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To be submitted via email to:

fundspolicy@centralbank.ie

Response to the Central Bank of Ireland's Discussion Paper on Exchange Traded Funds ("ETFs") (the Discussion Paper")

I. Introduction

We very much appreciate the opportunity to provide the Central Bank of Ireland ("CBI") with our views on the Discussion Paper. We believe it to be positive for the ETF industry in Ireland to have a regulator which is well informed and actively engaged in international and European regulatory discussions on ETFs.

Vanguard is a strong advocate of ETFs which provide investors with broadly diversified, liquid and low cost investment exposure. We see ETFs as a sound building block for a well-diversified portfolio and we are proud to be part of the remarkable value based investment solution which ETFs offer to millions of investors across the globe. The benefits of ETFs to investors are numerous and clear, and in particular include low-cost and broad diversification. In short, ETFs are a key element in meeting Vanguard's mission of providing investors with the best chance of investment success.

Over the past decade, ETFs have become ever more popular among investors for their use in building investment portfolios. Although sometimes portrayed as unique instruments, ETFs are comparable to traditional mutual funds, from both a regulatory and a structural standpoint.

Indeed, investors can use ETFs in a manner similar to their use of mutual funds, namely to create low-cost, broadly diversified investment portfolios, especially when implementing index-based strategies.

In our view, ETFs provide important benefits stemming from the method by which investors transact in fund shares. The secondary market trading of ETFs serves as an additional source of intraday liquidity for market participants while intraday market prices reflect valuable information about market conditions.

Although ETFs have become a sought-after option for investors in many countries, with European domiciled ETF assets totaling US\$649 billion as at 30 June 2017¹, we do not believe there to be any evidence to date that the increased volumes have led to any strain in the ETF architecture. ETFs remain a small percentage of the overall funds market and stock market activity.

¹ ETFGI.

II. Background on Vanguard

The Vanguard Group, Inc. (“VGI”) began operations in the U.S. in 1975 and is headquartered in Valley Forge, Pennsylvania, U.S. Today VGI (together with its affiliates, as appropriate, “Vanguard”) operates in the U.S., Europe, Asia, Australia and Canada. In Europe, Vanguard Group (Ireland) Limited (“VGIL”) (a wholly owned subsidiary of VGI) is the management company for Vanguard’s Irish domiciled fund range, including Vanguard’s range of UCITS ETFs. As at 30 June 2017, Vanguard managed approximately US\$4.4 trillion in assets worldwide, of which US\$29.9 billion was in Irish domiciled ETFs.

VGI is owned by Vanguard’s U.S. domiciled mutual funds, which in turn are owned by fund investors, and provides management services to the U.S. funds at VGI’s cost of operations. This keeps expenses low, which maximizes investor returns. VGIL operates with the same intention and focus, which is reflected in its philosophy, policies and practices.

Vanguard’s mission is to take a stand for all investors, to treat them fairly and to give them the best chance of investment success. It is our belief that the key benefits associated with our low cost, broadly diversified and robustly regulated ETFs lend themselves to our mission and afford our investors the best chance of investment success.

Vanguard’s ETF line up is comprised of well-diversified, equity and fixed income products, which investors use as core building blocks when structuring portfolios. While most of the ETFs we offer track indices, we also offer actively managed factor-based products. In all instances, our ETFs are physical in nature and we do not offer synthetically managed ETFs. Our responses in section II, regarding synthetic ETFs are therefore primarily observational.

III. Executive Summary

We are a strong advocate of ETFs and believe that they bring many benefits to the market such as, reduced cost of investing, broad diversification, enhanced liquidity and market transparency. By increasing market access and bringing additional choice to investors, ETFs (and mutual funds more generally) are providing valuable options for investors.

At their core, ETFs are comprehensively regulated funds and are authorised and supervised as such. We believe it is important to allow them to continue to be categorised and regulated under the existing well-established regimes, such as the Investment Company Act of 1940 in the U.S. and the UCITS Directive¹ in the European Union. An alternative approach, such as a standalone ETF regulatory regime, could risk damaging existing regulatory brands and impose unnecessary complications for investors. Such complications include increased compliance costs and a narrowing of the range of eligible investments. It is also important that any regulatory initiatives which impose greater obligations on product providers and the wider ETF ecosystem are approached in a uniform way globally so as to avoid regulatory arbitrage risks. We would also note that other initiatives outside of the core product regulation will bring enhancements to the already well developed regulatory

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), including the associated implementing measures contained in Directive 2010/43 and Directive 2010/44/EU, as amended by Directive 2014/97/EU of the European Parliament and of the Council (the “UCITS Directive”).

environment. In that regard we specifically welcome the increased transparency that MiFID II² will bring to the European ETF market through its trade reporting requirements.

In our responses to your questions, we make a number of points:

- We agree with the CBI's commentary that liquidity is a complex concept and ETF liquidity is a risk to be considered and managed. However, in comparison to traditional mutual funds, ETFs have multiple layers of liquidity, involving both primary and secondary markets. Indeed, due to the nature of the primary market, an ETF's liquidity can be no worse than that of the liquidity of the ETF's underlying holdings. From a regulatory perspective, we consider that there is a sufficient existing framework in place around liquidity. We disagree that index-tracking ETFs lead to increased non-fundamental volatility of, and decreased informational efficiency of underlying securities.
- We support permitting products to offer both listed and unlisted share classes. We have experience of this structure in our U.S. and Australian domiciled ranges and it has been successful and beneficial for investors.
- We support appropriate measures to deliver greater transparency for investors; in this regard, we are in favour of the regulatory disclosure of the identity of authorised participants ("APs") and official liquidity providers ("OLPs") when requested by regulators or as part of regular regulatory reporting. It is less obvious whether there is any particular investor benefit for public disclosure of the identities of these elements of the market infrastructure. We note that the disclosure of baskets is critical to the ETF arbitrage mechanism. Regarding the disclosure of portfolio holdings, we are of the view that a robust and efficient arbitrage mechanism, which ultimately delivers the best outcome for investors, does not require an ETF to disclose complete portfolio holdings on a daily basis. In our view, a requirement for daily disclosure could cause harm to both the ETF and its shareholders and is a disproportionate step which does not necessarily lead to tighter market spreads.
- We believe that an ETF should have the flexibility to suspend creations in the limited circumstances where doing so is in the best interests of shareholders. For example, an ETF should have flexibility to suspend creations when necessary to continue to achieve its investment objective (e.g. tracking an index).
- Regarding synthetic ETFs and concerns around conflicts of interest and counterparty risk issues that can arise in those structures, we consider that there is a sufficient regulatory framework already in place.
- Regarding the appropriateness of active strategies for inclusion in ETFs, we consider that this should primarily remain a matter for asset managers to determine, based on transparency, liquidity and capacity management considerations in respect of the mandate in question.

