



standard
chartered

InvesTips

How to invest in a recession and thrive afterwards

November 2022



WS Global CIO Office

Are we in a recession yet?

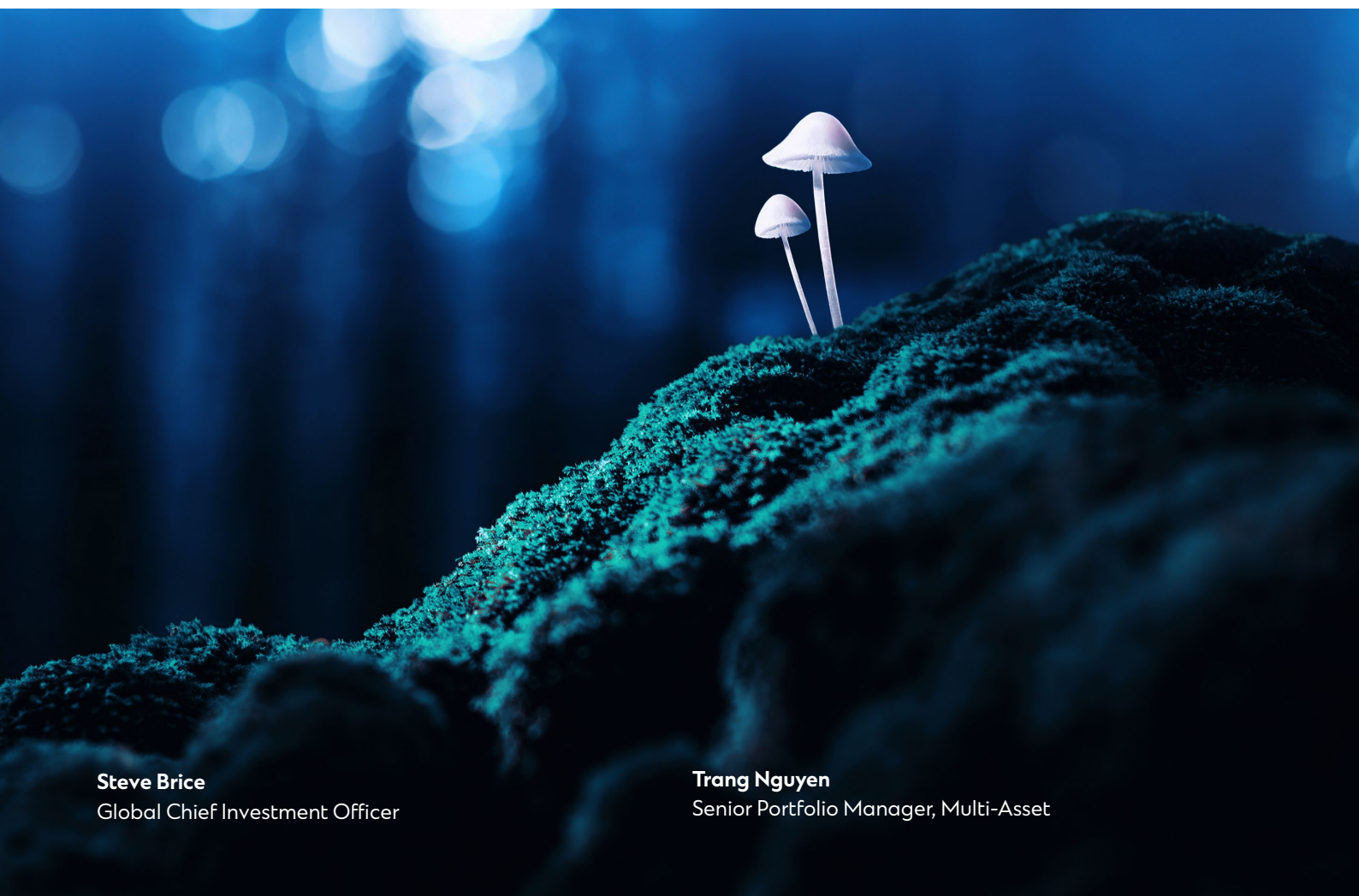
To say that it has been an eventful investing journey since the onset of Covid-19 is an understatement. First a pandemic, then a bear market, and then the highest inflation in four decades. Now the question on top of every investor's mind is: "Is the next recession around the corner?"

A recession is commonly defined as at least two consecutive quarters of declining GDP. More formally, the National Bureau of Economic Research (NBER) defines a recession in the U.S. as "a significant decline in economic activity spread across the economy, lasting more than a few months, normally visible in real gross domestic product (GDP), real income, employment, industrial production and wholesale-retail sales."

In 2022, the US economy contracted 1.6% in the first quarter and 0.6% in the second quarter. However, this is

unlikely to be seen as the start of a recession. According to the NBER, more evidence of a significant deterioration in the economy is required for the official declaration of a recession.

While the jury is still out on that question, we are clearly in economically challenging times. For those that wonder what you can do now to best position your investments to cope with the challenging times ahead, here's what you need to know about investing in a recession and set yourself up to thrive afterwards.



Steve Brice
Global Chief Investment Officer

Trang Nguyen
Senior Portfolio Manager, Multi-Asset

01

Cash is the king

Cash means different things for different people. In the investment world, cash generally refers to liquid investments that you can cash out quickly. In these instances, cash can mean money market accounts, certificates of deposit, Treasury bills and other short-term interest-bearing investments.

For investors, there are two advantages of holding cash during a recession. First, unlike all other investments, the risk of losing (nominal) value is extremely low for cash. As cash rates tend to go up during central bank hiking cycles, historically, cash has tended to yield positive returns during recessions. For this reason, cash offers great diversification benefits in an investment portfolio in times of crisis. Second, keeping liquid assets on hand during market downturns allows investors to take advantage of discounted investments during the recovery phase.

