INSIGHTS IN BRIEF

A European Comeback?

Global Markets Division | Prime Services
Hedge Fund Insights & Analytics

November 2021

Prepared by Prime Brokerage. In evaluating this material, you should know that it could have been previously provided to other clients and/or internal Goldman Sachs personnel, who could have already acted on it. The views or ideas expressed here are those of the desk and/or author only and are not an official view of Goldman Sachs; others at Goldman Sachs may have opinions or may express views that are contrary to those herein. This material is not independent advice and is not a product of Global Investment Research. This material is a solicitation of derivatives business generally, only for the purposes of, and to the extent it would otherwise be subject to, CFTC Regulations 1.71 and 23.605.

INTRODUCTION

In a year in which hedge funds have faced numerous performance headwinds – rotations from growth to value, the rise of retail investors, turbulence in Chinese equities – one area of apparent tailwinds is Europe.

In recent years, focus and interest in the region have remained muted relative to other regions, but steady. However, over the past ten months we've observed a swift migration of attention towards Europe, as European managers outperformed their peers elsewhere, and hedge funds globally have been increasing their exposure.

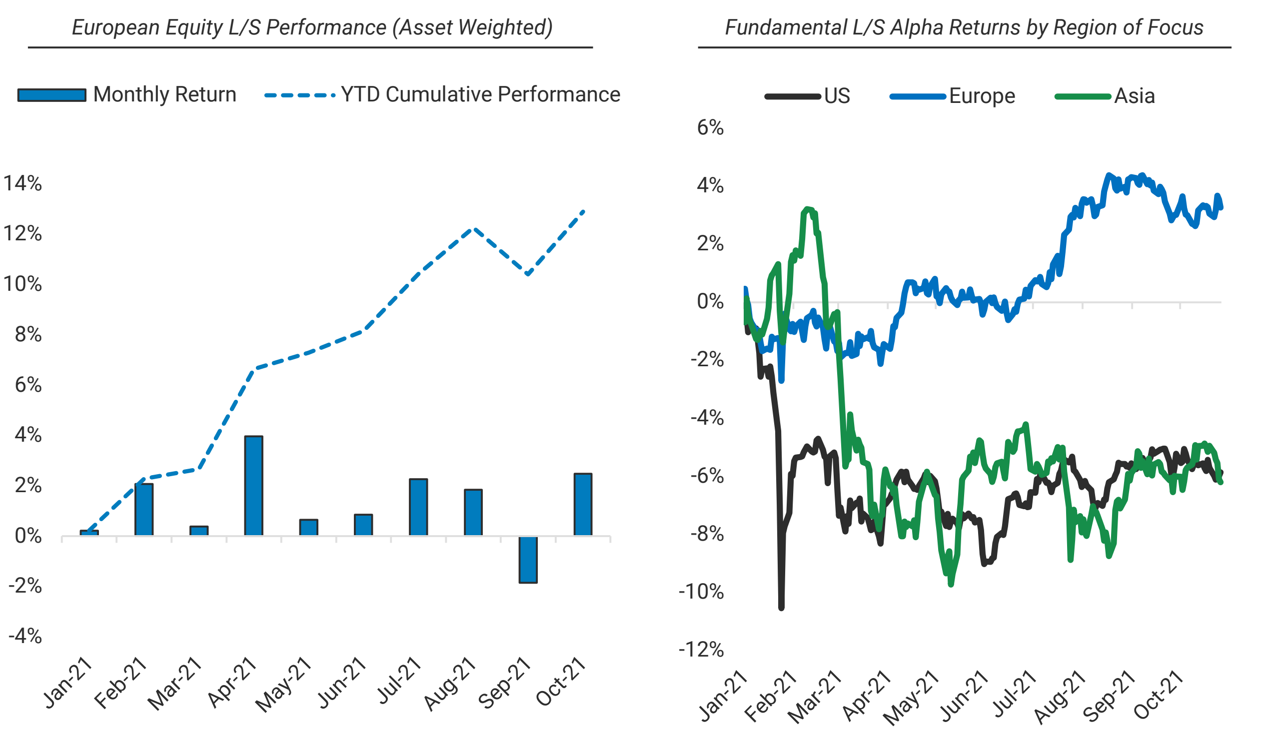
As a macro trend more broadly, Europe is in the spotlight. Recent Goldman Sachs Research reports, *Top of Mind: Europe at a Crossroads* and *Europe Equity Strategy - 2022 Outlook: If not now, when?*, highlighted a number of reasons as to why investors are looking to grow their European exposure. These include Europe's unprecedented program of fiscal risk-sharing in response to the pandemic and other developments towards increased European integration, combined with higher growth and relatively cheap valuations, all of which may create an environment for better investor returns.

In this latest issue of *Insights in Brief*, we explore the recent outperformance of European hedge funds, the rotation into the region, key trends in hedge fund positioning in Europe, the European hedge fund manager landscape, and the appetite of allocators for deploying capital in Europe-focused strategies.

RECENT EUROPEAN EQUITY HEDGE FUND PERFORMANCE

Based on our estimates (on an asset-weighted basis), European equity long/short managers are currently on track to deliver a third consecutive year of double-digit returns. Through October, we estimate that European L/S managers are up +12.9% YTD, after being up +11.4% and +14.1% in 2019 and 2020, respectively. As **Figure 1** shows, European managers have posted positive returns in 11 of the past 12 months (except September 2021).

Figure 1: YTD European Equity L/S performance and alpha estimates



Source: Goldman Sachs Prime Brokerage data. Data as of 11/30/21 except where noted. Past performance is not indicative of future results. This material is for discussion purposes only, and does not purport to contain a comprehensive analysis of the risks / rewards of any idea or strategy.

Despite the losses in September, European managers still managed to significantly outperform the market benchmark (-1.9% vs. -4.6% MSCI EU).