² 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 and Markets in Financial Instruments Regulation (EU) No. 600/2014 together with a number of implementing and delegated acts ("MiFID II") repeals and replaces the existing MiFID Directive (Directive 2004/39/EC).

IV. Responses

Section I Questions

- A. Is public disclosure of the identity of APs and OLPs of an ETF of benefit and should regulators have a clearer view of the interconnectedness of the AP / OLP ecosystem? Should remuneration models of OLPs (and if relevant APs) be disclosed?**

Vanguard fully supports the regulatory disclosure of the identity of APs and OLPs, when requested or as part of regular reporting. We believe that the provision of this information will better inform regulators' decision making and understanding of the functioning of the ETF ecosystem more generally. We would, however, highlight that the interpretation of such information be in the wider context of the ETF ecosystem. For example, although product providers strive to promote competition amongst ETF liquidity providers by onboarding as many APs as possible, it is important to note that an ETF can successfully operate and have a healthy secondary trading with as little as one AP. Accordingly, any inferences drawn from the number of APs appointed in relation to an ETF should be informed also by data on the level and depth of secondary market trading in the shares of that ETF.

We understand that this regulatory disclosure is a growing trend amongst regulators globally. By way of example, we understand that the U.S. Securities and Exchange Commission will begin to require ETFs to report certain information relating to APs and creation units via its new regulatory Form N-CEN.

We are less convinced that there is any particular investor benefit in a public disclosure of the identities of APs and OLPs. Although the disclosure of these entities may add to overall transparency, in our view the more relevant information from an investor perspective is the identity of the entities which transact in the secondary market. Stock exchanges or trading platforms would be best positioned to identify these institutions and, by doing so, there will be additional transparency which aligns with that of other exchange traded investments.

Concerning remuneration models of OLPs and APs, we do not believe that there is any particular investor benefit to be achieved in the public disclosure of those otherwise private remuneration arrangements. An ETF provider may decide to support its products by appointing and remunerating an OLP to facilitate trading in the secondary markets and in our view, such a contractual arrangement should not be made public because these are private commercial arrangements and typically such costs are borne from the provider's balance sheet rather than out of the ETF itself. Whether compensated or not, the creation and redemption activity of APs or an OLP via an AP is driven on a purely economic basis and the primary driver of revenue for these market participants is achieved through their arbitrage and trading activity.

- B. Transparency is described as the feature which enables a tight secondary market price (by comparison to net asset value) to be maintained. It also provides certainty to investors in terms of exposure achieved through the ETF. It might be the case that there are other mechanisms which achieve the same goal as transparency? If ETFs are not transparent does this have unintended consequences?**

A critical element enabling an ETF's arbitrage mechanism is the ability for a liquidity provider to assess the market price of the ETF relative to the fair value of the ETF or its net asset value (“NAV”). The simplest way to convey this information to the market is via a portfolio composition file (“PCF”) or basket, which can be independently valued by liquidity providers. In addition to using this list of securities to determine the ETF’s value, the basket also provides certainty around the securities which may be delivered or received in connection with a creation or redemption.

The transparency provided by the basket provides liquidity providers with the confidence to buy and sell shares of the ETF as they know with certainty, the underlying securities which will be delivered or received. In addition, the more accurately the basket or PCF reflects and enables liquidity providers to determine an ETF’s NAV, the tighter the secondary market prices.

Without a clear way to value the fund intraday, or clarity on the potential securities needed to create or redeem in/out of the ETF, the lower the degree of confidence the liquidity provider will have while trading the product, and the higher the potential for significant premiums or discounts to occur. Indeed ETFs that do not provide transparency provide less clarity as to asset allocation which, in turn, leads to wider spreads. This results in sub-optimal outcomes for investors.

Regarding the disclosure of portfolio holdings, over and above PCF/basket transparency, Vanguard is of the view that such a robust and efficient arbitrage mechanism does not require an ETF to disclose portfolio holdings on a *daily* basis. In our view this could cause harm to both the ETF and the shareholders, by arming professional traders with sensitive fund information which could be used to decipher proprietary portfolio management and trading techniques.

In our opinion, disclosing a complete list of portfolio holdings on a daily basis could be particularly concerning for index funds during specific events impacting a target index, such as publicly announced corporate actions and index reconstitutions. In such instances, market participants could use a fund’s list of portfolio holdings to reverse engineer its proprietary portfolio management and trading techniques, anticipate the amount of a particular security the fund must buy or sell, and profit by transacting in the security prior to the fund’s transactions. This would harm the fund and its shareholders by causing the fund to pay more or receive less, for the securities which it transacts.

In respect of active ETFs, disclosing a complete list of portfolio holdings on a daily basis, may limit the ability to add alpha, as this would potentially provide information about the provider’s views and future trading activity.

- C. Is the idea of secondary market investors dealing directly with an ETF when the AP arrangements breakdown unworkable in practice or unnecessary? Is there a better way of enabling secondary market investors to dispose of their ETF shares at a price close to the next calculated net asset value when secondary market liquidity is impaired?**

Secondary Market Investors – Direct Redemptions in the Ordinary Course of Trading

Vanguard recognises, that due to the dematerialised nature of its Irish domiciled ETF shares, it is prohibited from recognising any party other than the entity on the shareholder register (such as

the AP), from claiming an interest in its shares.³

In respect of its Irish domiciled ETFs, Vanguard's relationship is therefore with the legal holder of its shares and its constitution provides that it can only deal with this legal owner. This principle is important as it prevents against potential fraud and allows Vanguard to identify the holders of its shares with certainty and expediently. However, this is unfortunately not fully indicative of who ultimately owns the ETF.

In cases where a secondary market investor wishes to arrange a direct redemption of its ETF shareholding, the investor, as beneficial owner, has the option to sell the shares via the secondary market or engage an AP to perform a primary market transaction on its behalf.

In our opinion, the ETF's obligations in respect of the redemption process are fulfilled by providing reasonable information in its offering documents, in order to enable secondary market investors to implement share redemptions.

Market Dislocations

In our experience, ETFs trading within the secondary market can exhibit small premiums and discounts. These deviations from NAV are a common occurrence primarily due to the costs associated with creation and redemption and the supply and demand dynamics of the product.

We note that larger market dislocations can arise in a couple of different circumstances. For example, market anomalies like the "flash crash" or the events of 24th August 2015 relate to the unintended consequence of exchange market structure (rather than any specifics of the mechanics of the ETF arbitrage mechanism) and these events usually only last a very short time (they are generally resolved by the end of the day). Market anomalies can also arise due to an extended halt in the underlying markets.

The normal supply and demand dynamics do not warrant the operational complexities necessary to allow secondary market investors to deal directly with the ETF as the secondary markets quickly correct themselves, thus allowing investors to trade at a price close to the next calculated NAV. When the situation involves market closure and trading in a security is suspended for a material period of time, the ETF's market price may be a better reflection of the underlying securities' fair value pricing and therefore its NAV.

