EFAMA Response to the IOSCO Consultation on CIS Liquidity Risk Management Recommendations (CR04/2017)

TO THE ATTENTION OF DR. SHANE WORNER
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EFAMA is the representative association for the European investment management industry. EFAMA represents through its 28 member associations and 62 corporate members close to EUR 23 trillion in assets under management of which EUR 14.1 trillion managed by 58,400 investment funds at end 2016. Just over 30,600 of these funds were authorised as UCITS (Undertakings for Collective Investments in Transferable Securities) funds, with the remaining ones being authorised as AIFs (Alternative Investment Funds).

Preliminary comments

EFAMA welcomes the opportunity to respond to IOSCO's recent consultation report, proposing to review the existing 2013 Recommendations on liquidity risk management for collective investment schemes (CIS), accompanied by the related *Good Practices and Issues for Consideration* consultation report, on which general views are sought.

In the context of the FSB's broader *Policy Recommendations to Address Structural Vulnerabilities from Asset Management Activities*, as published in January 2017, we firstly wish to commend the fundamental role IOSCO has and must continue to play in operationalising the FSB's final recommendations for asset managers as non-bank actors. We consider that both consultation reports embody an accurate and mature reflection on the liquidity management challenges and good practices that respectively characterise and have been taken up within our industry. Overall, we consider that the outlined proposals are sensible enhancements to the existing IOSCO framework, placing greater emphasis where needed (e.g. around progressive steps towards improved profiling for investor types), all while recognising the value of existing regulation and the need to avoid unnecessary or disproportionate additional burdens to correct any alleged "failure"[1].

Liquidity risk management considerations must at all times attempt to strike a balance between honouring investor redemptions in a timely and fair manner with the objective of offering investors access to higher (illiquidity) *premia* from investing in less-liquid assets. In times where a vast consensus

[1] We are also grateful for the references to the joint EFAMA/AMIC report of April 2016 on *Managing fund liquidity risk in Europe* in the accompanying IOSCO *Good Practices* consultation report.

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within the investor community has formed around the distortive effects of expansive monetary policies of the world's most prominent central banks over a prolonged period, a "search for yield" would continue to characterise mid- to long-term asset allocations, in large part, to fund ever-growing savings and pensions liabilities. Any regulatory initiative, therefore, that intendedly or unintendedly prescribes outcomes to favour investments into more liquid *versus* less-liquid assets, risks further distorting capital markets at the investors' own peril. It is in this light that EFAMA would strongly caution against any liquidity "bucketing" regime established via regulation or legislative initiative. Instead, we insist that such categorisation continue to be carried out only internally within each asset management company on a fund-by-fund basis, while also drawing from qualitative elements like the judgement and experience of the management teams.

In the same vein, we welcome the importance placed on stress-tests in IOSCO's proposed narrative, with the emphasis that these must continue to be designed and implemented at the fund level only. We encourage IOSCO in this regard to continue resisting calls for "system-wide" stress-tests being advocated in wider parts of the regulatory community. As we shall argue further below, an overly prescriptive or centralised approach in the design and implementation of fund-level stress-tests will fail to incorporate key qualitative and judgmental information components, thus falsifying end results.

With regard to ETFs, we would favour the option of addressing possible liquidity concerns within the present consultation, based on the fact that ETFs in Europe are primarily UCITS-authorised funds to the extent that the European Securities and Markets Authority (ESMA) has even coined a specific "UCITS ETF" label through a set of targeted *Guidelines* first published in December 2012 and later revised[2]. There are, however, a few unique specificities of the ETF product - i.e. the distinction between a primary and secondary market and the role of Authorised Participants (APs) - which would deserve to be accounted for when considering the revised Recommendations. Moreover, alleged ETF liquidity risks should not be solely addressed by considering changes to buy-side specific IOSCO Principles or Recommendations. As ETFs are exchange-traded products, their tradability under both normal and abnormal market circumstances should also be viewed through the prism of existing exchange listing requirements. In this regard, it would be also important for IOSCO to acknowledge that recurring concerns around the "illusive liquidity" of the ETF product have often little to do with the intrinsic product design of an ETF *per se*, but rather with the functioning of the market infrastructure that supports ETF daily trading flows, as for those of other exchange-traded securities.

As to the detailed disclosures for investors and prospective investors concerning the recourse to liquidity management tools – as proposed in the *Guidance* related to Recommendation 7 – we consider these too detailed for the purpose of merely informing an investor audience. We maintain that only a succinct description of the available tools and of the general circumstances in which these may be activated should accompany the related liquidity risk warnings in the appropriate sections of the CIS offering documents. As we argue in our response to Question 8, further details – which may more appropriately be communicated to the competent market supervisor - could in reality mislead investors and prevent them from investing altogether.

[2] Please refer to the revised version of the *Guidelines*, published in August 2014; available at: https://www.esma.europa.eu/sites/default/files/library/2015/11/esma-2014-0011-01-00_en_0.pdf

Finally, we would also refer IOSCO to the existing guidance produced by some of the European national asset management associations, aimed at ensuring sound and consistent practices in terms of liquidity risk management for funds authorised in their respective jurisdictions.

Q1. The 2013 Liquidity Report related to open-ended CIS and, where determined by the responsible entity, to some closed-ended CIS. Should the proposed text laid out below apply also to the same range of CIS? Should certain CIS or types of CISs be excluded from any particular requirements, or be subject to a different requirement, because of their investment strategies, ownership concentrations, redemption policies, or some other factor that makes them more or less prone to liquidity risk?

In principle, EFAMA favours that the amended Recommendations continue apply to open-ended CIS only. As to closed-end funds, we note that the liquidity risks that the revised Recommendations seek to address would not essentially materialise, given the absence of a material asset-liability mismatch[3]. This fact has also been reflected in the narrative of the final FSB Recommendations published earlier in January this year[4].

A sensible approach in applying the revised Recommendations to open-end funds should in our view remain principles-based, while allowing the requirements to be tailored to some of the funds' key features, as for instance, dealing frequencies (from daily dealing, quarterly, semi-annually or with longer dealing cycles), underlying portfolio holdings that may be hard to value or model (e.g. instruments like bank loans, private companies, infrastructure projects, etc.), categories (i.e. retail versus professional) and numbers of investors. For the specific types of portfolio holdings outlined above, disclosures in the offering documents remain of paramount importance in communicating the underlying risks to investors, while also re-emphasising the long-term nature of their prospective investment.

As we shall argue in our responses to Questions 5 and 6, we believe that liquidity considerations around ETFs would deserve to remain within the scope of the present consultation.