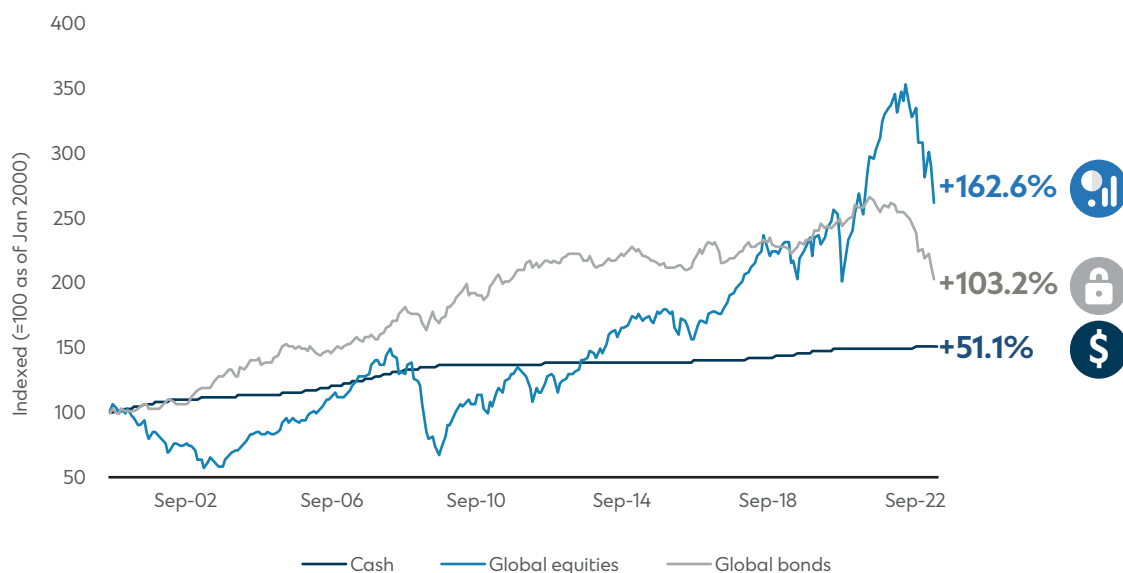
However, holding an excessive amount of cash can lead to unintended consequences:

- 1 when recessions are accompanied with persistently high inflation, holding cash can mean losing purchasing power.
- 2 timing the markets to deploy cash is easier said than done. Instead, we believe it makes more sense for investors to incrementally use cash for investment opportunities that have been significantly discounted.

In the chart below, we note that while recessions can be a scary time for equity investing, staying invested through market drawdowns has proven to yield much higher returns over the long term.

While cash is often perceived to be king during a recession, staying invested in equity and bond markets has proven to be more beneficial for long term investors

Cumulative returns of cash vs. global bond and global equity (2000 – 2022)



Source: Bloomberg, Standard Chartered.



02

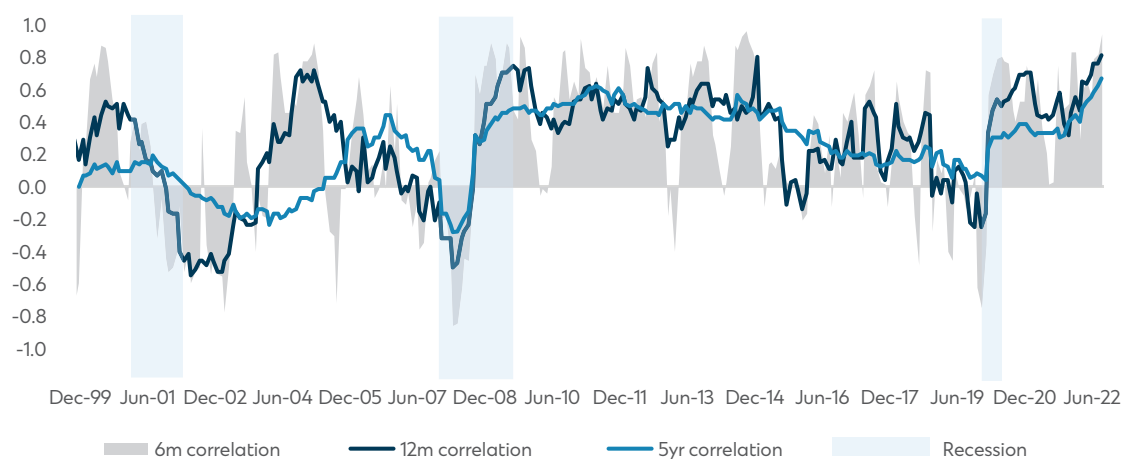
Diversification is not dead

The recent weaknesses seen in almost all financial assets, including so-called safe-haven investments such as global government bonds and gold, has undoubtedly posed the question of whether diversification benefits are a thing of the past. A close examination based on history reveals the following:

- 1 Such an outcome (i.e. diversification fails) is not unprecedented, but extremely rare. Including this year, there have only been 4 years in the past 150 years that we have seen both US equities and bonds lose value.
- 2 Correlation is a commonly used metric for diversification across assets. Historically, a spike in short term correlation (6 months) between global equity and global bonds tends to be short-lived, with a strong overshoot characteristic.
- 3 The long-term case for diversification remains valid. The longer term correlation (eg. 5 years) has proven to be more stable and should be a more appropriate proxy for diversification. While it has gone up recently, it remains low and not too dissimilar to past recessions.

The long-term case for diversification remains valid

Different windows (6m, 12m, 5-year) of rolling correlation between global bonds and global equities (1997 to 2022)



Source: Bloomberg, Standard Chartered.

