FSC

Financial Services Commission

Information page

Alternative Investment Fund Managers Directive
AIFMs managing leveraged AIFs

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Any advice or interpretation covered in this information page represents the views of the FSC as to its expectations of how the requirements of the AIFMD are to be complied with and/or how it fails to be applied. This however is not intended as a definitive interpretation of the AIFMD which is ultimately a matter for the courts to determine. The FSC does not provide, or purport to offer, legal advice.

1. Introduction

1.1 In this information page, reference is made to the Alternative Investment Fund Managers Directive 2011/61/EU ("AIFMD") and to the supplementing Level 2 Delegated Regulation ("Level 2").

1.2 Given that it is possible for an AIFM to employ leverage and, under certain conditions, to contribute to the build-up of systemic risk or disorderly markets, special requirements are imposed on AIFMs employing leverage. Such AIFMs will be required to disclose information regarding the overall level of leverage employed, the leverage arising from borrowing of cash or securities and the leverage arising from positions held in derivatives, the reuse of assets and the main sources of leverage in their AIFs.

1.3 If one or more AIFs managed by an AIFM could potentially constitute an important source of counterparty risk to a credit institution or other systemically relevant institutions in other Member States, such information must also be shared with the FSC.

1.4 In order to ensure a proper assessment of the risks induced by the use of leverage by an AIFM with respect to the AIFs it manages, the AIFM must demonstrate that the leverage limits for each AIF it manages are reasonable and that it complies with those limits at all times. Where the stability and integrity of the financial system may be threatened, the FSC may impose limits to the level of leverage that an AIFM can employ in AIFs under its management.

1.5 The purpose of this information page is to provide clarity on the obligations imposed on AIFMs which manage leveraged AIFs, including methods to calculate leverage, duration netting rules, limits to leverage, the FSC's role in respect of leveraged AIFs, use of information by the FSC and supervisory cooperation.

2. General provisions applicable to AIFs using leverage

Article 6 of Level 2

2.1 'Leverage' is defined in the AIFMD as any method by which an AIFM increases the exposure of an AIF it manages whether through borrowing of cash or securities, or leverage embedded in derivative positions or by any other means.

2.2 An AIFM applying for authorisation must provide its policy as regards the use of leverage in relation to each AIF it intends to manage.

2.3 Leverage of an AIF shall be expressed as the ratio between the exposure of an AIF and its net asset value.

2.4 AIFMs shall calculate the exposure of the AIFs managed in accordance with the gross method as set out in section 3 below and the commitment method as set out in section 4 below.

2.5 Exposure contained in any financial or legal structures involving third parties controlled by the relevant AIF shall be included in the calculation of the exposure where the structures referred to are specifically set up to directly or indirectly increase the exposure at the level of the AIF. For AIFs whose core investment policy is to acquire control of non-listed companies or issuers, the AIFM shall not

include in the calculation of the leverage any exposure that exists at the level of those non-listed companies and issuers provided that the AIF or the AIFM acting on behalf of the AIF does not have to bear potential losses beyond its investment in the respective company or issuer.

2.6   AIFMs shall exclude borrowing arrangements entered into if these are temporary in nature and are fully covered by contractual capital commitments from investors in the AIF.

2.7   An AIFM shall have appropriately documented procedures to calculate the exposure of each AIF under its management in accordance with the gross method and the commitment method. The calculation shall be applied consistently over time.

Article 24(4),(5) of the AIFMD

2.8   An AIFM managing AIFs employing leverage on a substantial basis shall make available to the FSC:

      (a)   information about the overall level of leverage employed by each AIF it manages;

      (b)   a break-down between leverage arising from borrowing of cash or securities and leverage embedded in financial derivatives; and

      (c)   information about the extent to which the AIF's assets have been reused under leveraging arrangements.

2.9   That information shall include the identity of the five largest sources of borrowed cash or securities for each of the AIFs managed by the AIFM, and the amounts of leverage received from each of those sources for each of those AIFs.

2.10   For non-EU AIFMs, the reporting obligations referred to in sections 2.7 and 2.8 are limited to EU AIFs managed by them and non-EU AIFs marketed by them in the EU.

