

RISK NOTICE

From: Risk Department
Date: 10th April 2012
Markets affected: Euronext Cash and Derivatives Amsterdam, Brussels, Lisbon and Paris
 Bourse de Luxembourg, Equiduct.

Pursuant to Article 20 of Instruction IV.3-1 LCH.Clearnet SA hereby publishes the calculation method and parameters for the Default Fund for Markets cleared through the Cash & Derivatives Clearing System.

Changes will be enforceable on 11th April 2012 end of business day and are appearing in bold.

Parameters of calculation of the Default Fund contribution for Transactions registered in the Cash & Derivatives Clearing System

This Notice aims at to provide information on:

- *the algorithms and parameters used for each market and type of products*
- *the date of calculation and of contribution calls.*

For details related to (i) the principles of the methodology used for the calculation of the uncovered risks and (ii) to how the size of the Default Fund is set and how the individual contributions of the Clearing Members are calculated, please refer to Instruction IV.3-1.

1. Algorithm and parameters used for uncovered risks calculations

❖ **Securities markets**

On Securities markets, the uncovered risk is given by the following formula:

$$\text{uncovered risk}_D = \text{stress liquidation risk}_D - (\text{regular liquidation risk}_{D-1} - \text{Min}(\text{negotiation risk}_{D-1}, 0)) - \text{negotiation risk}_D$$

The stress-test, providing stress liquidation risk is performed with the SPAN® Cash algorithm and a set of parameters as follows:

- For stocks:

Specific risk parameters: X = 24% (for all liquidity classes)
 General risk parameter: Y

| Liquidity Class | Parameter Y |
|-----------------|-------------|
| Liq01 | 11.2 % |
| Liq02 | 29.2 % |
| Liq03 | 15% |
| Liq04 | 50% |

Inter-classes parameters: same as daily Initial Margin

- For bonds:

| | Duration classes | | |
|----------------------------|-------------------|-------------------|--------------------|
| | DUR4ZZ [0-1[Year | DUR5ZZ [1-4[Year | DUR6ZZ [4-30[Year |
| Specific risk parameters X | 1.17% | 1.34% | 2.31% |
| General risk parameter Y | 0.38% | 0.39% | 0.55% |

Intra and inter classes parameters: same as the ones used for daily Initial Margin calculation.

❖ **Derivatives markets**

The uncovered risk is given by the following formula:

$$\text{uncovered risk}_D = \text{stress risk}_D - \text{Initial Margin}_{D-1} - \text{Variation Margin}_D$$

The stress-test is performed with the SPAN® Derivatives algorithm with the following parameters:

- For equity options and futures:

Range of underlying equity: cf. Appendix 1
 Volatility scan range parameters: cf Appendix 1

- For equity index Derivatives: (Futures and Options)

Range of underlying index variation and volatility scan range parameters:

| Product / Index | Combined Commodity | Underlying Price Scan Range | Volatility scan range |
|------------------------------|--------------------|-----------------------------|-----------------------|
| CAC 40 | FCE | 23% | 49% |
| BEL 20 | BXF | 23.5% | 50% |
| AEX | AEX | 25% | 50% |
| AEX Light | AEL | 25% | 50% |
| PSI 20 | PSI | 22% | - |
| FTSE Eurofirst 80 | FEF | 25% | - |
| FTSE Eurofirst 100 | FEO | 26.5% | - |
| FTSE EPRA Euro zone | EPE | 22.5% | - |
| FTSE EPRA Europe | EPR | 19% | - |
| Dividend CAC 40 | XFC | 24% | - |
| Dividend AEX | AXF | 24% | - |
| Tracker CAC | CAC | 23% | 49% |
| Tracker MSE and ISX | MSE - ISX | 24% | 50% |
| DJ STOXX 600 Banks | BNK | 25% | 50% |
| DJ STOXX 600 Oil & Gas | LOG | 20.5% | 50% |
| DJ STOXX 600 Basic Resources | BRE | 33,5% | 48% |
| DJ STOXX 600 Telecom | TEL | 16,5% | 43% |
| ETF China Enterprise | ASI | 40.5% | 47% |

- For currency derivatives and special products:

| Product / Index | Combined Commodity | Underlying Price Scan Range | Volatility scan range |
|-----------------|--------------------|-----------------------------|-----------------------|
| USD/EUR | DEX | 6 bp | 23% |
| EUR/USD | EDX | 11 bp | 23% |

