



RESOLUTION 5

“Risk management procedures in the Derivatives system and other related issues”

**THE BOARD OF DIRECTORS
OF ATHENS EXCHANGE CLEARING HOUSE (ATHEXClear)
(Meeting of 17/11/2014)**

Having regard to the provisions of § 2.4.12, § 3.2, § 5.2, § 5.3, § 6.1, § 6.2, § 6.4, § 6.4.1, § 6.4.2, § 7.7 and § 7.8.1 of Section II of the Regulation on Clearing Derivatives Transactions issued by ATHEXClear (hereinafter the "Regulation")

DECIDES AS FOLLOWS

PART 1. Scope & definitions

1.1 Scope of application

1. This Resolution sets out the Risk management procedures for the Derivatives System pursuant to the implementation of the Regulation and other relevant issues.
2. In particular, the Resolution sets out the following:
 - α. Margin Requirement Calculation under §§ 7.7 and 7.8.1 of Section II of the Regulation;
 - β. Establishment of Acceptable Collateral, Valuation Prices, Haircuts and Concentration Limits to meet the Margin Requirement under §§ 5.2 and 5.3 of Section II of the Regulation
 - γ. Clearing Fund Calculation Rules under § 6.2, 6.4.1 and 6.4.2 of Section II of the Regulation;
 - δ. Keeping Cash items under §§ 3.2, and 6.1 of Section II of the Regulation;
 - ε. Implementation of the Credit Limits under § 7.8.1 of Section II of the Regulation;
 - σ. Provision of data for managing related risk concentrations under § 2.4.12 of Section II of the Regulation.

1.2 Definitions

1. The terms and definitions contained in this Resolution shall have the same meaning as prescribed in the Regulation, unless otherwise explicitly specified.

2. In every event, the provisions of this Resolution shall be construed in accordance with the rules and principles set out in Paragraph 5 of the Scope of Application of the Regulation.

PART 2. Margin Requirement Calculation under §§ 7.7 and 7.8.1 of Section II of the Regulation

2.1 Margin Requirement Calculation

1. The Margin requirement shall be calculated per Clearing Account,
 - following the finalization of the positions aiming to test the adequacy of the Collaterals of the respective Account and payment of the Credit Limits under § 7.7 of Section II of the Rules, and
 - at regular intervals throughout the trading session, to adjust Credit Limits and calculate & test the Intraday Risk Change under § 7.8.1 of Section II of the Regulation.
2. The calculation of the Margin requirement shall be done on the basis of the model used by ATHEXClear and shall be based on calculating the damage to be caused by an adverse change in the value of the total open position, that corresponds to a Clearing Account, within the time it would take to close the position under the worst case scenario with a given level of confidence, as determined by the Margin calculation parameters.
3. For the risk from the total position to be assessed, all obligations that burden the Clearing Account and that could potentially lead to an increase in the open position risk are taken into account. Such obligations include pending physical settlement obligations from the day they arise, or cash settlement obligations following the distribution of dividend or capital return on Securities Loan Contracts from the ex-date.
4. ATHEXClear shall, at any time, be entitled to change the calculation and valuation method of any variable involved in specifying the Margin for the purpose of protecting the market. ATHEXClear shall also, at any time, be entitled to increase the Margin requirements both for the total number of Clearing Accounts and for individual Accounts, and set a deadline for their covering, taking into account in particular any imminent risks.

2.2 Margin Calculation Parameters

1. The parameters that the Margin calculation model uses are set according to the underlying value, product and/or totally for the market and are posted on ATHEXClear's website.

Such parameters include:

- the Underlying Change (%) on Futures and Stock Options
- the Opening Price (%) for Futures;
- Central Volatility (%) for Stock Options;
- Volatility Interval for Stock Options (%);
- Risk Free rate for Stock Options (%);

- Margin for Securities Lending Products (%)
- as well as all other parameters considered necessary in calculating the Margin.

2.3 Margin Calculation Parameter Determination and Adjustment Method

1. The parameters for calculating the margin of § 2.2 is reviewed and updated regularly on a quarterly basis within ten (10) working days of the beginning of each calendar quarter or on an extraordinary basis, using a methodology of calculation as defined in the following paragraphs, and the specific ATHEXClear procedures. At each adjustment, ATHEXClear shall communicate the new values of the parameters and when these shall be applied.
2. ATHEXClear shall also run, on a daily basis, back testing regarding Margin adequacy according to § 2.4.1 of this Resolution. At monthly or more frequent intervals a sensitivity analysis shall be run on the Margin calculation model according to § 2.4.2 of this Resolution and where there insufficient coverage, ATHEXClear shall, following its specific procedures, adjust the parameter values or change the calculation method, communicating each time when such changes shall take effect.
3. The method for calculating the parameter values that are taken into account for the Margin calculation model shall be based on the following.

a) Confidence Level

This is the Confidence Level based on which the calculated Margin should cover the relevant exposures through the use of statistical tests.

