



## Economics

# Fed Notes

## Date

30 January 2026

## What Warsh could mean for the Fed

### Introduction

This morning President Trump announced Kevin Warsh as his nominee to replace Jay Powell as Chair of the Federal Reserve. We build on a prior note to discuss what this nomination could mean for the Fed.

### Warsh's background

Warsh has a strong pedigree to be chair of the Federal Reserve, with a background somewhat similar to Chair Powell. Warsh is a lawyer by training, not a PhD economist, who has had an impressive mix of experience in the public and private sectors. On the public side, Warsh was a governor at the Federal Reserve from 2006 through 2011, a period that spanned the Fed's response to the GFC. During that period, he served as an important liaison between the Fed and markets.

On the private side, Warsh has held various roles, including currently as a partner at Stan Druckenmiller's family office, Duquesne. In addition to this role, Warsh has served as the Shepard Family Distinguished Visiting Fellow in Economics at the Hoover Institution and lecturer at the Stanford Graduate School of Business.

### Warsh's Fed critiques

During recent years he has been particularly critical of the Federal Reserve. His criticisms span short-term policy decisions – for example, continuing QT and rate hikes in late 2018 despite shaky markets and the 50bp reduction last September – as well as longer-term considerations for the central bank, which he outlined in a speech this year at an IMF lecture hosted by the G30 (see [here](#)).

**Warsh has been consistently critical of the Fed's active use of its balance sheet over the past ~15 years. This has earned him the label of a "hawk", at least with respect to the Fed's balance sheet.** Although he supported the Fed's initial foray into QE in response to the GFC, he cautioned that later programs were not appropriate, possibly raising inflation and financial stability risks, as well as moving the Fed away from its core duties and into credit allocation policies that could distort market signals. As he noted recently, "I worried mightily in the summer and fall of 2010-- a time of strong growth and financial stability --that the decision to buy more treasury bonds—would involve the Fed in the messy political business of fiscal policy. QE2 was announced. I disagreed with the decision, and resigned from the Fed soon after."

While Warsh spoke out against QE2 at the November 2010 meeting (see transcript [here](#)), he ultimately did not dissent. At the time, he argued that he

Matthew Luzzetti, Ph.D.  
Chief US Economist  
+1-212-250-6161

Brett Ryan  
Senior US Economist  
+1-212-250-6294

Justin Weidner  
Economist  
+1-212-469-1679

Amy Yang  
Economist  
+1-212-250-9959

Matthew Raskin  
Strategist  
+1-212-250-1741

30 January 2026  
Fed Notes



preferred to show consensus and support for Chair Bernanke's decision to undertake another QE program – Warsh did not want to undermine the effectiveness of that program by publicly showing disagreement on the Committee.

Warsh has further argued that the Fed's active use of its balance sheet may have brought about a period of "monetary dominance". By artificially depressing rates for extended periods, Warsh argues the Fed has played an important role in enabling US government debt accumulation. This contrasts with the usual concerns around "fiscal dominance", in which elevated debt levels make it difficult for the central bank to raise rates by increasing the debt service burden of the federal government.

Beyond the balance sheet, Warsh has levied a variety of criticisms on the Fed. For example, he argues that the Fed has been consistently too data dependent and not forward looking enough. **At the same time, Warsh has been critical of the Fed's regular use of forward guidance. He recently noted, "forward-guidance – a tool rolled out to great fanfare in the financial crisis—has little role to play in normal times."**

He also questioned various other aspects of how the Fed has set and/or justified monetary policy. Warsh has argued the Fed incorrectly believes: "monetary policy had nothing to do with money", "black-box DSGE models were anchored in reality", and "the surge of Putin and the pandemic were blameworthy for inflation rather than the surge of government spending and printing." **These criticisms imply that Warsh wants to put more focus on the Fed's balance sheet size and money supply in the conduct of monetary policy and could also be open to overhauling the Fed research staff.**

Finally, while he has described Fed independence as a "worthy" cause, he has also argued that the Fed has brought upon itself questions about independence. Warsh noted, "the Fed's outsized role and underperformance have weakened the important and worthy case for monetary policy independence." Further, Warsh denounced mission creep at the Fed, including considering issues related to climate and inclusion.

---

### What Warsh could mean for near-term policy

Warsh is nominated by a president who has pushed heavily for steep rate cuts. The President recently renewed his arguments for interest rates to be several percentage points lower, given the US's premier credit standing.