Q2. Do respondents agree with the general considerations around liquidity risk management? Are there other issues that should be included?

EFAMA agrees with the general considerations made by IOSCO in the opening chapters of the consultation report, in particular with the three key challenges for responsible entities, as enumerated under Section 2.2 thereof. We do not believe there are other issues to be included, at least at the present stage.

[3] Exceptionally, we do acknowledge in this regard that in Europe, there are requirements for a liquidity risk management process to be in place for leveraged closed-end funds, authorised under EU Directive 2011/61/EU (the AIFM Directive). Moreover, in some jurisdictions, closed-ended funds are structured as such precisely to account for the fact that the underlying assets are illiquid, although liquidity may be provided to investors through secondary market trading, albeit with the relative shares trading at a premium or at a discount to the net asset value.

[4] Please refer to the narrative related to Recommendation 3 of the FSB final report on *Policy Recommendations to Address Structural Vulnerabilities from Asset Management Activities*, as published on 12 January 2017.

Q3. Does the Good Practices Document cover the key considerations regarding liquidity risk management tools, including their use in normal and stressed scenarios? Are there other issues that should be considered? Are there other key tools that should be included? Do you agree with the pros and cons in regards to the use of each tool? Are there other pros and cons that should be considered?

EFAMA fully supports the intent and the comprehensiveness of IOSCO's additional guidance document on *Good Practices and Issues for Consideration*. However, we wish to clarify our understanding that the document should be intended as a pure informative mean, devoid of any recommendation or prescriptive intent. Moreover, we note that it should not be exhaustive. It is in this light that we believe the document should be read and utilised by the intended audience separately from the revised Recommendations.

Q4. Do you agree with the general considerations regarding stress testing? Are there other issues that should be included?

EFAMA agrees with the general considerations made with regard to stress-testing and would furthermore underscore that in Europe stress-tests are expressly foreseen by existing asset management-specific legislation and regulation[5]. We do not believe there are other issues to be included, at least at the present stage. For further details, please also refer to our answers to Questions 11 *et seq.*, as well as to Annex I.

We take this opportunity to also opine on some of the emerging literature, or "pilot studies", from a few central banks, purporting a case for "system-wide" stress-tests. We recognise these attempts are largely led by academics in view of modelling the behaviour of economic agents outside the banking system on the basis of gross assumptions, which are often and for simplicity, drawn more from game theory than from evidence through observed investor behaviour. An example of a common misconception is the assumption that all investors inevitably react to falling asset prices in the same and unique manner, i.e. by redeeming *en masse*, thus allegedly forcing the portfolio manager to have to liquidate or "fire sell" the underlying portfolio, in turn setting-off a negative feed-back loop that will only prompt more selling by the fund and inevitably involve other managers with funds exposed to the same broadly defined asset class (e.g. typically corporate bonds, albeit with no recognition of important features like credit quality and maturity). Wrongly, investors are assumed to be all rational economic agents, with identical investment horizons and risk tolerances, and are hence expected to try to redeem before others (i.e. the so-called "first-mover advantage"). In parallel, in other parts of the financial system, broker-dealers would have scarce incentives to meet the buy-side's excess supply by purchasing assets of falling value in view of Basel III capital constraints. The withdrawal of these, as well as of other intermediaries, would allegedly create significant "dislocations" in (corporate bond) markets, therefore justifying the use of macro-prudential tools to avert systemic risks[6]. As a global

[5] In this regard, please refer to the joint AMIC/EFAMA report of April 2016 on *Managing fund liquidity risk in Europe*, outlining these legal requirements in greater depth under the existing AIFMD and UCITS frameworks. The report is available at: https://www.efama.org/Publications/EFAMA_AMIC_Report_Managing_Fund_Liquidity_Risk_Europe.pdf

[6] We are very concerned about a recent initial attempt in this regard in a recent Financial Stability Paper authored by Baranova Y. *et al*. at the Bank of England (No. 42) in July 2017, *Simulating stress across the financial system:*

industry, EFAMA and many of our Members have been demonstrating the fallacy of such theories over the past several years, based on evidence drawn internally and from industry-wide studies. We encourage IOSCO to continue leveraging off this information in its discussions with the FSB and resist further misguided initiatives by drawing on the lessons and the experience of its ordinary members in authorising and supervising asset management companies across several jurisdictions.

Q5. Should ETFs be subject to different liquidity requirements than other CIS?

a) If not, should ETFs be included within the scope of the 2017 Liquidity Recommendations?

(i) If yes, are changes needed to be brought to the 2017 Liquidity Recommendations to reflect ETFs specificities? Which ones?

(ii) If not, please explain why ETFs should not be included within the scope of the 2017 Liquidity Recommendations if they have partly similar liquidity issues as other CIS.

b) If ETFs should be subject to different liquidity requirements than other CIS, what should they be?

As anticipated in our preliminary comments above, the vast majority of ETFs in Europe are authorised as UCITS funds, adhering to a specific set of portfolio/index diversification and liquidity risk management requirements foreseen under EU Directive 2009/65/EC and further specified by implementing Directive 2010/43/EU, as well as by ESMA's 2012 *Guidelines on ETFs and other UCITS issues* (as amended in 2014). In terms of liquidity risk management, European ETFs – as UCITS funds – must comply with the following general requirements:

(i) Establish a permanent and independent risk management function;

(ii) Count on a specific liquidity risk management requirements, including the possibility to temporarily suspend the redemption of fund units;

(iii) Exercise specific controls to monitor the performance of illiquid assets;

(iv) Carry-out portfolio stress-testing; and

(v) Disclose related risks to investors in prospectuses, yearly and half-yearly reports, and in key investor information documents[7].

Besides the above prescriptions, the relevant entities can also manage their liquidity risks by activating between a broad range of liquidity management tools, most of which have been well illustrated in IOSCO's accompanying consultation report on *Good Practices and Issues for Consideration*. EFAMA

the resilience of corporate bond markets and the role of investment funds; available at: http://www.bankofengland.co.uk/financialstability/Documents/fpc/fspapers/fs_paper42.pdf. A constructive critique to the assumptions and findings of the Paper remains worthwhile, although outside the specific scope of our response to the present consultation. Analogous in tone – albeit accompanied by policy suggestions - is also the recent report by the European Systemic Risk Board (ESRB), *Macroprudential policy issues arising from low interest rates and structural changes in the EU financial system*, of November 2016; available at: https://www.esrb.europa.eu/pub/pdf/reports/161128_low_interest_rate_report.en.pdf. Generic concerns around bond funds are equally echoed in the ESRB's more recent *EU Shadow Banking Monitor* (No. 2) of May 2017; available at: https://www.esrb.europa.eu/pub/pdf/reports/20170529_shadow_banking_report.en.pdf

[7] For further details, please refer to the above-cited joint EFAMA/AMIC report of April 2016 on *Managing fund liquidity risk in Europe*.

believes these regulatory requirements and practices to be sufficiently robust. Our view is therefore that ETFs should not be subject to different liquidity requirements compared to the broader (non-ETF) open-end fund universe and should consequently fall within the scope of the present consultation.