The confidence level is set at a rate equal to 99.0%.

β) Clearing Period Time Frame

This is the time expected to elapse between the last freezing and valuation of Collaterals and assurance of the position Risk until its final closure. For the purpose of determining the "Clearing Period Time Frame", liquidity categories, which would include underlying securities based on their characteristics and liquidity, shall be established following the specific procedures that ATHEXClear has in place.

A Clearing Period Time Frame value, which may not be under 2 days, shall be assigned to each liquidity category. The Margin calculation parameters shall be calculated in such a manner, so that based on historical data and with the above confidence level, such parameters cover changes that correspond to durations that are equal to the Clearing Period Time Frame.

γ) Time Frame for Calculating Historical Volatility

This is the time in which the historical changes shall be used to estimate the parameters with the above confidence level. The past twelve (12) month period shall be considered for the purpose of estimating the parameters.

- γ.1) The margin parameters calculated based on the time frame taken into account for calculating historical volatility shall be compared to those computed using the

estimated volatility for the previous ten-year historical period, for the purpose of ensuring that the former time frame leads to the estimate of stable and prudent Margins that limit procyclicality. If the results of the comparison show that the calculated parameters are less than those that would be calculated based on the previous ten-year historical period, they are adjusted so that they arrive at these levels.

- γ.2) In the case of underlying securities that do not have 10-year period data, these are calculated based on:
- data over the last twelve (12) months, which are weighted by a factor of 75% and
 - of 12-month period from the last five (5) years chosen to represent extreme market conditions, which are weighted at 25%.

In respect of such durations, the relevant parameters are calculated using the confidence level and the clearing period defined above.

- γ.3) Data from the past twelve (12) month period shall be used to compute Margin parameters for underlying securities for which no data are available to allow the implementation of any one of the aforementioned approaches. A reserve equal to at least 25% shall be added to the parameters, allowing it to be temporarily exhausted in periods where calculated Margin requirements rise significantly.

δ) **Offsetting Risk Positions**

When calculating the Margin, no offsetting of any sort shall be performed of the Risk between positions in derivatives with a different underlying security. For derivatives with a common underlying security it is recognized, also in line with the Margin calculation model, that the common underlying security shall have the same price for all of the products which have the same underlying security for the different scenarios considered.

4. In case of corporate actions on Securities Lending Products, concerning the distribution of bonus shares resulting from the share capital increase due to capitalization of reserves or profits or change of the nominal value of the share (splits), the increase of the share capital with cash payment and preemptive right in favor of old shareholders and the reverse split due to change of the nominal value of the share, ATHEXClear will adjust the relevant Margin parameters based on the readjustment of the price of the underlying security as a result of the corporate action, on the ex-date.

2.4 Parameters and Margin Calculation Model Tests

2.4.1. Back Testing

1. ATHEXClear shall assess its margin coverage by performing an retrospective comparison of observed results with expected results derived from the use of the Margin model on a daily

basis. This test shall be performed for all Clearing Accounts and clearing products to assess whether there are any exceptions with regard to the Margin coverage.

2. The principle underpinning back testing is that the Margin calculated is considered for each Clearing Account. Using actual market values the position closing cost is calculated. The deviation between these two figures is evaluated both at Clearing Account level, and in total, based on its frequency and materiality.

2.4.2. Sensitivity Analysis

1. ATHEXClear conducts sensitivity analysis to assess the coverage of its Margin model under various market conditions using historical data from realized stressed market conditions and hypothetical data for unrealized stressed market conditions.
2. Therefore, it is an investigational methodology for hidden shortcomings that cannot be discovered through back testing. Such sensitivity analysis shall be designed to test the key parameters and assumptions of the margin model under a number of scenarios to determine the sensitivity of the model to errors in determining such parameters and assumptions.

PART 3. Establishment of Acceptable Collateral, Valuation Prices, Haircuts and Concentration Limits to meet the Margin Requirement under § 5.2 and § 5.3 of Section II of the Regulation

3.1 Accepted Collateral

1. Acceptable collateral under § 5.2 of Section II of the Regulation shall mean:
 - a) cash in EUR;
 - β) cash in RON (Romanian New Leu) only for positions on products settled in RON;
 - γ) Greek government Treasury Bills, only for positions on products settled in EUR, which:
 - i) are included in the HDAT daily price bulletin;
 - ii) have a total issuance amount of over EUR 1 billion;
 - iii) have a duration of up to 2 years until maturity;
 - iv) are not complex securities.
 - δ) ATHEX-listed stocks with an average daily traded value of thirty (30) days greater than a limit set and published by ATHEXClear, that are underlying securities in ATHEX's Derivatives Market Futures or that belong to the FTSE / ATHEX-LARGE CAP or FTSE/ATHEX MID CAP indices with the exception of the share issue of "HELLENIC EXCHANGES - ATHENS STOCK EXCHANGES S.A. HOLDING". Such stocks shall constitute acceptable Collateral solely for positions on products settled in Euros.
 - i) In case of transfer of a transferable security to another index as provided for in the ATHEX Regulation, the transferred transferable security concerned shall cease to be accepted as transferable security Margin, and if it has been provided as a margin, it shall cease to be included in the relevant Margin.

