MORGAN STANLEY | INSTITUTIONAL SECURITIES GROUP

NOTICE TO CLIENTS REGARDING LIBOR RISKS AND GLOBAL BENCHMARK REFORM

April 2021

While the risks highlighted in this notice focus on LIBOR, they are likely to also be relevant to other benchmarks that are, or may be, subject to proposals for reform or discontinuation.

Regulators around the world have stated that LIBOR in all its currencies (USD, GBP, EUR, JPY and CHF), as well as certain other interest rate benchmarks (e.g., EONIA and CDOR), will likely cease to be published and be replaced by alternative reference rates or will be subject to significant reform (including to their calculation and/or publication methodology).

In particular, a number of LIBOR currency-tenor settings are expected to stop being published after the end of 2021, with the remaining LIBOR settings expected to cease publication in mid-2023. On March 5, 2021, ICE Benchmark Administration (IBA), which administers LIBOR publication, announced that it will cease the publication of most LIBOR rates as of the end of December 2021, except for the publication until June 30, 2023, of the most widely used U.S. dollar LIBOR tenors, and the U.K. Financial Conduct Authority (FCA), which regulates LIBOR publication, announced that it would not compel panel banks to submit to LIBOR beyond those dates.

Subsequently, the International Swaps and Derivatives Association (ISDA) published a statement that confirmed that the FCA announcement constitutes an index cessation event under the ISDA IBOR Fallbacks Supplement and the ISDA 2020 IBOR Fallbacks Protocol for all 35 LIBOR settings. As a result, the fallback spread adjustment published by Bloomberg was fixed on the announcement date for all EUR, GBP, CHF, USD and JPY LIBOR settings. The fallbacks (i.e., to the adjusted risk-free rate plus fallback spread adjustment) will automatically occur for outstanding derivatives contracts that incorporate the ISDA IBOR Fallbacks Supplement or are subject to adherence of the ISDA 2020 IBOR Fallbacks Protocol as follows:

- For outstanding derivatives referencing all EUR, GBP, CHF and JPY LIBOR settings, immediately after December 31, 2021; and
- For outstanding derivatives referencing USD LIBOR settings, after June 30, 2023. Under the fallback methodology, the rate for the one-week and two-month USD LIBOR settings will be computed using linear interpolation for the period between December 31, 2021, and June 30, 2023, before falling back to the adjusted risk-free rate plus spread immediately after June 30, 2023.

In addition, the Alternative Reference Rates Committee (ARRC) confirmed that the March 2021 announcements by the FCA and IBA fixed the spread adjustments with respect to all USD LIBOR settings under the ARRC's non-consumer recommended fallback provisions.

In order to support the phase-out of LIBOR, the FCA may, under proposed powers to be introduced to the Benchmarks Regulation (BMR), take action to procure the continued publication of certain LIBOR currencies and/or tenors deemed critical benchmarks after the end of 2021 with a substantially revised methodology (sometimes referred to as "synthetic LIBOR"), solely for use in "tough legacy" contracts (i.e., contracts that cannot realistically be amended before the end of 2021, which may be defined in more detail by the FCA). In its March 2021 announcement, the FCA also stated that it will consult in Q2 2021 on using these proposed legislative powers to create a synthetic LIBOR for certain settings of GBP and JPY LIBOR, while also continuing to monitor USD LIBOR and its transition progress in conjunction with U.S. authorities and stakeholders. It also confirmed that synthetic LIBOR is not being considered for EUR or CHF LIBOR. The FCA had published market consultations in November 2020 with respect to proposed methodology for synthetic LIBOR, and it is not known whether there will be any product or other restrictions to its potential use among legacy contracts. In addition, the impact of a synthetic LIBOR on contracts, particularly those not governed by English law and/or where one or more parties are not regulated entities in the U.K., may require an analysis of the governing law and applicable regulatory obligations of the parties. Market participants should consult their legal advisors in order to assess this impact.

Furthermore, in April 2021, New York State adopted legislation, that will, among other things, replace LIBOR-linked fallback references in certain contracts governed by New York law with the ARRC-recommended Secured Overnight Financing Rate and spread. The legislation will override fallback references in contracts with: (i) fallback language referencing a LIBOR-based rate; (ii) contracts with fallback language referencing bank polling; and (iii) contracts with no existing fallback language. Where one party has the right to exercise discretion or judgment regarding the fallback rate, that party may opt to use the ARRC's recommended rate and spread and avail themselves of a safe harbor from litigation. The financial products potentially impacted by this legislation include, but are not limited to, floating rate notes, preferred stock, securitized products, derivatives and certain consumer products.

Global regulators, including those in the U.S. and U.K., have stated that new transactions linked to LIBOR should cease as soon as possible, but in no event later than December 31, 2021, other than for hedging or risk management purposes. U.S. regulators, including the Board of Governors of the Federal Reserve System, the Federal Deposit Insurance Corporation and the Office of the Comptroller of the Currency, issued a joint statement in November 2020 stating that entering into new contracts that use USD LIBOR as a reference rate after year-end 2021 would generally create safety and soundness risks.