**Although Warsh has argued for lower rates recently, we do not view him as structurally dovish.** Instead, as noted earlier, his views have tended to skew hawkish relative to others. The most notable example was his concerns about inflationary risks from QE around the GFC. A more recent example is that he did not support the Fed's 50bp reduction in September 2024.

**In recent commentary, he has noted that the Fed could bring down inflation by reducing the size of its balance sheet, which in turn could allow for lower policy rates.** However, with reserves already at ample and the Fed recently restarting Reserve Management Purchases (RMPs), this trade-off would only be feasible if regulatory changes are made that lower banks' demand for reserves (or if the Fed were to decide to move back to a corridor system, which is highly unlikely). While

30 January 2026  
Fed Notes



several Fed officials have made this argument recently, including Vice Chair of Supervision Bowman and Governor Miran, it is not obvious these changes are realistic in the near term.

Ultimately, however, Warsh will be one vote on a Committee that recently set up the potential for a pause at the January FOMC meeting. **Warsh will have to convince his colleagues that rate cuts are appropriate this year, an argument that is unlikely to win unless the labor market shows renewed signs of weakening or inflationary pressures ease materially later this year.** One path towards rate cuts that Warsh could argue is that policy changes (e.g., deregulation) and an AI-driven productivity boom could lift potential growth and allow for inflation-less growth and renewed disinflationary pressures, such as Greenspan laid out in the 1990s. We recently documented the similarities and important differences between this period and that earlier episode (see [“Reaping the productivity gains from prior labor market tightness”](#)).

As with any Fed chair, Warsh will have to earn market trust and credibility around his commitment to achieving the inflation target. These bona fides always need to be earned by an incoming chair. The requirement could be more acute in the current context, with inflation well above target for five years and the President’s calls for steep Fed rate cuts. For this reason, we remain skeptical that policy will change in a discrete way in June once the leadership handoff takes place, especially since the chair has just one vote on a particularly divided committee.

---

## Warsh’s path to the Chair seat

From the Trump administration’s perspective, the clearest path to a more dovish Committee that can deliver lower rates would be to place Warsh in Chair Powell’s vacated seat, which would allow for another nomination to Governor Miran’s seat.

However, recent legal developments have complicated that path, at least in the near term. Following the DoJ’s subpoena of Chair Powell, Republican Senator Tillis pledged that the Senate Banking Committee will not move any Federal Reserve nominees forward for vote until the legal issues are resolved. Tillis reiterated that vow this morning, even as he supported Warsh’s nomination. Other GOP senators have expressed concern about Fed independence more broadly as well. Moreover, while not our base case, these legal developments have increased the potential for Powell to stay on as a governor after his chair seat expires in May (see [“Implications of the Fed’s latest legal developments”](#)). Resolution of these legal actions could therefore be a pre-condition for clarity on Warsh’s specific path to becoming the next chair of the Federal Reserve.

30 January 2026  
Fed Notes



30 January 2026  
Fed Notes



## Appendix 1

### Analyst Certification

The views expressed in this report accurately reflect the personal views of the undersigned lead analyst(s). In addition, the undersigned lead analyst(s) has not and will not receive any compensation for providing a specific recommendation or view in this report. Matthew Luzzetti, Ph.D., Matthew Raskin, Brett Ryan, Justin Weidner, Amy Yang.

### Important Disclosures

Prices are current as of the end of the previous trading session unless otherwise indicated and are sourced from local exchanges via Reuters, Bloomberg and other vendors . Other information is sourced from Deutsche Bank, subject companies, and other sources. For further information regarding disclosures relevant to Deutsche Bank Research, please visit our global disclosure look-up page on our website at <https://research.db.com/Research/Disclosures/FICCDisclosures>. Aside from within this report, important risk and conflict disclosures can also be found at <https://research.db.com/Research/Disclosures/Disclaimer> . Investors are strongly encouraged to review this information before investing.

30 January 2026  
Fed Notes



### Additional Information

The information and opinions in this report were prepared by Deutsche Bank AG or one of its affiliates (collectively 'Deutsche Bank'). Though the information herein is believed to be reliable and has been obtained from public sources believed to be reliable, Deutsche Bank makes no representation as to its accuracy or completeness. Hyperlinks to third-party websites in this report are provided for reader convenience only. Deutsche Bank neither endorses the content nor is responsible for the accuracy or security controls of those websites.