The strength of this performance distinguishes them from their US- and Asia-focused peers: through October, the average US-focused equity L/S fund was +6.5%, and the average Asia-focused L/S fund was +3.2%. In large part, this relative outperformance has been driven by European managers' lack of exposure to the major performance headwinds of 2021: the rapid appreciation of widely-held shorts in January in the US, and then the China sell-off that occurred from May onwards. We would caveat, however, that as in all regions, the dispersion in performance among European managers is high this year. Moreover, the asset-weighted performance average is higher than the equally-weighted average, indicating relatively stronger performance by larger European managers.

However, it is not just in absolute performance terms that European L/S funds are outperforming. In contrast to US-focused funds, which have delivered negative YTD alpha of around -6%, we estimate that European funds have delivered positive alpha of between +3.3% and +6.6% (depending on the alpha model used) through the end of October, positioning them for the third year in a row of positive alpha. European funds have also acquitted themselves well in alpha terms on a longer-term basis.

During the last 5 years, European L/S funds generated an aggregate alpha of +32.4%, while US funds delivered just +4.0% (though both regions lagged Asia at +46.1%). However, this alpha has been masked by an easier benchmark to beat: the MSCI Europe has annualized 7.1% over the last 5 years, while the S&P 500 has annualized 16.5%. In addition, our sense is that the 'globalization' of the portfolios of some of the largest European long/short managers (discussed in more detail on page 4-5) has also contributed to recent alpha.

Away from equity L/S, we estimate that European credit funds are also outperforming their global peers, albeit by a smaller margin: the average European credit fund was +13.8% through November, vs. 11.3% for the global average. In event-driven, European funds are slightly lagging the average (+8.4% vs. +10.2%), though that differential is largely explained by the larger presence of activist strategies in the US within our dataset, which have performed very strongly this year.

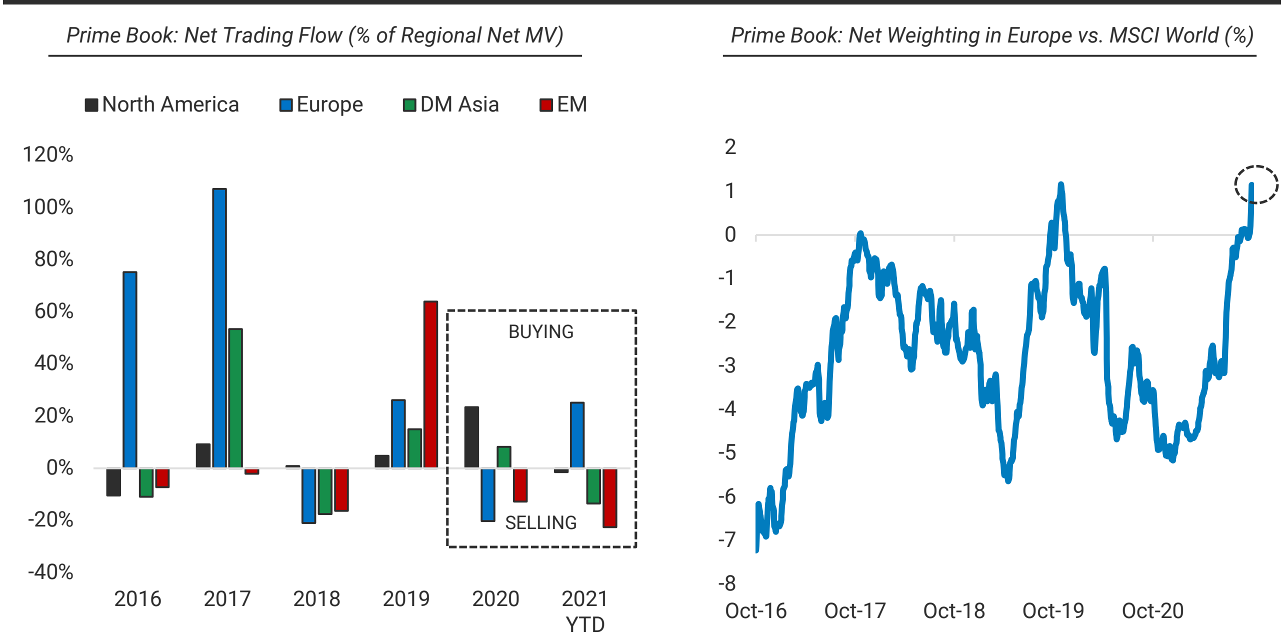
HEDGE FUND FLOWS INTO EUROPE

Since the start of the year, hedge funds globally have aggressively rotated into European equities at the expense of other regions, buying European stocks in seven out of the ten past months. To further this point, Europe is the only net bought region on the Goldman Sachs Prime Brokerage book year to date, on the back of risk-on flows with long buying outpacing short selling 3.5 to 1 in dollar terms, as shown in **Figure 2** .

As a result, hedge fund positioning in European equities has risen considerably this year on several measures:

- **Long/Short Ratio (market value)**: The aggregate L/S ratio in European stocks is up +27% YTD – from 1.9 to 2.4, the highest level in nearly six years (since June 2015). On the other hand, the aggregate L/S ratios in all other regions have declined so far this year.
- **Net weighting vs. the market benchmark**: Hedge funds' net weighting in Europe vs. the MSCI World has risen +6.0 pts YTD to +1.2%. This is the first time they have been overweight since December 2019 and the highest level on our record, as shown in **Figure 2**. For the first time since November 2017, Europe is now the most overweight region in the GS Prime Brokerage book.

Figure 2: Hedge fund net trading flow by region and over/under-weight in European equities



Source: Goldman Sachs Prime Brokerage data. Data as of 11/30/21 except where noted. Past performance is not indicative of future results. This material is for discussion purposes only, and does not purport to contain a comprehensive analysis of the risks / rewards of any idea or strategy.