- ii) In the event of interruption in trading of Futures on the ATHEX as provided for in the ATHEX Regulation, the underlying transferable security concerned shall cease to be accepted as transferable security Margin, and if it has been provided as Margin it shall cease to be included in the relevant Margin.
- ε) ATHEX-listed units that fall under Exchange Traded Funds (ETF Units) with an average daily traded value of thirty (30) days greater than a limit set and published by ATHEXClear; this applies solely to positions on products settled in Euros.

In case of transfer to another category as provided for in the ATHEX Regulation, the transferred transferable security concerned shall cease to be accepted as transferable security Margin, and if it has been provided as Margin it shall cease to be included in the relevant Margin.

2. The average daily traded value of three (3) months period per security (stock or ETF) is examined on a daily base, to check whether it is lower than the limit set by ATHEXClear. In case it is lower, the Security ceases to be accepted as Margin from the effective date of the new list of eligible collaterals published by ATHEXClear.
3. To obtain collateral from ATHEXClear in accordance with articles 7.7 and 7.8 of Section II of the Regulation, the Clearing Member must declare the security distribution method per Clearing Account to ATHEXClear. To obtain collateral in the form of cash, the declaration is forwarded to ATHEXClear in writing using the "Cash Distribution" form, which is standardized by ATHEXClear and announced on its website. The transmission is carried out by means of facsimile (fax). To obtain collateral in the form of Transferable Securities, the declaration is electronically transmitted via the System.
4. For the release of collateral received from ATHEXClear in accordance with the preceding paragraph, based on the terms of article 5.5 para. 5 of Section II of the Regulation, a written statement by the Clearing Member needs to be transmitted by fax to ATHEXClear according to the "Release of transferable securities collateral" and "Return of Cash to the Securities Market" Application Forms, as appropriate, which are standardized by ATHEXClear and announced on its website. The collateral is returned the next working day of the declaration, when received in the form of cash and on the declaration date, when received in the form of Transferable Securities.

3.2 Collateral Valuation

1. Collateral shall be valued at their market value on the basis of the values provided for in § 3.2.1. Next, the Haircuts under § 3.2.2 and concentration limits under § 3.2.3 shall be applied.

3.2.1. Collateral Valuation Values

1. For testing the adequacy of Collateral following the finalization of positions pursuant to § 7.7 of Section II of the Regulation,

- a) stocks and ETF units shall be valued based on the last available closing price on the market where they are traded;
 - β) treasury bills shall be valued on the basis of the last available price published in the HDAT's daily prices bulletin;
 - γ) collateral in the form of cash, in Euros, that are blocked for the purpose of covering a Margin requirement for a position that is settled in RON, shall be valued in RON using the last available Euro foreign exchange reference rate published by the European Central Bank (ECB).
2. For the adjustment of the Credit Limits and calculation of the Intraday Risk Change during the trading session under § 7.8.1 of Section II of the Regulation,
- a) stocks and ETFs shall be valued based on the last available trading price on the market where such stocks and ETFs are traded; in cases where there has been no trading, valuation shall be based on the starting price,
 - β) treasury bills shall be valued on the basis of the last available price published in the HDAT's daily prices bulletin,
 - γ) collateral in the form of cash, in Euros, that are blocked for the purpose of covering a Margin requirement for a position that is settled in RON, shall be valued in RON using the last available Euro foreign exchange reference rate published by the ECB on the previous day.
3. At any rate, transferable securities that have been issued by the Clearing Member that gives them as Collateral or by an entity that forms part of the same group as the Clearing Member that gives them as collateral, shall be valued at zero value.

3.2.2. Haircuts

1. Haircut used for the valuation of collateral are defined in accordance with the methodology set out in the following paragraphs, per transferable security or financial instruments category and are published on the ATHEXClear website.
2. Haircuts are reviewed and adjusted on a quarterly basis, at the beginning of each calendar quarter. The method set forth in the following paragraphs and the specific ATHEXClear procedures shall be implemented. Following each regular adjustment, ATHEXClear shall communicate the new haircut values and when these shall be applied.
3. Monthly back testing shall also be run by ATHEXClear to test the adequacy of Haircuts using the method set forth in § 3.3; where, under its specific procedures, there is inadequate coverage ATHEXClear shall perform an extraordinary adjustment of their value and/or update the method used for their calculation and/or modify the list of acceptable Collateral, communicating each time when these shall take effect.
4. The Haircut calculation method shall be based on the following.
 - a) Confidence Level

This is the confidence level based on which the haircut value of collateral must be greater than their value at liquidation through the use of statistical tests.

The confidence level is set at a rate equal to 99.0%.

