	Error

Check name	QC_EXIST_A_THEN_B_M3
Description	Trade: Monetary value (1000 national currency) must be reported when 1000 M3 are reported
Sheetname	Trade consistency 2
Threshold	-
Notification	Error

Check name	QC_EXIST_A_THEN_BCD_NAC
Description	Trade: At least one physical value (M3 or tonnes) must be reported when monetary value is reported
Sheetname	Trade consistency 3
Threshold	-
Notification	Error

Check name	QC_FORE_PHYS_VS_MONET
Description	Trade figures must have the same type of value: quantity and value must both be either empty, zero or a number above zero.
Sheetname	Missing trade value 1
Threshold	-
Notification	Warning