- **Europe as percentage of global gross and net exposures:** As a percentage of the overall Prime Brokerage book, gross/net exposures in Europe have risen +1.3/+5.9 pts YTD to 16.5%/19.0%, which are in the 47th/78th percentiles vs. the past ten years.

This is a sharp contrast versus what we observed in 2020 when Europe was by far the most net sold region on the Prime Brokerage book, almost entirely driven by short sales (also displayed in **Figure 2**); indicating much more positive sentiment towards the region throughout the course of this year.

Moreover, we would note that this year's buying activity has been more broad-based as compared to 2017 when European stocks saw large net buying on the back of double-digit earnings growth. While macro products (indices and ETFs) accounted for nearly 40% of the dollar net buying in 2017, the net buying so far this year has been driven entirely by single stocks, as 10 of 11 European sectors have been net bought (healthcare being the sole exception).

Although European stocks have seen significant net buying this year, the leverage profile across European equity L/S managers does not seem stretched, based on our estimates. While gross leverage has moved up in the past few months, it is still down -4.9 pts YTD at 171%, which is in the 33rd percentile vs. the past year and in the 52nd percentile vs. the past five years; suggesting there remains ample dry powder on the sidelines. Net leverage is also down -2.2 pts on a YTD basis at 55%, which is in the 32nd percentile vs. the past year and in the 79th percentile vs. the past five years.

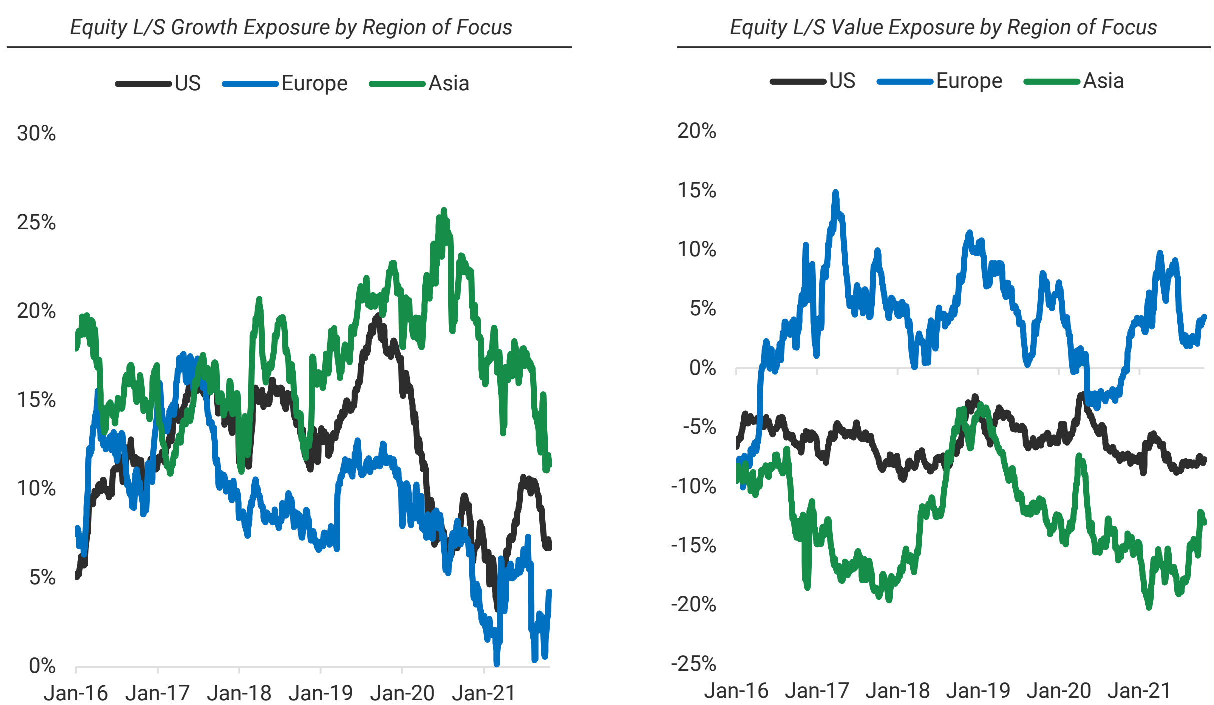
FACTOR AND THEMATIC POSITIONING IN EUROPE

One of the most notable facets of positioning in Europe is on the topic of growth vs. value. Our global client base has tended to be long growth and short value, which has created a performance headwind in the last 12 months. However, as shown in **Figure 3**, Europe-focused long/short managers tend to have a higher tilt towards value relative to their Asia and US peers. Our factor models estimate that European L/S managers are currently net long the value factor by +3.8%. In contrast, Asia and US L/S managers are net short value by -13.3% and -7.4%, respectively. Similarly, European L/S is currently net long the growth factor by just +3.6%, well below their Asian and US peers at +12.0% and +6.5%, respectively. This has helped to support the positive performance dynamics in favor of European managers this year.

Through our GS Custom Baskets, we also discern a number of other key themes in terms of current European hedge fund positioning:

- **Reopening (GSCBGOUT; above average positioning vs history)**: Prior to recent news of the Omicron variant, managers were positioned for outperformance of the European reopening trade: exposure to the EU Go Outside basket (**GSCBGOUT**) was in the 100th percentile versus the past five years. On a YTD basis, the basket was lagging the STOXX 600 by nearly 10 pts before the sell-off; since then, that gap has widened to almost 18 pts. Managers have also reduced their exposure to this theme, with the aggregate L/S ratio of the basket constituents on the GS Prime book falling from a high of 3.60 on November 17th

Figure 3: Equity L/S growth and value exposure by region of focus



Source: Goldman Sachs Goldman Sachs Prime Brokerage data. Data as of 11/30/21 except where noted. Past performance is not indicative of future results. This material is for discussion purposes only, and does not purport to contain a comprehensive analysis of the risks / rewards of any idea or strategy.

to 3.13 on November 30th, suggesting a more cautious stance. With that said, positioning still remains relatively elevated, with the L/S ratio currently in the 92nd percentile on a five-year basis.