β) Collateral Liquidation Time Frame

- a. This is the amount of time expected to elapse between the last valuation of the collateral committed and their liquidation. For the purpose of establishing the "Collateral Liquidation Time Frame", liquidity categories shall be established following the specific procedures that ATHEXClear has in place. Collateral along with their liquidity characteristics shall fall under such liquidity categories.
 - b. A Collateral Liquidation Time Frame value, which may not be less than 2 days, shall be assigned to each liquidity category. Haircut calculation shall be performed in such a manner so that based on historical data and with the above confidence level, such parameters cover changes that correspond to a period of time that is equal to the Collateral Liquidation Time Frame.
 - c. In order to examine the sufficiency of the liquidation period per collateral (stock or ETF), on a daily base, for each clearing account, the haircut value of pledged collaterals per security divided by the average daily traded value of 3 months period of the security is calculated. In case where the liquidation period as a result of the above calculation is greater than the one that have been taken into account for the collateral valuation, either the liquidation period for the specific security is increased or a replacement of the extra quantity of the collateral is required.
- γ) Time frame for the calculation of historical volatility. This is the period whose historical changes shall be used to estimate the Haircut with the above confidence level.
- γ.1) Two (2) periods are taken into account for estimating parameters to ensure that the historical data that is considered in computing historical volatility are inclusive of a period of extreme conditions, while leading to the assessment of stable and prudent Haircuts that limit procyclicality.
 - The last twelve (12) months.
 - A 12-month period from the last five (5) years chosen to represent extreme market conditions, in accordance with ATHEXClear's procedures.
 - γ.2) In respect of such time intervals the relevant parameters are calculated using the confidence level and the liquidation period time frame defined above.
 - γ.3) The final parameter is set by using a weighting factor of 75% for the parameter of the last 12 months and a weighting factor of 25% for the parameter from the extreme market conditions period.
 - γ.4) In any case, the final parameter shall be taken as being at least equal to the parameter resulting from the last 12 months.

- γ.5) A 25% reserve shall be added to the factors where no data are available for a duration that represents extreme market conditions.

3.2.3. Collateral Concentration Limits

1. In implementation of § 5.2 of Section II of the Regulation, Concentration Limits are set as provided in the following paragraphs. Concentration Limit values shall be determined by ATHEXClear and published on its website:
 - i. For stocks and ETFs that are accepted as Collateral, a maximum amount, which shall be valued to cover the Margin requirement per Clearing Account, equal to a percentage of the issue, shall be fixed per security.
 - ii. For Treasury Bills acceptable as Collateral, a maximum value (following the Haircut) shall be set per security to meet the Margin requirement per Clearing Account.
 - iii. For Treasury bills acceptable as Collateral, a liquidity ratio shall be determined that imposes an additional Haircut (up to 100%) per Clearing Account for all the securities in a staggered manner depending on the total haircut value calculated after the application of the maximum valuation per security in line with the previous paragraph.
 - iv. For the purpose of testing the adequacy of the Collateral after the finalization of positions, a percentage of margin requirements per Clearing Account shall be set which will be covered with cash on a daily basis, in the settlement currency only for positions on products that are settled in Euros.
 - v. The coverage percentage of the final haircut value of ATHEXClear's Collateral shall be calculated on a daily basis per Collateral issuing banking group. (Collateral that is reserved for the Margin, including contributions to the Clearing Fund) by the Collateral issuer belonging to the said group, taking into account the haircut value after the implementation of measures under items i to iii. Where this coverage rate exceeds 10%, the Collateral in question shall no longer be deemed acceptable. Collaterals that are committed before implementation of the measure, shall continue to be valued normally, whereas in cases where a large amount of specific Collaterals are provided that do not meet the Margin requirement, ATHEXClear may impose their release, setting the relevant time frame for it.

3.3 Haircut Back Testing

1. ATHEXClear shall evaluate the adequacy of Haircuts, conducting a comparison between the Haircut applied in the previous testing period and the changes in historical data regarding the value of each Collateral. The deviation between these two figures is assessed per Collateral and in total, based on the number of exceptions, the overshooting percentage and amount.

PART 4. Clearing Fund Calculation Rules under §§ 6.2, 6.4.1 and 6.4.2 of Section II of the Regulation

4.1 Clearing Fund Calculation Period under § 6.4.2 of Section II of the Regulation

1. The Clearing Fund amount shall be computed monthly; for the purposes herein, calculation periods shall mean the periods between the first day and the last day of each month in a calendar year.

4.2 Contribution Rate under § 6.4.1 of Section II of the Regulation

1. The Contribution Rate (a) under § 6.4.1 of Section II of the Regulation shall be defined as being at least equal to 30%.
2. When a scheduled or extraordinary adjustment of the Clearing Fund amount is performed following tests run by ATHEXClear pursuant to § 6.4.2 of Section II of the Regulation and the particular provisions of § 4.3 hereof, the Contribution Rate may be increased to meet the respective requirements, considering the updated Clearing Fund. The Contribution Rate that is applied in each case shall be posted on ATHEXClear's web page along with the new amount of the Clearing Fund.

