TAB: ECONOMIC FORECAST DATA, US UNEMPLOYMENT

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	01. ECUPUS Q116		02. ECUPUS Q216		03. ECUPUS Q316		04. ECUPUS Q416		05. ECUPUS Q117		06. ECUPUS Q217		07. ECUPUS Q317		08. ECUPUS Q417		09. ECUPUS Q118		10. ECUPUS Q218		11. ECUPUS Q318		12. ECUPUS Q418	
	Date	Last Price	Date	Last Price	Date	Last Price	Date	Last Price	Date	Last Price	Date	Last Price	Date	Last Price	Date	Last Price	Date	Last Price	Date	Last Price	Date	Last Price	Date	Last Price
MA	10-Mar-16	4.90	9-Jun-16	4.90	8-Sep-16	4.80	8-Dec-16	4.70	8-Dec-16	4.60	8-Jun-17	4.30	8-Sep-17	4.35	12-Oct-17	4.25	12-Oct-17	4.18	12-Oct-17	4.11	12-Oct-17	4.05	12-Oct-17	3.99
MA	11-Feb-16	4.90	12-May-16	4.90	11-Aug-16	4.80	17-Nov-16	4.80	17-Nov-16	4.70	11-May-17	4.40	10-Aug-17	4.30	8-Sep-17	4.23	8-Sep-17	4.24	8-Sep-17	4.18	8-Sep-17	4.12	8-Sep-17	4.05
MA	14-Jan-16	4.90	7-Apr-16	4.70	14-Jul-16	4.80	13-Oct-16	4.70	13-Oct-16	4.60	13-Apr-17	4.50	13-Jul-17	4.20	10-Aug-17	4.10	10-Aug-17	4.10	10-Aug-17	4.00	10-Aug-17	3.90	10-Aug-17	3.90
MA	10-Dec-15	4.90	10-Mar-16	4.70	9-Jun-16	4.80	8-Sep-16	4.70	8-Sep-16	4.50	17-Mar-17	4.50	8-Jun-17	4.20	13-Jul-17	4.10	13-Jul-17	4.10	13-Jul-17	4.10	13-Jul-17	4.00	13-Jul-17	4.00
MA	13-Nov-15	4.90	11-Feb-16	4.70	12-May-16	4.80	11-Aug-16	4.70	11-Aug-16	4.50	9-Feb-17	4.50	11-May-17	4.30	8-Jun-17	4.10	8-Jun-17	4.20	8-Jun-17	4.10	8-Jun-17	4.10	8-Jun-17	4.00
MA	8-Oct-15	4.90	14-Jan-16	4.80	7-Apr-16	4.50	14-Jul-16	4.80	14-Jul-16	4.70	12-Jan-17	4.50	13-Apr-17	4.40	11-May-17	4.30	11-May-17	4.20	11-May-17	4.10	11-May-17	4.10	11-May-17	4.00
MA	10-Sep-15	5.00	10-Dec-15	4.80	10-Mar-16	4.60	9-Jun-16	4.80	9-Jun-16	4.80	8-Dec-16	4.60	17-Mar-17	4.50	13-Apr-17	4.30	13-Apr-17	4.20	13-Apr-17	4.20	13-Apr-17	4.10		
MA	13-Aug-15	5.10	13-Nov-15	4.80	11-Feb-16	4.60	12-May-16	4.80	12-May-16	4.70	17-Nov-16	4.60	9-Feb-17	4.40	17-Mar-17	4.30	17-Mar-17	4.30	17-Mar-17	4.20	17-Mar-17	4.20		
MA	9-Jul-15	5.00	8-Oct-15	4.80	14-Jan-16	4.70	7-Apr-16	4.50	7-Apr-16	4.40	13-Oct-16	4.50	12-Jan-17	4.40	9-Feb-17	4.30	9-Feb-17	4.20	9-Feb-17	4.20	9-Feb-17	4.10		