- For Bluenext products:

| Product / Index | Combined Commodity | Underlying Price Scan Range | Volatility scan range |
|-----------------|--------------------|-----------------------------|-----------------------|
| CER | CER | 31% | - |
| EUA | EUA | 31% | - |

- For commodities Derivatives:

| Product / Index | Combined Commodity | Underlying Price Scan Range | Volatility scan range |
|-----------------------|--------------------|-----------------------------|-----------------------|
| WHEAT | EBM | 18% | 21% |
| RAPESEED | ECO | 11% | 24% |
| CORN | EMA | 18% | 31% |
| MALTING BARLEY | EOB | 17% | 36% |
| SKIMMED MILK Powder | EPL | 19% | - |

2. Date of calculation and date of contribution call:

Monthly reviews of the Default Fund:

The date of calculation, i.e the latest day of the 60 Clearing Days period used for monthly review of the contribution is:

- the latest clearing business day of each month (position at end of day)

Date of contribution calls:

The contributions are called on the morning of the 4th Clearing Day of each month.

Replenishment of the Default Fund in case of default of a clearing member:

In case of default with a replenishment required, the date of calculation is linked to the end of the liquidation process of the defaulting Clearing Member positions.

Both date of calculation and contribution calls will be communicated to the Clearing Members by LCH.Clearnet SA ad hoc notice.

Appendix 1

Equity options listed on Euronext Paris

| Combined commodity | Contract code | Name | UPSR [*] +/- | VSR +/- |
|--------------------|---------------|-----------------------|--------------------------|------------|
| ACCB | AC1 | EDENRED | 13% | 50% |
| | AC2 | | 13% | 50% |
| AHA | AH1 | ACCOR | 25% | 50% |
| | AH2 | | 25% | 50% |
| AF | AF1 | AIR FRANCE | 27% | 36% |
| | AF2 | | 27% | 36% |
| | AFA | | 27% | 36% |
| AI | AI1 | AIR LIQUIDE | 20% | 50% |
| | AI2 | | 20% | 50% |
| CGE | CG1 | ALCATEL - LUCENT | 35% | 39% |
| | CG3 | | 35% | 39% |
| ALS | AS1 | ALSTOM | 34% | 47% |
| | AS3 | | 34% | 47% |
| AK | AK1 | ARKEMA | 26% | 30% |
| ATO | AT1 | ATOS ORIGIN | 28% | 42% |
| CS | CS1 | AXA | 47% | 50% |
| | CS9 | | 47% | 50% |
| BNP | BN1 | BNP PARIBAS | 41% | 48% |
| | BN3 | | 41% | 48% |
| EN | EN1 | BOUYGUES | 30% | 46% |
| | EN9 | | 30% | 46% |
| CAP | CP1 | CAP GEMINI | 34% | 50% |
| | CA3 | | 34% | 50% |
| CA | CA1 | CARREFOUR | 25% | 47% |
| | CA2 | | 25% | 47% |
| CO | CO1 | CASINO GUICHARD | 24% | 43% |
| | CO2 | | 24% | 43% |
| CDI | CD1 | CHRISTIAN DIOR | 24% | 36% |
| | CD3 | | 24% | 36% |
| CNP | CN1 | CNP ASSURANCES | 50% | 50% |
| ACA | CR1 | CREDIT AGRICOLE | 40% | 48% |
| | AC3 | | 40% | 48% |
| BN | DA1 | GROUPE DANONE | 20% | 45% |
| | BN2 | | 20% | 45% |
| DSY | DS1 | DASSAULT SYSTEMES | 23% | 44% |
| | DS3 | | 23% | 44% |
| EAD | EA1 | EADS | 29% | 48% |
| | EA3 | | 29% | 48% |
| EDF | DF1 | EDF | 24% | 37% |
| | DF3 | | 24% | 37% |
| EF | EF1 | ESSILOR INTERNATIONAL | 15% | 40% |
| EO | EO1 | FAURECIA | 31% | 50% |

