Q2 2023

Corporate Arbitrage

Overview and Benefits of a Dynamic Multistrategy Approach

Executive Summary

Corporate arbitrage strategies seek to capture pricing differences among related assets which can arise due to liquidity demand around corporate events. Several distinct strategies fall under this umbrella. They are only modestly correlated to each other, and each has an opportunity set that varies over time. This is why a dynamic, multistrategy approach is more effective than siloed allocations at capturing these diversifying sources of returns.

Arbitrage lends itself to a hybrid quantitative and discretionary process. Portfolios diversified across hundreds of deals and securities, with discretionary oversight of each individual position's specific risks, can result in more consistent and risk-managed returns. In this short article, we provide an introduction to the main corporate arbitrage strategies, make the case for a multistrategy approach, and review the role of a corporate arbitrage allocation within a broader portfolio.

Convertible Arbitrage

Market segmentation creates differences between convertible security prices and theoretical values

Arbitrageurs provide liquidity and bear risk prices don't converge

Merger Arbitrage

Arbitrageurs earn a premium for assuming risk of deal failure

Strict hedging can be applied to target market neutrality

Arbitrageur diversifies across many deals

Event Driven

Capital flows around corporate events create opportunities for liquidity providers

- SPACs
- Closed-End Funds
- Capital Markets
- Special Situations

Thomas Maloney
Portfolio Solutions Group

Michael Schwert
AQR Arbitrage

We would like to thank Rocky Bryant, Harry Houldsworth and Brad Jones for helpful comments.

Contents

Introduction: What is Corporate Arbitrage? 3

Convertible Arbitrage 4

Merger Arbitrage 5

Event Driven Strategies 6

Implementing Corporate Arbitrage: Benefits of a Multistrategy Approach 7

Corporate Arbitrage in a Wider Portfolio 8

Further Reading 9

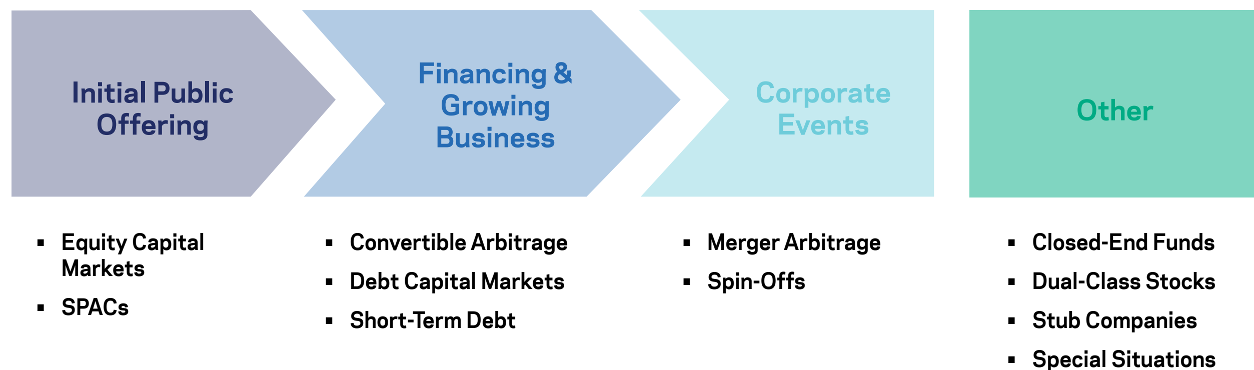
Disclosures 10

Introduction: What is Corporate Arbitrage?

The textbook definition of an arbitrage is a riskless profit opportunity, typically involving the simultaneous purchase and sale of two related assets that have the same future payoff but are priced differently. By buying the "cheap" asset and shorting the "expensive" asset, an arbitrageur seeks to profit from eventual price convergence. Since the real world presents few truly riskless opportunities, arbitrage in practice is more accurately characterized as the deployment of capital to address relative value differences among related assets. Effectively, arbitrageurs are compensated with attractive risk-adjusted returns for the service of making markets more efficient.[1]

The common theme of *corporate arbitrage* strategies is that they seek to harvest liquidity premia associated with supply/demand imbalances created by the actions of market participants across the corporate lifecycle (see **Exhibit 1**). In the following pages we introduce three main categories of corporate arbitrage strategies, discuss the merits of a multistrategy approach, and assess the diversification benefit of adding corporate arbitrage to a typical portfolio.