Notwithstanding some of the specificities of the ETF product wrapper – i.e. the creation/redemption mechanism and the role for APs as *arbitrageurs* between the primary and secondary market - that would call for a proportionate approach of the 2017 Liquidity Recommendations where relevant, we care to note that exceptional market circumstances may ultimately cause an ETF to become as liquid as the underlying primary market. In these very extreme circumstances, an ETF provider would behave no differently than the management company of any open-end fund. We thus conclude that we see no pressing need to alter the revised 2017 Liquidity Recommendations to address ETF specificities. Only in terms of improving investor education/disclosures, would we see value in (i) briefly illustrating the workings of an ETF's underlying arbitrage mechanisms to a non-professional investor audience, as well as in (ii) indicating that under very extreme market circumstances, the arbitrage mechanism may become impaired, leading the ETF share price to drift even significantly from the value of the underlying NAV, albeit temporarily. Such outcome inevitably reflects a liquidity risk premium under deteriorating market conditions common to other instruments that are traded on a secondary market.

Q6. Are there key liquidity related issues specifically regarding ETFs?

Our view is that the inclusion of ETFs within the present consultation has merit in underscoring their open-ended nature and consequent commonalities with the broader regulation for traditional collective investment schemes in Europe and where ETFs are almost exclusively authorised as UCITS funds, adhering to the general prescriptions of Directive 2009/65/EC, as accompanied by ESMA's more recent 2012 *Guidelines on ETFs and other UCITS issues*[8]. With the UCITS regime, European ETFs therefore have much in common, from index diversification requirements to investor disclosure requirements. However, whereas liquidity risk must be prudently managed to protect value for investors, while treating these fairly - in line with UCITS regulatory requirements and through the activation of *ad hoc* liquidity management tools - an ETF's liquidity is also characterised by the product's active secondary market. In this respect, we note that by their very own design, most ETFs are structured to generally provide intra-day liquidity when several of the underlying domestic markets may be closed (e.g. an ETF tracking an international basket of stocks will trade on the secondary market, while several of the individual tracked index components will not). Where market closures last several days or more extended periods, the bid/ask spreads quoted by APs will tend to widen, reflecting the cost for the AP to hedge its underlying position. The closure or suspension of the primary market – as the few examples in Annex II attempt to demonstrate - may therefore not prevent ETF shares from being exchanged on the secondary market nevertheless, as long as their relative demand and supply subsist.

For ETFs, liquidity is chiefly guaranteed by secondary market conditions and only occasionally by the ability of the designated APs to exchange ETF shares *versus* a basket of securities on the primary market via ETF share creations/redemptions. Important to acknowledge is that, not only does the primary market trade far less (i.e. every time the gap between ETF price and that of underlying basket offers APs an arbitrage incentive), but the exchange between an AP and ETF provider occurs typically in-kind.

This implies that an ETF provider does not rely on the direct sale of portfolio securities to raise the liquidity needed to meet redemption demands, as per traditional (non-ETF) collective investment schemes. Consequently, risks tied to a "first-mover advantage" or to "fire-sales", including the array of liquidity management tools to address these, would not concern ETFs in the same way, if not at all[9]. In this light, some of the traditional liquidity management tools available to open-end CIS may not be relevant. Additionally, were secondary markets to completely seize-up, European regulations introduced by the aforementioned 2012 ESMA *Guidelines* offer the opportunity for redemptions to exceptionally occur in-kind and directly between the ETF provider and the end-investor.

In addition, were we to assume a significant order imbalance reaching the secondary market, with investors wanting to sell their ETF shares over a very short time frame, the resulting excess supply would at first be met by any existing demand (generated by other investors and institutional market-makers). Any remaining net supply of ETF shares would cause their value to visibly depreciate *vis-à-vis* that of the underlying basket (a value reflected throughout the trading day by the iNAV), presenting an arbitrage opportunity for the AP to purchase all the remaining and cheaper securities to extinguish the original secondary market supply imbalance. The purchased shares are collected to constitute a block (typically 50.000 shares) - known as a "creation unit" – in turn to be exchanged in-kind with the ETF provider for the underlying basket of securities[10].

ETF liquidity could therefore be summarised by recalling the following few features:

i. A clear distinction between a primary market (where ETF basket components are typically transferred in-kind, i.e. with no market impact) and a secondary market (where only ETF shares are transacted);

ii. A deep secondary market where most daily demand/supply imbalances are absorbed (including for less liquid fixed income ETFs) and where additional liquidity is supplied by multiple (non-AP) market-making institutions, alongside designated APs;

iii. An efficient arbitrage mechanism with a key role for multiple APs in maintaining share prices aligned with the value of the underlying NAV, while capitalizing on arbitrage opportunities[11]; and

iv. A decisive and robust assessment of the underlying market liquidity prior to any product launch, given that an ETF's degree of liquidity and pricing are ultimately determined by the

[9] Dealing suspensions – in common with traditional open-ended funds – can still be activated under extreme circumstances and primarily to preserve the quality of the index replication in the interest of investors.

[10] Any underlying basket holdings delivered to a redeeming AP in-kind may furthermore either be sold into the market, or in many cases, be held onto as part of the AP's inventory or to hedge other positions. Alternatively it may also be delivered to a client of the AP seeking to exchange a temporary position in ETF shares for a longer-term position an individual security. As any demand to sell ETF shares is first met by matching with buyers in secondary market exchange transactions, and only eventually through in-kind redemptions (which may or may not lead directly to sale of assets), ETFs are therefore not prone to "fire sales" as a result of assumed mass redemptions as per traditional open-ended schemes.

[11] In this regard, we note that ETF liquidity is furthermore reinforced by the presence of multiple APs for any given fund, thereby lessening the latter's dependence on any one particular institution to link primary with secondary markets. Were one to assume the consider at an extreme "tail risk" scenario characterised by the complete absence of APs' arbitrage functions, regulation in Europe ultimately offer investors the possibility to redeem in-kind directly with the ETF provider (e.g. see paragraph 23 of the aforementioned ESMA *Guidelines on ETFs and other UCITS issues*), with a number of jurisdictions presently considering how to operationalise such requirement.

underlying market conditions. Such considerations are also critical for the commercial success of the vehicle in the eyes of investors.