* UPSR : Underlying Price Scan Range
VSR : Volatility Scan Range
Rate used : Euribor corresponding to maturity, reviewed weekly

| Combined commodity | Contract code | Name | UPSR* +/- | VSR +/- |
|--------------------|---------------|-----------------------------|--------------|------------|
| FTE | FT1 | FRANCE TELECOM | 23% | 48% |
| | FT3 | | 23% | 48% |
| GAZ | GA1 | GDF SUEZ | 28% | 48% |
| | GA3 | | 28% | 48% |
| HAV | HA1 | HAVAS | 25% | 50% |
| RMS | RM1 | HERMES INTERNATIONAL | 25% | 50% |
| | RMS | | 25% | 50% |
| LG | LG1 | LAFARGE | 30% | 44% |
| | LG2 | | 30% | 44% |
| MMB | MM1 | LAGARDERE SCA | 27% | 29% |
| | MM3 | | 27% | 29% |
| LR1 | LR1 | LEGRAND | 20% | 38% |
| OR | OR1 | L'OREAL | 20% | 27% |
| | OR2 | | 20% | 27% |
| MC | MC1 | LVMH | 26% | 35% |
| | MC2 | | 26% | 35% |
| MMT | MT1 | M6 METROPOLE TELEVISION | 22% | 50% |
| ML | ML1 | MICHELIN | 37% | 45% |
| | ML2 | | 37% | 45% |
| KN | KN1 | NATIXIS | 50% | 46% |
| | KN2 | | 50% | 46% |
| NYX | NY1 | NYSE EURONEXT INC | 36% | 50% |
| | NX1 | | 36% | 50% |
| RI | RI1 | PERNOD-RICARD | 29% | 39% |
| | RI2 | | 29% | 39% |
| UG | UG1 | PEUGEOT SA | 32% | 38% |
| | UG2 | | 32% | 38% |
| PP | PP1 | PINAULT PRINTEMPS REDOUTE | 31% | 47% |
| | PP2 | | 31% | 47% |
| PUB | PU1 | PUBLICIS GROUPE | 26% | 43% |
| RNO | RN1 | RENAULT | 45% | 50% |
| | RN3 | | 45% | 50% |
| SAG | SM1 | SAFRAN (ex SAGEM) | 24% | 50% |
| SGO | SG1 | SAINT-GOBAIN | 31% | 42% |
| | SG3 | | 31% | 42% |
| SAN | SA1 | SANOFI-AVENTIS | 22% | 48% |
| | SA3 | | 22% | 48% |
| | AV3 | | 22% | 48% |
| SU | SU1 | SCHNEIDER ELECTRIC SA | 29% | 38% |
| | SU2 | | 29% | 38% |
| SCR | SC1 | SCOR | 29% | 50% |
| GLE | GL1 | SOCIETE GENERALE | 41% | 50% |
| | GL3 | | 41% | 50% |
| SW | SW1 | SODEXO | 23% | 44% |
| | SW2 | | 23% | 44% |
| STM | ST1 | STMICROELECTRONICS | 28% | 39% |
| | ST3 | | 28% | 39% |
| SZECB | SZ1 | COMBO SUEZ | 23% | 35% |
| | SZ3 | | 23% | 35% |
| SE | SE1 | SUEZ ENVIRONNEMENT | 23% | 50% |
| | SE2 | | 23% | 50% |

* UPSR : Underlying Price Scan Range
VSR : Volatility Scan Range
Rate used : Euribor corresponding to maturity, reviewed weekly

| Combined commodity | Contract code | Name | UPSR +/- | VSR +/- |
|---------------------------|----------------------|-----------------------------|-----------------|----------------|
| TEC | TE1 | TECHNIP | 27% | 50% |
| | TE3 | | 27% | 50% |
| TF1 | TF1 | TF1 | 26% | 42% |
| | TF3 | | 26% | 42% |
| HO | HO1 | THALES | 22% | 35% |
| | HO2 | | 22% | 35% |
| TMS | TM1 | TECHNICOLOR | 50% | 50% |
| | TM3 | | 50% | 50% |
| FP | TO1 | TOTAL | 22% | 49% |
| | TO2 | | 22% | 49% |
| FPCB | FP1 | TOTAL ARKEMA | 22% | 49% |
| | FP2 | | 22% | 49% |
| UL | UL1 | UNIBAIL RODAMCO | 20% | 50% |
| | UBL | | 20% | 50% |
| FR | FR1 | VALEO | 29% | 50% |
| | FR2 | | 29% | 50% |
| VK | VA1 | VALLOUREC | 29% | 50% |
| | VA2 | | 29% | 50% |
| DG | DG1 | VINCI | 35% | 41% |
| | DG2 | | 35% | 41% |
| VIE | VI1 | VEOLIA ENVIRONNEMENT | 28% | 50% |
| | VI3 | | 28% | 50% |
| EX | EX1 | VIVENDI | 24% | 50% |
| | EX2 | | 24% | 50% |

