FMA

Financial Market Authority
Liechtenstein

FMA Guideline 2006/1

Risk assessment and notification procedure for the use of derivative financial instruments by investment undertakings for transferable securities

1. General provisions

1.1. Purpose and significance of the FMA Guideline

This FMA Guideline governs the risk assessment and notification procedure for the use of derivative financial instruments by investment undertakings for transferable securities.

According to article 64, paragraph 7 of the Investment Undertakings Act (IUA) in conjunction with article 49, paragraph 1 of the Investment Undertakings Ordinance (IUO), a management company (MC) must use a base model to calculate the risks arising from investment instruments, especially with respect to derivative financial instruments. For this purpose, recognized calculation methods must be used. These provisions implement article 19, paragraph 1(g), article 21, and the provisions relating to derivatives of article 22 of EU directive 85/611/EEC as amended by directives 2001/107/EC and 2001/108/EC, taking into account recommendation 2004/383/EC, into Liechtenstein national law.

In the case of an investment undertaking for transferable securities, these provisions require that a MC must use a risk assessment procedure that allows it to monitor and assess the risk associated with its investment positions and their share of the overall risk profile of the investment portfolio at all times; it must also use a procedure that allows for a precise and independent valuation of the OTC derivatives.

The MC shall implement the provisions of this FMA Guideline in an internal guideline in accordance with article 48, paragraph 5 of the IUO, which must be brought to the attention of the audit office of the investment undertaking for transferable securities. As part of the audit, the audit office shall review compliance with the provisions of this FMA Guideline.

In using derivative financial instruments in an investment undertaking for transferable securities, the MC shall pursue the investment goals and the investment policy of the investment undertaking in accordance with its prospectus. The conclusion of transactions with derivative financial instruments may not violate the prohibition of short sales according to article 37, paragraph 5 of the IUO.

1.2. Scope of application

This FMA Guideline shall exclusively govern the risk assessment procedure in the case of investment undertakings for transferable securities.

2. Notifications

2.1. Content of the notifications

Each quarter, the MC shall submit the notifications required by this FMA Guideline to the FMA. For each investment undertaking managed by the MC, and in the case of segmented investment undertakings for each segment, these notifications must include the risk indicators relating to derivative financial instruments and relating to the overall risk of the investment undertaking. To submit the notification, the notification form in Annex 1 must be

used, which may be obtained electronically from the FMA website at www.fma-li.li (Investmentunternehmen/Publikationen/Formulare zum Download).

The written notification to the FMA shall contain the following information:

a) Name of the investment undertaking and ISIN number, as well as designation of the segment if the investment undertaking is segmented;
b) Name of the MC;
c) Information on the calculation method used;
d) If the FMA has approved absolute VaR for the Value-at-Risk Approach (VaR Approach), indication of the approved upper limit and the amount determined for this notification (in the “Comments” field);
e) Information on the risk assumed for derivative financial instruments (derivative risk) as a percentage of the net asset value (not necessary if the VaR approach is used);
f) Information on the risk assumed by the investment undertaking or the segment (overall risk) as a percentage of the net asset value;
g) Information on the number of times the risk indicator determined in (e) and (f) was exceeded in the past quarter.

If the fund assets contain no derivative financial instruments at the time of the notification, an empty notification must be submitted and identified as such.

2.2. Frequency of the notifications

Notifications must be as of 31 March, 30 June, 30 September, and 31 December, and shall be submitted in writing to the FMA together with the quarterly reports within one month of the end of the quarter.

3. Market risk

3.1. General provisions

The market risk of an investment undertaking is reflected in the increase and decrease of the fund assets through market influences. According to article 49, paragraph 1 of the IUO, the overall risk of an investment undertaking for transferable securities associated with derivative financial instruments shall not exceed the total assets of its portfolio. Moreover, it must be ensured that 200% of the net asset value is not exceeded in total. The MC must ensure that the investment undertaking is able to fulfill its obligations arising from the positions entered into at all times, and that no positions are entered into that represent an unlimited risk for the assets.

3.2. Calculation methods

For the calculation of the market risk of investment undertakings that exclusively contain derivative financial instruments according to Annex 2 in their fund assets, the Simple or Modified Commitment Approach (see point 3.2 (a) and (b)) may be applied. Investment undertakings that additionally or exclusively contain derivative financial instruments according to Annex 3 in their fund assets must use the VaR Approach (see point 3.2 (c)). The investment company is free to use the VaR Approach instead of the Simple or

Modified Commitment Approach. However, consistent application of the chosen calculation method must be ensured.

