BlackRock.

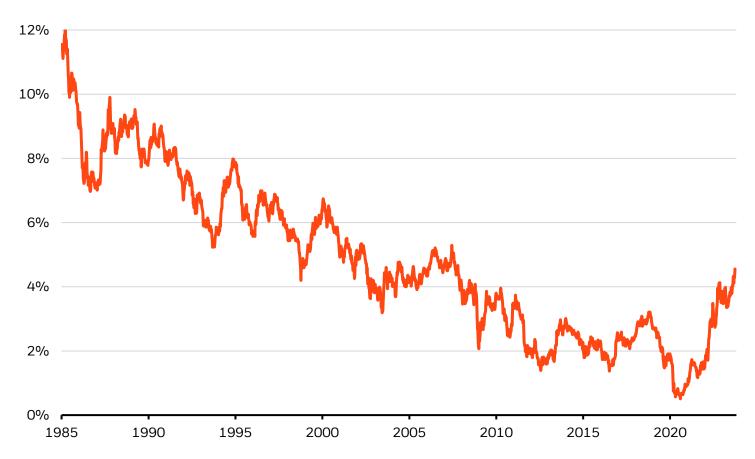
2023 Global outlook Q4 update

BlackRock **Investment** Institute

Markets are playing catch-up to the new regime

Bond yields have surged to 16-year highs. We think the market is adjusting to the new regime and its implications – especially higher macro volatility. We center our outlook on structural shifts and look through the market noise.

U.S. 10-year Treasury yields, 1985-2023



Past performance is not a reliable indicator of current or future results Source: BlackRock Investment Institute, with data from LSEG Datastream, October 2023. Notes: The chart shows the yield on the Datastream 10-year Benchmark Treasury.

New regime, new opportunities

1.

Holding tight

Markets have come around to the view that central banks will not quickly ease policy in a world shaped by supply constraints. We see them keeping policy tight to lean against inflationary pressures.

Key tactical view changes since our Midyear outlook



2.

Pivoting to new opportunities

Higher macro and market volatility has brought more divergent security performance relative to the broader market. Benefiting from this requires granularity and nimbleness.



3.

Harnessing mega forces

The new regime is shaped by five big structural forces we think are poised to create big shifts in profitability across economies and sectors. The key is identifying catalysts that can supercharge them and whether the shifts are priced by markets today.



The opinions expressed are as of October 2023 and are subject to change at any time due to changes in market or economic conditions. Strategic implications refer to long-term views of five years and longer, tactical implications refer to asset views on shorter horizons of 12 months or less.

Underweight

Inflation is falling as pandemic-induced mismatches resolve...

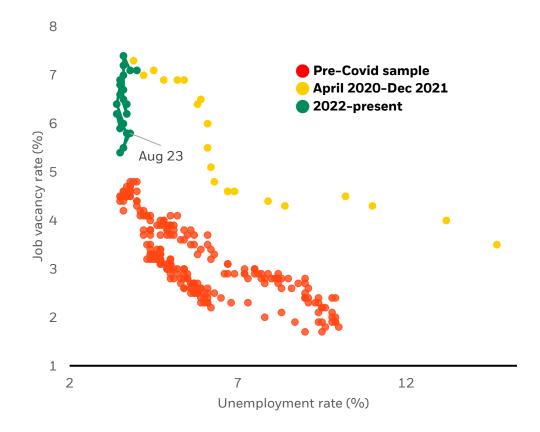
We think about two-thirds of the spending shift to goods from services has unwound. Goods prices are dragging inflation down as demand normalizes. A skills mismatch is also normalizing, helping cool wage growth.

Core goods and services inflation, 2017-2023

10% 8% 6% 3m/3m annualized -2% -4%2017 2018 2019 2020 2021 2022 2023 Core goods — Core services

Source: BlackRock Investment Institute, U.S. Bureau of Labor Statistics, with data from Haver Analytics, September 2023. Notes: The chart shows core goods and core services PCE inflation. Each line shows the three-month growth over the preceding three months, expressed as an annualized rate.