Exhibit 1: Supply/Demand Imbalances and Liquidity Premia Exist Across the Corporate Lifecycle



Source: AQR.

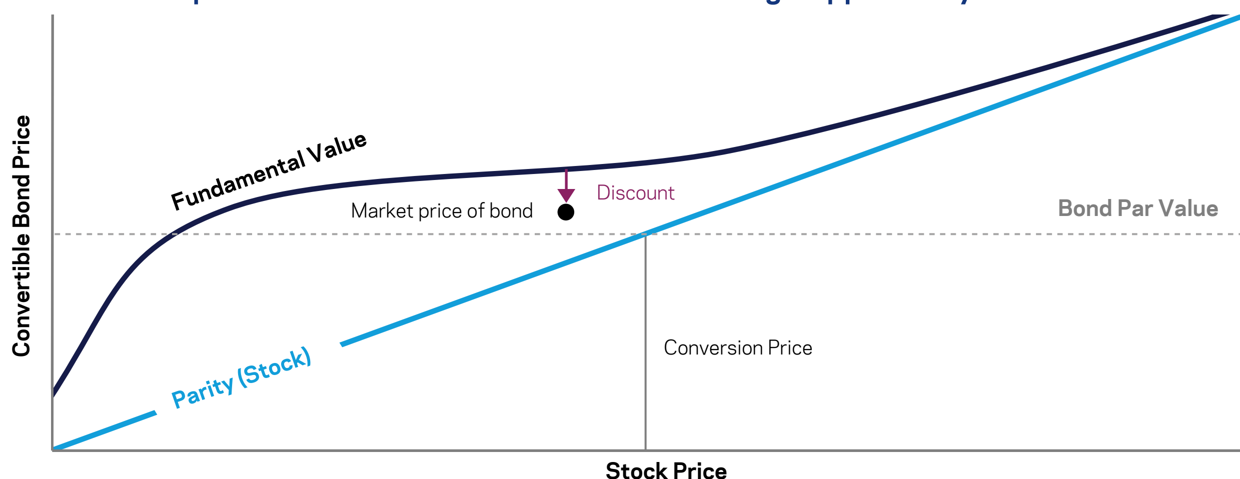
1 In Lasse Pedersen's book *Efficiently Inefficient* (Princeton, 2015), which includes an accessible and entertaining discussion of arbitrage strategies, the author describes them as "the most direct symptom of efficiently inefficient markets."

Convertible Arbitrage

Convertible bonds tend to be issued by under-capitalized companies that may have trouble accessing traditional debt markets. Such companies are willing to pay a premium to access capital without directly issuing equity, often to meet an immediate liquidity need. A convertible bond is a hybrid security that bundles together a corporate bond and an equity warrant. In addition to the coupon rate and maturity date that define a traditional debt instrument, each convertible bond has a conversion ratio, the number of shares into which the bond may be converted, which corresponds to a conversion price, effectively the strike price of the embedded warrant.

A convertible bond's fundamental value can be estimated as the sum of the values of its two components (see **Exhibit 2**). Convertible arbitrageurs buy bonds that are trading at a discount, or "cheap" relative to their fundamental value, and hedge the equity risk by short selling the company's common stock. The hedge ratio or "delta" depends on the sensitivity of the bond price to the underlying equity. Generally, bonds that are far out-of-the-money trade like straight debt instruments, whereas bonds that are in-the-money trade like their underlying equities. By building a diversified portfolio and hedging credit and interest rate risks, convertible arbitrageurs seek to generate excess returns that have a low correlation with traditional asset classes.

Exhibit 2: Simplified Illustration of a Convertible Arbitrage Opportunity



Source: AQR. For illustrative purposes only.