Only direct investments are relevant to the calculation of the market risk. If an investment undertaking makes investments in another investment undertaking, then the corresponding target investments of this investment undertaking are not relevant to the calculation of the market risk.

The market risk of investment undertakings must be calculated and recorded in writing for every net asset value calculation (NAV calculation), so that it is traceable for the audit office and the FMA.

The MC must declare the calculation method in the notification for each investment undertaking or its segments, as the case may be, in accordance with Annex 1. Changes to the calculation method must be communicated and justified to the FMA in writing in advance and brought to the attention of the audit company.

a) Simple Commitment Approach for derivative financial instruments without leverage effect

The Simple Commitment Approach converts the derivative positions into the corresponding underlying instruments. Derivative financial instruments with a risk-reducing effect may be offset against the cash positions of the same security and the derivative financial instruments with a risk-increasing effect to calculate the overall risk according to article 49, paragraph 1 of the IUO.

Using the Simple Commitment Approach, the derivative positions with a risk-increasing effect must be secured with liquid assets or appropriate securities, so that no leverage effect occurs. The use of an options delta for the calculation is not possible.

If this calculation method is used, the derivative and overall risk may be presented in words instead of figures in the notification form in Annex 1.

b) Modified Commitment Approach for derivative financial instruments with leverage effect

The Modified Commitment Approach converts the derivate positions into the corresponding underlying instruments. Derivative financial instruments with a risk-reducing effect may be offset against the cash positions of the same security and the derivative financial instruments with a risk-increasing effect to calculate the overall risk according to article 49, paragraph 1 of the IUO. The conversion of options into the applicable securities equivalent may make use of the appropriate options delta. In the case of forwards, futures, swaps, and forward exchange transactions, risk determination does not take any delta into account[1].

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[1] The delta is the relationship of the change of the value of the derivative financial instrument to the change (assumed to be minor) of the value of the underlying instrument.

c) VaR Approach

The VaR Approach is applied if derivative financial instruments according to Annex 3 are used. The MC is, however, free to use this approach also if derivative financial instruments according to Annex 2 are used.

By default, the allocable risk value for the market risk of an investment undertaking must be determined on the basis of an associated, derivative-free benchmark fund (relative VaR). The market risk of the investment undertaking is then compared with the market risk of the benchmark fund. The market risk of the investment undertaking may at most add up to twice the risk amount of the associated benchmark fund.

ca) Associated benchmark fund

The associated benchmark fund is a derivative-free fund corresponding to the current market value of the investment undertaking. The composition of this benchmark fund must correspond to the investment objective and investment policy of the investment undertaking and fulfill the requirements of its prospectus. When in doubt, a fund with a lower risk should be chosen.

If a derivative-free benchmark for the investment fund is already predefined in the prospectus, then this benchmark may be used as the benchmark fund for calculating the associated risk, if it appears to be representative with respect to the overall risk of the investment undertaking. The circumstances must be explained to the FMA in advance.

The composition of the benchmark fund and any changes to this composition must be documented in detail by the MC in writing.

If determination of the market risk of an investment undertaking on the basis of an associated benchmark fund is not possible or practicable on plausible grounds, the MC may determine the market risk on the basis of a relative value to the net asset value (relative VaR). The upper limit of this relative VaR must be approved by the FMA, and both its amount and its determination must be indicated in the full and simplified prospectuses.

cb) Quantitative requirements

When using the VaR Approach, the calculation of the market risk must apply the following factors:

a) confidence interval of 99%;
b) holding period of one month;
c) objective duration of observation of at most one year (most recent volatility).

d) Other calculation methods

Other calculation methods (internal risk assessment procedures) may be approved by the FMA if it is ensured that the scope of protection of this FMA Guideline is guaranteed by the calculation method in question.

4. Regular review of the VaR Approach

4.1. Stress tests

For every investment undertaking using the VaR Approach, the MC must conduct appropriate risk-adequate stress tests. The results of these stress tests must be taken into account accordingly when making investment decisions in the investment undertaking.