MA	11-Jun-15	5.00	10-Sep-15	4.90	10-Dec-15	4.70	10-Mar-16	4.60	10-Mar-16	4.60	8-Sep-16	4.40	8-Dec-16	4.50	12-Jan-17	4.30	12-Jan-17	4.30	12-Jan-17	4.30				
MA	14-May-15	4.90	13-Aug-15	5.00	13-Nov-15	4.70	11-Feb-16	4.60	11-Feb-16	4.60	11-Aug-16	4.40	17-Nov-16	4.50	8-Dec-16	4.50	8-Dec-16	4.40	8-Dec-16	4.40				
MA	9-Apr-15	5.00	9-Jul-15	4.90	8-Oct-15	4.70	14-Jan-16	4.70	14-Jan-16	4.60	14-Jul-16	4.60	13-Oct-16	4.40	17-Nov-16	4.40	17-Nov-16	4.40	17-Nov-16	4.40				
MA	12-Mar-15	5.00	11-Jun-15	4.90	10-Sep-15	4.90	10-Dec-15	4.60	10-Dec-15	4.50	9-Jun-16	4.70	8-Sep-16	4.30	13-Oct-16	4.40	13-Oct-16	4.30						
MA	12-Feb-15	5.10	14-May-15	4.90	13-Aug-15	4.90	13-Nov-15	4.60	13-Nov-15	4.50	12-May-16	4.60	11-Aug-16	4.30	8-Sep-16	4.20	8-Sep-16	4.20						
MA	15-Jan-15	5.00	9-Apr-15	5.00	9-Jul-15	5.00	8-Oct-15	4.70	8-Oct-15	4.60	7-Apr-16	4.40	14-Jul-16	4.50	11-Aug-16	4.20	11-Aug-16	4.20						
MA			12-Mar-15	4.90	11-Jun-15	4.90	10-Sep-15	4.80	10-Sep-15	4.80	10-Mar-16	4.50	9-Jun-16	4.60	14-Jul-16	4.40								
MA			12-Feb-15	5.10	14-May-15	4.80	13-Aug-15	4.90	13-Aug-15	4.90	11-Feb-16	4.50	12-May-16	4.50	9-Jun-16	4.50								
MA			15-Jan-15	5.00	9-Apr-15	4.90	9-Jul-15	4.90			14-Jan-16	4.60	7-Apr-16	4.40	12-May-16	4.50								
MA					12-Mar-15	4.90	11-Jun-15	4.90			10-Dec-15	4.50	10-Mar-16	4.50										
OXE	10-Mar-16	4.90	9-Jun-16	4.80	11-Aug-16	4.90	8-Dec-16	4.70	17-Mar-17	4.70	8-Jun-17	4.40	8-Sep-17	4.35	8-Sep-17	4.29	8-Sep-17	4.27	8-Sep-17	4.25	8-Sep-17	4.24	8-Sep-17	4.23
OXE	11-Feb-16	4.90	12-May-16	5.00	14-Jul-16	4.80	17-Nov-16	4.90	9-Feb-17	4.70	11-May-17	4.50	10-Aug-17	4.30	10-Aug-17	4.30	10-Aug-17	4.30	10-Aug-17	4.30	10-Aug-17	4.30	10-Aug-17	4.30
OXE	14-Jan-16	5.00	7-Apr-16	5.00	9-Jun-16	4.80	13-Oct-16	4.90	12-Jan-17	4.70	13-Apr-17	4.50	13-Jul-17	4.40	13-Jul-17	4.40	13-Jul-17	4.40	13-Jul-17	4.40	13-Jul-17	4.40	13-Jul-17	4.40
OXE	10-Dec-15	4.90	10-Mar-16	4.80	12-May-16	4.80	11-Aug-16	4.70	8-Dec-16	4.70	17-Mar-17	4.60	8-Jun-17	4.40	8-Jun-17	4.40	8-Jun-17	4.40	8-Jun-17	4.40	8-Jun-17	4.40	8-Jun-17	4.40
