

I

(Resolutions, recommendations and opinions)

RECOMMENDATIONS

EUROPEAN SYSTEMIC RISK BOARD

RECOMMENDATION OF THE EUROPEAN SYSTEMIC RISK BOARD

of 7 December 2017

on liquidity and leverage risks in investment funds

(ESRB/2017/6)

(2018/C 151/01)

THE GENERAL BOARD OF THE EUROPEAN SYSTEMIC RISK BOARD,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Regulation (EU) No 1092/2010 of the European Parliament and of the Council of 24 November 2010 on European Union macroprudential oversight of the financial system and establishing a European Systemic Risk Board ⁽¹⁾, and in particular Article 3(2)(b), (d) and (f) and Articles 16 to 18 thereof,

Having regard to Decision ESRB/2011/1 of the European Systemic Risk Board of 20 January 2011 adopting the Rules of Procedure of the European Systemic Risk Board ⁽²⁾, and in particular Articles 18 to 20 thereof,

Whereas:

- (1) The investment fund sector has grown strongly over the past decade, both in the Union and globally, and consequently investment funds now account for a greater overall component of securities markets. The role of investment funds in financial intermediation is expected to increase further in an environment of low interest rates and balance sheet constraints in the banking sector, coupled with changes resulting from the development of the Capital Markets Union. Regulatory authorities have welcomed this development as the diversification of financing sources may help to enhance the efficiency as well as the resilience of the financial system as a whole.
- (2) However, there are concerns that increased financial intermediation by investment funds may result in the amplification of any future financial crisis. Mismatches between the liquidity of open-ended investment funds' assets and their redemption profiles may result in fire sales in order to meet redemption requests in times of market stress. Such fire sales could adversely affect other financial market participants that own the same or closely correlated assets. Furthermore, leverage can amplify the impact of negative market movements as it creates exposure in excess of the assets of an investment fund. In addition to such channels of indirect contagion, an investment fund can spread risk through interconnectedness, e.g. interconnections with its investors, which is a direct channel through which shocks can be transmitted to other financial institutions.
- (3) Investment funds are also susceptible to changes in market dynamics and structure. For instance, in a low interest rate environment, the search for yield may encourage a greater proportion of investment in less liquid assets. There is a risk that macro-level shocks, such as a reversal in risk premia, could lead to widespread redemption requests by investment fund investors. This may be particularly pronounced in investment funds which hold a large proportion of highly leveraged and less liquid assets in their portfolios.

⁽¹⁾ OJ L 331, 15.12.2010, p. 1.

⁽²⁾ OJ C 58, 24.2.2011, p. 4.

- (4) In addition, unless this risk is appropriately managed, some investors may make use of a 'first mover advantage,' i.e. investors who redeem prior to, or in the early stages of, a stressed market situation do not bear the full impact of such a stressed market situation, leaving the remaining investors to assume the burden.
- (5) The current legislative framework in the Union includes measures designed to reduce the amplifying effects of the investment fund sector in a financial crisis and to strengthen the resilience of investment funds. The legislative framework comprises Directives 2009/65/EC ⁽¹⁾ and 2011/61/EU of the European Parliament and of the Council ⁽²⁾.
- (6) Directives 2009/65/EC and 2011/61/EU both contain liquidity management requirements. Alternative investment funds (AIFs) are required to have redemption policies that are consistent with the liquidity profile of their investment strategy and to conduct regular stress tests under both normal and exceptional liquidity conditions. Undertakings for collective investment in transferable securities (UCITS) are subject to detailed eligibility rules that govern the types of assets in which they are allowed to invest and must conduct stress tests where appropriate.
- (7) To address leverage related systemic risks, Directives 2009/65/EC and 2011/61/EU currently provide a legal basis for limiting the build-up of leverage in investment funds. Article 51(3) of Directive 2009/65/EC specifies an investment limit on the exposures of UCITS to derivative instruments and Article 83(2)(a) of the same Directive specifies a 10 % temporary borrowing cap. Article 25(3) of Directive 2011/61/EU allows national competent authorities (NCAs) to impose leverage limits or other restrictions on the management of AIFs. In addition, Article 25(7) of Directive 2011/61/EU provides a role for the European Securities and Markets Authority (ESMA) in determining that the leverage employed by an alternative investment fund manager (AIFM), or by a group of AIFMs, poses a substantial risk to the stability and integrity of the financial system and ESMA may issue advice to NCAs specifying the remedial measures to be taken, including limits on the level of leverage.
- (8) The application of consistently high standards in respect of fund managers' capacity to manage risks across the Union is warranted to ensure that regulation will mitigate systemic risk. There is evidence that the current regulatory framework provides for effective risk management by investment funds at the microprudential level. However, its efficacy from a macroprudential perspective is largely untested. The purpose of this Recommendation is to address systemic risks related to liquidity mismatches and the use of leverage in investment funds. This will enhance the macroprudential framework in the Union as it applies to the asset management sector.
- (9) Recommendation A is designed to address the risks that may arise when fund managers do not have adequate liquidity management tools in place such as redemption fees, redemption gates, or the ability to temporarily suspend redemptions. In the absence of such tools, redemption pressures during times of declining asset prices could cause system-wide liquidity stress and exacerbate asset price falls, which could lead to risks to financial stability. The availability of a diverse set of liquidity management tools in all Member States would increase the capacity of fund managers to deal with redemption pressures when market liquidity becomes stressed. In addition, Recommendation A calls for further clarification of the suspension of redemptions by NCAs.
- (10) Recommendation B is designed to mitigate and prevent excessive liquidity mismatches in open-ended AIFs. Some open-ended AIFs hold a large proportion of their investments in inherently less liquid assets. This includes investment funds that invest in real estate, unlisted securities, loans and other alternative assets. There is a need for such investment funds to demonstrate their capacity to NCAs during both the approval process, and/or after approval, to maintain their investment strategy under stressed market conditions.
- (11) Recommendation C is designed to promote coherent liquidity stress testing practices at the investment fund level. Stress tests are tools that help the fund manager identify potential weaknesses of an investment strategy and assist in preparing an investment fund for a crisis. If used correctly, as a risk management and decision-making

⁽¹⁾ Directive 2009/65/EC of the European Parliament and of the Council of 13 July 2009 on the coordination of laws, regulations and administrative provisions relating to undertakings for collective investment in transferable securities (UCITS) (OJ L 302, 17.11.2009, p. 32).

⁽²⁾ Directive 2011/61/EU of the European Parliament and of the Council of 8 June 2011 on Alternative Investment Fund Managers and amending Directives 2003/41/EC and 2009/65/EC and Regulations (EC) No 1060/2009 and (EU) No 1095/2010 (OJ L 174, 1.7.2011, p. 1).

tool, a stress test should reduce liquidity risk at the investment fund level and contribute to lowering liquidity risk at the financial system level. Guidance on fund managers' liquidity testing practices is expected to reduce liquidity risk, at both investment fund and system level, and strengthens the ability of entities to manage liquidity in the best interests of investors, including the avoidance of surprises and resulting emergency reactions during unexpectedly high redemption periods.

- (12) Recommendation D is designed to establish a harmonised UCITS reporting framework across the Union. Although many jurisdictions within the Union have reporting obligations for UCITS, reporting practices differ widely in terms of the reporting frequency, the UCITS covered, and the data reported. The lack of a harmonised reporting framework prevents monitoring and a comprehensive assessment of the potential contribution of UCITS to risks to financial stability. A harmonised UCITS reporting framework will also reduce existing reporting inefficiencies for both NCAs and industry.
- (13) Recommendation E is designed to facilitate the implementation of Article 25 of Directive 2011/61/EU, which provides for a macroprudential tool to limit leverage in AIFs. There is a need to clarify the use of this tool by developing a common approach to ensure that NCAs are able to use the tool in a harmonised manner. Therefore, guidance on a framework to assess leverage risks and on the design, calibration and implementation of leverage limits should be developed.
- (14) This Recommendation advocates a proportionate framework for managing the systemic risks that may arise in, or be propagated by, the investment funds sector, while maintaining the key redemption features that attract investors to open-ended investment funds and facilitate collective investment.
- (15) This Recommendation takes into account ongoing international and European initiatives on macroprudential policies to mitigate risks from liquidity mismatches and leverage in investment funds and, in particular, the work of the Financial Stability Board (FSB) and the International Organisation of Securities Commissions (IOSCO). On 12 January 2017, the FSB published recommendations to address structural vulnerabilities from asset management activities arising from liquidity mismatches and the use of leverage in investment funds⁽¹⁾. To supplement the FSB's work, IOSCO has been tasked with implementing the FSB's recommendations. This process is currently ongoing.
- (16) In order to implement the macroprudential elements of the current regulatory framework for investment funds and to ensure that NCAs act consistently, this Recommendation is addressed partially to ESMA, with regard to its facilitation and coordination role.
- (17) In order to tackle other risks posed by investment funds, it is recommended that the European Commission should propose additional legislative measures. It is recognised that the Commission has already placed legislative reviews in this area on its agenda. These will provide an opportunity to address the macroprudential issues referred to in the recommendations.
- (18) Recommendations of the European Systemic Risk Board (ESRB) are published after the General Board has informed the Council of the European Union of its intention to do so and provided the Council with an opportunity to react,

HAS ADOPTED THIS RECOMMENDATION:

SECTION 1

RECOMMENDATIONS

Recommendation A — Liquidity management tools for redemption

1. The Commission is recommended to propose that Union legislation incorporates a common Union legal framework governing the inclusion of additional liquidity management tools (a-LMTs) in the design of investment funds originating anywhere in the Union so that the decision on which a-LMTs to incorporate in the constitutional documents of or other pre-contractual information on investment funds is made individually by each entity responsible for management.

⁽¹⁾ Financial Stability Board, 'Policy Recommendations to Address Structural Vulnerabilities from Asset Management Activities', January 2017.

2. The Commission is recommended to propose that Union legislation includes further provisions specifying the NCAs' role when using their powers to suspend redemptions in situations where there are cross-border financial stability implications.
3. The Commission is recommended to propose that Union legislation sets out ESMA's general facilitation, advisory and coordination role in relation to the NCAs' powers to suspend redemptions in situations where there are cross-border financial stability implications, in line with Recommendation A(2).

Recommendation B — Additional provisions to reduce the likelihood of excessive liquidity mismatches

The Commission is recommended to propose that Union legislation includes measures to limit the extent to which the use of liquidity transformation in open-ended AIFs could contribute to the build-up of systemic risks or the risk of disorderly markets.

Recommendation C — Stress testing

In order to promote supervisory convergence ESMA is recommended to develop guidance on the practice to be followed by managers for the stress testing of liquidity risk for individual AIFs and UCITS.

Recommendation D — UCITS reporting

1. The Commission is recommended to propose that Union legislation requires UCITS and UCITS management companies to regularly report data, especially regarding liquidity risk and leverage, to the competent authority, and to provide such data to the relevant NCA if it is not the competent authority for UCITS reporting purposes.
2. The Commission is recommended to propose that the data mentioned in Recommendation D(1) is reported, within a reporting framework, at least on a quarterly basis by a sufficiently relevant proportion, from a financial stability perspective, of all UCITS and UCITS management companies. As a minimum, a sufficient subset of the data set should be reported annually by a representative proportion of all UCITS and UCITS management companies.
3. The Commission is recommended to propose that NCAs make the data mentioned in Recommendation D(1) available to the NCAs of other relevant Member States, ESMA and the ESRB.

Recommendation E — Guidance on Article 25 of Directive 2011/61/EU

1. ESMA is recommended 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.
2. ESMA is recommended to give guidance on the design, calibration and implementation of macroprudential leverage limits.
3. ESMA is recommended to give guidance on how NCAs should notify ESMA, the ESRB and other NCAs of their intention to implement macroprudential measures under Article 25(3) of Directive 2011/61/EU.
4. ESMA is recommended to use the information received from NCAs pursuant to Article 25(3) of Directive 2011/61/EU to benchmark and share knowledge with national macroprudential authorities and the ESRB on practices on the use of leverage limits and the imposition of other restrictions on the management of AIFs.

SECTION 2

IMPLEMENTATION

1. Definitions

1. For the purposes of this Recommendation the following definitions apply:
 - (a) 'additional liquidity management tools' (a-LMT) means tools that assist open-ended AIFs and UCITS as well as their managers to manage requests for redemption appropriately and effectively at all times and especially in stressed market conditions. These tools should include post-event measures, such as: suspensions of redemptions or deferred redemptions ('gates'/extendable notice periods), and pre-emptive measures such as allocation of trading costs to subscribing/redeeming investors ('swing pricing'/anti-dilution levies);

- (b) 'alternative investment funds' (AIFs) means collective investment undertakings as defined in Article 4(1)(a) of Directive 2011/61/EU;
 - (c) 'alternative investment fund managers' (AIFMs) has the same meaning as in Article 4(1)(b), subject to the exclusions set out in Article 2(3) and the exemptions set out in Article 3, of Directive 2011/61/EU;
 - (d) 'AIFMs of open-ended AIFs' means those falling within the category defined in Article 1(2) of Commission Delegated Regulation (EU) No 694/2014 ⁽¹⁾;
 - (e) 'entity responsible for management' means: (i) a management company as defined in Article 2(1)(b) of Directive 2009/65/EC; (ii) a UCITS constituted as an investment company that has not designated a management company as provided for in Directive 2009/65/EC; (iii) an AIFM as specified in Article 4(1)(b) of Directive 2011/61/EU; and (iv) an internally managed AIF constituted as an investment company that has not designated an AIFM referred to in Article 5(1)(b) of Directive 2011/61/EU;
 - (f) 'leverage' means any method by which an investment fund increases its exposure over and above the assets of the fund whether through the borrowing of cash or securities or leverage embedded in derivative positions or by any other means;
 - (g) 'national competent authority' (NCA) means the competent authority as defined in Article 2(1)(h) of Directive 2009/65/EC or in Article 4(1)(f) of Directive 2011/61/EU as applicable;
 - (h) 'systemic risk' has the same meaning as in Article 2(c) of Regulation (EU) No 1092/2010;
 - (i) 'undertaking for collective investment in transferable securities' (UCITS) means an undertaking as defined in Article 1(2) of Directive 2009/65/EC that has been authorised in accordance with Article 5 of that Directive;
 - (j) 'UCITS management company' has the same meaning as in Article 2(1)(b) of Directive 2009/65/EC.
2. Annexes I and II form an integral part of this Recommendation. In the event of conflict between the main text and the Annexes, the main text prevails.

2. Criteria for implementation

1. The following criteria apply to the implementation of this Recommendation:
- (a) the Recommendation covers AIFs, AIFMs, UCITS and UCITS management companies;
 - (b) regulatory arbitrage should be avoided;
 - (c) due regard should be paid to the principle of proportionality, taking into account the objective and the content of each recommendation;
 - (d) the compliance criteria set out in Annex I.
2. Addressees are requested to report to the ESRB and to the Council on the actions undertaken in response to this Recommendation, or adequately justify any inaction. The reports should as a minimum contain:
- (a) information on the substance and timeline of the actions undertaken, including any actions undertaken in relation to the European supervisory authorities, where applicable;
 - (b) an assessment of the functioning of the actions undertaken having regard to the objectives of this Recommendation;
 - (c) detailed justification of any inaction or departure from this Recommendation, including any delays.

3. Timeline for the follow-up

Addressees are requested to report to the ESRB and the Council on the actions taken in response to this Recommendation, or adequately justify any inaction, in compliance with the following timelines:

1. Recommendation A

By 31 December 2020, the Commission is requested to deliver to the ESRB and the Council a report on the implementation of Recommendations A(1), A(2) and A(3).

⁽¹⁾ Commission Delegated Regulation (EU) No 694/2014 of 17 December 2013 supplementing Directive 2011/61/EU of the European Parliament and of the Council with regard to regulatory technical standards determining types of alternative investment fund managers (OJ L 183, 24.6.2014, p. 18).

2. Recommendation B

By 31 December 2020, the Commission is requested to deliver to the ESRB and the Council a report on the implementation of Recommendation B.

3. Recommendation C

By 30 June 2019, ESMA is requested to deliver to the ESRB and the Council the guidance referred to in Recommendation C.

4. Recommendation D

By 31 December 2020, the Commission is requested to deliver to the ESRB and the Council a report on the implementation of Recommendations D(1), D(2) and D(3).

5. Recommendation E

(a) By 30 June 2019, ESMA is requested to deliver to the ESRB and the Council the guidance referred to in Recommendations E(1), E(2) and E(3);

(b) Starting on 31 December 2019, ESMA is requested to provide the national macroprudential authorities and the ESRB, at least annually, with the information referred to in Recommendation E(4).

4. Monitoring and assessment

1. The ESRB Secretariat will:

(a) assist the addressees, ensuring the coordination of reporting and the provision of relevant templates, and detailing where necessary the procedure and the timeline for the follow-up;

(b) verify the follow-up by the addressees, provide assistance at their request, and submit follow-up reports to the General Board via the Steering Committee.

2. The General Board will assess the actions and justifications reported by the addressees and, where appropriate, may decide that this Recommendation has not been followed and that an addressee has failed to provide adequate justification for its inaction.

Done at Frankfurt am Main, 7 December 2017.

*Head of the ESRB Secretariat, on behalf of the General Board of
the ESRB*

Francesco MAZZAFERRO

ANNEX I

COMPLIANCE CRITERIA FOR THE RECOMMENDATIONS

Recommendation A

For **Recommendation A**, the following compliance criteria are specified.

A(1) — Availability of additional liquidity management tools

Union legislation should allow for a wide range of additional liquidity management tools (a-LMTs) to be legally available at Union level while recognising that asset managers should bear the primary responsibility for activating and implementing a-LMTs and that some of the tools will not be suitable or necessary for all types of open-ended funds. The a-LMTs should support open-ended alternative investment funds (AIFs) and undertakings for collective investment in transferable securities (UCITS), as well as their managers, to manage requests for redemption appropriately and effectively at all times and especially in stressed market conditions.

The Commission's proposed changes to the relevant Union legislation should include obligations for:

- (a) alternative investment fund managers (AIFMs) of open-ended AIFs and UCITS management companies to assess all available a-LMTs and specifically to assess which of them are suitable for the investment strategies of the funds they manage and should be included in their constitutional documents or other pre-contractual information in order to be exercised both in normal and in stressed market conditions and to provide investors with sufficient transparency in relation to such tools;
- (b) AIFMs of open-ended AIFs and UCITS management companies to include, as a minimum, the power to suspend redemptions, particularly in stressed market conditions, in the constitutional documents or other pre-contractual information of the funds they manage;
- (c) AIFMs of open-ended AIFs and UCITS management companies to ensure that the necessary operational capacity and contingency planning is available for the timely activation of any a-LMT which they may use;
- (d) AIFMs of open-ended AIFs and UCITS management companies to report to the national competent authorities (NCAs) on the implementation and use of a-LMTs in stressed market conditions;
- (e) the European Securities and Markets Authority (ESMA), after taking into account the opinion of the European Systemic Risk Board (ESRB) in relation to macroprudential issues, to develop guidance on:
 - i. definitions and characteristics of a-LMTs;
 - ii. the criteria for the suitability assessment under point A(1)(a);
 - iii. the transparency requirements for the a-LMTs established under point A(1)(a);
 - iv. high-level principles on how the a-LMTs should be implemented in the fund's liquidity management process;
 - v. how to assess and deal with potential unintended consequences when using a-LMTs;
 - vi. the requirement to report to the NCAs under point A(1)(d); and
 - vii. the level of transparency in relation to investors when a-LMTs are activated and during their use.