If you use the services of Deutsche Bank in connection with a purchase or sale of a security that is discussed in this report, or is included or discussed in another communication (oral or written) from a Deutsche Bank analyst, Deutsche Bank may act as principal for its own account or as agent for another person.

Deutsche Bank may consider this report in deciding to trade as principal. It may also engage in transactions, for its own account or with customers, in a manner inconsistent with the views taken in this research report. Others within Deutsche Bank, including strategists, sales staff and other analysts, may take views that are inconsistent with those taken in this research report. Deutsche Bank issues a variety of research products, including fundamental analysis, equity-linked analysis, quantitative analysis and trade ideas. Recommendations contained in one type of communication may differ from recommendations contained in others, whether as a result of differing time horizons, methodologies, perspectives or otherwise. Deutsche Bank and/or its affiliates may also be holding debt or equity securities of the issuers it writes on. Analysts are paid in part based on the profitability of Deutsche Bank AG and its affiliates, which includes investment banking, trading and principal trading revenues.

Opinions, estimates and projections constitute the current judgment of the author as of the date of this report. They do not necessarily reflect the opinions of Deutsche Bank and are subject to change without notice. Deutsche Bank provides liquidity for buyers and sellers of securities issued by the companies it covers. Deutsche Bank research analysts sometimes have shorter-term trade ideas that may be inconsistent with Deutsche Bank's existing longer-term ratings. Some trade ideas for equities are listed as Catalyst Calls on the Research Website (<https://research.db.com/Research/>), and can be found on the general coverage list and also on the covered company's page. A Catalyst Call represents a high-conviction belief by an analyst that a stock will outperform or underperform the market and/or a specified sector over a time frame of no less than two weeks and no more than three months. In addition to Catalyst Calls, analysts may occasionally discuss with our clients, and with Deutsche Bank salespersons and traders, trading strategies or ideas that reference catalysts or events that may have a near-term or medium-term impact on the market price of the securities discussed in this report, which impact may be directionally counter to the analysts' current 12-month view of total return or investment return as described herein. Deutsche Bank has no obligation to update, modify or amend this report or to otherwise notify a recipient thereof if an opinion, forecast or estimate changes or becomes inaccurate. Coverage and the frequency of changes in market conditions and in both general and company-specific economic prospects make it difficult to update research at defined intervals. Updates are at the sole discretion of the coverage analyst or of the Research Department Management, and the majority of reports are published at irregular intervals. This report is provided for informational purposes only and does not take into account the particular investment objectives, financial situations, or needs of individual clients. It is not an offer or a solicitation of an offer to buy or sell any financial instruments or to participate in any particular trading strategy. Target prices are inherently imprecise and a product of the analyst's judgment. The financial instruments discussed in this report may not be suitable for all investors, and investors must make their own informed investment decisions. Prices and availability of financial instruments are subject to change without notice, and investment transactions can lead to losses as a result of price fluctuations and other factors. If a financial instrument is denominated in a currency other than an investor's currency, a change in exchange rates may adversely affect the investment. Past performance is not necessarily indicative of future results. Performance calculations exclude transaction costs, unless otherwise indicated. Unless otherwise indicated, prices are current as of the end of the previous trading session and are sourced from local exchanges via Reuters, Bloomberg and other vendors. Data is also sourced from Deutsche Bank, subject companies, and other parties. Artificial intelligence tools may be used in the preparation of this material, including but not limited to assist in fact-finding, data analysis, pattern recognition, content drafting and editorial corrections pertaining to research material.

30 January 2026  
Fed Notes



The Deutsche Bank Research Department is independent of other business divisions of the Bank. Details regarding our organizational arrangements and information barriers we have to prevent and avoid conflicts of interest with respect to our research are available on our website (<https://research.db.com/Research/>) under Disclaimer.