Own defensive and dividend stocks

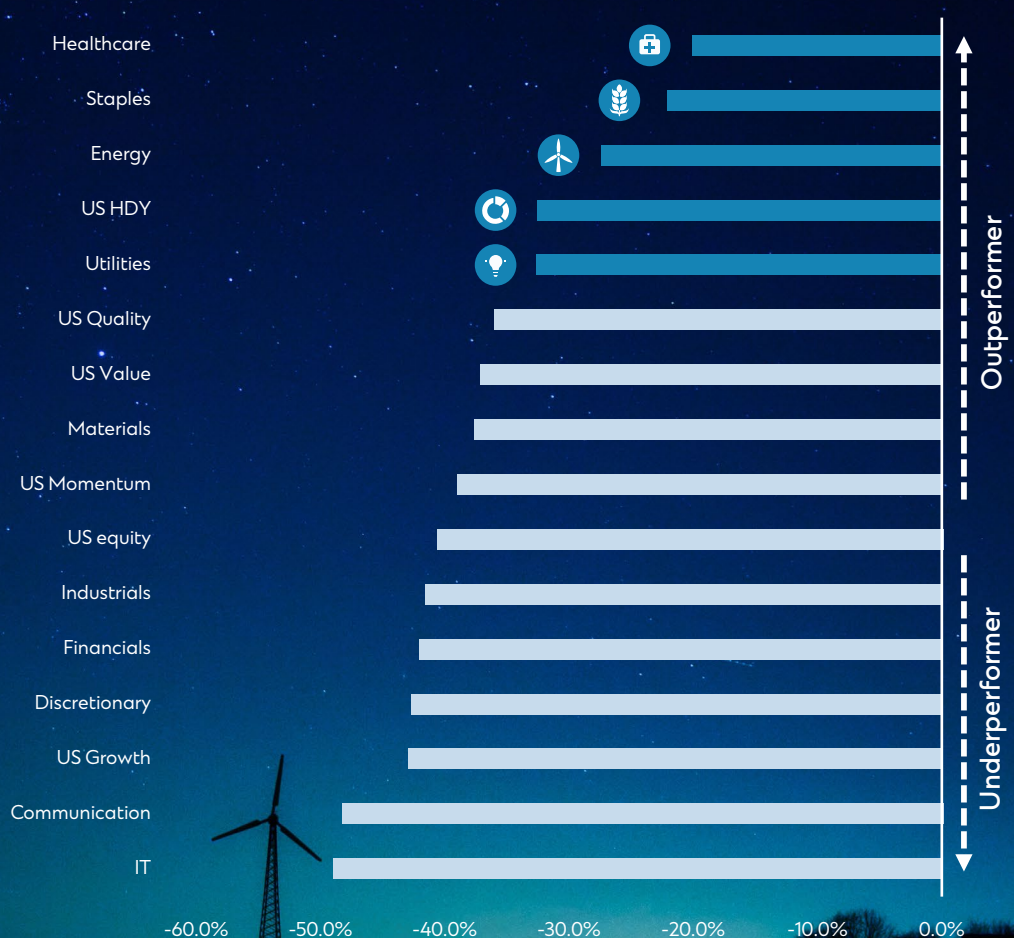
Equities often do poorly during a recession. However, the wide dispersion in performance during past recessions across sectors (see chart below) suggests some stocks are less affected by recession risks than others. These defensive stocks are companies and sectors that have a track record of generating stable revenue regardless of the declining economy. Healthcare, Consumer Staples, Energy and Utilities are often classified as defensive equities. Evidently, their historical performance has been more resilient compared to the broad equity markets in past recessions. Similarly, investing into established companies with consistent cashflows to pay dividends may be beneficial as income received can provide some cushion for any capital losses.

Investors that do not have any existing equity exposure can consider taking advantage of the recent indiscriminate sell-off in equities to start building positions in some of these defensive and high dividend equities.

For those that currently hold equities in their portfolios and do not wish to completely reposition their portfolios, incrementally substituting the broad equity exposure with these defensive/ income-paying stocks can be an effective way of reducing overall portfolio risk.

Defensive and high dividend equities outperformed in the past recessions

Average returns of various US equity sectors during the past recessions (2000, 2008 and 2020)



Source: Bloomberg, Standard Chartered.



04

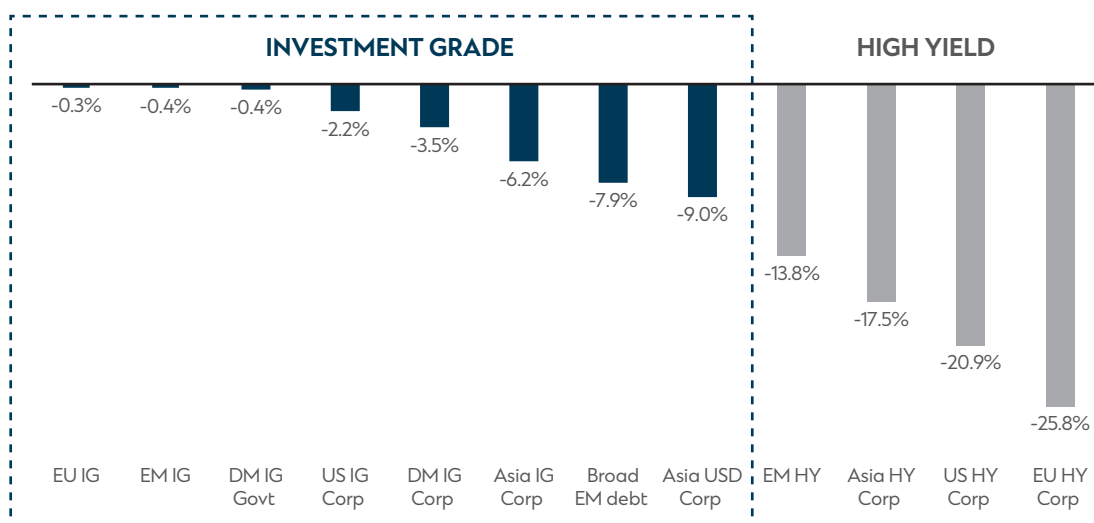
Buy quality assets

Most recessions are preceded by central bank hiking cycles, especially in an environment of high and rising inflation. This is because raising interest rates is the most effective tool most central banks have available to combat inflation. However, this effort is often done at the expense of slowing economic growth as higher interest rate means higher cost of capital for corporates, which can reduce their incentive to invest in new business opportunities. This pain tends to be felt first by companies that are highly indebted because higher interest rate payments can quickly become an increasing burden, putting a strain on their cashflows and hence future growth.

Higher rates can be good for bond investors over the long term as they increase returns in the future. However, for those investors that believe recession risk is high on the horizon, moving up in the credit quality spectrum would be a prudent approach in bond investing. Evidently, in the past recessions, across all regions, high yield bonds suffered much larger drawdowns compared to investment grade bonds.

Titling bond exposure toward higher quality assets would be a prudent approach to bond investing during recessions

Average returns of various bond components during the past recessions (2000, 2008 and 2020)



Source: Bloomberg, Standard Chartered.

