

Sample Dataset Structure: Intra_EU_Travellers

Components:

(1) Identifier

(2) Measure (3) Attribute

table	freq	time_period	reporting	partner	direction	age	adjust	obs_value	obs_status
T01	A	2015	IT	FR	IN	TOT	N	10 000	
T01	A	2015	PT	ES	OUT	Y18	N	8 000	
T02	Q	2015-Q1	FR	DE	IN	Y40	S	11 500	P
T02	Q	2016-Q2	DE	FR	OUT	Y40	N	12 000	C

Data Check Function and Dataset Filtering: for table "T01" only check if reporter and partner are identical

table	freq	time_period	reporting	partner	direction	age	adjust	obs_value	obs_status
T01	A	2015	IT	IT	IN	TOT	N	10 000	
T01	A	2015	PT	ES	OUT	Y18	N	8 000	
T02	Q	2015-Q1	IT	IT	IN	Y40	S	11 500	P
T02	Q	2016-Q2	DE	FR	OUT	Y40	N	12 000	C

TabT01:= Intra_EU_Travellers [filter table= "T01"] ;

check (TabT01#reporting <> TabT01#partner **errorcode("Intra country figures are excluded from T01") errorlevel("Error"))**

Apply filter table = "T01"	table	freq	time_period	reporting	partner	direction	age	adjust	obs_value	obs_status
	T01	A	2015	IT	IT	IN	TOT	N	10 000	
	T01	A	2015	PT	ES	OUT	Y18	N	8 000	

check result

table	freq	time_period	reporting	partner	direction	age	adjust	errorcode	errorlevel
T01	A	2015	IT	IT	IN	TOT	N	Intra country figures are excluded from T01	Error

Dataset Subset and Calculation: for IT reporter and non-adjusted series, convert obs_value in 1000 passengers and add the nconf_value measure which is the obs_value in 1000 when obs_status is not confidential (C), empty otherwise.

table	freq	Time_period	reporting	partner	direction	age	adjust	obs_value	obs_status
T01	A	2015	IT	FR	IN	TOT	N	10 000	
T01	A	2015	IT	ES	OUT	Y18	N	8 000	C
T01	A	2015	FR	DE	IN	Y40	S	11 500	P
T01	A	2016	IT	FR	OUT	Y40	S	12 000	C

NonAdjust_IT := Intra_EU_Travellers [sub reporting = "IT", adjust = "N"] ;

FinalStep:= NonAdjust_IT [calc obs_value:=obs_value/1000, nconf_value:= if obs_status="C" then null else obs_value] ;

Apply Subset (comp. removed)	table	freq	time_period	partner	direction	age	obs_value	obs_status
	T01	A	2015	FR	IN	TOT	10 000	
	T01	A	2015	ES	OUT	Y18	8 000	C

Then

Apply Calculations	table	freq	time_period	partner	direction	age	obs_value	nconf_value	obs_status
	T01	A	2015	FR	IN	TOT	10	10	
	T01	A	2015	ES	OUT	Y18	8		C

Dataset Offset (Analytics): get the previous year data for each datapoint (record)

table	freq	Time_period	reporting	partner	direction	age	adjust	obs_value	obs_status
T01	A	2014	IT	FR	IN	TOT	N	10 000	
T01	A	2015	IT	FR	IN	TOT	N	8 000	
T01	A	2016	IT	FR	IN	TOT	N	9 000	
T01	A	2015	IT	DE	IN	TOT	N	11 500	
T01	A	2016	IT	DE	IN	TOT	N	12 000	

PreviousYear:= lag (Intra_EU_Travellers, 1 over (order by time_period));

Apply Offset (when no previous data, obs_value is empty)	table	freq	Time_period	reporting	partner	direction	age	adjust	obs_value	obs_status
	T01	A	2014	IT	FR	IN	TOT	N		
	T01	A	2015	IT	FR	IN	TOT	N	10 000	
	T01	A	2016	IT	FR	IN	TOT	N	8 000	
	T01	A	2015	IT	DE	IN	TOT	N		
	T01	A	2016	IT	DE	IN	TOT	N	11 500	