2.11   Where necessary for the effective monitoring of systemic risk, the FSC may require information in addition to that described in sections 2.7 to 2.9, on a periodic as well as on an ad-hoc basis; and the FSC shall inform ESMA about any additional information requirements.

3.   Gross method for calculating the exposure of the AIF

Article 7 of Level 2

3.1   The exposure of an AIF calculated in accordance with the gross method shall be the sum of the absolute values of all positions valued in accordance with Article 19 of the AIFMD (valuation)[1], and all delegated acts adopted pursuant to it.

3.2   For the calculation of the exposure of an AIF in accordance with the gross method an AIFM shall:

      (a)   exclude the value of any cash and cash equivalents which are highly liquid investments held in the base currency of the AIF, that are readily

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[1] For further information, please refer to the FSC information page on "AIFMD – Organisational requirements – Valuation".

convertible to a known amount of cash, are subject to an insignificant risk of change in value and provide a return no greater than the rate of a three-month high quality government bond;

(b)   convert derivative instruments into the equivalent position in their underlying assets using the conversion methodologies set out in section 6 below and the methods set out in sections 5.4 to 5.9 and 5.14 below;

(c)   exclude cash borrowings that remain in cash or cash equivalent as referred to in point (a) and where the amounts of that payable are known;

(d)   include exposure resulting from the reinvestment of cash borrowings, expressed as the higher of the market value of the investment realised or the total amount of the cash borrowed as referred to in sections 5.1 and 5.2 below;

(e)   include positions within repurchase or reverse repurchase agreements and securities lending or borrowing or other arrangements in accordance with sections 5.3 and 5.10 to 5.13 below.

4.   Commitment method for calculating the exposure of the AIF

Article 8 of Level 2

4.1   The exposure of an AIF calculated in accordance with the commitment method shall be the sum of the absolute values of all positions valued in accordance with Article 19 of the AIFMD (valuation)[2] and its corresponding delegated acts, subject to the criteria provided for in sections 4.2 to 4.9.

4.2   For the calculation of the exposure of an AIF in accordance with the commitment method an AIFM shall:

(a)   convert each derivative instrument position into an equivalent position in the underlying asset of that derivative using the conversion methodologies set out in section 6.4 to 6.9 and 6.14 below;

(b)   apply netting and hedging arrangements;

(c)   calculate the exposure created through the reinvestment of borrowings where such reinvestment increases the exposure of the AIF as defined in sections 5.1 and 5.2 below;

(d)   include other arrangements in the calculation in accordance with sections 5.3 and 5.10 to 5.13 below.

4.3   For the purposes of calculating the exposure of an AIF according to the commitment method:

(a)   netting arrangements shall include combinations of trades on derivative instruments or security positions which refer to the same underlying asset, irrespective - in the case of derivative instruments - of the maturity date of the derivative instruments and where those trades on derivative instruments or security positions are concluded with the sole aim of eliminating the risks linked to positions taken through the other derivative instruments or security positions;

(b)   hedging arrangements shall include combinations of trades on derivative instruments or security positions which do not necessarily refer to the

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[2] Ibid.

same underlying asset and where those trades on derivative instruments or security positions are concluded with the sole aim of offsetting risks linked to positions taken through the other derivative instruments or security positions.

4.4   By way of derogation from section 4.2, a derivative instrument shall not be converted into an equivalent position in the underlying asset if it has all of the following characteristics:

(a)   it swaps the performance of financial assets held in the AIF's portfolio for the performance of other reference financial assets;

(b)   it totally offsets the risks of the swapped assets held in the AIF's portfolio so that the AIF's performance does not depend on the performance of the swapped assets;

(c)   it includes neither additional optional features, nor leverage clauses nor other additional risks as compared to a direct holding of the reference financial assets.

4.5   By way of derogation from section 4.2, a derivative instrument shall not be converted into an equivalent position in the underlying asset when calculating the exposure according to the commitment method if it meets both of the following conditions:

(a)   the combined holding by the AIF of a derivative instrument relating to a financial asset and cash which is invested in cash equivalents as defined in section 3.2(a) above, is equivalent to holding a long position in the given financial asset;

(b)   the derivative instrument shall not generate any incremental exposure and leverage or risk.