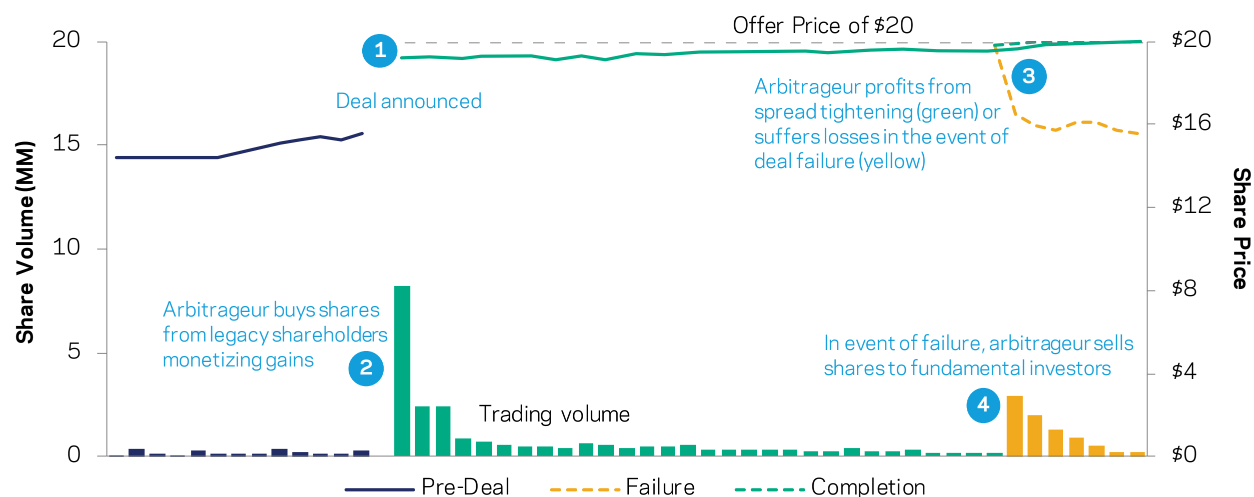
In crisis periods, convertible bond discounts can widen dramatically as investors shun less liquid assets. During the Global Financial Crisis, prime brokerage financing was effectively withdrawn from the convertible bond market, causing fire sales and large losses—followed by exceptional gains the next year for investors who were brave or nimble enough to take advantage.[2]

2 See Asness et al. (2009), *The Limits of Convertible Bond Arbitrage.*

Merger Arbitrage

When a merger is announced, the target company's stock price usually jumps up in response to the acquisition premium, but not fully to the price offered by the acquirer (see **Exhibit 3**). The remaining spread reflects the risk that the merger will not be completed. Trading volume in the target stock spikes after the deal announcement as legacy investors seek to lock in gains and avoid bearing the risk of deal failure. Merger arbitrageurs earn a liquidity premium by stepping in to buy shares from these investors, effectively selling insurance against deal failure. In stock mergers, this trade also involves shorting the acquirer's stock to hedge against changes in the consideration value. Arbitrageurs earn a positive spread on successful deals but can suffer a loss on deals that fail, as the target stock reverts to its pre-deal price.

Exhibit 3: Simplified Illustration of a Merger Arbitrage Trade



Source: AQR. For illustrative purposes only.

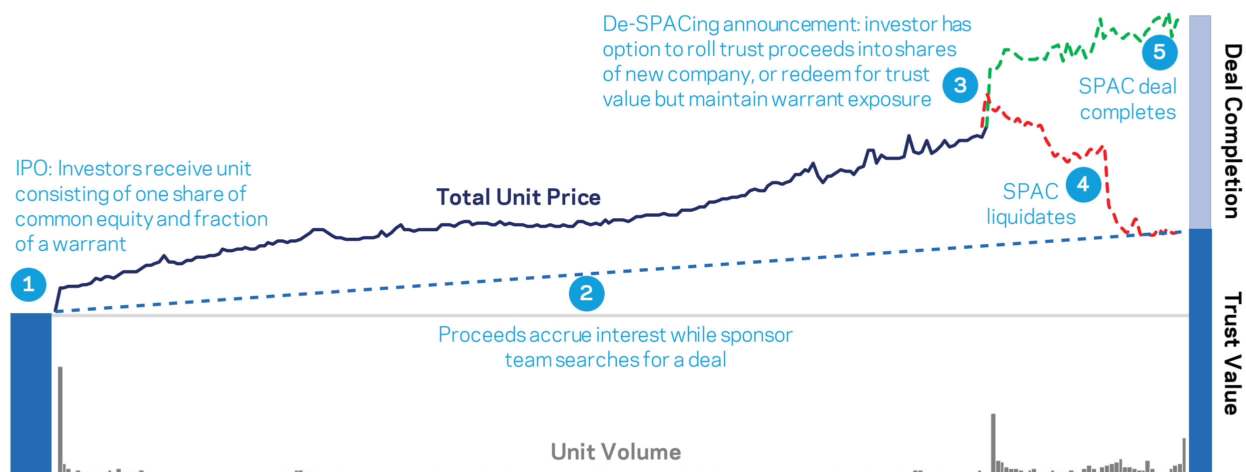
By diversifying across a large number of mergers and employing appropriate risk controls, an arbitrageur can build a portfolio that generates attractive returns with little systematic risk under normal market conditions. The strategy does tend to exhibit positive beta during severe market downturns, when the risk of deal failure rises. Despite these occasional drawdowns, skilled and patient arbitrageurs have been well-compensated over the long term.[3]