* UPSR : Underlying Price Scan Range
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Rate used : Euribor corresponding to maturity, reviewed weekly

Equity options listed on Euronext Brussels

| Combined commodity | Contract code | Name | UPSR +/- | VSR +/- |
|--------------------|---------------|-----------------------------|----------|------------|
| AGE | AGE | AGFA-GEVAERT | 36% | 35% |
| AVH | AVH | ACKERMANS & VAN HAAREN | 12% | 25% |
| BAR | BAR | BARCO (NEW) | 38% | 50% |
| BEK | BEK | BEKAERT | 26% | 26% |
| BLG | BLG | BELGACOM | 15% | 48% |
| COL | COL | COLRUYT | 15% | 32% |
| DEL | DEL | DELHAIZE GROUP | 21% | 40% |
| DXB | DXB | DEXIA | 50% | 50% |
| | DX1 | | 50% | 50% |
| | DX2 | | 50% | 50% |
| FRB | FRB | AGEAS | 50% | 50% |
| | FOR | | 50% | 50% |
| | FOO | | 50% | 50% |
| GBL | GBL | GPE BRUXEL.LAMBERT | 20% | 49% |
| INT | INT | ANHEUSER-BUSCH INBEV | 38% | 42% |
| KBC | KBC | KBC | 50% | 50% |
| MOB | MOB | MOBISTAR | 15% | 50% |
| NYR | NYR | NYRSTAR | 50% | 50% |
| OME | OME | OMEGA PHARMA | 28% | 50% |
| SOL | SOL | SOLVAY | 22% | 50% |
| TOTCB | TOT | TOTAL ARKEMA | 22% | 49% |
| TLN | TLN | TELENET | 20% | 42% |
| UCB | UCB | UCB | 31% | 50% |
| UMC | UMC | UMICORE | 50% | 41% |

* UPSR : Underlying Price Scan Range

VSR : Volatility Scan Range

Rate used : Euribor corresponding to maturity, reviewed weekly

Equity options listed on Euronext Amsterdam

| Combined commodity | Contract code | Name | UPSR [*] +/- | VSR +/- |
|--------------------|---------------|-----------------------------|--------------------------|------------|
| AAI | AAI | AALBERTS INDUSTRIES NV | 38% | 50% |
| AGN | AGN | AEGON | 50% | 50% |
| | 1AG | | 50% | 50% |
| | 2AG | | 50% | 50% |
| | 4AG | | 50% | 50% |
| | 5AG | | 50% | 50% |
| MT | MT | ARCELOR MITTAL | 47% | 40% |
| | MI1 | | 47% | 40% |
| | MI3 | | 47% | 40% |
| | 1MT | | 47% | 40% |
| | 2MT | | 47% | 40% |
| | 4MT | | 47% | 40% |
| | 5MT | | 47% | 40% |
| MTCB | MTZ | ARCELOR MITTAL COMBO | 47% | 40% |
| | MI1 | | 47% | 40% |
| AH | AH | KON AHOLD | 25% | 48% |
| | AHO | | 25% | 48% |
| AKZ | AKZ | AKZO NOBEL | 29% | 50% |
| AMG | AMG | AMG ADVANCED METALLURGICAL | 34% | 38% |
| AP | AP | APERAM | 26% | 46% |
| ARC | ARC | ARCADIS | 27% | 39% |
| ASL | ASL | ASML HOLDING | 28% | 46% |
| | ASO | | 28% | 46% |
| ASM | ASM | ASM INTERNATIONAL | 44% | 44% |
| BAM | BAM | KONINKLIJKE BAM GROEP | 39% | 50% |
| BCK | BCK | BINCKBANK | 35% | 50% |
| | BCO | | 35% | 50% |
| BOS | BOS | BOSKALIS WESTMINSTER NV | 28% | 38% |
| BI | BI | BRUNEL INTERNATIONAL | 25% | 39% |
| CIO | CIO | CORIO NV | 22% | 50% |
| CSM | CSM | CSM | 27% | 40% |
| DL | DL | DELTA LLOYD | 19% | 50% |
| DSM | DSM | KONINKLIJKE DSM | 26% | 50% |
| FUR | FUR | FUGRO | 34% | 50% |
| HEI | HEI | HEINEKEN | 20% | 34% |
| | HEX | | 20% | 34% |
| HEY | HEY | HEIJMANS NV | 50% | 50% |
| | HMO | | 50% | 50% |
| IHC | IHC | SBM OFFSHORE NV | 33% | 50% |
| | SBM | | 33% | 50% |
| IM | IM | IMTECH NV | 34% | 50% |
| ING | ING | ING GROEP | 50% | 50% |
| | INO | | 50% | 50% |
| | 1IN | | 50% | 50% |
| | 2IN | | 50% | 50% |
| | 4IN | | 50% | 50% |
| | 5IN | | 50% | 50% |