Use dollar cost averaging to add exposure incrementally

With a lot of uncertainties present in the financial markets, it is extremely difficult to resist the temptation to hold on to cash and wait for the 'right opportunity' to go all in – basically, timing the markets. That said, timing the market is incredibly difficult even for professional investors. It is only in retrospect you can identify what favourable prices would have been for any asset – and by then, it's too late to purchase. Therefore, as we believe time in the markets is more important than timing markets, investors should consider adopting a dollar cost averaging (DCA) approach to add to their portfolios. There are two common ways to do dollar cost averaging:

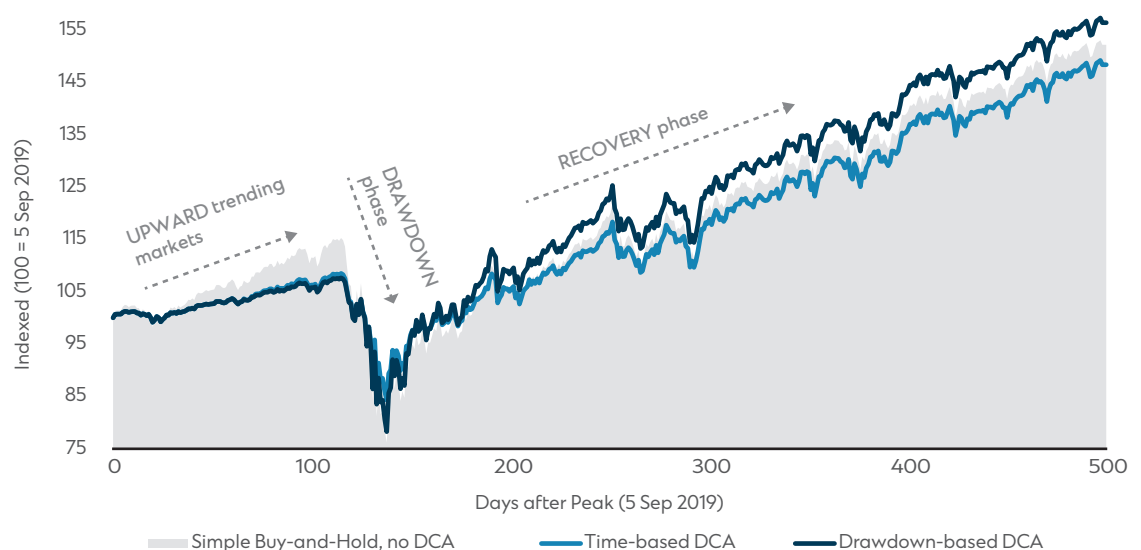
- 1 **Time-based DCA** is an approach in which investor can deploy a fixed amount of capital into investment following a fixed time frequency. For example, one can consider adding \$1000 into their investment portfolio every month.
- 2 **Drawdown-based DCA** is another approach of investing a fixed amount of money into an asset whenever it drops by a predetermined percentage in value. For example, investors can schedule to add \$1000 into US equity every time the S&P 500 index drops by 5%.

In the chart below, we ran simulated returns of different investing strategies through different phases of an equity market. Four observations emerge:

- | | | | |
|---|--|---|--|
| <p>A In an upward trending market, buy-and-hold strategy (i.e. deploying all the capital at the beginning) tends to outperform both DCA strategies.</p> | <p>B A time-based DCA could be superior if one believes a market decline could be prolonged.</p> | <p>C A drawdown based DCA could be more effective if a market decline is sharp and swift, allowing investors to capture opportunities in a timelier manner.</p> | <p>D For the same reason, a drawdown based DCA strategy can result in higher returns during the recovery phase (all else equal).</p> |
|---|--|---|--|

Both DCA strategies show limited downside when equity markets go through the drawdown phase

Simulated returns of various investing strategies



Source: Bloomberg, Standard Chartered. Full deployment: An investor deploys all his/her capital at today's level of drawdown, mapped to the Covid-19 crisis (5 Sep 2019), then simply holds. No subsequent DCA tranches. Drawdown-based: An investor deploys 50% of his/her capital at today's level of drawdown, mapped to the Covid-19 crisis (5 Sep 2019). Every -5% lower from the current level, he/she adds 10% of his/her capital, up to 5 tranches. Time-based: An investor deploys 50% of his/her capital at today's level of drawdown, mapped to the Covid-19 crisis (5 Sep 2019). Every 1 month onwards, he/she adds 10% of his/her capital, up to 5 tranches.

06

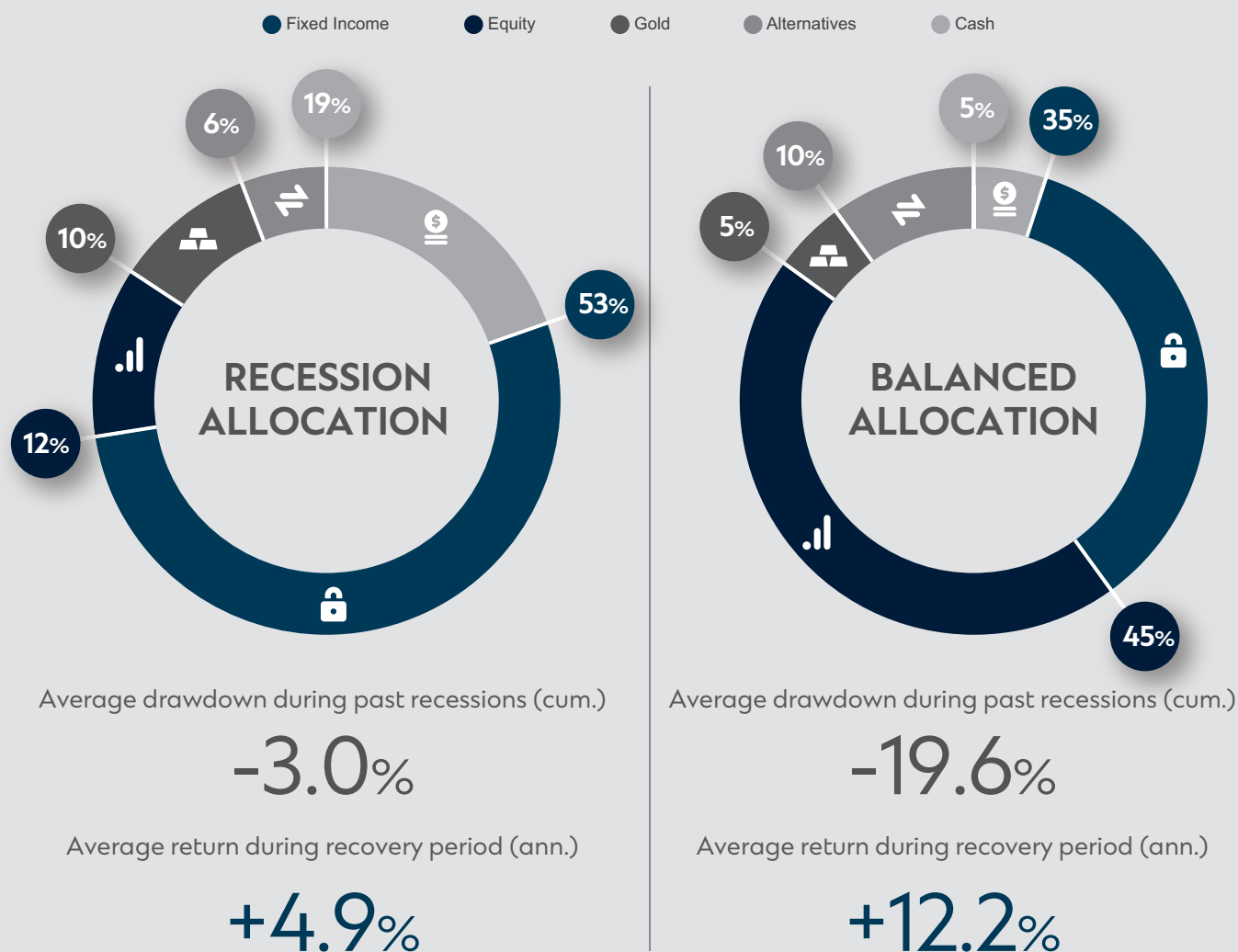
A recession portfolio can be helpful but will not be likely to take you far (in your investment journey)