Despite some of these distinctive features and in line with our above argumentation, EFAMA would recommend that IOSCO treat ETFs as open-end CIS within the context of the revised Recommendations, recognising in parallel that some of these may not be relevant for these products in light of their unique exchange-traded nature and direct secondary market dealing.

Q7. Does this guidance on the design phase process capture the best of current good practices in the design of CIS?

EFAMA broadly concurs with the proposed revisions to Recommendations 3 and 4 (including the narrative of their respective *Guidance*), as these well reflect existing practices applied broadly throughout our industry. In particular, we welcome the emphasis on better understanding a fund's investor base as an area for further improvements, where funds are typically marketed and sold via third-party distributors. Practical challenges, nevertheless, remain in the form of client omnibus/nominee account structures that presently offer limited transparency on the ultimate beneficial fund share/unit-holders. In this regard, please also refer to our answer to Question 10 further below.

We also support the choice of "Additional Liquidity Management Tools" to be applied under extreme but plausible market conditions, in a manner which is consistent with the nature/liquidity of the assets invested, the pursued investment strategy, as well as with the particular profile of the fund investor base.

A first reservation would relate to references in the *Guidance* to Recommendation 3 with regard to "market pressure" being presented as the predominant driving force behind the decision to offer funds with frequent dealing options. In our view, such reference is merely a general comment and not appropriate to the end of providing industry guidance.

Relevant to Recommendation 4, we moreover wish to clarify that there are typically no mechanisms to adjust the initially established and communicated dealing frequency throughout the life-cycle of the fund. Were liquidity conditions to change significantly, these would not prompt a review of the official dealing frequency (as the wording of the recommendation seems to suggest), but rather call on the relevant functions to make adjustments to the portfolio, albeit always in line with the chosen investment strategy. Such would logically not hinder the activation of redemption gates or temporary suspensions under extreme market circumstances.

Coming to the general *Guidance* relative to Recommendation 4, we believe that a "documented" assessment of the liquidity risks facing the CIS should not be conducted automatically, but only where appropriate given the nature of a portfolio, its strategy and its implied degree of risk for investors, its liability/investor profile, etc. The same we observe with regard to a proposed mandatory internal design "approval" process at a senior management and/or Board level within the responsible entity, when the specific liquidity features are typically decided at a lower and more technical company level.

Another observation would concern the *Guidance* under the sub-heading "Liquidity Risk Management Practices - Liabilities" related to Recommendation 4. In consideration of the "likely risk appetite of target investors", we note that this should not be a liquidity risk management consideration, but rather

one more pertinent to an individual client's investment decision. Relative to the following similar sub-heading concerning "Assets", we would only add that the reference to "counterparty risk" is not a liquidity concern and should thus be removed from the text of the *Guidance*.

Finally, under the following sub-heading of the *Guidance* related to Recommendation 4 on "Additional Liquidity Management Tools", we recall that the ultimate choice of the liquidity management tool across a broad range of opportunities should be left to the asset management company only, in light of its intimate knowledge of the fund's design, its strategy implementation, its liability profile, as well as of the prevailing market conditions at any one moment. Also, with regard to "side letters" under the same sub-heading, we note that these are not tools ordinarily used for open-ended CIS. Instead, they are more common to the realm of private funds, as characterised by a smaller investor base and where side letters constitute a separate, *ad hoc* agreement between one investor with the asset management company on unique redemption terms foreclosed to others.

Q8. Does Recommendation 7 capture appropriate additional liquidity disclosures?

EFAMA broadly agrees with the contents and objective of Recommendation 7, albeit with an important reservation related to the suggested "commitments" in the offering documentation concerning very detailed information on types of securities and portfolio holdings, as per the related *Guidance* narrative. Our reservation extends to the proposed profiling of the projected or actual asset portfolio/asset classes a given fund is expected to invest, or invests, in. Our reasoning is that, in the absence of a sufficient degree of financial literacy to understand how changes in assets' liquidity may be brought about by changes in the underlying market's conditions, liquidity risks may be disproportionately magnified, leading non-professional investors to completely avoid exposures to less-liquid asset classes altogether. A detailed description of future but plausible stressed market scenarios and how additional liquidity management tools would operate could, in our view, also inspire non-professional and uninformed investors to maintain an overly cautious attitude to investing. Moreover, we would caution against any sort of disclosure that implies an artificial classification, or "bucketing", of the fund portfolio into uniform asset categories on the basis of their estimated liquidity (i.e. the number of days needed to convert them into cash). We derive this impression from the wording of the *Guidance* relative to "additional disclosure requirements to investors", in particular under the first bullet points, where IOSCO respectively calls for (…) *A clear 'liquidity risk' assessment in the initial offering documentation for the CIS setting out an assessment of the likely liquidity risk positioning of the CIS, including for example, the liquidity risks associated with the relevant market(s), sector(s), and/or* ***asset class(es) invested in by the CIS*** (emphasis added by EFAMA).

We believe such outcome would inevitably lead investors to draw very different conclusions based on their very subjective degree of financial literacy which tends to vary widely. As a result, larger market dislocations may result from a greater propensity for investors to herd when reacting to market events in the belief that certain asset classes are intrinsically illiquid, whereas in reality these may be so only temporarily. This would be at odds with investors' best interests to not react emotionally to market events which very often prove to be short-lived[12]. The perils of a top-down, rules-based approach also

[12] In this regard, please also refer to a recent letter from the Investment Company Institute (ICI), dated 20 July 2017, to the Chairman of the U.S. SEC regarding recommendations related to liquidity risk management and fund reporting requirements; available at: https://www.ici.org/pdf/liquidity_sec_clayton_ltr.pdf

implies that CIS will in response tend to gravitate toward securities designated by portfolio managers, or even third-party providers at worst, as "more liquid", thus generating an industry-wide "performance drag". In parallel, investors will shun those deemed "less liquid", thereby incentivising portfolios to be built on model-based classifications, in turn generating a risk for significant trade correlations across funds and more vulnerable to cliff effects.

With regard to the detailed holdings of individual securities - as per the second bullet point at the top of page 25 - we note that investors are generally able to already access these via the asset management company's website and/or via the services of a third-party (e.g. Morningstar).

