



Stock Futures

Margin Calculation Methodology

RM Office

Version 1.3

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Foreword

This document is a guide to the calculation of Margins for the stock futures.

The margining methodology foresees the following types of Initial Margins:

- a) **Futures Straddle Margin**, calculated on futures positions of opposite sign, different maturity and referred to the same underlying (futures straddle positions). The Margin is equal to the number of futures straddle positions¹ multiplied by the unitary Futures Straddle Margin.
- b) **Additional Margin**, calculated on the non straddle futures positions. It represents the highest reasonable loss in case of underlying price variation within the margin interval.
- c) **Mark to Market Margin**, calculated on the futures positions that have been expired and have not yet been settled during the three days previous the settlement. It re-evaluates the theoretical settlement gain/loss to the current market values; it represents a theoretical credit (debit) for the member who bought the futures if the settlement price is lower (higher) than the current market value, set equal to the reference price of the of the underlying, and viceversa for the member that sold the futures.

1 Variation Margin

In the period comprised between the trading date and the expiration (9.05 a.m.: end of trading) included, Variation Margins are calculated with the same methodology currently utilized for FTSE-MIB.

2 Initial Margin

2.1 Futures Straddle Margin

The *Futures Straddle Margin* is calculated only for those *futures* positions of opposite sign on different maturities, that refer to the same underlying asset (*futures straddle* positions). It is equal to the number of *futures straddle* positions multiplied by the *future straddle* margin set by CC&G.

2.2 Additional Margin

The Additional Margin is calculated assuming that in each scenario the futures price variation is equal to the underlying reference price multiplied by the Margin Interval.

In other words:

- 1) The Margin Interval is applied to the underlying reference price;
- 2) Theoretical settlement gain/loss for the underlying are determined in each scenario;
- 3) A variation of the same amount (unit per unit) is assumed for the *futures* price.

The Margin Interval for the *futures* contracts shall not necessarily be the same applied to the options on the same underlying.

2.3 Mark-to-Market Margin – *Stock Futures with Physical Delivery*

The *mark-to-market* margin is applied to physically delivered Stock Futures.

¹ The number is equal to the lesser one between the long and short positions.

In the period comprised between the expiration date and the settlement date, the stock futures positions with physical delivery are marked to the market – as the tender/assigned options with physical delivery – with the daily adjustment of the Mark-to-Market margin, equal to the difference between the settlement price and the reference price of the underlying.

Therefore, on the expiration day both Variation Margins (positions re-valued at the settlement price determined at the end of trading at 9.05 a.m.), and Mark-to-Market Margins, (positions re-valued from the settlement price to the reference price of the underlying asset at the end of the day) are calculated.

3 Final differential settlement – Stock Futures with Cash Settlement

Cash-settled Stock *Futures* are not settled with the exchange of the asset underlying the *futures* contract, but with a final differential settlement.

The amount of the final settlement is equal to the difference between:

- the *Settlement Price* and the trading price, in case positions refer to operations of the last trading day;
- the *Settlement Price* and the daily settlement price of the previous trading day, in case positions refer to operations of previous trading days.

* * *

The annexed examples show how the stock *futures* margin calculation operates.

3 long positions on futures exp. JN02, trading price 12,0877; reference price 12,0272
2 short positions on futures exp. SP02, trading price 12,1869; reference price 12,126

Variation Margins (Settle-to-Market)	
(Reference Price - Trading Price) x Numb. Positions x Numb. Underlying	
(12,0272 - 12,0877) x 3 x 1000	-181,50 Debit
(12,126 - 12,1869) x -2 x 1000	121,80 Debit
TOTAL	-59,70 Debit

Futures Straddle Margins	
(Straddle Positions) x Straddle margin	
2 x 400	-800,00 Debit
TOTAL	-800,00 Debit

	DOWNSIDE					Market Value	UPSIDE				
Margin Interval	-10,00%	-8,00%	-6,00%	-4,00%	-2,00%		2,00%	4,00%	6,00%	8,00%	10,00%
Securities Theoretical Value	10,746	10,985	11,224	11,462	11,701	11,940	12,179	12,418	12,656	12,895	13,134
Unitary settlement gain/loss (Euro)	-1,194	-0,955	-0,716	-0,478	-0,239		0,239	0,478	0,716	0,955	1,194
Futures Theoretical Value	10,833	11,072	11,311	11,550	11,788	12,027	12,266	12,505	12,744	12,982	13,221
Closing Price	12,027	12,027	12,027	12,027	12,027		12,027	12,027	12,027	12,027	12,027
Futures Theoretical Value	-1,194	-0,955	-0,716	-0,478	-0,239		0,239	0,478	0,716	0,955	1,194
X 1 Long Positions	-1,194	-0,955	-0,716	-0,478	-0,239		0,239	0,478	0,716	0,955	1,194
Unitary settlement gain/loss Futures (Euro)	-1.194,000	-955,200	-716,400	-477,600	-238,800		238,800	477,600	716,400	955,200	1.194,000
Settlement gain/loss Total (Euro)	-1.194,00	-955,200	-716,40	-477,60	-238,80		238,800	477,600	716,400	955,200	1.194,000
Largest Theoretical loss	-1.194,00										€ Debit
Additional Margins	-1.194,00										€ Debit
Futures Straddle Margins	-800,00										€ Debit
Total Initial margins - Class Group	-1.994,00										€ Debit