U.S. job vacancy and unemployment rate, 2001-2023

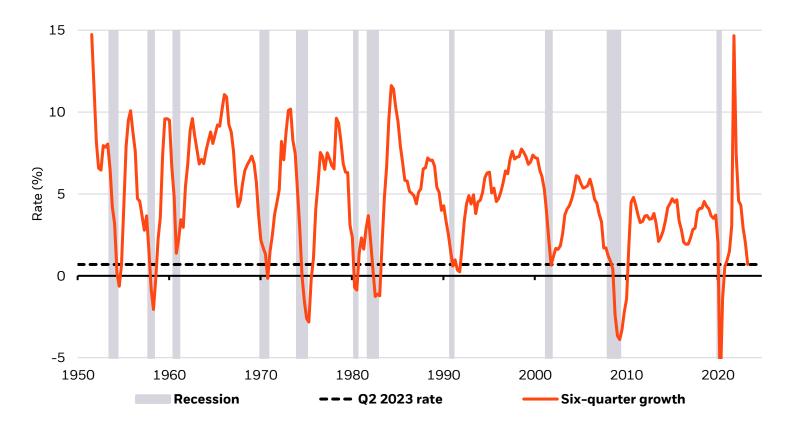


Source: BlackRock Investment Institute, U.S. Bureau of Labor Statistics, with data from Haver Analytics, October 2023. Notes: The chart shows the U.S. job vacancy rate vs the unemployment rate in the same month.

...but with stealth stagnation in the economy

Inflation declining through 2023 has come at the cost of economic growth as tighter policy bites. On some measures, the U.S. economy hasn't actually grown much in the last 18 months – it's never been this weak without a recession.

U.S. output growth over six quarters, 1950-2023



Source: BlackRock Investment Institute, U.S. Bureau of Labor Statistics, with data from Haver Analytics, September 2023. Notes: The chart shows the output growth rate (as measured by the average of GDP and GDI) over a six-quarter period. We use a six-quarter interval to benchmark the growth rate since the beginning of the Fed's current policy tightening cycle.

This is a tight labor market, not a strong one

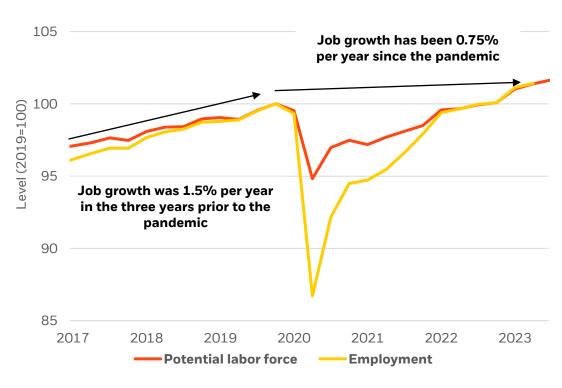
An aging population is set to constrain labor supply from here, we think. We find it'll mean the U.S. economy can only add around 70K new jobs a month without stoking higher inflation, compared to 200K previously.

U.S. unemployment rate, 1983-2023

14% 12% 10% 8% 6% 4% 1983 1993 2003 2013 2023

Source: BlackRock Investment Institute, U.S. Bureau of Labor Statistics, with data from Haver Analytics, September 2023. Notes: The chart shows the U.S. unemployment rate.

U.S. employment and potential labor force



Source: BlackRock Investment Institute, U.S. Bureau of Labor Statistics, with data from Haver Analytics, September 2023. Note: The yellow line shows U.S. employment level measured by the survey of households. The red line shows the level of employment that would have been obtained had the unemployment rate held steady at 3.6%, the level in Q4 2019, given the actual labor force.

The central bank response to stagnation will likely be muted...

