

# INFOCUS

MACRO COMMENT

SEPTEMBER 2023

## How high is the risk of a wage-price spiral?



**DISCIPLINED BY NATURE. FLEXIBLE BY DESIGN.**

The icons alongside represent our investment process. Through a disciplined provision of investment policy and security selection at the global level, regional portfolio management teams have the flexibility to construct portfolios to meet the specific requirements of our clients.

**HIGHLIGHTED IN THIS PUBLICATION:**

- 

GLOBAL STRATEGIC  
ASSET ALLOCATION
- 

GLOBAL SECURITY  
SELECTION
- 

REGIONAL  
ASSET ALLOCATION
- 

REGIONAL PORTFOLIO  
CONSTRUCTION

## HOW HIGH IS THE RISK OF A WAGE-PRICE SPIRAL?

Recent high inflation rates have raised concerns of a wage-price spiral developing. Central banks have stressed they will closely monitor developments in the job market when setting interest rates to guard against this risk materialising. In this edition of *Infocus*, Amanda Cotti and GianLuigi Mandruzzato look at how prices and labour costs affect each other and the implications for monetary policy.

Wages and prices have surged in the past two years, leading to concerns of a wage-price spiral forming. Since wages constitute a substantial portion of firms' costs, a reasonable hypothesis is that rising wages will result in higher inflation.<sup>1</sup> However, according to the empirical literature, labour cost has little to no impact on inflation and is instead absorbed by firms' profit margins. Rather, changes in wages lag changes in consumer prices, indicating that inflation influences future wages but not *vice versa*.

### Historical evidence on wage-price dynamics

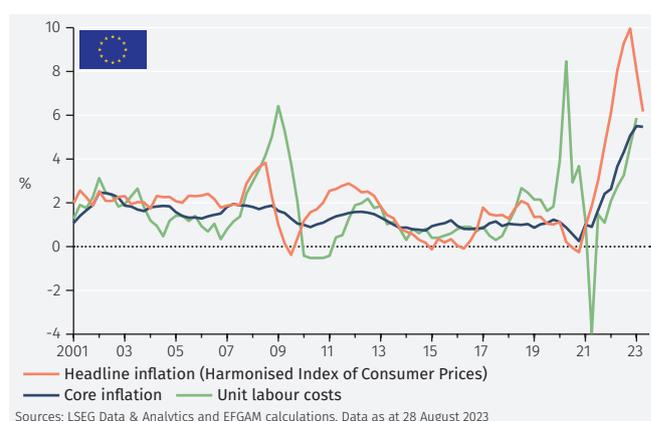
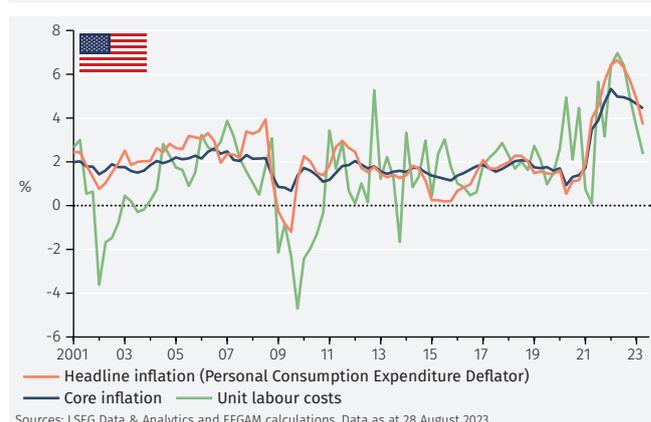
The International Monetary Fund (IMF) analysed 79 past episodes of wage-price spirals in advanced economies since the 1960s.<sup>2</sup> It concluded that 'the great majority' of sharp increases in inflation were not followed by sustained accelerations in wages and prices if they were short-lived. Instead, inflation and wage growth tended to stabilise close to their peak before moderating again in such a way that real wage growth also stabilised after the initial shock. Bernanke and Blanchard, in a recent working paper, reached similar results with regard to the recent rise in US inflation. They found that inflation was primarily driven by strong demand for goods and supply shortages rather than wage increases.<sup>3</sup>

Empirical research has also found that past inflation rates help forecast future changes in labour costs, but changes in labour costs fail to predict future inflation.<sup>4</sup> One explanation of these results is that companies raise selling prices before rising wage costs hit profits. Employers may be ahead of the curve in anticipating the effects of a tight labour market, such that wages lag inflation.