Predicting and timing recessions is incredibly difficult. Therefore, a prudent approach would be to prepare for it by shifting incrementally towards safer assets if one's conviction in an imminent recession becomes stronger. Practically, for a 'recession allocation', we would dial back risk from our balanced allocation by reducing equities in favour of bonds, gold and cash. Among equity regions, US equities have been generally most defensive. Within fixed income, historically, higher quality Developed Market bonds tend to outperform lower quality credit and Emerging Market bonds. Our back-testing results (the chart below) show that, on average, such a recession allocation posted -3.0% vs. -19.6% by a balanced allocation in the past recessions.

However, we must acknowledge that while a recession allocation can help alleviate worries of an immediate recession, it comes with the risk of underperforming in the future. For long term investors, it can mean compromising the chances of achieving their investment objectives in the following years. Based on our analysis, while a recession allocation was resilient during past recessions, it underperformed a diversified balanced allocation significantly in the recovery phase.

A comparative review of a recession allocation* vs. a balanced allocation

Average drawdown during the past recessions and average 12-month returns following the equity market troughs



Source: Bloomberg, Standard Chartered.

* Recession allocation is constructed based on the strategic asset allocation of the balanced risk profile by tilting toward asset classes that have performed well relatively during the past recessions while respecting various investment bandwidths/constraints for the risk profile

Disclosures

This document is confidential and may also be privileged. If you are not the intended recipient, please destroy all copies and notify the sender immediately. This document is being distributed for general information only and is subject to the relevant disclaimers available at our Standard Chartered website under Regulatory disclosures. It is not and does not constitute research material, independent research, an offer, recommendation or solicitation to enter into any transaction or adopt any hedging, trading or investment strategy, in relation to any securities or other financial instruments. This document is for general evaluation only. It does not take into account the specific investment objectives, financial situation or particular needs of any particular person or class of persons and it has not been prepared for any particular person or class of persons. You should not rely on any contents of this document in making any investment decisions. Before making any investment, you should carefully read the relevant offering documents and seek independent legal, tax and regulatory advice. In particular, we recommend you to seek advice regarding the suitability of the investment product, taking into account your specific investment objectives, financial situation or particular needs, before you make a commitment to purchase the investment product. Opinions, projections and estimates are solely those of SC at the date of this document and subject to change without notice. Past performance is not indicative of future results and no representation or warranty is made regarding future performance. The value of investments, and the income from them, can go down as well as up, and you may not recover the amount of your original investment. You are not certain to make a profit and may lose money. Any forecast contained herein as to likely future movements in rates or prices or likely future events or occurrences constitutes an opinion only and is not indicative of actual future movements in rates or prices or actual future events or occurrences (as the case may be). This document must not be forwarded or otherwise made available to any other person without the express written consent of the Standard Chartered Group (as defined below). Standard Chartered Bank is incorporated in England with limited liability by Royal Charter 1853 Reference Number ZC18. The Principal Office of the Company is situated in England at 1 Basinghall Avenue, London, EC2V 5DD. Standard Chartered Bank is authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and Prudential Regulation Authority. Standard Chartered PLC, the ultimate parent company of Standard Chartered Bank, together with its subsidiaries and affiliates (including each branch or representative office), form the Standard Chartered Group. Standard Chartered Private Bank is the private banking division of Standard Chartered. Private banking activities may be carried out internationally by different legal entities and affiliates within the Standard Chartered Group (each an "SC Group Entity") according to local regulatory requirements. Not all products and services are provided by all branches, subsidiaries and affiliates within the Standard Chartered Group. Some of the SC Group Entities only act as representatives of Standard Chartered Private Bank and may not be able to offer products and services or offer advice to clients.