In terms of disclosures, we consider it sufficient that liquidity risks tied to specific asset classes/holdings be identified and flagged in the fund's offering documentation. The latter should also include a succinct description of the available liquidity tools, outlining the general circumstances in which these may be used, rather than a more granular description of possible market events, why and how one tool would be preferred over another, or which internal groups or committees would be responsible for their activation. Important, we believe, is for fund portfolio and risk managers to not be bound by investor pre-contractual and offering disclosures when choosing the most appropriate tool to best manage a liquidity crisis, in the interest of those same investors. We would also possibly support enhancing present disclosures via a brief illustration in the offering documentation of the liquidity management process, although would refrain from recommending any more detail as to how individual tools achieve fair investor treatment beyond their mere description[13]. In this, we definitely support the intent and contents of IOSCO's *Good Practices and Issues for Consideration* document accompanying this consultation report. The detailed disclosures envisaged in the proposed *Guidance* to Recommendation 7 should more appropriately be shared with market supervisors. We would therefore invite IOSCO adjust its *Guidance* in line with our suggestions above.

Q9. Should additional wording be included in Recommendation 12 concerning how responsible entities should proceed when faced with the need to sell assets to the extent that might lead the CIS to vary from its investment strategy?

EFAMA agrees with the wording of Recommendation 12 and its respective *Guidance*, with no need for additional wording. Given the fiduciary nature of the asset management business, our very *raison d'etre* coincides with the primacy of investors' interests and their fair treatment, regardless of market conditions. For this precise reason, monitoring large redemptions lies firmly at the core of the relevant risk management requirements as mandated by existing EU legislative/regulatory prescriptions. Beyond these, any asset management company seeking to attract investor inflows into its fund product range to improve its business prospects over the long-term is *de facto* obliged to invest substantially to ensure that its risk management capabilities are at least on par with those of its closest industry peers. Therefore, also from a reputational perspective, each fund must have internal processes for identifying potential liquidity shortages early on.

A second observation is related to the prospect of "(…) ensuring that remaining investors are not left with a disproportionate share of potentially illiquid assets". Here we would note that there should be

[13] For instance, we believe that the last paragraph of the additional *Guidance* would go too far, where accordingly, "(…) the CIS should explain why it considers these additional liquidity management tools to be appropriate in the relevant circumstances, and how the mechanisms of such tools have been designed to be fair to all investors".

no concerns if the proportion of illiquid assets remaining investors may be left owning corresponds to the accepted terms of their investment in the fund, as well as to their desired risk-adjusted exposure. In our view, the integrity of the advertised investment strategy has the primacy over the need to necessarily sell assets in order to meet redemptions.

Q10. Does the proposed additional guidance under Recommendation 13 constitute the appropriate approach for a CIS to assess its redemption obligations and liabilities? If not, what else would you suggest?

EFAMA generally supports the additional *Guidance*, although recalls that the reception of detailed information on the entire investor base is not systematic and may be complicated by omnibus/nominee account structures. We therefore agree that responsible entities should make "reasonable efforts" to improve their understanding of the (retail) investor base, collecting information from intermediaries where possible/appropriate, without necessarily needing to construct an individual liquidity profile for each end-investor, as such outcome would be impossible at the present stage. In our view, the onus deserves to be placed onto distributors in ensuring that CIS are sold to a proper investor audience, capable of fully appreciating the risk implications of their investment. Therefore, the "investor base knowledge" referred to in the second-last paragraph of the additional *Guidance* text, as proposed, should be removed for the revised *Guidance*, as it is not up to the responsible asset management entity to conduct minute assessments of its (retail) investor base. In addition to our response to Question 7 above, there are presently relevant regulatory evolutions in Europe calling for the identification of end-client types even within *omnibus* account structures for anti-money laundering (AML) purposes. We believe these initiatives, with the aim of standardising information exchanges between producers and distributors of CIS products, will inevitably provide the former with a more holistic view over their entire investor base, both professional and non-professional, albeit in a more remote future.

Another worthy observation relates to the proposed interactions between the responsible entities and relevant intermediaries to secure the pre-notification regarding removals from "best-buy" lists. We note in this regard that intermediaries will generally not agree to secure a pre-notification process as a result of the fact that they also have a fiduciary obligation towards their clients, which in turn may redeem without prior notice.

Q11. Are there procedures or practices that responsible entities currently use to implement their stress tests which have been found to be particularly informative to responsible entities and which are not consistent with or included in the approach set out here? If so, please provide examples.

EFAMA wholly supports the new phrasing of Recommendation 14, including the accompanying *Guidance* which accurately captures most of the existing practices performed within asset management companies on a daily basis, and more specifically, within the relevant risk-management functions.

Firstly, such practices are firmly grounded in current EU regulatory requirements across both of the legal frameworks applicable to open-ended funds (i.e. the AIFMD and the UCITS ones), as further illustrated in the Annex I to this response.

Secondly, given the diversity of our industry, it is important that stress-tests continue to be implemented on a fund-by-fund basis and that risk managers be allowed to model the tests' parameters on the specific characteristics of the pursued investment strategy, the nature of the underlying securities, investor profiles and their respective concentration, as well as the terms of the investment management agreements. As per our response to the 2016 FSB consultative document on *Proposed Policy Recommendations to Address Structural Vulnerabilities from Asset Management Activities*, we therefore wish to re-instate that stress-testing results can only be informative when carried out in a de-centralised fashion and at an individual portfolio-level only. Consequently, continued calls for system-wide stress-tests in parts of the regulatory community remain deceitful, as no "top-down", centralised stress-test could ever adequately account for funds' diversity, while at the same time factor in huge quantities of available data, and most importantly, those fundamental qualitative judgment factors which can only be found with the individual asset manager[14], without necessarily yielding flawed results.

Thirdly, IOSCO and other global standard setters should consider that stress-testing and redemption risk modelling, notwithstanding their sophistication and assuming access to the most complete and precise data sets can be guaranteed, yield only partial results. For instance, our Members note that there are inherent limitations to the use of historical observations, as well as in the use of data to analyse price behaviour which tends to be limited during normal markets and large when recorded in volatile markets. Necessarily therefore, these inputs must be supplemented by qualitative information based on the experience and sound judgment of individuals who in their internal functions interact daily with an asset managers' client base, as well as with the market more broadly. These exchanges typically bring together the experience traders, risk officers, analysts, IT product experts, as well as the portfolio managers themselves, in a true collegial manner.

Box 1 below presents a stylised example of how one of our Members performs stress-tests at an individual portfolio level through the entire life-cycle of an open-ended fund. We have chosen a fixed-income alternative investment fund (AIF) for this purpose, also to demonstrate how existing EU regulatory requirements are being adhered to. In this regard, we also welcome valuable efforts made recently by national market supervisors in providing their domestic industry with a clear guidance around the design for a robust stress-testing framework.