- **Renewables (GSXERNEW and GSXEENAB; mixed)**: The recent COP26 conference saw a reaffirmation of government commitments to net zero targets, with prospects of additional green fiscal stimulus supporting the broader ESG ecosystem. However, amid persistent supply chain challenges, hedge fund positioning appears to have shifted from pure green energy producers into tech and green transition enablers this year. For perspective, the aggregate L/S ratio of the EU Renewable Energy basket (GSXERNEW) is down -47% YTD to 1.94 (34th percentile vs. the past five years), while the L/S ratio of the EU New Cycle Enablers basket (GSXEENAB) is up +6% YTD to 3.06 (80th percentile vs. the past five years); though the trends appear to have partially reversed in the past few weeks.
- **China Exposure (GSXECHNA; above average positioning vs history but well below recent highs)**: The aggregate L/S ratio of the EU China Exposure basket (GSXECHNA) currently stands at 3.34, which is up +10% YTD and in the 89th percentile vs. the past five years; however, it has declined by -18% since rising to a multi-year high of 4.05 in early July, suggesting that hedge funds recently reduced net length in EU stocks with significant China exposure even though the price of the basket has risen +2.8% during the same period.

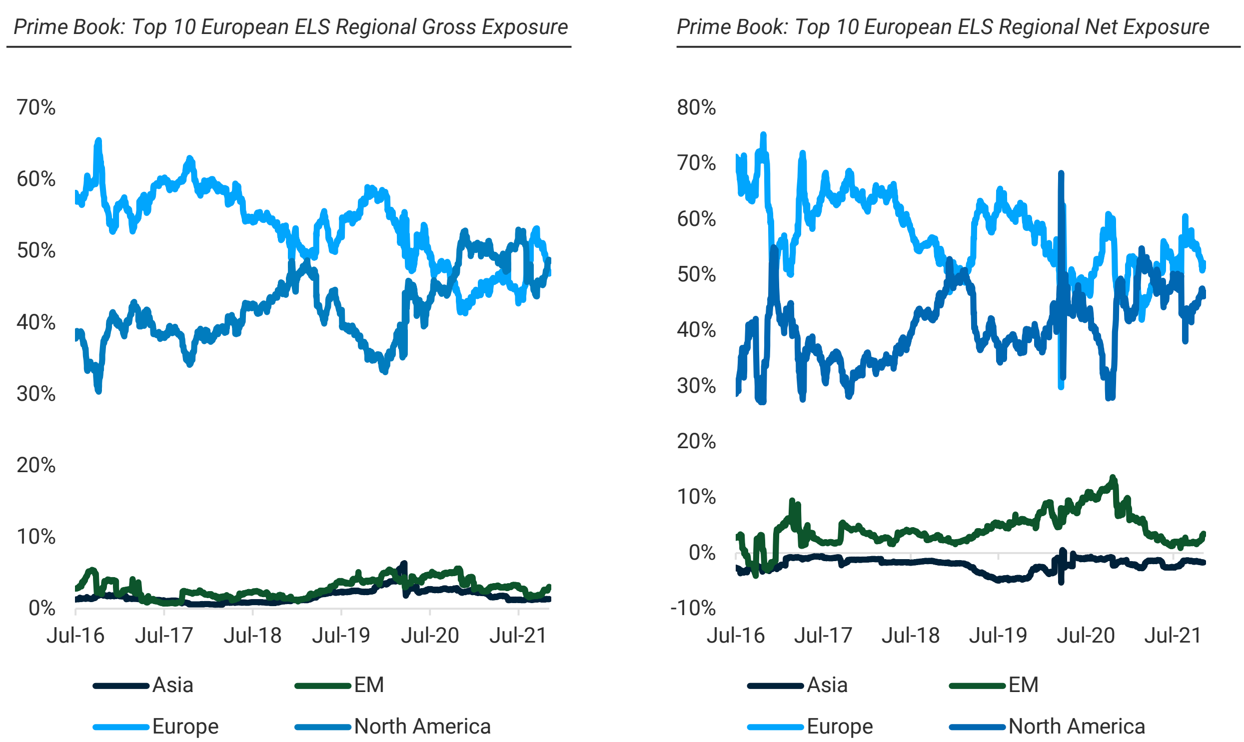
THE EUROPEAN HEDGE FUND MANAGER LANDSCAPE

On a regional basis, European managers have consistently accounted for 15-25% of industry assets during the last decade. In the post-crisis period (2010-15), European managers lost share, falling from 19% to 15% of global assets, before beginning to grow again steadily. This growth reached a peak of almost 24% of assets in 2019, before falling sharply amid the COVID crisis back to 18%.[1]

However, the European hedge fund industry has tended to be skewed towards certain strategies in particular, with macro and systematic strategies representing an outsized share of assets relative to other regions. These strategies tend mostly to be global in their investment focus, meaning that funds with a regional focus on Europe represent a smaller segment of overall industry AUM. According to HFR, funds with a regional focus on Europe account for around 5.9% of total hedge fund industry AUM as of Q3 2021. While this proportion has declined over the past ten years (7.6% in 2011), all regions have experienced this losing trend as the number of funds with a global focus has continued to grow (40.1% in 2011, 50.9% in Q3 2021).[2]

Moreover, we found it interesting to note that many of the largest 'brand name' European managers have broadened their portfolios beyond their home region. As **Figure 4** illustrates, the top ten European long/short managers in our Prime book have substantially decreased their exposure to

Figure 4: Top 10 European equity L/S funds: regional gross and net exposure



Source: Goldman Sachs Prime Brokerage data. Data as of 11/30/21 except where noted. Past performance is not indicative of future results. This material is for discussion purposes only, and does not purport to contain a comprehensive analysis of the risks / rewards of any idea or strategy.
1. HFM – note that this analysis only includes managers with >$1bn in AUM, so assumes that these trends hold for smaller managers.
2. HFR

Europe (by almost 20%) over the past five years, while North American exposure has steadily risen by an offsetting amount. The globalization of these strategies in recent years may have been due to many reasons including the perceived opportunity set within Europe, the migration towards growth, and more. The effect, however, has been to limit the range of dedicated European-focused products available to investors, and in some cases to discourage allocation to European funds given the potential for overlap with existing global exposures.