The CBI will be aware that the European Securities and Markets Authority Guidelines on ETFs and Other UCITS Issues (the "**ESMA Guidelines**"), permit direct redemptions by secondary market investors where the stock exchange value of the shares of a UCITS ETF significantly varies from its NAV. In terms of practicality, however, the facilitation of direct dealing in the ETF by a secondary market investor, requires implementing a workflow which is substantially similar to that of a traditional mutual fund. This is operationally feasible but can be challenging to implement in a short timeframe and some of the challenges can include the investor's need to open an account with the ETF provider, which would first require completion of anti-money laundering/ know your customer (AML/KYC) checks as well as other documentation. Furthermore, ETFs are typically created and redeemed via creation units which are larger than many retail sized orders. This

³ Regulation 10 (6) of the Companies Act, 1990 (Uncertificated Securities) Regulations 1990 (as amended).

allows for efficiency in the trading and portfolio management process.

Flexibility to Suspend Creations in Limited Circumstances

We believe that ETFs should have the flexibility to suspend creations in the limited circumstances where doing so is in the best interests of shareholders. For example, an index ETF should have flexibility to suspend creations when necessary to continue achieving its investment objective of tracking an index. This could occur in unusual circumstances such as when trading markets for the index ETF's underlying securities are closed for an extended period of time. This could also arise in limited circumstances where an ETF is subject to investment limitations imposed by corporate issuers, regulators, or foreign governments. These circumstances could hinder an ETF's ability to achieve its investment objective by prohibiting the ETF from investing cash inflows in securities that comprise an index, thereby causing a deviation between the performance of the index and the performance of the ETF. ETFs should have the flexibility to protect ETF shareholders from this harm by suspending creations and continuing to achieve the ETF's investment objective. This flexibility, along with the risk that a premium or discount could develop in the ETF's shares, should be disclosed in an ETF's prospectus and an ETF should be required to promptly notify markets and investors upon exercising this flexibility.

D. Should ETFs warn investors that the ETF may temporarily become a closed-ended fund in certain market conditions? Would requiring an ETF to remain open-ended in a stressed market be disadvantageous to existing investors or have other unintended consequences?

We are of the view that ETF investors should be educated and made aware of the reliance by ETF providers on liquidity providers in setting the market prices within the secondary markets. The risk of primary market suspension should be highlighted in the prospectus as is the case with any other open-ended mutual fund.

Should an event arise in which the liquidity of a significant portion of the underlying market of an ETF becomes impaired and price formation, (i.e. calculation and publication of a NAV), is no longer possible, then, in our view, it may be necessary, as a final step having worked through the liquidity tools available, to temporarily close a **UCITS** ETF to creations or redemptions where this is consistent with the best interests of investors. Circumstances impacting the tradability/delivery of the underlying securities are the primary reason a fund would need to suspend dealing. Whilst we acknowledge that these events are extremely rare, they can, however, arise for reasons such as; unplanned market holidays (for e.g. a leader's death) or extreme economic or political circumstances. The dynamics of the ETF closure would mimic that of a typical fund holiday. Meanwhile, the secondary markets would still allow buyers and sellers to exchange risk at prices which are determined by the market and which incorporate all available information.

E. Is it correct to permit share classes to be structured having regard to the operational concerns of APs and the impact this may have on secondary market pricing? Are there factors (other than those noted above) that could be relevant to ETF structuring?

In our opinion, as long as the OLPs are afforded sufficient information to value an ETF, via a PCF or basket, then the impact of share classes on the secondary market pricing mechanics of an ETF is minimal.

Regarding the CBI's commentary on the different dealing deadlines in respect of both hedged and unhedged currency share classes, it is our view that these different deadlines would be necessary to accommodate the portfolio management function trading the foreign exchange rate, at the fixing time of the benchmark.

We don't believe that differences in cut-off times between share classes should have a material impact on the secondary market trading between the two listings.

F. What are the benefits or disadvantages of permitting listed and unlisted share classes within the same investment fund? Do listed and unlisted share classes create unfairness as between investors in the same investment fund and if so, can these be mitigated or addressed?

Vanguard supports the permission of both listed and unlisted share classes within the same investment fund and believes that this structure is beneficial to investors.

We believe that permitting multiple share classes within the same fund, including a listed share class, benefits all share classes due to advantageous economies of scale. By pooling the assets of investors seeking the same investment exposure through multiple share classes, a fund may be able to lower expense ratios by allocating a fund's operational costs across a larger asset base. In addition, permitting multiple share classes within the same fund also allows all share classes to achieve investment scale more quickly and, in the case of index funds, results in lower tracking error for all share classes.

Although there may be differences among share classes (e.g. expense ratios), and such differences may be derivative of local law (e.g. ability to offer hedged share classes), these differences are not unfair to investors. A fund's Board of Directors and Management Company oversee a fund and have an obligation to ensure that investors in different share classes are treated fairly. As such, they would seek to address any differences that could result in potential disadvantages or inequities. Key differences, such as those applicable to listed and unlisted share classes, are disclosed in a fund's prospectus so that investors can make an informed choice as to the share class through which they seek exposure to the fund.

Listed and unlisted share classes give investors exposure to the same investment objective, investment strategy, and portfolio holdings. The only key difference is the method and price at which investors transact in fund shares. This key difference does not result in any unfair treatment of shareholders as secondary market liquidity for ETF shares as well as the arbitrage mechanism ensure that an ETF's market price does not materially deviate from its NAV. Requiring listed and unlisted share classes to be launched as separate funds with the same investment objective, investment strategy, and portfolio holdings may harm shareholders by prohibiting the funds from, among other things, recognising advantageous economies of scale that helps to lower expense ratios paid by all fund shareholders.

Section II Questions

G. Are conflicts of interest rules effective for dealing with concentrations of activities within an ETF provider's financial group (e.g. group entities could act as promoter, investment manager,

AP and swap counterparty or SFT counterparty)? Are other approaches worthy of consideration?

As noted in the section entitled “*Background on Vanguard*”, in all instances, our ETFs are physical in nature and we do not offer synthetically managed ETFs. Our comments in this Section II, in respect of synthetic ETFs, are therefore observational in nature only. We also note that synthetic ETFs are generally a non-U.S. product structure.

We note the counterparty and conflict of interest risks that the CBI references as being possible as a result of the connectedness between APs and collateral counterparties and synthetic strategies.

That being said, we believe the existing comprehensive regulatory framework that applies to ETFs under the 1940 Act in the U.S. and under the UCITS Directive (as amplified by MIFID II) in the EU, in respect of conflicts of interest rules, to be adequate to address any perceived risks arising from concentrations of activities.