4.3 Resource Adequacy Testing

4.3.1. *Stress tests on the adequacy of the Clearing Fund amount*

1. ATHEXClear shall apply a method by which it shall test if the amount of the Clearing Fund would be adequate, for every day in the test period, to cover losses beyond the Margins under extreme, but plausible market conditions (stress testing), that may arise in case of a Clearing Member's default in which the System has the greatest risk exposure or of the second and third Clearing Members, if the cumulative exposure is higher, taking into account the dependencies of their groups, based also on its specific procedures, while it also tests the adequacy of the Clearing Fund in case of default of a Clearing Member that is also an issuer of cleared financial instruments.
2. ATHEXClear shall, when adjusting the Clearing Fund, implement the above testing method for the new amount of the Clearing Fund for a testing period that is equal to the calculation period. In case of inadequacy, ATHEXClear shall modify the Contribution Rate under § 4.2 of this Resolution, adjusting the amount of the share of each Clearing Member, so as to meet the respective deficit by taking into account the adjusted Clearing Fund.
3. ATHEXClear shall apply the aforementioned method to test the current amount of the Clearing Fund for the previous day (testing period) on a daily basis. Where inadequacy should result, it shall cover the deficit by increasing the available resources to at least the above level by no later than the next day margin call. Such increase may include an unscheduled increase in the amount of the Clearing Fund or even a Margin increase for one or more Clearing Accounts.

4.3.2. Stress testing on the adequacy of total financial resources

1. ATHEXClear shall implement a method, based on which it shall test whether the Clearing Fund and the Dedicated Own Resources of ATHEXClear would be adequate to cover the loss in case of the Clearing Member's default ranking first and second in terms of exposure, taking into account the dependencies of their groups, based also on its specific procedures.
2. When adjusting the Clearing Fund, ATHEXClear shall apply the above testing method for the new amount of the Clearing Fund and the Dedicated Own Resources ATHEXClear is to keep, as calculated in accordance with the previous paragraph, for a period that is equal to the calculation period (testing period). In case of inadequacy, ATHEXClear shall modify the Contribution Rate under § 4.2 of this Resolution, adjusting the amount of the share of each Clearing Member and/or increasing the Dedicated Own Resources, so as to meet the respective deficit by taking into account the adjusted amount of the total financial resources.
3. ATHEXClear shall apply the aforementioned method to test the current amount of the Clearing Fund and of the Dedicated Own Resources it keeps for the previous day (testing period) on a daily basis. In case of inadequacy, it shall decide to cover the shortfall by increasing the resources available to at least the above level by no later than the next day margin call, which may include an unscheduled increase in the Clearing Fund and/or increasing the Margins for one or more Clearing Accounts and/or increasing the Dedicated Own Resources;
4. At quarterly or more frequent intervals, ATHEXClear shall also plan and perform reverse stress testing under extreme conditions that are tailored to the specific Risks of the markets and the products it clears and whose aim is to establish the market conditions under which a combination of the margin, the Clearing Fund and other financial resources can offer inadequate credit risk coverage. The purpose of reverse stress tests is to identify market conditions that go beyond those that are considered plausible market conditions. The results and analysis of the reverse stress tests are used to assist in identifying extreme, but plausible stress test scenarios.

4.3.3. Liquidity stress testing on the adequacy of realizable financial resources

1. ATHEXClear shall implement a method based on which it shall analyze and monitor its liquidity Risk management framework by conducting at least daily stress tests of its realizable financial resources under extreme conditions. In case of inadequacy, it shall, according to its specific procedures, decide to cover the shortfall by increasing its available resources to an acceptable level as soon as is practicable, which may include increasing the Clearing Fund, increasing the Margins that must be covered by cash for one or more Clearing Accounts or increase the Dedicated Own Resources or securing liquidity lines with credit institutions.
2. At quarterly or more frequent intervals, ATHEXClear shall also plan and perform reverse stress testing under extreme conditions that are tailored to the specific Risks of the markets and the products it clears and whose aim is to establish the market conditions under which its total realizable resources can offer inadequate liquidity Risk coverage. Reverse stress tests under extreme conditions aim at establishing the market conditions that shall exceed plausible market

conditions. The results and the analysis of reverse stress testing shall be used to contribute towards determining extreme, but plausible liquidity Risk stress test scenarios.