OXE	13-Nov-15	4.90	11-Feb-16	4.80	7-Apr-16	4.80	14-Jul-16	4.70	17-Nov-16	4.80	9-Feb-17	4.70	11-May-17	4.50	11-May-17	4.50	11-May-17	4.50	11-May-17	4.50	11-May-17	4.50	11-May-17	4.50
OXE	8-Oct-15	4.90	14-Jan-16	4.90	10-Mar-16	4.70	9-Jun-16	4.70	13-Oct-16	4.80	12-Jan-17	4.70	13-Apr-17	4.50	13-Apr-17	4.50	13-Apr-17	4.50	13-Apr-17	4.50	13-Apr-17	4.50		
OXE	10-Sep-15	5.00	10-Dec-15	4.80	11-Feb-16	4.70	12-May-16	4.70	11-Aug-16	4.70	8-Dec-16	4.70	17-Mar-17	4.60	17-Mar-17	4.60	17-Mar-17	4.50	17-Mar-17	4.50	17-Mar-17	4.50		
OXE	13-Aug-15	5.10	13-Nov-15	4.80	14-Jan-16	4.80	7-Apr-16	4.70	14-Jul-16	4.60	17-Nov-16	4.70	9-Feb-17	4.60	9-Feb-17	4.60	9-Feb-17	4.50	9-Feb-17	4.50	9-Feb-17	4.50		
OXE	9-Jul-15	5.10	8-Oct-15	4.80	10-Dec-15	4.80	10-Mar-16	4.70	9-Jun-16	4.70	13-Oct-16	4.70	12-Jan-17	4.60	12-Jan-17	4.60	12-Jan-17	4.50	12-Jan-17	4.50				
OXE	11-Jun-15	5.00	10-Sep-15	4.90	13-Nov-15	4.80	11-Feb-16	4.70	12-May-16	4.70	11-Aug-16	4.60	8-Dec-16	4.60	8-Dec-16	4.60	8-Dec-16	4.60	8-Dec-16	4.60				
OXE	14-May-15	5.10	13-Aug-15	4.90	8-Oct-15	4.80	14-Jan-16	4.70	7-Apr-16	4.60	14-Jul-16	4.60	17-Nov-16	4.70	17-Nov-16	4.70	17-Nov-16	4.70	17-Nov-16	4.70				
OXE	9-Apr-15	5.10	9-Jul-15	5.00	10-Sep-15	4.80	10-Dec-15	4.70	10-Mar-16	4.70	9-Jun-16	4.60	13-Oct-16	4.70	13-Oct-16	4.70	13-Oct-16	4.70						
OXE	12-Feb-15	5.30	11-Jun-15	5.00	13-Aug-15	4.80	13-Nov-15	4.80	11-Feb-16	4.70	12-May-16	4.60	11-Aug-16	4.60	11-Aug-16	4.60	11-Aug-16	4.60						
OXE	15-Jan-15	5.30	14-May-15	5.00	9-Jul-15	5.00	8-Oct-15	4.80	14-Jan-16	4.70	7-Apr-16	4.60	14-Jul-16	4.60	14-Jul-16	4.60								
OXE	11-Dec-14	5.60	9-Apr-15	5.00	11-Jun-15	5.00	10-Sep-15	4.70	10-Dec-15	4.70	10-Mar-16	4.70	9-Jun-16	4.60	9-Jun-16	4.60								
OXE	13-Nov-14	5.60	12-Feb-15	5.30	14-May-15	5.00	13-Aug-15	4.70	13-Nov-15	4.80	11-Feb-16	4.70	12-May-16	4.60	12-May-16	4.60								
OXE	9-Oct-14	5.60	15-Jan-15	5.30	9-Apr-15	5.00	9-Jul-15	5.00	8-Oct-15	4.80	14-Jan-16	4.70	7-Apr-16	4.60										
OXE	11-Sep-14	5.60	11-Dec-14	5.50	12-Feb-15	5.30	11-Jun-15	5.00	10-Sep-15	4.70	10-Dec-15	4.70	10-Mar-16	4.70										
OXE	14-Aug-14	5.60	13-Nov-14	5.50			14-May-15	5.00	13-Aug-15	4.70	13-Nov-15	4.80	11-Feb-16	4.70										