From an EU/Irish perspective specifically, we welcome the extensive product governance requirements being introduced under MIFID II, which will ensure that any conflicts between the interests of the product producer and the investor are addressed in the manufacturing stage of the product lifecycle. Conflicts will need to be identified and managed in the interests of investors and where this cannot be done, these will either be disclosed to the investor or another corrective action will be triggered. We also note that the Irish UCITS Regulations⁴ contain provisions around connected party transactions. In particular, so far as it would concern the ETF entering into trades with an affiliate of the promoter or investment manager, then such a transaction would need to be conducted on an arm's length basis with appropriate supporting evidence. We further note that the CBI has a range of regulatory tools to address risks of investors' detriment through a failure to identify and manage conflicts, including thematic reviews and inspections.

H. Are multiple counterparties necessary, or appropriate for ETFs? Could they expose ETFs to unintended risks and consequences?

In our opinion, a multiple counterparty swap approach is preferable within a synthetic ETF because it can lead to price competition for the swap spreads which are applied to the ETF. In addition, this approach can mitigate concentrated counterparty exposure beyond one financial firm and the various counterparties will compete on trading costs and on-screen spreads (i.e. not just the swap fee).

It is important to point out that concept of “best execution” often necessitates the use of multiple counterparties. The compelling nature of the arguments for such use apply to investors generally and are not specific to ETFs.

I. Some academic research suggests that if a synthetic ETF experiences counterparty default, the synthetic ETF is more likely to be able to deliver the performance of its underlying index if the collateral received is correlated to that index. Should collateral received (where a funded model is used) or securities purchased (where an unfunded model is used) be correlated to the index

⁴ European Communities (Undertakings for Collective Investment in Transferable Securities) Regulations 2011, as amended.

being tracked? Is this practical, particularly for example where the index tracked by an ETF is comprised of securities which may be relatively expensive to access? Is collateral quality sufficiently regulated and disclosed?

Vanguard is a vocal advocate of the significant positive impact for investors arising from centralised clearing of derivatives and greater regulation as to collateral requirements applicable to over the counter (“OTC”) transactions.

As collateral is a swap-based ETF’s key risk mitigator in the event of a counterparty default, we specifically welcomed the collateral requirements introduced by the ESMA Guidelines. The Guidelines stipulate that UCITS funds entering into total return swaps should hold collateral that complies with the investment limits applicable to all UCITS fund portfolios in addition to requirements around collateral being highly liquid, valued at least daily, of high credit quality and independent from/non-correlated with the counterparty. We echo the CBI’s view that one of the most important collateral criteria imposed by the ESMA Guidelines relates to collateral having to be “fully enforced” at any time by the UCITS without reference to, or approval from, the counterparty.

Section III Questions

- J. Are active strategies appropriate for “housing” in an ETF structure and if so, is there a limit to the type of strategy that would be appropriate? If the ETF structure provides opportunities for managers to achieve scale is there a downside to this where the strategy is active (or, if scale is achieved, its potential impact is not otherwise capable of being ascertained)?**

The transparency facilitated by the basket mechanism enables the ETF ecosystem to function efficiently and allows the creation of bid-ask spreads and continuous pricing on exchange. An added layer of transparency is visible through the fact that index funds track indices which in turn publish their methodologies and constituents.

In the context of any ETF, including an active fund (not tracking an index), any requirement to disclose holdings on a daily basis and thereby making visible how stocks are traded and added to a portfolio, may impact performance and be detrimental to the fund and its investors by enabling market participants to gain advantage, reverse engineer and/or front run a fund. For active managers attempting to add alpha, such a requirement may make the ETF wrapper less attractive. For all managers, positioning a portfolio to its ideal state is more difficult if the mechanics of this are transparent to the entire market on a daily basis.

Finally, all good active managers will have liquidity and capacity management procedures built into their product development and risk management tools which should highlight when an active strategy should be housed within an ETF.

- K. Similar to the question posed in Section I, is portfolio transparency fundamental to the nature of an ETF or are there are other mechanisms which achieve the same goal as transparency? In the context of an active ETF, is transparency essential in order to achieve a liquid market and to facilitate efficiency in pricing?**

We believe that a robust and efficient arbitrage mechanism does not require an ETF to disclose portfolio holdings on a daily basis. Our ETFs do not promulgate a complete list of portfolio holdings on a daily basis because doing so could harm the fund and its shareholders by arming professional traders with sensitive fund information that could be used to decipher proprietary portfolio management and trading techniques.

Disclosure of portfolio holdings on a daily basis is often a key concern for both actively and passively managed mandates. Skilled fund managers use an array of proprietary portfolio management and trading techniques to effectively produce the risk and return profile of a target mandate. These managers typically adjust techniques based on a variety of market factors when in the best interests of the fund and its shareholders. In the context of an index fund, some techniques involve holding all, or substantially all, of the securities within the target index at their prescribed weights. Other techniques involve holding a representative sample of the securities within the target index. The composition of a representative sample is determined through investment expertise and proprietary research and analysis. A requirement to disclose portfolio holdings on a daily basis may enable market participants to use a fund's list of portfolio holdings to reverse engineer its proprietary portfolio management and trading techniques, anticipate the amount of a particular security the fund must buy or sell, and profit by transacting in the security prior to the fund's transactions. This could harm the fund and its shareholders by causing the fund to pay more, or receive less, for the securities in which it transacts. Consequently, our ETFs protect fund shareholders by disclosing portfolio holdings in a manner that addresses these concerns.

Whilst transparency is very important to the smooth operation and on-screen pricing of an ETF, disclosure of portfolio holdings on a daily basis could be harmful. There are other versions of transparency which are more appropriate and which enable ETF sponsors to protect shareholders from this harm and continue to offer ETFs with narrow spreads and market prices approximating NAV. This is possible because of the array of tools market participants use to monitor, value, and hedge an ETF's portfolio, basket, and index. Through these tools, market participants can efficiently and effectively arbitrage ETFs and maintain organized markets featuring narrow spreads. In addition, market participants can efficiently price, arbitrage, and hedge exposure to ETFs by calculating intraday NAVs based on the contents of their baskets. In this regard, issuers have the ability to publish more than one basket suitable for different uses. One, a tracking or pricing basket related to the fund holdings providing sufficient detail for a liquidity provider to determine an ETF's intraday fair value, and the other, a transactional basket optimised for liquidity and transaction cost can be used to conduct creation and redemption. Another method to efficiently price and arbitrage ETFs is by reference to their target index levels, which can be highly correlated to ETFs' NAVs. Years of market experience demonstrate that a well-constructed basket with performance that closely tracks the performance of an index promotes efficient arbitrage.