However, in the last two years, we have seen an increasingly vibrant new launch market in Europe, which may point towards a resurgence. Interestingly, a notable percentage of these offerings have been credit-focused, accounting for around 27% and 30% of new launches in Europe during 2019 and 2020 respectively, considerably higher than in the past. This changing strategy mix points towards both the evolving opportunity set and the changing nature of European managers.

ALLOCATOR APPETITE FOR EUROPEAN HEDGE FUNDS

Until recently, allocator interest in Europe had been relatively muted for a number of years. **Figure 5** shows regional demand for hedge fund strategies based on investor surveys that the Goldman Sachs Capital Introduction team has conducted. After a spike in demand in 2018 (off the back of strong European performance in 2017), appetite for European exposure has stayed at a consistently low level. At the outset of 2021, the majority of regional interest expressed was in Asia-focused strategies, with around 45% of allocators planning to increase their exposure. At the same time, just 11% of allocators planning to increase their exposure to European strategies throughout 2021.

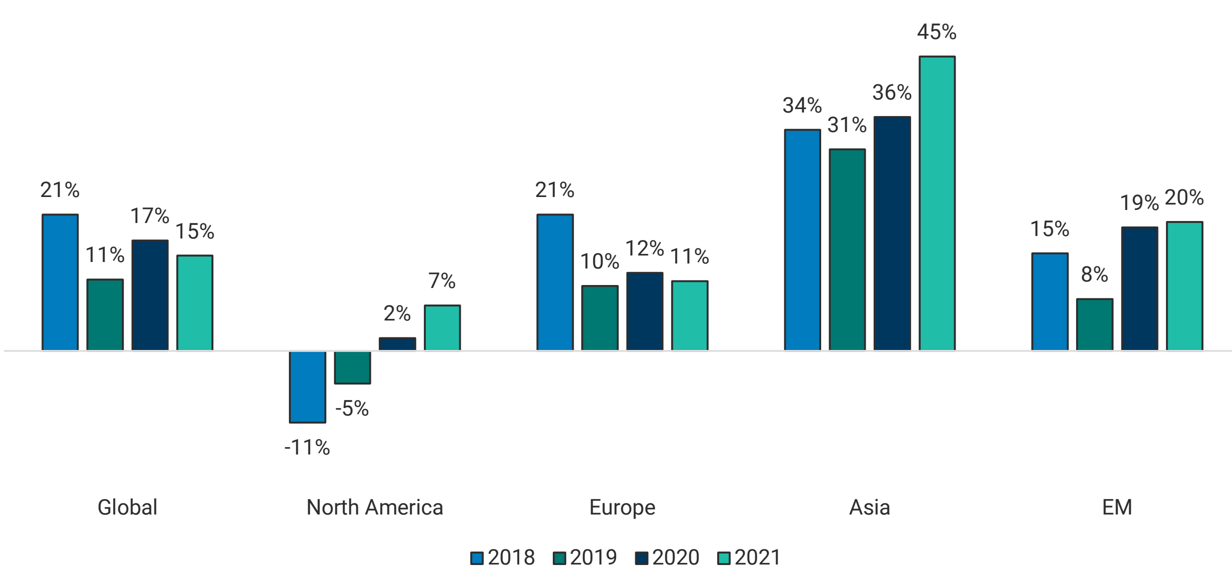
However, despite this muted interest at the beginning of the year, we have begun to observe (on an anecdotal basis) more allocators looking to re-evaluate the opportunity set for various reasons, including:

- **Concerns around diversification**: A number of investors have expressed concerns around their portfolios being overweight in US equities or growth and are looking to diversify internationally or towards value through European managers. While the larger European managers have decreased Europe exposure in recent years, this exposure still accounts for the majority of the book, which offers investors the opportunity to achieve that regional diversification within their portfolios. Moreover, European managers indeed have a value tilt according to our book.
- **Tackling the 'travel backlog'**: As international travel between the US and Europe has recently reopened, and comfort levels with international travel are slowly increasing, many allocators have expressed that they are looking to make up for lost time and commence searches for European managers.
- **Opportunity set**: More and more allocators have indicated that many of the macro headwinds in Europe have dissipated (Brexit, broader EU/Eurozone concerns etc.) making Europe as a macro play more attractive than it has been in many years, and giving comfort that European markets are less likely to be impacted by political challenges than they have been in the last decade.

It remains to be seen whether this recent interest will prove durable, but combined with the increased trading flows to the region, it suggests that 2021 may mark the beginning of a European comeback for the hedge fund industry.

Figure 5: Allocator appetite by regional focus of hedge fund strategy

Regional Appetite for 2018-2021 (net % of allocators planning to increase allocation)



Source: Goldman Sachs Prime Insights & Analytics: 'A Rising Tide: The Outlook for the Hedge Fund Industry in 2021', February 2021

HEDGE FUND INSIGHTS & ANALYTICS

Questions? Comments? Please reach out to the Prime Insights & Analytics team…

Freddie Parker, CFA
freddie.parker@gs.com | 212-357-5613
Co-Head of Prime Insights and Analytics
Vice President, Capital Introduction

Vincent Lin, CFA
vincent.lin@gs.com | 212-902-9060
Co-Head of Prime Insights and Analytics
Vice President, Securities Lending

Sydney Watson
sydney.watson@gs.com | 212-357-4131
Prime Insights and Analytics
Analyst, Capital Introduction