3 See Mitchell and Pulvino (2001), Characteristics of Risk and Return in Risk Arbitrage.

Event Driven Strategies

A number of other corporate arbitrage strategies are typically classified under the broad category of "event driven" strategies. One example that entered the mainstream in the early 2020s, though it was a profitable niche for arbitrageurs long before that, is SPAC arbitrage. SPACs (special purpose acquisition companies) issue units consisting of stock and warrants to raise capital, and then find a non-listed company to merge with, taking the company public in the process. Since the capital is invested in an interest-bearing trust account and investors can redeem shares for their trust value before the merger closes, SPAC shares have limited downside risk (see **Exhibit 4**). At the same time, SPAC shares and warrants can offer considerable upside if the merger is received positively by the market. SPAC arbitrage involves buying SPAC units either in the IPO or in the secondary market below their trust value, and maximizing the chance of upside by allocating to many SPACs. For providing liquidity to SPAC sponsors, arbitrageurs are rewarded with an attractive combination of upside potential and limited downside risk. Although the strategy encountered regulatory headwinds in 2022, the SPAC boom of 2020 to 2021 is a prime example of how arbitrageurs can successfully exploit time-varying opportunities.

Exhibit 4: Capturing the Liquidity Risk Premium in SPACs



Source: AQR. For illustrative purposes only.

Closed-end fund (CEF) arbitrage is another event driven strategy where attractiveness has varied over time. CEFs issue a fixed number of shares, which are primarily held by retail investors. Unlike open-end and exchange-traded funds, CEFs do not have a redemption mechanism. As a result, CEF prices can deviate, sometimes dramatically, from their net asset values. CEF arbitrage seeks to capture mean reversion of prices towards NAVs while diversifying idiosyncratic risks and hedging market risks.

Other examples of event driven strategies include dual-class arbitrage, which exploits price differentials between a firm's voting and non-voting shares; equity and debt capital markets, a strategy that captures the liquidity concession paid by firms to access capital; and special situations.

Implementing Corporate Arbitrage: Benefits of a Multistrategy Approach

Corporate arbitrage serves an important economic function, meeting the liquidity demands of firms and concentrated investors and correcting relative pricing dislocations in markets. In this light, economic intuition suggests the corporate arbitrage liquidity premium is a sustainable, long-standing risk premium, not an anomalous return that we'd expect to disappear. But the opportunities and risks of the different strategies can vary dramatically over time. Sometimes deal flow is meager in one strategy but plentiful in another. Often dislocations in relative pricing, such as convertible bond cheapening, are sudden and relatively short-lived. It is difficult for non-specialist investors to take advantage of these opportunities, which have often passed by the time an allocation to an attractive strategy is made. *Multistrategy* arbitrage managers can redeploy risk capital much more quickly, passing on the benefits to their investors. They also have a better chance of finding attractive opportunities throughout the course of the business cycle.

As well as making the most of tactical opportunities, a multistrategy approach can harness strategic diversification benefits. If a disciplined hedging approach is applied to each strategy to minimize unwanted market exposures, correlations between strategies are low. They are not zero – episodes of broad market stress can cause spreads to widen and deals to fail at the same time – but there is substantial diversification to be found by overlaying tactical tilts on a risk-balanced, strategic base, offering investors a smoother ride.