Other Observations/Commentary in respect of Particular Types and Features of ETFs

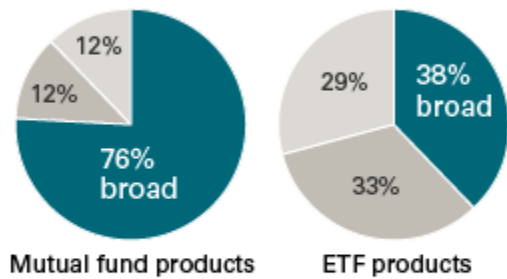
As recognised by the Discussion Paper, we also note that in addition to the ETFs that Vanguard makes available to investors (low cost, broadly diversified and liquid ETFs), there are increasing examples of more niche products, such as leveraged and inverse ETFs and ETFs of less liquid/illiquid asset classes (e.g. bank loans, property). Those products give rise to separate and distinct challenges than those posed by more diversified ETFs. As a result, we support the CBI and other regulators taking account of these differences in a risk based approach in the authorisation and supervision of ETFs.

Section IV Questions

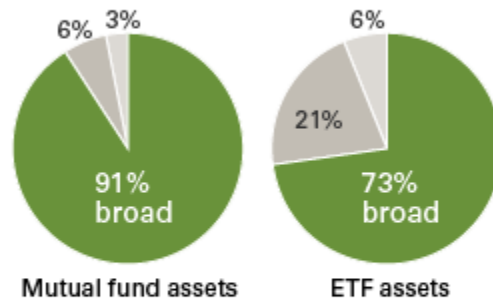
- L. Some commentators are concerned that ETFs are tracking indices of underlying stocks which are not sufficiently liquid to match the intra-day liquidity on the secondary market which the ETF offers. This statement is quite simplistic and does not, for example, reflect that there may be much secondary market activity but very little primary market activity. UCITS, including UCITS ETFs, are subject to general liquidity management rules which should ensure that ETFs track indices of underlying stocks that are sufficiently liquid to allow the ETF to meet creation and redemption requests. Is this sufficient? What liquidity practices do ETFs follow? Are there other practices that might be appropriate for ETFs?

It is important to note that ETFs have more similar characteristics to mutual funds than differences. Like mutual funds, the overwhelming majority of ETFs, (73% in the U.S.)⁵, are invested in broadly focused funds, which consist of broad U.S. and international equity. These ETFs invest in the largest and deepest capital markets in the world with a large diversified group of market participants (i.e. the most liquid markets). Although there may be concern about ETFs investing in niche markets, this should be put in proper perspective and certainly does not give rise to systemic risk. See below chart⁶ setting out this position.

While only about a third of ETF products are broadly focused . . .



the majority of ETF assets are invested in broadly focused funds.



Legend: Broadly focused (dark blue), Narrowly focused (grey), Niche (light grey)

Sources: Vanguard calculations, using Morningstar data, as of May 31, 2016. Excludes bond and balanced funds.

It is important to bear the following in mind with regard to ETF liquidity:

- Most ETFs trade with very tight spreads because of the competition among market

⁵ Data covers the period as at 31 May 2016, see link: <https://vanguardadvisorsblog.com/2016/10/04/its-all-too-relative/>

⁶ See link: <https://vanguardadvisorsblog.com/2016/10/04/its-all-too-relative/>

makers and the resources they have devoted to making markets;

- Investor education around liquidity is of utmost importance. Whilst many investors are aware of the advantages offered by ETFs, they may not fully comprehend the creation and redemption mechanism of ETFs and its impact on a fund's liquidity; and
- The on-screen liquidity of an ETF is represented by the posted sizes on the bid/offer sides of the market. The average daily volume (“**ADV**”) of an ETF is another metric for gauging on-screen liquidity. However, due to the nature of the primary market, an ETF's liquidity can be no worse than that of the liquidity of the ETF's underlying holdings. Market makers and APs have the ability to create and redeem ETF shares based upon client demand. This is an important distinction because it means that even large trades in an ETF with a low ADV can avoid having significant market impact costs provided they track a deep, liquid market. An investor can access this true ETF liquidity by leveraging the experience and expertise of a good ETF trading desk.

ETFs have multiple layers of liquidity, involving both primary and secondary markets. As the CBI has observed, and Vanguard and Investment Company Institute research finds, the overwhelming majority of ETF trading occurs on the secondary market. A limited amount of this trading volume results in primary market trading (i.e., trading in the underlying securities market).⁷

We also agree that the general UCITS rules, including those around liquidity management and eligibility of investments, provide for an existing and robust framework for primary market liquidity. Whilst most indices are constructed of liquid securities that reflect an investible market, we note that some markets may be “less liquid” than others (e.g. high yield bonds relative to government bonds), but they are not, however, “illiquid” (e.g. property). If there is an issue in relation to an index containing illiquid securities, then this is more a matter to be addressed as part of the due diligence assessment and decision making on the product provider side, in selecting such an index. For completeness, we have outlined some information below on the Vanguard methodology for managing liquidity risk in respect of ETFs. From a regulatory perspective, we would consider that there is a sufficient existing framework in place around liquidity.

In terms of the additional liquidity features of ETFs, we think it is useful to take note of the variety of sources of liquidity in the secondary market and ultimately at the level of the underlying securities:

(i) *Visible Liquidity on the Stock Exchange*

The most visible source of ETF liquidity is the trading activity of buyers and sellers in the

⁷ Vanguard figures are included in Vanguard's “Exchange-traded funds: Clarity Amid the Clutter”, US and UK papers, which can be accessed at the following links:

<https://advisors.vanguard.com/iwe/pdf/ISGETFC.pdf?cbdForceDomain=true>

<https://www.institutional.vanguard.co.uk/documents/etfs-clarity-amid-clutter-ch.pdf>

Please note that this analysis does not capture all secondary market transactions as not all secondary market transactions are required to be disclosed on exchange within the current European regulatory regime.

secondary market which takes place on an exchange. ADV is a measure of this trading activity, but it doesn't indicate an ETF's total liquidity.

The natural liquidity of ETFs trading in the secondary market is enhanced by OLPs. OLPs help maintain a fair and orderly market by selling ETF shares to potential buyers and by buying ETF shares from potential sellers. In the absence of another buyer or seller, an OLP can often match the other side of a pending order.

(ii) *"Hidden" Liquidity on the Stock Exchange*

Not all of an ETF's liquidity in the secondary market is readily visible. The on-screen view of a typical investor, is generally limited to what is available through public financial websites. This means that the investor will have access to an ETF's highest bid and lowest ask, but won't be able to see all the quotes in an ETF's order book. These quotes are another source of ETF liquidity because they represent additional prices at which ETF shares can be traded.

An ETF's liquidity can be hidden in other ways too. For example, many ETFs trade on more than one exchange. So although an investor's on-screen view may display an ETF's trading volume on the London Stock Exchange, it might not show its volume on other exchanges such as Euronext or the SIX Swiss Exchange.

Finally, some ETF trading activity takes place off exchanges altogether. This OTC trading is generally not reflected in the volume data provided by stock exchanges. Therefore, without seeing consolidated trading information, investors cannot accurately assess an ETF's liquidity.