4.6   Hedging arrangements shall be taken into account when calculating the exposure of an AIF only if they comply with all the following conditions:

(a)   the positions involved within the hedging relationship do not aim to generate a return and general and specific risks are offset;

(b)   there is a verifiable reduction of market risk at the level of the AIF;

(c)   the risks linked to derivative instruments, general and specific, if any, are offset;

(d)   the hedging arrangements relate to the same asset class;

(e)   they are efficient in stressed market conditions.

4.7   Subject to section 4.6, derivative instruments used for currency hedging purposes and that do not add any incremental exposure, leverage or other risks shall not be included in the calculation.

4.8   An AIFM shall net positions in any of the following cases:

(a)   between derivative instruments, provided they refer to the same underlying asset, even if the maturity date of the derivative instruments is different;

(b)   between a derivative instrument whose underlying asset is a transferable security, money market instrument or units in a collective investment undertaking, and that same corresponding underlying asset.

4.9   AIFMs managing AIFs that, in accordance with their core investment policy, primarily invest in interest rate derivatives shall make use of specific duration

netting rules in order to take into account the correlation between the maturity segments of the interest rate curve as set out in section 7 below.

5.   Methods of increasing the exposure of an AIF

Article 9 of Level 2

When calculating exposure, AIFMs shall use the methods set out in Annex I of Level 2 (see section 10 below) for the situations referred to therein.

6.   Conversion methodologies for derivative instruments

Article 10 of Level 2

AIFMs shall use the conversion methodologies set out in Annex II of Level 2 (see section 11 below) for the derivative instruments referred to therein.

7.   Duration netting rules

Article 11 of Level 2

7. 1   Duration netting rules shall be applied by AIFMs when calculating the exposure of AIFs according to section 4.9 above.

7. 2   The duration netting rules shall not be used where they would lead to a misrepresentation of the risk profile of the AIF. AIFMs availing themselves of those netting rules shall not include other sources of risk such as volatility in their interest rate strategy. Consequently, interest rate arbitrage strategies shall not apply those netting rules.

7. 3   The use of those duration netting rules shall not generate any unjustified level of leverage through investment in short-term positions. Short-dated interest rate derivatives shall not be the main source of performance for an AIF with medium duration which uses the duration netting rules.

7. 4   Interest rate derivatives shall be converted into their equivalent underlying asset position and netted in accordance with Annex III (see section 12 below).

7. 5   An AIF making use of the duration netting rules may still make use of the hedging framework. Duration netting rules may be applied only to the interest rate derivatives which are not included in hedging arrangements.

8.   Additional information for FSC, supervisory cooperation and limits to leverage

Article 15(4) of the AIFMD

8.1   AIFMs must set a maximum level of leverage which they may employ on behalf of each AIF they manage as well as the extent of the right to reuse collateral or guarantee that could be granted under the leveraging arrangement, taking into

account, inter alia:

(a)   the type of the AIF;

(b)   the investment strategy of the AIF;

(c)   the sources of leverage of the AIF;

(d)   any other interlinkage or relevant relationships with other financial services institutions, which could pose systemic risk;

(e)   the need to limit the exposure to any single counterparty;

(f)   the extent to which the leverage is collateralised;

(g)   the asset-liability ratio;

(h)   the scale, nature and extent of the activity of the AIFM on the markets concerned.

Article 25 of the AIFMD

8.2   The FSC shall use the information to be gathered under Article 24 of the AIFMD (on reporting obligations)[3] for the purposes of identifying the extent to which the use of leverage contributes to:

(a)   the build-up of systemic risk in the financial system;

(b)   risks of disorderly markets; or

(c)   risks to the long-term growth of the economy.

8.3   The FSC will make this information available to the competent authorities of other relevant Member States, ESMA and the ESRB as per established processes.

8.4   An AIFM must demonstrate that the leverage limits set by it for each AIF it manages are reasonable and that it complies with those limits at all times, this is needed because:

(a)   the FSC shall assess the risks that the use of leverage by an AIFM with respect to the AIFs it manages could entail; and

(b)   where deemed necessary in order to ensure the stability and integrity of the financial system, the FSC, after having notified ESMA, the ESRB and the competent authorities of the relevant AIF, shall impose limits to the level of leverage that an AIFM are entitled to employ or other restrictions on the management of the AIF with respect to the AIFs under its management to limit the extent to which the use of leverage contributes to the build-up of systemic risk in the financial system or risks of disorderly markets.