4.4 Share adjustment in the Clearing Fund due to the Clearing Members' corporate actions or other events under § 6.2 of Section II of the Regulation

1. Where there is a merger of Clearing Members or other relevant corporate events, the share in the Clearing Fund of the member that shall retain the capacity shall be fixed as equal to the sum of all shares of all merged members until the next scheduled or extraordinary adjustment of the Clearing Fund. For the purpose of establishing the share of the Member that retains the capacity, during the following scheduled or extraordinary adjustment of the Clearing Fund, the share shall be initially calculated for the Member that keeps the capacity for the time period before the merger, taking into consideration the Margins of the Clearing Accounts of all merged Members and then the share for the member that retains the capacity for the period following the merger shall be calculated, taking into account only the Margins of the Clearing Accounts of the Member that retains the capacity. The shares that result from the above calculations shall be weighted against the number of days of each one of the above intervals for the purpose of finally determining the share of the Member that retains the capacity.
2. Where a Clearing Account is transferred to another Clearing Member, for the purpose of the determining the share of the member to whom the account is transferred, at the next scheduled or extraordinary Clearing Fund adjustment, such member's share shall be calculated for the period before the transfer taking into account the Margin of the Account being transferred, while its share for the calculation period following the transfer shall also be calculated. The shares that result from the above calculations shall be weighted against the number of days of each one of the above intervals for the purpose of finally determining the share of the member to whom the account is transferred.
3. In the event that a Clearing Account is canceled, including its transfer to another member, to establish the share of the Clearing Member from whom the Clearing Account is canceled at the next scheduled or extraordinary Clearing Fund adjustment, its share shall be calculated, not taking into account the Margin of the Clearing Account that was canceled.

PART 5. Keeping Cash Items under §§ 3.2, and 6.1 of Section II of the Regulation;

5.1 Keeping Cash Items

1. ATHEXClear's cash items, relating to Collateral in the form of the Clearing Members' cash and the cash items of the Clearing Fund and the Dedicated Own Resources, are kept by ATHEXClear in an account that it holds as a Direct Participant in the Target2 at the Bank of Greece.
2. ATHEXClear's cash items that relate to other financial resources are held by ATHEXClear in accounts held at the Bank of Greece and at credit institutions in accordance with the investment policy and the terms laid down in article 45 of Regulation (EU) 153/2013.
3. For Collaterals that are deposited, in accordance with ATHEXClear's procedures, in a credit institution in the form of cash in foreign currency, ATHEXClear implements arrangements that

allow their conversion to Euros and their adherence to the Bank of Greece in accordance with the following specific provisions. In particular, pursuant to a standing order by ATHEXClear, the above credit institution must conduct currency conversion of the Collateral amount into Euros on a daily basis and then credit the ATHEXClear account in the Target2. The next business day ATHEXClear transfers the monetary amount credited from the Collateral currency conversion in Euros to an account held in the name of the credit institution, so that the credit institution is able to proceed with the currency conversion of the Collateral amount from Euros to a foreign currency amount that is equal to the Collateral amount that was originally deposited.

PART 6. Implementation of the Credit Limits under § 7.8.1 of Section II of the Regulation

6.1 Credit Limits

1. Prior to the start of the trading session, ATHEXClear shall establish the Credit Limit (CL) for each Clearing Account, on the basis of its available coverage pursuant to § 7.7 of Section II of the Regulation.
2. Next, through the Clearing System, each Clearing Member will be able to allocate the Credit Limit of the Clearing Account to the respective Credit Limits established per Clearing Subaccount & Market Member ($CL_{\text{Subaccount\&Member}}$), which ATHEXClear shall enter in the Trading System through the Market Operator.
3. The sum of the Credit Limit (CL) of each Clearing Account that shall not be paid to a Market Member, shall be considered an Unallocated Credit Limit of the Clearing Account ($CL_{\text{Unallocated}}$).

6.2 Trading Member Credit Limit Consumption during trading

1. During the Market's trading session, the Credit Limit shall be gradually subtracted from the Credit Limit of each Clearing Member, per Clearing Subaccount and Market Member ($CL_{\text{Subaccount\&Member}}$) that has been consumed based on unexecuted orders entered by the Market Member in the Market, and the trade it has concluded during the relevant session.
2. To this end, Day Risk (R_{day}) shall be calculated as the sum of the Risk arising out of active orders (R_{order}) and the Risk from trading that has already been concluded (R_{trade}), as calculated pursuant to § 6.2.1 and § 6.2.2, respectively.

$$K_{\text{Day}} = K_{\text{Command}} + K_{\text{transactions}}$$

Specifically:

- a) when each order is entered, the new Order Risk is calculated (R_{order}) by adding the Risk from the new order to the existing Risk. Where the total Day Risk (R_{day}) is covered by the Clearing Member's credit limit per Clearing Subaccount and Market Member, the order shall be entered in the book of orders, otherwise it shall be rejected;
- β) after every order cancellation, the new Order Risk (R_{order}) shall be calculated by subtracting the Risk that the canceled order had added;

- y) when an order is executed, the new Order Risk (R_{order}) shall be calculated by subtracting the Risk that the executed order had added, while the new Trade Risk (R_{trade}) shall be calculated by adding the Risk resulting from the new trade.