(iii) *Liquidity from Underlying Securities*

We note that as trade size increases, the liquidity profile of an ETF becomes closer to the liquidity of the underlying securities. This means that the liquidity of the ETF should therefore mirror the liquidity of the underlying securities which it holds.

Although trading activity and market depth on the stock exchange contribute to an ETF's secondary market liquidity, we note that a significant proportion of an ETF's liquidity comes from its underlying securities. ETFs tap into this liquidity with the help of APs who create and redeem large blocks of ETF shares directly from the ETF manager in the primary market. This creation/redemption process supports ETF liquidity by regulating the supply of ETF shares in the secondary market as needed to meet investor demand. It also explains how investors can execute large buy and sell orders for lower-volume ETFs, with little or no market impact.

Every ETF has a unique liquidity profile that is based on how easy it is to trade the ETF's underlying securities, the costs associated with the creation/redemption process and other considerations.

Vanguard's Portfolio-based Liquidity Risk Management Program

We believe that managing portfolios of *all* funds, including ETFs, in order to preserve the ability to satisfy investor redemption requests is a fundamental fiduciary duty of fund managers. We further believe that portfolio-based liquidity risk management programs are an effective analytical tool in assessing *all* fund's ability to fulfill redemption requests in various market conditions.

Vanguard's own liquidity risk management program monitors the resilience of all our funds, including our ETFs, in various market conditions. We believe that a documented, board-approved liquidity risk management framework incorporates the following best practices into its assessment:

(i) *Fund type and investment objective*

Assessment of a fund's potential risks should be embedded in the firm's product development process, long before a new fund is brought to market. Liquidity risk is one of many risks that should be included in this assessment and the focus given to any one risk should be proportionate to the likelihood and severity of a future event. This assessment will drive whether a product is brought to market and influence many key features such as legal structure, shareholder redemption policies, shareholder disclosures, and available redemption management tools. For example, funds holding primarily exchange-traded equities, government bonds, or investment grade corporate bonds are examples of investment strategies that can be easily managed in an open-ended fund format offering daily shareholder redemptions. On the other hand, funds designed to invest primarily in securities that are not readily transferable, have extended settlement periods or are potentially difficult to value would require a different fund structure and/or shareholder redemption terms.

(ii) *Investment holdings*

Similar types of funds at different firms (or even at the same firm) may have different liquidity and redemption experiences based on the unique investment holdings of each fund. A portfolio-based liquidity risk management approach that evaluates the liquidity characteristics of a portfolio holistically is the most effective way to assess the liquidity risk of a portfolio. The liquidity characteristics of a portfolio can generally be determined by assessing a common set of variables. Assets that trade in large, broad and deep markets with a diverse group of participants, and that can be readily converted to cash in normal and stressed markets with minimal or modest volatility in transaction costs such as exchange traded equities, government bonds, and investment grade corporate bonds are generally considered highly liquid or liquid. Assets that generally trade in markets that are smaller in size and/or have few participants, are difficult to trade and have volatile transaction costs in normal and stressed markets such as emerging market high yield corporate bonds are generally considered less liquid. Appropriate disclosure of the liquidity characteristics of a portfolio to the relevant local regulator, supports regulatory objectives of strengthening liquidity risk management programs by funds, and identifying similarities among funds, as well as any outlier funds.

(iii) *Portfolio construction*

Given the fund manager's obligation to manage liquidity risk, the portfolio will reflect specific strategies put in place to mitigate that risk. For example, a portfolio holding primarily liquid assets may make a minimal allocation to cash. Conversely, a portfolio holding assets deemed less liquid may allocate a greater portion of its assets to cash. This is illustrated in the proportion of liquid assets held by U.S. funds investing in different asset types. Over the past 15 years, U.S. equity funds held between 2.6%-4.8% in liquid assets, while high yield bond funds held between 4.3%-10.7% in liquid assets⁸.

(iv) *Access to liquidity risk management tools*

Funds strive to fulfill shareholder redemption requests while maintaining the funds' investment and liquidity profiles in all market environments. Prescribing specific tools to utilize in managing fund redemptions encourages herding in fund portfolios and trading, which could amplify market stress. Managers require discretion in assessing appropriate liquidity management measures based on the unique circumstances of the fund. To achieve their objectives, funds rely on the set of tools that is most appropriate for the situation and as are permitted by rules in the relevant fund domicile. The tools available in the major jurisdictions where ETFs are domiciled to manage liquidity risk in ETFs often include:

- Pre-emptive tools taken into consideration during product design, including a fund's liquidity risk assessment as described above.
- Standard tools used on a routine basis include: offsetting redemptions with purchases within the fund; factoring in pending portfolio rebalancing activity (e.g. coupon and dividend payments, fund-of-fund flows, or index rebalancing); inter-fund trading where the acquisition and disposal of securities occurs among funds at the firm without transacting directly in the securities markets; in-kind redemption baskets whereby APs receive securities representing a risk-matched slice of the portfolio in lieu of cash; and selling securities in the market.
- Extraordinary tools used only in the most extraordinary circumstances include: inter-fund lending where a fund may borrow assets from another fund within the firm; unsecured line of credit where a fund may borrow cash from a bank or syndicate of banking institutions; and temporary suspension of dealing where a fund may temporarily suspend its obligation to fulfill shareholder redemptions.

(v) *Historical levels of peak redemptions during periods of stress*

A review of fund performance during periods of pronounced market stress suggests that this collection of policies, processes, and portfolio management tools has worked effectively. We review historical cash flow data for each Vanguard fund and comparable funds in the industry to evaluate redemption activity during times of stress such as the

⁸ ICI as of May 2017. Liquid assets, defined as *cash, receivables, and securities maturing in less than one year*, as of the last day of the month.

bond bear market of 1987, the global financial crisis, and the Taper Tantrum. We determine the potential impact of worst-case scenarios based on the construction of the portfolio, liquidity in the underlying market, and the composition of the investor base in the case of traditional mutual funds.

(vi) *Liquidity risk assessment*

Requiring funds to adopt a board-approved liquidity risk management program is an appropriate measure to ensure that a fund's redemption risk is managed in a manner that is consistent with its stated investment objectives and strategies and does not dilute the interests of remaining shareholders. A portfolio-based liquidity risk management approach that evaluates the liquidity characteristics of a portfolio holistically, rather than at an individual holding level, is the most effective way to assess the liquidity risk of a portfolio. Such an approach allows a fund to tailor its liquidity risk management program to the unique characteristics of the fund and account for differences in equity and fixed income market structures, portfolio composition, and investment objectives, while remaining adaptive to market conditions.