8.5   The FSC shall duly inform ESMA, the ESRB and the competent authorities of the AIF, of actions taken under this section, through the procedures set out in Article 50 of the AIFMD (obligation to cooperate), and the notification:

(a)   must be made not less than 10 working days before the proposed measure is intended to take effect or to be renewed, and

(b)   must include details of the proposed measure, the reasons for the measure and when the measure is intended to take effect.

8.6   In exceptional circumstances, the FSC may decide that a proposed measure is to take effect within the period referred to in section 8.5(a).

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[3] For further information, please refer to the FSC information page on "AIFMD – Transparency requirements – Reporting obligations to FSC".

8.7   The FSC shall:

    (a)   cooperate with ESMA in its facilitation and coordination role generally and in relation to measures proposed by competent authorities, under Article 25(5) of the AIFMD;

    (b)   take account of any advice issued by ESMA under Article 25(6) of the AIFMD; and

    (c)   give effect to any determination of ESMA under Article 25(7) of the AIFMD.

8.8   If the FSC proposes to take action contrary to ESMA's advice it must inform ESMA, stating its reasons.

9. Restrictions on the management of leveraged AIFs

Article 112 of Level 2

9.1   The principles laid down in this section apply in order to specify the circumstances in which the FSC can exercise its power to impose leverage limits or other restrictions on AIFMs.

9.2   When assessing the information received under Articles 7(3)[4], 15(4)[5], 24(4)[6] or 24(5)[7] of the AIFMD, the FSC will take into account the extent to which the use of leverage by an AIFM or its interaction with a group of AIFMs or other financial institutions can contribute to the build-up of systemic risk in the financial system or risks creating disorderly markets.

9.3   The FSC will take into account at least the following aspects in their assessment:

    (a)   the circumstances in which the exposure of an AIF or several AIFs including those exposures resulting from financing or investment positions entered into by the AIFM for its own account or on behalf of the AIFs could constitute an important source of market, liquidity or counterparty risk to a financial institution;

    (b)   the circumstances in which the activities of an AIFM or its interaction with, for example, a group of AIFMs or other financial institutions, in particular with respect to the types of assets in which the AIF invests and the techniques employed by the AIFM through the use of leverage, contribute or could contribute to a downward spiral in the prices of financial instruments or other assets in a manner that threatens the viability of such financial instruments or other assets;

    (c)   criteria such as the type of AIF, the investment strategy of the AIFM with respect to the AIFs concerned, the market conditions in which the AIFM and the AIF operate and any likely pro-cyclical effects that could result from the imposition by the competent authorities of limits or other restrictions on the use of leverage by the AIFM concerned;

    (d)   criteria, such as the size of an AIF or several AIFs and any related impact in a particular market sector, concentrations of risks in particular markets in which the AIF or several AIFs are investing, any contagion risk to other markets from a market where risks have been identified, liquidity issues

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[4] General information on each managed AIF (see section 2.1 above).
[5] Set maximum level of leverage for each AIF (see section 8.1 above).
[6] Details of the leverage used by each AIF (see sections 2.7 to 2.9 above).
[7] Additional information on each AIF requested by the FSC (see section 2.10 above).

in particular markets at a given time, the scale of asset liability mismatch in a particular AIFM investment strategy or irregular movements in the prices of assets in which an AIF may invest.

10.   Annex I of Level 2

10.1   Unsecured cash borrowings: When cash borrowings are invested they have the propensity to increase the exposure of the AIF by the total amount of those borrowings. Therefore, the minimum exposure is always the amount of the borrowing. It might be higher if the value of the investment realised with the borrowing is greater than the borrowed amount. To avoid double counting, cash borrowings that are used to finance the exposure shall not be included within the calculation. If the cash borrowings are not invested but remain in cash or cash equivalent as defined in section 3.2(a) they will not increase the exposure of the AIF.