6.2.1. Order Risk Calculation

1. Order Risks (R_{orders}) shall mean the risk that a Clearing Member assumes as a result of active orders during the trading session. Such risk is computed in real time prior to the entry of each order per Clearing Subaccount that the Clearing Member and the Market Member keep to which it has provided a Credit Limit.
2. Based on the product to which the order relates, it is calculated as follows:

a) Futures

$$[\text{Number of Contracts}] \cdot [\text{Contract Amount}] \cdot [\text{Contract Order Price}] \cdot [\text{Risk Factor}]$$

With regard to market orders and at-the-close orders, the order price used shall be that of the last trade in the Futures at the time of entry of the order or, if no trade has been concluded, the starting price of the Futures. The Risk factor shall be set to be equal to the Margin calculation of the "Underlying Change (%) for Futures" parameter plus the "Opening Price (%) for Futures" parameter.

In terms of an order on a standard combination series between different maturities, the Risk is estimated for the said order for the following type, while the Risk will not be calculated for orders that are entered automatically by the system to execute the command of a standard combination series.

$$2 \cdot [\text{Number of Contracts}] \cdot [\text{Contract Amount}] \cdot [\text{Underlying Price}] \cdot [\text{Risk Factor}]$$

The price of the underlying security shall be the last available price of the underlying security at the time the order was entered. Where there is no price from the trading of an underlying security, the price used will be its starting price. The risk factor shall be set to be equal to the Margin calculation parameter "Opening Price (%) for Futures".

β) Stock Options

$$[\text{Number of Contracts}] \cdot [\text{Contract Amount}] \cdot [\text{Underlying Price}] \cdot \frac{[\text{Risk Factor}]}{2}$$

The price of the underlying security shall be the last available price of the underlying security at the time the order was entered. Where there is no price from the trading of an underlying security, the price used will be its starting price. The risk factor shall be set to be equal to the Margin calculation parameter "Underlying Change (%) for Stock Options".

γ) Securities Lending Contracts

$$[\text{Number of Contracts}] \cdot [\text{Contract Amount}] \cdot [\text{Underlying Price}] \cdot [\text{Risk Factor}]$$

The price of the underlying security shall be the last available price of the underlying security at the time the order was entered. Where there is no price from the trading of an

underlying security, the price used will be its starting price. The risk factor shall be set to be equal to the Margin calculation parameter "Securities Lending Margin (%)".

Risk Orders will not be calculated lending orders.

6.2.2. Trade Risk Calculation

1. Trade risk (R_{trade}) shall mean the risk that a Clearing Member assumes as a result of transactions concluded during the trading session. Such risk is computed in real time following the conduct of each transaction per Clearing Subaccount that the Clearing Member and the Market Member keep to which it has provided a Credit Limit.
2. Depending on the product concerning the trade, it is calculated as follows:

α) Futures

$$[\text{Number of Contracts}] \cdot [\text{Contract Amount}] \cdot [\text{Futures Transaction Price}] \cdot [\text{Risk Factor}]$$

The Risk factor shall be set to be equal to the Margin calculation of the "Underlying Change (%) for Futures" parameter plus the "Opening Price (%) for Futures" parameter.

For transactions arising from the execution of orders of standard combination series between different maturities, the Risk will be determine separately for individual transactions, in accordance with the following formula.

$$[\text{Number of Contracts}] \cdot [\text{Contract Amount}] \cdot [\text{Futures Transaction Price}] \cdot [\text{Risk Factor}]$$

The Risk Factor shall be set to be equal to the Margin calculation parameter "Opening Price (%) for Futures".

β) Stock Options

$$[\text{Number of Contracts}] \cdot [\text{Contract Amount}] \cdot [\text{Underlying Price}] \cdot \frac{[\text{Risk Factor}]}{2}$$

The price of the underlying security shall be the last price of the underlying security at the time of conclusion of the trade. Where there is no price from the trading of an underlying security, the price used will be its starting price. The Risk Factor shall be set to be equal to the Margin calculation parameter "Underlying Change (%) for Stock Options".

γ) Securities Lending Contracts

$$[\text{Number of Contracts}] \cdot [\text{Contract Amount}] \cdot [\text{Underlying Price}] \cdot [\text{Risk Factor}]$$

The price of the underlying security shall be the last price of the underlying security at the time of conclusion of the trade. Where there is no price from the trading of an underlying security, the price used will be its starting price. The risk factor shall be set to be equal to the Margin calculation parameter "Securities Lending Margin (%)".

Trade Risk will not be calculated for lending transactions.

6.3 Clearing Account Credit Limit Adjustment

1. The Risk assumed by each Clearing Account shall be recalculated at regular intervals during the trading session (every 15 minutes), and the Credit Limit (CL) shall decrease or increase accordingly, following the method set forth below.

$$\begin{aligned} \text{CL} = & \text{Haircut Collateral Value at current prices} && (\S 6.3.1) \\ & + \text{Earnings from the valuation of open Futures positions at current prices} && (\S \\ 6.3.3) & \\ & + \text{Outstanding Proceeds from the sale of Stock Options} && (\S 6.3.4) \\ & + \text{Trading Risk of Subaccounts} && (\S 6.2.2) \\ & - \text{Margin at current prices} && (\S 6.3.2) \\ & - \text{Loss from the valuation of open Futures positions at current prices} && (\S 6.3.3) \\ & - \text{Outstanding Payments from the purchase of Stock Options} && (\S 6.3.4) \end{aligned}$$

2. Next, the amount of the Unallocated Credit Limit ($CL_{\text{unallocated}}$) is also recalculated as the amount of the Credit Limit of the Clearing Account that has not yet been allocated to a Trading Member. Market Member Credit Limits that have already been allocated shall not change.
3. During the trading session, a Clearing Member may decrease and/or increase the Credit Limits that it has allocated to Market Members under the following conditions.