The market transition away from LIBOR to alternative reference rates is complex and could have a range of impacts on financial products, transactions and services that reference LIBOR as a benchmark (whether for the payment of interest or other amounts, or for discounting or other calculations).

In light of these impacts and associated risks, clients should consider actively transitioning contracts away from LIBOR, and wherever possible, refrain from entering into new LIBOR transactions (or extending/renewing existing LIBOR transactions) with maturity dates beyond the end of 2021, taking into account their own circumstances and in consultation with their own professional advisors, including in relation to financial, legal, regulatory, tax and accounting matters.

In particular, relevant risks include (but are not limited to) the following:

Risks related to LIBOR

- Any permanent cessation or non-representativeness determination in relation to LIBOR (or announcement thereof) may adversely impact the pricing, liquidity, value, return and trading of a broad array of financial products, including LIBOR-linked securities, loans, derivatives and consumer products.

- Market and/or regulatory developments prior to any permanent cessation of LIBOR may result in LIBOR performing differently than in the past (e.g., its liquidity may decline, its volatility may increase and/or the pricing of LIBOR-referencing products may change materially). In particular, central bank sponsored committees (ARR Committees) in the U.S. and the U.K. have issued target milestones for USD LIBOR and GBP LIBOR respectively to encourage the transition away from LIBOR by the end of 2021, including target dates to cease trading of new LIBOR-referencing derivatives and issuance of new LIBOR-linked cash products. The first major milestone in the U.K.

market occurred on March 31, 2021 with the target cessation of all new GBP LIBOR-linked loans, bonds, securitizations and linear derivatives that expire after the end of 2021.

- Changes to the calculation methodology implemented for any synthetic LIBOR are expected to be significant and thus likely to materially impact the economics of outstanding transactions for which a synthetic LIBOR is used. Regulators globally have discouraged market participants from relying on the publication of a synthetic LIBOR, as (i) it may not be feasible in all circumstances and/or for all currency and tenor pairs, (ii) parties who rely on synthetic LIBOR will not have control over the economic terms of their contracts and (iii) the methodology of a synthetic LIBOR may not be the same as the structures expected to prevail for new transactions based on the alternative reference rates. Furthermore, synthetic LIBOR may not be recognized as a contractual continuation rate under all governing laws or may require local legislation in order to be so recognized.

- There is no guarantee that legislative initiatives currently finalized or being contemplated in different jurisdictions (e.g., the U.S., U.K. and E.U.) will have the same scope of application or result in the same outcome or timing for similar financial products (e.g., USD LIBOR products whose contracts are governed by the laws of different jurisdictions such as New York or the U.K.). As a result, assuming the passage of legislation or that it will be consistent across jurisdictions may not result in the desired outcome.

- Existing or future regulations or regulatory guidance are very likely to materially limit the ability of and discourage market participants from entering into new transactions, products or services linked to LIBOR.

- Certain constant maturity swap (CMS) derivative and cash transactions, such as those linked to the USD, EUR and GBP LIBOR ICE Swap Rates, are determined based on trading in the over-the-counter LIBOR swaps market and will be impacted by the cessation of LIBOR. New CMS fallbacks are currently being developed by ARR Committees and ISDA, but there is no guarantee that replacement of LIBOR with an RFR in CMS transactions would yield an economically equivalent outcome. As a result, upon the occurrence of a CMS cessation event, the fallbacks in ISDA derivatives and cash market documentation may yield unintended and unpredictable economic consequences for market participants.

Risks related to the Alternative Reference Rates

- Alternative reference rates chosen by ARR Committees to replace LIBOR in each currency have different characteristics (in particular, unlike LIBOR, they are overnight “risk free” rates (RFRs) that do not embed a forward looking term structure or credit risk premium). As a result, they may perform materially differently than LIBOR and/or may not gain universal market acceptance in one or more asset classes due to these differences in composition and characteristics. In addition, there can be no assurance that ARR Committees will recommend term RFRs as replacement rates and, even if they do, such term RFRs may not include a credit risk premium or be suitable for all asset classes.

- Replacing LIBOR with the RFRs (including through the inclusion of fallbacks or active conversions to the RFRs) may not be economically equivalent (even after the inclusion of industry-standard adjustment spreads), and therefore may result in contracts or instruments not performing in the same way as when linked to LIBOR and/or having lower secondary market liquidity, which may adversely impact their value, pricing, or return.

- Alternative reference rates (in particular, SOFR and ESTR, but also SONIA for certain products and markets) have a limited history and their future performance may not be capable of being predicted based on historical performance. Spread adjustments and market conventions regarding the use of these RFRs in different products and currencies are still being developed and may change over time.

- New reference rates may be developed over time and may be different from and compete for liquidity with the RFRs recommended by the ARR Committees to replace LIBOR.

- The administrators of the RFRs may make changes to their calculation methodology over time, which may adversely impact the value and/or liquidity of instruments linked to them.