10.2   Secured cash borrowings: Secured cash borrowings are similar to unsecured cash borrowings but the loan may be secured by a pool of assets or a single asset. If the cash borrowings are not invested but remain in cash or cash equivalent as defined in section 3.2(a) they will not increase the exposure of the AIF.

10.3   Convertible borrowings: Convertible borrowings are purchased debt which has the ability, under certain circumstances, to enable the holder or issuer to convert that debt into another asset. The exposure of the AIF is the market value of such borrowings.

10.4   Interest rate swaps: An interest rate swap is an agreement to exchange interest rate cash flows, calculated on a notional principal amount, at specified intervals (payment dates) during the life of the agreement. Each party's payment obligation is computed using a different interest rate based on the notional exposures.

10.5   Contracts for differences: A contract for differences (CFD) is an agreement between two parties — the investor and the CFD provider — to pay the other the change in the price of an underlying asset. Depending on which way the price moves, one party pays the other the difference from the time the contract was agreed to the point in time where it ends. Exposure is the market value of the underlying asset. The same treatment must be applied to financial spread bets.

10.6   Futures contracts: A futures contract is an agreement to buy or sell a stated amount of a security, currency, commodity, index or other asset at a specific future date and at a pre-agreed price. The exposure is the market value of the equivalent underlying asset.

10.7   Total return swaps: A total return swap is an agreement in which one party (total return payer) transfers the total economic performance of a reference obligation to the other party (total return receiver). Total economic performance includes income from interest and fees, gains or losses from market movements, and credit losses. The exposure of the AIF is the market value of the equivalent reference assets which have a bearing on the economic performance of the swap.

10.8   Forward agreements: A forward agreement is a customised, bilateral agreement to exchange an asset or cash flows at a specified future settlement date at a

forward price agreed on the trade date. One party to the forward is the buyer (long), who agrees to pay the forward price on the settlement date; the other is the seller (short), who agrees to receive the forward price. Entering into a forward contract typically does not require the payment of a fee. The exposure of the AIF is the market value of the equivalent underlying asset. This may be replaced by the notional value of the contract where this is more conservative.

10.9   <u>Options:</u> An option is an agreement that gives the buyer, who pays a fee (premium), the right — but not the obligation — to buy or sell a specified amount of an underlying asset at an agreed price (strike or exercise price) on or until the expiration of the contract (expiry). A call option is an option to buy, and a put option an option to sell. The bounds of the exposure of the fund will be on the one side a potential unlimited exposure and on the other side an exposure that is limited to the higher of the premium paid or the market value of that option. The exposure between these two bounds is determined as the delta (an options delta measures the sensitivity of an option's price solely to a change in the price of the underlying asset) adjusted equivalent of the underlying position. The same approach must be adopted for embedded derivatives, e.g. in structured products. The structure should be broken down into its component parts and the effect of layers of derivative exposures must be adequately captured.

10.10   <u>Repurchase agreements:</u> The repurchase agreement normally occurs where an AIF 'sells' securities to a reverse-repo counterparty and agrees to buy them back at an agreed price in the future. The AIF will incur a financing cost from engaging in this transaction and will therefore need to re-invest the cash proceeds (effectively cash collateral) in order to generate a return greater than the financing cost incurred. This reinvestment of 'cash collateral' means that incremental market risk will be carried by the AIF and consequently must be taken into account in the global exposure calculation. The economic risks and rewards of the 'sold' securities remain with the AIF. Also, a repo transaction will almost always give rise to leverage as the cash collateral will be reinvested. In the event that non-cash collateral is received as part of the transaction and this collateral is further used as part of another repo, or stock-loan agreement, the full market value of the collateral must be included in the global exposure amount. The exposure of the AIF is increased by the reinvested part of the cash collateral.

10.11   <u>Reverse repurchase agreements:</u> This transaction occurs where an AIF 'purchases' securities from a repo counterparty and agrees to sell them back at an agreed price in the future. AIFs normally engage in these transactions to generate a low-risk money-market type return, and the 'purchased' securities act as collateral. Therefore no global exposure is generated; nor does the AIF take on the risks and rewards of the 'purchased' securities, i.e. there is no incremental market risk. However, it is possible for the 'purchased' securities to be further used as part of a repo or security-loan transaction, as described above, and in that case the full market value of the securities must be included in the global exposure amount. The economic risks and rewards of the purchased securities remain with the counterparty and therefore this does not increase the exposure of the AIF.