Kartik Singhal
kartik.singhal@gs.com | 646-446-7605
Prime Insights and Analytics
Analyst, Prime Services Strats

marquee Read all the latest content from Goldman Sachs Prime Services on Marquee®

DISCLAIMERS

Conflict of Interest Disclosure: We are a full-service, integrated corporate advisory, investment management, and brokerage firm. The professionals who prepared this material are paid in part based on the profitability of The Goldman Sachs Group, Inc., which includes earnings from the firm's trading, capital markets, corporate advisory and other business. They, along with other salespeople, traders, and other professionals may provide oral or written market commentary or trading strategies to our clients that reflect opinions that are contrary to the opinions expressed herein or the opinions expressed in research reports issued by our Research Departments, and our market making, investing and lending businesses may make investment decisions that are inconsistent with the views expressed herein. In addition, the professionals who prepared this material may also produce material for, and from time to time, may advise or otherwise be part of our trading desks that trade as principal in the securities mentioned in this material. This material is therefore not independent from our interests, which may conflict with your interests. We and our affiliates, officers, directors, and employees, including persons involved in the preparation or issuance of this material, may from time to time have "long" or "short" positions in, act as principal in, and buy or sell the securities or derivatives (including options) thereof in, and act as market maker or specialist in, and serve as a director of, companies mentioned in this material. In addition, we may have served as manager or co manager of a public offering of securities by any such company within the past three years

Unless cited to a third party source, the information in this material is based solely upon the personal observations of members of the Goldman Sachs Capital Introduction team. Industry-wide information in this material may have been extrapolated solely from data, surveys or observations relating to hedge fund activity conducted solely in Goldman Sachs prime brokerage accounts. Information sourced exclusively from the Goldman Sachs client base or observations of the GS Capital Introduction Team may not be representative of the broader global hedge fund industry. This material has been prepared and distributed by Goldman Sachs for informational purposes only and should not be construed as legal, accounting, tax or other professional advice. You should consult with your own independent legal, accounting, tax and other professional advisors before taking any action on the basis of this information.This presentation has been prepared by the Equities Division and is not the product of Goldman Sachs Global Investment Research. This material should not be construed as an endorsement, advice or recommendation by Goldman Sachs about investing in hedge funds generally or in any particular hedge fund strategy. It is for your general information only and we are not soliciting any action based upon it. It does not take into account your particular investment objectives, financial situation or needs. • Investments in hedge funds are speculative, involve a high degree of risk, and are illiquid. • Hedge funds may be highly leveraged and their performance can be volatile. • You could lose all or a substantial amount of any investment you make in a hedge fund. • You are solely responsible for performing such due diligence as you may deem appropriate, including consulting your own legal, tax and investment advisors, and any information provided by Goldman Sachs shall not form the primary basis of any investment decision you may make. The information provided in the material is based upon sources believed to have been reliable by Goldman Sachs only as of the date indicated, but Goldman Sachs has not taken any steps to verify the accuracy or completeness of the information. Neither Goldman Sachs nor any of its officers, employees, agents, affiliates or advisers make any representation or warranty as to the accuracy or completeness of the material or are under any obligation, express or implied, to update the information to correct any inaccuracies it may contain or to reflect any changes that may occur in the future.Goldman Sachs has or may develop a business or client relationship with you, which may have an investment advisory or discretionary aspect to it ("Advisory Relationship"). Any information or material accompanying this disclaimer is not being, and shall not be deemed under any circumstances to be, provided to you as part of such Advisory Relationship. In addition, unless expressly agreed to the contrary in writing, Goldman Sachs shall be under no obligation as a result of such Advisory Relationship to provide you with any advice or recommendations in connection with the accompanying material or any further information or material relating to any particular fund or manager referenced thereinThis material is confidential and may not be disclosed to any person other than the intended recipient without the express written approval of Goldman Sachs. No part of this material may be (i) copied, photocopied, or duplicated in any form, by any means or (ii) redistributed, without Goldman Sachs' prior written consent. Copyright 2021. The Goldman Sachs Group, Inc. All rights reserved.

Alternative Investments: Alternative Investments are not subject to the same regulatory requirements or governmental oversight as mutual funds. The sponsor or manager of any Alternative Investment may not be registered with any governmental agency. Alternative Investments often engage in leverage and other investment practices that are extremely speculative and involve a high degree of risk. Such practices may increase the volatility of performance and the risk of investment loss, including the loss of the entire amount that is invested.

Alternative Investments may purchase instruments that are traded on exchanges located outside the United States that are "principal markets" and are subject to the risk that the counterparty will not perform with respect to contracts. Furthermore, this is the case since there is generally less government supervision and regulation of foreign exchanges, Alternative Investments are also subject to the risk of the failure of the exchanges and there may be a higher risk of financial irregularities and/or lack of appropriate risk monitoring and controls.

Alternative Investments may impose significant fees, including incentive fees that are based upon a percentage of the realized and unrealized gains, and such fees may offset all or a significant portion of such Alternative Investment's trading profits.Alternative Investments are offered in reliance upon an exemption from registration under the Securities Act of 1933, as amended, for offers and sales of securities that do not involve a public offering. No public or other market is available or will develop. Similarly, interests in an Alternative Investment are highly illiquid and generally are not transferable without the consent of the sponsor, and applicable securities and tax laws will limit transfers.

Alternative Investments may themselves invest in instruments that may be highly illiquid and extremely difficult to value. This also may limit your ability to redeem or transfer your investment or delay receipt of redemption proceeds.

Alternative Investments are not required to provide their investors with periodic pricing or valuation information. There may be conflicts of interest between the Alternative Investment and other service providers, including the investment manager and sponsor of the Alternative Investment.

Investors in Alternative Investments may have limited rights with respect to their investment interest, including limited voting rights and participation in the management of the Alternative Investment.