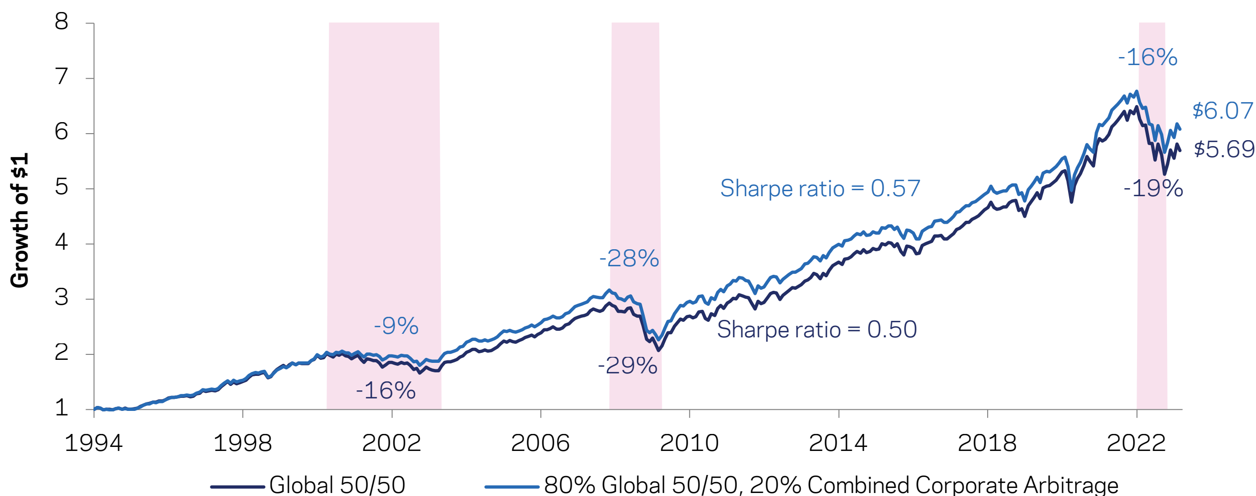
What about *quantitative* versus *discretionary* implementations of corporate arbitrage? A quantitative process is well-suited to identifying and participating in a large number of arbitrage opportunities to minimize company-specific risks. But discretionary oversight also has an important role, as it is difficult to design a purely systematic response to the range of circumstances that can arise in corporate arbitrage situations. For instance, the details of a merger agreement are critical to understanding the potential outcomes of a deal. Similarly, understanding the investor's rights under a convertible bond indenture is important for assessing the downside risks of convertible arbitrage. Managerial experience and discretion are valuable in managing the risks and assessing the rewards of each trade. Corporate arbitrage therefore lends itself to a hybrid quantitative and discretionary approach.

Corporate Arbitrage in a Wider Portfolio

The corporate arbitrage liquidity premium deserves a strategic allocation alongside traditional and alternative asset class exposures, as part of a broader allocation to diversifying strategies. Over the long term, indices representing the historical performance of the arbitrage manager universe have delivered positive alpha comparable to the broadest hedge fund indices, with similar or lower risk.[4] A thoughtfully implemented multistrategy arbitrage allocation can provide attractive positive expected returns with only modest correlations to traditional assets on average, and so has the potential to improve the overall risk/return characteristics of a portfolio, as shown in **Exhibit 5**. Correlations can rise temporarily during episodes of market stress, so investors should size arbitrage allocations carefully, according to risk tolerance, to ensure that the substantial long-term benefits can be harvested.

Exhibit 5: Global 50/50 Stock/Bond Portfolio and Impact of 20% Allocation to Corporate Arbitrage

January 1994 – February 2023



Source: AQR and Bloomberg. Global 50/50 is 50% MSCI World in USD and 50% Bloomberg Barclays Global Aggregate hedged to USD. Combined Corporate Arbitrage is a simple average of four net-of-fee hedge fund indices: Credit Suisse Event Driven and Convertible Arbitrage indices and HFRI Event Driven and Convertible Arbitrage indices. Shading highlights worst 3 drawdowns for Global 50/50 portfolio. Sample period based on data availability. Risk-free rate is 3-month T-Bills.

4 A simple average of Credit Suisse Event Driven and Convertible Arbitrage indices delivered 2.9% alpha (versus MSCI World) from January 1994 to February 2023, with 4.4% beta-adjusted volatility. This compares to 3.2% alpha and 5.2% beta-adjusted volatility for the broad Credit Suisse Hedge Fund index. For equivalent HFRI indices over the same period, the arbitrage combination delivered 3.6% alpha with 4.2% beta-adjusted volatility, compared to 2.9% alpha and 3.9% beta-adjusted volatility for the broad HFRI Fund-Weighted Composite index.