Below, we describe Vanguard's approach to liquidity risk assessment, although a variety of approaches can be valid as determined by the unique circumstances of the fund and firm. Based on this multi-dimensional comprehensive analysis, we developed a liquidity risk assessment to make the risk management approach tractable. The liquidity management approach aims to position each fund to meet greater than normal redemptions during periods of market stress. Importantly, judgement and estimation are required, particularly in assessing the areas of stressed redemption amount and liquidity of the fund's assets. Another potential area requiring judgement is the application of a participation rate i.e. the manager's expected trading volume as a proportion of the total market volume, which is one way to roughly characterise the degree of impact the fund's selling could have on market prices. Qualitative judgement is used throughout the process, for example when market trade volume data is not available for asset types, particularly bond markets outside the U.S.

A liquidity risk dashboard is then compiled based on the liquidity risk assessment and assists in the ongoing monitoring of key factors and helps to gauge each fund's ability to satisfy redemptions during a prolonged market crisis. For example, the dashboard could indicate an elevated level of risk for a particular fund due to a lower base of liquid assets as defined by the fund's liquidity management approach. The dashboard is not designed to serve as a playbook for the portfolio manager, rather it is a useful tool to help understand the current environment and inform the investment management process. The below chart shows one process that could be used for assessing inherent liquidity risk, the effectiveness of mitigations, and the residual risk.

Sample Liquidity Risk Assessment Framework

| Mult-Dimensional Redemption & Market Liquidity Risk Assessment | | | | | | | |
|---|-----------------------|----------------------|--------------------------------------|----------------------|---|---|--|
| Examples of Key Factors | Volatility of Returns | Cash Flow Volatility | Cash Flow Sensitivity to Performance | Client Concentration | Stressed Redemption Amount (quantitative and qualitative) | Market Liquidity (quantitative and qualitative) | Total Inherent Risk (quantitative and qualitative) |



| Risk Mitigation Toolkit | | | | | |
|--------------------------------|---|-----------------------|--|--|---|
| Examples of Key Factors | Fund Structure (conventional, ETF, closed-end, daily redemption, ...) | Portfolio Composition | Redemption Coverage (quantitative and qualitative) | Effectiveness of Mitigation (quantitative and qualitative) | Redemption Toolkit - Standard - Non-standard - Extraordinary |



| Residual Risk |
|---|
| Risk of Not Meeting Client Redemptions (quantitative and qualitative) |

M. One of the potential impacts from greater investment in index-tracking ETFs is decreased informational efficiency of underlying securities as well as increased non-fundamental volatility of underlying securities. However, these may not be risks per se or, at any rate, may not be risks that ETF providers or regulators can mitigate, manage or eliminate. Is this assessment correct or could measures be taken to address this impact?

We disagree that greater investment in index-tracking ETFs leads to increased non-fundamental volatility of, and decreased informational efficiency of, underlying securities.⁹ While ETFs provide

⁹ See link below to Vanguard’s “Exchange-traded funds: Clarity Amid the Clutter”, UK paper.

investors with the flexibility to trade shares intra-day, the overwhelming majority of this trading reflects secondary market transactions, and only a limited amount of this trading volume by market participants results in primary market trading. Indeed, in the U.S., 94% of equity ETF and 83% of fixed income ETF trading was conducted on the secondary market.¹⁰ The secondary market provides investors with an additional source of liquidity, meaning they can trade a broad portfolio of securities without trading in the underlying market. During the course of the trading day, investor orders to buy and sell ETF shares are matched on an exchange with the help of market makers. At the end of the trading day, if market makers have a net short position in shares of an ETF (i.e. they sold more than they bought) or a net long position (i.e. they bought more than they sold), they might decide to offset those positions by seeking to create new ETF shares or redeem their existing ETF shares. ETF creations and redemptions are usually executed once per day at their net asset value derived from the closing market prices of the underlying securities.

To provide perspective on how much of the primary market activity could have an impact on the underlying securities markets, we note that in 2015, equity trading on U.S. stock markets totaled approximately \$69 trillion¹¹. However, we estimate that less than 5% of that amount can be attributed to the trading by portfolio managers in the underlying securities of index funds. This means that active strategies still accounted for the majority of price discovery. Although index funds' share of mutual fund assets has consistently grown, Vanguard's research shows that market volatility has historically coincided with global macroeconomic events and has occurred long before index funds even came into existence. Our research also shows that no relationship exists between the share of fund assets in index strategies and the return dispersion amongst stocks.¹²

Regarding the effect of index inclusion on a security's liquidity, we note that this is not necessarily straightforward. Indeed, the most well-known indices are part of an index provider's "*family of indices*", which typically includes a total-market index and component indices based upon market capitalisation. As such, it is frequently the case that when a security is added to one component index, it is likely to be deleted from another. For example, a stock added to the S&P 500 Index could simultaneously be deleted from the S&P 400 Index. Those stocks considered to be index additions, and which haven't been deleted from other indices, would include stocks which have grown out of the micro-cap space or which have recently been newly issued (e.g. an IPO). However, in these cases, reasons for the stock's addition, include relevant investability characteristics such as size and liquidity. In other words, these stocks have become index-eligible because they have demonstrated a particular level of investability, as opposed to them obtaining investable characteristics *because* they were acquired by an index fund.

With respect to the "*liquidity illusion*" in respect of an ETF, as we noted in our response to question L above, ETFs have multiple layers of liquidity and as an ETF's trade size increases, its liquidity profile becomes closer to the liquidity of the underlying securities. This means that the liquidity of the ETF should therefore be no worse than the liquidity of the underlying securities. During times of lower liquidity in the underlying markets, an ETF's liquidity might be deemed to have worsened, as judged by the existence of expanded premiums or discounts. However, if the size of

<https://www.institutional.vanguard.co.uk/documents/etfs-clarity-amid-clutter-ch.pdf>

10 Data covers the period 1 July 2012 to 30 June 2015. See link to Vanguard's "Exchange-traded funds: Clarity Amid the Clutter" US Paper:

<https://advisors.vanguard.com/iwe/pdf/ISGETFC.pdf?cbdForceDomain=true>

11 Source: Vanguard calculations using data from Arcvision.

12 Rowley, James J., 2017. "*No more, no less challenging for active.*" Vanguard.com.

the premium or discount were to exceed the heightened transaction costs of the underlying market, market makers and APs would have an incentive to engage in the creation or redemption of new ETF shares. When analysing premiums and discounts, it's critical to note that a mutual fund portfolio manager trying to buy or sell the same basket of securities as those found in an ETF, may also be facing the same transaction costs. However, mutual fund investors do not see those costs in real time; rather, the costs are captured as part of the fund's NAV. In addition, investors trying to trade individual bonds in smaller quantities would likely face even higher transaction costs, especially in the non-U.S. Treasury sectors of the bond market. That is why premiums and discounts in ETFs, in particular bond ETFs, are largely a reflection of the externalisation of transaction costs, and rather than possibly being viewed as a "liquidity illusion," this should in fact be viewed as revealing valuable information about market conditions.

Finally, we agree with the CBI's commentary that liquidity is a complex concept. Liquidity is dynamic. The ability to convert an asset into cash in a reasonable amount of time, and in a prudent manner, changes constantly. It responds to shifts in investor preferences, dealer financing costs, profit opportunities, and a myriad of other factors which influence capital market activity. Liquidity emerges when needed, summoned by buyers, sellers, and dealers seeking to capitalise on opportunity. At times, of course, liquidity can recede, returning when prices reach a level that brings buyers, sellers, and dealers to the market. Importantly, liquidity cannot be captured in a simple metric. Factors such as: market structure (size, breadth, and depth of the market); transaction costs (bid-ask spreads); and market conditions (normal versus stressed) all aid in assessing the liquidity of a particular asset type. In our experience, participants in large, broadly diversified markets consistently manage to find a market-clearing price for high-quality securities. Experienced portfolio managers rely on a variety of gauges, (as set out in our response to question L above), to ensure that they can buy and sell securities in a cost-effective manner and in the best interests of fund shareholders.

N. One of the key issues in the context of support by ETF providers is investor expectation. Investors' views about purchasing ETFs and their ability to sell may be informed by whether or not the ETF provider will support the ETF in the face of stress events. There are, however, divergent views amongst ETF providers as to whether they would support their ETFs. Is provider support a desirable objective?

We believe that the CBI's concern with secondary market liquidity risk becoming a threat to the stability of the broader financial system, in the face of a stress event, is mitigated in the current ETF ecosystem due to the following factors:

(i) Economic Incentive

APs receive compensation from acting as market maker and effecting arbitrage via the creation/redemption process, as well as for providing creation/redemption clearing services to other market makers (i.e. facilitating someone else's arbitrage). If an AP were to "step away", in the face of a stress event, it is highly likely that other APs would "step-in" to create and redeem, in order to take advantage of the economic incentive. Indeed this was evidenced in June 2013 when Citigroup reached certain of its internal risk limits and other APs such as Credit Suisse stepped in.

The ETF arbitrage mechanism serves as an incentive to APs to provide liquidity when there is an

imbalance in the demand for clients wishing to buy or sell ETF shares. Once again, in the face of a stress event, if an AP were to “step away”, it is highly likely that the other APs would “step-in” to create and redeem given the economic incentive.

(ii) ETF Becomes a Closed-ended Fund

In the unlikely event of an absence of APs providing creation/redemption activity, as stated in our response to question D above, the ETF could operate similarly to a closed-ended fund whereby the NAV would be determined by supply and demand. It is likely that this would be a temporary event because of the arbitrage mechanism i.e. if the ETF traded at a premium or discount to the value of its underlying holdings, an AP would act on the economic incentive.

Section V Questions

- O. The Central Bank is primarily interested in risks associated with Irish authorised ETFs and European ETFs more generally yet much of the available academic literature, analysis and data relates to US ETFs. The concern is that any analysis of Irish authorised and European ETFs may be adversely affected by our reliance on US-centric materials. Is this valid? Are Stakeholders aware of EU ETF specific information that might lead to different conclusions? Will MIFID II resolve these data issues?**

We acknowledge that much of the available ETF academic literature, analysis and data relates to U.S. ETFs. However, we do not believe reliance on these materials, in the context of analysis of Irish and European ETFs, to have a negative effect, as fundamentally both European and U.S. ETFs share the same mechanics, such as: organisational structure; strict regulatory framework; and enhanced liquidity arising from secondary market trading. We believe that benefit is to be derived from the educational merits of the analysis of such U.S. data.

We do, however, appreciate the below key differences between the U.S. and European ETF markets and note that U.S. data on these topics, should be read with these key differences in mind.

(i) *On-Exchange vs OTC Trading*

Whilst, on average, 60% of U.S. ETF trades are executed on an exchange¹³, it is estimated that within Europe, as little as 20 to 30% of ETF trading takes place on exchange, with 70 to 80% being traded over the counter.¹⁴

The reported ADV of European ETFs is much lower than that in the U.S. with ADV for April 2017 at US\$5.9bn versus US\$6.9bn in the U.S.¹⁵ These ADV figures are estimates as the requirement to report trades currently differs by jurisdiction.

We believe that the introduction of MiFID II’s mandatory trade reporting requirement, in January 2018, should greatly improve trade volume visibility in Europe and move the on exchange market

13 BATS ETF Market Place.

14 LSE & Liquidity Providers.

15 ETFGI.

more in line with that of the U.S., in terms of the reliability of on-screen liquidity and trading volume and depth.

(ii) Pre-trade Fragmentation

In contrast to the single U.S. ETF listing landscape, the European ETF landscape is fragmented with ETFs listed across multiple exchanges, (such as the London Stock Exchange, Euronext, Deutsche Borse Xetra, Swiss SIX Exchange, and Borsa Italiana). Whilst a greater number of listings enables distribution and access in different markets, it also creates disparate pools of liquidity.

Though the product count between both the U.S. and European markets is comparable at 1,775 and 1,589 respectively, Europe's multiple exchanges have led to a greater number of ETF listings, at 5,896 compared to 1,775 in the U.S.¹⁶ This factor, combined with the fact that the majority of the European ETF flow is trading OTC, means market makers are less incentivised to compete on-screen. This, in turn, leads to markets with less depth and wider spreads.

It is also worth noting that Europe does not have an equivalent to the U.S.'s Regulation NMS which ensures an investor is executing at the national best bid and offer ("**NBBO**") regardless of which exchange on which their order was routed and requires OTC trades to sweep the top of the book if not improving on the NBBO.

P. Does the nature of an ETF have peculiarities (and therefore risks) that neither the UCITS nor MiFID regulatory frameworks, either in isolation or in conjunction, address and which has not been examined here?

We consider the UCITS and MiFID regulatory frameworks to be appropriate in the context of European ETF regulation and welcome the increased transparency reporting to be introduced under MiFID II.

We do not believe there is a need for a bespoke ETF regulatory regime to be introduced. As mentioned in the section entitled "*Executive Summary*", such an alternative approach could risk damaging the UCITS brand and impose unnecessary complications for investors. In addition, regulatory arbitrage could arise due to the divergence of the two regimes, as well as the harmful influencing of investor behaviour according to the wrapper (i.e. fund versus ETF), rather than the underlying investment exposure. As further mentioned in the section entitled "*Executive Summary*", we note that ETFs are comparable to mutual funds, from both a regulatory and a structural standpoint.

Thank you for the opportunity to comment on the Discussion Paper. For further information in respect of our responses, please contact Aisling O' Regan, Legal Counsel at aisling.o'regan@vanguard.co.uk or Richard Withers, Head of Government Relations, Europe at richard.withers@vanguard.co.uk.

¹⁶ ETFGI as at end June 2017.