Macroeconomic fluctuations often account for most of the risks associated with exposures to instruments that promise to pay fixed or variable interest rates. For an investor who is long fixed-rate instruments (thus receiving these cash flows), increases in interest rates naturally lift the discount factors applied to the expected cash flows and thus cause a loss. The longer the maturity of a certain cash flow and the higher the move in the discount factor, the higher will be the loss. Upside surprises in inflation, fiscal funding needs, and FX depreciation rates are among the most common adverse macroeconomic shocks to receivers. But counterparty exposure, issuer creditworthiness, client segmentation, regulation (including changes in assets holding limits for different types of investors), changes in tax policies, currency convertibility (which may constrain currency conversion, repatriation of profits and/or liquidation of positions), and settlement issues related to local clearing houses are also important risk factors. The sensitivity of fixed-income instruments to macroeconomic shocks may be mitigated by indexing the contracted cash flows to inflation, to FX depreciation, or to specified interest rates - these are common in emerging markets. The index fixings may - by construction - lag or mis-measure the actual move in the underlying variables they are intended to track. The choice of the proper fixing (or metric) is particularly important in swaps markets, where floating coupon rates (i.e., coupons indexed to a typically short-dated interest rate reference index) are exchanged for fixed coupons. Funding in a currency that differs from the currency in which coupons are denominated carries FX risk. Options on swaps (swaptions) the risks typical to options in addition to the risks related to rates movements.

Derivative transactions involve numerous risks including market, counterparty default and illiquidity risk. The appropriateness of these products for use by investors depends on the investors' own circumstances, including their tax position, their regulatory environment and the nature of their other assets and liabilities; as such, investors should take expert legal and financial advice before entering into any transaction similar to or inspired by the contents of this publication. The risk of loss in futures trading and options, foreign or domestic, can be substantial. As a result of the high degree of leverage obtainable in futures and options trading, losses may be incurred that are greater than the amount of funds initially deposited - up to theoretically unlimited losses. Trading in options involves risk and is not suitable for all investors. Prior to buying or selling an option, investors must review the 'Characteristics and Risks of Standardized Options', at <https://www.theocc.com/company-information/documents-and-archives/options-disclosure-document>. If you are unable to access the website, please contact your Deutsche Bank representative for a copy of this important document.

Participants in foreign exchange transactions may incur risks arising from several factors, including the following: (i) exchange rates can be volatile and are subject to large fluctuations; (ii) the value of currencies may be affected by numerous market factors, including world and national economic, political and regulatory events, events in equity and debt markets and changes in interest rates; and (iii) currencies may be subject to devaluation or government-imposed exchange controls, which could affect the value of the currency. Investors in securities such as ADRs, whose values are affected by the currency of an underlying security, effectively assume currency risk.

Unless governing law provides otherwise, all transactions should be executed through the Deutsche Bank entity in the investor's home jurisdiction. Aside from within this report, important conflict disclosures can also be found at <https://research.db.com/Research/> on each company's research page or under the 'Disclosures' tab. Investors are strongly encouraged to review this information before investing.

Deutsche Bank (which includes Deutsche Bank AG, its branches and affiliated companies) is not acting as a financial adviser, consultant or fiduciary to you or any of your agents (collectively, "You" or "Your") with respect to any information provided in this report. Deutsche Bank does not provide investment, legal, tax or accounting advice, Deutsche Bank is not acting as your impartial adviser, and does not express any opinion or recommendation whatsoever as to any strategies, products or any other information presented in the materials. Information contained herein is being provided solely on the basis that the recipient will make an independent assessment of the merits of any investment decision, and it does not constitute a recommendation of, or express an opinion on, any product or service or any trading strategy.



30 January 2026  
Fed Notes



The information presented is general in nature and is not directed to retirement accounts or any specific person or account type, and is therefore provided to You on the express basis that it is not advice, and You may not rely upon it in making Your decision. The information we provide is being directed only to persons we believe to be financially sophisticated, who are capable of evaluating investment risks independently, both in general and with regard to particular transactions and investment strategies, and who understand that Deutsche Bank has financial interests in the offering of its products and services. If this is not the case, or if You are an IRA or other retail investor receiving this directly from us, we ask that you inform us immediately.

In July 2018, Deutsche Bank revised its rating system for short term ideas whereby the branding has been changed to Catalyst Calls ("CC") from SOLAR ideas; the rating categories for Catalyst Calls originated in the Americas region have been made consistent with the categories used by Analysts globally; and the effective time period for CCs has been reduced from a maximum of 180 days to 90 days.

**United States:** Approved and/or distributed by Deutsche Bank Securities Incorporated, a member of FINRA and SIPC. Analysts located outside of the United States are employed by non-US affiliates and are not registered/qualified as research analysts with FINRA.

