BEST PRACTICES FOR BETTER BENCHMARKS
Recommendations for Financial Benchmark Reform
MARCH 2013

Allegations of manipulation of the London Interbank Offered Rate (LIBOR) have regulators taking a more critical look at financial benchmarks. Policy and regulatory bodies globally are actively reviewing both “rate benchmarks” (e.g., LIBOR) and “market indices” (e.g., the S&P 500® Index) to understand their mechanics and determine whether reform may be necessary.

Financial benchmark reform is being considered by multiple regulators worldwide, including the Commodity Futures Trading Commission (CFTC), the International Organization of Securities Commissions (IOSCO), the European Commission (EC), and the European Securities and Markets Authority (ESMA) & European Banking Authority (EBA). These policymakers have issued consultations for comment and/or conducted roundtables on the matter. Additionally, Martin Wheatley, Managing Director of the Financial Services Authority (FSA) and CEO Designate of the Financial Conduct Authority, was commissioned by the Chancellor of the Exchequer to undertake a review of LIBOR, culminating in the comprehensive “Wheatley Review of LIBOR.” Mr. Wheatley and CFTC Chairman Gary Gensler co-chair the IOSCO Board Level Task Force on Financial Benchmarks.

We commend the efforts to learn more about financial benchmarks, as they are used by a wide range of investors and market participants. As the discussions proceed, however, we caution regulators to carefully evaluate what types of reforms may benefit investors and which may impose unintended harm. One-size-fits-all solutions and/or rapid benchmark transitions as a result of new regulatory regimes could lead to excessive and unnecessary costs for end-investors as well as market dislocation and disruption. We believe it is important to differentiate across the various types of financial benchmarks, as there are many distinctions among them that call for markedly different recommendations. This ViewPoint outlines the key differences between rate benchmarks and market benchmarks (commonly called market indices), and advocates prudent reform that is in the best interests of investors and financial markets. Our recommendations are summarized below.

FINANCIAL BENCHMARK REFORM RECOMMENDATIONS

- For all financial benchmarks: enhance transparency and disclosure, and apply appropriate sanctions for manipulation.
- Differentiate rate benchmarks from market indices given the fundamental differences between these two types of benchmarks.
- Focus reform efforts on those rate benchmarks that are subjective, and based on survey submissions. For such rate benchmarks:
  - supplement subjective estimates with transactional data, where available;
  - allow market forces to develop alternatives rather than mandating any specific replacement;
  - specifically allow for transition periods that are sufficiently long to avoid market disruption and costly renegotiations of existing contracts; and
  - establish greater regulatory oversight and supervision, including a binding code of conduct for rate benchmark submitters (subject to independent audit).
- Should regulators pursue reforms for market indices, instituting a code of conduct for index providers is an option that could be considered.

The opinions expressed are as of March 2013 and may change as subsequent conditions vary.
Rate Benchmarks vs. Market Indices

It is important to differentiate between rate benchmarks and market indices, as the two are not synonymous. Rate benchmarks provide interest rate levels that can be used as reference rates for securities. LIBOR and the Euro Interbank Offered Rate (EURIBOR®) are two of the most widely used rate benchmarks. Conversely, market indices reflect the total return on a basket of securities (typically designed to represent an underlying market) and can have a wide variety of uses at both the security and the portfolio level, including as a performance reference. Examples include the indices offered by MSCI, FTSE, Russell, S&P/Dow Jones, and Barclays. We strongly believe these two categories of financial benchmark demand very different regulatory approaches. In the following pages, we define the two categories and offer our recommendations for each.

Figure 1: DIFFERENTIATING RATE BENCHMARKS AND MARKET INDICES

What Are Rate Benchmarks?

Rate benchmarks provide interest rate levels that can be used as reference rates for securities. Rate benchmarks serve a variety of purposes in the financial markets. As a global investment manager, BlackRock uses rate benchmarks in three principal ways: (i) as an explicit reference rate used to determine the coupon paid on a security in a fund; (ii) to calculate coupon payments on a wide variety of securities, including interest rate derivatives, with a floating rate component; and (iii) as a purely indicative reference rate to calibrate the expected performance of a fund.

There are a range of methodologies that are used to construct rate benchmarks – from those benchmarks, such as LIBOR and EURIBOR, that are based on survey submissions (“survey-based rate benchmarks”) to those based on transactional data (e.g., OIS, EONIA). Different methodologies reflect differences in the liquidity of the underlying markets the benchmarks are designed to represent and the varying objectives of the investors that use the benchmarks. See Figure 2 for an overview of commonly used rate benchmarks.

Survey-based rate benchmarks, such as LIBOR and EURIBOR, are used by the market as reference rates, at several maturity points, by various securities. LIBOR and EURIBOR are constructed using daily submissions by a panel of banks. These submissions are based on subjective estimates and the current rate-setting process is opaque and subject to potential conflicts of interest.

Market participants are increasingly adopting Overnight Index Swap (OIS) and other benchmarks as alternatives to survey-based rate benchmarks. The adoption of OIS has also been driven by its usage as a discount curve in the US swaps market. Further, we believe the need to collateralize interest rate swaps with cash instruments at central clearing counterparties (CCPs) will lead to a natural increase in the use of OIS, as the credit risk of cash flows should reflect the risk-free rate, rather than rates derived from LIBOR. Importantly, however, while rate benchmarks that utilize transactional data can be useful alternatives to survey-based rate benchmarks in certain circumstances, they are not straight substitutes. The use of these benchmarks could have implications for the overall risk and return profile of an investment. Additionally, the transition to OIS will be gradual as central clearing takes effect throughout 2013 and 2014.
Each of the interest rate benchmarks listed below represents a method for deriving a borrowing or lending cost for the relevant market. And while each benchmark may provide a rate that appears similar on the surface, as highlighted below, each has differentiating features that make them useful and relevant based on their respective market. For example, both EURIBOR and LIBOR provide benchmarks indicating the cost of borrowing in different currencies, including dollars. Importantly however, these rates may differ as they reflect differences in the underlying construction of the indices. LIBOR and EURIBOR in dollars for example may differ due to the differences in the credit risk of the underlying banks making up the benchmarks as well as the differences in those banks’ access to dollar based deposits or other forms of funding.

<table>
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<tr>
<th>BENCHMARK</th>
<th>WHAT IT MEASURES</th>
<th>DISTINGUISHING CHARACTERISTICS</th>
<th>HOW IS IT USED?</th>
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<tr>
<td><strong>LIBOR</strong> (London Interbank Offered Rate)</td>
<td>Trimmed mean of where unsecured interbank term deposits are indicatively offered within the London area</td>
<td>Non-transactional/survey-based: rates are where a bank itself perceives it could borrow funds for the stated maturities in the interbank market. Contributing banks are part of a member panel with an international scope. For example the USD panel consists of 18 banks and the EUR panel consists of 15 banks. Quoted at a wide range of short-dated maturities. Trimmed mean is calculated by removing the top and bottom quartiles.</td>
<td>USD LIBOR is embedded in trillions of dollars of contracts. USD LIBOR settings are the building blocks of the USD swaps curve. Widely used across a variety of financial products, including interest rate derivatives, mortgages, bank loans, and deposits.</td>
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<tr>
<td><strong>EURIBOR</strong>® (Euro Interbank Offered Rate)</td>
<td>Trimmed mean of where unsecured interbank Euro term deposits are indicatively offered within the Eurozone</td>
<td>Non-transactional/survey-based: rates are where a bank perceives funds could be borrowed from one another for the stated maturities in the interbank market. Contributing banks are part of a member panel consisting of representative banks primarily from Eurozone countries; currently there are 44 banks on the panel. Quoted at a wide range of short-dated maturities. Trimmed mean is calculated by removing the top and bottom 15%.</td>
<td>Widely used across a variety of financial products, including interest rate derivatives, mortgages, and deposits. EURIBOR settings are used as the building blocks of the European swaps curve rather than EUR LIBOR.</td>
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<tr>
<td><strong>Federal Funds Effective Rate / Overnight Index Swap (OIS)</strong></td>
<td>Volume-weighted average of daily overnight rates at which depository institutions lend their reserve balances to one another</td>
<td>Overnight index Transaction based Market has developed a liquid overnight index swaps (OIS) market based on this index. Discounting curve for most USD LIBOR swaps has transitioned to OIS.</td>
<td>Used as a proxy for a risk-free rate, given OIS is a Fed Funds-based yield curve. OIS is the adopted discount curve for the USD swaps market where dollar-cash collateral is exchanged.</td>
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<tr>
<td><strong>EONIA® (Euro Overnight Index Average)</strong></td>
<td>Volume-weighted average of daily overnight unsecured lending transactions in the Eurozone interbank market</td>
<td>Overnight index Member panel consists of representative prime banks. Transaction based Market has developed a liquid swaps market based on this index. Discounting curve for most EURIBOR swaps has transitioned to EONIA.</td>
<td>Used as a proxy for European overnight interbank lending rates. EONIA is the adopted discount curve for the Euro swaps market where euro-cash collateral is exchanged.</td>
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<tr>
<td><strong>DTCC GCF Repo Index®</strong></td>
<td>Volume-weighted average of daily overnight repurchase agreement transactions (“repo”) across Treasuries, agencies, and agency mortgages</td>
<td>Overnight index Transaction based Blended collateral; inclusive of Treasury, agency, and agency MBS repo.</td>
<td>Provides further transparency to the short-end of the yield curve.</td>
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Source: BlackRock
Recommendations for Survey-Based Rate Benchmarks

Survey-based rate benchmarks are important to the financial markets. For example, LIBOR and EURIBOR are the building blocks for the US and European swaps curves, respectively, and they remain key reference rates for floating rate loans. Further, LIBOR is embedded in trillions of dollars of existing financial instruments and loans to corporations and individuals. These obligations have many years remaining to maturity, creating a significant legacy issue. Therefore, reform for survey-based rate benchmarks must take a balanced approach to avoid doing more harm than good.

The Wheatley Review, arguably the most comprehensive study following the rate-rigging scandal, put forth three main conclusions: (i) that there is a clear case for reforming, rather than replacing, LIBOR; (ii) that transaction data should be explicitly used to support LIBOR submissions; and (iii) that market participants should retain a central role in the production and oversight of LIBOR.

For rate benchmarks, the single most important precondition for adoption by the market is liquidity. As such, BlackRock recommends regulators and policymakers concentrate their efforts on reforms which are necessary to restore market credibility for survey-based rate benchmarks, such as LIBOR and EURIBOR. Such initiatives should focus on the shorter tenors and the maturities most representative of bank funding activity. Our key recommendations are:

- **Increase transparency and oversight.** BlackRock supports greater transparency and clear standards of governance, both of which are fundamental to restoring market confidence in rate benchmarks. We recommend greater regulatory oversight and supervision, including a binding code of conduct for rate benchmark submitters, subject to independent audit. This would be supplemented with the potential for sanctions in cases of non-compliance or benchmark manipulation.

- **Encourage choice.** The “one-size-fits-all” approach will not work for rate benchmarks. We recommend that the reform agenda encourage the development of alternative rate benchmarks such as the Overnight Index Swap (OIS), DTCC GCF Repo Index, and Euro Overnight Index Average (EONIA) (see Figure 2). Investors and borrowers are diverse and have different needs and preferences. For that reason, we believe multiple solutions are required and those benchmarks providing the greatest liquidity will gain the greatest adoption. We do not believe it is appropriate to mandate an alternative benchmark to replace LIBOR or EURIBOR or that any particular rate benchmark be mandated for specific activities. Instead, market participants should be allowed to determine which rate benchmarks are the best match for their particular needs.

A LOOK AT LIBOR

LIBOR, the London Interbank Offered Rate, is a widely used reference for floating interest rates. LIBOR is intended to reflect the cost of funds to banks and is determined based on a group of banks’ responses to the question: “At what rate could you borrow funds, were you to do so by asking for and then accepting interbank offers in a reasonable market size just prior to 11 a.m. (London Time)?” LIBOR is published across a number of currencies and maturities. However, in December 2012, the British Bankers’ Association (BBA) proposed the discontinuation of a number of currencies and maturities. The remaining reported currencies would include: Euro (EUR), Japanese Yen (JPY), Pound Sterling (GBP), Swiss Franc (CHF), and the US Dollar (USD). The remaining reported maturities would include: overnight/spot-next, one week, one month, three months, six months, and twelve months.

LIBOR remains a widely used benchmark throughout the financial markets, forming the foundation of the interest rate swaps and Eurodollar futures markets* (see Figure 3). Futures and swaps trade with a wide range of expiries and are a common tool to manage long-dated interest rate risk. LIBOR also remains a key reference rate for various types of floating rate loans including student loans, credit cards, bank loans, floating rate corporate bonds, short-term floating rate commercial paper, municipal contracts and mortgages. One estimate by staff of the Federal Reserve Bank of Cleveland found that 45% of prime adjustable-rate mortgages use LIBOR as the benchmark.

The alleged manipulation of LIBOR prior to the 2008 financial crisis and the alleged underreporting of LIBOR at the height of crisis cast doubt on the credibility of the LIBOR rate-setting process. As discussed in our July 2012 ViewPoint, LIBOR: Where Do We Go From Here?, LIBOR is embedded in trillions of dollars of existing financial instruments and loans to corporations and individuals, many of which have multiple years remaining to maturity.

The BBA has published LIBOR since 1986. However, in September 2012, following reviews of the “LIBOR scandal,” the UK FSA confirmed that the BBA would be replaced by a private organization, such as a regulated exchange or a data provider, who will be directly regulated by the FSA. In February 2013, HM Treasury (HMT) in the United Kingdom formed an independent committee, the Hogg Tendering Advisory Committee for LIBOR, which will be tasked with determining a new administrator for LIBOR. The HMT has indicated that the committee will make a recommendation later this year. * Eurodollar futures represent cash-settled forwards of 3-month LIBOR and serve as the building block for the swaps curve.
Figure 3: NOTIONAL AMOUNTS OUTSTANDING

| OTC Single Currency Interest Rate Derivatives by Instrument and Currency (US$ billions) |
|---------------------------------|-----------------|-----------------|-----------------|-----------------|--------------|
|                                 | USD             | EUR             | JPY             | GBP             | CAD          | Other**      | Total         |
| Forward Rate Agreements         | 27,341          | 21,695          | 27              | 6,364           | 350          | 8,526        | 64,302        |
| Interest Rate Swaps             | 122,593         | 133,196         | 53,051          | 30,148          | 6,936        | 33,477       | 379,401       |
| Options Bought*                 | 10,809          | 20,005          | 5,881           | 2,671           | 60           | 1,209        | 40,635        |
| Options Sold*                   | 11,049          | 19,656          | 6,073           | 2,722           | 58           | 1,485        | 41,043        |
| Total Contracts                 | 164,024         | 178,667         | 60,092          | 39,913          | 7,380        | 43,940       | 494,018       |

As of June 2012
Source: BIS
* Separate data on options sold and options bought are recorded on a gross basis, i.e. not adjusted for interdealer double counting.
**Includes CHF, SKK, and Residual

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As of June 2012
Source: CME Group

- **Promote participation.** While participation in the setting of survey-based rate benchmarks such as LIBOR and EURIBOR is voluntary, the benefits of a credible benchmark accrue to all in the financial system. As such, any changes in the rate-setting process should weigh the benefits of the reform against the costs (direct and indirect) and the impact such changes may have in terms of discouraging broad, meaningful participation.

- **Supplement subjective estimates with transactional data.** Though we do believe that the current market is a functioning one, we support augmenting survey-based rate benchmarks with the use of transactional data. We believe this type of mixed, or "hybrid," methodology would bolster market confidence. Certainly, if a liquid, transparent, transactional market exists, then a hybrid approach is less necessary and alternative benchmarks will naturally be adopted without a regulatory mandate. This is not always the case, however, and in the absence of such condition, a hybrid approach is appropriate to ensure that both subjective and transactional measures can combine to form a reliable benchmark. For example, consider a scenario in which the underlying assets of a fixed income market index do not trade frequently. In such an instance, the modeled prices can provide a more accurate price valuation than the last actual episodic trade/transaction. Coupled with a reduction in the number of tenors and currencies, we believe that this approach will focus rates on those most representative of interbank funding and those where most transactions are likely to take place.

- **Reform rather than replace.** Some regulators have proposed that LIBOR and other survey-based rate benchmarks be replaced. While they provide rational arguments to support their view, we do not advocate this approach. We believe such a dramatic move could potentially lead to greater dislocation and disruption than any distortion of LIBOR or EURIBOR that may have occurred over the past few years. Together with auditing of submissions and greater regulatory oversight, we believe this approach is the most likely to restore investor confidence in such benchmarks and the least likely to cause adverse consequences for savers and retirees.

- **Ensure an orderly transition.** Whatever changes are ultimately agreed upon, we believe it is important to allow for a multi-year transition period that is sufficiently long to not disrupt markets and investors who rely on rate benchmarks (particularly those who have already invested in products that have many years remaining to maturity). Although we do not think it is advisable, we would note that a move to a benchmark based purely on transactions would represent a significant change and would require a lengthy and orderly transition period because thousands of outstanding credit agreements would need to be renegotiated. In some markets, such as that for bank loans, this would be further complicated by the need for base rates for financing vehicles (i.e., CLOs) to follow suit to avoid a mismatch. Furthermore, other adjustments to lending agreements such as averaging may become necessary to deal with a potentially more volatile transaction-based index. The preferred solution would avoid imposing significant costs on investors.
What Are Market Indices?

As noted earlier, market indices reflect the return on a basket of securities that is designed to be representative of an underlying market. They can have a variety of uses at both the security and the portfolio level, and are often utilized as a performance reference. Market indices are privately owned and licensed by the relevant index provider (e.g., MSCI, FTSE, Barclays) to users of indices, who are typically asset managers or other financial intermediaries. As such, the index providers have discretion over which securities are included in a particular index.

In choosing among market indices, end-investors (e.g., pension funds, endowments, etc.) typically consider their investment objectives and requirements, as well as innovation and incremental improvements in the construction of indices made by index providers. The ability to choose one market index over another promotes a competitive and innovative marketplace. As such, index providers seek to create market benchmarks that can compete for adoption.

As part of this process, index providers often seek input from the users of their benchmarks. BlackRock takes an active interest in the construction of market indices and provides feedback to various index providers through index consultations and participation on index user committees, where applicable. In evaluating benchmarks, we seek to determine whether a market index is representative, is “investible” (i.e., the underlying securities are available or accessible to the fund or account seeking to purchase them), can be replicated and measured, has appropriate transparency and governance, and is sufficiently liquid. To determine the efficacy of an index, we consider its performance against a number of key criteria. If an index does not meet these criteria, it will struggle to gain acceptance in what is a highly competitive market.

Recommendations for Market Indices

Market indices are fundamentally different from rate benchmarks—by definition, in purpose, and in construction—and we believe that market indices do not carry the same potential manipulation conflicts as survey-based rate benchmarks. As such, we believe market index reform is misplaced in discussions of reform intended to address issues with LIBOR and other survey-based rate benchmarks. Further, we are concerned that new regulatory regimes for market indices developed in this context could result in unintended consequences for end-investors—though we recognize that limited reforms may be warranted.

It should be noted that the use of market indices as benchmarks for index-tracking funds is already subject to regulatory requirements in many jurisdictions. For example, in Europe, the UCITS Directive and the new ESMA Guidelines on ETFs provide that a chosen market index for an index-tracking UCITS must be representative of the relevant market and must be sufficiently diversified. Those Guidelines also require the UCITS management company to carry out appropriately documented due diligence on the quality of the index. In the United States, an underlying market index of an index-tracking ETF is subject to certain diversification and liquidity requirements in order for the ETF to rely on existing listing rules and class-wide trading relief for ETFs under the Securities Exchange Act. Additionally, the competitive nature of the market index business drives index providers to ensure their products are commercially viable and well-constructed and monitored.

Should regulators decide to pursue reforms for market indices, we believe the following recommendations could be considered:

- **Enhance disclosure.** We would support enhanced disclosure requirements that help end-investors understand both the components and the relevant risks of index-tracking products. Ultimately, the goal must be to ensure end-investors understand how indices are compiled and the risks associated with index-tracking products, while retaining access to a broad selection of investments.

- **Enact a code of conduct.** A formal code of conduct whereby market index providers to public securities commit to a high level of transparency and conduct would help investors clearly understand whether a given index is: (i) representative of its opportunity set, (ii) investible, and (iii) sufficiently diversified. We are also supportive of requiring market index providers for public securities to apply rigorous and auditable validation procedures designed to mitigate incorrect data feeds into the portfolio management and index valuation processes. Lastly, measures to manage conflicts for sole index providers who also make markets in the underlying securities could be included in such a code of standards.

Importantly, we believe any reform measure being considered should undergo a robust cost-benefit analysis to ensure it does not create any unintended consequences or significantly increased costs for end-investors.

Conclusion

In medicine, there is a doctrine that requires practitioners to “do no harm.” In the case of financial benchmarks, regulators must be careful not to mandate reforms that could be more harmful than the problem they are seeking to address.

We agree with the consensus view that the potential for manipulation of LIBOR is a risk. However, while we acknowledge that LIBOR is “imperfect,” we do not consider it to be “critically flawed.” From a pragmatic standpoint, we believe there are strong arguments that LIBOR should continue to exist, with certain reforms, or until there is one or more acceptable alternatives. In pursuit of that end, it is
important that an ample transition period be allowed to minimize disrupting the markets and forcing the renegotiation of thousands of existing contracts. We do not believe it is prudent to hastily assign an alternative benchmark to LIBOR or EURIBOR or that any particular rate benchmark should be mandated for specific activities. Market participants should be allowed to select benchmarks or indices that meet their varying needs, cognizant that these needs and preferences will evolve over time.

Any reform efforts should clearly distinguish market indices from rate benchmarks to avoid unintended consequences for end-investors. We believe the existing regulatory framework in many jurisdictions for market indices and the competitive pressures that exist among index providers afford many protections to investors. However, should regulators continue to pursue reform for market indices, we believe that beneficial changes could include the enactment of a code of conduct for index providers.

Overall, the incorporation of certain best practices for both rate benchmarks and market indices has little downside. In particular, BlackRock strongly supports a regime of enhanced transparency and disclosure, as well as appropriate sanctions for the manipulation of any financial benchmark. Measures such as these enhance investor protection and ensure access to the information investors require to determine whether the relevant financial benchmark is well suited to their needs and objectives.

**RELATED CONTENT**

- LIBOR: Where Do We Go From Here?, *ViewPoint*, July 2012
- Consultation on Financial Benchmarks, IOSCO, February 2013
- Response to Consultation on Implementing Recommendation 6 of the Wheatley Review, Letter to BBA, December 2012
- Response to EC Benchmark Consultation, Letter to EC, November 2012
- Response to Wheatley Review of LIBOR, Letter to Regulators, September 2012

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BLK-0670