Copyright © 2025, Accounting Research & Analytics, LLC d/b/a CFRA (and its affiliates, as applicable). Reproduction of content provided by CFRA in any form is prohibited except with the prior written permission of CFRA. CFRA content is not investment advice and a reference to or observation concerning a security or investment provided in the CFRA SERVICES is not a recommendation to buy, sell or hold such investment or security or make any other investment decisions. The CFRA content contains opinions of CFRA based upon publicly-available information that CFRA believes to be reliable and the opinions are subject to change without notice. This analysis has not been submitted to, nor received approval from, the United States Securities and Exchange Commission or any other regulatory body. While CFRA exercised due care in compiling this analysis, CFRA, ITS THIRD-PARTY SUPPLIERS, AND ALL RELATED ENTITIES SPECIFICALLY DISCLAIM ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE, to the full extent permitted by law, regarding the accuracy, completeness, or usefulness of this information and assumes no liability with respect to the consequences of relying on this information for investment or other purposes. No content provided by CFRA (including ratings, credit-related analyses and data, valuations, model, software or other application or output therefrom) or any part thereof may be modified, reverse engineered, reproduced or distributed in any form by any means, or stored in a database or retrieval system, without the prior written permission of CFRA, and such content shall not be used for any unlawful or unauthorized purposes. CFRA and any third-party providers, as well as their directors, officers, shareholders, employees or agents do not guarantee the accuracy, completeness, timeliness or availability of such content. In no event shall CFRA, its affiliates, or their third-party suppliers be liable for any direct, indirect, special, or consequential damages, costs, expenses, legal fees, or losses (including lost income or lost profit and opportunity costs) in connection with a subscriber's, subscriber's customer's, or other's use of CFRA's content.

Market Abuse Regulation (MAR) Disclaimer

Banking activities may be carried out internationally by different branches, subsidiaries and affiliates within the Standard Chartered Group according to local regulatory requirements. Opinions may contain outright "buy", "sell", "hold" or other opinions. The time horizon of this opinion is dependent on prevailing market conditions and there is no planned frequency for updates to the opinion. This opinion is not independent of Standard Chartered Group's trading strategies or positions. Standard Chartered Group and/or its affiliates or its respective officers, directors, employee benefit programmes or employees, including persons involved in the preparation or issuance of this document may at any time, to the extent permitted by applicable law and/or regulation, be long or short any securities or financial instruments referred to in this document or have material interest in any such securities or related investments. Therefore, it is possible, and you should assume, that Standard Chartered Group has a material interest in one or more of the financial instruments mentioned

herein. Please refer to our Standard Chartered website under Regulatory disclosures for more detailed disclosures, including past opinions/ recommendations in the last 12 months and conflict of interests, as well as disclaimers. A covering strategist may have a financial interest in the debt or equity securities of this company/issuer. All covering strategist are licensed to provide investment recommendations under Monetary Authority of Singapore or Hong Kong Monetary Authority. This document must not be forwarded or otherwise made available to any other person without the express written consent of Standard Chartered Group.

Sustainable Investments

Any ESG data used or referred to has been provided by Morningstar, Sustainalytics, MSCI or Bloomberg. Refer to 1) Morningstar website under Sustainable Investing, 2) Sustainalytics website under ESG Risk Ratings, 3) MSCI website under ESG Business Involvement Screening Research and 4) Bloomberg green, social & sustainability bonds guide for more information. The ESG data is as at the date of publication based on data provided, is for informational purpose only and is not warranted to be complete, timely, accurate or suitable for a particular purpose, and it may be subject to change. Sustainable Investments (SI): This refers to funds that have been classified as 'ESG Intentional Investments – Overall' by Morningstar. SI funds have explicitly stated in their prospectus and regulatory filings that they either incorporate ESG factors into the investment process or have a thematic focus on the environment, gender diversity, low carbon, renewable energy, water or community development. For equity, it refers to shares/stocks issued by companies with Sustainalytics ESG Risk Rating of Low/Negligible. For bonds, it refers to debt instruments issued by issuers with Sustainalytics ESG Risk Rating of Low/Negligible, and/or those being certified green, social, sustainable bonds by Bloomberg. For structured products, it refers to products that are issued by any issuer who has a Sustainable Finance framework that aligns with Standard Chartered's Green and Sustainable Product Framework, with underlying assets that are part of the Sustainable Investment universe or separately approved by Standard Chartered's Sustainable Finance Governance Committee. Sustainalytics ESG risk ratings shown are factual and are not an indicator that the product is classified or marketed as "green", "sustainable" or similar under any particular classification system or framework.

Country/Market Specific Disclosures

Bahrain: This document is being distributed in Bahrain by Standard Chartered Bank, Bahrain Branch, having its address at P.O. 29, Manama, Kingdom of Bahrain, is a branch of Standard Chartered Bank and is licensed by the Central Bank of Bahrain as a conventional retail bank. **Botswana:** This document is being distributed in Botswana by, and is attributable to, Standard Chartered Bank Botswana Limited which is a financial institution licensed under the Section 6 of the Banking Act CAP 46:04 and is listed in the Botswana Stock Exchange. **Brunei Darussalam:** This document is being distributed in Brunei Darussalam by, and is attributable to, Standard Chartered Bank (Brunei Branch) | Registration Number RFC/61 and Standard Chartered Securities (B) Sdn Bhd | Registration Number RC20001003. Standard Chartered Bank is incorporated in England with limited liability by Royal Charter 1853 Reference Number ZC18. Standard Chartered Securities (B) Sdn Bhd is a limited liability company registered with the Registry of Companies with Registration Number RC20001003 and licensed by Brunei Darussalam Central Bank as a Capital Markets Service License Holder with License Number BDCB/R/CMU/S3-CL and it is authorised to conduct Islamic investment business through an Islamic window. **China Mainland:** This document is being distributed in China by, and is attributable to, Standard Chartered Bank (China) Limited which is mainly regulated by National Financial Regulatory Administration (NFRA), State Administration of Foreign Exchange (SAFE), and People's Bank of China (PBOC). **Hong Kong:** In Hong Kong, this document, except for any portion advising on or facilitating any decision on futures contracts trading, is distributed by Standard Chartered Bank (Hong Kong) Limited ("SCBHK"), a subsidiary of Standard Chartered PLC. SCBHK has its registered address at 32/F, Standard Chartered Bank Building, 4-4A Des Voeux Road Central, Hong Kong and is regulated by the Hong Kong Monetary Authority and registered with the Securities and Futures Commission ("SFC") to carry on Type 1 (dealing in securities), Type 4 (advising on securities), Type 6 (advising on corporate finance) and Type 9 (asset management) regulated activity under the Securities and Futures Ordinance (Cap. 571) ("SFO") (CE No. AJ1614). The contents of this document have not been reviewed by any regulatory authority in Hong Kong and you are advised to exercise caution in relation to any offer set out herein. If you are in doubt about any of the contents of this document, you should obtain independent professional advice. Any product named herein may not be offered or sold in Hong Kong by means of any document at any time other than to "professional investors" as defined in the SFO and any rules made under that ordinance. In addition, this document may not be issued or possessed for the purposes of issue, whether in Hong Kong or elsewhere, and any interests may not be disposed of, to any person unless such person is outside Hong Kong or is a "professional investor" as defined in the SFO and any rules made under that ordinance, or as otherwise may be permitted by that ordinance. In Hong Kong, Standard Chartered Private Bank is the private banking division of SCBHK, a subsidiary of Standard Chartered PLC. **Ghana:** Standard Chartered Bank Ghana Limited accepts no liability and will not be liable for any loss or damage arising directly or indirectly (including special, incidental or consequential loss or damage) from your use of these documents. Past performance is not indicative of future results and no representation or warranty is made regarding future performance. You should seek advice from a financial adviser on the suitability of an investment for you, taking into account these factors before making a commitment to invest in an investment. To unsubscribe from receiving further updates, please send an email to feedback_ghana@sc.com. Please do not reply to this email. Call our Priority Banking on 0302610750 for any questions or service queries. You are advised not to send any confidential and/or important information to Standard Chartered via e-mail, as Standard Chartered makes no representations or warranties