**European Economic Area (exc. United Kingdom):** Approved and/or distributed by Deutsche Bank AG, a joint stock corporation with limited liability incorporated in the Federal Republic of Germany with its principal office in Frankfurt am Main. Deutsche Bank AG is authorized under German Banking Law and is subject to supervision by the European Central Bank and by BaFin, Germany's Federal Financial Supervisory Authority.

**United Kingdom:** Approved and/or distributed by Deutsche Bank AG acting through its London Branch at 21 Moorfields, London EC2Y 9DB. Deutsche Bank AG in the United Kingdom is authorised by the Prudential Regulation Authority and is subject to limited regulation by the Prudential Regulation Authority and Financial Conduct Authority. Details about the extent of our authorisation and regulation are available on request.

**Hong Kong SAR:** Distributed by Deutsche Bank AG, Hong Kong Branch, except for any research content relating to futures contracts within the meaning of the Hong Kong Securities and Futures Ordinance Cap. 571. Research reports on such futures contracts are not intended for access by persons who are located, incorporated, constituted or resident in Hong Kong. The author(s) of a research report may not be licensed to carry on regulated activities in Hong Kong, and if not licensed, do not hold themselves out as being able to do so. The provisions set out above in the 'Additional Information' section shall apply to the fullest extent permissible by local laws and regulations, including without limitation the Code of Conduct for Persons Licensed or Registered with the Securities and Futures Commission. This report is intended for distribution only to 'professional investors' as defined in Part 1 of Schedule of the SFO. This document must not be acted or relied on by persons who are not professional investors. Any investment or investment activity to which this document relates is only available to professional investors and will be engaged only with professional investors.

**India:** Prepared by Deutsche Equities India Private Limited (DEIPL) having CIN: U65990MH2002PTC137431 and registered office at 14th Floor, The Capital, C-70, G Block, Bandra Kurla Complex, Mumbai (India) 400051. Tel: + 91 22 7180 4444. It is registered by the Securities and Exchange Board of India (SEBI) as a Stock broker bearing registration no.: INZ000252437; Merchant Banker bearing SEBI Registration no.: INM000010833 and Research Analyst bearing SEBI Registration no.: INH000001741. DEIPL's Compliance / Grievance officer is Ms. Rashmi Poddar (Tel: +91 22 7180 4929 email ID: complaints.deipl@db.com). Registration granted by SEBI and certification from NISM in no way guarantee performance of DEIPL or provide any assurance of returns to investors. Investment in securities market are subject to market risks. Read all the related documents carefully before investing. DEIPL may have received administrative warnings from the SEBI for breaches of Indian regulations. Deutsche Bank and/or its affiliate(s) may have debt holdings or positions in the subject company. With regard to information on associates, please refer to the "Shareholdings" section in the Annual Report at: <https://www.db.com/ir/en/annual-reports.htm>. For latest India research audit report, refer [https://country.db.com/india/deutsche-equities-india/index?language\\_id=1](https://country.db.com/india/deutsche-equities-india/index?language_id=1).

**Japan:** Approved and/or distributed by Deutsche Securities Inc.(DSI). Registration number - Registered as a financial instruments dealer by the Head of the Kanto Local Finance Bureau (Kinsho) No. 117. Member of associations: JSDA,



30 January 2026  
Fed Notes



Type II Financial Instruments Firms Association and The Financial Futures Association of Japan. Commissions and risks involved in stock transactions - for stock transactions, we charge stock commissions and consumption tax by multiplying the transaction amount by the commission rate agreed with each customer. Stock transactions can lead to losses as a result of share price fluctuations and other factors. Transactions in foreign stocks can lead to additional losses stemming from foreign exchange fluctuations. We may also charge commissions and fees for certain categories of investment advice, products and services. Recommended investment strategies, products and services carry the risk of losses to principal and other losses as a result of changes in market and/or economic trends, and/or fluctuations in market value. Before deciding on the purchase of financial products and/or services, customers should carefully read the relevant disclosures, prospectuses and other documentation. 'Moody's', 'Standard Poor's', and 'Fitch' mentioned in this report are not registered credit rating agencies in Japan unless Japan or 'Nippon' is specifically designated in the name of the entity. Reports on Japanese listed companies not written by analysts of DSI are written by Deutsche Bank Group's analysts with the coverage companies specified by DSI. Some of the foreign securities stated on this report are not disclosed according to the Financial Instruments and Exchange Law of Japan. Target prices set by Deutsche Bank's equity analysts are based on a 12-month forecast period.