In a stress test, potential unusually large value losses of the investment undertaking must be determined, which may result from unusual changes to the value-determining parameters and their interrelations. Conversely, changes to the value-determining parameters and their interrelations must be determined that may result in large or asset-threatening value losses of the fund assets. If a precise calculation of the potential value losses of the fund assets or of the changes to the value-determining parameters and their interrelations is not possible for specific types of risk, then the MC may use a qualified estimate in their place. The qualified estimate represents the best possible estimate, taking into account all information attainable with a reasonable effort.

The stress tests must extend to all possible risks that must be reasonably expected in a foreseeable period. Special attention must be paid to those risks that the VaR Approach takes into account not at all or only incompletely.

In an internal guideline on derivative financial instruments according to article 48, paragraph 5 of the IUO, the MC shall determine the design and procedure of the stress tests (see point 1.1 infra). In a traceable manner, the MC must continuously adapt the design to the fund assets of the investment undertaking and to the market circumstances relevant to the investment undertaking. The conducted stress tests, including the results, must be documented objectively and in writing for each investment undertaking.

The stress tests must be conducted at least once every quarter. In addition, stress tests must also be conducted when a significant change to the results of the stress test cannot be ruled out, due to a change in the value or the composition of the fund assets or due to a change in the circumstances of the market. For each change to the design of the stress tests, the old and the new stress tests must be conducted in parallel at least once.

4.2. Backtesting

The predictive power of a risk model must be verified at least once every quarter by means of a daily comparison between the daily change in value and the potential risk amount for the market risk determined using the risk model on the basis of a holding period of one working day. For each investment undertaking, the result of the backtesting must be recorded in writing and in detail.

5. Credit risk

5.1. Issuer risk

The derivative financial instruments of an investment undertaking must be included in the calculation of compliance with the issuer limits according to

article 39 of the IUO. To calculate the issuer risk, the corresponding derivative financial instruments are converted into equivalent securities positions using the Commitment Approach. Derivative financial instruments with a risk-reducing effect may be offset against the cash positions of the same security and the derivative financial instruments with a risk-increasing effect to determine the issuer limits according to article 39 of the IUO.

Investments in index-based derivatives shall only then not be taken into account with respect to the issuer limits according to article 39 of the IUO if the underlying instrument is an index complying with article 46, paragraph 3 of the IUO and if the prospectus allows such investments.

5.2. Default risk (counterparty risk)

According to article 43, paragraph 1 of the IUO, default risks are considered open positions with counterparties the fulfillment of which is endangered by liquidity difficulties or bankruptcy of the counterparty. As a rule, the default risk refers to the positive replacement value of the open position.

Derivative transactions conducted on an exchange and whose clearing office fulfills the requirements of article 43, paragraph 2 of the IUO are considered default-risk free and need not be taken into account when calculating the value allocated to the counterparty risk.

All other derivative financial instruments are not considered default-risk free. The value allocated to the counterparty risk is derived from the sum of the current positive replacement values of the derivative positions existing with respect to a counterparty, plus a safety margin. If there is no liquid market for the derivative position, then the mathematical amount can be used as a market value that derives from the assumption of market conditions.

The safety margin as a percentage of the positive replacement value of the derivate position in question is as follows:

Term to maturity	Interest-based transactions	Exchange rate-based transactions	Equity-based transactions
up to 1 year	0.00%	1.00%	6.00%
between 1 and 5 years	0.50%	5.00%	8.00%
more than 5 years	1.50%	7.50%	10.00%

In the case of bilateral netting arrangements and debt conversion agreements, the positive replacement values plus the safety margins may be netted against the negative replacement values of the investment undertaking's derivative positions with respect to a counterparty, as long as the netting conditions according to article 6e of the Ordinance concerning the Law on Banks and Finance Companies (Bank Ordinance) are fulfilled.

In calculating the value allocated to the counterparty risk, the value of any collateral furnished by either of the parties may be deducted if the collateral:

a) is revaluated daily on the basis of the current market rating and its value exceeds the risk amount;

b) is only exposed to negligible risks (example: top-grade government bonds or cash resources) and is liquid;
c) is kept by a third party that has no connection with the operator or is legally protected from the consequences of a bankruptcy of a connected party;
d) can be utilized by the investment undertaking at any time.

The value allocated to the counterparty risk must be taken account in calculating the issuer limit according to article 39 of the IUO.