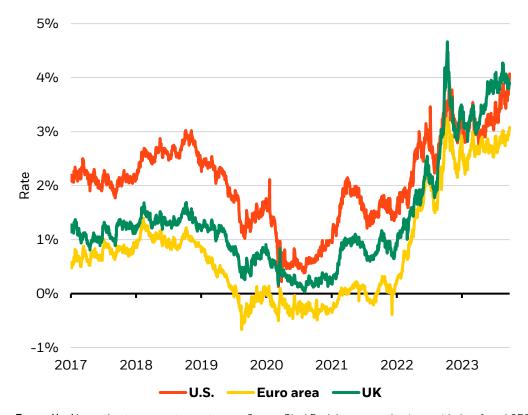
Some markets have come around to our view that central banks won't be riding to the rescue with sizeable rate cuts. Persistent inflationary pressures driven by supply constraints means central banks will have to hold policy tight.

Fed funds rate expectations, Sep. 2023- Sep. 2024

6% 5% %4 4% 3% Historic rate cut cycles range (1989-2006) Historical average As of June 1, 2023 September 2023 2% Sep-23 Mar-24 Sep-24

Forward looking estimates may not come to pass. Source: BlackRock Investment Institute, with data from LSEG Datastream, September 2023. Notes: The lines show market pricing of the path of future U.S. policy rates based on Fed Funds Futures. The orange line shows the current pricing the yellow line shows the pricing as at the start of June 2023. The grey area and green line shows historic rate cut cycles since 1989 and the average rate cuts during that period.

Medium-term policy rate expectations, 2018-2023

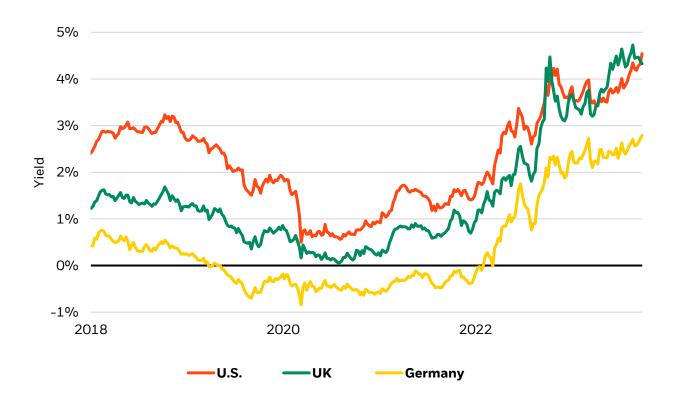


Forward looking estimates may not come to pass. Source: BlackRock Investment Institute, with data from LSEG Datastream, October 2023. Notes: The chart shows market expectations for 1-year rates in 5 years' time based on interest rate swaps.

...and that's creating exciting opportunities for income

As markets realize that central banks will have to keep a lid on activity to stem inflation it creates exciting opportunities for income. We like UK and euro area bonds, where yields spiked far above their pre-pandemic level.

10-year government bond yields, 2018-2023

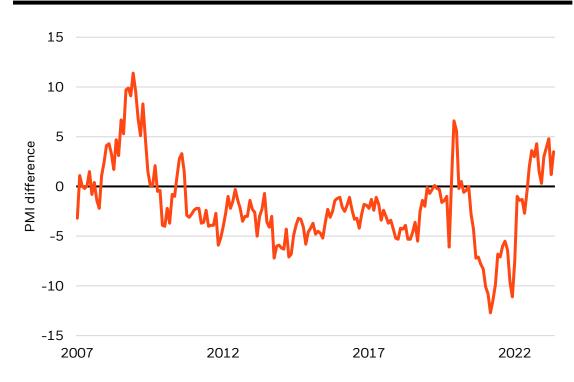


Past performance is not a reliable indicator of current or future results. Source: BlackRock Investment Institute with data from LSEG Datastream, October 2023. Notes: The chart shows the 10-year government bond yield for the U.S.., Germany and the UK