**Korea:** Distributed by Deutsche Securities Korea Co.

**South Africa:** Deutsche Bank AG Johannesburg is incorporated in the Federal Republic of Germany (Branch Register Number in South Africa: 1998/003298/10).

**Singapore:** This report is issued by Deutsche Bank AG, Singapore Branch (One Raffles Quay #18-00 South Tower Singapore 048583, 65 6423 8001), which may be contacted in respect of any matters arising from, or in connection with, this report. Where this report is issued or promulgated by Deutsche Bank in Singapore to a person who is not an accredited investor, expert investor or institutional investor (as defined in the applicable Singapore laws and regulations), they accept legal responsibility to such person for its contents.

**Taiwan:** Information on securities/investments that trade in Taiwan is for your reference only. Readers should independently evaluate investment risks and are solely responsible for their investment decisions. Deutsche Bank research may not be distributed to the Taiwan public media or quoted or used by the Taiwan public media without written consent. Information on securities/instruments that do not trade in Taiwan is for informational purposes only and is not to be construed as a recommendation to trade in such securities/instruments.

**Qatar:** Deutsche Bank AG in the Qatar Financial Centre (registered no. 00032) is regulated by the Qatar Financial Centre Regulatory Authority. Deutsche Bank AG - QFC Branch may undertake only the financial services activities that fall within the scope of its existing QFCRA license. Its principal place of business in the QFC: Qatar Financial Centre, Tower, West Bay, Level 5, PO Box 14928, Doha, Qatar. This information has been distributed by Deutsche Bank AG. Related financial products or services are only available only to Business Customers, as defined by the Qatar Financial Centre Regulatory Authority.

**Russia:** The information, interpretation and opinions submitted herein are not in the context of, and do not constitute, any appraisal or evaluation activity requiring a license in the Russian Federation.

**Kingdom of Saudi Arabia:** Deutsche Securities Saudi Arabia (DSSA) is a closed joint stock company authorized by the Capital Market Authority of the Kingdom of Saudi Arabia with a license number (No. 37-07073) to conduct the following business activities: Dealing, Arranging, Advising, and Custody activities. DSSA registered office is Faisaliah Tower, 17th Floor, King Fahad Road - Al Olaya District Riyadh, Kingdom of Saudi Arabia P.O. Box 301806.

**United Arab Emirates:** Deutsche Bank AG in the Dubai International Financial Centre (registered no. 00045) is regulated by the Dubai Financial Services Authority. Deutsche Bank AG - DIFC Branch may only undertake the financial services activities that fall within the scope of its existing DFSA license. Principal place of business in the DIFC: Dubai International Financial Centre, The Gate Village, Building 5, PO Box 504902, Dubai, U.A.E. This information has been distributed by Deutsche Bank AG. Related financial products or services are available only to Professional Clients, as defined by the Dubai Financial Services Authority.

30 January 2026  
Fed Notes



**Australia and New Zealand:** This research is intended only for 'wholesale clients' within the meaning of the Australian Corporations Act and New Zealand Financial Advisors Act, respectively. Please refer to Australia-specific research disclosures and related information at [https://www.dbresearch.com/PROD/RPS\\_EN-PROD/PROD0000000000521304.xhtml](https://www.dbresearch.com/PROD/RPS_EN-PROD/PROD0000000000521304.xhtml). Where research refers to any particular financial product recipients of the research should consider any product disclosure statement, prospectus or other applicable disclosure document before making any decision about whether to acquire the product. In preparing this report, the primary analyst or an individual who assisted in the preparation of this report has likely been in contact with the company that is the subject of this research for confirmation/clarification of data, facts, statements, permission to use company-sourced material in the report, and/or site-visit attendance. Without prior approval from Research Management, analysts may not accept from current or potential Banking clients the costs of travel, accommodations, or other expenses incurred by analysts attending site visits, conferences, social events, and the like. Similarly, without prior approval from Research Management and Anti-Bribery and Corruption ("ABC") team, analysts may not accept perks or other items of value for their personal use from issuers they cover.