Dataset complete time series and check missing data (exist in operator): append the missing datapoints within a Time Series for Quarterly Periodicity (first period to latest period) then check the missing periods

table	freq	Time_period	reporting	partner	direction	age	adjust	obs_value	obs_status
T02	Q	2014-Q3	IT	FR	IN	TOT	N	10 000	
T02	Q	2015-Q1	IT	FR	IN	TOT	N	8 000	
T02	Q	2015-Q3	IT	FR	IN	TOT	N	9 000	
T02	Q	2015-Q2	IT	DE	IN	TOT	N	11 500	
T02	Q	2015-Q4	IT	DE	IN	TOT	N	12 000	

ExtendedTimeSeries:= fill_time_series (Intra_EU_Travellers)

check (exists_in (ExtendedTimeSeries, Intra_EU_Travellers) errorcode ("missing datapoint") errorlevel ("Error"))

Apply complete time series (Only missing datapoints between first and latest period are append)	table	freq	Time_period	reporting	partner	direction	age	adjust	obs_value	obs_status
	T02	Q	2014-Q3	IT	FR	IN	TOT	N	10 000	
	T02	Q	2014-Q4	IT	FR	IN	TOT	N		
	T02	Q	2015-Q1	IT	FR	IN	TOT	N	8 000	
	T02	Q	2015-Q2	IT	FR	IN	TOT	N		
	T02	Q	2015-Q3	IT	FR	IN	TOT	N	9 000	
	T02	Q	2015-Q2	IT	DE	IN	TOT	N	11 500	
	T02	Q	2015-Q3	IT	DE	IN	TOT	N		
T02	Q	2015-Q4	IT	DE	IN	TOT	N	12 000		

check result

table	freq	time_period	reporting	partner	direction	age	adjust	errorcode	errorlevel
T02	Q	2014-Q4	IT	FR	IN	TOT	N	missing datapoint	Error
T02	Q	2015-Q2	IT	FR	IN	TOT	N	missing datapoint	Error
T02	Q	2015-Q3	IT	DE	IN	TOT	N	missing datapoint	Error

Dataset time aggregates and check annual data calculation: calculate the annual series from quarterly series and compare the result within a 1% tolerance with the reported annual series.

table	freq	Time_period	reporting	partner	direction	age	adjust	obs_value	obs_status
T02	Q	2015-Q1	IT	FR	IN	TOT	N	8 000	
T02	Q	2015-Q2	IT	FR	IN	TOT	N	8 300	
T02	Q	2015-Q3	IT	FR	IN	TOT	N	8 150	
T02	Q	2015-Q4	IT	FR	IN	TOT	N	9 000	
T02	Q	2016-Q1	IT	FR	IN	TOT	N	9 100	
T02	Q	2015-Q3	IT	DE	IN	TOT	N	11 500	
T02	Q	2015-Q4	IT	DE	IN	TOT	N	12 000	
T01	A	2015	IT	FR	IN	TOT	N	39 000	
T01	A	2015	IT	DE	IN	TOT	N	51 000	

Calculated_Year:= sum (Intra_EU_Travellers [sub table = "T02", freq = "Q"] group all time_agg ("A", "Q")) ;

Reported_Year:= Intra_EU_Travellers [sub table = "T01", freq = "A"] ;

check ((Reported_Year - Calculated_Year) / Reported_Year <= 0.01 errorcode ("Annual <> Sum(Quarters)") errorlevel ("Error"))

Calculated Year	Time_period	reporting	partner	direction	age	adjust	obs_value	obs_status
	2015	IT	FR	IN	TOT	N	33 450	

Remark: only annual aggregates from complete quarterly series are calculated

Reported Year	Time_period	reporting	partner	direction	age	adjust	obs_value	obs_status
	2015	IT	FR	IN	TOT	N	39 000	
	2015	IT	DE	IN	TOT	N	51 000	

check result (dataset identifiers key are identical, formulas can be applied)

time_period	reporting	partner	direction	age	adjust	errorcode	errorlevel
2015	IT	FR	IN	TOT	N	Annual <> Sum(Quarters)	Error