10.12   <u>Securities lending arrangements:</u> An AIF engaging in a securities lending transaction will lend a security to a security-borrowing counterparty (who will normally borrow the security to cover a physical short sale transaction) for an agreed fee. The security borrower will deliver either cash or non-cash collateral to the AIF. Only where cash collateral is reinvested in instruments other than those defined in section 3.2(a) above will global exposure be created. If the non-

cash collateral is further used as part of a repo or another security lending transaction, the full market value of the securities must be included in the global exposure amount as described above. Exposure is created to the extent that the cash collateral has been reinvested.

10.13 <u>Securities borrowing arrangements:</u> An AIF engaging in the borrowing of securities will borrow a security from a security-lending counterparty for an agreed fee. The AIF will then sell the security in the market. The AIF is now short that security. To the extent that the cash proceeds from the sale are reinvested this will also increase the exposure of the AIF. Exposure is the market value of the shorted securities; additional exposure is created to the extent that the cash received is reinvested.

10.14 <u>Credit default swaps:</u> A credit default swap (CDS) is a credit derivative agreement that gives the buyer protection, usually the full recovery, in case the reference entity defaults or suffers a credit event. In return the seller of the CDS receives from the buyer a regular fee, called the spread. For the protection seller, the exposure is the higher of the market value of the underlying reference assets or the notional value of the credit default swap. For the protection buyer, the exposure is the market value of the underlying reference asset.

11. Annex II of Level 2

11.1 The following conversion methods shall be applied to the non-exhaustive list below of standard derivatives:

(a) Futures

- Bond future: Number of contracts * notional contract size * market price of the cheapest-to-deliver reference bond

- Interest rate future: Number of contracts * notional contract size

- Currency future: Number of contracts * notional contract size

- Equity future: Number of contracts * notional contract size * market price of underlying equity share

- Index futures: Number of contracts * notional contract size * index level

(b) Plain vanilla options (bought/sold puts and calls)

- Plain vanilla bond option: Notional contract value * market value of underlying reference bond * delta

- Plain vanilla equity option: Number of contracts * notional contract size * market value of underlying equity share * delta

- Plain vanilla interest rate option: Notional contract value * delta

- Plain vanilla currency option: Notional contract value of currency leg(s) * delta

- Plain vanilla index options: Number of contracts * notional contract size * index level * delta

- Plain vanilla options on futures: Number of contracts * notional contract size * market value of underlying asset * delta

- Plain vanilla swaptions: Reference swap commitment conversion amount * delta

- Warrants and rights: Number of shares/bonds * market value of underlying referenced instrument * delta

(c)   Swaps

- Plain vanilla fixed floating rate interest rate and inflation swaps: notional contract value

- Currency swaps: Notional value of currency leg(s)

- Cross currency interest rate swaps: Notional value of currency leg(s)

- Basic total return swap: Underlying market value of reference asset(s)

- Non-basic total return swap: Cumulative underlying market value of both legs of the TRS

- Single name credit default swap:

  Protection seller - The higher of the market value of the underlying reference asset or the notional value of the Credit Default Swap

  Protection buyer - Market value of the underlying reference asset

- Contract for differences: Number of shares/bonds * market value of underlying referenced instrument

(d)   Forwards

- FX forward: notional value of currency leg(s)

- Forward rate agreement: notional value

(e)   Leveraged exposure to indices with embedded leverage

  A derivative providing leveraged exposure to an underlying index, or indices that embed leveraged exposure to their portfolio, must apply the standard applicable commitment approach to the assets in question.

