Consultation Paper
Responding to this paper

ESMA invites comments on all matters in this paper and in particular on the specific questions summarised in Annex I. Comments are most helpful if they:

- respond to the question stated;
- indicate the specific question to which the comment relates;
- contain a clear rationale; and
- describe any alternatives ESMA should consider.

ESMA will consider all comments received by 01/09/2020.

All contributions should be submitted online at www.esma.europa.eu under the heading ‘Your input - Consultations’.

Publication of responses

All contributions received will be published following the close of the consultation, unless you request otherwise. Please clearly and prominently indicate in your submission any part you do not wish to be publicly disclosed. A standard confidentiality statement in an email message will not be treated as a request for non-disclosure. A confidential response may be requested from us in accordance with ESMA’s rules on access to documents. We may consult you if we receive such a request. Any decision we make not to disclose the response is reviewable by ESMA’s Board of Appeal and the European Ombudsman.

Data protection

Information on data protection can be found at www.esma.europa.eu under the heading Legal Notice.

Who should read this paper

This document will be of interest to asset managers managing alternative investment funds and their trade associations.
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I. Executive Summary

In April 2018, the European Systemic Risk Board (ESRB) published a set of recommendations to address liquidity and leverage risk in investment funds (the ESRB recommendations).

The ESRB ‘Recommendation E’ requests ESMA to provide guidance on Article 25 of Directive 2011/61/EU and, *inter alia*, recommends ESMA to:

- give guidance on the framework to assess the extent to which the use of leverage within the AIF sector contributes to the build-up of systemic risk in the financial system [“ESRB Recommendation E(1): Assessment of leverage-related systemic risk”];
- give guidance on the design, calibration and implementation of macroprudential leverage limits [“ESRB Recommendation E(2): Macroprudential leverage limits”].

Contents

Section III explains the background to our proposals and outlines its legislative basis. Section IV details ESMA’s initial cost-benefit analysis concerning the draft Guidelines. At all stages stakeholders’ input is sought through specific questions, which are summarised in Annex I.

The proposed Guidelines are set out in Annex II to this CP.

Next Steps

ESMA will consider the feedback it receives by the closure of this consultation with a view to finalising the guidelines for publication afterwards.

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II. Legislative references, abbreviations and definitions

Legislative references

For a list of legislative references, abbreviations and definitions used in this CP, please see Section 2 of the draft Guidelines (page 22).
III. Background

1. The proposed Guidelines have been drafted in response to a recommendation by the ESRB for ESMA to produce guidance on Article 25 of Directive 2011/61/EU.

2. Article 25(1) of the AIFMD provides that Member States shall “ensure that the competent authorities of the home Member State of the AIFM use the information to be gathered under Article 24 for the purposes of identifying the extent to which the use of leverage contributes to the build-up of systemic risk in the financial system, risks of disorderly markets or risks to the long-term growth of the economy”.

3. Given the rapid expansion of the investment fund sector and the higher risk-taking, in a context of low interest rates, it is of utmost importance to implement a framework for NCAs to monitor the level of leverage and deleveraging process of highly leveraged alternative investment funds. The deleveraging process of those funds may, indeed, further amplify systemic risks during a financial crisis, especially if the fund has short redemption periods.

4. AIFs can employ both financial leverage, which includes securities financing transactions and borrowing, and synthetic leverage, through the use of derivatives. Unlike financial leverage, synthetic leverage cannot be observed from balance sheets, as derivatives are accounted for at market value. The information on both types of leverage figures is included in the mandatory AIFMD reporting for leveraged funds.

5. During a financial crisis, potential spill-over effects, resulting from the fund deleveraging, may include:

   a) amplifying the price impact of adverse market movements on the assets held by the fund;
   b) fire sales, which can adversely affect other financial market participants owning the same asset or assets which are highly correlated;
   c) contagion effects to the banking system, in light of the interconnectedness with the investment fund sector;
   d) interruption in direct credit intermediation, which can amplify the credit cycle and the impact on the real economy.

6. Those effects can be further amplified by leverage as, given the same value of outflows, leveraged funds are likely to liquidate a greater amount of assets.

7. The risk of fire sales is further amplified by the possibility of short-term redeemable claims (especially where the possibility of daily redemptions is offered by highly leveraged funds) and exacerbated by investors’ concentration.

8. Leverage can also amplify the impact of negative market movements especially during stressed times, due to the need of obtaining more liquidity to cover margin calls and higher haircuts on leveraged positions, increasing the fund’s liquidity risk.

9. The use of consistent methodology to compute leverage across Member States is of fundamental importance in order to collect data to identify potential sources of risk to financial stability. For the purpose of calculating leverage limits, NCAs should consider the leverage measures set out in the AIFMD framework.
10. The proposed guidelines are based on AIFMD data. ESMA acknowledges that data quality issues may exist: in its first Annual Statistical Report on EU Alternative Investment Funds\(^2\), ESMA provided a detailed analysis of issues identified at the time with data reported in the AIFMD reporting, including some very important indicators such as leverage. The report also describes a variety of reporting errors (formatting, monetary values instead of percentages, etc.). Therefore, while NCAs should assess all the leverage-related risks, they should base their assessment on indicators that are available and relevant in their jurisdictions. Also, ESMA and the NCAs continuously work on further improving overall data quality, in particular on key risk measures.

11. Leverage limits should be based on the leverage measures set out in Directive 2011/61/EU: the gross method as set out in Article 7 of the Delegated Regulation 231/2013 and the commitment method as set out in Article 8 of the same text.

12. The proposed guidelines are without prejudice to any further regulatory updates coming from the IOSCO work on leverage, the AIFMD review and any further calibration of the indicators that may be deemed appropriate in the future.

III.1 ESRB Recommendation E(1): Assessment of leverage-related systemic risk.

13. The proposed Guidelines relate to the assessment of leverage-related systemic risk and aim at ensuring that NCAs adopt a consistent approach when assessing whether the condition for imposing leverage-related measures are met.

14. In order to ensure that a consistent approach is taken by NCAs in the assessment of leverage-related systemic risk, the proposed guidelines include:
   a) a common minimum set of indicators to be taken into account by NCAs during their assessment;
   b) the instructions to calculate such indicators based on the reporting data under Article 24 of Directive 2011/61/EC;
   c) qualitative and, where appropriate, quantitative descriptions of the interpretation of the indicators.

15. NCAs should assess the extent to which the use of leverage within the AIF sector contributes to the build-up of systemic risk in the financial system. The assessment of the leverage-related systemic risk posed by the AIF sector (“the risk assessment”) should take into account a range of quantitative and qualitative information.

16. NCAs should perform the risk assessment on a quarterly basis in line with Article 110(3)b-c of Commission Regulation 231/2013, AIFMs shall provide NCAs with the AIFMD data reporting on a quarterly basis for the leveraged AIFs they manage. The leverage risk assessment should be completed by the NCA following the receipt of data by the AIFMs.

Q1. What are your views on the frequency at which the risk assessments should be performed by NCAs?

17. The risk assessment should be designed into a two-steps approach: Step 1 and Step 2.

18. Under Step 1 (Level, source and different usages of leverage), NCAs should identify not only AIF employing leverage on a substantial basis but also non-substantially leveraged AIFs which may cause risks to financial stability and thus need to be assessed under Step 2.

Q2. What are your views on the sample of funds to be included under Step 1? Do you agree in including in the risk assessment not only substantially leveraged funds but also funds not employing leverage on a substantial basis which may pose financial stability risks?

Q3. Do you agree with the proposed leverage and size threshold identified under Step 1? Would you set the same threshold for all AIFs, or would you be in favour of setting different thresholds for different types of AIFs (e.g.: real estate, hedge funds, private equity, etc.) or sub-types of AIFs (please specify) based on a statistical analysis (e.g. percentile)? Should you prefer the latter option, please provide proposals and detailed arguments and justification supporting them.

19. Under Step 2 (Leverage-related systemic risk), NCAs should evaluate potential risks to financial stability of the AIFs identified under Step 1.

20. When assessing leverage-related systemic risk, NCAs should at least include the following risks:
   a) risk of market impact;
   b) risk of fire sales;
   c) risk of direct spill over to financial institutions;
   d) risk of interruption in direct credit intermediation.

Q4. Would you identify other relevant transmission channels?

21. When assessing each risk, NCAs should apply the risk indicators included under Table 2 of the draft guidelines, in addition to any other risk indicator they deem relevant to assess those risks.

Q5. What are your views on using not only leverage indicators, but also other types of indicator such as those indicated under Table 2 of the draft Guidelines? Do you agree with the list of indicators provided?

22. In order to select the funds which pose risks to financial stability, NCAs should analyse the indicators calculated under Step 1. This assessment is aimed at selecting the fund(s) for which it is deemed appropriate setting a leverage limit and it should involve comparison among peer funds and comparison with the data provided by ESMA to NCAs on the mean level of the indicators.
23. The risk assessment under Step 2 should be consistent across jurisdictions and based on a common methodology and indicators (table 2). Ultimately, the decision to impose leverage limits will also necessitate a qualitative assessment and expert judgment, as illustrated by the case studies in Annex I.

**Q6. What are your views on using not only AIFMD data but also other external data sources to perform the assessment? Which types of external data sources would you consider more useful for the purpose of performing the assessment under Step 2, other than those already identified in Annex of to the draft Guidelines?**

24. NCAs should communicate the result of the risk assessments to ESMA at least on an annual basis and anytime they identify a risk relevant for financial stability. NCAs should inform other EU NCAs when they find risk relevant for their jurisdiction.

25. It is acknowledged that funds not using leverage may also pose risks to financial stability. However, such risks cannot be mitigated by the imposition of leverage limits and are therefore not in the scope of the guidelines.

### III.2 ESRB Recommendation E(2): Leverage limits

26. The proposed Guidelines aimed at operationalising the leverage limits set out under Section V.2 and calibrate them in order to ensure their effectiveness and their efficiency.

27. The design of a macroprudential framework regarding leverage limits include:
   
   a) a description of the leverage limits, as imposed by the indicators of Section V.1;
   
   b) a set of principles that NCAs should take into account when calibrating leverage limits;
   
   c) a set of principles that NCAs should take into account when considering the imposition of leverage limits.

28. The calibration of leverage limits should be based on an assessment on whether the application of leverage limits would effectively limit the contribution of the leveraged fund(s) to the build-up of systemic risk. This includes a mapping of the various channels through which negative spill-overs to financial markets and/or financial market participants can materialise, such as fire sales, credit intermediation etc.

29. NCAs should pay particular attention on how leverage can contribute to procyclicality, especially in times of economic cycle-downturn or increase in market volatility. This is the case when funds’ asset sales are triggered by specific market indicators (e.g.: increase of volatility of X%; increase of margin calls of X% caused by collateral price drop).

30. When setting the appropriate level of leverage limits, NCAs should take into account their effectiveness in addressing the risk of market impact, fire sales, spill-overs to financial counterparties, and disruptions of credit intermediation. In order to do so, NCAs should assess the likely impact of these measures on the risks:
a) when risks are directly related to size, imposing leverage limits should reduce the risks accordingly;

b) when risks are partially related to size, but imposing limits may not reduce risks in the same proportion because AIFs can adjust their strategy to maintain the same level of risk, NCAs should consider imposing other restrictions on the management of the AIFs;

c) when imposing limits may, at least temporary, result in an increase of the risks, for example because a manager may sell less risky assets to meet the new requirements, NCAs should impose other restrictions (e.g. on the investment policy, redemption policy, risk policy) on the management of the AIF, at least until the end of the phased-in period. Examples of restrictions on the management of the AIF could include setting limits to the proportion of some assets based on their contribution to the risk profile of the fund, its sensitivity to market risk factors, its exposure to counterparty risk or their liquidity under stressed market conditions. In order to address liquidity mismatches, managers could also implement redemption policies and reduce the frequency of redemptions offered by an investment fund or impose notice periods for investors wishing to redeem from an investment fund.

31. Systemic risk typically builds up over a prolonged period before suddenly materialising. NCAs should carefully implement leverage limits, both in terms of timing and phasing in and out:

a) where an NCA impose leverage limits to an AIFs or a group of AIFs posing a threat to financial stability on a constant basis, limits should be maintained as long as the risks posed by the AIF or the group of AIFs have not decreased;

b) NCAs should impose temporary limits to limit the building up of risk, including any procyclical behaviour from an AIF or a group of AIFs. It is the case when funds contribute to excessive credit growth or the formation of excessive asset prices. In that case, limits should be released when the change in market conditions or fund behaviour stop being procyclical;

c) the implementation of leverage limits should be progressive (“the phased-in period”) to avoid procyclicality, especially if imposing limits in a procyclical way could trigger the risk they were supposed to mitigate. NCAs should not impose limits where the risks have already materialised. In the long run, NCAs should take into account the possibility to apply cyclical limits in order to dampen the build-up and materialisation of risks in the upswing and downswing phases of the financial cycle.

Q7. Which other restrictions would you consider as appropriate?

Q8. What are your views on the application of the leverage limits? Should those be applied only on the single fund or, where appropriate, limits should also be applied on group of funds? In this case, how would you identify the group of funds?

32. In order to evaluate the efficiency of leverage limits in mitigating excessive leverage, NCAs’ assessment should take into consideration:
a) Proportionality to the systemic risk posed by the investment fund's use of leverage, to ensure that the sector remains able to provide valuable services to the economy;

b) robustness to gaming and arbitrage, especially:

i) where the NCA determines that a fund may pose leverage-related systemic risks, the same limits should be considered for different type of funds but with a similar risk profiles, as defined by the risk assessment. This is aimed at avoiding the situation where a manager would declare a different type to avoid leverage limits.

ii) where AIFs managed by non-EU AIFMs pose leverage-related systemic risks but the NCA cannot impose leverage limits, it should impose other restrictions relating to the management of the AIF.

iii) complexity of calibration.

Q9. How would you assess the efficiency of leverage limits in mitigating excessive leverage?

III.3 Legislative basis

33. These Guidelines relate to provisions of the AIFMD framework.

34. Article 24 of the AIFMD sets out the reporting obligations to competent authorities of an AIFM for each of the EU AIFs it manages and for each of the AIFs it markets in the Union. Furthermore, Article 24(4) provides that “an AIFM managing AIFs employing leverage on a substantial basis shall make available information about the overall level of leverage employed by each AIF it manages, a break-down between leverage arising from borrowing of cash or securities and leverage embedded in financial derivatives and the extent to which the AIF’s assets have been reused under leveraging arrangements to the competent authorities of its home Member State”.

35. For the purpose of Article 24(4) of the AIFMD, Article 111(1) of Commission Regulation 231/2013 provides that leverage should be considered to be employed on a substantial basis when “the exposure of an AIF as calculated according to the commitment method under Article 8 of this Regulation exceeds three times its net asset value”.

36. Article 25(1) of the AIFMD provides that Member States shall “ensure that the competent authorities of the home Member State of the AIFM use the information to be gathered under Article 24 for the purposes of identifying the extent to which the use of leverage contributes to the build-up of systemic risk in the financial system, risks of disorderly markets or risks to the long-term growth of the economy”.

37. Pursuant to art. 25(2) of the AIFMD, the competent authorities of the home Member State of the AIFM "shall ensure that all information gathered under Article 24 in respect of all AIFMs that they supervise and the information gathered under Article 7 is made available to competent authorities of other relevant Member States, ESMA and the ESRB by means of the procedures set out in Article 50 on supervisory cooperation. They shall, without delay, also provide information by means of those procedures, and bilaterally to the competent authorities of other Member States directly concerned, if an AIFM under their responsibility, or AIF managed by that AIFM could potentially
constitute an important source of counterparty risk to a credit institution or other systemically relevant institutions in other Member States”.

38. Based on Article 25(3) of the AIFMD, the AIFM shall 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. The competent authorities shall assess the risks that the use of leverage by an AIFM with respect to the AIFs it manages could entail, and, where deemed necessary in order to ensure the stability and integrity of the financial system, the competent authorities of the home Member State of the AIFM, 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. The competent authorities of the home Member State of the AIFM shall duly inform ESMA, the ESRB and the competent authorities of the AIF, of actions taken in this respect, through the procedures set out in Article 50”.

39. According to Article 25(5), ESMA “shall perform a facilitation and coordination role, and, in particular, shall try to ensure that a consistent approach is taken by competent authorities, in relation to measures proposed by competent authorities under paragraph 3”.

40. Furthermore, Article 112 of Commission Regulation 231/2013 provides that competent authorities shall 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 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.
### IV. Cost-benefit analysis

1. **Technical options to identify the sample of funds for the purpose of imposing leverage limits**

<table>
<thead>
<tr>
<th>Policy Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>NCAs should assess the extent to which the use of leverage within the AIF sector contributes to the build-up of systemic risk in the financial system. The assessment of the leverage-related systemic risk posed by the AIF sector (“the risk assessment”) should be performed on a sample of leveraged AIFs which could potentially be a source of systemic risk.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Baseline scenario</th>
</tr>
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<tbody>
<tr>
<td>Under Step 1 of the draft guidelines, NCAs should identify the sample of funds which may cause risks to financial stability; under Step 2, NCAs should then evaluate potential risks to financial stability of those funds selected under Step 1.</td>
</tr>
</tbody>
</table>

The baseline scenario should be understood for this CBA as including in the sample of funds selected under Step 1 only the AIFs employing leverage on a substantial basis.

Given that substantially leveraged AIFs have to report their use of leverage, this option would be the simplest to assess, as NCAs will easily find this information in the AIFMD reporting framework. This would also be in line with the ESRB Recommendations.

<table>
<thead>
<tr>
<th>Technical proposal</th>
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<tbody>
<tr>
<td>In order to include in the scope of the risk assessment a larger sample of leveraged funds that may pose risks to financial stability, ESMA deems necessary to consider not only AIFs employing leverage on a substantial basis, but also those which may cause risks to financial stability despite not being substantially leverage.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Benefits</th>
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<tbody>
<tr>
<td>The introduction of this Guideline aims at contributing to safeguarding financial stability and limiting the potential sources of systemic risks coming from the use of leverage in the AIF sector. The policy objective is in line with the ESRB Recommendations which recommend ESMA to give guidance on the framework to assess the extent to which the use of leverage within the AIF sector contributes to the build-up of systemic risk.</td>
</tr>
</tbody>
</table>

Investment fund managers are obliged to report granular data for each leveraged AIF they manage to NCAs, including detailed information on the investment fund's use of leverage, size, investment strategies, principal exposures, geographical focus,
Investor ownership and concentration, instruments traded, market risk, counterparty risk profile, liquidity profile (including redemption profile), and operational and other risk aspects. In this context, AIFs with a leverage ratio of more than three times their NAV, calculated according to the commitment method, are viewed as employing leverage on a substantial basis. Managers of such investment funds have to report, in addition, on the five largest sources of borrowed cash or securities.

ESMA considers that, based on the amount of granular information reported by leveraged funds to the NCAs, the option of including in the sample of funds to be further assessed under Step 2 not only AIFs employing leverage on a substantial basis, but also leveraged AIFs which may cause risks to financial stability, despite not being substantially leveraged, is expected to bring more benefits than costs, both to NCAs and to the financial system.

This option is in fact based on data which are largely reported by AIFs and would be facilitated by the ESMA guidance which has identified a set of criteria in order to potentially filter those funds. The aim is to ensure that NCAs adopt a consistent approach when assessing whether the conditions for imposing leverage-related measures are met, in line with the ESRB Recommendations.

Conversely, the option of including in the sample substantially leveraged AIFs only, could entail the risk of leaving out leveraged funds which would potentially be systemically relevant. This is especially true if the leveraged AIF is interconnected to the financial system in a way that a potential deleveraging may cause risks materialising through various channels, in light of the interconnectedness of the AIF sector.

Also, a lack of common practices in this field could lead to a situation where some Member States would adopt different rules, thus creating greater uncertainty in the effective use of the extensive information available to NCAs under Directive 2011/61/EU.

| Costs to regulators | The Guideline is not expected to add significant costs to ESMA and NCAs. The latter are already required by the relevant legislation to perform an assessment regarding the potential contribution of leveraged AIFs to systemic risks. Following the application of the Guidelines, NCAs could benefit from the harmonisation of the rules regarding the imposition of leverage |
limits, as well as on the interpretation of the indicators and data gathered pursuant to Directive 2011/65/EU. This guidance would facilitate the effective use of the extensive information available to NCAs under Directive 2011/61/EU and encourage NCAs to perform an assessment of the extent to which the use of leverage in the AIF sector contributes to the build-up of systemic risk.

2. Technical options regarding the use of indicators in order to assess whether the conditions for imposing leverage-related measures are met

<table>
<thead>
<tr>
<th>Policy Objective</th>
<th>As recommended by the ESRB, to ensure that NCAs adopt a consistent approach when assessing whether the conditions for imposing leverage-related measures are met, ESMA is recommended to provide guidance on a common set of indicators to facilitate the effective use of the extensive information available to NCAs under Directive 2011/61/EU.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline scenario</td>
<td>Under Step 2 (Leverage-related systemic risk), NCAs should evaluate potential risks to financial stability of the AIFs identified under Step 1. When assessing leverage-related systemic risks, the baseline scenario should be understood for this CBA as considering leverage indicators only (e.g.: the leverage level reported by the AIF as in the gross method, commitment method etc) in order to assess the potential contribution of the leveraged AIFs to systemic risk.</td>
</tr>
</tbody>
</table>
| Technical proposal | Under Step 2 (Leverage-related systemic risk), NCAs should evaluate potential risks to financial stability of the AIFs identified under Step 1. When assessing leverage-related systemic risk, NCAs should at least include the following risks:  
  a. risk of market impact;  
  b. risk of fire sales;  
  c. risk of direct spill over to financial institutions;  
  d. risk of interruption in direct credit intermediation  
 When assessing each risk, NCAs should apply the risk indicators included under Table 2 of the draft guidelines, in addition to any other risk indicator they deem relevant to assess those risks.  
 Table 2 includes a set of indicators which, read in combination with the leveraged measures, would help NCAs assessing |
whether the leveraged AIF would potentially entail systemic risk to the financial sector. The list of indicators provided in the Table aims at identifying the various channels of risk propagation through which systemic risk may materialise, in line with the ESRB Recommendations. This would ensure to perform a comprehensive assessment without leaving out any potential risk to financial stability arising from leveraged AIFs, in light of the interconnectedness of the AIF sector to the financial and banking system.

### Benefits

The introduction of this Guideline aims at contributing to safeguarding financial stability and limiting the potential sources of systemic risks coming from the use of leverage in the AIF sector. The policy objective is in line with the ESRB Recommendations which recommend ESMA to give guidance on a framework which should capture, as much as possible, the channels through which systemic risk may materialise. This includes the following aspects: the potential contribution by individual funds and the AIF sector as a whole to the risk of fire sales; the direct interconnections of investment funds and the AIF sector as a whole with financial institutions; the direct or indirect involvement in credit intermediation of individual investment funds and the AIF sector as a whole.

The proposed framework would include indicators that capture the level, source and different usages of leverage regarded in their interconnected with the financial system as a whole, as well as supporting a harmonised use of the indicators, without leaving out any potential channel through which systemic risk may materialise.

Conversely, the option of using leverage indicators only, would not allow for NCAs to have a comprehensive picture of how leverage could potentially affect financial stability through the relevant transmission channels.

Also, a lack of common practices in this field could lead to a situation where some Member States would adopt different rules, thus creating greater uncertainty in the effective use of the extensive information available to NCAs under Directive 2011/61/EU and the imposition of leverage limits.

### Costs to regulators

The Guideline is not expected to add significant costs to ESMA and NCAs. The latter are already required by the relevant legislation to perform an assessment regarding the potential contribution of leveraged AIFs to systemic risks.
This option is based on data which are largely reported by AIFs. Nevertheless, the active assessment performed by the NCA would in some cases require the use of external data, where appropriate. For this reason, and in order to minimise this cost for regulators, ESMA guidance will also focus on providing a list of data bases which could potentially be a source of information in case the NCA deems appropriate to employ the use of data not included in the AIFMD reporting.

This cost will therefore be counterbalanced by the guidance provided by ESMA to this respect.

### 3. Technical options regarding the design, calibration and implementation of macroprudential leverage limits

<table>
<thead>
<tr>
<th><strong>Policy Objective</strong></th>
<th>As recommended by the ESRB, ESMA guidance should aim at operationalising the leverage limits and calibrate them in order to ensure their effectiveness and their efficiency.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Baseline scenario</strong></td>
<td>When operationalising leverage limits, the baseline scenario should be understood for this CBA as considering imposing the same limit to all funds identified under the risk assessment.</td>
</tr>
<tr>
<td><strong>Technical proposal</strong></td>
<td>The calibration of leverage limits should be based on an assessment on whether the application of leverage limits would effectively limit the contribution of the leveraged fund(s) to the build-up of systemic risk. When setting the appropriate level of leverage limits, NCAs should take into account their effectiveness in addressing the risk of market impact, fire sales, spill-overs to financial counterparties, and disruptions of credit intermediation. In order to do so, NCAs should assess the likely impact of these measures on the risks: NCAs should pay particular attention on how leverage can contribute to procyclicality, especially in times of economic cycle-downturn or increase in market volatility. If leverage limits are not efficient or not sufficient, NCAs should consider imposing other restrictions on the management of the AIFs.</td>
</tr>
</tbody>
</table>
### Benefits

The policy objective is in line with the ESRB Recommendations which recommend ESMA to give guidance on the design, calibration and implementation of macroprudential leverage limits.

A lack of common practices in this field could lead to a situation where some Member States would adopt different rules, thus creating greater uncertainty, uneven level playing field and inaction bias.

However, the option of setting the same limits for all funds identified under the risk assessment does not take into account the diversity of fund risk profiles. On some occasion it could lead to unintended effect, for example if a fund or a group of funds deleverage in a procyclical way.

Conversely, the option of calibrating the limits based on the fund profile and the efficiency of the limits in reducing the risk, should be more proportionate, limit the build-up of systemic risk and improve financial stability. The possibility to impose other restrictions to the management acknowledge the risks of unintended effect during the phase-in period.

### Costs to regulators

The Guideline is not expected to add significant costs to ESMA and NCAs. The latter are already required by the relevant legislation to perform an assessment regarding any likely procyclical effects that could result from the imposition of limits or other restrictions on the use of leverage by the AIFM concerned.

Moreover, the cost of inaction or inappropriate action is expected to be higher towards financial stability.
V. Annex I: Summary of questions

Q1. What are your views on the frequency at which the risk assessments should be performed by NCAs?

Q2. What are your views on the sample of funds to be included under Step 1? Do you agree in including in the risk assessment not only substantially leveraged funds but also funds not employing leverage on a substantial basis which may pose financial stability risks?

Q3. Do you agree with the proposed threshold identified under Step 1? Would you set the same threshold for all AIFs, or would you be in favour of setting different thresholds based for different types of AIFs (e.g.: real estate, hedge funds, private equity etc) or sub-types of AIFs (please specify) based on a statistical analysis (e.g. percentile)? Should you prefer the latter option, please provide proposals and detailed arguments and justification supporting them.

Q4. Would you identify other relevant transmission channels?

Q5. What are your views on using not only leverage indicators, but also other types of indicator such as those indicated under Table 2 of the draft Guidelines? Do you agree with the list of indicators provided?

Q6. What are your views on using not only AIFMD data but also other external data sources to perform the assessment? Which types of external data sources would you consider more useful for the purpose of performing the assessment under Step 2, other than those already identified in Annex of to the draft Guidelines?

Q7. Which other restrictions would you consider as appropriate?

Q8. What are your views on the application of the leverage limits? Should those be applied only on the single fund or, where appropriate, limits should also be applied on group of funds? In this case, how would you identify the group of funds?

Q9. How would you assess the efficiency of leverage limits in mitigating excessive leverage?

Table of Contents

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I. Scope

Who?
1. These guidelines apply to National Competent Authorities (NCAs).

What?
2. These guidelines apply in relation to Article 25 of the AIFMD.

When?
3. These guidelines apply from [dd month yyyy]
II. Legislative references, abbreviations and definitions

Legislative references

AIFMD  Directive 2011/65/EU

Abbreviations

AIF  Alternative Investment Fund
AIFM  Alternative Investment Fund Manager
ASR  Annual Statistical Report
CP  Consultation Paper
ECB  European Central Bank
EIOPA  European Insurance and Occupational Pensions Authority
ESRB  European Systemic Risk Board
NAV  Net Asset Value

Definitions

leverage  any method by which the 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

III. Purpose

4. These guidelines are based on Article 16(1) of the ESMA Regulation. The objectives of these guidelines are to establish consistent, efficient and effective supervisory practices within the ESFS and to ensure the common, uniform and consistent application of Article 25 of the AIFMD. In particular, they relate to the assessment of leverage-related systemic risk and aim at ensuring that NCAs adopt a consistent approach when assessing whether the condition for imposing leverage-related measures are met.
IV. Compliance and reporting obligations

Status of the guidelines

5. In accordance with Article 16(3) of the ESMA Regulation, NCAs must make every effort to comply with these guidelines.

6. Competent authorities to which these guidelines apply should comply by incorporating them into their national legal and/or supervisory frameworks as appropriate, including where particular guidelines are directed primarily at financial market participants. In this case, competent authorities should ensure through their supervision that financial market participants comply with the guidelines.

Reporting requirements

7. Within two months of the date of publication of the guidelines on ESMA’s website in all EU official languages, competent authorities to which these guidelines apply must notify ESMA whether they (i) comply, (ii) do not comply, but intend to comply, or (iii) do not comply and do not intend to comply with the guidelines.

8. In case of non-compliance, competent authorities must also notify ESMA within two months of the date of publication of the guidelines on ESMA’s website in all EU official languages of their reasons for not complying with the guidelines.

9. A template for notifications is available on ESMA’s website. Once the template has been filled in, it shall be transmitted to ESMA.
V. Guidelines on Article 25 of Directive 2011/61/EU

V.1 Guidelines on the assessment of leverage-related systemic risk

10. When assessing the extent to which the use of leverage contributes to the build-up of systemic risk in the financial system in accordance with Article 25 of the AIFMD (“the risk assessment”), competent authorities should take into account a range of quantitative and qualitative information.

11. NCAs should perform the risk assessment on a quarterly basis. The leverage risk assessment should be completed by the NCA following the receipt of data by the AIFMs.

12. The risk assessment should follow a two-steps approach:
   a) Step 1: Level, source and different usages of leverage (Table 1)
   b) Step 2: Leverage-related systemic risk (Table 2)

13. Under Step 1, NCAs should identify the following:
   a) AIFs employing leverage on a substantial basis, based on Article 111(1) of Commission Delegated Regulation (EU) 231/2013;
   b) AIFs employing leverage but not on a substantial basis and whose regulatory assets under management are greater than EUR 500mn\(^3\) at the reporting date; and
   c) AIFs employing leverage other than those referred to in points a) and b) whose unusually high use of leverage, as measured through the indicators of Table 1, may pose risks to financial stability.

14. For the purpose of point c) of paragraph 13, an “unusually high use of leverage” is a use of leverage that differs significantly (e.g. a high percentile in the distribution) from that of other funds by comparing the AIF’s leverage value with:
   a) the median or average value of leverage of AIFs of the same type (for example: hedge funds, private equity, real estate, fund of funds and other AIFs); and
   b) the AIF’s historical median or average leverage value.

15. The risk assessment under Step 2 should be consistent across jurisdictions and based on a common methodology and indicators. Ultimately, the decision to impose leverage limits will also necessitate a qualitative assessment and expert judgment, as illustrated by the case studies in Annex I.

16. NCAs should evaluate potential leverage-related systemic risks to financial stability of the AIFs identified under Step 1 and include in their assessment at least the following risks:

---

\(^3\) This threshold corresponds to a semi-annual or quarterly reporting frequency, as indicated by Article 110(3) letters a) and c) of Commission Regulation 231/2013, for authorised AIFMs based on the managers’ characteristics and AIFs managed. Full diagrams on the reporting frequencies available in the ESMA guidelines on reporting obligations.
a) risk of market impact;
b) risk of fire sales;
c) risk of direct spill over to financial institutions;
d) risk of interruption in direct credit intermediation

17. NCAs should base their risk assessment on AIFMD data. In addition to AIFMD data, NCAs should use the best available data for some of the indicators in table 2, including national supervisory data and/or third-party data when appropriate. However, in order to limit the risk of inconsistencies, NCAs should refer to the (non-exhaustive) list of data sources included in the annex.

18. NCAs should communicate the result of the risk assessments to ESMA at least on an annual basis and anytime they identify a risk relevant for financial stability. NCAs should inform other EU NCAs when they find risk relevant for their jurisdiction.

19. NCAs should use the risk assessment, in combination with a qualitative assessment where necessary, to select the AIFs for which it is appropriate to set a leverage limit, according to the Guidelines in V.2.

Table 1

<table>
<thead>
<tr>
<th>Leverage-related systematic risk</th>
<th>Indicator</th>
<th>Description</th>
<th>Scope</th>
<th>Data source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leverage measures</td>
<td>Gross leverage</td>
<td>Leverage of the AIF as calculated under the Gross Method</td>
<td>Single AIF</td>
<td>AIFMD: 294</td>
</tr>
<tr>
<td></td>
<td>Commitment Leverage</td>
<td>Leverage of the AIF as calculated under the Commitment Method</td>
<td>Single AIF</td>
<td>AIFMD: 295</td>
</tr>
<tr>
<td></td>
<td>Adjusted gross leverage</td>
<td>Gross exposures (excluding IRDs and FEX for hedging purposes) as percentage of NAV</td>
<td>Single AIF</td>
<td>AIFMD: 123:124, 53</td>
</tr>
<tr>
<td></td>
<td>Financial leverage</td>
<td>Value of borrowings of cash or securities as percentage of NAV</td>
<td>Single AIF</td>
<td>AIFMD: 283:286, 53</td>
</tr>
<tr>
<td>Assets under management</td>
<td>Regulatory AuM</td>
<td>Value in base currency of the Assets under management (AuM) for the AIF, using the method set out in Articles 2 and 10 of the Regulation 231/2013</td>
<td>Single AIF</td>
<td>AIFMD: 48</td>
</tr>
</tbody>
</table>

* Figures refer to the corresponding field in the AIFMD reporting.
| Indicator | Description | Scope | Data source
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Market impact</strong></td>
<td>The size of an AIF or a group of AIFs is sufficient to move the market</td>
<td>NAV x leverage calculated under the commitment method</td>
<td>Single AIF</td>
</tr>
<tr>
<td></td>
<td>Main categories of assets in which the AIF invested compared to the size of the underlying market</td>
<td>Group of AIFs</td>
<td>AIFMD: 123, 124</td>
</tr>
<tr>
<td></td>
<td>Value of turnover in each asset class over the reporting months compared to the turnover of the asset class</td>
<td>Group of AIFs</td>
<td>AIFMD: 126</td>
</tr>
<tr>
<td><strong>Risk from fire sales</strong></td>
<td>The activities of an AIFM could contribute to a downward spiral in the prices of financial instruments or other assets</td>
<td>Percentage of the AIF’s equity that is beneficially owned by the five largest owners</td>
<td>Single AIF</td>
</tr>
<tr>
<td></td>
<td>Average difference across time buckets between share of funds’ portfolios capable of being liquidated and investor ability to receive redemption payments.</td>
<td>Single AIF</td>
<td>AIFMD: 53, 57, 178-184, 186-192</td>
</tr>
<tr>
<td></td>
<td>Illiquid assets include physical assets, unlisted equity, non-investment grade corporate and convertible bonds, and loans, in percentage of AuM</td>
<td>Single AIF</td>
<td>AIFMD: 123, 33</td>
</tr>
<tr>
<td></td>
<td>Potential liquidity demands resulting from market shock (Single AIF: in % of NAV; group of AIFs: in base currency)</td>
<td>Net Equity Delta</td>
<td>Single AIF or group of AIFs</td>
</tr>
<tr>
<td></td>
<td>Additional information that NCAs could require AIFMs to report on a periodic basis pursuant to Article 24(5)</td>
<td>Net DV01</td>
<td>Single AIF or group of AIFs</td>
</tr>
<tr>
<td></td>
<td>Potential liquidity demands from collateral calls (on funds’ derivatives and repo) relative to available liquid assets</td>
<td>Net CS01</td>
<td>Single AIF or group of AIFs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>VAR</td>
<td>Single AIF or group of AIFs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Vega exposure</td>
<td>Single AIF or group of AIFs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Net FX Delta</td>
<td>Single AIF or group of AIFs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Net Commodity Delta</td>
<td>Single AIF or group of AIFs</td>
</tr>
</tbody>
</table>

5 Figures refer to the corresponding field in the AIFMD reporting.
<table>
<thead>
<tr>
<th>Indicator</th>
<th>Description</th>
<th>Scope</th>
<th>Data source</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Leverage-related systemic risk</strong></td>
<td>Potential liquidity demands (by source)</td>
<td>Single AIF</td>
<td>AIFMD: 297-301</td>
</tr>
<tr>
<td><strong>Risk of direct spillovers to financial institutions</strong></td>
<td>The exposure of an AIF or several AIFs could constitute an important source of market, liquidity or counterparty risk to a financial institution</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Linkages to financial institutions via investments</td>
<td>Long value of investments in listed equities and corporate bonds issued by financial institutions.</td>
<td>Group of AIFs</td>
<td>AIFMD: 123 (securities issued by financial institutions)</td>
</tr>
<tr>
<td></td>
<td>Sum of long exposures in structured and securitised products.</td>
<td>Group of AIFs</td>
<td>AIFMD: 53, 57, 123</td>
</tr>
<tr>
<td>Counterparty risk</td>
<td>Mark-to-market net counterparty credit exposure vis a vis the AIF</td>
<td>Single AIF</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Potential liquidity demands resulting from market shock6 (see above)</td>
<td>see above</td>
<td>see above</td>
</tr>
<tr>
<td>Linkages to financial institutions via investor base</td>
<td>Financial institution exposed to a risk of loss7</td>
<td>Group of AIFs</td>
<td>AIFMD: 209</td>
</tr>
<tr>
<td><strong>Risk of interruption in direct credit intermediation</strong></td>
<td>AIFs contributing to the funding of the real economy deleverage during the downturn thus contributing to the procyclicality of the overall credit supply.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fund investments in credit instruments of non-financial institutions</td>
<td>Sum of long values of corporate bonds, convertible bonds not issued by financial institutions.</td>
<td>Group of AIFs</td>
<td>AIFMD: 123</td>
</tr>
<tr>
<td></td>
<td>Sum of leveraged and other loans.</td>
<td>Group of AIFs</td>
<td>AIFMD: 123</td>
</tr>
</tbody>
</table>

6 Liquidity demands stemming from derivatives especially represent a counterparty risk for the counterpart.
7 Bank exposure to shadow banking entities is nevertheless limited by EBA guidelines. EBA is of the view that only AIFs with limited leverage could be considered to fall outside the definition of ‘shadow banking entities’
V.2 Guidelines on leverage limits

20. NCAs should impose leverage limits on AIFs posing risks to financial stability. When deciding to impose leverage limits NCAs should consider:

a) risks posed by funds according to their type (hedge funds, private equity, real estate, fund of funds or any other relevant type) and risk profile, as defined by the risk assessment performed in accordance with paragraph 12;

b) risks posed by common exposures. Where the NCA determines that a group of funds of the same type and similar risk profiles may collectively pose leverage-related systemic risks, the NCA should apply leverage limits in a similar or identical manner to all funds in that group.

21. NCA should carefully implement leverage limits, both in terms of timing and phasing in and out:

a) where an NCA imposes continuous leverage limits to an AIF or a group of AIFs posing a threat to financial stability, the limits should be maintained for as long as the risks posed by the AIF or the group of AIFs do not decrease;

b) when an NCA imposes temporary leverage limits to limit the build-up of risk, including any procyclical behaviour from an AIF or a group of AIFs, such as when funds contribute to excessive credit growth or the formation of excessive asset prices, the limits should be released when the change in market conditions or fund behaviour stop being procyclical;

c) competent authorities should implement of leverage limits progressively (“the phased-in period”) to avoid procyclicality, especially if imposing limits in a procyclical way could trigger the risk they were supposed to mitigate; and

d) competent authorities should take into account the possibility to apply cyclical limits in order to dampen the build-up and materialisation of risks in the upswing and downswing phases of the financial cycle.

22. When setting the appropriate level of leverage limits, NCAs should take into account their effectiveness in addressing the risk of market impact, fire sales, spill-overs to financial counterparties, and disruptions of credit intermediation. NCAs should take into account:

a) when risks are directly related to size, imposing leverage limits should reduce the risks accordingly;

b) when risks are partially related to size, but imposing limits may not reduce risks in the same proportion because AIFs can adjust their strategy to maintain the same level of risk, NCAs should consider imposing other restrictions on the management of the AIFs (for example, restrictions on the investment policy, redemption policy or risk policy);

c) when imposing limits may temporarily, result in an increase of the risks, for example through a sale by an AIFM of lower risk assets to meet the new requirements, NCAs should impose other restrictions on the management of the AIF, at least until the end of the phased-in period. For example, the restrictions could include setting limits on the proportion of certain assets based on their contribution to the risk profile of the AIF, their sensitivity to market risk factors, their exposure to counterparty risk or their liquidity under stressed market conditions. In order to address liquidity mismatches, competent authorities may also consider the AIF to
implement redemption policies and reduce the frequency of redemptions offered by an AIF or impose notice periods for those redemptions.

23. Competent authorities should evaluate the efficiency of leverage limits in mitigating excessive leverage by taking into consideration the following:

a) proportionality of the leverage limits to the systemic risk posed by the use of leverage of the AIF, to ensure that the sector remains able to provide valuable services to the economy;

b) robustness of leverage limits to gaming and arbitrage, especially:

i) where the competent authority determines that an AIF fund may pose leverage-related systemic risks, the same limits should be considered for different types of funds but with a similar risk profiles, as defined by the risk assessment. This is especially to avoid the situation where a manager would declare a different type of AIF to avoid leverage limits.

ii) where AIFs managed by non-EU AIFMs pose leverage-related systemic risks but the NCA cannot impose leverage limits, it should impose other restrictions relating to the management of the AIF; and

iii) complexity of calibration.
V.3 Annexes to the Guidelines

Annex I: Use of external data for the purpose of the risk assessment

1. The Guidelines promote a consistent approach based on consistent data and data definitions from the AIFMD reporting. Also, NCAs can compare AIFs in their market with data aggregated at EU level: ESMA publishes its statistical report on EU Alternative Investment Funds on an annual basis.

2. However, for the assessment of leverage related systemic risks, external data may be necessary in order to measure fund exposure in relation to their counterparty or the market in which they operate. This is especially the case when:
   a) NCAs want to assess the market share of a fund or a group of funds, in which case they would need the information regarding the fund exposure and the size of the underlying market;
   b) NCAs want to measure counterparty risk, in which case they would need information on the counterparty.

3. NCAs should use the best available data, including national data when appropriate. However, in order to limit the risk of inconsistencies, NCAs should refer to the following data sources included in the below non-exhaustive table (Table 3), for the EU market.

4. The data sources indicated in Table 3 are without prejudice to any further data sources that ESMA may include in the future to improve exhaustivity, especially in terms of instruments and geographical areas.

Table 3

<table>
<thead>
<tr>
<th>Instruments Traded and Individual Exposures</th>
<th>Underlying market</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Securities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Listed equities</td>
<td>listed shares</td>
<td>ECB: Selected euro area statistics and national breakdowns - Securities issues</td>
</tr>
<tr>
<td>Corporate bonds not issued by financial institutions</td>
<td>euro-denominated debt securities issued by Non-financial corporation</td>
<td>ECB: Selected euro area statistics and national breakdowns - Securities issues</td>
</tr>
<tr>
<td>Corporate bonds issued by financial institutions</td>
<td>euro-denominated debt securities issued by Non-MFI financial institutions</td>
<td>ECB: Selected euro area statistics and national breakdowns - Securities issues</td>
</tr>
<tr>
<td>Sovereign bonds</td>
<td>euro-denominated debt securities issued by central government</td>
<td>ECB: Selected euro area statistics and national breakdowns - Securities issues</td>
</tr>
<tr>
<td>Structured/securitised products</td>
<td>Financial vehicle corporations</td>
<td>ECB - Statistics – Financial corporations - Financial vehicle corporations -</td>
</tr>
</tbody>
</table>

8 ESMA Annual Statistical Report, EU Alternative Investment Funds, ESMA, 2020
### b) Derivatives

<table>
<thead>
<tr>
<th>Derivatives</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equity derivatives</td>
<td>ESMA: ASR on EU Derivatives markets</td>
</tr>
<tr>
<td>CDS</td>
<td>ESMA: ASR on EU Derivatives markets</td>
</tr>
<tr>
<td>Foreign exchange</td>
<td>ESMA: ASR on EU Derivatives markets</td>
</tr>
<tr>
<td>Interest rate derivatives</td>
<td>ESMA: ASR on EU Derivatives markets</td>
</tr>
<tr>
<td>Commodity derivatives</td>
<td>ESMA: ASR on EU Derivatives markets</td>
</tr>
</tbody>
</table>

### d) Collective Investment Undertakings

<table>
<thead>
<tr>
<th>Undertakings</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Money Market Funds and Cash management CIU</td>
<td>ECB - Statistics - Money, credit and banking - Credit institutions and money market funds</td>
</tr>
<tr>
<td>ETF</td>
<td>ECB - Statistics - Financial corporations - Investment funds balance sheets</td>
</tr>
<tr>
<td>Other CIU</td>
<td>ECB - Statistics - Financial corporations - Investment funds balance sheets</td>
</tr>
</tbody>
</table>

### Top counterparty exposure

<table>
<thead>
<tr>
<th>Counterparty data</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Banks</td>
<td>EBA EU-wide transparency exercise</td>
</tr>
<tr>
<td>Insurance</td>
<td>EIOPA insurance statistics</td>
</tr>
</tbody>
</table>
## ANNEX II: Case studies (for illustrative purpose)

### Leverage-related systemic risk Indicator*

<table>
<thead>
<tr>
<th>Step 1</th>
<th>Leverage measures</th>
<th>FoF</th>
<th>HF</th>
<th>Real</th>
<th>PE</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Adjusted gross leverage</td>
<td>Fund 1 90th percentile</td>
<td>Fund 2 90th percentile</td>
<td>Fund 3 90th percentile</td>
<td>Fund 4 90th percentile</td>
<td>Fund 5 90th percentile</td>
</tr>
<tr>
<td></td>
<td>8x 1x</td>
<td>6x 1x</td>
<td>15x 11x</td>
<td>4x 2x</td>
<td>3x 1x</td>
<td>4x 2x</td>
</tr>
<tr>
<td>Commitment leverage</td>
<td>Fund 1 90th percentile</td>
<td>Fund 2 90th percentile</td>
<td>Fund 3 90th percentile</td>
<td>Fund 4 90th percentile</td>
<td>Fund 5 90th percentile</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6x 1x</td>
<td>36x 8x</td>
<td>4x 2x</td>
<td>4x 1x</td>
<td>4x 1x</td>
<td></td>
</tr>
</tbody>
</table>

### Step 2 | Market impact | Net exposure (EUR mn)
<table>
<thead>
<tr>
<th>Fund 1 90th percentile</th>
<th>Fund 2 90th percentile</th>
<th>Fund 3 90th percentile</th>
<th>Fund 4 3rd quartile</th>
<th>Fund 5 3rd quartile</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,300 353</td>
<td>50,000 2,528</td>
<td>1,500 295</td>
<td>170 81</td>
<td>230 185</td>
</tr>
</tbody>
</table>

### Risk from fire sales

<table>
<thead>
<tr>
<th>Step 2</th>
<th>Risk from fire sales</th>
<th>Liquidity profile*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fund 1 Median</td>
<td>Fund 2 Median</td>
<td>Fund 3 Median</td>
</tr>
<tr>
<td>12% 0%</td>
<td>0% 13%</td>
<td>0% 0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Share of less liquid assets</th>
<th>Fund 1 Median</th>
<th>Fund 2 3rd quartile</th>
<th>Fund 3 90th percentile</th>
<th>Fund 4 90th percentile</th>
<th>Fund 5 90th percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td>4% 3%</td>
<td>27% 25%</td>
<td>368% 400%</td>
<td>221% 113%</td>
<td>350% 119%</td>
<td></td>
</tr>
</tbody>
</table>

### Risk of direct spillovers to financial institutions

<table>
<thead>
<tr>
<th>Fund 1 Median</th>
<th>Fund 2 90th percentile</th>
<th>Fund 3 Median</th>
<th>Fund 4 90th percentile</th>
<th>Fund 5 Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>2% 7%</td>
<td>41% 33%</td>
<td>0% 0%</td>
<td>0% 0%</td>
<td>0% 14%</td>
</tr>
</tbody>
</table>

*Higher values indicate higher risks except for the liquidity profile indicator.

Coding: green=average or low risk for a fund of this type, orange=high risk for a fund of this type, red=high risk for an AIF.
1. Funds should be assessed according to the absolute value of the indicators and the relative value, compared to funds of the same type and other alternative funds. The above examples (Fund 1-5) are based on real cases. All funds are substantially leveraged (commitment leverage >x3) and should therefore be subject to the risk assessment.

2. A high absolute value of an indicator is indicated in red in the table. A high relative value compared to funds of the same type is indicated in orange. Green indicate a low or medium value. For each indicator, the table also indicates a comparison with the relevant descriptive statistic for funds of the same category (e.g. a comparison with the median, the 3rd quartile or the 90th percentile).

3. Fund 1 is highly leveraged both in absolute terms and in comparison with funds of the same type (the funds of funds). Its main risk is related to its potential market impact, due to its high net exposure (EUR 2.3bn). Risks of fire sales and direct spillovers to financial institutions appear to be more limited and in line with other funds in the same category. Therefore, the NCA should consider imposing leverage limits if it expects this fund to have a potential market impact of, taking into account the depth of the market it is active in (i.e. its capability to move market prices when selling assets).

4. Fund 2 is very highly leveraged both in absolute terms and in comparison with funds of the same type. Its main risk is related to its potential market impact, due to its very high net exposure (EUR 50bn). It also holds a relatively high share of less liquid assets (27% of NAV), has a less liquid profile than fund of the same category (0% compared to 13%) and is exposed to financial institutions (41% of NAV). Therefore, the NCA should consider imposing leverage limits on this fund, especially to reduce its potential market impact.

5. Fund 3 is more leveraged than funds of the same type and has a relatively high net exposure (EUR 1.5bn). Like most of its peers, the fund is invested in illiquid assets (real estate). The combination may lead to a fire sale in case of a significant redemption episode. However, the liquidity profile of the fund doesn’t show particular liquidity mismatches. Therefore, the NCA should base its decision on a deeper analysis of the appropriateness of the redemption policy of the funds.

6. Fund 4 is more leveraged than funds of the same type with a relatively high net exposure compared to peers but limited in absolute terms (EUR 170mn). Like most of its peers, the fund is invested in illiquid assets (private equity). The combination may lead to a fire sale in case of a significant redemption episode. However, the liquidity profile of the fund doesn’t show particular liquidity mismatches. Therefore, the NCA should base its decision on a deeper analysis of the appropriateness of the redemption policy of the funds.

7. Fund 5 belongs to the “other category”. It is more leveraged than other funds of the same type with a relatively high net exposure compared to peers but limited in absolute terms (EUR 230mn). The fund is heavily invested in less liquid assets (private equity) but doesn’t show particular liquidity mismatches. Given the type of this fund (“other”), the NCA should base its decision on a deeper analysis of the business model of this fund, and especially the appropriateness of its redemption policy.