Box 1 – A stylised example of a stress-test for fixed-income open-end funds

In a step-wise fashion, the stress-test would begin by assuming a "base case" and consequently calculate mark-to-market values for all portfolio holdings, subsequently tiering them into several "buckets" depending on the number of days to be liquidated with little or no market impact. Here, transaction cost models are used, with the caveat that these prove in general less-reliable for fixed-income securities, as these trade less compared to other asset classes (especially equities) and do not trade on exchanges.

A second phase would then consist of defining a plausible, but extreme, set of market shocks. For instance, these could consist in simulating market conditions in the first few months following the

[14] Worthy of attention in this regard is also the fact that even within asset management companies, there are no centralised or "house" views as to liquidity risk. On the contrary, these vary considerably across several investment management teams which manage portfolios independently of one another.

Lehman Collapse of September 2008, or otherwise an n-standard deviation shift in global equity markets through a representative global index, or analogously, also consider similar standard deviation moves of the Volatility Index (VIX). A robust stress-test would also consider adverse scenarios for transaction costs, where fixed costs are doubled and marker depth is reduced by some 50% to reflect reduced liquidity conditions. The mark-to-market value of derivative positions would also be shocked to estimate related margin requirements to be posted, and hence, removed from the asset tiers earmarked to meet redemptions. When defining the shocks, both historical and future theoretical daily redemption scenarios are considered, *inter alia*,

(i) An average of daily net flows over a given historical period,
(ii) A worst-case daily redemption with a 99% confidence level over the entire life-cycle of the fund,
(iii) A 10% of NAV (or more) daily redemption with or without the application of redemption gates, and
(iv) Redemptions by the top-5 investors with their full holdings within a single day(s), weeks, or months, also depending on the relative notice periods.

A third consequent step would be the calculation of redemption coverage ratios, based on dividing the mark-to-market value of the portfolio holdings and redemptions for each of the "days to liquidate" tiers by the specified redemption scenarios illustrated above. Any value below 1 of the derived ratio would signify that there would be insufficient assets to meet expected redemptions in the time frame considered to liquidate assets by each tier. It is under these conditions that the portfolio manager of the fund would consider activating liquidity management tools, in line with disclosures and existing regulations. To make redemption scenarios more "draconian", the stress-test also does not assume there to be inflows occurring with the outflows in parallel, nor that the fund have access to additional "stand-by" borrowing facilities.

Q12. Are there procedures or practices that responsible entities have not found to be particularly useful which the proposed approach to liquidity stress testing would encourage and why?

We consider that the *Guidance* accompanying Recommendation 14 sufficiently reflects all good practices in Europe, with the following two clarifications.

Firstly, unlike the proposed *Guidance* seems to suggest, we wish to clarify that the purpose of fund-level stress-tests is not for investment managers to consequently determine the composition of the CIS asset portfolio. More precisely, stress-testing is above all a risk management tool and should by no means guide a fund's portfolio construction, nor asset allocation in either the product design phase or on an ongoing basis. In other terms, stress-testing serves to better manage a fund's liability side commensurately with the advertised investment strategy. We refer in particular to the following passage of the proposed new *Guidance*:

***Stress testing results have the potential to contribute**, as appropriate, into all stages of the CIS's product life cycle, **including in the product design stage when determining the dealing and distribution arrangements and asset composition, and in performing investment** and liquidity risk **management** (e.g. in calibrating holdings of liquid assets and other investments, and the use of different liquidity risk management tools and contingency planning) on an ongoing basis* (emphasis added by EFAMA).

Secondly, we note that references in the text of the proposed new *Guidance* to downgrades of securities' individual credit ratings should be removed, in line with IOSCO's and other regulators' recent drive to remove our industry's over-reliance on CRAs.

Q13. Is the proposed approach to the design and operation of stress testing processes realistic and does it deal with the key issues?

Please refer to our response to Question 12 above.

Q14. Does the proposed additional guidance under Recommendations 3, 7 and 12 add effectively to the available guidance?

Yes, albeit considering the caveats with regard to Recommendation 7 described in our response to Q.8 above.

Q15. Does Recommendation 14 capture the best of current good practices in stress testing?

Yes, we believe so.

Q16. Does the recommendation add up to an effective testing procedure which will lead to the smooth triggering of applicable liquidity management tools when appropriate?

In terms of contingency planning, EFAMA agrees with the wording and substance of the new proposed Recommendation 16. In this respect, it is important to note that temporary disruptions in the dealing of investor redemption rights, although rare, do occur and often for reasons that are entirely independent from the particular asset manager (e.g. market failures, geopolitical events, or other forms of "tail" risk, etc.). In such instances, key is for any contingency plan to not be imposed "top-down" by the competent securities regulator, nor emanate from too prescriptive regulatory requirements, as solutions should rather aspire to maintain a structural flexibility within funds and in line with the management of *inter alia* liquidity risk on a real-time basis. This may firstly be achieved by considering an ample liquidity management tool-kit, starting with swing-pricing, or other pricing mechanisms, under normal market conditions. For more challenging market circumstances, in-kind redemptions for institutional investors, deferred redemptions and/or out-of-the-money suspension "gates" could be triggered, as well as recourse to forms of temporary borrowing (e.g. temporary credit facilities and opportunities to rely on repurchase agreements) where available.

Recognising the above pretext, we agree with the good practices reflected in the text of the related *Guidance* to Recommendation 16.

Q17. Other than those examples listed above, are there any additional scope and/or aspect that you consider necessary and appropriate to be included as part of the contingency plan for an effective implementation of liquidity management tools by CIS/responsible entities?

EFAMA fully agrees with the objective of establishing and periodically testing contingency plans with regard to the activation of liquidity management tools, as per Recommendation 16. Here again, it is however important to strike a right balance between an internal *ex-ante* procedure and the use of judgment to be exercised contingently by the relevant internal risk functions.

Q18. How do existing CIS envision transitioning to Recommendation 17?

As per our response to Question 16 above, EFAMA wholly supports that the breadth of the available liquidity risk tool-kit be as broad as possible, while also conform to national/regional laws and regulations. Naturally, on the basis of the specificities of the open-end investment vehicle, including strategy, characteristics of the underlying portfolio, investor type and concentration, as well as redemption terms, certain tools will or should be used over others. Important in this regard is that due mention of these tools and a summary description of the conditions that would trigger their activation should be disclosed to investors in the offering documents. We consider these disclosures valuable also in light of explaining to end-investors how the activation of any one tool descends from the responsible entity's own fiduciary duties to preserve value for its clients. Finally, we consider it important that competent securities regulators also be informed of developments following their activation.