Alternative Investments may involve complex tax and legal structures. Investment in any particular Alternative Investment, or Alternative Investments generally, is only suitable for sophisticated investors for whom such an investment does not constitute a complete investment program and who fully understand and are willing to assume the risks involved in such Alternative Investment. You are urged to consult with your own tax, accounting and legal advisers regarding any investment in any Alternative Investment.

DISCLAIMERS

Notice to Australian Investors: When this document is disseminated in Australia by Goldman Sachs & Co. LLC ("GSCO"), Goldman Sachs International ("GSI"), Goldman Sachs Bank Europe SE ("GSBE"), Goldman Sachs (Asia) L.L.C. ("GSALLC"), or Goldman Sachs (Singapore) Pte ("GSSP") (collectively the "GS entities"), this document, and any access to it, is intended only for a person that has first satisfied the GS entities that:
• the person is a Sophisticated or Professional Investor for the purposes of section 708 of the Corporations Act of Australia; and
• the person is a wholesale client for the purpose of section 761G of the Corporations Act of Australia.
To the extent that the GS entities are providing a financial service in Australia, the GS entities are each exempt from the requirement to hold an Australian financial services licence for the financial services they provide in Australia. Each of the GS entities are regulated by a foreign regulator under foreign laws which differ from Australian laws, specifically:
• GSCO is regulated by the US Securities and Exchange Commission under US laws;
• GSI is authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority, under UK laws;
• GSBE is subject to direct prudential supervision by the European Central Bank and in other respects is supervised by the German Federal Financial Supervisory Authority (Bundesanstalt für Finanzdienstleistungsaufischt, BaFin) and Deutsche Bundesbank;
• GSALLC is regulated by the Hong Kong Securities and Futures Commission under Hong Kong laws; and
• GSSP is regulated by the Monetary Authority of Singapore under Singapore laws.

Notice to Brazilian Investors

Marquee is not meant for the general public in Brazil. The services or products provided by or through Marquee, at any time, may not be offered or sold to the general public in Brazil. You have received a password granting access to Marquee exclusively due to your existing relationship with a GS business located in Brazil. The selection and engagement with any of the offered services or products through Marquee, at any time, will be carried out directly by you. Before acting to implement any chosen service or products, provided by or through Marquee you should consider, at your sole discretion, whether it is suitable for your particular circumstances and, if necessary, seek professional advice. Any steps necessary in order to implement the chosen service or product, including but not limited to remittance of funds, shall be carried out at your discretion. Accordingly, such services and products have not been and will not be publicly issued, placed, distributed, offered or negotiated in the Brazilian capital markets and, as a result, they have not been and will not be registered with the Brazilian Securities and Exchange Commission (Comissão de Valores Mobiliários), nor have they been submitted to the foregoing agency for approval. Documents relating to such services or products, as well as the information contained therein, may not be supplied to the general public in Brazil, as the offering of such services or products is not a public offering in Brazil, nor used in connection with any offer for subscription or sale of securities to the general public in Brazil.

The offer of any securities mentioned in this message may not be made to the general public in Brazil. Accordingly, any such securities have not been nor will they be registered with the Brazilian Securities and Exchange Commission (Comissão de Valores Mobiliários) nor has any offer been submitted to the foregoing agency for approval. Documents relating to the offer, as well as the information contained therein, may not be supplied to the public in Brazil, as the offer is not a public offering of securities in Brazil. These terms will apply on every access to Marquee.

Ouvidoria Goldman Sachs Brasil: 0800 727 5764 e/ou ouvidoriagoldmansachs@gs.com

Horário de funcionamento: segunda-feira à sexta-feira (exceto feriados), das 9hs às 18hs.

Ombudsman Goldman Sachs Brazil: 0800 727 5764 and / or ouvidoriagoldmansachs@gs.com

Available Weekdays (except holidays), from 9 am to 6 pm.

Please note that none of Goldman Sachs and its affiliates including Goldman Sachs (Asia) LLC maintains any licenses, authorisations or registrations in the People's Republic of China ("PRC") nor are the funds discussed in this material registered in the PRC.

The distribution of this material and the placement of interests in the funds in Hong Kong is restricted. Accordingly, unless permitted by the securities laws of Hong Kong, no person may issue or have in its possession for the purposes of issue, this material, or any advertisement, invitation or document relating to the interests in the funds, whether in Hong Kong or elsewhere, which is directed at, or the contents of which are likely to be accessed or read by, the public in Hong Kong, other than with respect to the interests in the funds which are intended to be disposed of only to persons outside Hong Kong or only to ―professional investors‖ within the meaning of the Securities and Futures Ordinance (Cap. 571 of the Laws of Hong Kong) and any rules made thereunder.

Note to Investors in Israel: GS is not licensed to provide investment advice or investment management services under Israeli law.

Notice to Investors in Japan
Marquee is made available in Japan by Goldman Sachs Japan Co., Ltd.

本書は情報の提供を目的としております。また、売却・購入が違法となるような法域での有価証券その他の売却若しくは購入を勧めるものでもありません。ゴールドマン・サックスは本書内の取引又はストラクチャーの勧誘を行うものではございません。これらの取引又はストラクチャーは、社内及び法規制等の承認等次第で実際にはご提供できない場合がございます。

<適格機関投資家限定　転売制限>
ゴールドマン・サックス証券株式会社が適格機関投資家のみを相手方として取得申込みの勧誘（取得勧誘）又は売付けの申込み若しくは買付けの申込みの勧誘(売付け勧誘等)を行う本有価証券には、適格機関投資家に譲渡する場合以外の譲渡が禁止される旨の制限が付されています。本有価証券は金融商品取引法第４条に基づく財務局に対する届出が行われておりません。なお、本告知はお客様によるご同意のもとに、電磁的に交付させていただいております。