We are overweight hard currency EM debt

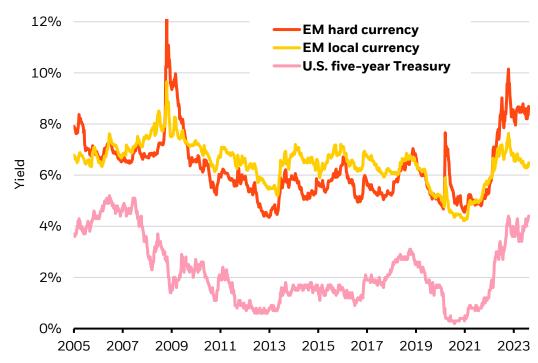
We prefer emerging hard currency debt due to higher yields. It is also cushioned from weakening local currencies as EM central banks start to cut policy rates.

EM PMI vs. DM, 2007-2023



Past performance is not a reliable indicator of current or future results. Source: BlackRock Investment Institute, Bank of International Settlements (BIS), Bloomberg, S&P, JPMorgan with data from Refinitiv Datastream, September 2023. Notes: The chart shows the difference between the S&P emerging market manufacturing PMI and U.S. PMI.

EM bonds vs. U.S. Treasury yields, 2005-2023

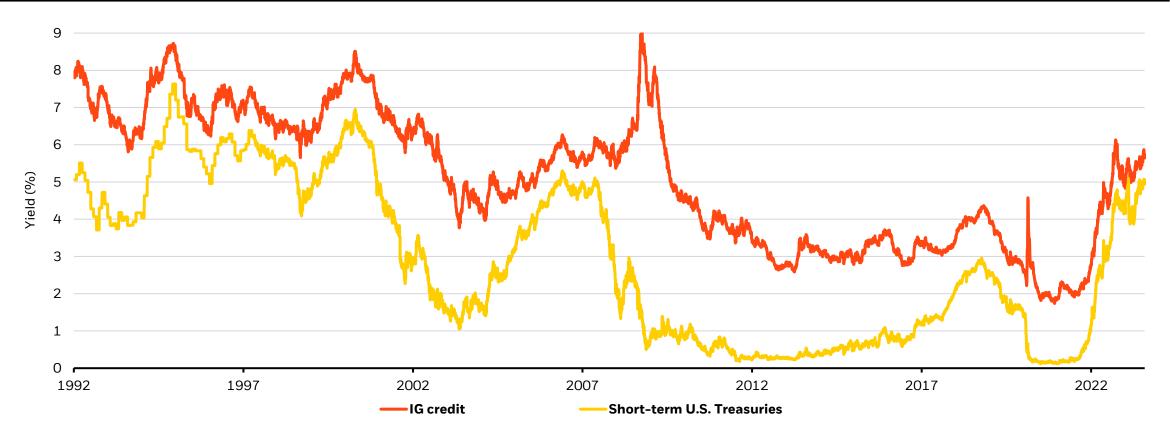


Past performance is not a reliable indicator of current or future results, and index returns do not account for fees. It is not possible to invest directly in an index. Source: BlackRock Investment Institute, with data from Refinitiv Datastream, October 2023. Notes: The chart shows yield levels for the JP Morgan Emerging Market Bond Index Global Diversified (EM hard currency), JP Morgan GBI-Emerging Market Bond Index Global Diversified and the benchmark U.S. five-year Treasury.

We prefer short-term government bonds for income over credit

The back-up in yields boosts the appeal of short-dated government bonds for income. We prefer the asset class to investment grade (IG) credit where tight spreads offer poorer reward for higher risk, in our view.