Data in the US and eurozone indicate that wages have not kept pace with inflation since mid-2021, depressing real wages. Unemployment rates have remained low as labour demand has increased while labour supply has been slow to respond. Many commentators fear that tight labour markets will lead to mounting wage pressures and persistently high inflation.

However, businesses' decisions to raise prices due to changes in labour costs will also consider changes in labour productivity. Unit labour costs (ULCs) adjust wage growth for changes in labour productivity. If productivity increases it will reduce the adverse impact of higher wages on firms' profit margins and, hence, the pressure to raise prices. Annual changes in headline and core inflation and ULCs in the US and eurozone are shown in Figures 1 and 2. In the pre-pandemic period, ULCs appear to lag headline inflation and be insensitive to changes in core inflation. After the pandemic,

1&2. Year-on-year inflation and unit labour costs



<sup>1</sup> The wage-price spiral model can be explained as the process of adjustment of nominal prices to a change in aggregate demand. After an increase in aggregate demand, the process of adjustment of nominal prices and wages results from attempts by workers to maintain or increase their real wages and by firms to maintain or increase their markups of prices over wages.

<sup>2</sup> See Alvarez et al. (2022), 'Wage-Price Spirals: What is the historical evidence?' <https://tinyurl.com/bdedty2d>

<sup>3</sup> See Bernanke and Blanchard (2023), 'What Caused the US pandemic-Era Inflation?', National Bureau of Economic Research <https://www.nber.org/papers/w31417>

<sup>4</sup> Barlevy and Hu (2023), 'Unit labor costs and inflation in the non-housing service sector', Federal Reserve Bank of Chicago, found that unit labour cost does not provide significant help forecasting changes in inflation, but past inflation does help forecast changes in unit labour cost <https://tinyurl.com/7d5e5bhx>  
Yasser and Danninger (2018) 'Understanding US wage dynamics', IMF, found that causality runs from prices to wages, though probably not from wages to prices. <https://tinyurl.com/36ujwv4>

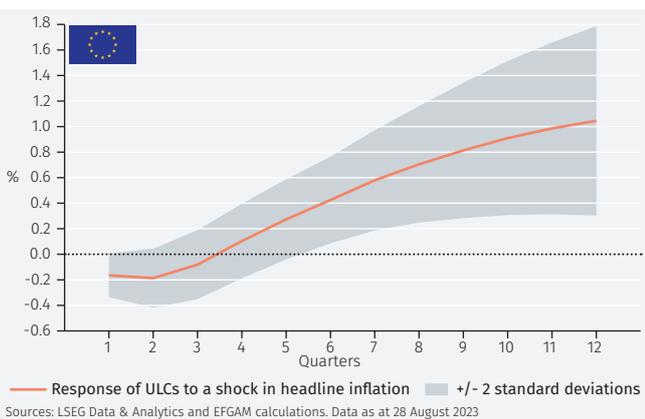
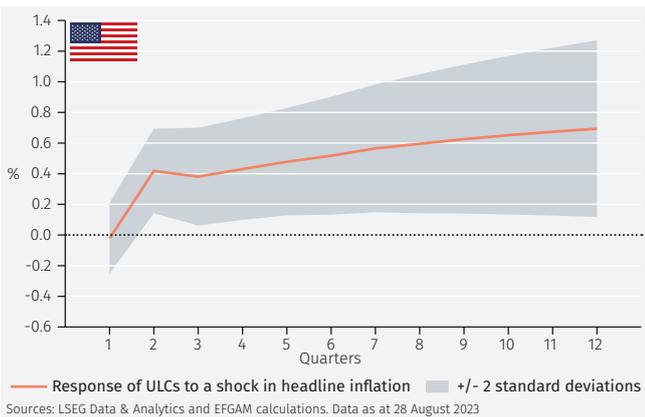
# HOW HIGH IS THE RISK OF A WAGE-PRICE SPIRAL?

ULCs seem to have responded strongly to the increases in headline inflation in the US and closely followed the trend in core inflation in the eurozone.

## Empirical evidence

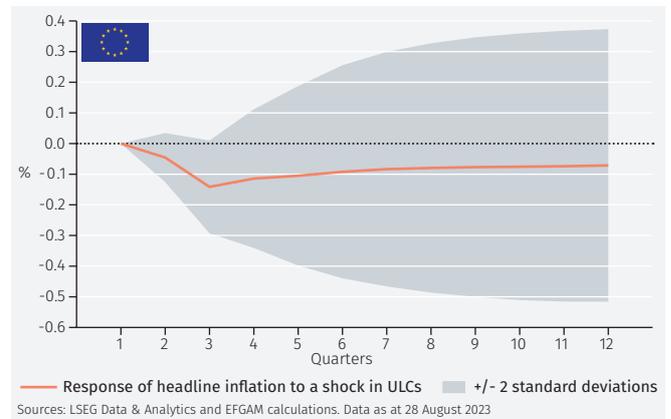
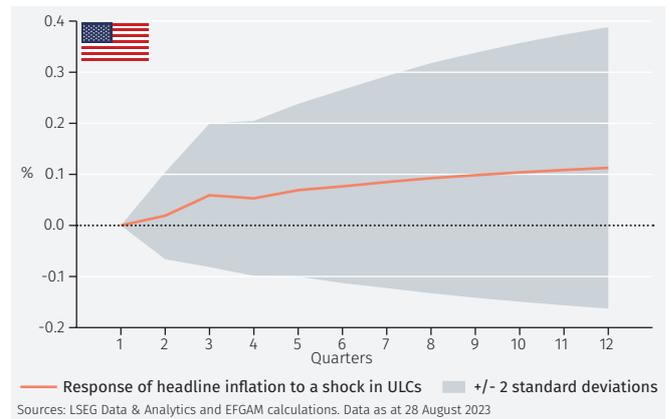
To investigate the empirical relationship between consumer prices and ULCs in the US and the eurozone a model is used to illustrate how they respond to shocks.<sup>5</sup> The results are qualitatively similar in the US and the eurozone. The model shows that a one-standard deviation shock to headline inflation has a statistically significant and lasting impact on ULCs in both the US and the eurozone (see Figures 3 and 4). The response of ULCs increases over time in both areas, but it is much quicker in the US, where it becomes significant one quarter after the shock. In the eurozone, ULCs take more than a year before meaningfully responding to a shock to inflation.

**3&4. Accumulated responses of ULC to shocks to headline inflation**



In contrast, for both the US and eurozone, the estimates show that a shock to ULC affects neither headline nor core inflation immediately (see Figures 5 and 6). In line with the existing literature on the US economy, these results suggest that ULC shocks do not help forecast consumer prices and show that this seems to be the case in the eurozone too. Hence, the concern expressed by some members of the ECB Governing Council about the risk of a wage-price spiral appears excessive.<sup>6</sup>

**5&6. Accumulated responses of headline inflation to ULC**



Finally, the model shows that core inflation responds strongly to a shock to headline inflation in both the US and eurozone. The response is contemporaneous to the shock to headline inflation and rises over time, peaking after more than a year. This evidence helps explain why core inflation has risen so much in the last two years and has been so persistent, particularly in the eurozone where headline inflation peaked

<sup>5</sup> A VAR model is estimated on headline and core inflation and unit labour costs, using two lags in the US and three in the eurozone. The PCE index was used in the US model and the HICP index was used in the eurozone model. All variables are quarterly averages and seasonally adjusted. The sample starts in Q1 2000 and ends in Q2 2023 for the US and in Q1 2023 for the eurozone. The correlation matrix of the model variables suggests that shocks to headline inflation come first, followed by shocks to core inflation and ULCs. However, since the reduced-form residuals are uncorrelated, the issue of identification does not arise. The Granger causality tests gave inconclusive results and were highly sensitive to the choice of the sample period. While this suggests some structural instability, unsurprising given the degree of the pandemic shock, more data will be needed to test this hypothesis.