The guidance should take into account the necessary contingency planning that should apply in advance, as required under point A(1)(c), to enable such a-LMTs to be activated promptly and effectively.

A(2) — Further provisions on the NCAs' suspension of redemptions with cross-border financial stability implications

The Commission's proposed changes to Union legislation should include:

- (a) clarification of the respective roles of the NCAs and cooperation between them with regard to suspending redemptions for cross-border financial stability purposes, where the AIF or UCITS is established in one Member State but has an AIFM or UCITS management company established in another Member State, i.e. cross-border implications;

- (b) an obligation for the NCAs, when exercising the powers to direct the suspension of redemptions for cross-border financial stability purposes, to notify other relevant NCAs, ESMA, and the ESRB, prior to exercising such powers.

A(3) — Further provisions on ESMA's role in relation to the NCAs suspending redemptions with cross-border financial stability implications

The Commission's proposed changes to the relevant Union legislation should include an obligation for ESMA to ensure that it fulfils a general facilitation, advisory and coordination role in relation to the NCAs' powers to suspend redemptions where there are cross-border financial stability implications.

Recommendation B

For **Recommendation B**, the following compliance criteria are specified.

The Commission's proposed changes to the relevant Union legislation should include:

- (a) granting powers to ESMA to prepare and to update a list of inherently less liquid assets, on the basis of ESMA's own analysis, after taking into account the ESRB's opinions in relation to macroprudential issues and those of the European Banking Authority and the European Insurance and Occupational Pensions Authority in relation to cross-sectoral consistency issues. In compiling this list, ESMA should consider, as a minimum, real estate, unlisted securities, loans and other alternative assets that appear to be inherently less liquid. The analysis should take into account, inter alia, the time it would take to liquidate those assets under stressed market conditions;
- (b) a requirement for AIFMs of open-ended AIFs whose objective is to invest significantly in assets included in the list of inherently less liquid assets under point B(a), to demonstrate to the NCAs their capacity to maintain their investment strategy under foreseeable market conditions. The assessment should include, inter alia, tailored redemption policies, the implementation of a-LMTs and/or internal limits of assets included in the list of inherently less liquid assets under point B(a). Such internal limits, if used, should then be disclosed to the NCAs at the inception of the relevant funds and reported thereafter whenever these limits change. Disclosure to investors should also be implemented based on guidance to be developed by ESMA;
- (c) the discretion to impose transitional provisions for AIFMs of open-ended AIFs specifying the time allowed to comply with the legislation when assets are added to the list of inherently less liquid assets under point B(a), and when internal limits are breached, where useful, in order to avoid any unintended, harmful effects.

Recommendation C

For **Recommendation C**, the following compliance criteria are specified.

The guidance issued on liquidity stress testing by ESMA should include, but not be limited to:

- (a) the design of liquidity stress testing scenarios;
- (b) the liquidity stress test policy, including internal use of liquidity stress test results;
- (c) considerations for the asset and liability sides of investment fund balance sheets; and
- (d) the timing and frequency for individual funds to conduct the liquidity stress tests.

Such guidance should be based on the stress testing requirements set out in Directive 2011/61/EU and how market participants carry out stress testing.

Recommendation D

For **Recommendation D**, the following compliance criteria are specified.

D(1) — Reporting obligations for UCITS and UCITS management companies

The Commission's proposed changes to the relevant Union legislation should include reporting obligations that cover both manager and fund-specific data while also reflecting the specificities of UCITS. The reported data should allow for sufficient monitoring of potential vulnerabilities that may contribute to systemic risk, and should cover, as a minimum:

- (a) the value of assets under management for all UCITS managed by a management company;
- (b) instruments traded and individual exposures;

- (c) investment strategy;
- (d) global exposure/leverage;
- (e) stress testing;
- (f) efficient portfolio management techniques;
- (g) counterparty risk/collateral;
- (h) liquidity risk;
- (i) credit risk; and
- (j) trading volumes.

The Commission should propose, where appropriate, a harmonisation of overall reporting requirements on investment funds and their managers, particularly between the recommended UCITS reporting and the measures already implemented for reporting under Directive 2011/61/EU. In this respect, the Commission should also take into account the reporting requirements under Regulation (EU) 2017/1131 of the European Parliament and of the Council⁽¹⁾. Such harmonisation should enable the use of existing reporting platforms, achieve synergies and avoid undue burdens on asset managers.

The Commission's changes to Union legislation should furthermore include a provision stating that if the NCA of the UCITS manager is different from the NCA of the UCITS itself, the UCITS manager must, upon request, also provide the reported information to the NCA of the UCITS.

D(2) — Frequency and coverage of reporting obligations for UCITS and UCITS management companies

The Commission's proposed changes to Union legislation should include the following requirements:

- (a) the data mentioned in Recommendation D(1) is reported as a minimum on a quarterly basis to enable effective monitoring of financial stability risks while also addressing proportionality aspects in relation to the entities required to report;
- (b) the total assets under the management of the management company and the assets under management by individual UCITS funds should be taken into account when setting the scope for reporting, thus ensuring that a sufficient part of the industry will be covered by the reporting, in order to address risks to financial stability.

D(3) — Harmonised reporting and information sharing

The Commission's proposed changes to Union legislation should include an obligation for the information mentioned in Recommendation D(1) to be made available to the NCAs of other relevant Member States, ESMA and the ESRB in order to ensure the harmonisation of UCITS data reporting with data sharing practices under Directive 2011/61/EU. In this context, the Commission should also take into account reporting requirements under Regulation (EU) 2017/1131.

Recommendation E

For **Recommendation E**, the following compliance criteria are specified.

E(1) — Assessment of leverage-related systemic risk

The guidance issued by ESMA should include:

- (a) a common minimum set of indicators to be taken into account by the NCAs during their assessment;
- (b) instructions to calculate the indicators referred to in point E(1)(a) based on reporting data under Article 24 of Directive 2011/61/EU; and
- (c) qualitative and, where feasible, quantitative descriptions of the interpretation of the indicators in the context of the assessment framework.

⁽¹⁾ Regulation (EU) 2017/1131 of the European Parliament and of the Council of 14 June 2017 on money market funds (OJ L 169, 30.6.2017, p. 8).

The common set of indicators referred to in point E(1)(a) should:

- (1) facilitate assessment of the level, source and different usages of leverage;
- (2) facilitate assessment of the main channels through which systemic risk may materialise, i.e. fire sales, direct spillovers to financial institutions, and the interruption of credit intermediation; and
- (3) be operable and sufficient for NCAs to inform ESMA, in connection with its advice under Article 25(6) of Directive 2011/61/EU and the principles laid down in Article 112 of Commission Delegated Regulation (EU) No 231/2013⁽¹⁾, whether the conditions for imposing leverage limits or other restrictions on the management of AIFs have been met.

E(2) — Macroprudential leverage limits

The guidance issued by ESMA should include:

- (a) a description of the various types of leverage limits, including an evaluation of their effectiveness and efficiency in mitigating excessive leverage;
- (b) a set of principles to be taken into account by the NCAs when calibrating leverage limits. As a minimum such principles should include all of the following: (i) a statement that provides for leverage limits to be based on the leverage measures set out in Directive 2011/61/EU, (ii) criteria for applying leverage limits, and (iii) principles regarding the periodic review of leverage limits;
- (c) a set of principles to be taken into account by the NCAs when considering the imposition of leverage limits, as a minimum covering all of the following: (i) principles for a balanced approach between rules-based versus discretionary limit setting; (ii) principles relating to the interaction with other policy measures; (iii) principles for coordination among Union authorities.

E(3) — Notification procedure

The guidance issued by ESMA should enable the NCAs to notify ESMA, the ESRB and other relevant NCAs. In particular, this guidance should include, but not be limited to, an efficient working procedure and templates for notification letters and reporting requirements on the NCAs' assessment of the need to implement macroprudential measures pursuant to Article 25(3) of Directive 2011/61/EU.

E(4) – Benchmarking

ESMA should share, on an annual basis, with national macroprudential authorities and the ESRB:

- (a) the results, if any, of its benchmarking exercise;
- (b) the practices, if any, in relation to the use of leverage limits and the imposition of other restrictions on the management of AIFs using information received from the NCAs pursuant to Article 25(3) of Directive 2011/61/EU.

⁽¹⁾ Commission Delegated Regulation (EU) No 231/2013 of 19 December 2012 supplementing Directive 2011/61/EU of the European Parliament and of the Council with regard to exemptions, general operating conditions, depositaries, leverage, transparency and supervision (OJ L 83, 22.3.2013, p. 1).

ANNEX II

ECONOMIC RATIONALE AND ASSESSMENT

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List of abbreviations

a-LMT	additional liquidity management tools
AIF	alternative investment fund
AIFM	alternative investment fund manager
AuM	assets under management
CESR	Committee of European Securities Regulators
CIS	collective investment scheme
CLMT	countercyclical liquidity management tool
CRE	commercial real estate
CSD	central securities depository
EBA	European Banking Authority
ECB	European Central Bank
EEA	European Economic Area
ELTIF	European long-term investment funds
ESCB	European System of Central Banks
ESMA	European Securities and Markets Authority
ESRB	European Systemic Risk Board
EU	European Union
EUR	euro
FSB	Financial Stability Board
FVP	fair value pricing
IOSCO	International Organization of Securities Commissions
ITS	implementing technical standards
MMF	money market fund
NAV	net asset value
NCA	national competent authority
OTC	over-the-counter
RTS	regulatory technical standards
SEC	Securities and Exchange Commission
UCITS	undertakings for collective investments in transferable securities
VaR	value at risk

This Annex provides background material for the ESRB recommendations in order to support their implementation in the EU. In particular, each recommendation is discussed in detail below, and the economic rationale and assessment that accompany each recommendation are set out, including possible intended and unintended effects and potential market impact. For the analysis, extensive use is made of research and policy papers, national regulations and results of ESMA, ESRB and IOSCO surveys (e.g. of the availability and use of liquidity management tools, of the use of fund leverage under Directive 2009/65/EC of the European Parliament and of the Council⁽¹⁾ and Directive 2011/61/EU of the European Parliament and of the Council⁽²⁾, and of fund managers' stress-testing practices).

I. Introduction

Structural considerations

The Union's investment fund sector has grown considerably in recent years. Since 2008 total net assets of EU investment funds have more than doubled, growing from EUR 6,2 trillion to stand at EUR 15,3 trillion in the third quarter of 2017.⁽³⁾ It should also be noted that, in the same period, European AIFs more than tripled in size, increasing from EUR 1,6 trillion to EUR 5,8 trillion.⁽⁴⁾ As the investment funds sector becomes a larger part of the total financial market, so managing systemic risk in that sector becomes more pertinent.

Investment funds show a particularly complex range of potential behaviours in reaction to market stress.

Investment funds are just one of a number of major types of investor in financial markets – others include banks, insurance companies, pension funds, retail investors, family offices, sovereign wealth funds and intermediaries of various kinds. Each type has its own specific behavioural characteristics. One characteristic typical for investment funds is that they gather funds from a wide variety of end-investors and channel that investment into the markets through a collective investment structure. This feature, combined with the fact that most investment funds are 'open-ended' (i.e. end-investors can withdraw their investment from the fund prior to the maturity of the underlying assets), means that under market stress investment funds show a particularly complex range of potential behaviours. One notable possibility is that an investment fund, or a subsector of an investment fund, might, in response to market stress and resulting investor redemption behaviour, sell assets on a significant scale into a falling market, thus exacerbating the market shock and contributing to financial instability.

Investment funds tend to maintain their investment strategy in the presence of market shocks. With the exception of some AIFs, investment funds typically use low levels of leverage.⁽⁵⁾ In this case, funds which are not experiencing redemptions pressure tend to keep their assets and may even opportunistically seek to purchase assets as prices fall, thereby producing a countercyclical impact.

Sources of risk

The main reason for funds possibly acting differently and selling into a falling market during a market shock would be an unexpectedly high level of redemption demand. While this has not been the historical pattern, there have been a few cases of high levels of redemption demand during times of market stress. Furthermore, the past pattern of an investment fund's behaviour is not necessarily indicative of its future behaviour. For this reason, we cannot be certain that those cases of high levels of redemption demand will continue to be rare or isolated occurrences. One reason why there might be high levels of redemption demand during times of market stress is the fact that investment funds do not act merely as vehicles for unleveraged, long-term equity investments. Instead, funds are sometimes used by investors who have shorter-term perspectives and the proportion of such investors can vary significantly, depending on other influences on the market. This creates the potential for significantly greater systemic risk within the sector than would be the case if high levels of redemption occurred only rarely or as isolated instances. As the sector becomes larger, this fact, in turn, becomes a more important feature of systemic risk overall.

⁽¹⁾ Directive 2009/65/EC of the European Parliament and of the Council of 13 July 2009 on the coordination of laws, regulations and administrative provisions relating to undertakings for collective investment in transferable securities (UCITS) (OJ L 302, 17.11.2009, p. 32).

⁽²⁾ Directive 2011/61/EU of the European Parliament and of the Council of 8 June 2011 on Alternative Investment Fund Managers and amending Directives 2003/41/EC and 2009/65/EC and Regulations (EC) No 1060/2009 and (EU) No 1095/2010 (OJ L 174, 1.7.2011, p. 1).

⁽³⁾ 'Trends in the European Investment Fund Industry in the Third Quarter of 2017', European Fund and Asset Management Association, December 2017.

⁽⁴⁾ It should be noted that since 2014 AIFs have been classified according to the regulatory definition in Directive 2011/61/EU. Since then, net assets have increased by more than 25 %.

⁽⁵⁾ European Systemic Risk Board, 'EU Shadow Banking Monitor', No 2, May 2017.

The second major source of systemic risk is the fact that there are incentives to trade liquidity off against yield, or to increase leverage so as to deliver a yield that will be attractive to investors. The more an investment fund is leveraged the less it is likely to show resilience in periods of market stress. In addition, the more an investment fund trades liquidity off against yield, the less well placed it might be to deal with spikes in redemption demand in an orderly fashion. This behaviour might be exacerbated if the trade-off is unclear to potential investors, either because the assets invested appear to be liquid although the liquidity is not resilient, or because the leverage is embedded in derivative instruments and its scale is not transparent.

The third source of systemic risk is the way the redemption mechanism works. Open-ended investment funds may give rise to 'first mover advantage', whereby redeeming investors do not bear the full cost of redeeming early, which is instead passed on to the remaining unit holders. For fund managers there is also a related reputational issue which can lead them to be reluctant to suspend redemptions, even when it would be in the interests of investors to do so, while also managing a balancing act between providing liquidity to investors who have requested redemptions as long as there is liquidity in the fund and determining that circumstances are sufficiently exceptional to warrant a suspension.

The fourth source of systemic risk is that the operation of the redemption mechanism depends on market liquidity. For many of the instruments that investment funds invest in, liquidity has traditionally been dependent on market makers and has been variable across time and instruments. Recent developments – including reductions in volatility, increased reliance on electronic trading, the fragmentation of sources of liquidity, and smaller holdings of assets by traditional market makers such as banks and broker-dealers, as well as cyclical factors such as monetary policy – indicate that the structure of liquidity provision can change over time (although ongoing research has not yet found unanimous evidence of reduced liquidity at this time). These changes can affect how robust liquidity provision proves to be when markets come under stress. The significance of these changes in the structure of liquidity is difficult to predict and, as a consequence, investment funds may find themselves relying on levels of liquidity which are less resilient than expected.

There are important interactions between the leverage, liquidity and redemption features of investment funds. Leveraged investment funds that are experiencing higher margin calls, withdrawals of funding, or increased haircuts can make rapid adjustments if they hold assets that can be liquidated quickly. If, however, a highly leveraged fund holds smaller amounts of liquid assets and is subject to potential short-term redemptions or changes in lending terms, it may have to sell assets quickly in less liquid markets (selling at a discount) in order to honour its obligations. Although, in the event of margin calls, investment funds may be able to suspend redemptions in the interests of the investors, the fund will have to raise cash quickly via emergency funding and/or asset sales to avoid liquidation, which could potentially cause significant counterparty risk and have a great impact on asset prices.

Central banks, markets and securities regulators have raised concerns over the potential for investment funds to amplify systemic risks. ⁽¹⁾ At a global level, the FSB has ascertained that investment funds' liquidity mismatches and use of leverage give rise to potentially significant structural vulnerabilities in the fund management sector. Subsequently, the FSB has stressed how important it is to examine and address potential structural vulnerabilities associated with liquidity mismatch and the use of leverage by investment funds that could pose financial stability risks. The FSB recommends, for instance, authorities to monitor the use of leverage by funds and to take action when appropriate. ⁽²⁾

⁽¹⁾ See the Bank of England's 'Financial Stability Report – December 2015'; ESMA's 'Report on Trends, Risks and Vulnerabilities' No 2, 2015; the ECB's 'Financial Stability Review', May 2016; the Financial Stability Oversight Council's 'Update on Review of Asset Management Products and Activities', April 2016; speech by Vítor Constâncio, 'Risk sharing and macroprudential policy in an ambitious Capital Markets Union', April 2016; speech by Steven Maijoor, 'Measuring and assessing stability risks in financial markets', May 2015; and speech by Mary Jo White, 'Enhancing Risk Monitoring and Regulatory Safeguards for the Asset Management Industry', December 2014.

⁽²⁾ 'Policy Recommendations to Address Structural Vulnerabilities from Asset Management Activities', Financial Stability Board, January 2017.

The current regulatory framework for investment fund liquidity and leverage

In Europe, the regulatory framework governing investment fund liquidity and leverage management consists of Directives 2009/65/EC and 2011/61/EU. This forms the basis of how investment funds in Europe are required to manage their liquidity and leverage positions, and serves as a starting point for assessing systemic risks from investment fund liquidity mismatch and the use of leverage.

UCITS are highly regulated investment funds. UCITS are investment funds that invest in eligible assets, such as cash and cash-like deposits, bonds, equities, money-market instruments and other investment funds (see Box 1a). Theoretically, UCITS are less prone to liquidity mismatches since both their assets and their liabilities are supposed to be traded in a short timeframe. They may only invest in transferable securities or in other liquid financial assets whose eligibility rules are detailed in a specific Directive ⁽¹⁾. UCITS are obliged (subject to the possibility that the investment fund could be suspended) to redeem an investor's share on receipt of a request from the unitholder: this means that UCITS must permit redemptions at least twice a month, although many UCITS permit redemptions on a daily or weekly basis. Regarding leverage, UCITS operate under regulatory leverage limits. UCITS may only use financial leverage via unsecured cash borrowing against up to 10 % of their assets and on condition that such borrowing is only temporary (see Box 1b). As a result, UCITS using both cash borrowing and securities financing transactions or derivatives can leverage up to a maximum of 2,1 times their NAV.

