

Overview of MSCI Liquidity Report

Jorge Gonzalez:

Hi, on this presentation I want to guide you through our liquidity standard report, designed to help you comply with the new ESMA liquidity stress-testing regulation, coming up into compliance on September 2020. We know regulations can be challenging and that's why we have designed a solution that will help you cover specific re-commendations from the regulation. I would like to walk you through our report and focus on what we consider are the six most important guidelines with support to this report.

The first one of them is a liquidity bucketing. Liquidity bucketing classification is based on the days to liquidate. We use Highly Liquid, Liquid, Less Liquid and Illiquid buckets to support the alerting mechanism as required by the regulation. We offer this default classification based on the regulation recommendations, but these parameters for each one of them are fully customizable by you.

We also provide you with the ability to do reverse stress-testing. We do this as a solution to the regulation recommendation to assess potential sources of liquidity risk, to which the fund is exposed, by introducing two different liquidation strategies, near-proportional and waterfall liquidation, each one of them with six different liquidation costs and seven different time liquidity horizons. You can identify the conditions that lead you to a specific liquidity size outcome.

Following the guideline's request to employ different liquidity stress-testing scenarios, we introduced the historical stress-test our research team has created, based on some of the best data sources in the industry for the different asset types. We have designed four stress tests based on the different faces of the great financial crisis, using the build-up, peak, recovery and worst-week faces in our historical stress test. The results are also shown using the same liquidation strategies as mentioned before, near-proportional and waterfall liquidation.

The regulation also indicates the use of more than historical stress tests, as future stress tests may differ from previous ones. To comply with this aspect of the regulation, we are introducing five different hypothetical stress tests, which you are able to customize to reflect different shocks in the following parameters: bid/ask spread, market depth reduction, relaxation type, market volatility and typical order. For each one of them, we offer the ability to define what is the amount that you want to have shoved on each one, as well as if you would like to combine the different shocks into more than one stress test. Let's say that you would like to stress bid/ask spread and market depth in this same stress test. You are able to do so through our analysis attributes and the different targeting mechanisms that we have in place.

We also provide you with the ability to focus on both asset and liability liquidity stress testing, by using the redemption coverage ratio measure. We chose this measure to indicate the ability of a fund's assets to meet the funding obligations arising from the liability side of the balance sheet, such as the redemption shock. You are able to indicate the parameters for this analysis as a transaction cost limit in that trading horizon, as well as identify the liability stress test that you would like to have included in this analysis. You will see the results also on both trading scenarios, near-proportional and waterfall

trading scenario, and you will be able to see how your portfolio would react to different redemption shocks.

Finally, you have the ability to allocate liquidity analysis across funds having similar strategies for exposure. We provide look-through data for funds from deeper and ETF transparency from market, and you can also provide data for the target funds yourself. In the dashboard report you're able to see that 25 Less Liquid positions, as well as the 25 Most Liquid positions, and some of the details on each one of them. There is a diagnostic self-report accompanying this dashboard report, which also contains all of the position level information included in your portfolios. This has come to be very useful for our clients, as they can look at the two categories that are usually the ones that gather the most attention and focus in the Least Liquid positions and the Most Liquid positions of your portfolio.

About MSCI

MSCI is a leading provider of critical decision support tools and services for the global investment community. With over 50 years of expertise in research, data and technology, we power better investment decisions by enabling clients to understand and analyze key drivers of risk and return and confidently build more effective portfolios. We create industry-leading research-enhanced solutions that clients use to gain insight into and improve transparency across the investment process. To learn more, please visit www.msci.com.

This document and all of the information contained in it, including without limitation all text, data, graphs, charts (collectively, the "Information") is the property of MSCI Inc. or its subsidiaries (collectively, "MSCI"), or MSCI's licensors, direct or indirect suppliers or any third party involved in making or compiling any Information (collectively, with MSCI, the "Information Providers") and is provided for informational purposes only. The Information may not be modified, reverse-engineered, reproduced or redistributed in whole or in part without prior written permission from MSCI.

The Information may not be used to create derivative works or to verify or correct other data or information. For example (but without limitation), the Information may not be used to create indexes, databases, risk models, analytics, software, or in connection with the issuing, offering, sponsoring, managing or marketing of any securities, portfolios, financial products or other investment vehicles utilizing or based on, linked to, tracking or otherwise derived from the Information or any other MSCI data, information, products or services.

The user of the Information assumes the entire risk of any use it may make or permit to be made of the Information. NONE OF THE INFORMATION PROVIDERS MAKES ANY EXPRESS OR IMPLIED WARRANTIES OR REPRESENTATIONS WITH RESPECT TO THE INFORMATION (OR THE RESULTS TO BE OBTAINED BY THE USE THEREOF), AND TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, EACH INFORMATION PROVIDER EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES (INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OF ORIGINALITY, ACCURACY, TIMELINESS, NON-INFRINGEMENT, COMPLETENESS, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE) WITH RESPECT TO ANY OF THE INFORMATION.