DISCLAIMERS

＜適格機関投資家用資料＞
本資料は、適格機関投資家のお客さまのみを対象に作成されたものです。本資料における金融商品は適格機関投資家のお客さまのみがお取引可能であり、適格機関投資家以外のお客さまからのご注文等はお受けできませんので、ご注意ください。 商号等/ゴールドマン・サックス証券株式会社 金融商品取引業者　関東財務局長（金商）第６９号
加入協会/　日本証券業協会、一般社団法人金融先物取引業協会、一般社団法人第二種金融商品取引業協会
本書又はその添付資料に信用格付が記載されている場合、日本格付研究所（JCR）及び格付投資情報センター（R&I）による格付は、登録信用格付業者による格付（登録格付）です。その他の格付は登録格付である旨の記載がない場合は、無登録格付です。無登録格付を投資判断に利用する前に、「無登録格付に関する説明書」（http://www.goldmansachs.com/disclaimer/ratings.html）を十分にお読みください。

If any credit ratings are contained in this material or any attachments, those that have been issued by Japan Credit Rating Agency, Ltd. (JCR) or Rating and Investment Information, Inc. (R&I) are credit ratings that have been issued by a credit rating agency registered in Japan (registered credit ratings). Other credit ratings are unregistered unless denoted as being registered. Before using unregistered credit ratings to make investment decisions, please carefully read "Explanation Regarding Unregistered Credit Ratings" (http://www.goldmansachs.com/disclaimer/ratings.html).

Notice to Mexican Investors: Information contained herein is not meant for the general public in Mexico. The services or products provided by or through Goldman Sachs Mexico, Casa de Bolsa, S.A. de C.V. (GS Mexico) may not be offered or sold to the general public in Mexico. You have received information herein exclusively due to your existing relationship with a GS Mexico or any other Goldman Sachs business. The selection and engagement with any of the offered services or products through GS Mexico will be carried out directly by you at your own risk. Before acting to implement any chosen service or product provided by or through GS Mexico you should consider, at your sole discretion, whether it is suitable for your particular circumstances and, if necessary, seek professional advice. Information contained herein related to GS Mexico services or products, as well as any other information, shall not be considered as a product coming from research, nor it contains any recommendation to invest, not to invest, hold or sell any security and may not be supplied to the general public in Mexico.

Notice to New Zealand Investors: When this document is disseminated in New Zealand by Goldman Sachs & Co. LLC ("GSCO") , Goldman Sachs International ("GSI"), Goldman Sachs Bank Europe SE ("GSBE"), Goldman Sachs (Asia) L.L.C. ("GSALLC") or Goldman Sachs (Singapore) Pte ("GSSP") (collectively the "GS entities"), this document, and any access to it, is intended only for a person that has first satisfied; the GS entities that the person is someone:
(i) who is an investment business within the meaning of clause 37 of Schedule 1 of the Financial Markets Conduct Act 2013 (New Zealand) (the "FMC Act");
(ii) who meets the investment activity criteria specified in clause 38 of Schedule 1 of the FMC Act;
(iii) who is large within the meaning of clause 39 of Schedule 1 of the FMC Act; or
(iv) is a government agency within the meaning of clause 40 of Schedule 1 of the FMC Act.
No offer to acquire the interests is being made to you in this document. Any offer will only be made in circumstances where disclosure is not required under the Financial Markets Conducts Act 2013 or the Financial Markets Conduct Regulations 2014.

Notice to Swiss Investors: This is marketing material for financial instruments or services. The information contained in this material is for general informational purposes only and does not constitute an offer, solicitation, invitation or recommendation to buy or sell any financial instruments or to provide any investment advice or service of any kind.

Not all services or products can be made available in Taiwan. Any particular offer of securities may not have been and may not be registered with the Securities and Futures Bureau, Financial Supervisory Commission of Taiwan pursuant to relevant securities laws and regulations and may therefore not be capable of being sold or publicly offered in Taiwan. The Goldman Sachs companies involved in any such promotion may not maintain any licenses, authorisations or registrations in Taiwan. Therefore, for such securities, any subscriptions into the securities must be received in a currency foreign to, and to an account offshore, Taiwan. Any issue of such securities will not take effect until a valid subscription is received and accepted in accordance with the offering materials, outside Taiwan.

THE INFORMATION CONTAINED IN THIS DOCUMENT DOES NOT CONSITUTE, AND IS NOT INTENDED TO CONSTITUTE, A PUBLIC OFFER OF SECURITIES IN THE UNITED ARAB EMIRATES IN ACCORDANCE WITH THE COMMERCIAL COMPANIES LAW (FEDERAL LAW NO. 2 OF 2015), ESCA BOARD OF DIRECTORS' DECISION NO. (9/R.M.) OF 2016, ESCA CHAIRMAN DECISION NO 3/R.M. OF 2017 CONCERNING PROMOTING AND INTRODUCING REGULATIONS OR OTHERWISE UNDER THE LAWS OF THE UNITED ARAB EMIRATES. ACCORDINGLY, THE INTERESTS IN THE SECURITIES MAY NOT BE OFFERED TO THE PUBLIC IN THE UAE (INCLUDING THE DUBAI INTERNATIONAL FINANCIAL CENTRE AND THE ABU DHABI GLOBAL MARKET). THIS DOCUMENT HAS NOT BEEN APPROVED BY, OR FILED WITH THE CENTRAL BANK OF THE UNITED ARAB EMIRATES, THE SECURITIES AND COMMODITIES AUTHORITY, THE DUBAI FINANCIAL SERVICES AUTHORITY, THE FINANCIAL SERVICES REGULATORY AUTHORITY OR ANY OTHER RELEVANT LICENSING AUTHORITIES IN THE UNITED ARAB EMIRATES. IF YOU DO NOT UNDERSTAND THE CONTENTS OF THIS DOCUMENT, YOU SHOULD CONSULT WITH A FINANCIAL ADVISOR. THIS DOCUMENT IS PROVIDED TO THE RECIPIENT ONLY AND SHOULD NOT BE PROVIDED TO OR RELIED ON BY ANY OTHER PERSON.

© 2021 Goldman Sachs. All rights reserved.