U.S. IG credit and short-term Treasuries, 1992-2023



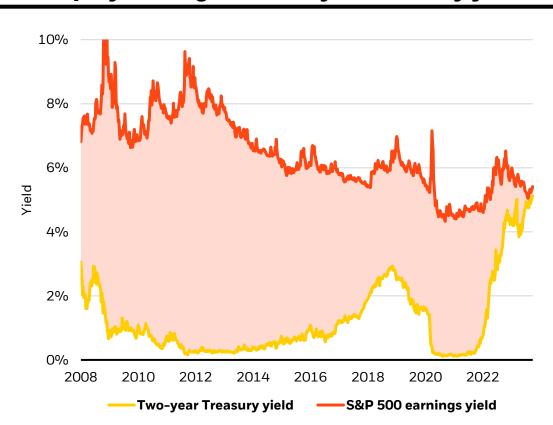
Past performance is not a reliable indicator of current or future results, and it is not possible to invest directly in an index. Index returns do not account for fees Source: BlackRock Investment Institute, with data from LSEG Datastream, October 2023. Notes: The chart shows the yields for U.S. investment grade credit (using the Bloomberg U.S. Credit USD index) and short-term U.S. Treasuries (Bloomberg U.S. Treasuries).

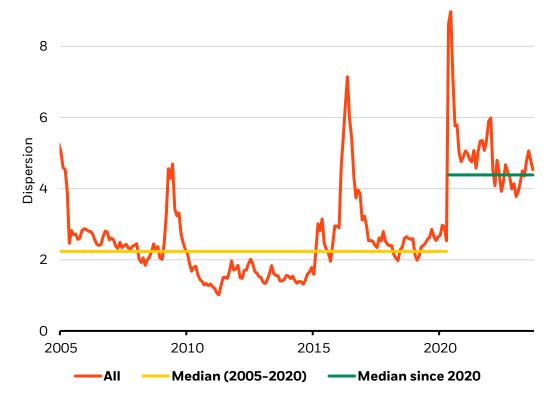
Greater dispersion = greater opportunities

Surging yields and stealth stagnation aren't friendly conditions for broad equity exposures. Valuation dispersion within sectors has moved meaningfully higher relative to the past – creating new opportunities, we think.

U.S. equity earnings and two-year Treasury yields

Dispersion of global sector price-earnings ratios



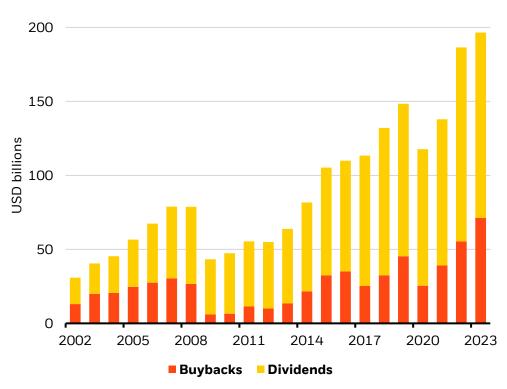


Past performance is not a reliable indicator of current or future results, and index returns do not account for fees. It is not possible to invest directly in an index. Source: BlackRock Investment Institute with data from LSEG Datastream, October 2023. Notes: The left chart shows the S&P 500 12-month forward earnings yield and the two-year U.S. Treasury yields.. The right chart shows the cross-sectional standard deviation of 12-month forward price-earnings (P/E) ratios for the 11 standard GICs sectors.

We are overweight Japanese equities

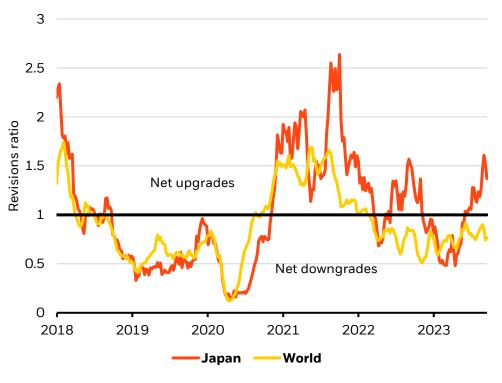
Japan stands apart from the DM pack. Accelerating share buy backs and other shareholder friendly corporate reforms, strong earnings and still-accommodative monetary policy boost their appeal.

Japan share buybacks and dividends, 2002-2023



.Source: BlackRock Investment Institute, with data from Morgan Stanley Research, Nikkei NEEDS-BULK/FDS, TSE, Alphasense, Bloomberg and FactSet, August 2023. Notes: The chart shows the annual cumulative capital returned to shareholders via buybacks and dividends for the top-tier companies listed on the TSE and Prime Market firms. 2023 data is annualized.

