EQUITIES & EQUITY DERIVATIVES RISK ENGINE

File set for margin calculation replica

Content and format specifications

Table of contents

1 Replicable margins

Given input trades/positions with Open Interest (O/I):

- Mark-to-market/Premium Margins;
- Variation Margins;
- Initial Margins;
- Decorrelation risk add-on.

2   File set

(in conjunction with 'Risk Array' or 'Risk Array'-like files containing product static and settlement price data)

2.1   Product scenario price file

The file contains the product scenario prices (including current scenario, which must be employed to compute product scenario profits/losses) for the calculation of the Initial Margins (and of the Decorrelation risk add-on).

Two different files will be produced, one for Borsa Italiana and one for Euronext legacy products.

The files will be **.csv** files composed by a first header row + *n* value rows (delimiter: comma; decimal separator: dot).

Here below are the specifications for the fields of the file:

Table 1 - Product scenario prices

Field name	Field type	Possible field values	Field description
eval_dt	Integer		Evaluation date YYYYMMDD
scenario	String	'S', 'U'	Scenario type, ordinary (scaled) 'S' or stressed (unscaled) 'U'
instr_id	String		Product ISIN code
asset_type	String	'C', 'F', 'O'	Product type, cash ('C'), futures ('F') or option ('O')
option_type	String	'C', 'P', 'N'	Option type, call ('C') or put ('P') ('N' for cash and futures products)
class_code *	String		Borsa Italiana product class code

und_instr_id	String		Underlying product ISIN code
mat_dt	Integer		Product expiry date YYYYMMDD (0 for cash products)
mult	Float		Product multiplier
strike	Float		Option strike price (0.0 for cash and futures products)
settl_curcy	String		Product denomination currency
ref_dt	Integer		Scenario date YYYYMMDD (= **eval_dt** for current scenario)
value	Float		Scenario value

* Borsa Italiana products only

2.2 Model parameter file

The file contains the model parameters for the calculation of the Initial Margins (and of the Decorrelation risk add-on). Please notice that not all the parameters in the file must be used for the abovementioned computation (e.g. *holding period*, *scaling window* and *lambda* parameters are already 'embedded' into the prices of the product scenario price file).

Borsa Italiana and Euronext legacy margin portfolios will share the same parameter set.

The file will be a **.txt** file composed by 8 rows containing the parameter name followed by its value, as in the below example:

```
holding_period: 2
scaling_window: 60
lambda: 0.98
ordinary_confidence_level: 0.995
stressed_confidence_level: 0.995
```

```
decorrelation_parameter: 0.8

ordinary_weight: 0.75

stressed_weight: 0.25
```

2.3 FX scenario value file

The file contains the exchange rate scenario values (including current scenario) for the calculation of the Initial Margins (and of the Decorrelation risk add-on).

Euronext legacy products only need this kind of file.

The file will be a **.csv** file composed by a first header row + *n* value rows (delimiter: comma; decimal separator: dot).

Here below are the specifications for the fields of the file:

Table 2 - FX scenario values

Field name	Field type	Possible field values	Field description
eval_dt	Integer		Evaluation date YYYYMMDD
base_curcy	String		ISO product currency code (e.g. 'USD')
counter_curcy	String		ISO clearing currency code (i.e. 'EUR')
scenario	String	'S', 'U'	Scenario type, ordinary (scaled) 'S' or stressed (unscaled) 'U'
ref_dt	Integer		Scenario date YYYYMMDD (= **eval_dt** for current scenario)
value	Float		Scenario value