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Brussels, 18 September 2017

[17-4037]

Annex I – Stress-testing requirements under the EU AIFMD/UCITS regimes – the key provisions

Both EU AIFMD and UCITS frameworks present several provisions on liquidity risk management, with stress-testing as a core requirement per se.

The Alternative Investment Managers' Directive (AIFMD) – 2011/61/EU

Paragraph 2 of Article 48 of the delegated Regulation (No. 231/2013), implementing the Directive, mandates the conduct of stress-tests, both under normal and exceptional market conditions, for each management alternative investment fund (AIF). Their design is specified as follows, with stress-tests to:

(a) be conducted on the basis of reliable and up-to-date information in quantitative terms or, where this is not appropriate, in qualitative terms;
(b) where appropriate, simulate a shortage of liquidity of the assets in the AIF and atypical redemption requests;
(c) cover market risks and any resulting impact, including on margin calls, collateral requirements or credit lines;
(d) account for valuation sensitivities under stressed conditions;
(e) be conducted at a frequency which is appropriate to the nature of the AIF, taking in to account the investment strategy, liquidity profile, type of investor and redemption policy of the AIF, and at least once a year.

Article 24(2) of the Directive mandates also that details concerning the liquidity profile of each AIF, including the results of the stress-tests performed, be shared with the competent national securities regulator.

Finally, Article 49 of the delegated Regulation foresees the conditions for a fundamental alignment between the investment strategy, liquidity profile and redemption policy of each AIF managed. Such condition is satisfied when investors have the ability to redeem their investments in a manner consistent with the fair treatment of all AIF investors and in accordance with the AIF's redemption policy and its obligations.

The Undertakings for Collective Investments in Transferable Securities (UCITS) Directive – (2009/65/EC)

Although not expressly in the text of the Directive, stress-tests have become a core requirement even for UCITS funds, following the implementing Directive 2010/43/EU and the Committee of European Securities Regulators' (CESR) 2010 Guidelines on Risk Measurement and the Calculation of Global Exposure and Counterparty Risk for UCITS[15].

Implementing Directive, Article 40(2) letters b) and c) prescribe that for each UCITS they manage, companies must conduct periodic back-tests in order to review the validity of risk measurement arrangements (including model-based forecasts and estimates), as well as periodic stress-tests and scenario analyses to address risks arising from potential changes in market conditions that might adversely impact the value of the UCITS portfolio.

[15] Please refer to the CESR Guidelines on Risk Measurement and the Calculation of Global Exposure and Counterparty Risk for UCITS (CESR/10-788) of 28 July 2010, particularly to Box 19 - 21.

In addition, Article 40(3), Member States shall ensure that management companies employ an appropriate liquidity risk management process. In particular, Article 40(3) requires that where appropriate, management companies shall conduct stress tests which enable assessment of the liquidity risk of the UCITS under exceptional circumstances.

With regard to the Guidelines, these specify that where the Value at Risk (VaR) approach is used to calculate global exposure, each UCITS should adopt a rigorous and comprehensive stress-testing programme in accordance with qualitative and quantitative requirements. Such programme should be designed to measure any potential major depreciation of the UCITS value as a result of unexpected changes in the relevant market parameters and correlation factors. Conversely, where appropriate, it should also measure changes to these parameters and factors, which could result in major depreciation of the UCITS value. Such tests should be adequately integrated into the UCITS risk management process and results considered when making investment decisions on behalf of investors in the UCITS, i.e. results should be monitored and analysed by the responsible risk management function and submitted for review to the senior management. Where particular vulnerabilities are revealed, prompt steps/corrective actions should be taken (e.g. hedging or a reduction in the relevant exposure).

The accompanying quantitative requirements of the Guidelines (Box 20 thereof) specify that tests should cover all risks which affect the value or the fluctuations in value of the UCITS portfolio to a significant degree. In particular, those risks which are not fully captured by the VaR model used. In terms of focus, the stress-tests should address those risks which, though not significant in normal circumstances, are likely to be significant in stress scenarios (e.g. unusual correlations, spikes in market illiquidity, behaviour of complex structured products, etc.). Finally, the accompanying qualitative requirements (Box 21 thereof) prescribe that stress-tests be carried out on a regular basis at least once a month, or earlier whenever a change in the value or the composition of a UCITS or a change in market conditions makes it likely that the test results will differ significantly from the ones performed previously. Ultimately, the management company should implement clear procedures relating to the design and ongoing adaptation of the stress-tests.

Annex II – Recent examples of ETF trading suspensions and their causes

We take the opportunity of this consultation to draw from a number of recent market events to illustrate how temporary suspensions to an ETF's liquidity where in reality prompted by factors beyond the control of the individual ETF providers. These exogenous factors, as the following examples portray, coincided with the impaired price formation affecting several underlying index components, in turn the result of volatile trading sessions, trading suspension and market closures. Such evidence presents a strong case against the further regulation of the ETF industry, especially if considered from the end of asset-management-specific regulation to tackle alleged "structural vulnerabilities".

By design, ETFs rely on designated APs to arbitrage between a primary and secondary market, thereby allowing the price of the ETF to remain in line with the value of the underlying basket portfolio as represented intra-day by the iNAV and in turn mirroring the composition of the chosen index. Changes in the value of the ETF price relative to the iNAV may prompt an AP to either sell (create) or purchase (redeem) the ETF's shares on the secondary market, only to later exchange them in-kind with the ETF provider. Such mechanism ensures that an AP (i) realises a profit by being "long" the value of the declining asset (ETF share or basket portfolio) and "short" the value of the appreciating one; and (ii) nets out its own balance sheet exposure at the end of the trading day. Consequently, bouts of market volatility large enough to impair the pricing of a large part of the single ETF basket components would not only affect the quality of the index replication, but also the ability of the AP to hedge its own risk. Where this occurs, the price of the ETF share can depart significantly from the underlying iNAV to a point where an AP, having determined that the cost of hedging has become prohibitive, ceases all new creations and redemptions until market conditions normalise. The following examples demonstrate how and why these extreme events may occasionally materialise, although their occurrence is at the same time a valid demonstration of the fact that – unlike often assumed – ETFs may at times enhance the overall liquidity of a market by becoming the pricing point of reference.

I. The volatile opening of the NYSE trading session in August 2015

During a volatile trading session on 24 August 2015, some 327 ETFs listed on the NYSE were halted a total of 1116 times, as the stock market experienced its biggest drop since 2008. Amidst extreme market uncertainty and although many stocks suffered trading halts as well, much of the attention was on ETFs, due to their significant price divergence from the value of their underlying baskets.