Further Reading

Asness, C., A. Berger and C. Palazzolo, 2009, "The Limits of Convertible Bond Arbitrage," AQR white paper.

Mitchell, M. and T. Pulvino, 2001, "Characteristics of Risk and Return in Risk Arbitrage," *Journal of Finance*, 61(6).

Mitchell, M., L. Pedersen and T. Pulvino, 2007, "Slow Moving Capital," *AEA Papers and Proceedings*.

Pedersen, L., 2015, "Efficiently Inefficient: How Smart Money Invests and Market Prices Are Determined," *Princeton University Press*.

Disclosures

This document has been provided to you solely for information purposes and does not constitute an offer or solicitation of an offer or any advice or recommendation to purchase any securities or other financial instruments and may not be construed as such. The factual information set forth herein has been obtained or derived from sources believed by the author and AQR Capital Management, LLC ("AQR"), to be reliable, but it is not necessarily all-inclusive and is not guaranteed as to its accuracy and is not to be regarded as a representation or warranty, express or implied, as to the information's accuracy or completeness, nor should the attached information serve as the basis of any investment decision. This document is not to be reproduced or redistributed without the written consent of AQR. The information set forth herein has been provided to you as secondary information and should not be the primary source for any investment or allocation decision.

Past performance is not a guarantee of future performance.

This presentation is not research and should not be treated as research. This presentation does not represent valuation judgments with respect to any financial instrument, issuer, security, or sector that may be described or referenced herein and does not represent a formal or official view of AQR.

The views expressed reflect the current views as of the date hereof, and neither the author nor AQR undertakes to advise you of any changes in the views expressed herein. It should not be assumed that the author or AQR will make investment recommendations in the future that are consistent with the views expressed herein, or use any or all of the techniques or methods of analysis described herein in managing client accounts. AQR and its affiliates may have positions (long or short) or engage in securities transactions that are not consistent with the information and views expressed in this presentation.

The information contained herein is only as current as of the date indicated and may be superseded by subsequent market events or for other reasons. Charts and graphs provided herein are for illustrative purposes only. The information in this presentation has been developed internally and/or obtained from sources believed to be reliable; however, neither AQR nor the author guarantees the accuracy, adequacy, or completeness of such information. Nothing contained herein constitutes investment, legal, tax, or other advice, nor is it to be relied on in making an investment or other decision.

There can be no assurance that an investment strategy will be successful. Historic market trends are not reliable indicators of actual future market behavior or future performance of any particular investment, which may differ materially, and should not be relied upon as such. Target allocations contained herein are subject to change. There is no assurance that the target allocations will be achieved, and actual allocations may be significantly different from those shown here. This presentation should not be viewed as a current or past recommendation or a solicitation of an offer to buy or sell any securities or to adopt any investment strategy.

The information in this presentation might contain projections or other forward-looking statements regarding future events, targets, forecasts, or expectations regarding the strategies described herein and is only current as of the date indicated. There is no assurance that such events or targets will be achieved and might be significantly different from that shown here. The information in this presentation, including statements concerning financial market trends, is based on current market conditions, which will fluctuate and may be superseded by subsequent market events or for other reasons. Performance of all cited indices is calculated on a total return basis with dividends reinvested.

The investment strategy and themes discussed herein may be unsuitable for investors depending on their specific investment objectives and financial situation. Please note that changes in the rate of exchange of a currency might affect the value, price, or income of an investment adversely. Neither AQR nor the author assumes any duty to, nor undertakes to update forward-looking statements. No representation or warranty, express or implied, is made or given by or on behalf of AQR, the author, or any other person as to the accuracy and completeness or fairness of the information contained in this presentation, and no responsibility or liability is accepted for any such information. By accepting this presentation in its entirety, the recipient acknowledges its understanding and acceptance of the foregoing statement. Diversification does not eliminate the risk of experiencing investment losses.