as to the security or accuracy of any information transmitted via e-mail. Standard Chartered shall not be responsible for any loss or damage suffered by you arising from your decision to use e-mail to communicate with the Bank. **India:** This document is being distributed in India by Standard Chartered in its capacity as a distributor of mutual funds and referrer of any other third party financial products. Standard Chartered does not offer any 'Investment Advice' as defined in the Securities and Exchange Board of India (Investment Advisers) Regulations, 2013 or otherwise. Services/products related securities business offered by Standard Chartered are not intended for any person, who is a resident of any jurisdiction, the laws of which imposes prohibition on soliciting the securities business in that jurisdiction without going through the registration requirements and/or prohibit the use of any information contained in this document. **Indonesia:** This document is being distributed in Indonesia by Standard Chartered Bank, Indonesia branch, which is a financial institution licensed and supervised by Otoritas Jasa Keuangan (Financial Service Authority) and Bank Indonesia. **Jersey:** In Jersey, Standard Chartered Private Bank is the Registered Business Name of the Jersey Branch of Standard Chartered Bank. The Jersey Branch of Standard Chartered Bank is regulated by the Jersey Financial Services Commission. Copies of the latest audited accounts of Standard Chartered Bank are available from its principal place of business in Jersey: PO Box 80, 15 Castle Street, St Helier, Jersey JE4 8PT. Standard Chartered Bank is incorporated in England with limited liability by Royal Charter in 1853 Reference Number ZC 18. The Principal Office of the Company is situated in England at 1 Basinghall Avenue, London, EC2V 5DD. Standard Chartered Bank is authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and Prudential Regulation Authority. The Jersey Branch of Standard Chartered Bank is also an authorised financial services provider under license number 44946 issued by the Financial Sector Conduct Authority of the Republic of South Africa. Jersey is not part of the United Kingdom and all business transacted with Standard Chartered Bank, Jersey Branch and other SC Group Entity outside of the United Kingdom, are not subject to some or any of the investor protection and compensation schemes available under United Kingdom law. **Kenya:** This document is being distributed in Kenya by and is attributable to Standard Chartered Bank Kenya Limited. Investment Products and Services are distributed by Standard Chartered Investment Services Limited, a wholly owned subsidiary of Standard Chartered Bank Kenya Limited that is licensed by the Capital Markets Authority in Kenya, as a Fund Manager. Standard Chartered Bank Kenya Limited is regulated by the Central Bank of Kenya. **Malaysia:** This document is being distributed in Malaysia by Standard Chartered Bank Malaysia Berhad ("SCBMB"). Recipients in Malaysia should contact SCBMB in relation to any matters arising from, or in connection with, this document. This document has not been reviewed by the Securities Commission Malaysia. The product lodgement, registration, submission or approval by the Securities Commission of Malaysia does not amount to nor indicate recommendation or endorsement of the product, service or promotional activity. Investment products are not deposits and are not obligations of, not guaranteed by, and not protected by SCBMB or any of the affiliates or subsidiaries, or by Perbadanan Insurans Deposit Malaysia, any government or insurance agency. Investment products are subject to investment risks, including the possible loss of the principal amount invested. SCBMB expressly disclaim any liability and responsibility for any loss arising directly or indirectly (including special, incidental or consequential loss or damage) arising from the financial losses of the Investment Products due to market condition. **Nigeria:** This document is being distributed in Nigeria by Standard Chartered Bank Nigeria Limited (SCB Nigeria), a bank duly licensed and regulated by the Central Bank of Nigeria. SCB Nigeria accepts no liability for any loss or damage arising directly or indirectly (including special, incidental or consequential loss or damage) from your use of these documents. You should seek advice from a financial adviser on the suitability of an investment for you, taking into account these factors before making a commitment to invest in an investment. To unsubscribe from receiving further updates, please send an email to clientcare.ng@sc.com requesting to be removed from our mailing list. Please do not reply to this email. Call our Priority Banking on 02 012772514 for any questions or service queries. SCB Nigeria shall not be responsible for any loss or damage arising from your decision to send confidential and/or important information to Standard Chartered via e-mail. SCB Nigeria makes no representations or warranties as to the security or accuracy of any information transmitted via e-mail. **Pakistan:** This document is being distributed in Pakistan by, and attributable to Standard Chartered Bank (Pakistan) Limited having its registered office at PO Box 5556, I.I Chundrigar Road Karachi, which is a banking company registered with State Bank of Pakistan under Banking Companies Ordinance 1962 and is also having licensed issued by Securities & Exchange Commission of Pakistan for Security Advisors. Standard Chartered Bank (Pakistan) Limited acts as a distributor of mutual funds and referrer of other third-party financial products. **Singapore:** This document is being distributed in Singapore by, and is attributable to, Standard Chartered Bank (Singapore) Limited (Registration No. 201224747C/ GST Group Registration No. MR-8500053-0, "SCBSL"). Recipients in Singapore should contact SCBSL in relation to any matters arising from, or in connection with, this document. SCBSL is an indirect wholly owned subsidiary of Standard Chartered Bank and is licensed to conduct banking business in Singapore under the Singapore Banking Act, 1970. Standard Chartered Private Bank is the private banking division of SCBSL. IN RELATION TO ANY SECURITY OR SECURITIES-BASED DERIVATIVES CONTRACT REFERRED TO IN THIS DOCUMENT, THIS DOCUMENT, TOGETHER WITH THE ISSUER DOCUMENTATION, SHALL BE DEEMED AN INFORMATION MEMORANDUM (AS DEFINED IN SECTION 275 OF THE SECURITIES AND FUTURES ACT, 2001 ("SFA")). THIS DOCUMENT IS INTENDED FOR DISTRIBUTION TO ACCREDITED INVESTORS, AS DEFINED IN SECTION 4A(1)(a) OF THE SFA, OR ON THE BASIS THAT THE SECURITY OR SECURITIES-BASED DERIVATIVES CONTRACT MAY ONLY BE ACQUIRED AT A CONSIDERATION OF NOT LESS THAN S\$200,000 (OR ITS EQUIVALENT IN A FOREIGN CURRENCY) FOR EACH TRANSACTION. Further, in relation to any security or securities-based derivatives contract, neither this document nor the Issuer Documentation has been registered as a prospectus with the Monetary Authority of Singapore under the SFA. Accordingly, this document and any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of the product may not be circulated or distributed,