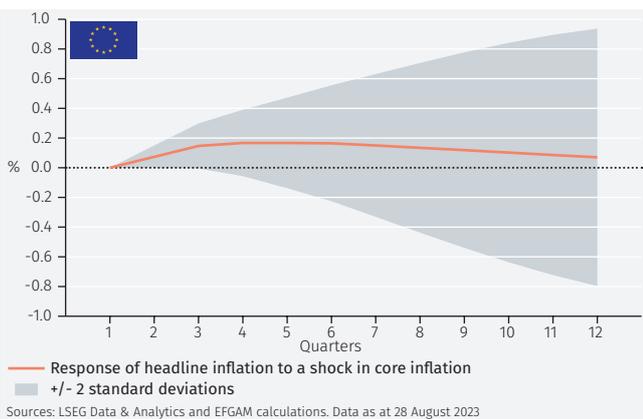
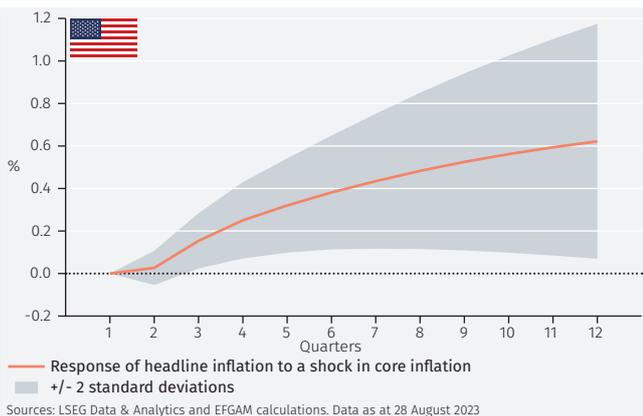
<sup>6</sup> To test the robustness of the results, an alternative VAR model, tilted in favour of the wage-price spiral hypothesis, was estimated. In a VAR, the ordering of the variables matter as they are placed in decreasing order of relative exogeneity. Hence, the VAR was reordered placing ULC first followed by headline and core inflation. The results of the alternative model are not meaningfully different from those of the original model.

## HOW HIGH IS THE RISK OF A WAGE-PRICE SPIRAL?

higher and later than in the US. However, with headline inflation having fallen sharply for several months, one would expect core inflation to moderate soon.

Looking at the response of headline inflation to a shock to core inflation, the model points to notable differences between the US and eurozone (see Figures 7&8). In the US, headline inflation is affected by shocks to core inflation with a lag of two quarters, while the response of eurozone headline inflation to shocks to core prices is not statistically significant.<sup>7</sup> These results support the concerns expressed by the Federal Reserve about the persistence of core inflation at a high level. However, with core PCE inflation having moderated since the end of last year, one would expect that if the recent trend is sustained it will push future headline inflation lower.

**7&8. Accumulated responses of headline inflation to shocks to core inflation**



### Conclusions

The relationship between wages and inflation is complex and nuanced. While concerns about a wage-price spiral have been raised, the literature suggests that inflation is primarily driven by demand for goods and supply shortages rather than wages and labour costs. The empirical evidence shows that short-term inflation spikes resulting from wage increases do not normally lead to a sustained acceleration in wages and prices. Instead, inflation and nominal wage growth tend to stabilise.

The empirical investigation of the relationship between consumer prices and unit labour costs in the US and eurozone shows that ULCs respond to shocks to consumer price inflation but not the other way around. This has important implications for the current debate on future monetary policy in the two economies.

The Federal Reserve and the European Central Bank have often highlighted the risk that a tight labour market and high wage growth pose to price stability and that tight monetary policy is needed to prevent this risk from crystallising. However, with headline inflation having fallen sharply from the peak of last year, the empirical evidence suggests that wages will also slow in due course and that its behaviour, in isolation, does not justify the adoption of a more restrictive policy.

Overall, while wages do play a role in shaping inflation dynamics, they are just one part of a complex system of factors influencing price levels. Demand for goods, supply constraints, and employer pricing behaviour all contribute significantly to inflation outcomes.

<sup>7</sup> To test the robustness of the results to changes in the sample period, the VAR was also estimated on the sample period 2000Q1-2019Q4. The main difference compared to the full-sample results is that the estimated responses to shocks are less pronounced, although their statistical significance is not affected. The only exception is the response of US headline inflation to a shock to core inflation which in the shorter sample period is not statistically significant as opposed to the estimates based on the full sample. Overall, this evidence suggests that the response of the variables to shocks may have intensified after the pandemic, but more data will be needed to test if that was the case.

## Important disclaimers

**The value of investments and the income derived from them can fall as well as rise, and past performance is no indicator of future performance. Investment products may be subject to investment risks involving, but not limited to, possible loss of all or part of the principal invested.**

This document does not constitute and shall not be construed as a prospectus, advertisement, public offering or placement of, nor a recommendation to buy, sell, hold or solicit, any investment, security, other financial instrument or other product or service. It is not intended to be a final representation of the terms and conditions of any investment, security, other financial instrument or other product or service. This document is for general information only and is not intended as investment advice or any other specific recommendation as to any particular course of action or inaction. The information in this document does not take into account the specific investment objectives, financial situation or particular needs of the recipient. You should seek your own professional advice suitable to your particular circumstances prior to making any investment or if you are in doubt as to the information in this document.

Although information in this document has been obtained from sources believed to be reliable, no member of the EFG group represents or warrants its accuracy, and such information may be incomplete or condensed. Any opinions in this document are subject to change without notice. This document may contain personal opinions which do not necessarily reflect the position of any member of the EFG group. To the fullest extent permissible by law, no member of the EFG group shall be responsible for the consequences of any errors or omissions herein, or reliance upon any opinion or statement contained herein, and each member of the EFG group expressly disclaims any liability, including (without limitation) liability for incidental or consequential damages, arising from the same or resulting from any action or inaction on the part of the recipient in reliance on this document. The availability of this document in any jurisdiction or country may be contrary to local law or regulation and persons who come into possession of this document should inform themselves of and observe any restrictions. This document may not be reproduced, disclosed or distributed (in whole or in part) to any other person without prior written permission from an authorised member of the EFG group.

This document has been produced by EFG Asset Management (UK) Limited for use by the EFG group and the worldwide subsidiaries and affiliates within the EFG group. EFG Asset Management (UK) Limited is authorised and regulated by the UK Financial Conduct Authority, registered no.7389736. Registered address: EFG Asset Management (UK) Limited, 116 Park Street, London W1K 6AP, United Kingdom, telephone +44 (0)207 491 9111.

Independent Asset Managers: in case this document is provided to Independent Asset Managers ("IAMs"), it is strictly forbidden to be reproduced, disclosed or distributed (in whole or in part) by IAMs and made available to their clients and/or third parties. By receiving this document IAMs confirm that they will need to make their own decisions/judgements about how to proceed and it is the responsibility of IAMs to ensure that the information provided is in line with their own clients' circumstances with regard to any investment, legal, regulatory, tax or other consequences. No liability is accepted by EFG for any damages, losses or costs (whether direct, indirect or consequential) that may arise from any use of this document by the IAMs, their clients or any third parties.

If you have received this document from any affiliate or branch referred to below, please note the following:

**Australia:** This document has been prepared and issued by EFG Asset Management (UK) Limited, a private limited company with registered number 7389736 and with its registered office address at 116 Park Street, London W1K 6AP (telephone number +44 (0)207 491 9111). EFG Asset Management (UK) Limited is regulated and authorized by the Financial Conduct Authority No. 536771. EFG Asset Management (UK) Limited is exempt from the requirement to hold an Australian financial services licence in respect of the financial services it provides to wholesale clients in Australia and is authorised and regulated by the Financial Conduct Authority of the United Kingdom (FCA Registration No. 536771) under the laws of the United Kingdom which differ from Australian laws.

ASIC Class Order CO03/1099

EFG Asset Management (UK) Limited notifies you that it is relying on the Australian Securities & Investments Commission (ASIC) Class Order CO03/1099 (Class Order) exemption (as extended in operation by ASIC Corporations (Repeal and Transitional Instrument 2016/396) for UK Financial Conduct Authority (FCA) regulated firms which exempts it from the requirement to hold an Australian financial services licence (AFSL) under the Corporations Act 2001 (Cth) (Corporations Act) in respect of the financial services we provide to you.

The financial services that we provide to you are regulated by the FCA under the laws and regulatory requirements of the United Kingdom which are different to Australia. Consequently any offer or other documentation that you receive from us in the course of us providing financial services to you will be prepared in accordance with those laws and regulatory requirements. The UK regulatory requirements refer to legislation, rules enacted pursuant to the legislation and any other relevant policies or documents issued by the FCA.

Your Status as a Wholesale Client

In order that we may provide financial services to you, and for us to comply with the Class Order, you must be a 'wholesale client' within the meaning given by section 761G of the Corporations Act. Accordingly, by accepting any documentation from us prior to the commencement of or in the course of us providing financial services to you, you:

- warrant to us that you are a 'wholesale client';
- agree to provide such information or evidence that we may request from time to time to confirm your status as a wholesale client;
- agree that we may cease providing financial services to you if you are no longer a wholesale client or do not provide us with information or evidence satisfactory to us to confirm your status as a wholesale client; and
- agree to notify us in writing within 5 business days if you cease to be a 'wholesale client' for the purposes of the financial services that we provide to you.

**Bahamas:** EFG Bank & Trust (Bahamas) Ltd. is licensed by the Securities Commission of the Bahamas pursuant to the Securities Industry Act, 2011 and Securities Industry Regulations, 2012 and is authorised to conduct securities business in and from The Bahamas including dealing in securities, arranging dealing in securities, managing securities and advising on securities. EFG Bank & Trust (Bahamas) Ltd. is also licensed by the Central Bank of The Bahamas pursuant to the Banks and Trust Companies Regulation Act, 2000 as a Bank and Trust company. Registered office: Goodman's Bay Corporate Centre West Bay Street and Sea View Drive, Nassau, The Bahamas.

**Bahrain:** EFG AG Bahrain is a branch of EFG Bank AG as licensed by the Central Bank of Bahrain (CBB) as Investment Business Firm Category 2 and is authorised to carry out the following activities:

- Dealing in financial instruments as agents;
- Arranging deals in financial instruments;
- Managing financial instruments;
- Advising on financial instruments; and
- Operating a Collective Investment Undertaking. Registered address: EFG AG Bahrain Branch, Manama / Front Sea / Block 346 / Road 4626 / Building 1459 / Office 1401 / P O Box 11321 Manama -- Kingdom of Bahrain.

**Cayman Islands:** EFG Wealth Management (Cayman) Ltd, is licensed and regulated by the Cayman Islands Monetary Authority ("CIMA") to provide securities investment business in or from within the Cayman Islands pursuant to the Securities Investment Business Law (as revised) of the Cayman Islands. Registered Office: Suite 3208,9 Forum Lane, Camana Bay, Grand Cayman KY1-1003, Cayman Islands. EFG Bank AG, Cayman Branch, is licensed as a Class B Bank and regulated by CIMA. Registered Office: EFG Wealth Management (Cayman) Ltd, Suite 3208,9 Forum Lane, Camana Bay, Grand Cayman KY1-1003, Cayman Islands.

**Cyprus:** EFG Cyprus Limited is an investment firm established in Cyprus with company No. HE408062, having its registered address at Kennedy 23, Globe House, 6th Floor, 1075, Nicosia, Cyprus. EFG Cyprus Limited is authorised and regulated by the Cyprus Securities and Exchange Commission (CySEC).

**Dubai:** EFG (Middle East) Limited is regulated by the DFSA. This material is intended "for professional clients only". Registered address: EFG (Middle East) Limited DIFC, Gate Precinct5, 7th Floor PO Box 507245 - Dubai, UAE.

**Greece:** EFG Bank (Luxembourg) S.A., Athens Branch is a non-booking establishment of EFG Bank (Luxembourg) S.A. which is authorised to promote EFG Bank (Luxembourg) S.A.'s products and services based on the EU freedom of establishment pursuant to a license granted by the Luxembourg financial supervisory authority "CSSF". Registered address: 342 Kifisias Ave. & Ethnikis Antistaseos Str. - 154 51 N. Psychiko, General Commercial Registry no. 143057760001.

**Hong Kong:** The Hong Kong branch of EFG Bank AG is authorised as a licensed bank by the Hong Kong Monetary Authority pursuant to the Banking Ordinance (Cap. 155, Laws of Hong Kong) and is authorised to carry out Type 1 (dealing in securities), Type 4 (advising on securities) and Type 9 (asset management) regulated activity in Hong Kong. Registered address: EFG Bank AG, Hong Kong Branch, 18th floor, International Commerce Centre 1 Austin Road West - Kowloon, Hong Kong.

**Liechtenstein:** EFG Bank von Ernst AG is regulated by the Financial Market Authority Liechtenstein.

Registered address: EFG Bank von Ernst AG Egertastrasse 10 - 9490 Vaduz, Liechtenstein.

**Jersey:** EFG Wealth Solutions (Jersey) Limited is regulated by the Jersey Financial Services Commission in the conduct of investment business under the Financial Services (Jersey) Law 1998.

**Luxembourg:** EFG Bank (Luxembourg) S.A. is authorised by the Ministry of Finance Luxembourg and supervised by the Commission de Surveillance du Secteur Financier (CSSF). EFG Bank (Luxembourg) S.A. is Member of the Deposit Guarantee Fund Luxembourg (F.G.D.L. - Fonds de Garantie des Dépôts Luxembourg) and Member of the Luxembourg Investor Compensation Scheme (S.I.L.L. - Système d'Indemnisation des Investisseurs Luxembourg). R.C.S. Luxembourg no. B113375. Registered address: EFG Bank (Luxembourg) SA - 56, Grand-Rue, L-1660 Luxembourg.

**Monaco:** EFG Bank (Monaco) SAM is a Monegasque Public Limited Company with a company registration no. 90 502647 (Registre du Commerce et de l'Industrie de la Principauté de Monaco). EFG Bank (Monaco) SAM is a bank with financial activities authorised and regulated by the French Prudential Supervision and Resolution Authority and by the Monegasque Commission for the Control of Financial Activities. Registered address: EFG Bank (Monaco) SAM, Villa les Aigles, 15, avenue d'Ostende - BP 37 - 98001 Monaco (Principauté de Monaco), telephone: 377 93 15 11 11. The recipient of this document is perfectly fluent in English and waives the possibility to obtain a French version of this publication.

**People's Republic of China ("PRC"):** EFG Bank AG Shanghai Representative Office is approved by China Banking Regulatory Commission and registered with the Shanghai Administration for Industry and Commerce in accordance with the Regulations of the People's Republic of China for the Administration of Foreign-invested Banks and the related implementing rules. Registration No: 310000500424509. Registered address: Room 65T10, 65 F, Shanghai World Financial Center, No. 100, Century Avenue, Pudong New Area, Shanghai. The business scope of EFG Bank AG Shanghai Representative Office is limited to non-profit making activities only including liaison, market research and consultancy.

**Portugal:** EFG Bank (Luxembourg) S.A. - Sucursal em Portugal is authorised and supervised by Banco de Portugal (register 280) and the CMVM, the Portuguese securities market commission, (register 393) for the provision of financial advisory and reception and transmission of orders. EFG Bank (Luxembourg) S.A. - Sucursal em Portugal is a non-booking branch of EFG Bank (Luxembourg) S.A., a public limited liability company incorporated under the laws of the Grand Duchy of Luxembourg, authorised and supervised by the CSSF (Commission de Surveillance du Secteur Financier). Lisbon Head Office: Avenida da Liberdade n.º 131 - 6.º Dto., 1250 - 140 Lisboa. Porto agency: Avenida da Boavista, n.º 1837 - Escritório 6.2, 4100 - 133 Porto. Companies Registry Number: 980649439.