Gross performance results do not reflect the deduction of investment advisory fees and other expenses, which would reduce an investor's actual return. AQR's asset based fees may range up to 2.85% of assets under management, and are generally billed monthly or quarterly at the commencement of the calendar month or quarter during which AQR will perform the services to which the fees relate. Where applicable, performance fees are generally equal to 20% of net realized and unrealized profits each year, after restoration of any losses carried forward from prior years. In addition, AQR funds incur expenses (including start-up, legal, accounting, audit, administrative and regulatory expenses) and may have redemption or withdrawal charges up to 2% based on gross redemption or withdrawal proceeds. Please refer to AQR's ADV Part 2A for more information on fees. Consultants supplied with gross results are to use this data in accordance with SEC, CFTC, NFA or the applicable jurisdiction's guidelines.

Broad-based securities indices are unmanaged and are not subject to fees and expenses typically associated with managed accounts or investment funds. Investments cannot be made directly in an index

Index Definitions:

The **MSCI World Index** is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of developed markets.

The **Bloomberg Barclays Global Aggregate Index** is a market-weighted index of global government, government-related agencies, corporate and securitized fixed-income investments.

The **Credit Suisse Event Driven Hedge Fund Index** is a subset of the Credit Suisse Hedge Fund Index that measures the aggregate performance of event driven funds.

The **Credit Suisse Convertible Arbitrage Hedge Fund Index** is a subset of the Credit Suisse Hedge Fund Index that measures the aggregate performance of convertible arbitrage funds.

The **HFRI Event-Driven (Total) Index** Event-Driven measures the aggregate performance of Investment Managers who maintain positions in companies currently or prospectively involved in corporate transactions of a wide variety including but not limited to mergers, restructurings, financial distress, tender offers, shareholder buybacks, debt exchanges, security issuance or other capital structure adjustments.

The **HFRI RV: Fixed Income-Convertible Arbitrage Index** includes strategies in which the investment thesis is predicated on realization of a spread between related instruments in which one or multiple components of the spread is a convertible fixed income instrument.

There is a risk of substantial loss associated with trading commodities, futures, options, derivatives, and other financial instruments. Before trading, investors should carefully consider their financial position and risk tolerance to determine whether the proposed trading style is appropriate. Investors should realize that when trading futures, commodities, options, derivatives, and other financial instruments, one could lose the full balance of their account. It is also possible to lose more than the initial deposit when trading derivatives or using leverage. All funds committed to such a trading strategy should be purely risk capital.

Regional Information

Australia: AQR Capital Management, LLC, is exempt from the requirement to hold an Australian Financial Services License under the Corporations Act 2001, pursuant to ASIC Class Order 03/1100 as continued by ASIC Legislative Instrument 2016/396 (as extended by amendment). AQR is regulated by the Securities and Exchange Commission ("SEC") under United States of America laws and those laws may differ from Australian laws.

Canada: This material is being provided to you by AQR Capital Management, LLC, which provides investment advisory and management services in reliance on exemptions from adviser registration requirements to Canadian residents who qualify as "permitted clients" under applicable Canadian securities laws. No securities commission or similar authority in Canada has reviewed this presentation or has in any way passed upon the merits of any securities referenced in this presentation and any representation to the contrary is an offence.

Middle East: AQR Capital Management (Europe) LLP (DIFC Representative Office) is regulated by the Dubai Financial Services Authority of the Dubai International Financial Centre as a Representative Office (firm reference number: F007651). Its principal place of business is Unit 34, Level 12, The Gate Building, DIFC, Dubai. This marketing communication is distributed on behalf of AQR Capital Management, LLC.

UK: The information set forth herein has been prepared and issued by AQR Capital Management (Europe), LLP, a UK limited liability partnership with its registered office at Charles House 5–11 Regent Street, London, SW1Y 4LR, which is authorized by the UK Financial Conduct Authority ("FCA").

EU: AQR in the European Economic Area is AQR Capital Management (Germany) GmbH, a German limited liability company (Gesellschaft mit beschränkter Haftung; "GmbH"), with registered offices at Maximilianstrasse 13, 80539 Munich, authorized and regulated by the German Federal Financial Supervisory Authority (Bundesanstalt für Finanzdienstleistungsaufsicht, "BaFin"), with offices at Marie-Curie-Str. 24-28, 60439, Frankfurt am Main und Graurheindorfer Str. 108, 53117 Bonn, to provide the services of investment advice (Anlageberatung) and investment broking (Anlagevermittlung) pursuant to the German Securities Institutions Act (Wertpapierinstitutsgesetz; "WpIG"). The Complaint Handling Procedure for clients and prospective clients of AQR in the European Economic Area can be found here: https://ucits.aqr.com/Legal-and-Regulatory. This is a marketing communication in the European Economic Area and approved as a Financial Promotion in the United Kingdom ("UK"). It is only intended for Professional Clients.