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VSR : Volatility Scan Range
Rate used : Euribor corresponding to maturity, reviewed weekly

| Combined commodity | Contract code | Name | UPSR* +/- | VSR +/- |
|--------------------|---------------|--------------------------------|-----------|------------|
| KPN | KPN | KON KPN | 20% | 50% |
| | KPO | | 20% | 50% |
| | 1KP | | 20% | 50% |
| | 2KP | | 20% | 50% |
| | 4KP | | 20% | 50% |
| LC | 5KP | | 20% | 50% |
| | LC | LOGICACMG PLC | 30% | 50% |
| | LCX | | 30% | 50% |
| MDQ | MDQ | MEDIQ | 15% | 48% |
| NUO | NUO | NUTRECO HOLDING | 24% | 50% |
| | NUC | | 24% | 50% |
| | NXO | | 24% | 50% |
| NYE | NYE | NYSE EURONEXT INC | 36% | 50% |
| OCE | OCE | OCE | 50% | 50% |
| ORD | ORD | ORDINA | 42% | 33% |
| | ORO | | 42% | 33% |
| PHI | PHI | KON PHILIPS ELECTRONICS | 27% | 50% |
| | 1PH | | 27% | 50% |
| | 2PH | | 27% | 50% |
| | 4PH | | 27% | 50% |
| | 5PH | | 27% | 50% |
| PNL | PNL | POST NL | 31% | 50% |
| RD | RD | ROYAL DUTCH SHELL PLC (A) | 27% | 50% |
| | 1RD | | 27% | 50% |
| | 2RD | | 27% | 50% |
| | 4RD | | 27% | 50% |
| | 5RD | | 27% | 50% |
| REN | REN | REED ELSEVIER | 24% | 48% |
| RND | RND | RANDSTAD HOLDING | 31% | 50% |
| SR | SR | SNS REAAL | 50% | 50% |
| TCT | TCT | TEN CATE | 20% | 36% |
| TNE | TNE | TNT EXPRESS | 31% | 36% |
| TPGCB | TPO | COMBO TNT | 31% | 36% |
| | TPG | | 31% | 36% |
| TTM | TTM | TOMTOM N.V. | 50% | 50% |
| UN | UN | UNILEVER | 22% | 47% |
| | UOO | | 22% | 47% |
| UNT | UNT | UNIT4 NV | 12% | 50% |
| USG | USG | USG PEOPLE NV | 31% | 16% |
| VPK | VPK | KON VOPAK | 20% | 49% |
| WES | WES | KON WESSANEN | 35% | 45% |
| WHV | WHV | WERELDHAVE NV | 19% | 50% |
| WAV | WAV | WAVIN NV | 37% | 36% |
| | WVX | | 37% | 36% |
| WKL | WKL | WOLTERS KLUWER | 50% | 44% |

* UPSR : Underlying Price Scan Range
VSR : Volatility Scan Range
Rate used : Euribor corresponding to maturity, reviewed weekly

Future on Equity listed on Euronext Lisbon

| Combined commodity | Contract code | Name | UPSR* +/- |
|--------------------|---------------|---------------------------------|-----------|
| MBC | MBC | BANCO COMERCIAL PORTUGUES | 20% |
| ESS | ESS | BANCO ESPIRITO SANTO | 24% |
| BBP | BBP | BANCO PORTUGUES DE INVESTIMENTO | 34% |
| BRS | BRS | BRISA AUTOESTRADAS DE PORTUGAL | 20% |
| EDR | EDR | EDP RENOVAVEIS | 33% |
| EPM | EPM | ENERGIAS DE PORTUGAL | 24% |
| GAL | GAL | GALP ENERGIA SGPS SA | 42% |
| JMT | JMT | JERONIMO MARTINS | 24% |
| PTS | PTS | PORTUGAL TELECOM | 23% |
| PTA | PTA | ZON MULTIMEDIA | 22% |
| RNE | RNE | REDES ENERGETICAS NACIONAIS | 45% |
| | RNA | | 45% |
| SNA | SNA | SONAE | 37% |
| SNC | SNC | SONAECOM SGPS | 29% |