Additional information relative to securities, other financial products or issuers discussed in this report is available upon request. This report may not be reproduced, distributed or published without Deutsche Bank's prior written consent.

Backtested, hypothetical or simulated performance results have inherent limitations. Unlike an actual performance record based on trading actual client portfolios, simulated results are achieved by means of the retroactive application of a backtested model itself designed with the benefit of hindsight. Taking into account historical events the backtesting of performance also differs from actual account performance because an actual investment strategy may be adjusted any time, for any reason, including a response to material, economic or market factors. The backtested performance includes hypothetical results that do not reflect the reinvestment of dividends and other earnings or the deduction of advisory fees, brokerage or other commissions, and any other expenses that a client would have paid or actually paid. No representation is made that any trading strategy or account will or is likely to achieve profits or losses similar to those shown. Alternative modeling techniques or assumptions might produce significantly different results and prove to be more appropriate. Past hypothetical backtest results are neither an indicator nor guarantee of future returns. Actual results will vary, perhaps materially, from the analysis.

The method for computing individual E,S,G and composite ESG scores set forth herein is a novel method developed by the Research department within Deutsche Bank AG, computed using a systematic approach without human intervention. Different data providers, market sectors and geographies approach ESG analysis and incorporate the findings in a variety of ways. As such, the ESG scores referred to herein may differ from equivalent ratings developed and implemented by other ESG data providers in the market and may also differ from equivalent ratings developed and implemented by other divisions within the Deutsche Bank Group. Such ESG scores also differ from other ratings and rankings that have historically been applied in research reports published by Deutsche Bank AG. Further, such ESG scores do not represent a formal or official view of Deutsche Bank AG.

It should be noted that the decision to incorporate ESG factors into any investment strategy may inhibit the ability to participate in certain investment opportunities that otherwise would be consistent with your investment objective and other principal investment strategies. The returns on a portfolio consisting primarily of sustainable investments may be lower or higher than portfolios where ESG factors, exclusions, or other sustainability issues are not considered, and the investment opportunities available to such portfolios may differ. Companies may not necessarily meet high performance standards on all aspects of ESG or sustainable investing issues; there is also no guarantee that any company will meet expectations in connection with corporate responsibility, sustainability, and/or impact performance.

Copyright © 2026 Deutsche Bank AG



## David Folkerts-Landau

Group Chief Economist and Global Head of Research

Pam Finelli  
Global Chief Operating  
Officer Research

Steve Pollard  
Global Head of Company  
Research and Sales

Jim Reid  
Global Head of Macro and  
Thematic Research

Tim Rokossa  
Head of Germany  
Research

Gerry Gallagher  
Head of European  
Company Research

Matthew Barnard  
Head of Americas  
Company Research

Peter Milliken  
Head of APAC Company  
Research

Debbie Jones  
Global Head of  
Sustainability and Data  
Innovation, Research

Sameer Goel  
Global Head of EM &  
APAC Research

Francis Yared  
Global Head of Rates  
Research

George Saravelos  
Global Head of FX  
Research

Peter Hooper  
Vice-Chair of Research

## International Production Locations

### Deutsche Bank AG

Deutsche Bank Place  
Level 16  
Corner of Hunter & Phillip  
Streets  
Sydney, NSW 2000  
Australia  
Tel: (61) 2 8258 1234

### Deutsche Bank AG

Equity Research  
Mainzer Landstrasse 11-  
17  
60329 Frankfurt am Main  
Germany  
Tel: (49) 69 910 00

### Deutsche Bank AG

Filiale Hongkong  
International Commerce  
Centre  
1 Austin Road West,  
Kowloon,  
Hong Kong  
Tel: (852) 2203 8888

### Deutsche Securities Inc.

1-3-1 Azabudai  
Azabudai Hills Mori JP  
Tower  
Minato-ku, Tokyo 106-  
0041  
Japan  
Tel: (81) 3 6730 1000

### Deutsche Bank AG

21 Moorfields  
London EC2Y 9DB  
United Kingdom  
Tel: (44) 20 7545 8000

### Deutsche Bank Securities Inc.

The Deutsche Bank  
Center  
1 Columbus Circle  
New York, NY 10019  
Tel: (1) 212 250 2500

### Deutsche Bank AG

Filiale Singapur  
One Raffles Quay, South  
Tower  
Singapore 048583  
Tel: (65) 6423 8001