Risks related to contracts, systems and operational processes

- Existing contractual terms may not adequately provide for the occurrence of a permanent cessation or non-representativeness determination (or a future announcement thereof) in relation to LIBOR. For example, standard ISDA derivative contracts and bonds/notes typically include fallbacks that were designed at a time when market participants did not contemplate a permanent cessation of LIBOR (e.g., dealer poll and/or fallback to the last LIBOR fixing). Such fallbacks may result in increased uncertainty (e.g., dealer polls may not result in a sufficient number of quotes) and/or lack of market pricing transparency, and may materially change the economics of the contract (e.g., a last LIBOR fixing would convert a floating rate instrument into a fixed rate contract).

- As a result, the transition away from LIBOR may require extensive modification of the contractual terms (including any fallback terms) of existing products or services, which may involve time-consuming negotiations among multiple parties, particularly for products where there may be no industry protocols (such as the ISDA 2020 IBOR Fallbacks Protocol for derivatives, which became effective on January 25, 2021 and remains open for adherence) to facilitate the transition.

- There may be a population of LIBOR-linked products that cannot be amended due to an inability to obtain sufficient consent from counterparties or product owners. For example, bonds and notes linked to LIBOR typically involve high noteholder consent requirements, while structured transactions that involve one or more instruments (such as bonds, loans and/or swaps) may require the consent of multiple classes of creditors whose interests may differ from each other.

- The occurrence of a permanent cessation and/or non-representativeness determination in relation to LIBOR (or any announcement thereof) may lead to Morgan Stanley exercising discretion to determine a replacement rate, spread and other adjustments to contractual terms. Any such determination made by Morgan Stanley, while exercised in good faith and taking into account relevant market practice or regulatory guidance where available, may be inconsistent with, or contrary to, your interests or positions.

- New industry RFR fallbacks, such as those recommended by ARR Committees and the ISDA 2020 IBOR Fallbacks may change the operational mechanics and/or economics of financial products. The ISDA 2020 IBOR Fallbacks Protocol may have even more of an operational and/or economic impact on non-linear products, such as swaptions and interest rate caps and floors, as well as certain other non-derivative products that it covers, such as repurchase, stock lending, equities financing and commodities transactions. As a result, active transition of existing financial contracts in advance of any non-representative determination or permanent cessation reduces these risks.

- Furthermore, LIBOR fallback provisions (regardless of whether they are new or legacy provisions) may vary across products and regions, even within asset classes. New LIBOR fallbacks for different products are being developed by the relevant trade associations in each region at different speeds and may differ in scope, economics and operational mechanics. Industry and regulatory guidance regarding different products in each currency LIBOR is also being made available at different times. As a result of such differences in new and legacy LIBOR fallback provisions, as well as the pace of transition across products, currencies and regions, there may be economic mismatches between instruments (e.g., a bond or a loan referencing LIBOR and a related derivative transaction intended to operate as a hedge or between the OTC derivative hedging that bond or loan and the cleared derivative intended to hedge that OTC derivative).

- In addition to contractual changes, the replacement of LIBOR with alternative reference rates may require significant modifications and/or development of systems, models and other analytics (including by 3rd party vendors) to effectively transition risk management processes and firm systems from LIBOR to RFRs in a timely manner. In particular, interest and other amounts linked to the RFRs may be determined at or around the end of an applicable calculation period, such as in the case of RFR derivatives which follow the conventions of OIS markets, whereas those linked to LIBOR are typically determined at the start of the applicable calculation period.

- The replacement of LIBOR in existing contracts, as well as the introduction or modification of fallback terms, may lead to additional tax, accounting and regulatory impact or risk, which may vary across jurisdictions and products. Some relief and/or official guidance to ensure the continued grandfathering of trades from applicable tax, accounting and regulatory requirements has been granted and further relief and/or guidance is being considered in each of the major jurisdictions (including the U.S., E.U. (or its member states), U.K. and Japan). Clients should consider the applicability of tax, accounting and regulatory risks to their own circumstances, as well as the availability of any relevant relief, in consultation with their own professional advisors.

- The retention of LIBOR in existing contracts, particularly as we approach the end of 2021 and beyond, could also lead to additional tax, accounting and regulatory risk. For example, regulators and relevant industry bodies may look to apply more conservative and/or cumbersome requirements (including on tax, accounting, capital and other regulatory requirements) in order to encourage the transition away from LIBOR. Clients should consider these risks and weigh them against any risks arising from replacing LIBOR in existing contracts, in consultation with their own professional advisors.

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Links to key LIBOR Transition Resources:

ARR Committees in U.S., U.K., E.U. and Japan

+ **Alternative Reference Rates Committee**
+ **Euro Risk Free Rates Working Group**
+ **Sterling Risk Free Rates Working Group**
+ **Cross-Industry Committee on Japanese Yen Interest Rate Benchmarks**

ISDA

+ **Benchmark Reform and Transition from LIBOR**
+ **IBOR Alternative Reference Rates Disclosure**