The opening trading session on the morning of 24 August was heavily influenced by concerns tied to the Chinese economy which had already led to steep declines in both Chinese and European indices. Anticipating a volatile trading session, the NYSE opted for a manual opening of the session, i.e. relying on human specialists to match the order flow instead of electronic algorithms, with the consequence that pricing information on listed stocks trickled through only very slowly[16]. This in turn had a knock-on effect on the valuation of several ETFs, while the secondary market had already begun actively trading. Without the means to accurately price and trade securities, the arbitrage mechanism temporarily broke-down for several ETFs, leading to large price disconnects between the value of their shares and those of their underlying baskets. Steep declines in these ETFs' share prices, as these dropped an average of 30% from the previous day's close, eventually triggered trading halts[17].

[16] By 9:35 a.m., only 65% of the S&P 500 components where open for trading.

[17] On average, bid-ask spreads in the affected ETFs on the morning of 24 August were nearly 40-times as wide as those of the previous morning, with market depth very thin. By comparison, the rest of the ETF universe (approximately 80%) saw spreads about 4-times as wide when compared to the previous morning. For further

Although such declines were short-lived and ETF prices began rising back in line with the underlying stocks once conditions began to normalise, this correction was additionally also hindered by more trading halts as prices found their way up.

Put into perspective, these events – although useful to illustrate possible impediments to ETF-specific mechanics – were nevertheless of a very mild and non-systemic nature. In fact, the 327 ETFs affected by the halts represented only approximately 20% of the ETF market (or USD 433 billion out of over USD 2 trillion in terms of AUM), with the remaining 80% continuing to trade as normal. Moreover, the episode was short-lived in that by 10:30 a.m. most of the affected ETFs were trading back in line with their underlying basket values.

Another valuable consideration is around the unintended consequences of market infrastructure rules that functioned well as they had been intended to. The trading halts on the single stock index components had been effectively implemented and certainly avoided larger price swings away from their fundamentals. Inevitably though, through a confluence of factors, these halts further complicated the valuation of the ETF's underlying basket which had already been impacted by the manual opening of the trading session just earlier. Designated APs for the affected ETFs could thus no longer pair-off their risk (resulting from their "long" position in the rapidly declining secondary market for ETF shares, exacerbated also by a growing momentum of sell-orders) by intervening in the primary market (to "short" the securities constituting the ETFs' baskets).

A final consideration concerns the fact that those affected ETFs momentarily observed their value trade like any other individual listed security, in the absence of their supporting valuation of the basket of underlying stocks.

II. The closure of the Athens Stock Exchange in June 2015

At the height of the Greek debt crisis in the summer of 2015, the Athens Stock Exchange announced its closure on Friday, 26 June. The following Monday, a European ETF provider offering an ETF tracking the performance on the 20 largest companies by market capitalisation listed on the Athens Stock Exchange notified to its investors that subscriptions and redemptions of the related units would be suspended, when no longer able to accurately calculate the fund's underlying NAV. Trading of the ETF was suspended shortly thereafter also on the exchanges of Frankfurt, Milan and Paris.

Soon, the fact that individual Greek stocks were no longer trading, affected other providers whose products were also dependent, although to a lesser extent, on the same underlying valuations. Recourse to alternative valuation techniques (e.g. reference to the last available price, use of fair value accounting, etc.), supported by the continued trading of another ETF on the U.S. NYSE Arca venue, allowed investors to continue trading their Greek exposure until 3 August when the Athens Stock Exchange re-opened[18].

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insights, please refer to "Perfect Storm Leads to ETF Trading Halts", *Credit Suisse* Trading Strategy note by Victor Lin *et al.* of 30 September 2015.

[18] The U.S. ETF provider was able to derive the underlying values for its ETF by investing in American Depository Receipts (ADRs), Global Depository Receipts (GDRs), and in companies "economically tied to Greece", as per its investment policy outlined in the relevant prospectus. In this regard, we care to note that the ETF, by acting as the closest proxy to the actual value of the chosen index in this particular instance, acted as a price discovery vehicle for the wider market until trading on the Athens Exchange resumed. Analogously, a similar situation occurred during the Arab Spring of 2011 when the National Exchange of Egypt closed for two months. Investors continued to trade their exposure to Egypt through the shares of another ETF, bidding up the price on hopes of

The value of Greek ETF example is to be appreciated as a "live" case to demonstrate that even in circumstances of very poor or absent liquidity, ETFs are able to continue trading by estimating the intrinsic value of their underlying basket components. Naturally, the price for the enhanced or "resilient" liquidity they provide – demonstrated typically by significant upticks in secondary market trading volumes *vis-à-vis* the primary market – comes in the form of larger bid/ask spreads quoted by APs/market-makers and greater tracking error, at least until full price transparency is restored under normalised market conditions.

III. The Chinese A-Share trading suspensions in July 2015

The first week of July 2015 witnessed a tide of Chinese corporations announcing trading suspensions on the country's two largest exchanges of Shanghai and Shenzhen, following dramatic drops in the value of their respective Composite indices, and ultimately involving well over half of all listed securities[19]. Inevitably, such suspensions led ETFs tracking the performance of these main indices, or holding relevant company names in their portfolios, to hold "frozen" shares. Nevertheless, shares of these ETFs continued to trade in the secondary market, with their volumes soaring in response to the underlying market volatility, as the sole mean for investors to estimate the true level of the market and trade their exposure to Chinese equities accordingly[20].

Analogously to the Greek episode described above, the fact that Chinese equity ETFs continued to trade despite a substantial portion of their underlying portfolios was unable to transact, reflects the specific role of these instruments as price discovery vehicles. It is thus no surprise that increasingly industry practitioners are becoming accustomed to using them as, or *in lieu* of, futures[21].

a more open economy following the domestic revolution (only to see the price plunge when the exchange re-opened).

[19] To note is that, following the initial plunge of the two main indices, the domestic regulator (CSRC) intervened artificially support the market by banning large listed company shareholders from selling their stakes over an initial six-month period. This occurred in concomitance with significant purchases of the depreciating stocks by the national central bank and state-sponsored brokerages in an effort to avert further selling and irreparable damage to the economy's reputation.

[20] Please also refer to the *Financial Times* article "China's market-tracking ETFs roiled by share suspensions", published on 12 July, 2015.

[21] Please refer to the article "ETFs set to capture historic cost savings over futures, according to Source", published on ETF Strategy on 8 December 2015; available at: https://www.etfstrategy.co.uk/etfs-set-to-capture-historic-cost-savings-over-futures-according-to-source-47596/