6. Cover of transactions with listed and over-the-counter derivative financial instruments

If a cash settlement is transacted for a derivative financial instrument automatically or on the request of the MC, it is permissible for the investment undertaking not to hold the affected underlying instrument as cover. In this case, cash resources and liquid values must be held as cover. Instruments are considered liquid that can be converted into cash resources in less than seven working days at a price that corresponds as exactly as possible to the current market value of the financial instrument to be covered. The investment undertaking must at all times fulfill the obligations arising from derivative financial transactions to the full extent.

If cash settlement is not possible for a derivative financial instrument, the investment undertaking must hold the respective underlying instrument in its portfolio as cover.

7. Delegation of the risk assessment procedure

According to article 25 of the IUA, the FMA may allow a MC to delegate one or more of its responsibilities to third parties for the purpose of efficient management. The designated person must meet the necessary conditions. In accordance with article 34, paragraph 1 of the IUO, supervision by the FMA must be ensured, and the interests of the investors must not appear to be threatened. The mandated person must have the necessary qualifications and be able to fulfill the responsibilities in question impeccably. The delegation must also not give rise to any conflicts of interest.

A MC may delegate the risk assessment procedure within the meaning of this FMA Guideline to an appropriate person, if the requirements of article 25 of the IUA and article 34 of the IUO are fulfilled. Any delegation must be approved in advance by the FMA.

8. Exemption clause

In exceptional cases, the FMA may impose other requirements on the MC and/or exempt it from compliance with this Guideline in whole or in part.

9. Entry into force

The FMA Guideline was adopted by the FMA on 31 March 2006 and will enter into force on 1 May 2006. During a transitional period lasting until 1 October 2006, the MC is called upon to take the necessary implementation measures. The first written notification to the FMA shall be as of 31 December 2006 and must be submitted to the FMA by 31 January 2007 at the latest.

Annex 1:
The following notification form is available at www.fma-li.li (Investmentunternehmen/ Publikationen/Formulare zum Download).

FMA
Finanzmarktaufsicht
Liechtenstein

Notification form for investment undertakings for transferable securities relating to the risk management procedure according to article 49 IUO

Notification as of:

Information on the investment undertaking	
Name of the investment undertaking	
Name of the segment (if segmented)	
ISIN number	
Name of the management company	

Risk indicators		
Calculation method used	Simple Commitment	☐
	Modified Commitment	☐
	Value-at-Risk	☐
Derivative risk in % of the net asset value*		
Overall risk in % of the net asset value*		
* If Simple Commitment used: complied with/not complied with		

Incidents during the quarter	
Number of breaches of - derivative risk: - overall risk:	

Comments		
Empty notification: (if no derivatives available)	☐ yes	☐ no

Place and date

Signature of the general management

Annex 2:

For the calculation of the market risk of an investment undertaking with the following derivative financial instruments in its fund assets, the Simple or Modified Commitment Approach may be used.

Underlying				
Interest rates	**Securities**	**Index**	**Currencies**	**Commodities**
Put Option	Put Option	Put Option	Put Option	Put Option
Call Option	Call Option	Call Option	Call Option	Call Option
Swaption	Credit Spread Options		Swaption	
Cap Option				
Floor Option				
Collar Option				
Call auf Future		Call auf Indexfuture	Call auf Future	
Put auf Future		Put auf Indexfuture	Put auf Future	
Future	Future	Future	Future	Future
Swap Notes (Future auf Swap)	Forward	Forward	Forward	Forward
Forward				
Forward Rate Agreement (FRA)				
Interest Rate Swap	Equity Swap	Indexswap	Cross Currency Swap	Contract for Difference (CFD)
Amortised Swap	Credit Default Swap	Equity Index Swap		
Step-up-Swap	Total Return Swap			
Deferred / Forward Swap				
Extendable Swap				
Puttable Swap				
Constant Maturity Swap				
Diff Swap				
	Basket Options	Basket Options	Basket Options	Basket Options

Annex 3:

For the calculation of the market risk of an investment undertaking with complex derivative financial instruments in its fund assets, the VaR Approach must be used. Examples of complex options are in particular the following derivative financial instruments or combinations of such instruments:

Complex Options
Barrier Options
Asian Options
Lookback Options
Payout Options
Compound Option
Spread Option
Outperformance Option
Quantos
Rainbow Option
Forward Start Option
Chooser Option
Contingent Option
Cliquet Option (Ratchet Option)
Ladder Option
other derivative financial instruments