**Singapore:** Singapore (UEN No. T03FC6371) is licensed by the Monetary Authority of Singapore as a wholesale bank to conduct banking business and additionally carries on the regulated activities of dealing in capital markets products (securities, collective investment schemes, exchange-traded derivatives contracts, spot foreign exchange contracts for the purposes of leveraged foreign exchange trading and over-the-counter derivatives contracts), fund management, product financing and provision of custodial services as an Exempt Capital Markets Services Entity under the Securities and Futures Act 2001 and of providing financial advisory services as an Exempt Financial Adviser under the Financial Advisers Act 2001 by advising others, either directly or through publications or writings, and whether in electronic, print or other form, and advising others by issuing or promulgating research analyses or research reports, whether in electronic, print or other form, concerning the following investment products: securities, collective investment schemes, exchange traded derivatives contracts, over-the-counter derivatives contracts, spot foreign exchange contracts other than for the purposes of leveraged foreign exchange trading, spot foreign exchange contracts for the purposes of leveraged foreign exchange trading and structured deposits. Advice should be sought from a financial adviser regarding the suitability of the investment product, taking into account the specific investment objectives, financial situation or particular needs of the recipient, before the recipient makes a commitment to purchase the investment product. Please contact EFG Bank AG (Singapore Branch) in respect of any matters or queries arising from or in connection with this publication. Please note that EFG Bank AG (Singapore Branch), however, does not take legal responsibility for the contents of this publication. EFG Bank AG (Singapore Branch) and EFG Asset Management (UK) Limited have put in place appropriate mechanisms and segregation policies to ensure the independence of EFG Asset Management (UK) Limited's research activities, and procedures to manage undue influence of issuers, institutional investors or other external parties on EFG Asset Management (UK) Limited. Other arrangements may be established where necessary to prevent conflicts of interest from arising. For Singapore, this document and the products mentioned herein are only intended for "accredited investors" and "institutional investors" within the meaning of the Securities and Futures Act 2001 and any rules made thereafter. This advertisement has not been reviewed by the Monetary Authority of Singapore. Registered address: EFG Bank AG, Singapore Branch 79 Robinson Road, #18-01 Singapore 068897.

**Switzerland:** EFG Bank AG, Zurich, including its Geneva and Lugano branches, is authorised and regulated by the FINMA. Registered Office: EFG Bank AG, Bleicherweg 8, 8001 Zurich, Switzerland. Registered Swiss Branches: EFG Bank SA, 24 quai du Seujet, 1211 Geneva 2, and EFG Bank SA, Via Magatti 2, 6900 Lugano.

**United Kingdom:** EFG Private Bank Limited is authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority. EFG Private Bank Limited is a member of the London Stock Exchange. Registered company no. 2321802. Registered address: EFG Private Bank Limited, Park House, 116 Park Street, London W1K 6AP, United Kingdom, telephone +44 (0)20 7491 9111.

**USA:** EFG Capital International Corp ("EFG Capital") is a U.S. Securities and Exchange Commission ("SEC") registered broker-dealer and member of the Financial Industry Regulatory Authority ("FINRA") and the Securities Investor Protection Corporation ("SIPC"). None of the SEC, FINRA or SIPC, have endorsed this document or the services and products provided by EFG Capital and its U.S. based affiliate, EFG Asset Management (Americas) Corp ("EFGAM Americas"), a registered SEC investment adviser. Securities products and brokerage services are provided by EFG Capital, and asset management services are provided by EFGAM Americas. EFG Capital and EFGAM Americas are affiliated by common ownership under EFG International AG and maintain mutually associated personnel. Registered address: 701 Brickell Avenue, Ninth Floor - FL 33131 Miami.

© EFG. All rights reserved