nor may the product be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons other than a relevant person pursuant to section 275(1) of the SFA, or any person pursuant to section 275(1A) of the SFA, and in accordance with the conditions specified in section 275 of the SFA, or pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA. In relation to any collective investment schemes referred to in this document, this document is for general information purposes only and is not an offering document or prospectus (as defined in the SFA). This document is not, nor is it intended to be (i) an offer or solicitation of an offer to buy or sell any capital markets product; or (ii) an advertisement of an offer or intended offer of any capital markets product.

Deposit Insurance Scheme: Singapore dollar deposits of non-bank depositors are insured by the Singapore Deposit Insurance Corporation, for up to S\$100,000 in aggregate per depositor per Scheme member by law. Foreign currency deposits, dual currency investments, structured deposits and other investment products are not insured. This advertisement has not been reviewed by the Monetary Authority of Singapore.

Taiwan: SC Group Entity or Standard Chartered Bank (Taiwan) Limited ("SCB (Taiwan)") may be involved in the financial instruments contained herein or other related financial instruments. The author of this document may have discussed the information contained herein with other employees or agents of SC or SCB (Taiwan). The author and the above-mentioned employees of SC or SCB (Taiwan) may have taken related actions in respect of the information involved (including communication with customers of SC or SCB (Taiwan) as to the information contained herein). The opinions contained in this document may change, or differ from the opinions of employees of SC or SCB (Taiwan). SC and SCB (Taiwan) will not provide any notice of any changes to or differences between the above-mentioned opinions. This document may cover companies with which SC or SCB (Taiwan) seeks to do business at times and issuers of financial instruments. Therefore, investors should understand that the information contained herein may serve as specific purposes as a result of conflict of interests of SC or SCB (Taiwan). SC, SCB (Taiwan), the employees (including those who have discussions with the author) or customers of SC or SCB (Taiwan) may have an interest in the products, related financial instruments or related derivative financial products contained herein; invest in those products at various prices and on different market conditions; have different or conflicting interests in those products. The potential impacts include market makers' related activities, such as dealing, investment, acting as agents, or performing financial or consulting services in relation to any of the products referred to in this document.

UAE: DIFC – Standard Chartered Bank is incorporated in England with limited liability by Royal Charter 1853 Reference Number ZC18. The Principal Office of the Company is situated in England at 1 Basinghall Avenue, London, EC2V 5DD. Standard Chartered Bank is authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and Prudential Regulation Authority. Standard Chartered Bank, Dubai International Financial Centre having its offices at Dubai International Financial Centre, Building 1, Gate Precinct, P.O. Box 999, Dubai, UAE is a branch of Standard Chartered Bank and is regulated by the Dubai Financial Services Authority ("DFSA"). This document is intended for use only by Professional Clients and is not directed at Retail Clients as defined by the DFSA Rulebook. In the DIFC we are authorised to provide financial services only to clients who qualify as Professional Clients and Market Counterparties and not to Retail Clients. As a Professional Client you will not be given the higher retail client protection and compensation rights and if you use your right to be classified as a Retail Client we will be unable to provide financial services and products to you as we do not hold the required license to undertake such activities. For Islamic transactions, we are acting under the supervision of our Shariah Supervisory Committee. Relevant information on our Shariah Supervisory Committee is currently available on the Standard Chartered Bank website in the Islamic banking section. For residents of the UAE – Standard Chartered UAE ("SC UAE") is licensed by the Central Bank of the U.A.E. SC UAE is licensed by Securities and Commodities Authority to practice Promotion Activity. SC UAE does not provide financial analysis or consultation services in or into the UAE within the meaning of UAE Securities and Commodities Authority Decision No. 48/r of 2008 concerning financial consultation and financial analysis.

Uganda: Our Investment products and services are distributed by Standard Chartered Bank Uganda Limited, which is licensed by the Capital Markets Authority as an investment adviser.

United Kingdom: In the UK, Standard Chartered Bank is authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and Prudential Regulation Authority. This communication has been approved by Standard Chartered Bank for the purposes of Section 21 (2) (b) of the United Kingdom's Financial Services and Markets Act 2000 ("FSMA") as amended in 2010 and 2012 only. Standard Chartered Bank (trading as Standard Chartered Private Bank) is also an authorised financial services provider (license number 45747) in terms of the South African Financial Advisory and Intermediary Services Act, 2002. The Materials have not been prepared in accordance with UK legal requirements designed to promote the independence of investment research, and that it is not subject to any prohibition on dealing ahead of the dissemination of investment research.

Vietnam: This document is being distributed in Vietnam by, and is attributable to, Standard Chartered Bank (Vietnam) Limited which is mainly regulated by State Bank of Vietnam (SBV). Recipients in Vietnam should contact Standard Chartered Bank (Vietnam) Limited for any queries regarding any content of this document.

Zambia: This document is distributed by Standard Chartered Bank Zambia Plc, a company incorporated in Zambia and registered as a commercial bank and licensed by the Bank of Zambia under the Banking and Financial Services Act Chapter 387 of the Laws of Zambia.