11.2   The following conversion methods shall be applied to the non-exhaustive list below of financial instruments which embed derivatives

- Convertible bonds: Number of referenced shares * market value of underlying referenced shares * delta

- Credit linked notes: Market value of underlying reference asset(s)

- Partly paid securities: Number of shares/bonds * market value of underlying referenced instruments

- Warrants and rights: Number of shares/bonds * market value of underlying referenced instrument * delta

11.3   List of examples of non-standard derivatives with the related commitment methodology being used:

- Variance swaps: Variance swaps are contracts that allow investors to gain exposure to the variance (squared volatility) of an underlying asset and, in particular, to trade future realised (or historical) volatility against current implied volatility. According to market practice, the strike and the variance notional are expressed in terms of volatility. For the variance notional, this gives:

$$variance\ notional = \frac{vega\ notional}{2 \times strike}$$

The vega notional provides a theoretical measure of the profit or loss resulting from a 1% change in volatility.

As realised volatility cannot be less than zero, a long swap position has a known maximum loss. The maximum loss on a short swap is often limited by the inclusion of a cap on volatility. However, without a cap, a short swap's potential losses are unlimited.

The conversion methodology to be used for a given contract at time t is:

Variance notional * (current) variance$_t$ (without volatility cap)

Variance notional * min [(current) variance$_t$ volatility cap²] (with volatility cap)

whereby: (current) variance$_t$ is a function of the squared realized and implied volatility, more precisely:

$(current)\ variance_t = (t / T) * realized\ volatility (0 , t)^2 + (T - t) / T * implied\ volatility (t , T)^2$

- Volatility swaps

By analogy with the variance swaps, the following conversion formulae should be applied to volatility swaps:

- Vega notional * (current) volatility$_t$ (without volatility cap)

- Vega notional * min [(current) volatility$_t$; volatility cap] (with volatility cap)

whereby the (current) volatility t is a function of the realized and implied volatility.

11.4   Barrier (knock-in knock-out) options

Number of contracts * notional contract size * market value of underlying equity share * delta

12.   Annex III of Level 2

12.1   An interest rate derivative shall be converted into its equivalent underlying asset position in accordance with the following methodology:

The equivalent underlying asset position of each interest rate derivative instrument shall be calculated as its duration divided by the target duration of the AIF and multiplied by the equivalent underlying asset position:

Equivalent underlying asset position = $\dfrac{duration_{FDI}}{duration_{target}}$ x $CV_{derivative}$

where:

-    $duration_{FDI}$ is the duration (sensitivity of the market value of the financial derivative instrument to interest rate movements) of the interest rate derivative instrument;

-    $duration_{target}$ is in line with the investment strategy, the directional positions and the expected level of risk at any time and will be regularised otherwise. It is also in line with the portfolio duration under normal market conditions;

-    $CV_{derivative}$ is the converted value of the derivative position as defined in Annex II of Level 2 (see section 11 above).

12.2   The equivalent underlying asset positions calculated in accordance with section 7.6 shall be netted as follows:

(a)   Each interest rate derivative instrument shall be allocated to the appropriate maturity range of the following maturity-based ladder:

Maturities ranges

1.   0-2 years

2.   2-7 years

3.   7-15 years

4.   > 15 years

(b)   The long and short equivalent underlying asset positions shall be netted within each maturity range. The amount of the former which is netted with the latter is the netted amount for that maturity range.

(c)   Starting with the shortest maturity range, the netted amounts between two adjoining maturity ranges shall be calculated by netting the amount of the remaining unnetted long (or short) position in the maturity range (i) with the amount of the remaining unnetted short (long) position in the maturity range (i+1).

(d)   Starting with the shortest maturity range, the netted amounts between two remote maturity ranges separated by another one shall be calculated by netting the amount of the remaining unnetted long (or short) position in the maturity range (i) with the amount of the remaining unnetted short (long) position in the maturity range (i + 2).

(e)   The netted amount shall be calculated between the remaining unnetted long and short positions of the two most remote maturity ranges.

12.3   The AIF shall calculate its exposures as the sum of absolute values:

-      0% of the netted amount for each maturity range;

-      40% of the netted amounts between two adjoining maturity ranges (i) and (i+1);

-      75% of the netted amounts between two remote maturity ranges separated by another one, meaning maturity ranges (i) and (i+2);

-      100% of the netted amounts between the two most remote maturity ranges; and

-      100% of the remaining unnetted positions.

13.   Application of implementing measures

Any measures adopted by the European Union Commission under Articles 4(3), 24(6) and 25(9) of the AIFMD shall also be applicable.