Asia: This presentation may not be copied, reproduced, republished, posted, transmitted, disclosed, distributed or disseminated, in whole or in part, in any way without the prior written consent of AQR Capital Management (Asia) Limited (together with its affiliates, "AQR") or as required by applicable law. This presentation and the information contained herein are for educational and informational purposes only and do not constitute and should not be construed as an offering of advisory services or as an invitation, inducement or offer to sell or solicitation of an offer to buy any securities, related

financial instruments or financial products in any jurisdiction. Investments described herein will involve significant risk factors which will be set out in the offering documents for such investments and are not described in this presentation. The information in this presentation is general only and you should refer to the final private information memorandum for complete information. To the extent of any conflict between this presentation and the private information memorandum, the private information memorandum shall prevail. The contents of this presentation have not been reviewed by any regulatory authority in Hong Kong. You are advised to exercise caution and if you are in any doubt about any of the contents of this presentation, you should obtain independent professional advice.

AQR Capital Management (Asia) Limited is licensed by the Securities and Futures Commission ("SFC") in the Hong Kong Special Administrative Region of the People's Republic of China ("Hong Kong") pursuant to the Securities and Futures Ordinance (Cap 571) (CE no: BHD676). AQR Capital Management (Asia) Limited, Unit 2023, 20/F, One IFC, 1 Harbour View Street, Central Hong Kong, Hong Kong. Licensed and regulated by the Securities and Futures Commission of Hong Kong (CE no: BHD676).

China: This document does not constitute a public offer of any fund which AQR Capital Management, LLC ("AQR") manages, whether by sale or subscription, in the People's Republic of China (the "PRC"). Any fund that this document may relate to is not being offered or sold directly or indirectly in the PRC to or for the benefit of, legal or natural persons of the PRC.

Further, no legal or natural persons of the PRC may directly or indirectly purchase any shares/units of any AQR managed fund without obtaining all prior PRC's governmental approvals that are required, whether statutorily or otherwise. Persons who come into possession of this document are required by the issuer and its representatives to observe these restrictions.

Singapore: This document does not constitute an offer of any fund which AQR Capital Management, LLC ("AQR") manages. Any fund that this document may relate to and any fund related prospectus that this document may relate to has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, this document and any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of shares may not be circulated or distributed, nor may the shares be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Singapore other than (i) to an institutional investor pursuant to Section 304 of the Securities and Futures Act, Chapter 289 of Singapore (the "SFA")) or (ii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA.

Korea: Neither AQR Capital Management (Asia) Limited or AQR Capital Management, LLC (collectively "AQR") is making any representation with respect to the eligibility of any recipients of this document to acquire any interest in a related AQR fund under the laws of Korea, including but without limitation the Foreign Exchange Transaction Act and Regulations thereunder. Any related AQR fund has not been registered under the Financial Investment Services and Capital Markets Act of Korea, and any related fund may not be offered, sold or delivered, or offered or sold to any person for re-offering or resale, directly or indirectly, in Korea or to any resident of Korea except pursuant to applicable laws and regulations of Korea.

Japan: This document does not constitute an offer of any fund which AQR Capital Management, LLC ("AQR") manages. Any fund that this document may relate to has not been and will not be registered pursuant to Article 4, Paragraph 1 of the Financial Instruments and Exchange Law of Japan (Law no. 25 of 1948, as amended) and, accordingly, none of the fund shares nor any interest therein may be offered or sold, directly or indirectly, in Japan or to, or for the benefit, of any Japanese person or to others for re-offering or resale, directly or indirectly, in Japan or to any Japanese person except under circumstances which will result in compliance with all applicable laws, regulations and guidelines promulgated by the relevant Japanese governmental and regulatory authorities and in effect at the relevant time. For this purpose, a "Japanese person" means any person resident in Japan, including any corporation or other entity organised under the laws of Japan.

Request ID: 381254

www.aqr.com

AQR Capital Management, LLC Two Greenwich Plaza, Greenwich, CT 06830 **P** +1.203.742.3600 **F** +1.203.742.3100