TAB: SAMPLE CALCULATOR

Forecast sample

Sample parameters	java.util.LinkedHashMap@Sun, 24 Jun 2018 00:12:58:6	2
variable-to-maturity	java.util.LinkedHashMap@Sun, 24 Jun 2018 00:12:58:615..7516927927	12
sample-type	sample-forecast-B	
Forecast sample object	jmathkr.lib.stats.sample.model.forecast.ForecastSample@Sun, 24 Jun 2	
Sample moments (as of issue date)	jmathkr.lib.stats.sample.Sample@Sun, 24 Jun 2018 00:12:58:754..2068	
Sample moments (as of maturity date)	jmathkr.lib.stats.sample.Sample@Sun, 24 Jun 2018 00:12:58:755..5072	
Sample moments with different maturity terms	jmathkr.lib.stats.sample.Sample@Sun, 24 Jun 2018 00:12:58:761..2728	2

Sample parameters

Variable names	*Variable-to-maturity mapping*	
quarter [00]	01. ECUPUS Q116	31-Mar-16
quarter [01]	02. ECUPUS Q216	30-Jun-16
quarter [02]	03. ECUPUS Q316	30-Sep-16
quarter [03]	04. ECUPUS Q416	31-Dec-16
quarter [04]	05. ECUPUS Q117	31-Mar-17
quarter [05]	06. ECUPUS Q217	30-Jun-17
quarter [06]	07. ECUPUS Q317	30-Sep-17
quarter [07]	08. ECUPUS Q417	31-Dec-17
quarter [08]	09. ECUPUS Q118	31-Mar-18
quarter [09]	10. ECUPUS Q218	30-Jun-18
quarter [10]	11. ECUPUS Q318	30-Sep-18
quarter [11]	12. ECUPUS Q418	31-Dec-18

Sample size	1,000	swap-dates	1
Number of columns	24	swap-levels	0

Output parameters

		Table A	Table B	Table C	Table D	Table E
java.util.LinkedHashMap@Sun, 2	values-only	0	0	0	0	0
java.util.LinkedHashMap@Sun, 2	level	0	0	0	0	0
java.util.LinkedHashMap@Sun, 2	key	quarter [04]	quarter [04]	31-Mar-17	30-Jun-17	
java.util.LinkedHashMap@Sun, 2	key-names	java.util.ArrayList@	java.util.ArrayList@	java.util.ArrayLis	java.util.ArrayList	java.util.ArrayList(
java.util.LinkedHashMap@Sun, 2						

Sample Statistics

min		java.util.ArrayList@Sun, 2	5
percentile	0.25	java.util.ArrayList@Sun, 2	5
mean			
percentile	0.75		
max			

TAB: SAMPLE STATISTICS

java.util.ArrayList@Sun, 24 Jun 2018 00:12:5 12 3

quarter [04] Table A: Forecasts presented as of the issue date

Forecast issue date	MA	OXE	historical data
31-Mar-15	5.00	5.00	
30-Jun-15	4.90	4.90	
30-Sep-15	4.70	4.80	
31-Dec-15	4.60	4.70	
31-Mar-16	4.80	4.70	
30-Jun-16	4.40	4.60	
30-Sep-16	4.50	4.60	
31-Dec-16	4.30	4.60	
31-Mar-17	4.20	4.40	
30-Jun-17	4.18	4.25	
30-Sep-17	4.05		

java.util.ArrayList@Sun, 24 Jun 2018 00:12:5 12 3

quarter [04] Table B: Forecasts presented as of the maturity date

Forecast maturity date	MA	OXE	historical data
31-Mar-16	5.00	5.00	
30-Jun-16	4.90	4.90	
30-Sep-16	4.70	4.80	
31-Dec-16	4.60	4.70	
31-Mar-17	4.80	4.70	
30-Jun-17	4.40	4.60	
30-Sep-17	4.50	4.60	
31-Dec-17	4.30	4.60	
31-Mar-18	4.20	4.40	
30-Jun-18	4.18	4.25	
30-Sep-18	4.05		

java.util.ArrayList@Sun, 24 Jun 2018 00:1 8 3

31-Mar-17 Table C: Forecasts term structure as of given date

Entity name	quarter [01]	quarter [02]	quarter [03]	quarter [04]	quarter [05]	quarter [06]	quarter [07]
MA	4.30	4.20	4.10	4.20	4.10	4.10	4.00
OXE	4.40	4.40	4.40	4.40	4.40	4.40	4.40

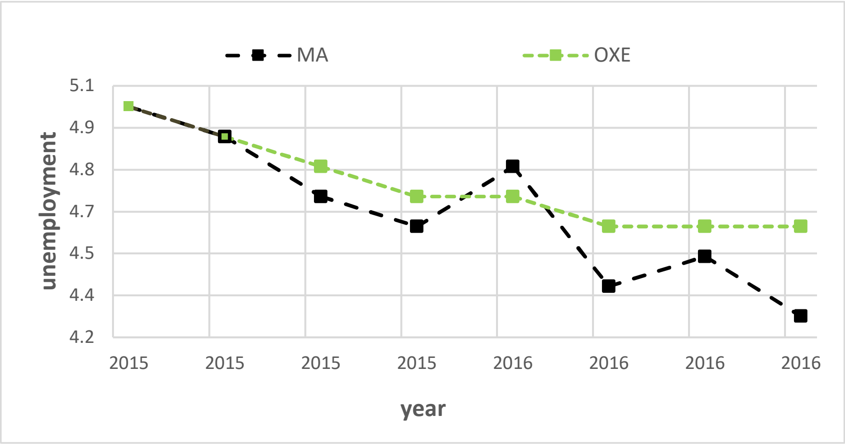
java.util.ArrayList@Sun, 24 Jun 2018 00:1 7 3