Without limiting any of the foregoing and to the maximum extent permitted by applicable law, in no event shall any Information Provider have any liability regarding any of the Information for any direct, indirect, special, punitive, consequential (including lost profits) or any other damages even if notified of the possibility of such damages. The foregoing shall not exclude or limit any liability that may not by applicable law be excluded or limited, including without limitation (as applicable), any liability for death or personal injury to the extent that such injury results from the negligence or willful default of itself, its servants, agents or sub-contractors.

Information containing any historical information, data or analysis should not be taken as an indication or guarantee of any future performance, analysis, forecast or prediction. Past performance does not guarantee future results.

The Information should not be relied on and is not a substitute for the skill, judgment and experience of the user, its management, employees, advisors and/or clients when making investment and other business decisions. All Information is impersonal and not tailored to the needs of any person, entity or group of persons.

None of the Information constitutes an offer to sell (or a solicitation of an offer to buy), any security, financial product or other investment vehicle or any trading strategy.

It is not possible to invest directly in an index. Exposure to an asset class or trading strategy or other category represented by an index is only available through third party investable instruments (if any) based on that index. MSCI does not issue, sponsor, endorse, market, offer, review or otherwise express any opinion regarding any fund, ETF, derivative or other security, investment, financial product or trading strategy that is based on, linked to or seeks to provide an investment return related to the performance of any MSCI index (collectively, "Index Linked Investments"). MSCI makes no assurance that any Index Linked Investments will accurately track index performance or provide positive investment returns. MSCI Inc. is not an investment adviser or fiduciary and MSCI makes no representation regarding the advisability of investing in any Index Linked Investments.

Index returns do not represent the results of actual trading of investible assets/securities. MSCI maintains and calculates indexes, but does not manage actual assets. Index returns do not reflect payment of any sales charges or fees an investor may pay to purchase the securities underlying the index or Index Linked Investments. The imposition of these fees and charges would cause the performance of an Index Linked Investment to be different than the MSCI index performance.

The Information may contain back tested data. Back-tested performance is not actual performance, but is hypothetical. There are frequently material differences between back tested performance results and actual results subsequently achieved by any investment strategy.

Constituents of MSCI equity indexes are listed companies, which are included in or excluded from the indexes according to the application of the relevant index methodologies. Accordingly, constituents in MSCI equity indexes may include MSCI Inc., clients of MSCI or suppliers to MSCI. Inclusion of a security within an MSCI index is not a recommendation by MSCI to buy, sell, or hold such security, nor is it considered to be investment advice.

Data and information produced by various affiliates of MSCI Inc., including MSCI ESG Research LLC and Barra LLC, may be used in calculating certain MSCI indexes. More information can be found in the relevant index methodologies on www.msci.com.

MSCI receives compensation in connection with licensing its indexes to third parties. MSCI Inc.'s revenue includes fees based on assets in Index Linked Investments. Information can be found in MSCI Inc.'s company filings on the Investor Relations section of www.msci.com.

MSCI ESG Research LLC is a Registered Investment Adviser under the Investment Advisers Act of 1940 and a subsidiary of MSCI Inc. Except with respect to any applicable products or services from MSCI ESG Research, neither MSCI nor any of its products or services recommends, endorses, approves or otherwise expresses any opinion regarding any issuer, securities, financial products or instruments or trading strategies and MSCI's products or services are not intended to constitute investment advice or a recommendation to make (or refrain from making) any kind of investment decision and may not be relied on as such. Issuers mentioned or included in any MSCI ESG Research materials may include MSCI Inc., clients of MSCI or suppliers to MSCI, and may also purchase research or other products or services from MSCI ESG Research. MSCI ESG Research materials, including materials utilized in any MSCI ESG Indexes or other products, have not been submitted to, nor received approval from, the United States Securities and Exchange Commission or any other regulatory body.

Any use of or access to products, services or information of MSCI requires a license from MSCI. MSCI, Barra, RiskMetrics, IPD and other MSCI brands and product names are the trademarks, service marks, or registered trademarks of MSCI or its subsidiaries in the United States and other jurisdictions. The Global Industry Classification Standard (GICS) was developed by and is the exclusive property of MSCI and Standard & Poor's. "Global Industry Classification Standard (GICS)" is a service mark of MSCI and Standard & Poor's.

MIFID2/MIFIR notice: MSCI ESG Research LLC does not distribute or act as an intermediary for financial instruments or structured deposits, nor does it deal on its own account, provide execution services for others or manage client accounts. No MSCI ESG Research product or service supports, promotes or is intended to support or promote any such activity. MSCI ESG Research is an independent provider of ESG data, reports and ratings based on published methodologies and available to clients on a subscription basis. We do not provide custom or one-off ratings or recommendations of securities or other financial instruments upon request.

Privacy notice: For information about how MSCI ESG Research LLC collects and uses personal data concerning officers and directors, please refer to our Privacy Notice at <https://www.msci.com/privacy-pledge>.