AIFs are investment funds which are permitted to invest in assets similar to those in UCITS but are not subject to such detailed restrictions on diversification, liquidity or leverage. AIFs may also invest in financial instruments that are not eligible assets for UCITS, such as private equity, venture capital, real estate, physical commodities and other alternative assets. However, managers are required to put in place liquidity management procedures if they manage open-ended AIFs or closed-ended AIFs that are leveraged. This includes aligning the investment fund's investment strategy, liquidity profile and redemption policy, as well as setting appropriate liquidity management limits and stress tests (see Box 1a). It should be noted that AIFMs operating below certain thresholds ⁽²⁾ may not be subject to the same requirements, in which case they will not be able to benefit from the passport available under Directive 2011/61/EU for marketing in other Union jurisdictions. Regarding leverage, AIFs operate without any regulatory leverage limits. AIFs' funds are only required to report their use of leverage (see Box 1b).

Box 1a: The current regulatory framework for investment fund liquidity

Directive 2009/65/EC – UCITS

Dealing frequency. UCITS must provide facilities so that units can be repurchased or redeemed at the request of fund investors. This means that UCITS must allow redemption requests at least twice a month ⁽³⁾, although many UCITS permit redemptions on a daily or weekly basis ⁽⁴⁾.

Dealing procedures. Directive 2009/65/EC does not specify the dealing procedures to be followed by UCITS. In practice, a dealing deadline for the receipt of applications will be set at a time before the valuation point – which could be hours or days later. Furthermore, UCITS will generally pay out redemption monies in line with the settlement procedures detailed in the fund documentation, which could specify a time of three to five days after the valuation point ⁽⁵⁾. In line with these dealing procedures, there is a period of time between the cut-off time for receipt of applications and the deadline for payment of redemption monies. This gives the UCITS management company time to sell investments and generate cash to pay redemption monies if this is necessary.

⁽¹⁾ Commission Directive 2007/16/EC of 19 March 2007 implementing Council Directive 85/611/EEC on the coordination of laws, regulations and administrative provisions relating to undertakings for collective investment in transferable securities (UCITS) as regards the clarification of certain definitions (OJ L 79, 20.3.2007, p. 11).

⁽²⁾ AIFMs managing AIFs that have total assets of less than EUR 100 million or managing AIFs that have total assets of less than EUR 500 million, provided that the AIFs are not 'leveraged' and there are no redemption rights for a period of five years following the date of initial investment in each AIF.

⁽³⁾ NCAs may permit UCITS to reduce the frequency to once a month 'on condition that such derogation does not prejudice the interests of the unit holders'. However, this option has not been transposed into national law by all Member States.

⁽⁴⁾ See, for example, Article 76 of Directive 2009/65/EC.

⁽⁵⁾ Constant NAV money market funds may offer same day settlement.

Eligible assets. UCITS are subject to detailed eligible assets rules and are therefore obliged to invest predominantly in liquid assets. These include: listed liquid transferable securities and money market instruments; exchange traded-derivatives; and bank deposits which are repayable on demand or include withdrawal rights and which mature in no more than 12 months. ⁽¹⁾ To provide further support to liquidity, criteria are stipulated governing the markets on which eligible assets must be listed or traded ⁽²⁾.

Pre-investment due diligence. Before an UCITS management company makes an investment, it must analyse, inter alia, the investment's contribution to the UCITS fund's portfolio composition, liquidity, and risk and reward profile. ⁽³⁾

Risk management. As a part of its risk management processes, an UCITS management company must follow an appropriate liquidity risk management procedure to ensure that each UCITS it manages is able to comply, in all foreseeable circumstances including stressed conditions, with its obligation to redeem units if requested to do so by a unitholder. Where appropriate, an UCITS management company must conduct stress tests to assess the liquidity risk of the UCITS under exceptional conditions. ⁽⁴⁾

Netting of subscriptions and redemptions. Where an UCITS fund receives subscription and redemption orders for the same dealing day, it will match the unit transactions and use the subscription monies received to pay some or all of the redemption requests. This reduces or removes any need to sell underlying investments to generate cash to pay out redeeming investors.

Directive 2011/61/EU – AIFMD

Dealing procedures. As is the case for UCITS, Directive 2011/61/EU does not specify the dealing procedures to be used for AIFs. An AIFM will design dealing procedures which are appropriate for its AIFs under management and which provide sufficient time for it to sell investments so it can generate cash to pay redemption monies.

Risk management. Article 15 of Directive 2011/61/EU contains similar provisions to those covering pre-investment due diligence in Directive 2009/65/EC (explained above). The Article requires, as part of AIFMs' risk management, risks associated with each investment position of the AIF and their overall effect on the AIF's portfolio to be properly identified, measured, managed and monitored on an ongoing basis, including through the use of appropriate stress-testing procedures. Directive 2011/61/EU furthermore requires an AIFM to ensure that the investment strategy, liquidity profile and redemption policy are consistent for each AIF it manages. ⁽⁵⁾ An AIFM must have appropriate liquidity management systems in place to monitor the liquidity risk of the AIF and ensure that the liquidity profile of the investments of the AIF complies with its underlying obligations. Furthermore, an AIFM must regularly conduct stress tests, under both normal and exceptional liquidity conditions, to assess and monitor the liquidity risk of the AIFs. ⁽⁶⁾ These obligations are supplemented by detailed Level 2 rules on liquidity management. ⁽⁷⁾

Netting of subscriptions and redemptions. As is the case for UCITS, an AIFM can net subscription and redemption orders in an open-ended AIF.

⁽¹⁾ Further detailed eligible assets rules apply to MMFs, whether established as UCITS or AIFs (e.g. portfolio rules concerning daily and weekly maturing assets). See Regulation (EU) 2017/1131.

⁽²⁾ Admission to trading, however, does not guarantee liquidity. Nonetheless, an UCITS fund may rely on an admission unless it is, or should be, aware of circumstances indicating that a particular asset is not liquid. In that case the UCITS fund must assess the liquidity of the security so that it can establish whether its addition to the portfolio would compromise portfolio liquidity.

⁽³⁾ See, for example, Article 23(4) of Commission Directive 2010/43/EU of 1 July 2010 implementing Directive 2009/65/EC of the European Parliament and of the Council as regards organisational requirements, conflicts of interest, conduct of business, risk management and content of the agreement between a depositary and a management company (OJ L 176, 10.7.2010, p. 42).

⁽⁴⁾ See, for example, Article 40(3) of Directive 2010/43/EU.

⁽⁵⁾ See, for example, Article 16(2) of Directive 2011/61/EU.

⁽⁶⁾ See, for example, Article 16(1) of Directive 2011/61/EU.

⁽⁷⁾ See, for example, Articles 46 to 49 of Commission Delegated Regulation (EU) No 231/2013 of 19 December 2012 supplementing Directive 2011/61/EU of the European Parliament and of the Council with regard to exemptions, general operating conditions, depositaries, leverage, transparency and supervision (OJ L 83, 22.3.2013, p. 1).

Box 1b: The current regulatory framework for investment fund leverage

Directive 2009/65/EC – UCITS

Borrowings. UCITS may utilise financial leverage by borrowing up to a maximum of 10 % of their assets, provided that any such borrowing is only temporary. Such borrowing may be used if there is a temporary mismatch of cash flows, e.g. when redemption monies need to be paid out in advance of monies to be received into the UCITS following the sale of investments.

Use of synthetic leverage. With regard to the use of synthetic leverage via derivative exposures, UCITS may create synthetic exposures – as calculated under the commitment approach – up to an amount equal to their total NAV. As a result, UCITS may use both borrowing and derivatives to leverage up to a maximum of 2,1 times their NAV. Under Directive 2009/65/EC, NCAs may also allow UCITS to calculate their global exposure by using a value-at-risk (VaR) approach or other advanced risk measurement methodologies instead of the commitment approach. For these funds, the use of leverage is only indirectly restricted via limitations on the fund's market risk, as explained in CESR Level 3 guidelines⁽¹⁾. So, funds that use the *absolute* VaR approach are limited to an absolute VaR which is not greater than 20 % of NAV (over a 20 day period). In turn, funds applying the *relative* VaR approach are limited to no more than double the risk of loss under a given VaR model of a similar, but unleveraged, portfolio. Importantly, these VaR approaches potentially allow for significantly higher leverage than would be allowed under the commitment approach, depending on the volatility of the underlying assets. Survey responses for 11 jurisdictions within the Union indicate that the subset of UCITS funds applying VaR approaches to calculate global exposure could represent between 27 % and 50 % of the Union's UCITS sector in NAV terms.

Directive 2011/61/EU – AIFMD

Borrowings and use of synthetic leverage. AIFs operate without any regulatory leverage limits. Under Directive 2011/61/EU, funds are only required to report their use of leverage. Notwithstanding this, Directive 2011/61/EU allows competent authorities to impose limits on the level of leverage that fund managers may employ in their AIFs, as well as other restrictions to risk management, in order 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'. So far, no authority has implemented this tool, and no EU-level framework supporting a harmonised implementation of macroprudential leverage requirements has been developed.

II. ESRB Recommendation on liquidity and leverage risks in investment funds

II.1 Recommendation A – Liquidity management tools for redemption

II.1.1 Economic rationale and intended effects

Recommendation A(1) – Availability of additional liquidity management tools

The regulatory framework governing investment fund liquidity management in the Union needs to be broadened. The provisions concerning liquidity management in the Directives 2009/65/EC and 2011/61/EU have been generally adequate in the past. However the continued growth of the investment fund sector, combined with an increase in its liquidity transformation activity, could lead to increased financial stability risks that need to be addressed.

Appropriate liquidity management tools could smooth liquidity mismatches occurring in UCITS and open-ended AIFs, thus reducing financial stability risks under stressed market situations. Liquidity mismatch is especially relevant for open-ended funds that offer frequent redemption opportunities but invest in assets which, in certain cases, cannot be sold off quickly without a material impact on their market price. Many open-ended funds offer daily redemptions, but not all. Under the provisions of the Directives 2009/65/EC and 2011/61/EU, fund managers are responsible for determining the redemption frequency (see Box 1a). There is a set of a-LMT which can help to mitigate liquidity risks for open-ended funds by reducing the first-mover advantage⁽²⁾ in stressed market situations (*ex ante*) and the occurrence of a liquidity spiral (*ex post*).

⁽¹⁾ CESR's Guidelines on Risk Measurement and the Calculation of Global Exposure and Counterparty Risk for UCITS, 28 July 2010.

⁽²⁾ For a further explanation of the concept see Section II.1 of the Annex to Recommendation ESRB/2012/1 of the European Systemic Risk Board of 20 December 2012 on money market funds (OJ C 146, 25.5.2013, p. 1).

Ex ante tools can be used to mitigate first mover advantage and systemic risk. In principle these tools can be used under either normal or stressed market conditions. The purpose of *ex ante* tools such as swing pricing and anti-dilution levies is to treat customers fairly, ensuring that the remaining investors are not disadvantaged by the actions of the redeeming investors. This should remove any incentive for investors to redeem before others in order to benefit from lower costs. Nevertheless, if investors are determined to liquidate their fund positions they will do so regardless of the associated cost. The tools therefore only mitigate first mover advantage, but not necessarily selling pressure in the underlying asset markets.

Ex post tools allow fund managers to manage investment fund liquidity by controlling or limiting outflows. These tools typically relieve managers from the obligation to immediately sell assets (at or below market prices) in response to redemption requests by investors. They can therefore act, to some extent, as a kind-of circuit breaker and can mitigate the occurrence of a liquidity spiral. *Ex post* tools are typically employed under stressed market conditions.

The availability and implementation of a-LMT for investment funds varies significantly across jurisdictions. While the suspension of redemption by the fund manager or by the NCA is explicitly allowed under Directives 2009/65/EC and 2011/61/EU, the latter do not stipulate any other a-LMT. Thus, there are differences in the availability of as well as the specific procedures governing the use of a-LMT across jurisdictions. A survey conducted by IOSCO ⁽¹⁾ and also a recent survey of Union Member States conducted by ESMA ⁽²⁾ show that in some Member States a set of a-LMT tools is available, including swing pricing and an anti-dilution levy. However, in most Member States fewer tools are available.

The most commonly available tools in Union Member States are:

- redemption fees;
- redemption gates;
- redemptions in kind;
- side pockets;
- suspension of redemptions.

The only tool common to all participating jurisdictions is the suspension of redemptions. After that, the most commonly available tool is redemption-in-kind, which is available in 17 Member States.

In most Member States fund managers are solely responsible for the activation of liquidity management tools – regulators play only a minor role in the process and cannot activate the tools. Fund managers do not need regulatory authorisation to activate most a-LMT. Only three Union Member States require authorisation for some tools, and only one for the use of the power to suspend redemptions. However, liquidity tools, and the circumstances under which they can be used, must typically be listed in the constitutional documents of the investment fund, which are subject to authorisation in EU Member States. Regulators are not usually allowed to activate tools. The general exception to this is the suspension of redemptions, which may be imposed by the regulator if it is deemed to be in the public interest which, presumably, also includes financial stability factors. In a number of jurisdictions NCAs are granted the power to activate redemption gates.

The availability of the tools is, in some cases, restricted to certain types of investment funds and/or to exceptional circumstances. The option of using a-LMT varies under normal conditions. In some Member States certain tools can be used under normal circumstances, usually on the condition that their possible use has been previously stipulated in the fund documents. In other Member States the use of certain tools is restricted to extraordinary circumstances. In all Member States the use of the power to suspend redemptions is restricted to extraordinary circumstances only.

⁽¹⁾ The IOSCO survey covers both Union Member States and non-Union Member States. The focus of this report is on the responses from 11 participating Union Member States. Available at <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD517.pdf>.

⁽²⁾ For further information see Table A1 in the Appendix.

The guidance provided by regulators on the use of a-LMT is heterogeneous and differs for each individual tool.

A maximum time limit is not always set governing the application of suspension of redemption, and three Member States do not provide any guidance on the use of suspension of redemption. With regard to the other a-LMT, formal definitions rarely exist, although Member States usually have a general understanding of the tools. In most cases, there are no specific regulatory provisions in the national legislation or guidance by the NCAs as to the use of the tools.

The FSB identified liquidity mismatch as a potential structural vulnerability for open-ended investment funds and suggested that liquidity risk management tools should be more widely available.

The availability of a diverse set of *ex ante* and *ex post* liquidity management tools in all Member States would improve capacity to react to stressed liquidity situations and would, therefore, reduce risks to financial stability. NCAs and investment fund managers also indicated, in their responses to a consultation carried out by the Commission, that they would welcome the wider availability of liquidity management tools. ⁽¹⁾

Cross-border effects emphasise the need for a more harmonised regulatory framework. Since UCITS and AIFs often invest and operate on a cross-border basis, the potential impact of liquidity problems is not limited to the jurisdictions in which the respective UCITS and AIFs are domiciled. Contagion could therefore contribute to liquidity spirals with cross-border effects. A homogeneous set of liquidity management tools should, as a consequence, be available across the Union. This will provide investment funds with a common set of a-LMT which fund managers should assess and, as appropriate, include in the investment funds' constitutional documents to mitigate cross-border liquidity risks. All AIFs and UCITS should have the power to suspend redemption under stressed market conditions routinely included in their constitutional documents.

The recommendation aims to make it easier to activate liquidity management tools in addition to enhancing their availability.

Fund managers might be reluctant to use certain liquidity management tools for a number of reasons, including reputational concerns or contagion. Activating a tool could lead to spill-over effects that impact on other investment funds managed by the same fund manager. In some cases, even investment funds managed by different fund managers but with a similar portfolio concentration might be affected. Thus, the insertion of a-LMT into an investment fund's constitutional documents may not be enough to effectively reduce the liquidity risks associated with the investment fund if the manager is reluctant to apply the a-LMT in practice. Fund managers should therefore ensure that the necessary operational capacity and contingency planning is in place for the timely activation of a-LMT. Each investment fund's prospectus or the pre-contractual information disclosed to investors should therefore describe all a-LMT included in the constitutional documents, their purpose and a description of how they are used. This will provide clarity and will familiarise investors with tools that are not commonly used.

The aim of the recommendations is to encourage a consistent approach to the use of liquidity management tools across Member States.

To ensure the consistent application of a-LMT across Member States, the legislative proposal should oblige ESMA to develop high-level guidance on how a-LMT should be implemented in an investment fund's liquidity management process and the transparency and reporting requirements that should be established. In order to reach a better understanding of the effects of a-LMT on financial stability, the ESRB should collaborate with ESMA on macroprudential issues. Fund managers should report to the NCA regarding the implementation and use of a-LMT. To avoid burdensome reporting of any a-LMT in regular or constant use, reporting could comprise the use of tools under stressed market circumstances only.

Ex ante liquidity management tools could be used to mitigate the build-up and impact of systemic risk, while ex post liquidity management tools could be activated under stressed market conditions when investment funds face considerable outflows.

Both types of instruments would therefore help to address financial stability risks arising from liquidity mismatches for investment funds. It is therefore recommended that both types of instruments be available at Union level. Box 2 further explains the different instruments while recognising that some of the tools will not always be suitable or necessary for all types of open-ended investment funds.

⁽¹⁾ 'Consultation on the Undertakings for Collective Investment in Transferable Securities (UCITS) – Product Rules, Liquidity Management, Depositary, Money Market Funds, Long-term Investments', available at http://ec.europa.eu/finance/consultations/2012/ucits/contributions_en.htm.

Box 2: Liquidity management tools

Ex ante/hybrid ⁽¹⁾ liquidity management tools ⁽²⁾

Swing pricing is aimed at protecting existing investment fund shareholders from adverse price effects caused by transactions executed by other investors. Swing pricing can be used to adjust the price of shares in an investment fund in order to make a contribution to the cost of fund transactions resulting from investor activity. ⁽³⁾ In practice, the NAV of the investment fund is adjusted downwards (upwards) in the case of large outflows (inflows) so that the transaction costs are borne by the investors buying or selling the shares rather than the existing investors. These price changes, if understood by investors, should incentivise investors to adjust their redemption and subscription behaviour in a way that helps to stabilise investment funds' net flows. Swing pricing can either be applied to all subscriptions and redemptions by investors (full swing pricing) or to just subscriptions and redemptions beyond a certain threshold (partial swing pricing). In the case of partial swing pricing a swing threshold is determined, and whenever net outflows exceed the threshold the NAV of the investment fund is adjusted downward, and vice versa. Thresholds may be variable, so the mechanism can be adjusted to match market/liquidity conditions, thus limiting investor optimisation behaviour (i.e. preventing investors from anticipating the use of swing pricing and taking appropriate action). Under conditions of full swing pricing the NAV is adjusted continuously, depending on whether there are net inflows or outflows. Swing pricing is a tool that can effectively influence investors' redemption and subscription behaviour, stabilising fund returns, and reducing the probability that first mover advantages and the associated fire sales will occur. Nevertheless, investors who are determined to exit a fund will do so, even if they incur a resulting cost from 'swung' prices. Since there may be multiple NAVs, employing the swing-pricing tool could be quite complex and cost intensive, and it may not be feasible for small investment funds to use it.

Similarly, anti-dilution levies involve investors paying an extra charge to the investment fund when they subscribe to or redeem investment fund shares. Subscriptions to and redemptions of an investment fund can have an impact on the value of the investment fund. This is especially the case when shares in investment funds are not simply being transferred between matched buyers and sellers, but an imbalance between buyers and sellers requires the fund manager to purchase or sell underlying assets. This will involve transaction fees, related taxes and liquidity costs that impact the NAV of the investment fund, giving rise to dilution. An anti-dilution levy covers these dealing costs.

Swing pricing and anti-dilution levies disincentivise procyclical behaviour, although only the former incentivises anticyclical behaviour. In contrast to swing pricing, anti-dilution levies do not incentivise investors to act in a countercyclical manner (i.e. subscribing in a redemption phase) since in this case investors do not benefit from the more favourable sales or redemption price created by swing pricing. Neither anti-dilution levies nor swing pricing generate extra costs for the investment fund – they only change the way costs are passed on to investors.

Ex post liquidity management tools

Redemption gates (deferred redemptions) temporarily delay redemptions. A redemption gate is a temporary deferral of the right of shareholders to redeem their shares. This deferral may be full, so that investors cannot redeem their shares at all, or partial, so that investors can only redeem a certain portion of their shares. Redemption gates can also be designed in such a manner that when redemption requests exceed a certain threshold (for example 10 % of NAV for an investment fund offering daily or weekly dealing), a fund management company can decide to carry

⁽¹⁾ Since adjustments to the NAV may be made *ex post*, the tools may also be viewed as hybrid, i.e. implemented *ex ante* but activated *ex post*.

⁽²⁾ Stress testing is an additional key liquidity tool. It tests liquidity management practices against significant stress events which have the potential to expose funds to severe liquidity issues. As there is a separate recommendation covering stress testing, the topic is not discussed here (see Recommendation C).

⁽³⁾ Swing pricing is the mechanism used by single-priced funds; dual-priced funds have similar mechanisms allowing the fund manager to determine where the dealing price should be fixed between the prices at which units are created and cancelled, in order to ensure the cost of fund transactions is borne by incoming or outgoing investors as appropriate.

forward any redemption requests over that threshold to the next dealing period. Under stressed market conditions, redemption gates give fund managers more time and flexibility to react to investor redemptions and to ensure the orderly sale of underlying assets. This can decrease the risk of fire sales.

Redemption-in-kind frees the fund manager from the need to liquidate large amounts of assets in the event of large-scale redemptions. A fund manager may decide to meet a redemption request by transferring securities, instead of cash, to the redeeming unitholder. Since a large ad hoc sale of assets might generate significant market impact, redemption-in-kind may protect investors remaining in the investment fund against the high liquidation costs which might otherwise arise. This mechanism may be suitable for redemption orders from institutional investors. However it is generally less suitable for redemptions by retail investors because it might not be feasible to redeem single shares of the investment fund in kind and to do so might also entail high operational and reputational costs. Although investors can sell assets redeemed in-kind in the same way as fund managers, they would then be obliged to internalise the costs of such sales, rather than spreading them across all investors in the investment fund. The impact on the market (and therefore on financial stability) might, however, be the same, regardless of whether it was the investment fund itself or the investors selling the underlying assets.

'Side pockets' allow illiquid investments to be separated from remaining liquid investments of the investment fund. This approach has two advantages. First, investors needing liquidity can still cash in the liquid part of the investment fund's investments at, presumably, little liquidation cost. Second, the approach protects the interests of investors who wish to remain in the investment fund, since the fund manager is not forced to liquidate assets at or under market prices if faced with high redemption demand. Side pockets are therefore especially suitable whenever a fund has diverging investor interests, i.e. when some investors wish to remain invested in the fund while others want to redeem their shares. Practices vary across Member States as to the rules governing the circumstances under which side pockets can be created.

Notice periods provide fund managers with additional flexibility to manage their liquidity. A notice period refers to the period of advance notice that investors must give to fund managers when redeeming their investments. Notice periods are often already stipulated in the constitutional documents of an investment fund and give fund managers more time to meet redemption requests without having to sell assets immediately at a discount.

Suspension of redemption is an instrument of last resort during a liquidity crisis. Suspensions function as circuit breakers, giving the fund managers additional time, in situations of financial distress, to liquidate assets in an orderly manner. Instead of having to make hasty decisions and to liquidate at any price, the fund managers are granted extra time to find the optimum solution. Moreover, this additional time may allow the fund managers and supervisors to better communicate the reasons for the stress to investors, potentially avoiding panic. Suspensions are, therefore, widely regarded as an important tool for managing large-scale redemptions in a crisis. However, suspensions may impose high welfare costs on investors by preventing them from cashing in their investments. Furthermore, there are concerns that sophisticated investors might be able to predict a suspension of redemption and could seek to redeem their shares ahead of others (in contrast to the initial objective of the tool which is to mitigate first-mover advantages), possibly even triggering a run.

Recommendations A(2) and A(3) – Further provisions on NCAs and on ESMA's role in relation to NCAs' suspension of redemptions with cross-border financial stability implications

Suspension of redemptions is the only tool available across all Member States. In principle, the decision to suspend redemptions is, first and foremost, the responsibility of, and at the discretion of, the fund manager (see Box 2). Suspension of redemption can, however, also be ordered by the NCAs for both UCITS and AIFs, if it is in the interests of the unitholders or the public.

Fund managers might not suspend redemptions if they fail to internalise the effect of large scale redemptions on the stability of the financial system. A run on an individual investment fund alone may be enough to cause general panic among investors and large-scale withdrawals from other funds. As a consequence, investment funds may also face severe liquidity stress and may be forced to sell substantial amounts of assets. If the size of the affected investment funds is large relative to a market or sector, considerable declines in asset prices may result, leading to a downward spiral. Hence, the prevention of runs and consequent large-scale fire sales is of great importance to overall financial stability.

Fund managers might not suspend redemptions because they are concerned about reputational risk. One of the main obstacles to the use of a suspension of redemption is a potentially negative impact on the fund manager's reputation. Since the need for a suspension could easily be attributed to poor liquidity management on the part of the fund manager, there may be a lasting loss of confidence in the professionalism of the fund manager. Consequently, fund managers may refrain from using suspension of redemption even if it would be in the collective interests of all investors in the investment fund. In some other cases fund managers may also decide not to order the suspension of redemptions if they believe that this would not be in the best interests of the investors in their investment funds. In these cases, where the suspension of redemption is not used by fund managers but is nevertheless warranted from a macroprudential perspective, NCAs should use the power to require the suspension of redemption.

Passporting arrangements in the Union mean that roles and responsibilities should be assigned to NCAs for ordering suspensions. Passporting regimes allow AIFMs and UCITS management companies to market units or shares across borders to investors within the EEA. They also allow cross-border management activities by the managers of these investment funds. If an investment fund is established in one Member State but the AIFM or the UCITS management company is based in another, it might not be clear which NCA is responsible for managing the suspension of redemptions or when an authority should intervene with suspension powers. Lack of clearly assigned responsibilities might lead to insufficient or delayed reactions during stressed and rapidly changing market conditions. Shared responsibilities and/or responsibility lying with the less well informed authority could therefore have unintended negative consequences. To avoid this, the Commission is recommended to propose that the relevant Union legislation clarify the roles and responsibilities of the NCAs involved.

Other relevant authorities, including ESMA and the ESRB, should be notified before the responsible authority exercises its power to order the suspension of redemption if there are cross-border financial stability implications. Since passporting allows funds to be marketed on a cross-border basis within the EEA, ordering the suspension of redemption might directly affect the investors and markets of other relevant authorities. Ordering the suspension of the redemption of a certain investment fund might also, therefore, have consequences for the financial markets and investor trust in other jurisdictions. If the relevant authorities are not informed, such market reactions might come as a surprise and could inhibit appropriate regulatory action. So that potential risks to financial stability may be mitigated, the Commission is recommended to propose including the obligation to provide prior information to relevant authorities in the appropriate Union legislation. This obligation should, however, be formulated in such a way that it does not prevent NCAs from acting immediately in the event of a crisis.

ESMA should seek to provide advice and should facilitate and coordinate NCAs' use of their powers to suspend redemptions if there are cross-border financial stability implications. Taking national characteristics into consideration, ESMA should adopt a coordinating and advisory role to provide a level playing field for NCAs to use their powers to suspend redemptions, with the goal of mitigating risks to financial stability. This coordinating role should include taking a lead on the general practicalities that NCAs need to consider when using their powers to suspend redemptions. Furthermore, there is currently no homogeneous and precise definition of the public interest. ESMA should promote a shared understanding among NCAs of how the relevant provisions in Directives 2009/65/EC and 2011/61/EU relate to financial stability and systemic risk, without making regulators predictable and generating moral hazard. These provisions will not only facilitate a more harmonised approach to the suspension of redemptions but will also support the idea that the suspension of redemptions should become a functional tool to help mitigate risks to financial stability.

II.1.2 Unintended effects

There is a risk that well-informed institutional investors might anticipate the activation of a certain tool. This could reduce or counter the effectiveness of a tool, since investors would try to act before the tool had actually been activated. Under certain circumstances the anticipation of the activation of a tool could even lead to run scenarios, thus triggering the emergence of a liquidity spiral. For that reason, guidance should avoid any kind of automaticity and prescriptiveness.

Liquidity management tools may be of value when stressed market conditions are persistent. Depending on the market circumstances, *ex post* tools might only defer the liquidity problem given that they only defer redemptions for a limited amount of time (e.g. redemption gates). They do not eliminate the problem when stressed market conditions persist and cannot, therefore, replace structural measures such as those aimed at addressing excessive liquidity mismatches.

II.2 Recommendation B – Additional provisions to reduce the likelihood of excessive liquidity mismatches

II.2.1 Economic rationale and intended effects

Investment funds managing assets that are inherently less liquid do not necessarily create financial stability concerns. Providing access to a variety of asset classes increases market efficiency as it offers more investment opportunities and improves access to financing for the issuers of such assets. From an economic policy perspective,

allowing investment funds to invest in less actively traded asset classes, such as private equity, unrated corporate bonds or loans, also contributes to the diversification of funding in the economy. This coincides with rising investor demand for more investment opportunities in the context of a prolonged low-yield environment.

Financial stability risks arise when there is a large mismatch between the liquidity of these assets and the liquidity offered to investors through fund redemption policies. Compared with investment funds that invest in liquid assets, where only a large number of redemptions would have an impact on market prices, the obligation (subject to the possibility that the fund could be suspended) to sell even a small amount of less liquid assets could rapidly lead to large amplifications of market falls. The availability of frequent redemption points is particularly problematic if this leads investors to overestimate the liquidity of the assets held by the investment funds they have invested in. This might result in forced sales by, for example, leveraged investors.

Ensuring that the redemption policy of an open-ended investment fund is structurally aligned with the liquidity profile of its assets should reduce risks associated with fire sales. Managers have several options when investing heavily in less liquid assets. For example, on the asset side, setting limits to the proportion of less liquid assets a manager can invest in would improve the capacity of the fund manager to redeem, even under stressed market conditions. By making sure that sufficient liquid assets are available, this would reduce first-mover advantage and the risk of a run. While addressing excessive liquidity mismatches at an individual fund level, it would also reduce the magnitude of collective selling and the risk of fire sales. Finally, it would reduce the likelihood and severity of a systemic event.

Improving an investment fund's capacity to honour redemptions under stressed market conditions also reduces the likelihood of a suspension of redemptions. Increasing the structural resilience of investment funds would avoid over-reliance on a-LMT since a part of the media commentary specifically refers to a potential unintended effect of the suspension tool itself ⁽¹⁾.

On the liability side, managers could implement redemption policies and reduce the frequency of redemptions offered by an investment fund, and/or impose notice periods for investors wishing to redeem from an investment fund. In the event of abnormal levels of outflows, restricting redemptions would provide the fund manager with more time to liquidate assets to meet redemption requests. It would also provide more time for the market to find a solution to the underlying concerns, or for the concerns to dissipate naturally over time (e.g. in the case of UK property funds). In some cases, it could allow for some form of broad intervention from authorities, which could help to alleviate the immediate underlying stress. In the case of notice periods, knowing the due date in advance would allow investors a degree of planning in terms of their own liquidity positions which suspension of redemptions does not permit.

Real estate funds are one example of funds that may present high liquidity mismatches. Real estate funds typically invest in less liquid underlying assets and are prone to significant liquidity mismatches if they have an open-ended structure. Systemic risks could arise from a combination of liquidity mismatches and the use of leverage. Early redeemers may benefit from first-mover advantage, thus starting a run, since these investment funds hold few liquid assets on hand to meet redemptions. Because of leverage these redemption requests could force the manager to sell off a larger proportion of the portfolio, with a concomitant impact on asset prices. Eventually, these investment funds might amplify and spread risks through the rest of the financial system. ⁽²⁾ In the case of UK property funds, suspensions helped to avoid widespread, rapid sales of CRE in the wake of the UK referendum on membership of the European Union (see Box 3). However, as has been pointed out by the Bank of England, there is still an underlying vulnerability that could emerge from liquidity mismatches between the investment funds' assets and liabilities. Future shocks to the CRE market could trigger cycles of redemptions, suspensions and discounted sales.

⁽¹⁾ For some examples of potential unintended consequences related to the recent developments in UK property funds, see <https://www.bloomberg.com/news/articles/2016-07-11/the-week-brex-it-got-real-for-investors-in-frozen-property-funds> or <https://www.ft.com/content/4f6b1a9a-452c-11e6-9b66-0712b3873ae1>, viewed at November 2017.

⁽²⁾ Bank of England, 'Financial Stability Report – November 2016'.

Box 3: Real estate funds – the case of UK property funds

The characteristics of Union real estate funds differ. Real estate funds typically invest in less liquid assets such as property, property rights and equity interests in property companies. In some jurisdictions, only closed-ended real estate funds are permitted, in which case investors may only redeem units at predetermined maturities and, normally, only on the investment fund's expiry date. In other jurisdictions, the investment fund rules and the offering documentation of open-ended structures give investors the right to request redemption of their fund units more frequently. This can lead to large-scale liquidity transformation, especially if these investment funds offer weekly or daily redemptions.

An example of the concerns relating to real estate funds was seen in the United Kingdom following the 23 June 2016 EU referendum. Between July and December 2016, several of the United Kingdom's 19 authorised CISs ⁽¹⁾ investing in direct property applied some form of special liquidity measure. The UK property market had been experiencing declining values and investment fund redemptions for around eight months prior to the referendum, and the vote to leave triggered an increase in redemption demands from investors. Some 15 investment funds offering daily dealing experienced cumulative redemptions of 4,1 % of NAV, reaching 8 % of NAV in one case. At the same time, ten investment funds made fair value pricing (FVP) adjustments ranging from 4 % to 15 %.

The affected investment funds adopted different approaches to using liquidity management tools. In the first week of July six daily-dealing investment funds, representing about GBP 14,6 billion, suspended redemptions (three of them had also applied FVP adjustments). One investment fund resumed dealing with an anti-dilution adjustment in place to reflect the discount required to sell a number of properties rapidly. The other fund managers kept their investment funds suspended until they judged there was sufficient clarity regarding asset valuations. The UK Financial Conduct Authority (FCA) rules require a fund manager to review the justification for a suspension at least every 28 days, but do not set a maximum period for which the suspension may be kept in place.

Levels of redemption demand began to revert to normal from mid-July onwards. Those investment funds that had suspended redemptions gradually began to resume dealing, the last of these doing so in mid-December. Investment funds offering monthly or quarterly liquidity either did not experience higher than usual levels of redemption requests, or were able to ensure that sufficient levels of cash and other liquid assets were available to meet demand.

This episode had an impact on some unit-linked investment funds, but no contagion spread to other asset classes. The suspension of dealing affected some unit-linked investment funds that had invested in CIS to gain exposure to property as an asset class. Of these investment funds, 59, with total AuM of GBP 2 billion, had invested in the CIS that had suspended dealing. In some cases, this affected their ability to meet their non-contractual obligations, including surrenders or transfers, although there was no impact on the paying out of benefits either on maturity or on the death of insured persons.

The Bank of England highlighted contagion risks in its Financial Stability Report of July 2016 ⁽²⁾. However, the nature of the market event reduced the risk that it might have a systemic impact. The shock was not a widespread credit event, but primarily a UK-specific event affecting property prices. In addition, the impact from redemptions of daily-dealing investment funds was well contained through the use of the tools already available to investment funds. Moreover, the value of the investment funds affected was small: in terms of AuM, authorised property CIS represented about 2,7 % of UK open-ended investment funds (GBP 949,7 billion). On aggregate, all open-ended investment funds hold approximately GBP 35 billion in commercial property, i.e. less than 10 % of the market (GBP 683 billion).

⁽¹⁾ These funds are AIFs under Directive 2011/61/EU but are subject to authorisation and regulation under UK law.

⁽²⁾ Bank of England, 'Financial Stability Report – July 2016'.

Another example is when bond funds invest in non-investment grade or unrated securities, which can present significant liquidity mismatches. In December 2015 a large US high-yield bond fund announced that it was liquidating its portfolio and suspending redemptions. The fund manager considered that investor requests for redemption, in the context of a general reduction of liquidity in the fixed income markets, meant it was not practicable to raise sufficient cash to pay redemption requests without selling assets at a discounted price, thereby disadvantaging the remaining shareholders. This was a consequence of the intrinsic low liquidity of the holdings of the investment fund, such as corporate bonds rated CCC and below or that were unrated (also known as distressed securities), coupled with a low level of cash and other liquid assets.

There are no large liquidity mismatches in most investment funds in the Union. For instance, equity funds are viewed as engaging in limited liquidity transformation ⁽¹⁾ since most listed shares are deemed liquid even under stressed conditions. Similarly, evidence for bond funds seems to point to a trade-off between liquidity and maturity transformation. ⁽¹⁾ Investment funds focusing on less liquid corporate debt generally invest in securities with a shorter than average maturity, while investment funds investing in more liquid sovereign bonds tend to invest in longer-term assets. An investment fund investing in long-term liquid assets is generally able to sell these at any time, while a fund investing in short-term less liquid assets should be able to roll over its portfolio frequently, thus limiting its liquidity transformation. ⁽²⁾

By contrast, the largest maturity mismatches occur for open-ended AIFs investing in inherently less liquid assets. Real estate funds, in particular, account for 5 % of investment funds in Europe (EUR 658 billion), of which the majority are open-ended and exposed to liquidity mismatches as reflected in the ESRB Shadow Banking Monitor (Tables 1 and 2). The real estate fund sector has also become more important in recent years, as AuM have increased by 34 % over two years (to the fourth quarter of 2016) compared with 19 % for the rest of the fund industry. The ESRB Shadow Banking Monitor also shows that hedge funds (EUR 436 billion) engage in liquidity transformation, depending on their strategy. In comparison, loan funds are still a nascent industry (EUR 26 billion).

Table 1

Liquidity transformation by investment funds

Fund type	Bond Funds	Hedge Funds	Real Estate Funds	Exchange Traded Funds	Private Equity Funds
	●	●	●	●	○

Colour coding: ● = pronounced engagement; ● = medium engagement; ● = low engagement; ○ = unlikely or insignificant engagement

Table 2

Euro area investment funds' assets (EUR trillions)

	Dec-14	Jun-15	Dec-15	Jun-16	Dec-16	Mar-17	Apr-17
Bond funds	3,06	3,31	3,19	3,32	3,36	3,51	3,54
Equity funds	2,55	2,89	2,82	2,70	2,95	3,15	3,17
Hedge funds	0,42	0,48	0,47	0,49	0,42	0,43	0,44
Mixed funds	2,24	2,57	2,64	2,71	2,81	2,93	2,97

⁽¹⁾ See the ESRB's 'EU Shadow Banking Monitor', No 2, 2017.

⁽²⁾ See the ESRB's 'EU Shadow Banking Monitor', No 1, 2016.

	Dec-14	Jun-15	Dec-15	Jun-16	Dec-16	Mar-17	Apr-17
Real estate funds	0,48	0,50	0,57	0,61	0,64	0,66	0,66
Total	9,30	10,37	10,38	10,62	11,12	11,64	11,77

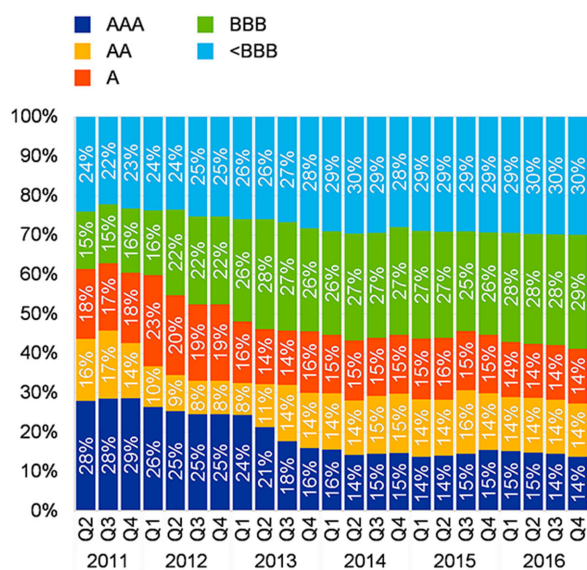
A pattern observed over the last few years has been for some Union bond funds including UCITS to shift their asset allocation from higher to lower-rated debt securities, resulting in exposure to longer maturities and higher credit risk. In particular, high-yield investment funds represent 19 % of bond fund assets, and, depending on structural and cyclical factors of market liquidity, as mentioned before, it cannot be excluded that investment funds could eventually become exposed to liquidity mismatches, at least temporarily. However, in the absence of harmonised data at Union level, it is difficult to measure the materiality of this issue and the potential contribution of UCITS to financial stability risks (see Box 4).

Box 4: Potential exposure of UCITS to liquidity mismatches

Directive 2007/16/EC requires UCITS to invest predominantly in liquid assets. However, the liquidity of some eligible assets could decline under stressed market conditions, temporarily exposing them to liquidity mismatches. This is especially the case for high-yield bond funds. Reacting to this, IOSCO has recently launched a consultation on whether funds, including UCITS, should have additional mechanisms for managing liquidity. ⁽¹⁾

Union bond funds: average rating of fund holdings

(percentage of total assets; last observation: Q4 2016)



Sources: Thomson Reuters Lipper, ESMA and Standard & Poor's.

A common pattern observed since 2009 has been for some Union bond funds to shift their asset allocation from higher to lower-rated debt securities, while, at the same time, increasing the duration of their portfolios. Although this shift in investment patterns has slowed over the past few years, it still means that these funds are now more exposed to changes in bond yields. Less liquid portfolios and lower cash holdings could make it more difficult for bond funds to rebalance portfolios following large redemption requests, i.e. without causing spillovers to the bond markets.

Despite evidence of increased risk-taking against a backdrop of reduced liquidity in the bond markets ⁽²⁾, a lack of granular information on UCITS assets (e.g. liquidity) and liabilities means that the risk to financial stability cannot be comprehensively assessed. Reporting obligations for UCITS management companies, as foreseen by Recommendation D, are required to assess the materiality of this risk. This implies collecting and exchanging granular and harmonised data. If there is, however, analytical evidence showing that parts of the UCITS fund sector are exposed to significant liquidity mismatches, it might be necessary to review the scope of Recommendation B to include some specific UCITS products.

⁽¹⁾ 'IOSCO, Open-ended Fund Liquidity and Risk Management – Good Practices and Issues for Consideration', Consultation report, July 2017.

⁽²⁾ 'Shifting tides – market liquidity and market-making in fixed income instruments', BIS, 2015.

The FSB advises ⁽¹⁾ that investment funds' assets and investment strategies should be consistent with the terms and conditions governing investment fund unit redemptions both at investment fund inception and on an ongoing basis (for new and existing investment funds). This should take into account the expected liquidity of the assets and investor behaviour under both normal and stressed market conditions.

Additional provisions in that area would be consistent with the existing framework under Directive 2011/61/EU, which already requires the alignment of the investment strategy, liquidity profile and redemption policy of the investment fund, and sets appropriate liquidity management limits and stress tests. In particular, under the current regulatory regime AIFMs should be able to demonstrate to their NCAs that appropriate liquidity management systems and effective procedures are in place. However, based on recent evidence the ESRB has observed that some AIFs are still performing a high level of liquidity transformation. ⁽²⁾ Therefore, making this demonstration mandatory for investment funds investing in less liquid assets would contribute to achieving the goals of Directive 2011/61/EU by ensuring a more consistent implementation of the Directive. It would promote the use of specific measures for investment funds investing in less liquid assets, such as, for example, the use of internal limits on less liquid assets.

Substantial liquidity transformation should be avoided. Some Member States have incorporated bespoke regimes into their national legal frameworks to establish the conditions under which AIFs may manage assets deemed to be less liquid, such as real estate or loans. In its opinion to the European Parliament, the Council and the Commission ⁽³⁾, ESMA argued that loan-originating AIFs should be set up as closed-ended vehicles without the right to redeem units on a regular basis. Other jurisdictions have adopted structural measures to remove the risks of fire sales posed by massive redemption requests. For instance, if a non-negligible part of the portfolio is illiquid, the closed-ended form is required owing to the intrinsic nature of the assets held by the CIS. The option to request repayment during the life of the AIF should only be offered by the fund manager to investors if certain conditions have been fulfilled. This should take place at fixed intervals, e.g. as stipulated by Regulation (EU) 2015/760 of the European Parliament and of the Council ⁽⁴⁾.

This recommendation advises ESMA to define a list of inherently less liquid assets. There is currently no definition of liquid or less liquid assets in the regulations (see Box 5), although the objective is not to propose such a definition but instead to promote a consistent approach to the implementation of the aforementioned provisions of Directive 2011/61/EU. The term 'less liquid' also acknowledges the fact that assets are rarely, or never totally, illiquid.

In view of the need for cross-sectoral consistency, ESMA should consult with the EBA and EIOPA when preparing the list. The labelling by any regulator of an asset as liquid or less liquid sends a signal to market participants. Moreover, regardless of who is selling the asset (regulated, unregulated, bank or non-bank), the pool of buyers is generally the same under stressed market conditions. Consistency of regulatory approaches is therefore desirable. ⁽⁵⁾

The list of inherently less liquid assets should include assets that cannot be easily and rapidly converted into cash with little loss of value during market stress. The analysis of asset liquidity should consider, inter alia, the time required to liquidate those assets under stressed market conditions without having to accept a large discount. In compiling this list, ESMA should, in particular, consider real estate, unlisted securities (including private shares), loans and other alternative assets. Assets that, under normal market conditions, can be sold without having to accept a large discount should not be on the list, since this recommendation aims to address structural issues posed by inherently less liquid assets.

⁽¹⁾ FSB, Policy Recommendations to Address Structural Vulnerabilities from Asset Management Activities, January 2017.

⁽²⁾ The ESRB's 'EU Shadow Banking Monitor' November 2017.

⁽³⁾ ESMA, 'Key principles for a European framework on loan origination by funds', April 2016.

⁽⁴⁾ Regulation (EU) 2015/760 of the European Parliament and of the Council of 29 April 2015 on European long-term investment funds (OJ L 123, 19.5.2015, p. 98).

⁽⁵⁾ The need for cooperation between the regulators on such matters appears to be well-recognised (e.g. Article 46(3) and Article 11(15) of Regulation (EU) No 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories (OJ L 201, 27.7.2012, p. 1), which stipulates risk mitigation techniques for OTC derivative contracts not cleared by a central counterparty clearing house.

Where an investment fund offers exposure to less liquid assets, the fund manager may have access to provisions it can introduce to address liquidity risk. ⁽¹⁾ Managers would then need to demonstrate to the relevant NCAs, both at the inception of the investment fund and on an ongoing basis (i.e. during the approval process and after approval for investment funds subject to an approval procedure), that they can follow their investment strategy under any foreseeable market conditions. Having taken into account any regulation applying to the investment fund and following their investment policy, fund managers have different ways to ensure consistency between their investment strategy and the investment fund's redemption profile, both during the design phase and on an ongoing basis. ⁽¹⁾ These include:

- the type of vehicle (e.g. closed-ended investment fund, ELTIF);
- redemption policies;
- investment policy including internal limits for assets included in the list, liquid asset buffer, diversification (exposures or counterparty) and limits on the size of the investment fund relative to the underlying market;
- implementation of a-LMT;
- liquidity risk management processes including, for example, defining relevant thresholds, classifying assets into liquidity buckets, monitoring the concentration of investors and expected redemption patterns.

The use of internal limits in particular should be disclosed to the NCAs at the inception of the relevant investment funds, notified thereafter whenever these limits change and also available upon supervisors' request. Disclosure to investors should also be implemented based on guidance that should be developed by ESMA.

In some cases, it could be unduly burdensome for small funds' managers in particular to show they can stick to the investment funds' investment strategies. Therefore, some discretion should be left to NCAs in designing a mechanism that allows AIFMs to show they can stick to the investment funds' investment strategies. The NCA assessment could, for example, take stress test results into account.

There is no single definition of market 'liquidity' across Union legislation on the basis of which a list of less liquid assets could be compiled. Each piece of legislation approaches the issue of liquidity in a different way, according to its purpose (see Box 5). An example of approaches followed at national level is given by the FCA consultation paper on illiquid assets and open-ended investment funds ⁽²⁾, which identifies a number of characteristics shared by illiquid assets:

- they are not traded on an organised market;
- there may be a significant imbalance between supply and demand;
- it is likely to take time for the buyer and seller to negotiate the price and the other terms of the transaction;
- valuing the asset is a complex process;
- physical assets are typically bought and sold in their entirety;
- owing to these factors, and other possible complications such as restrictions on the free transfer of title, transactions often take a long time to conclude.

Box 5: Liquidity in Union legislation

Directive 2007/16/EC regarding eligible assets requires UCITS to invest predominantly in liquid assets, and sets out specific rules covering the eligibility of transferable securities, money market instruments and derivatives. In general, transferable securities and money market instruments may be considered liquid if they are admitted to or traded on a regulated market. Less liquid assets are not explicitly defined but are seen as ineligible investments under Directive 2009/65/EC. This is particularly the case for physical commodities and real estate assets.

⁽¹⁾ 'IOSCO, Open-ended Fund Liquidity and Risk Management – Good Practices and Issues for Consideration', Consultation report, July 2017.

⁽²⁾ FCA, 'Illiquid assets and open-ended investment funds' discussion paper (DP 17/1), February 2017.

The concept of liquidity is mentioned in several other Union legal acts, as listed below.

- Regulation (EU) No 909/2014 of the European Parliament and of the Council ⁽¹⁾ stipulates that a CSD must invest in cash or highly liquid financial instruments with minimal market and credit risk. However, Regulation (EU) No 909/2014 does not explicitly define liquidity, recommending instead that ESMA, the EBA and the ESCB should develop draft RTS detailing the financial instruments that may be viewed as highly liquid.
- Regulation (EU) 2017/1131 of the European Parliament and of the Council ⁽²⁾ on money market funds includes liquidity thresholds for assets which may be viewed as providing daily and weekly liquidity, although liquidity is not explicitly defined. Regulation (EU) 2017/1131 is based on the reasoning that an early maturity date for assets helps to ensure that investors get their money back.
- Directive 2014/65/EU of the European Parliament and of the Council ⁽³⁾ includes discussions of the methodology used to calculate liquidity in non-equities such as bonds. ESMA considers two alternative methods for calculating liquidity, i.e. the instrument-by-instrument approach (IBIA) and the categories of financial instruments approach (COFIA). ESMA eventually adopted the IBIA in its RTS for the calculation of bond liquidity.
- Regulation (EU) No 575/2013 of the European Parliament and of the Council ⁽⁴⁾ defines liquid assets for the purposes of credit institutions' liquidity buffers as the only freely transferable assets that can be converted quickly into cash in private markets without significant loss of value. The Regulation differentiates between assets of extremely high liquidity and credit quality (Level 1 assets), and assets of high liquidity and credit quality (Level 2 assets). Level 1 assets include cash, deposits at the central bank, Union government or government guaranteed bonds and covered bonds that meet certain conditions. Level 2 assets include third-country government bonds and bonds issued by public entities, and both covered and corporate bonds on the basis of their credit quality. They also include high quality securitisations and shares that form part of a major stock index.

The US SEC's approach may provide a useful foundation for the development of a Union methodology for assessing liquidity and creating a list of less liquid assets. The SEC approach defines the 'illiquidity' of asset holdings not in absolute terms, but also taking size into account (e.g. the investment funds' asset holdings). See Box 6 below.

Box 6: SEC composite liquidity score

The SEC has addressed the issue of liquidity in a recent ruling ⁽⁵⁾ introducing changes to the disclosure of liquidity risk by open-ended investment funds. The ruling presents a new liquidity classification scheme that identifies the liquidity of an investment on the basis of the number of days within which an investment may be converted into cash without significantly changing the market value of that investment. More specifically, the SEC suggests that classifying an investment as illiquid implies that the investment fund cannot reasonably expect to sell the investment within seven calendar days without generating a significant impact on its market value. Furthermore, the SEC requires an investment fund to take the size of its position into account, as well as the depth of the trading market for the investment, when determining whether an investment is liquid or illiquid.

The SEC ruling requires fund managers to assess and review their liquidity risk at least annually, on the basis of a number of factors: strategy, cash flows, cash on hand and ETF considerations. The rationale for such a review process is that the SEC is concerned that a 'check-the-box' solution could lead to liquidity being assessed in a way that does not truly reflect the fund's ability to sell off its portfolio (or a part of it) to cover redemption without impacting the market.

⁽¹⁾ Regulation (EU) No 909/2014 of the European Parliament and of the Council of 23 July 2014 on improving securities settlement in the European Union and on central securities depositories and amending Directives 98/26/EC and Regulation (EU) No 236/2012 (OJ L 257, 28.8.2014, p. 1).

⁽²⁾ Regulation (EU) 2017/1131 of the European Parliament and of the Council of 14 June 2017 on money market funds (OJ L 169, 30.6.2017, p. 8).

⁽³⁾ Directive 2014/65/EU of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments and amending Directive 2002/92/EC and Directive 2011/61/EU (OJ L 173, 12.6.2014, p. 349).

⁽⁴⁾ Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms and amending Regulation (EU) No 648/2012 (OJ L 176, 27.6.2013, p. 1).

⁽⁵⁾ <https://www.sec.gov/rules/final/2016/33-10233.pdf>

Furthermore, the SEC requires an investment fund to take 'market, trading, and investment-specific considerations' into account when classifying its portfolio investments' liquidity, although it does not provide any details of these aspects.

Dealing frequencies tend, for example, to be low for certain fixed income securities. This would not, however, necessarily indicate that a security is illiquid, and an investment fund might still be able to sell it reasonably quickly. More reliable estimates may be obtained by evaluating the range of metrics proposed by the SEC ⁽¹⁾. Composite liquidity scores of this type could include factors that are based on the asset, market and portfolio properties of the security, as detailed below.

- Asset factors are based on the structure of an asset. The more difficult it is to value a security, and the less it complies with standards, the more illiquid it tends to be. Furthermore, for fixed income products specifications such as maturity, rating and date of issue may have an impact on liquidity.
- Market factors relate to the issuance and the secondary market of an asset. Typically, the more markets there are in which a security may be traded, the less illiquid it tends to be. Market quality factors also include the number, diversity and quality of participants in these markets. They may also be related to the costs of trading in these markets, and depend on the liquidation costs that might be associated with operating in a different country and currency.
- Trading factors are measurements relating to the price and volume of trading in a security. Spreads between the bid and ask price, as well as the trading volume and trading frequency, can be used to measure potential illiquidity. Historical data for volume can, for example, provide an estimate of maximum volume that can be used to assess the market impact of a trade.
- Portfolio factors are portfolio-specific measurements. Investment funds should take into consideration the size of their position in relation to daily trading volume and amounts outstanding. They should also, however, consider the relationships of assets to other portfolio assets (e.g. derivatives). Finally, illiquidity may also relate to the clustering of portfolio positions – this could be a source of illiquidity if all assets held by the investment fund are very similar and trade in the same market.

Since the SEC's approach may provide a useful foundation on which a future European articulation of illiquidity could be based, it might be desirable to align the Union approach closely with this. From a policy perspective, alignment would offer an additional benefit since, if the Union and US frameworks were broadly similar, this would constitute an effective global standard to use when evaluating illiquidity in investment funds.

II.2.2 Unintended effects

On the asset side, managers implementing internal limits would not completely eliminate first-mover advantage. Early leavers may still want to seize liquid assets so as to avoid being trapped in an illiquid investment fund. However, to the extent that the availability of liquid assets would increase confidence in the capacity of the investment fund to redeem, the risk of runs by investors should be reduced overall.

The implementation of an internal limit could unnecessarily hamper the fund manager's ability to use available liquid assets to meet redemptions. This is the case when, for example, the manager cannot use liquid assets without breaching the internal limit. It is possible, nevertheless, to qualify the materiality of this issue. In the context of Directive 2011/61/EU, exceeding a limit may not of itself require action by the AIFM as this would depend on the facts and circumstances, as well as the tolerances set by the AIFM. These provide triggers for continued monitoring or remedial action, according to the circumstances.

⁽¹⁾ The SEC document lists nine factors for classifying portfolio positions in a particular asset.

In a worst-case scenario, adding an asset to the list could be procyclical, triggering the sale of the asset and causing a price collapse. The manager might need to sell the asset to comply with new internal limits, or might anticipate an adverse investor reaction, thus triggering the very issue the list was supposed to mitigate. Similarly, stigmatising an asset because of its lack of liquidity might deter some investment funds from investing in it altogether, which could have repercussions on the functioning of financial markets. For those reasons, the list should only include assets which are 'inherently' less liquid, a characteristic which should have already been identified by market participants. Moreover, investors investing in 'inherently' less liquid assets would already expect managers to have an investment policy consistent with their redemption policy, as foreseen by Directive 2011/61/EU. Finally, transitional arrangements will be necessary when an asset is added to the list, in order to allow the manager time to comply and to avoid forced sales.

On the liability side, decreasing the redemption frequency is likely to increase the volume of trades, which might have an impact on prices under stressed market conditions. Instead of experiencing regular outflows, the fund would accumulate multiple orders to be executed at the same time. One option would be to implement notice periods⁽¹⁾ to reflect the expected time needed to dispose of underlying assets. Another option would be to use a queuing system, so that redemption requests would not have to be carried out at the next valuation point after they have been accepted by the fund manager. The manager would then be able to calculate even earlier the liquidity needed to meet redemption requests, and could start to sell investments as required. This could reduce the risk of transactions being executed at fire sale prices.

Finally, the risk of regulatory arbitrage should be acknowledged. There is a risk: (1) for unregulated AIFs excluded from the scope of the Recommendation and (2) if a manager registers an investment fund under UCITS with the objective of making a major investment in an asset listed as inherently less liquid, provided that this asset would be considered as eligible for the UCITS. However, in the latter scenario the investment fund would then be subject to the rules of Directive 2009/65/EC, which are stricter than those of Directive 2011/61/EU in certain respects. This reduces the incentive to register under UCITS in order to avoid restrictions applying to AIFs.

II.3 Recommendation C – Stress testing

II.3.1 Economic rationale and intended effects

Microprudential stress tests are aimed at improving risk and portfolio management at individual investment fund and fund manager level. These tests simulate extreme or unfavourable, yet plausible, economic and financial conditions in order to study their consequences both for the performance of an investment fund and for its ability to honour redemption requests, even at a discounted NAV. They provide scenario analyses that offer a better insight into the risks arising from potential changes in market conditions that might have an adverse impact on the portfolios managed. Under normal market conditions, the stress tests identify the potential weaknesses of investment products/strategies and help fund management companies to adjust their portfolio risk management and prepare themselves operationally for a crisis. During crisis periods, the stress tests support adjustment to the specifics of the crisis, management of the crisis, and disclosure to the resolution authority. As such, stress tests are risk management and decision-making tools.

Investment funds have different characteristics, all of which influence the liquidity risk of a particular investment fund and, therefore, the design of a meaningful stress test at investment fund level. The asset side is characterised by, for example, the main markets and instruments, investment strategy and time horizon, geographical focus, portfolio concentrations, portfolio turnover and typical deal sizes. The liability side is characterised by the investment fund's investor base, which may be either retail investors or institutional investors or a combination of the two, all having their individual portfolio structure and liquidity needs, possibly their own regulatory requirements (banks, insurance companies and pension funds) and, therefore, displaying their own investor behaviour. The investor type concentration in an investment fund is particularly relevant because a high concentration could lead to large simultaneous redemption requests.

⁽¹⁾ It should be noted that the use of a notice period poses practical challenges due to the delay between an order and its execution. In particular, benchmark-tracking funds would be incentivised to trade as close as possible to the end of the notice period to maximise their performance, even if this has a negative market impact.

Given the heterogeneity of investment funds there are no mandatory specifications for stress test scenarios.

Therefore, currently, the parameters, scope, frequency and sophistication of stress testing vary across the industry. Nevertheless, there are some meaningful, well-established approaches covering both sides of the balance sheet. Stress tests for the liability side of an investment fund are simulations of redemptions. These simulations are typically calibrated based on a stability analysis of the liabilities, which itself depends on the type of investor and the concentration of the liabilities. Simulations could include historical or hypothetical redemption scenarios, redemptions by the largest investors, redemptions equal to the largest redemptions ever seen, and an analysis of market trends and peer groups. Stress tests should also cover the asset side of an investment fund, meaning the simulation of the liquidity of the investment fund assets under different market conditions. This simulation considers the investment fund's ability to sell assets without having a major impact on the price. Scenarios could include a reduction in trading volumes in certain instruments or market segments (losses incurred following an increase in bid-ask spreads), estimations of the maximum liquidation possible in one day, or estimations of the liquidation time based on breaking down investment fund assets (by, for example, liquidity buckets), and should also consider the interaction of market and liquidity risk for the relevant assets.

Guidance relating to individual stress-testing practices is expected to reduce liquidity risk at both investment fund and system level, and strengthen the ability of entities to manage liquidity in the interests of investors, which includes reducing unexpected redemption periods. Stress tests are tools that support the analysis of the strengths of the strategies already in place. Testing should identify the weaknesses of an investment strategy and should prepare a fund for a crisis. If used correctly as a risk management and decision-making tool, stress tests should reduce liquidity risk at an investment fund level and, thereby, contribute to lower liquidity risk at system level.

Guidance should address the shortcomings of stress-testing procedures, as has been shown by the ESRB survey into stress-testing practices. Following the guidance given by ESMA, entities should have an understanding of the minimum level of stress-testing requirements and should address shortcomings involving the application of too-small haircuts, stress-testing frequency and scenario design, and a naïve use of historical data. The guidance indicates that the frequency and design of the stress test should be determined by investment fund-specific as well as by firm-specific characteristics. Furthermore, the guidance also has the intended effect of obliging firms, when designing stress scenarios, to use a level of severity that they are at least likely to encounter in the market. Finally, due to the heterogeneity of the investment fund sector, the complexity of the stress tests should be aligned with the specific risk and redemption profile of the investment fund, without seeking too much conformity in stress test scenarios. The guidance should contribute to more accurate and appropriate stress testing at investment fund level, leaving less doubt over the level of risk at system level.

Recommendation C is in line with ESMA's obligation to provide guidance on the MMF stress testing in Regulation (EU) 2017/1131. Under the Regulation, ESMA is obliged to provide guidelines regarding the common reference parameters of stress test scenarios.

Fund managers must regularly conduct stress tests on the investment funds they manage. Stress testing is a requirement for UCITS and AIFs, except where the AIF is an unleveraged closed-ended AIF or where it is deemed inappropriate for UCITS (Article 40(3) of Directive 2010/43/EU; Article 16(1) of Directive 2011/61/EU; and Article 48 of Delegated Regulation (EU) No 231/2013). For both types of investment funds, stress tests enable fund managers to assess liquidity risk under both normal and exceptional liquidity conditions. Within the framework of reporting under Directive 2011/61/EU, stress test results must be reported to the NCA and this information must be made available to ESMA and the ESRB. Regulation (EU) 2017/1131 introduces detailed stress-testing obligations for MMFs, which could also be beneficial for other types of investment funds.

For UCITS, stress-testing obligations are less detailed than they are for AIFs. This reflects the different characteristics of the asset and liability sides of UCITS (i.e. the definitions of eligible assets, which should be liquid, and an investor base that is mainly retail) and the different regulatory requirements.

The stress-testing rules for AIFs, however, are more detailed, according to Delegated Regulation (EU) No 231/2013.

- (a) Stress tests should simulate a shortage of liquidity and atypical redemption requests. The stress test should, as a minimum, take recent and expected future redemption requests into consideration and should analyse the time required to meet these redemption requests. The stress test should also include a test of market factors, e.g. the exchange rate that could affect the credit profile of the AIFM or AIF. Furthermore, the stress-testing approach should include valuation sensitivities under stressed conditions.
- (b) The risk profile of the AIF, which is a function of the investment strategy, liquidity profile, type of investor, and redemption policy, determines the frequency of the stress tests on the basis of a minimum annual frequency. The AIFM should act in the interests of all AIF investors in respect of the design of the AIF and the adequacy of liquidity management policies and procedures when stress tests suggest significantly higher than expected liquidity risk.

An ESRB survey of fund managers' stress-testing practices showed that most Union fund managers conduct regular stress testing. Around 93 % of the fund managers covered by the ESRB survey ⁽¹⁾ regularly stress test all investment funds under management and perform additional stress tests (or have the ability to do so) whenever material changes occur. Given the different types of fund managers and funds covered, the review also revealed considerable differences in the frequency at which the stress testing was carried out, the type of stressed scenarios used by fund managers, and the level of complexity of the stress testing (see bullets below):

- **Although mainly investment fund-specific characteristics are supposed to determine the frequency of the stress-testing exercise, only a few fund managers use investment fund-specific frequencies.** Instead they operate by using a firm-specific frequency applied to all investment funds managed. This is the case even for large investment companies that manage many different types of investment funds. A large proportion of fund managers that use investment fund-specific stress-testing frequencies differentiate between UCITS and AIFs instead of using different frequencies for investment funds with different portfolio structures.
- **A large proportion of fund managers use multiple liquidity scenarios that typically represent varying market conditions.** A basic feature of any stress test is an underlying scenario that represents significantly stressed market conditions. However, the severity of the stress scenarios used varies widely across fund managers. For some of these scenarios it is highly questionable whether they actually represent stressed market conditions at all. On the asset side, some of the applied haircuts are quite small, which makes them less appropriate for representing considerable changes in market liquidity. On the liability side, investment funds that had not experienced redemption pressure in the past should not base their redemption scenarios solely on historical data.
- **In line with the considerable differences across different types of fund managers and investment funds, the complexity of stress test scenarios used varies widely across fund managers.** Some fund managers use simple hypothetical scenarios that are not backed up by any data, while others use sophisticated statistical methods to design investment fund-specific scenarios. Sensible liquidity scenarios are, by nature, difficult to define. In contrast to market risk, where there is an abundance of information available, modelling liquidity stress testing is much more complicated. On the asset side, modelling the liquidity profile under stress can be extremely challenging, especially for assets for which transaction data is not readily available (e.g. fixed income instruments). On the liability side, anticipating investor behaviour under stressed market conditions is not straightforward and depends on a variety of factors, e.g. on the ratio of institutional to retail investors or the proportion of 'sticky' clients. The problem is even more pronounced for UCITS because fund managers usually have little information on UCITS' investor profiles. Regulatory aspects appear to play only a minor role in modelling the scenarios. Stress scenarios are, therefore, designed in accordance with the asset class exposures and redemption schedule applicable to the investment fund.

⁽¹⁾ The main objective of the ESRB survey was to provide an overview of the stress-testing practices of European asset managers, primarily to analyse the extent to which the stress testing of individual funds covered liquidity stress (i.e. the ability of an investment fund to meet large redemption requests). The ESRB's survey covered 274 Union fund managers and included questions regarding asset managers' current liquidity risk management and stress-testing practices.

The stress test should be carried out under different conditions, such as atypical redemption requests and abnormal behaviour in asset prices, and could also take into account events such as counterparty default and other risk factors (e.g. political risks). Guidance from ESMA should be provided in respect of the type of scenarios an investment fund should consider when designing a stress test. The scenarios should include scenarios based on past price movement and hypothetical scenarios. Historical scenarios model the parameters of the stress test on a previous crisis and calculate the impact that would have had on the investment fund. Because future crises are likely to be different from previous crises, and because it is difficult to exactly replicate past crises, stress testing should not rely solely on historical scenarios. Hypothetical scenarios could be based on economic shocks or behavioural characteristics of the investors or fund manager. The design of these hypothetical scenarios should match the specific sensitivities of the type of fund and the fund strategy.

Reverse stress testing could complete the total stress-testing exercise. The inclusion of reverse stress testing could provide beneficial insights into the behaviour of the investment fund until its point of failure. It limits reliance on historical scenarios and the possibility of designing hypothetical scenarios. Reverse stress testing could allow the fund manager to fully explore and understand any vulnerabilities and resolve those risks.

Stress testing should, ideally, be used during all stages of a fund's lifetime, from its creation to liquidation as well as all investment decisions in between. When an investment fund is set up, stress testing should be used to establish and define the parameters (e.g. the risk profile and risk tolerance) of the investment fund, in particular the relationship between the liquidity of the underlying assets and the frequency of possible redemptions, including under stressed market conditions. Stress testing could also be used when considering any adjustments to investment fund strategy, terms and conditions, and investment decisions. When formulating a contingency plan for the investment fund under stressed conditions, stress testing could be used to analyse the use of different liquidity risk management tools.

The timing and frequency of stress testing should reflect the characteristics of the investment fund such as size, investment strategy, underlying assets, investor profile and frequency of possible redemptions. For a portfolio with high turnover or rapidly changing investor base the liquidity profile and risk are likely to be more volatile. Stress testing should be used more frequently under these circumstances than for an investment fund with a more stable investor base and long redemption periods.

The frequency of stress testing may depend on the type of scenario used. When using historical scenarios, the statistical methods used to construct the scenarios could easily be updated using new data and the stress testing parameters. As this process is often mechanical it could be used more frequently. Hypothetical scenarios demand a more investment fund-specific, tailor-made assessment of the relevant factors affecting the investment fund so, given that it requires a more extensive analysis, this type of stress testing may be performed less frequently.

This recommendation does not seek to cover macroprudential stress testing. Macroprudential stress testing is an area that requires further development. Data and modelling limitations currently prevent such models from being used as efficient supervisory tools. The ESRB is currently analysing the role of macroprudential stress testing in assessing financial stability risks from investment funds.

II.3.2 Unintended effects

Concrete guidelines relating to stress testing might lead to fund managers showing more similar/harmonised behaviour and, eventually, to the uniform asset positioning of investment funds (one-sided positioning). This could increase the risk of future herding behaviour and systemic financial risk. In addition and especially for smaller fund managers, more guidance could result in extra stress testing and therefore higher costs.

II.4 Recommendation D – UCITS reporting

II.4.1 Economic rationale and intended effects

Recommendation D(1) – Reporting obligations for UCITS and UCITS management companies

The lack of a harmonised reporting framework across Member States is currently an obstacle to the comprehensive assessment and monitoring of the potential contribution of UCITS to financial stability risks. Although many jurisdictions within the Union do stipulate reporting obligations for UCITS, survey results reveal that reporting practices differ widely in terms of reporting frequency, scope of UCITS reporting, and the data reported⁽¹⁾. As a result, it is not possible to aggregate national data and monitor developments regarding, for example, liquidity and leverage risks for UCITS at Union level.

ECB statistics on investment funds are insufficient to ensure the comprehensive assessment and monitoring of liquidity and leverage risks for UCITS. Although ECB statistics allow regulators to monitor developments in the euro area investment fund sector using information on broad balance sheet asset and liability categories, including maturity breakdowns, the information items covered are not sufficient to produce an adequate risk assessment. Most notably, granular data on instrument trades and individual exposures are not included, yet these data are needed to adequately assess developments in the portfolio liquidity of UCITS. Also, trends in the use of leverage cannot be adequately monitored since the available data only allow the use of financial leverage to be calculated (i.e. via borrowings). A more comprehensive measure of leverage, including the use of leverage via derivatives (i.e. synthetic leverage), is not available. Moreover, at this time the ECB statistics do not differentiate between UCITS and AIFs, which is important for the adequate monitoring of risks since these funds operate under very different regulatory regimes.

Setting up a harmonised UCITS reporting framework at Union level could be efficient from a monitoring perspective, and could also reduce existing reporting inefficiencies and costs both for competent authorities and the industry. Since the entry into force of Directive 2011/61/EU, both NCAs and AIFMs have improved their technical capacity and have built up experience of the comprehensive Union-level reporting framework under Directive 2011/61/EU. To the extent that a new UCITS reporting framework would be built on the existing technical reporting systems, both competent authorities and fund managers managing AIFs and UCITS, or fund managers managing UCITS with various reporting requirements in different jurisdictions, would reap the benefits of greater reporting synergies.

When setting up the UCITS reporting framework, the Commission should bear in mind that UCITS operate under a more stringent regulatory regime than AIFs. A less extensive reporting framework would be sufficient for the proper monitoring of UCITS-related financial stability risks.

The Commission should also bear in mind other ongoing initiatives which might have an impact on such harmonised reporting. The Commission should take into account input from ESMA and NCAs relating to this reporting, as well as possible new, alternative/amended leverage measures currently being developed by IOSCO. Furthermore, reporting requirements set out in Regulation (EU) 2017/1131 on money market funds should also be taken into consideration.

Detailed reporting requirements on liquidity features would facilitate the monitoring of potential systemic risk arising from UCITS' liquidity transformations and mismatches. UCITS are subject to detailed rules concerning asset eligibility and, therefore, typically invest in more liquid assets, although certain UCITS may also invest in less liquid asset classes, e.g. certain types of bond fund (emerging markets or high-yield bonds). Since UCITS are also subject to minimal requirements concerning redemption frequencies, they may also present a higher liquidity risk. For these UCITS a potential data gap persists under the current legislative framework since they are not required to report to NCAs in a similar fashion to AIFs. The scope of the current reporting framework is not, therefore, all-encompassing (Directive 2011/61/EU versus Directive 2009/65/EC) and does not include harmonised liquidity risk indicators that are meaningful and easy to construct and interpret. This is especially important for monitoring developments from a macroprudential perspective and for aggregating individual measures across industry and jurisdictions.

⁽¹⁾ For example, the Luxembourg Financial Sector Supervisory Commission (*Commission de Surveillance du Secteur Financier* – CSSF) introduced an UCITS risk reporting requirement in early 2016 and asks its UCITS industry to report, on a semi-annual basis, data relating to various risk factors such as leverage, counterparty risk, credit risk and liquidity risk. Further information is available at <http://www.cssf.lu/en/supervision/ivm/ucits/legal-reporting/>.

To enable monitoring of the liquidity mismatch within UCITS, UCITS should be obliged to report information on both their assets and liabilities. AIFMs must report information on their AIF's liquidity profile, which provides useful information regarding the liquidity assessment (by the AIFM) of the invested assets of an AIF and the structure of its investors. This should also be used as the basis for related UCITS reporting and should be complemented by reporting on the availability and the use of various liquidity management tools available to the UCITS. Further reportable data points could, for example, include information on the size of historical redemptions.

The gathering of other data facilitates a comprehensive assessment of the potential contribution to financial/systemic risk by these UCITS. In particular, the source of leverage is of interest so that a proper assessment can be made of the risks induced, for example, by the use of leverage by UCITS. UCITS should also provide, among other things, information on the investment strategy, instruments traded and individual exposures, market risk profile, counterparty and credit risk profile, and liquidity risk profile. This information could provide an indication of the risk of forced sales, counterparty concentration, and interconnectedness with the overall financial system. This should also include categories of derivative positions and techniques and instruments such as repurchase agreements or securities lending transactions. Very similar requirements are laid down in the reporting requirements of Directive 2011/61/EU, which could be complemented by UCITS-specific aspects such as, for example, efficient portfolio management. The AIFM must provide information on the risk profile and the main categories of assets in which the AIF is invested, including the corresponding gross, long and short derivative positions. However, AIFMs are also required to provide information on the source of cash borrowing. ⁽¹⁾

An economically relevant part of the UCITS sector applies strategies where leverage – including synthetic leverage – is only indirectly restricted. With regard to the use of financial leverage via securities financing transactions or synthetic leverage via derivative exposures, UCITS may create exposure – as calculated by the commitment approach – only up to a maximum amount equalling their total NAV (see Box 1b). However, according to Directive 2009/65/EC, Member States may also allow UCITS to calculate their global exposure by using a VaR approach or other advanced risk measurement methodologies instead of the commitment approach ⁽²⁾. For these investment funds, the use of leverage is only indirectly restricted via limitations on the investment fund's market risk. ⁽³⁾ That is to say, funds that use the *absolute* VaR approach are restricted to an absolute VaR which is not greater than 20 % of NAV. In turn, investment funds that use the *relative* VaR approach are restricted to no more than double the risk of loss under a given VaR model compared with a similar, but unleveraged, portfolio. Importantly, these VaR approaches potentially allow for higher leverage than the commitment approach, depending on the volatility of the underlying assets. An ESRB survey covering 11 jurisdictions within the Union indicates that the subset of UCITS employing VaR approaches to calculate global exposure could represent between 27 % and 50 % of the Union's UCITS sector in NAV terms.

Consistent reporting of leverage for all UCITS and all AIFs should be the aim and should support the monitoring of investment funds not subject to leverage limits within the Union's investment fund sector. The FSB recommends that authorities collect data on leverage in investment funds, monitor the use of leverage by investment funds not subject to leverage limits or which may pose significant leverage-related risks to the financial system, and take action where appropriate. At the same time, IOSCO has been asked to identify and/or develop consistent measures of leverage in investment funds to achieve more meaningful monitoring of leverage for financial stability purposes, and to help ensure that direct comparisons can be made across investment funds at global level by the end of 2018 ⁽⁴⁾. Therefore, the end goal should be the harmonised reporting of leverage, in line with the consistent leverage measures expected to be developed/identified by IOSCO. The harmonisation of the reporting framework for UCITS and the reporting on leverage in AIFs under Directive 2011/61/EU should develop along these lines and should facilitate the monitoring of leveraged investment funds within the Union's investment fund sector as a whole. The Commission should, therefore, develop a harmonised framework across the Union as well as across UCITS and AIFs, taking into consideration the international dimension as well as the goal of developing uniform approaches for the different leverage calculation methods (the notional, gross and commitment methods). This would also facilitate the monitoring of leverage for UCITS that only operate under indirect leverage restrictions.

⁽¹⁾ See, for example, Annex IV to Delegated Regulation (EU) No 231/2013.

⁽²⁾ See, for example, Article 41(3) of Directive 2010/43/EU.

⁽³⁾ See CESR's (Level 3) 'Guidelines on Risk Measurement and the Calculation of Global Exposure and Counterparty Risk for UCITS', 28 July 2010.

⁽⁴⁾ See Recommendations 10 and 11 of the FSB's 'Policy Recommendations to Address Structural Vulnerabilities from Asset Management Activities', January 2017.

Reporting leverage in compliance with the commitment method under Directive 2011/61/EU would require UCITS to add their NAV to their exposure as measured by the UCITS commitment method. Currently, the methods used to calculate exposure according to the commitment method differ slightly between the Directives 2009/65/EC and 2011/61/EU. Whereas Directive 2011/61/EU requires AIFs to calculate the commitment exposure as the sum of the absolute value of all positions, UCITS funds are required to calculate only the incremental exposure generated by the use of leverage (see Table 3). Since UCITS are not permitted to borrow unsecured cash for investment purposes and the rules for calculating exposure via securities financing transactions and derivatives resemble those laid down by Directive 2011/61/EU, the UCITS commitment method can be aligned with Directive 2011/61/EU by requiring UCITS to add NAV to their exposure.

In this context, the new UCITS risk reporting should also cover stress test reporting by UCITS. This should include reporting on the results of standardised univariate stress tests and should also provide information on proprietary stress test scenarios by fund managers, as well as the relevant outcomes.

Table 3

Calculation of investment fund exposure under the commitment methods

	AIFMD	UCITS	
		Current calculation	Recommended changes
Definition of exposure	Sum of the absolute values of all positions	Incremental exposure and leverage generated through the use of financial derivative instruments	Add net asset values
Financial leverage	Re-use of cash borrowing		
	The higher of the market value of the investment realised or the total amount of the cash borrowed	Unsecured cash borrowing not allowed for investment purposes	None
	Securities financing transactions		
	Market value of the collateral received (including cash) when reinvested	Market value of the collateral received (including cash) when reinvested	None
Net synthetic leverage	Derivatives		
	Sum of the market value of the equivalent position in the underlying asset after netting and hedging arrangements are taken into account	Sum of the market value of the equivalent position in the underlying asset after netting and hedging arrangements are taken into account	None

Recommendation D(2) – Frequency and coverage of reporting obligations for UCITS and UCITS management companies

The data mentioned in Recommendation D1 should be reported on a quarterly basis by a sufficient and – from a financial stability perspective – relevant part of all UCITS and UCITS management companies. Investment funds' portfolio composition, the liquidity of portfolios, and the use of leverage (in particular via the use of derivatives) may be subject to significant short-term changes. As such, at least quarterly reporting is needed to adequately monitor and, where necessary, respond to developments that could contribute to the build-up of financial stability risks. Given the various investment strategies and sizes of UCITS and UCITS management companies, the extent to which individuals or groups of investment funds may contribute to systemic risk is likely to vary. From a financial stability perspective, quarterly reporting by a sufficient subset of UCITS and UCITS management companies would be adequate for monitoring and would, at the same time, limit the industry's overall reporting burden.

The subset of UCITS that should report on a quarterly basis should contain at least the UCITS that use the VaR approach to measure their global exposure. By engaging in derivatives transactions these UCITS generally use more complex investment strategies, and may employ a substantial level of leverage. In addition to this subset of UCITS, the Commission should also consider characteristics such as the size of AuM and, potentially, the investment strategy and liquidity profile, such that a relevant proportion of all UCITS and UCITS management companies will report on a quarterly basis.

Effectively monitoring developments and the potential build-up of financial stability risks within the UCITS industry more generally would require a sufficient subset of all UCITS and UCITS management companies to report a sufficient subset of data at least annually. Introducing annual reporting for a sufficient proportion of the UCITS industry would, in combination with the data available on AIFs, allow general developments to be monitored throughout the Union investment fund sector. It should be noted that annual reporting would be in line with the minimum reporting frequency laid down by Directive 2011/61/EU. This would ensure that the financial stability risk associated with the investment fund industry, for both UCITS and AIFs, could be monitored at least annually. This would also allow meaningful comparisons to be made across time between developments in UCITS and those in AIFs, and would allow potential structural changes to be identified that could contribute to the build-up of systemic risk.

The Commission is advised to consider the total AuM of the UCITS and the UCITS management companies when determining which entities should be subject to an annual reporting requirement. The use of AuM to determine reporting requirements is in line with existing practices for deciding reporting requirements for AIFMs. The Commission may also consider other characteristics, such as the use of leverage within UCITS, the approach used to calculate global exposure, and the investment strategy of the UCITS, when determining which entities should be subject to annual reporting requirements.

Under Directive 2011/61/EU, reporting frequencies for AIFMs could be used as a benchmark to determine the reporting frequencies for UCITS and UCITS management companies, subject to the three reporting categories (quarterly, annual, or no reporting). The current reporting frequencies ⁽¹⁾ for authorised AIFMs managing Union AIFs (in line with those for UCITS and UCITS management companies that must all be authorised and are domiciled in the EU) may be summarised as follows:

- AIFMs that manage AIFs with a total AuM below the threshold of EUR 100 million may opt in to be authorised and report information at both manager level and at AIF level on an annual basis;
- if the total AuM of an AIFM exceeds the threshold of EUR 100 million, but total AuM remains below the threshold of EUR 1 billion, the AIFM has a half-yearly reporting obligation both at manager level and at AIF level, except for those funds with an AuM above EUR 500 million;
- if the total AuM of an AIFM exceeds the threshold of EUR 1 billion, the AIFM has a quarterly reporting obligation both at manager level and at AIF level.

⁽¹⁾ 'Guidelines on reporting obligations under Articles 3(3)(d) and 24(1), (2) and (4) of the AIFMD' (ESMA/2014/869EN). It should be noted that the above summary does not consider the reporting frequencies for AIFs that invest in non-listed companies and issuers in order to acquire control – an investment strategy that cannot be pursued by UCITS.

The Commission may engage with ESMA and NCAs to establish a reasonable approach for determining the subset of UCITS and UCITS management companies in the relevant reporting categories. Engaging with ESMA and NCAs offers an opportunity to learn from current experiences in reporting under Directive 2011/61/EU, when developing the reporting framework for UCITS and UCITS management companies. It should be noted that while doing this, the Commission – in cooperation with ESMA and NCAs – may also consider objectives other than the monitoring of financial stability risks (e.g. investor protection) that could require more frequent reporting. Once established, the reporting on UCITS and UCITS management companies should be revisited at a specific point in time after implementation to assess the appropriateness of its scope and frequency.

The Commission should aim to strike the right balance between maximising the benefits from increased risk monitoring and minimising the costs that would be generated by new reporting requirements. In the longer term, all jurisdictions are likely to benefit from an UCITS reporting framework that is similar to the technical reporting systems/setups of the reporting framework already in operation under Directive 2011/61/EU. In the short term, however, transitioning to new reporting on UCITS and UCITS management companies would generate costs for both the investment fund industry and supervisory authorities. For competent authorities the short-term costs are likely to differ, with jurisdictions that currently have no reporting obligations potentially facing the biggest burden. For the industry the costs of a new unified UCITS reporting framework are likely to vary significantly across UCITS management companies. For instance, fund managers managing UCITS in various jurisdictions will face some initial additional reporting costs, although they will see an improvement in overall reporting efficiency and a reduction in costs compared with the current situation of different reporting regimes and requirements in different jurisdictions. Likewise, management companies managing both UCITS and AIFs will face only small one-off costs and will report on their UCITS using the existing reporting systems/setups for their AIFs. Small UCITS management companies that manage UCITS in only one jurisdiction are likely to face the highest short-term costs of a new UCITS reporting regime, as efficiency gains will be small at best compared with the existing reporting situation. New risk reporting will involve additional administration and compliance costs relating to the setup of the reporting system, as well as periodic costs associated with generating the reports. In turn, these additional costs could lead to economies of scale and could potentially affect the structure of the industry.

Recommendation D(3) – Harmonised reporting and information sharing

NCAs should be required to share the information reported by UCITS and UCITS management companies with other authorities in the Union, ESMA and the ESRB. Mandatory information sharing facilitates the collective analysis of the potential contribution of UCITS to the build-up of systemic risk, and elicits a common response. Additionally, one or more UCITS could, at some point in time, constitute an important source of counterparty risk to a credit institution or other systemically relevant institution in one or more Member States. This further underlines the importance of an adequate framework for sharing the reported information with other authorities.

The Commission is advised to apply the current provisions and practices for information sharing under Directive 2011/61/EU to the new UCITS reporting framework⁽¹⁾. Under Directive 2011/61/EU, NCAs are obliged to share the information collected on AIFMs and AIFs with other authorities, ESMA and the ESRB. In turn, the exchange of information between ESMA and the ESRB relating to data gathered pursuant to Directive 2011/61/EU is based on a Memorandum of Understanding (MoU). NCAs of the home Member State may also demand additional information outside the reporting framework on a periodic or ad hoc basis if this is deemed to be necessary for the effective monitoring of systemic risk. Finally, the harmonised exchange of information is further supported under Directive 2011/61/EU by ITS drafted by ESMA setting out the procedures for the exchange of information between NCAs and between the NCAs and ESMA.

II.4.2 Unintended effects

A new UCITS reporting framework creates costs related to gathering data and sharing processes which must be implemented by management companies and NCAs. Any attempt to enhance reporting by UCITS and UCITS management companies should, therefore, duly recognise the principle of proportionality and seek to reduce the associated costs. In particular, enhanced UCITS reporting could impose an unnecessary burden on smaller industry participants. The UCITS reporting framework should, therefore, take into consideration each investment fund's potential contribution to the build-up of systemic risk when setting reporting requirements. The UCITS reporting framework should consider other ways of reducing associated costs, and should take into account existing reporting frameworks for which technical standards have already been developed by the industry and competent authorities. In particular, since a number of UCITS management companies also hold a licence as an AIFM, and a number of reporting fields are likely

⁽¹⁾ See, for example, Articles 50, 52 and 54 of Directive 2011/61/EU.

to be similar for both UCITS and AIFs, it would be reasonable to base the format of the UCITS reporting framework on the existing reporting framework under Directive 2011/61/EU. The UCITS reporting framework should also take into consideration, as much as possible, the existing reporting that these investment funds are already subject to. In particular, the ECB data collection with regard to the balance sheet of investment funds already includes detailed information on the assets and liabilities of investment funds (see Regulation (EU) No 1073/2013 of the European Central Bank⁽¹⁾). However, these data are not available for the entire Union and generally lack sufficient granularity to provide useful insights into liquidity risk and leverage associated with investment funds.

II.5 Recommendation E – Guidance on Article 25 of Directive 2011/61/EU

II.5.1 Economic rationale and intended effects

Recommendation E(1) – Assessment of leverage-related systemic risk

Investment fund managers are obliged to report granular data for each leveraged AIF they manage to NCAs.

The data, which can include up to 301 items, include 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. It should be noted that 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.

The granular data available to NCAs support assessments of leverage-related systemic risk, although they leave ample room for diverging national approaches. For example, the data reported include two measures of leverage – a gross measure and also a net measure that accounts for leveraged exposures used for netting or hedging purposes – and authorities may hold diverging views with regard to the use and interpretation of these measures. Moreover, extensive data reporting allows for national differences as to whether it is necessary to include further information items beyond the use of leverage in an assessment. There may also be differences in respect of the need to assess the contribution of the use of leverage within AIFs to the build-up of systemic risk.

The international nature of the AIF sector calls for a more coordinated approach to the assessment of leverage-related systemic risk and potential mitigating measures. AIFs generally invest and have linkages with financial institutions across borders, so the potential economic impact of deleveraging by investment funds or investment fund failures is not limited to jurisdictions in which AIFs are domiciled. It is also relatively easy for fund managers and/or their investment funds to relocate across jurisdictions, which further underlines the importance of a more coordinated approach to assessments and potential mitigating measures.

To ensure that NCAs adopt a consistent approach when assessing whether the conditions for imposing leverage-related measures are met ESMA should, as a first step, provide guidance on a common set of indicators. 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. Operationalising policy measures under Article 25 of Directive 2011/61/EU, including macroprudential leverage limits or other restrictions placed on the management of AIFs, requires a framework that can assess whether measures that are ultimately applied at investment fund level effectively limit the contribution of leverage to the build-up of systemic risks within the AIF sector.

To support a harmonised use of the indicators, ESMA is also advised to give guidance relating to the interpretation of the indicators. ESMA is currently in the process of building an EU-level dataset which will include all data reported to NCAs under Directive 2011/61/EU at national level. Once it is available, this dataset should allow ESMA to develop quantitative perspectives on the interpretation of the indicators within the assessment framework, e.g. by examining basic summary statistics on individual indicators such as the mean, median, minimum and maximum reported values, and the distribution of reported values.

⁽¹⁾ Regulation (EU) No 1073/2013 of the European Central Bank of 18 October 2013 concerning statistics on the assets and liabilities of investment funds (ECB/2013/38) (OJ L 297, 7.11.2013, p. 73).

The assessment framework should include indicators that capture the level, source and different usages of leverage. Financial leverage via borrowings or securities financing transactions increases the funding liquidity risk of an investment fund, since lending costs or margin requirements may increase. In turn, the use of synthetic leverage increases a fund's sensitivity to shocks in derivatives markets and the risk that margin calls caused by small downward price fluctuations could force a fund to fire-sell assets.

The framework should capture, as much as possible, the channels through which systemic risk may materialise, as explained below.

- (a) **The potential contribution by individual funds and the AIF sector as a whole to the risk of fire sales.** An investment fund's redemption profile is one aspect of fire sale risk. Offering short-term (especially daily) redeemable claims and short notice periods leaves investment funds susceptible to investor runs which could spark a fire sale. Another aspect of an investment fund's redemption profile is its investor base, where a higher concentration by type of investor – especially when combined with a short redemption frequency – increases the risk of fire sales as these can then be triggered when just one or a few investors decide to redeem their shares. The liquidity profile of an investment fund is a second aspect of fire sale risk. The liquidity of an investment fund's portfolio is central to its ability to meet redemption requests and/or margin calls without having to fire-sell assets. The capacity to liquidate parts of the portfolio depends, to a large extent, on the investment fund's portfolio characteristics. Aspects such as high concentrations of counterparty credit exposures or single instruments increase the chance that an investment fund will need to fire-sell assets in the event of a counterparty failure. For complex portfolios (i.e. those that trade a high proportion of OTC instruments or extensively recycle collateral) these effects could be amplified still further.
- (b) **The direct interconnections of investment funds and the AIF sector as a whole with financial institutions.** The use of leverage may increase the risk that an investment fund will encounter financial distress, which could then be transmitted to the investment fund's counterparties and on to the broader financial system (the 'counterparty channel'). Counterparties could include banks or brokers that have direct trading linkages with, or have extended financing to, a leveraged investment fund. A leveraged investment fund may also spread risks to the global financial system through its interconnections with its investors and its funding of other financial intermediaries and businesses (the 'interconnectedness channel'). One way of capturing direct interconnections with financial institutions is to measure the concentration of counterparty exposures to an investment fund. Investment funds may also have direct linkages with financial institutions via their investor base and portfolio investments.
- (c) **The direct or indirect involvement in credit intermediation of individual investment funds and the AIF sector as a whole.** Leveraged investment funds can contribute to excessive credit intermediation and to the risk of interruptions in the credit intermediation process when the credit cycle turns. The use of leverage allows investment funds to directly extend more credit to the real economy or to facilitate greater credit intermediation by banks. In respect of the latter, investment funds can provide direct funding to the banking sector, invest in structured credit and take on credit risk through derivatives. Systemic risks could arise owing to sudden halts in the provision of liquidity and short-term funding to financial institutions, sudden reductions in market liquidity for financial instruments that are important for credit intermediation, or insufficient risk separation. ⁽¹⁾

ESMA should provide guidance on an assessment framework that is operable. Although the potential channels for systemic risk may be broadly categorised in theory, they are intertwined and are likely to be mutually reinforcing in practice. Also, the underlying mechanisms for systemic risk via these channels can be complex and are subject to change. As a result, the contribution of investment funds to systemic risks is not easily captured by individual indicators, which creates a trade-off between developing a simple and operable framework versus a framework which is more complex and difficult to implement. As a guiding principle indicators should only be part of the framework when they make it significantly easier to assess the contribution of investment funds and the AIF sector as a whole to leverage-related systemic risks.

⁽¹⁾ Bengtsson, E., 'Investment funds, shadow banking and systemic risk.' *Journal of Financial Regulation and Compliance*, Vol. 24(1), pp. 60-73.

In addition, ESMA's guidance on the assessment framework should provide a sufficient basis for NCAs to explain their decision to take macroprudential policy measures. NCAs of the home Member State of the AIFM should inform ESMA, the ESRB and the NCAs of the AIF of the reasons for any macroprudential measure taken to limit the extent to which the use of leverage is contributing to the build-up of systemic risk in the financial system or to risks of disorderly markets ⁽¹⁾. Subsequently, ESMA should issue advice regarding the measure, and should also address whether the conditions for policy action appear to have been met ⁽²⁾. A detailed assessment framework that NCAs can follow will make it more likely that NCAs and ESMA will agree on the need to take a measure.

Table 4 provides an example of a set of common indicators that could form part of the recommended assessment framework. The indicators derive from analyses conducted by the ECB and De Nederlandsche Bank (DNB) ⁽³⁾, Oesterreichische Nationalbank (OeNB) ⁽⁴⁾, and the UK FCA ⁽⁵⁾. The indicators facilitate an assessment of the level, source and different usages of leverage, and aim to capture, as much as possible, the channels through which systemic risk may materialise. All indicators can be constructed using information reported to NCAs under Article 24 of Directive 2011/61/EU.

Table 4

Example of a set of indicators for a framework to assess financial stability risks from investment funds

		INDICATOR		DESCRIPTION	ID datafields AIFMD data-template
		#	NAME		
1. RISK OF MARKET IMPACT	Size	1.1	Net exposure	Net asset value (NAV) * leverage under the commitment method	53, 295
		1.2	Net asset value	NAV	53
2. RISK OF FIRE SALES	Leverage	2.1	Net leverage	Leverage under the commitment method	295
		2.2	Gross to net leverage	Gross leverage / commitment leverage, as a measure for the use of netting and hedging arrangements	294, 295
	Redemption profile	2.3	Redemption duration	Minimum time in days investors have to wait to withdraw investments	194, 195, 196

⁽¹⁾ See, for example, Article 25 of Directive 2011/61/EU.

⁽²⁾ See, for example, Article 25(6) of Directive 2011/61/EU.

⁽³⁾ Van der Veer, K., Levels, A., Lambert, C., Molestina Vivar, L., Weistroffer, C., Chaudron, R. and de Sousa van Stralen, R. (2017) 'Developing macroprudential policy for alternative investment funds. Towards a framework for macroprudential leverage limits in Europe: an application for the Netherlands', joint ECB-DNB Occasional Paper.

⁽⁴⁾ Lehecka, G. and Ubl, E., 'Analysing the systemic risks of alternative investment funds based on AIFMD reporting: a primer', OeNB Financial Stability Report 30, December 2015.

⁽⁵⁾ Financial Conduct Authority, 'Hedge Fund Survey', June 2015.

		INDICATOR		DESCRIPTION	ID datafields AIFMD data-template
		#	NAME		
	Liquidity mismatch	2.4	Redemption duration minus perceived portfolio liquidity in days	Minimum time in days investors have to wait to withdraw investments minus portfolio liquidity as reported by the asset manager	194, 195, 196, 178-184
		2.5	Ratio of net asset value to highly liquid assets	Highly liquid assets include cash and cash equivalents (deposits, commercial papers and others), listed equities, investment grade securities issued by financial institutions, EU and G10 non-EU government bonds, and investment fund shares	53, 123
		2.6	Share of illiquid assets (% NAV)	Illiquid assets include physical assets, unlisted equity, non-investment-grade corporate and convertible bonds, and loans.	53, 123
	Investor and counterparty concentration	2.7	Investor concentration	Share of net asset value owned by five largest investors	118
		2.8	Counterparty concentration	Total net credit exposure to top five counterparties (% NAV)	165
	3. RISK OF DIRECT SPILLOVERS TO FINANCIAL INSTITUTIONS	Linkages via investments	3.1	Investments in financial institutions	Long value of investments in listed equities and corporate bonds issued by financial institutions as a % NAV
3.2			Investments in structured & securitised products (% NAV)	Sum of long exposures in ABS, RMBS, CMBS, AMBS, ABCP, CDO, CLO, structured certificates, ETP and other, as % NAV	53, 123

		INDICATOR		DESCRIPTION	ID datafields AIFMD data-template
		#	NAME		
	Linkages via investor base	3.3	Banks in investor base (% NAV)	Direct connections with financial institutions as investors	209
		3.4	Insurers in investor base (% NAV)		
		3.5	Pension funds in investor base (% NAV)		
		3.6	Investment funds in investor base (%NAV)		
		3.7	Other financial institutions in investor base (%NAV)		
4. RISK OF INTERRUPTION IN DIRECT CREDIT INTERMEDIATION		4.1	Investments in corporate bonds (% NAV)	Sum of long values of corporate bonds, convertible bonds not issued by financial institutions (IG & non-IG) as a % of NAV	53, 123
		4.2	Investments in corporate loans (% NAV)	Leveraged & other loans as a % of NAV	53, 123

Sources: FCA (2015), Lehecka, G. and E. Ubl (2015), Van der Veer et al. (2017).

Recommendation E(2) – Macroprudential leverage limits

ESMA can help NCAs to operationalise leverage limits by providing guidance on design options, including an assessment of their effectiveness and efficiency. Directive 2011/61/EU allows leverage to be restricted if it is contributing to a ‘build-up of systemic risk’, but provides no further guidance regarding the design of limits. NCAs could benefit from ESMA guidance on the design of leverage limits, while ESMA could build on Recommendation ESRB/2013/1 of the European Systemic Risk Board ⁽¹⁾. The ESRB recommends that authorities design macroprudential instruments that are effective and efficient for meeting their policy objectives.

Leverage limits for AIFs may be deemed effective if they address the risk of (i) fire sales, (ii) spillovers to financial counterparties, and (iii) disruptions of credit intermediation. By addressing these market failures, leverage limits support financial stability. With regard to the ESRB’s intermediate objectives, leverage limits target the ‘risk of excessive leverage’ ⁽²⁾. System-wide leverage is excessive when it causes economies to become prone to costly financial crises.

For leverage limits to be efficient, the instrument should be simple and unintended consequences should be contained. Authorities should choose limits that are easy to calibrate and implement, which promotes transparency and avoids inaction. Moreover, unintended consequences should be contained and leverage limits should be robust to gaming and arbitrage by market participants. Leverage limits should also be proportional 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. For instance, investment funds should still be able to employ diverse and active strategies which could act as shock absorbers during market stress. When assessing whether leverage limits are needed, and the types of limit that would be proportional to the systemic risks, authorities should conduct a risk analysis based on data gathered pursuant to Directive 2011/61/EU and the risk indicators from a common risk assessment framework (the development of which was suggested by ESMA in Recommendation E1).

For ESMA’s information, Table 5 provides an example of a framework for evaluating various design options for leverage limits in terms of effectiveness and efficiency. As an example, the table evaluates three design options for constant leverage limits and considers cyclical limits. These examples do not represent an exhaustive set of options, and the evaluation below should be viewed as an example of how the framework could be used to evaluate different design options.

A ‘one-size-fits-all’ limit might be simple to implement but could have major unintended consequences. Such a limit might be effective in limiting leverage-related systemic risks if it is binding for a large share of the investment fund sector. However, this approach could have the unintended consequence of making some business models unviable, which could have a severe negative impact on the liquidity of different products in the global financial market. Moreover, a restrictive ‘one-size-fits-all’ limit might significantly reduce the sector’s ability to absorb market shocks to the extent that fund managers invest actively and go against the market trends. Finally, given that such leverage limits could significantly limit the activities of the investment fund sector, there is a risk that activities could shift to other, less regulated, parts of the financial sector.

Leverage limits based on investment fund type and/or profile may be a useful instrument for NCAs in the short to medium term. Differentiating leverage limits based on investment fund type and/or profile would enable authorities to effectively target those investment funds that contribute most to systemic risk, thereby addressing the structural vulnerabilities of the sector. Several options might be considered for differentiation according to the investment fund profile. For instance, authorities seeking to address the risk of fire sales might consider imposing limits on investment funds that offer short-term redemptions or invest in less liquid assets. As another example, authorities that are concerned about contagion might consider imposing leverage limits on investment funds that have large or concentrated exposures to other financial institutions. ESMA could help authorities by providing guidance on the profiling of investment funds for the purposes of assessing leverage-related risk and implementing macroprudential leverage limits.

⁽¹⁾ Recommendation ESRB/2013/1 of the European Systemic Risk Board of 4 April 2013 on intermediate objectives and instruments for macro-prudential policy (OJ C 170, 15.6.2013, p. 1).

⁽²⁾ See, for example, Recommendation ESRB/2013/1 for an overview of intermediate objectives and a mapping of existing and potential macroprudential instruments.

Authorities could also cater for differences in overall levels of leverage by differentiating limits for each investment fund type. A drawback of this option is that investment funds might try to game limits by looking to obtain a more favourable investment fund classification⁽¹⁾. Imposing criteria for the classification of AIFs into investment fund types might therefore be warranted.

Table 5

Possible framework for evaluating design options for leverage limits in terms of effectiveness and efficiency

	Leverage limit design options	Constant leverage limits			Cyclical limits
		1	2	3	
		One-limit-fits-all	Limits by fund type	Limits by fund profile	
Effectiveness	Fire sales	Effective in limiting all market failures if the limit is binding for a large share of leveraged funds	Effective in limiting all market failures if the limits are binding for a large share of leveraged funds	Effective when targeting leveraged funds with relatively illiquid portfolios and/or short redemption terms	Design options 1 to 3 could be applied in a time-varying way. The designs would have the same effect, but cyclical leverage limits would be better suited to limiting the build-up of risks in the upswing and materialisation of risks in the downswing of the financial cycle
	Counterparty & interconnectedness externality			Effective when targeting leveraged funds with strong direct linkages to financial institutions	
	Excessive credit intermediation			Effective when targeting leveraged funds which invest in corporate bonds and loans	
Efficiency	Proportional	A low limit could make fund types (i.e. hedge funds) unviable, while a high limit will fail to prevent a general build-up of leverage	Limits target fund types with relatively high leverage (e.g. hedge funds), but do not differentiate between risk profiles within a fund type	Limits target different general fund risk profiles across fund types	The proportionality would depend on the chosen design option

⁽¹⁾ Under Directive 2011/61/EU fund managers may choose the fund type.

Leverage limit design options	Constant leverage limits			Cyclical limits
	1	2	3	
	One-limit-fits-all	Limits by fund type	Limits by fund profile	
Robust to gaming & arbitrage	No scope for gaming & arbitrage	Some scope for gaming & arbitrage as mixed funds could try to obtain a more favourable fund classification	Gaming & arbitrage opportunities unlikely with small number of strictly defined profiles	The scope for gaming & arbitrage would depend on the chosen design option
Complexity of calibration	Simplest design option	Relatively simple with small number of strictly defined fund types	Relatively simple with small number of strictly defined fund profiles	Requires a leverage cycle indicator and measure of funds' contribution, which adds a layer of complexity to the calibration

Source: Table 4.1 in Van der Veer et al. (2017).

In the longer term, cyclical leverage could also be explored. Authorities may also want to consider applying a certain leverage limit design (e.g. a 'one-size-fits-all', fund type or fund profile limit) in a cyclical fashion. Compared with constant leverage limits, cyclical limits would be better suited to dampening the build-up and materialisation of risks in the upswing and downswing phases of the financial cycle respectively. For the short to medium term a cyclical approach would not be feasible, however, as this would require a measure for the financial cycle and an indicator for a fund's contribution, which would add an additional layer of complexity to this measure. Taking the same approach as that used for leverage limits under Basel III, the focus in the short term could be on constant limits. Cyclical limits could be explored once authorities have gained more experience using constant limits.

Leverage limits should be based on the leverage measures under Directive 2011/61/EU in order to enhance consistent application and transparency, and avoid regulatory arbitrage. The use of common leverage measures helps authorities to achieve consistent application of leverage limits in Europe. It also enhances the transparency of the policy measure and its ease of implementation. Moreover, the use of common measures helps to limit regulatory arbitrage by fund managers. Noting the complexities involved in measuring leverage, authorities should ideally build on existing concepts and measures used for reporting leverage under Directive 2011/61/EU.

A periodic review of leverage limits will lead to (i) improvements based on experience and (ii) alignment with international standards. It could be argued that the leverage measures under Directive 2011/61/EU are currently not perfectly defined, or that the measures will eventually be out of line with international standards (such as those developed by IOSCO). However, a major advantage of using the leverage measures under Directive 2011/61/EU is that potential future improvements in the measurement of leverage are automatically and consistently taken into account if a regular review process is in place. A regular review process would also provide consistency with international standards (FSB, IOSCO). A periodic revision of the leverage limit would be in line with Recommendation ESRB/2013/1.⁽¹⁾

Guidance on the criteria for applying leverage limits helps NCAs to operationalise leverage limits. Clear guidance enhances consistent application in Europe and mitigates inaction.

⁽¹⁾ See, for example, Recommendation D of ESRB/2013/1.

ESMA could help authorities to operationalise leverage limits by providing guidance on how authorities should balance rules-based measures and the discretionary implementation of measures. A balance should be struck between the ease of implementing rules-based measures and the flexibility for exercising discretion.

Recommendation E(3) – Notification procedure

ESMA should develop a clear notification procedure for decisions taken by NCAs under Article 25 of the AIFMD. Such a harmonised notification procedure allows NCAs to inform ESMA in an efficient way. In turn, it allows ESMA and the ESRB to analyse such notifications in an effective and efficient way.

Recommendation E(4) – Benchmarking

To further promote a sound, effective and consistent level of regulation and supervision, it is recommended that ESMA benchmarks the exercise by NCAs of their powers under Article 25(3) of Directive 2011/61/EU. Such benchmarking could, for instance, provide an indication of the circumstances in which the powers have been exercised and the requirements imposed to address different situations. This may help identify best practices. ESMA should also discuss the results of this benchmarking among its members and share knowledge on NCA actions with national macroprudential authorities and the ESRB.

Although the results of benchmarking exercises are non-binding, they can be applied by NCAs to inform their own practices. For instance, benchmarking exercises have been carried out with regard to the assessment by NCAs of internal approaches used for computing own funds requirements by banks ⁽¹⁾ and recovery plan scenarios in accordance with Directive 2014/59/EU of the European Parliament and of the Council ⁽²⁾, ⁽³⁾. These exercises illustrate the utility of benchmarking in comparing supervisory practices, which promotes their convergence, and improving decision-making among NCAs, while maintaining supervisory discretion. This benchmarking could also help inform Commission-delegated acts pursuant to Article 25(9) of Directive 2011/61/EU (principles specifying the circumstances under which NCAs apply the powers pursuant to Article 25(3), taking into account the different strategies of AIFs, the different market conditions under which AIFs operate, and the possible procyclical effects of applying the provisions).

II.5.2 Unintended effects

There is a trade-off between the level of harmonisation and the discretionary powers available to national competent authorities. Since this recommendation is intended to promote a harmonised approach to the operationalisation of Article 25, some limitations to the discretionary powers of NCAs are implied. Indeed, the power for ESMA to issue guidelines is aimed at promoting supervisory convergence. However, an extreme effect could be that ESMA guidance on the risk assessment framework and the design, calibration and implementation of macroprudential leverage limits could create unintended barriers to NCAs exercising their discretionary powers to implement macroprudential leverage limits for AIFs managed by fund managers in their jurisdiction.

⁽¹⁾ <http://www.eba.europa.eu/documents/10180/950548/EBA+report+on+CCR+benchmarking+2014>.

⁽²⁾ Directive 2014/59/EU of the European Parliament and of the Council of 15 May 2014 establishing a framework for the recovery and resolution of credit institutions and investment firms and amending Council Directive 82/891/EEC, and Directives 2001/24/EC, 2002/47/EC, 2004/25/EC, 2005/56/EC, 2007/36/EC, 2011/35/EU, 2012/30/EU and 2013/36/EU, and Regulations (EU) No 1093/2010 and (EU) No 648/2012, of the European Parliament and of the Council (OJ L 173, 12.6.2014, p. 190).

⁽³⁾ See report on <https://www.eba.europa.eu/-/eba-benchmarks-approaches-on-scenarios-in-recovery-plans>.

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Appendix

Table A1

Availability of the liquidity management instruments in Union Member States (Source: ESMA)

	AT	BE	BG	CY	CZ	DE	DK	EE	ES	FI	FR	GR	HR	HU	IE	IS	IT	LI	LT	LU	LV	MT	NL	NO	PT	RO	SE	SI	SK	UK	
Gates	NO	NO	NO	YES	NO	NO	NO	YES	YES	NO	YES	NO	NO	NO	YES	NO	YES	YES	NO	YES	NO	YES	YES	YES	YES	YES	YES	NO	NO	YES	YES
Side pockets	YES	NO	NO	YES	NO	NO	NO	YES	YES	NO	YES	NO	NO	NO	YES	NO	YES	YES	NO	YES	NO	YES	YES	YES	NO	NO	NO	YES	NO	NO	
Anti-dilution levy	NO	NO	NO	YES	NO	NO	NO	YES	NO	NO	YES	NO	NO	NO	YES	NO	YES	YES	NO	YES	NO	NO	YES	NO	YES	YES	NO	NO	NO	YES	
Redemption fees	YES	NO	NO	YES	NO	YES	NO	YES	NO	YES	YES	NO	NO	NO	YES	NO	YES	YES	NO	YES	NO	NO	YES	NO	NO	NO	NO	NO	NO	YES	
Redemption-in-kind	YES	NO	NO	YES	NO	YES	NO	YES	YES	YES	YES	NO	YES	NO	YES	NO	YES	YES	NO	YES	NO	YES	YES	NO	YES	NO	NO	YES	NO	YES	
Suspension of redemptions	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Swing pricing	YES	NO	NO	YES	NO	NO	NO	YES	NO	YES	YES	NO	NO	NO	YES	NO	NO	YES	NO	YES	NO	NO	YES	YES	NO	NO	NO	NO	NO	YES	
Short-term borrowings	YES	NO	YES	YES	YES	YES	NO	YES	YES	YES	YES	YES	NO	NO	YES	YES	YES	YES	NO	YES	NO	YES	YES	NO	YES	YES	NO	YES	YES	YES	
Mandatory liquidity buffers	YES	NO	NO	NO	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO	YES	NO
Side letters	YES	NO	NO	NO	NO	NO	NO	YES	YES	NO	NO	NO	NO	NO	YES	NO	NO	YES	NO	YES	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	YES
Other tools/measures	NO	NO	NO	NO	NO	YES	NO	NO	YES	NO	YES	NO	NO	NO	NO	NO	YES	NO	NO	YES	NO	NO	NO	NO	NO	NO	YES	NO	NO	NO	YES