30-Jun-17 Table D: Forecasts term structure as of given date

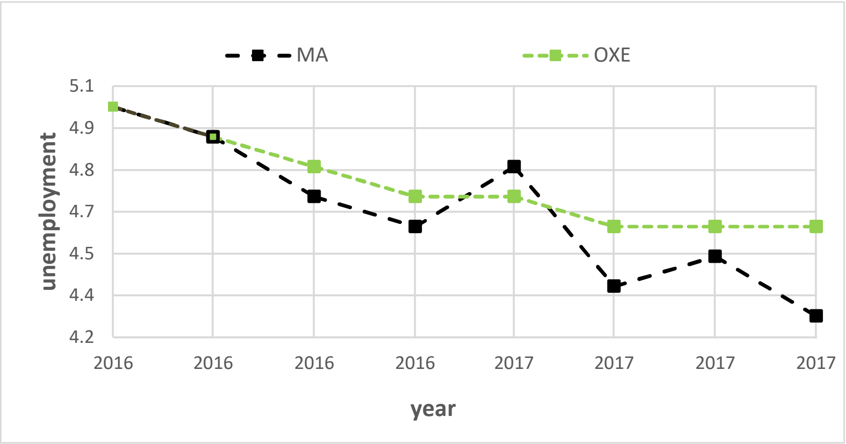
Entity name	quarter [01]	quarter [02]	quarter [03]	quarter [04]	quarter [05]	quarter [06]
MA	4.35	4.23	4.24	4.18	4.12	4.05
OXE	4.35	4.29	4.27	4.25	4.24	4.23

TAB: CHARTS

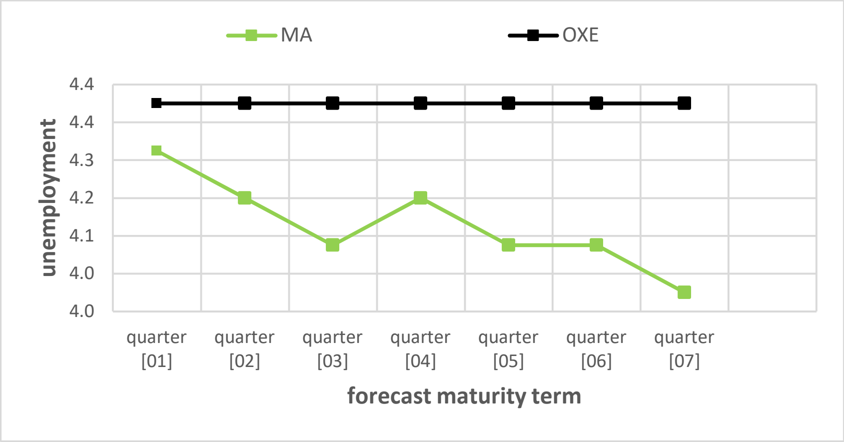
quarter [04] Table A: Forecasts presented as of the issue date



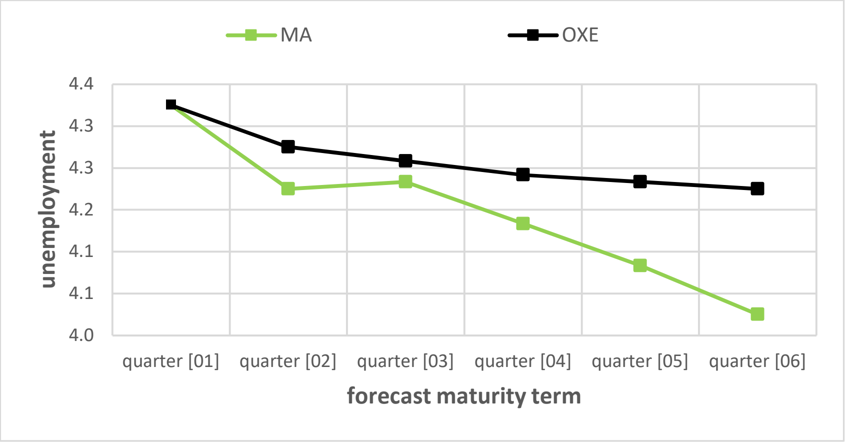
quarter [04] Table B: Forecasts presented as of the maturity date



31-Mar-17 Table C: Forecasts term structure as of given date



30-Jun-17 Table D: Forecasts term structure as of given date



SAMPLE TESTING

java.util.ArrayList@Sun, 24 Jun 2018 0C 9 26

Table E:

Forecast issue date	Entity name	quarter [01]	quarter [02]	quarter [03]	quarter [04]	quarter [05]	quarter [06]	quarter [07]
31-Dec-15	MA	4.90	4.70	4.60	4.60	4.60	4.50	4.50
31-Dec-15	OXE	4.90	4.80	4.70	4.70	4.70	4.70	4.70
31-Mar-16	MA	4.90	4.80	4.80	4.80	4.70	4.60	4.50
31-Mar-16	OXE	4.80	4.80	4.70	4.70	4.60	4.60	4.60
30-Jun-16	MA	4.80	4.70	4.50	4.40	4.30	4.20	4.20
30-Jun-16	OXE	4.90	4.70	4.70	4.60	4.60	4.60	4.60
30-Sep-16	MA	4.70	4.60	4.60	4.50	4.50	4.40	4.40
30-Sep-16	OXE	4.70	4.70	4.70	4.60	4.60	4.60	4.60
31-Dec-16	OXE	4.70	4.60	4.60	4.60	4.50	4.50	4.50
31-Mar-17	MA	4.30	4.20	4.10	4.20	4.10	4.10	4.00
31-Mar-17	OXE	4.40	4.40	4.40	4.40	4.40	4.40	4.40
30-Jun-17	MA	4.35	4.23	4.24	4.18	4.12	4.05	
30-Jun-17	OXE	4.35	4.29	4.27	4.25	4.24	4.23	
30-Sep-17	MA	4.25	4.18	4.11	4.05	3.99		
30-Sep-15	MA		4.90	4.80	4.70	4.60	4.50	4.50
30-Sep-15	OXE		4.90	4.80	4.80	4.70	4.70	4.70
31-Dec-16	MA		4.50	4.50	4.30	4.30	4.20	4.20
30-Jun-15	MA			5.00	4.90	4.90	4.80	4.80
30-Jun-15	OXE			5.00	4.90	4.80	4.70	4.70
31-Mar-15	MA				5.00	4.90	4.90	4.90
31-Mar-15	OXE				5.00	5.00	5.00	5.00
31-Dec-14	MA					5.00	4.90	4.90
31-Dec-14	OXE					5.30	5.30	5.30
30-Sep-14	OXE						5.60	5.50
30-Jun-14	OXE							5.60

TAB: CONFIGURATION FILE

Test connection host: home-pc; user: Konstantin Rybakov; key: null

Array formula cell address	number of rows	number of cols	Description
'stats'!$B$7	12	3	Forecast sample as of forecast issue date
'stats'!$J$7	12	3	Forecast sample as of forecast maturity date
'stats'!$R$7	3	8	Forecast sample with different maturities
'stats'!$R$20	3	7	
'test'!$B$7	26	9	

Variable names

quarter [00]
quarter [01]
quarter [02]
quarter [03]
quarter [04]
quarter [05]
quarter [06]
quarter [07]
quarter [08]
quarter [09]
quarter [10]
quarter [11]
quarter [12]
quarter [13]
quarter [14]
quarter [15]
quarter [16]

Supplementary output parameters

key-names	Forecast maturity date
	Forecast issue date
	Entity name

Graph configuration

Line	yes	Set to yes/no to set line visible or non-visible
Line size	1.5	Set line size
Marker	yes	Set to yes/no to set markers visible or non-visible
Marker size	4	Set markers size

Parameter	Description		
Statistics	Sample statistics	Data types	Sample key data types
min		*date*	
max		*int*	
mean		*double*	
median		*string*	
stdev		sample-type	Type of the constructed sample
variance		*sample-forecast-A*	
percentile		*sample-forecast-B*	
		period-unit	Duration of a forecast period unit
		quarter	
key-ranking	List of sample key ranking (default ranking is (c0, c1, ..., r0, r1, ...)		
key-types	Mapping from key id to key type: e.g. (r0 => date, r1 => int, c0 => string)		
values-only	If 1, return value array without keys		
key	Key value use to retrieve a sub-sample		
level	Specifies how to split sample in two-dimensional array		
key-names	Names of keys added as a respective columns headers		
swap-dates	If set to one, then the issue and maturity dates are swapped in the forecast sample		
swap-levels	Specifies sequence of key indices swapped in the sample		

Forecast sample keys	
issue-date	Forecast issue date
forecaster-id	Forecaster id
variable-id	Variable id

Package: AC.stats.sample

Available functions: