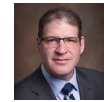
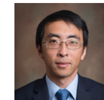
A Multi-Asset Perspective on High Yield

There are potential opportunities when spreads are wide or tight.

April 2020



Lowell Yura
Head of Multi-Asset Solutions, North America



Max Yu
Solutions Analyst, Multi-Asset Division

KEY INSIGHTS

- High yield spreads and equities have a strong relationship as both are closely tied to the business cycle and financial conditions.
- Historically, as spreads widened, forward returns for high yield became more attractive relative to a basket of equities and Treasuries with similar risk.
- Investors potentially could improve portfolio risk/return profiles by allocating to or from high yield when spreads are especially wide or tight.

High yield bonds provide many benefits to multi-asset investors, warranting a strategic allocation in a diversified portfolio. However, while many, if not most, multi-asset investors now have dedicated high yield allocations, what we've found to be less common is a process for allocating to or away from high yield bonds in environments that appear particularly favorable or unfavorable relative to a basket of U.S. Treasuries and equities with similar characteristics.

The analysis that follows suggests that investors who take a "set it and forget it" approach to their high yield allocations may be forgoing opportunities to generate additional returns and/or manage downside risk when spreads become historically wide or tight.

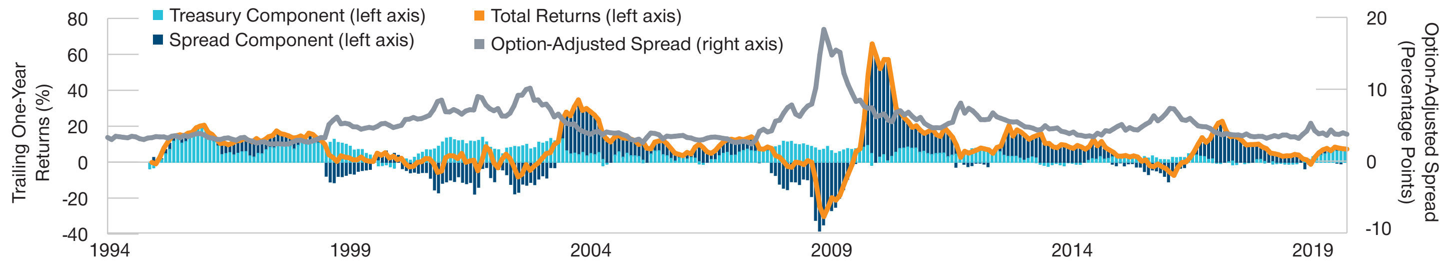
High Yield Bonds: A Total Portfolio Perspective

High yield bonds often are regarded as a hybrid of equities and investment-grade (IG) bonds because they share common characteristics with those assets. Relative to IG bonds, they offer meaningfully higher yields. The additional yield spread over Treasuries compensates investors for the weaker balance sheets and higher default risks of high yield-issuing companies. In addition to having favorable characteristics as a standalone asset class, high yield bonds also provide other potential benefits to investors:

- Relative to equities, high yield bonds sit higher up in the capital structure and, like IG corporates, provide capital structure diversification.
- High yield benchmarks provide industry, factor, and company-specific diversification that changes over time based on issuance trends rather than the relative equity performance that drives changes to equity benchmarks that are weighted by market capitalization.

Examining the Relationship Between Sources of High Yield Returns

(Fig. 1) Decomposition of Trailing One-Year Returns on High Yield Bonds



Past performance is not a reliable indicator of future performance.

January 1994 Through September 2019

Source: Bloomberg Index Services Limited (see Additional Disclosures); data analysis by T. Rowe Price.

High Yield = The Bloomberg Barclays U.S. High Yield Index

- High yield bonds provide meaningfully higher income or carry relative to most asset classes. While this is particularly beneficial to income-focused investors, it is also beneficial to total return investors, particularly when other asset classes are range-bound and income makes up a larger portion of the total portfolio return.

We think it is critical for asset allocators to think about diversification not only by asset class, but also by common factors when they are constructing portfolios. A relatively simple approach to looking at asset class factors at the total portfolio level is to decompose each asset class into the two primary factors that explain most of the return: interest rates (i.e., Treasury yields) and equities. We believe this approach is particularly suitable for analyzing high yield bond returns for two reasons:

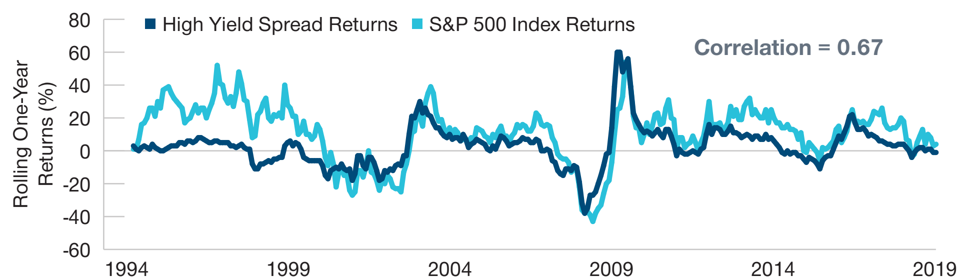
- High yield bonds are often quoted and analyzed based on interest rate spreads over Treasuries, such that the total yield and return can easily be decomposed between Treasuries and spreads.
- Like equities, high yield spreads serve as a barometer for future corporate profits, and, therefore, the returns each generate are highly correlated with one another.

Figure 1 shows trailing one-year returns for high yield bond returns decomposed into their Treasury yield and spread

We think it is critical for asset allocators to think about diversification not only by asset class, but also by common factors when they are constructing portfolios.

High Yield Spread Returns Have Been Correlated With Equities

(Fig. 2) Rolling One-Year U.S. High Yield Spread Returns vs. S&P 500 Index Returns



Past performance is not a reliable indicator of future performance.

January 1994 Through September 2019.

Sources: Bloomberg Index Services Limited and Standard & Poor's (see Additional Disclosures); data analysis by T. Rowe Price.

High Yield = The Bloomberg Barclays U.S. High Yield Index

components. Looking at high yield returns in this manner allows us to see the relationship between the two sources of high yield bond returns over time. In combination with Figure 2, we also can see how closely returns from equity and credit spreads, carry and gains/losses, have tended to move with one another over multiple cycles.

Historically, both spreads and equities often have generated positive returns in calm or improving markets. However, spread and equity returns historically have been even more highly correlated during periods of stress (when spreads widened and equities fell) and during the recoveries that followed (when spreads tightened and equities rallied). For example, during the bursting of the technology bubble (2000–2003) and again during the global financial crisis of 2008–2009, spreads widened and generated significant losses (as did equities) but produced significant gains in the recovery that followed.

Because the relationship between spreads and equities has historically been strong, and because we expect this relationship to continue, we can create a proxy for high yield bonds by replacing the return from spreads with the return on equities, with a beta adjustment (β) to reflect the difference in risk between spread returns and equity returns as follows: $R_{High\ Yield} = R_{Treasuries} + \beta(R_{Equity}) + e$.

A Closer Look at Spread Behavior

One way to think about the behavior of high yield spreads is to compare them with a metal spring. As you pull a spring from its natural state, it becomes increasingly more difficult to pull it further and further apart as mechanical force tries to return the spring to its resting state. On the other hand, when you compress a spring, it becomes increasingly difficult to further compress as mechanical force pushes back, aiming to widen it back to its natural state.

Historically, spreads have acted in a similar manner. Like a spring pulled or pushed to extremes, there has been a tendency for spreads to revert to more natural equilibrium levels. Like equities, the catalyst for spread movement typically has been the level of market liquidity, which is often driven by the outlook for the economy and future corporate profits. Extremes of excess (or scarce) liquidity have tended to result in spreads narrowing (or widening) toward historically tight (or wide) levels. Ultimately, as the outlook moderates, we would expect spreads to revert toward their more natural state.

The potential impact of this behavior on high yield spread returns is that as spreads widen, they generate a loss, but going forward, investors not only benefit from higher spreads (i.e., carry), but also have increased potential to generate additional returns as spreads narrow again. This results in a favorable return distribution with relatively large potential upside relative to potential downside (i.e., positive skew). This potential return profile improves the wider spreads get and the likelihood of future spread narrowing increases. Even if spreads don't narrow, investors gain a larger return buffer in the form of greater carry.

At the other extreme, when spreads were historically tight, they became increasingly less likely to tighten further. This led to less favorable distributions of future potential returns as the downside grew larger than the upside (i.e., negative skew), reflecting the risk that spreads could widen while the buffer from carry was small.

The characteristics of spreads described above are evident in Figure 3, which shows how historically tight (lowest 20%) and historically wide (highest 20%) spreads have translated into one-year forward spread returns. Over the period shown, spreads were below 3.2% in the lowest 20% of observations and above 6.6% in the

> ...historically, when spreads have been wide, the distribution of returns has been skewed toward the upside relative to the downside.

highest 20% of observations. We chose to only show returns from high yield spreads (as opposed to total high yield returns) in Figure 3 for two reasons:

- Treasury yields have been in a secular decline for more than 30 years and are now meaningfully lower relative to history, making the returns from the Treasury component less relevant given today's low rates.
- We ultimately want to compare high yield spread returns with equity returns to see if and when one offers a meaningfully better distribution than the other, such that an allocation change could be warranted.

It is clear from Figure 3 that historically, when spreads have been wide, the distribution of returns has been skewed toward the upside relative to the downside. This is because, as discussed earlier, when spreads have been wide, investors not only have received more carry, but also have had a higher probability of obtaining additional gains when spreads subsequently narrowed from their historically wide levels.

Note that there still was meaningful downside risk when spreads crossed the 6.6% level, as they could have widened further (and indeed did so during both the bursting of the tech bubble and the global financial crisis). However, in our view, investors were more than compensated for this risk in the form of greater upside potential relative to downside potential.

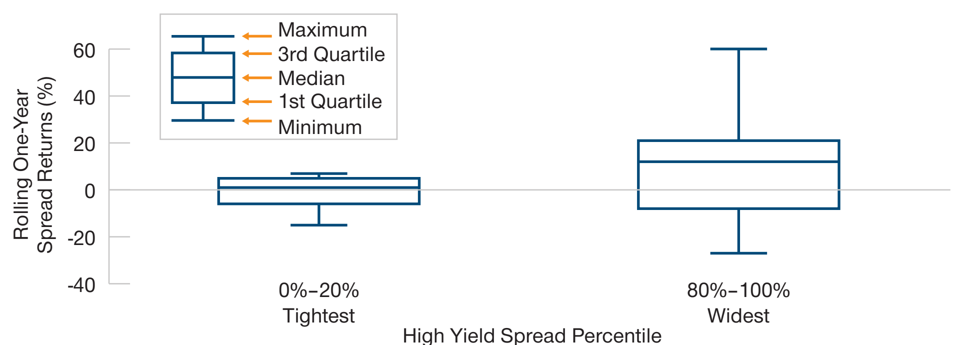
At the opposite extreme, when spreads historically have been narrow, the distribution of future returns from high yield spreads has shown more downside than upside potential. This is because, as with our example of a metal spring, there were barriers to further tightening that limited spread returns to the then current level of carry and, at most, only modest additional gains from further tightening. Additionally, in these environments, there typically has been little resistance to spread widening in situations where conditions worsened. Unlike when spreads have been historically wide, tight spreads have provided a smaller level of carry to protect investors from losses.

Distribution of Spread Returns Relative to Equities

Since high yield spread returns and equity returns are highly correlated to the business cycle, has one offered a better distribution of potential returns when spreads have been relatively tight or wide? Historically, the answer has generally been yes.

When Spreads Have Been Wide, High Yield Returns Have Skewed to the Upside

(Fig. 3) Distributions of Rolling One-Year High Yield Spread Returns



Past performance is not a reliable indicator of future performance.

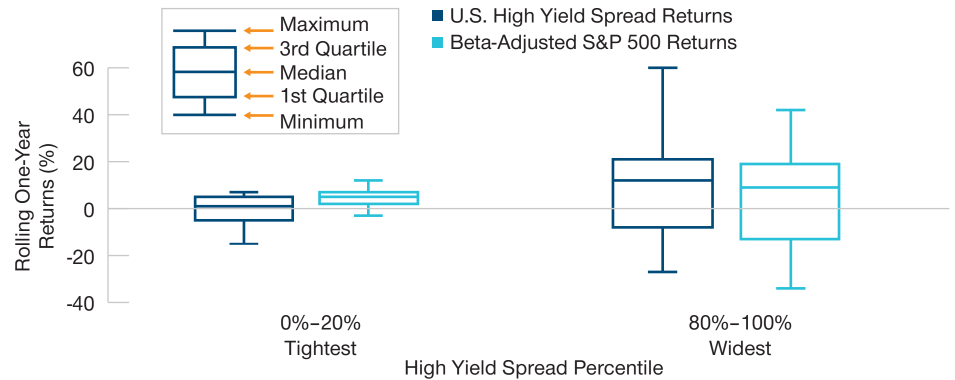
January 1994 Through September 2019

Source: Bloomberg Index Services Limited (see Additional Disclosures); data analysis by T. Rowe Price.

High Yield = The Bloomberg Barclays U.S. High Yield Index

Historically, Spread Returns Outperformed When Spreads Were Wide, While Equities Outperformed When Spreads Were Tight

(Fig. 4) Distributions of High Yield Spread Returns and Beta-Adjusted Total Returns on the S&P 500 Index



Performance Statistics (One-Year Rolling Returns)	High Yield Spread Environment			
	0%–20%		80%–100%	
	High Yield Spread Return	Beta-Adjusted SP500 Return	High Yield Spread Return	Beta-Adjusted SP500 Return
Average Return	-0.7%	4.3%	10.0%	4.4%
Median Return	1.1%	4.5%	12.1%	8.8%
Standard Deviation	6.2%	3.2%	20.9%	18.3%
Beta to S&P 500	0.23	0.23	0.78	0.78
Minimum	-15.2%	-3.0%	-27.0%	-33.7%
Maximum	7.4%	11.8%	60.2%	41.8%
12-month C-VAR (5%)	-14.0%	-1.9%	-26.3%	-31.2%

Past performance is not a reliable indicator of future performance.
For illustrative purposes only.
January 1994 Through September 2019
High Yield = The Bloomberg Barclays U.S. High Yield Index
Sources: Bloomberg Index Services Limited and Standard & Poor's (see Additional Disclosures); data analysis by T. Rowe Price.

Figure 4 compares beta-adjusted forward returns on the S&P 500 Index with the high yield spread returns shown in Figure 3 in the narrowest 20% and widest 20% of observed cases. The equity returns are beta adjusted in order to roughly equalize the amount of equity risk in spreads and equities. Historically, high yield spread returns have had an equity beta of approximately 0.5, but betas have been lower when spreads were tight (0.2 in the lowest 20% of historical observations) than when spreads were wide (0.8 in the highest 20% of observations).

In our view, a beta-adjusted comparison is appropriate because it isolates the difference in return distributions without increasing the overall equity beta at the total portfolio level. We believe that asset allocators should separate the decision to take on more equity risk from the decision on how best to gain equity factor exposure.

> ...we generally believe the case for an allocation change is stronger when spreads are wide compared with when spreads are tight relative to historical ranges.

Looking at the distribution of returns when spreads have been historically wide, we can see that the distribution of spread returns (shown in blue) was superior to the distribution of the beta-adjusted equity returns (shown in orange). Specifically, high yield spreads provided a greater median return with greater upside and less downside.

In historical environments where spreads were tight, we found that the distribution of beta-adjusted one-year equity returns was more uniform and that the negative skew (larger downside relative to upside) of spread returns could have been improved by using equities as a proxy for spreads.

Figure 5 provides another look at how high yield bonds have performed relative to a high yield proxy composed of Treasuries and beta-adjusted equities. The screened area on the left side of the chart highlights the return relationship in the tightest 20% of spread observations, while the screened area on the right shows the return relationship in the widest 20% of spread observations. Again, we can see that during the period shown, high yield bonds generally outperformed the proxy when spreads were wide, while the reverse generally held when spreads were tight.

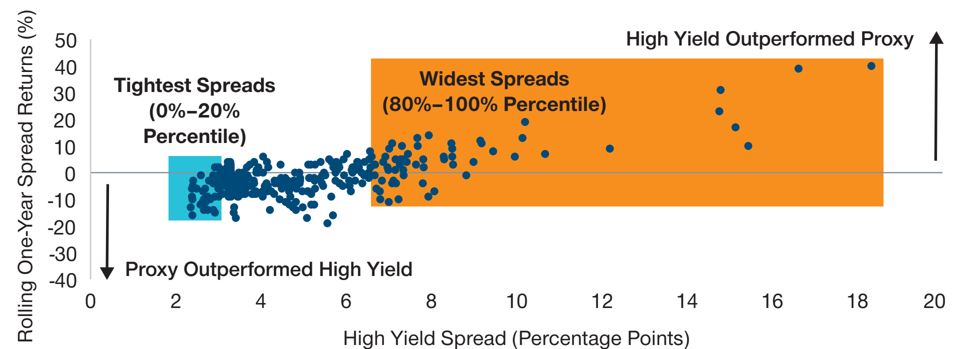
Note that there are important caveats that make a change from high yield to equities and Treasuries less compelling when spreads are narrow than when spreads are wide:

- Historically, even when spreads have been tight, the level of carry has been meaningfully greater for high yield relative to beta-adjusted equities. As mentioned earlier, carry can be extremely beneficial to investors in range-bound markets.
- As evident in Figure 1, when spreads have been tight, they historically have often remained tight for long periods of time.

For these reasons, we generally believe the case for an allocation change is stronger when spreads are wide compared with when spreads are tight relative to historical ranges.

Another Look at Relative Performance

(Fig. 5) Rolling One-Year Returns of High Yield Versus High Yield Proxy[1]



Past performance is not a reliable indicator of future performance.

For illustrative purposes only.

January 1994 through September 2019

[1] High Yield proxy = duration-matched Treasuries + beta-adjusted equities. High Yield = the Bloomberg Barclays U.S. High Yield Index. Duration-matched Treasuries = the Bloomberg Barclays High Yield Index total return series minus the spreads, 0.78 in the widest 20%, and 0.5 in all other spread environments.

Sources: Bloomberg Index Services Limited and Standard & Poor's (see Additional Disclosures); data analysis by T. Rowe Price.

High Yield = The Bloomberg Barclays U.S. High Yield Index

Implementation and Other Considerations

Based on this analysis, we would argue that when spreads are wide relative to typical historical ranges, investors can improve their risk/return profile by increasing their exposure to high yield bonds and reducing their exposure to equities and Treasuries. For example, for every unit of high yield exposure added to a portfolio, an investor could sell 0.8 units of equity and 0.2 units of Treasuries. Depending on how this move was implemented, using derivatives or physical securities, an investor could adjust the duration of the Treasury portfolio sold so that it matched the duration of the Treasury component of high yield bonds.

We purposely chose the S&P 500 as the index for our analysis because large-cap equities are a practical source of capital to fund an overweight to high yield bonds when spreads widen. While this simplification makes implementation more practical, investors also might consider using a basket of equities that more closely resembles the characteristics of the high yield indexes, which typically would have smaller average market cap, lower quality relative to the S&P 500, and an industry allocation that more closely resembles the major high yield indexes.

Finally, it's important to note that the high yield benchmarks themselves continue to evolve. One important trend to highlight has been the overall improvement in the quality of the high yield universe over the last few years. One reason for this has been that lesser-quality high yield issuers increasingly are turning to the loan market to raise capital rather than issuing high yield debt.

These types of changes make it critical to compare the characteristics of today's high yield market with that of the past in order to determine whether spreads once considered historically wide or tight are still the appropriate triggers for portfolio changes. For this reason, we do not recommend using a purely quantitative approach, but rather one that relies on a mix of quantitative analysis and sound forward-looking judgments.

Additional Disclosures

Copyright © 2020, S&P Global Market Intelligence (and its affiliates, as applicable). Reproduction of any information, data or material, including ratings ("Content") in any form is prohibited except with the prior written permission of the relevant party. Such party, its affiliates and suppliers ("Content Providers") do not guarantee the accuracy, adequacy, completeness, timeliness or availability of any Content and are not responsible for any errors or omissions (negligent or otherwise), regardless of the cause, or for the results obtained from the use of such Content. In no event shall Content Providers be liable for any damages, costs, expenses, legal fees, or losses (including lost income or lost profit and opportunity costs) in connection with any use of the Content. A reference to a particular investment or security, a rating or any observation concerning an investment that is part of the Content is not a recommendation to buy, sell or hold such investment or security, does not address the suitability of an investment or security and should not be relied on as investment advice. Credit ratings are statements of opinions and are not statements of fact.

Bloomberg Index Services Limited. BLOOMBERG® is a trademark and service mark of Bloomberg Finance L.P. and its affiliates (collectively "Bloomberg"). BARCLAYS® is a trademark and service mark of Barclays Bank Plc (collectively with its affiliates, "Barclays"), used under license. Bloomberg or Bloomberg's licensors, including Barclays, own all proprietary rights in the Bloomberg Barclays Indices. Neither Bloomberg nor Barclays approves or endorses this material, or guarantees the accuracy or completeness of any information herein, or makes any warranty, express or implied, as to the results to be obtained therefrom and, to the maximum extent allowed by law, neither shall have any liability or responsibility for injury or damages arising in connection therewith.

INVEST WITH CONFIDENCE℠

T. Rowe Price focuses on delivering investment management excellence that investors can rely on—now and over the long term.

T.RowePrice®

Important Information

This material is being furnished for general informational and/or marketing purposes only. The material does not constitute or undertake to give advice of any nature, including fiduciary investment advice, nor is it intended to serve as the primary basis for an investment decision. Prospective investors are recommended to seek independent legal, financial and tax advice before making any investment decision. T. Rowe Price group of companies including T. Rowe Price Associates, Inc. and/or its affiliates receive revenue from T. Rowe Price investment products and services. **Past performance is not a reliable indicator of future performance.** The value of an investment and any income from it can go down as well as up. Investors may get back less than the amount invested.

The material does not constitute a distribution, an offer, an invitation, a personal or general recommendation or solicitation to sell or buy any securities in any jurisdiction or to conduct any particular investment activity. The material has not been reviewed by any regulatory authority in any jurisdiction.

Information and opinions presented have been obtained or derived from sources believed to be reliable and current; however, we cannot guarantee the sources' accuracy or completeness. There is no guarantee that any forecasts made will come to pass. The views contained herein are as of the date written and are subject to change without notice; these views may differ from those of other T. Rowe Price group companies and/or associates. Under no circumstances should the material, in whole or in part, be copied or redistributed without consent from T. Rowe Price.

The material is not intended for use by persons in jurisdictions which prohibit or restrict the distribution of the material and in certain countries the material is provided upon specific request. It is not intended for distribution to retail investors in any jurisdiction.

Australia—Issued in Australia by T. Rowe Price Australia Limited (ABN: 13 620 668 895 and AFSL: 503741), Level 50, Governor Phillip Tower, 1 Farrer Place, Suite 50B, Sydney, NSW 2000, Australia. For Wholesale Clients only.

Brunei—This material can only be delivered to certain specific institutional investors for informational purpose upon request only. The strategy and/or any products associated with the strategy has not been authorised for distribution in Brunei. No distribution of this material to any member of the public in Brunei is permitted.

Canada—Issued in Canada by T. Rowe Price (Canada), Inc. T. Rowe Price (Canada), Inc.'s investment management services are only available to Accredited Investors as defined under National Instrument 45-106. T. Rowe Price (Canada), Inc. enters into written delegation agreements with affiliates to provide investment management services.

China—This material is provided to specific qualified domestic institutional investor or sovereign wealth fund on a one-on-one basis. No invitation to offer, or offer for, or sale of, the shares will be made in the People's Republic of China ("PRC") (which, for such purpose, does not include the Hong Kong or Macau Special Administrative Regions or Taiwan) or by any means that would be deemed public under the laws of the PRC. The information relating to the strategy contained in this material has not been submitted to or approved by the China Securities Regulatory Commission or any other relevant governmental authority in the PRC. The strategy and/or any product associated with the strategy may only be offered or sold to investors in the PRC that are expressly authorized under the laws and regulations of the PRC to buy and sell securities denominated in a currency other than the Renminbi (or RMB), which is the official currency of the PRC. Potential investors who are resident in the PRC are responsible for obtaining the required approvals from all relevant government authorities in the PRC, including, but not limited to, the State Administration of Foreign Exchange, before purchasing the shares. This document further does not constitute any securities or investment advice to citizens of the PRC, or nationals with permanent residence in the PRC, or to any corporation, partnership, or other entity incorporated or established in the PRC.

DIFC—Issued in the Dubai International Financial Centre by T. Rowe Price International Ltd. This material is communicated on behalf of T. Rowe Price International Ltd. by its representative office which is regulated by the Dubai Financial Services Authority. For Professional Clients only.

EEA ex-UK—Unless indicated otherwise this material is issued and approved by T. Rowe Price (Luxembourg) Management S.à r.l. 35 Boulevard du Prince Henri L-1724 Luxembourg which is authorised and regulated by the Luxembourg Commission de Surveillance du Secteur Financier. For Professional Clients only.

Hong Kong—Issued in Hong Kong by T. Rowe Price Hong Kong Limited, 6/F, Chater House, 8 Connaught Road Central, Hong Kong. T. Rowe Price Hong Kong Limited is licensed and regulated by the Securities & Futures Commission. For Professional Investors only.

Indonesia—This material is intended to be used only by the designated recipient to whom T. Rowe Price delivered; it is for institutional use only. Under no circumstances should the material, in whole or in part, be copied, redistributed or shared, in any medium, without prior written consent from T. Rowe Price. No distribution of this material to members of the public in any jurisdiction is permitted.

Korea—This material is intended only to Qualified Professional Investors upon specific and unsolicited request and may not be reproduced in whole or in part nor can they be transmitted to any other person in the Republic of Korea.

Malaysia—This material can only be delivered to specific institutional investor upon specific and unsolicited request. The strategy and/or any products associated with the strategy has not been authorised for distribution in Malaysia. This material is solely for institutional use and for informational purposes only. This material does not provide investment advice or an offering to make, or an inducement or attempted inducement of any person to enter into or to offer to enter into, an agreement for or with a view to acquiring, disposing of, subscribing for or underwriting securities. Nothing in this material shall be considered a making available of, solicitation to buy, an offering for subscription or purchase or an invitation to subscribe for or purchase any securities, or any other product or service, to any person in any jurisdiction where such offer, solicitation, purchase or sale would be unlawful under the laws of Malaysia.

New Zealand—Issued in New Zealand by T. Rowe Price Australia Limited (ABN: 13 620 668 895 and AFSL: 503741), Level 50, Governor Phillip Tower, 1 Farrer Place, Suite 50B, Sydney, NSW 2000, Australia. No Interests are offered to the public. Accordingly, the Interests may not, directly or indirectly, be offered, sold or delivered in New Zealand, nor may any offering document or advertisement in relation to any offer of the Interests be distributed in New Zealand, other than in circumstances where there is no contravention of the Financial Markets Conduct Act 2013.

Philippines—THE STRATEGY AND/ OR ANY SECURITIES ASSOCIATED WITH THE STRATEGY BEING OFFERED OR SOLD HEREIN HAVE NOT BEEN REGISTERED WITH THE SECURITIES AND EXCHANGE COMMISSION UNDER THE SECURITIES REGULATION CODE. ANY FUTURE OFFER OR SALE OF THE STRATEGY AND/ OR ANY SECURITIES IS SUBJECT TO REGISTRATION REQUIREMENTS UNDER THE CODE, UNLESS SUCH OFFER OR SALE QUALIFIES AS AN EXEMPT TRANSACTION.

Singapore—Issued in Singapore by T. Rowe Price Singapore Private Ltd., No. 501 Orchard Rd, #10-02 Wheelock Place, Singapore 238880. T. Rowe Price Singapore Private Ltd. is licensed and regulated by the Monetary Authority of Singapore. For Institutional and Accredited Investors only.

South Africa—T. Rowe Price International Ltd ("TRPIL") is an authorised financial services provider under the Financial Advisory and Intermediary Services Act, 2002 (FSP Licence Number 31935), authorised to provide "intermediary services" to South African investors.

Switzerland—Issued in Switzerland by T. Rowe Price (Switzerland) GmbH, Talstrasse 65, 6th Floor, 8001 Zurich, Switzerland. For Qualified Investors only.

Taiwan—This does not provide investment advice or recommendations. Nothing in this material shall be considered a solicitation to buy, or an offer to sell, a security, or any other product or service, to any person in the Republic of China.

Thailand—This material has not been and will not be filed with or approved by the Securities Exchange Commission of Thailand or any other regulatory authority in Thailand. The material is provided solely to "institutional investors" as defined under relevant Thai laws and regulations. No distribution of this material to any member of the public in Thailand is permitted. Nothing in this material shall be considered a provision of service, or a solicitation to buy, or an offer to sell, a security, or any other product or service, to any person where such provision, offer, solicitation, purchase or sale would be unlawful under relevant Thai laws and regulations.

UK—This material is issued and approved by T. Rowe Price International Ltd, 60 Queen Victoria Street, London, EC4N 4TZ which is authorised and regulated by the UK Financial Conduct Authority. For Professional Clients only.

USA—Issued in the USA by T. Rowe Price Associates, Inc., 100 East Pratt Street, Baltimore, MD, 21202, which is regulated by the U.S. Securities and Exchange Commission. For Institutional Investors only.

© 2020 T. Rowe Price. All rights reserved. T. Rowe Price, INVEST WITH CONFIDENCE, and the bighorn sheep design are, collectively and/or apart, trademarks or registered trademarks of T. Rowe Price Group, Inc.