α) Clearing Subaccount and Market Member Credit Limit Increase.

A Clearing Member may proceed to increase the Credit Limit of a Clearing Subaccount and Market Member through the Clearing System, if it holds an equivalent Unallocated Credit Limit in the Clearing Account. Following the increase, the Unallocated Credit Limit ($CL_{\text{unallocated}}$) of the Clearing Account shall be decreased by the same amount.

β) Clearing and Market Member Subaccount Credit Limit Decrease.

A Clearing Member may proceed to decrease the Credit Limit of a Clearing Subaccount and Market Member through the Clearing System, solely to the extent that the new Credit Limit of the Clearing Subaccount and the Market Member covers the Day Risk (R_{day}) that has already been assumed.

6.3.1. Collateral Haircut

1. Collateral haircut shall be calculated during the trading session (every 5 minutes) as the haircut value of the Collateral given per Clearing Account in accordance with the provisions of § 3.2.

6.3.2. Margin

1. The Margin shall be calculated during the trading session (every 5 minutes) as the Margin Requirement per Clearing Account pursuant to the provisions of § 2.1, also considering, for the purpose of establishing the open positions per clearing Account, the trades that have already been conducted during the trading session for all of its Subaccounts.

6.3.3. Earning/Loss from the valuation of open Futures positions at current prices

1. It shall be calculated during the trading session (every 5 minutes) per Clearing Account as the current estimate of the monetary requirement (loss) or right (earning) that must be settled on the next day and regards requirements or rights arising from the valuation of open positions in Futures.
2. The estimate shall include:
 - α) the calculation of the valuation difference of open positions, as these stood before the start of the trading session, between the previous daily clearing price and the price of the last trade in the contract, or the starting price of the contract, where no trade had been conducted;
 - β) the calculation of the valuation difference of trades conducted during the trading session, between the price of each trade and the price of the last trade in the contract, or the starting price of the contract, where no trade had been conducted.

6.3.4. Outstanding Proceeds/Payments from the Sale/Purchase of Stock Options

1. It shall be calculated during the trading session (every 5 minutes) per Clearing Account as the monetary requirement (payment) or right (proceed) that must be settled on the next day and concerns requirements or rights arising from the settlement of prices in stock options.
2. The calculation shall include:
 - α) the calculation of the right (proceed) from the sale of stock options during the trading session based on the price of each trade.
 - β) the calculation of the requirement (payment) from the purchase of stock options during the trading session based on the price of each trade.

6.4 Intraday Risk Change Testing

1. Intraday Risk Change (IRC) shall be tested at regular intervals throughout the trading session (every 5 minutes) using the following method.

IRC -- Haircut Collateral Value at current prices	(§ 6.3.1)
- + Earnings from the valuation of open Futures positions at current prices	(§ 6.3.3)
- + Outstanding Proceeds from the sale of Stock Options	(§ 6.3.4)
+ Margin at current prices	(§ 6.3.2)
+ Loss from the valuation of open Futures positions at current prices	(§ 6.3.3)
+ Outstanding Payments from the purchase of Stock Options	(§ 6.3.4)

2. Where the Intraday Risk Change (IRC) for a Clearing Account is higher than the Intraday Risk Change Limit established and posted by ATHEXClear on its website, all the Market Members' Credit Limits, whose trades are cleared through such Clearing Account shall be immediately zeroed; hence it shall not be possible to enter new orders until the supply of additional

Collateral that shall lead to a decrease in the Intraday Risk Change below the Intraday Risk Change Recovery Limit established and posted by ATHEXClear on its website.

PART 7. Provision of data for managing related risk concentrations under § 2.4.12 of Section II of the Regulation

7.1 Provision of data

1. ATHEXClear shall monitor the amount and the development of open positions on a Clearing Account and Position Account level and, where there are indications of high Risk concentrations, particularly with regard to clients who clear trades through different Clearing Members, it shall request of Clearing Members, in accordance with § 2.4.12 of Section II of the Regulation, to provide additional data that shall allow the identification, testing and management of related Risk concentrations.
2. Such information shall refer primarily to data that enables for the identification of Clearing Members' clients, whose positions they hold, and the quantity and type of pledges they have given to the Clearing Member.

This Resolution shall become effective from 1st December 2014

This Resolution shall be posted on the ATHEXClear's website