3 long expiring futures positions; settlement price 12,00; underlying reference price 11,94

Settlement Balance		
Settlement Price x Numb. Positions x Numb. Underlying		
12 x -3000	-36.000,00	
Securities net amount	3.000,00	€ Collect
Cash net amount	-36.000,00	€ Pay

Mark-to-Market Margin		
(Reference Price - Settlement Price) x Numb. Positions x Numb. Underlying		
(11,94-12) x 3000	-180,00	€ Debit
TOTAL	-180,00	€ Debit

	Downside					Market value	Upside				
Margin Interval	-10,00%	-8,00%	-6,00%	-4,00%	-2,00%		2,00%	4,00%	6,00%	8,00%	10,00%
Securities Theoretical Value	10,746	10,985	11,224	11,462	11,701	11,940	12,179	12,418	12,656	12,895	13,134
Reference Price	11,940	11,940	11,940	11,940	11,940		11,940	11,940	11,940	11,940	11,940
Unitary settlement gain/loss (Euro)	-1,194	-0,955	-0,716	-0,478	-0,239		0,239	0,478	0,716	0,955	1,194
Theoretical settlement gain/loss (Euro) X 3000 securities long positions	-3.582,00	-2.865,60	-2.149,20	-1.432,80	-716,40		716,40	1.432,80	2.149,20	2.865,60	3.582,00
Settlement gain/loss Total (Euro)	-3.582,00	-2.865,60	-2.149,20	-1.432,80	-716,40		716,40	1.432,80	2.149,20	2.865,60	3.582,00
Largest Theoretical loss	-3.582,00										
Additional Margins	-3.582,00										
Futures Straddle Margins	0,00										
Mark to Market Margins	-180,00										
Total Initial margins - Class Group	-3.762,00										

2 long positions options call 11,00 exp. SP 02, trading price 2,216; closing price 2,176

2 short positions futures exp. JN02, trading price 12,0877; closing price 12,0272

Variation Margins (Settle-to-Market)	
(Reference Price - Trading Price) x Numb. Positions x Numb. Underlying	
(12,0272 - 12,0877) x -2 x 1000	121,00 € Credit
TOTAL	121,00 € Credit

Premium Options	
(Trading Price x Numb.Positions x Numb. Underlying)	
2,2162 x 2 x 1000	4.432,40 € Collect
TOTAL	4.432,40 € Collect

Premium Margins	
(Closing Price x Numb. Positions x Numb. Underlying)	
2,1755 x 2 x 1000	4.351,00 € Credit
TOTAL	4.351,00 € Credit

	Downside					Market Value	Upside				
Margin Interval	-10,00%	-8,00%	-6,00%	-4,00%	-2,00%		2,00%	4,00%	6,00%	8,00%	10,00%
Securities Theoretical Value	10,746	10,985	11,224	11,462	11,701	11,940	12,179	12,418	12,656	12,895	13,134
Unitary settlement gain/loss (Euro)	-1,194	-0,955	-0,716	-0,478	-0,239		0,239	0,478	0,716	0,955	1,194
Theoretical Value Option Call 11 set-02	1,436	1,573	1,715	1,863	2,017	2,176	2,339	2,508	2,681	2,858	3,039
Closing Price	2,176	2,176	2,176	2,176	2,176		2,176	2,176	2,176	2,176	2,176
Settlement gain/loss (Euro)	-0,740	-0,603	-0,461	-0,312	-0,159		0,164	0,332	0,505	0,683	0,864
X 2 Long Positions	-1,479	-1,206	-0,921	-0,625	-0,318		0,327	0,664	1,010	1,365	1,728
Settlement Theoretical gain/loss (Euro) Call 11 set-02	-1.479.000	-1.205,800	-921,000	-624,600	-317,600		327,400	664,400	1.010,400	1.365,000	1.727,800
Futures Theoretical Value	10,833	11,072	11,311	11,550	11,788	12,027	12,266	12,505	12,744	12,982	13,221
Closing Price	12,027	12,027	12,027	12,027	12,027		12,027	12,027	12,027	12,027	12,027
Unitary settlement gain/loss (Euro)	-1,194	-0,955	-0,716	-0,478	-0,239		0,239	0,478	0,716	0,955	1,194
X 2 Long Positions	2,388	1,910	1,433	0,955	0,478		-0,478	-0,955	-1,433	-1,910	-2,388
Settlement gain/loss Futures (Euro)	2.388,000	1.910,400	1.432,800	955,200	477,600		-477,600	-955,200	-1.432,800	-1.910,400	-2.388,000
Settlement gain/loss Total (Euro)	909,00	704,60	511,80	330,60	160,00		-150,20	-290,80	-422,40	-545,40	-660,20
Largest Theoretical loss		-660,20									
Additional Margins		-660,20									
Option Premium Margin		4.351,00									
Total Initial margins - Class Group		3.690,80									