Equity earnings revision ratio, 2000-2023

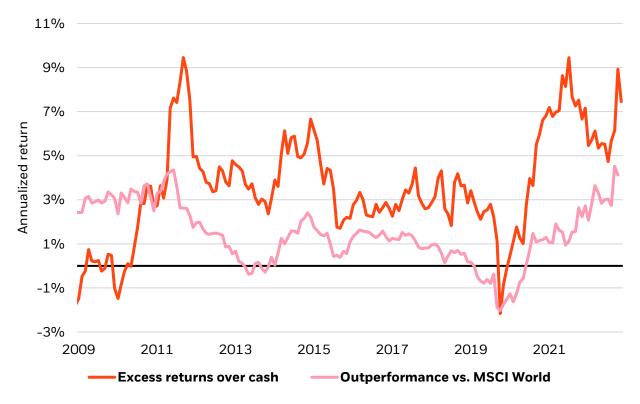


Past performance is not a reliable indicator of current or future returns. Index performance does not account for fees, it is not possible to invest directly in an index. Source: BlackRock Investment Institute, with data from LSEG Datastream, October 2023. Notes: The chart shows the equity earnings revisions for Japan and World equities. The lines show the number of companies with upward revisions to 12-month forward earnings divided by the number with downward revisions. Index proxies used: MSCI Japan and MSCI ACWI.

Active strategies may benefit from greater dispersion

More macro volatility has seen greater dispersion between and within asset classes. We see this environment as more conducive for active strategies looking to beat market benchmark returns such as those employed by hedge funds.

Hedge fund excess returns over cash and outperformance vs. MSCI World, 2009-2023



Past performance is not a reliable indicator of current or future results, and it is not possible to invest directly in an index. Index returns do not account for fees. This information is not intended as a recommendation to invest in any particular asset class or strategy or as a promise - or even estimate - of future performance. Source: BlackRock Investment Institute, Hedge Fund Research with data from LSEG Datastream, October 2023. Notes: The chart shows the three-year rolling average of the excess returns of the HFRI Fund Weighted Composite Index over the MSCI World Index. This outperformance is calculated using HFR data and three-year rolling regression analysis to remove the effects of broad market risk. The outperformance is measured as the difference between the returns of both indexes once the effects of broad market risk have been removed. Regression analysis is only an estimate of a relationship and may not fully reflect the true relationship between variables.

Mega forces are creating new opportunities

We see mega forces, or structural shifts shaping the long-term growth and inflation outlook, creating big shifts in profitability across economies and sectors – and new investment opportunities.

Low-carbon transition

The transition to is set to spur a massive reallocation of capital. We see the transition's speed and shape driven by an interplay of policy, technology, and consumer and investor preferences.

Implications: We see opportunities across the energy system – high-carbon and low. The impact on portfolios depends on the timing and size of these shifts – and when markets price them in.

Shifting demographics

Shrinking workforces in DMs mean tight labor markets will likely keep inflation elevated. By contrast, selected emerging market economies are poised to benefit from younger populations.

Implications: We see opportunities in healthcare, real estate, leisure and companies with products and services for seniors.

Geopolitics and economic competition

We have entered a new era of competing geopolitical and economic blocs. We see countries favoring national security and resilience over economic efficiency, accelerating the rewiring of supply chains.

Implications: A surge in investment in areas like technology, clean energy, infrastructure and defense could create opportunities

Digital disruption and Al

Artificial intelligence advances have sparked market euphoria over its potential. Al tools can automate laborious tasks, analyze huge sets of data and help generate fresh ideas.

Implications: We think the market focus will move beyond the technology producers to large-scale data owners and Al users within and across industries.

Future of finance

Regulatory shifts, changes in the financial architecture, the end of zero rates and technological innovation are changing the markets for deposits and credit, disrupting traditional business models.

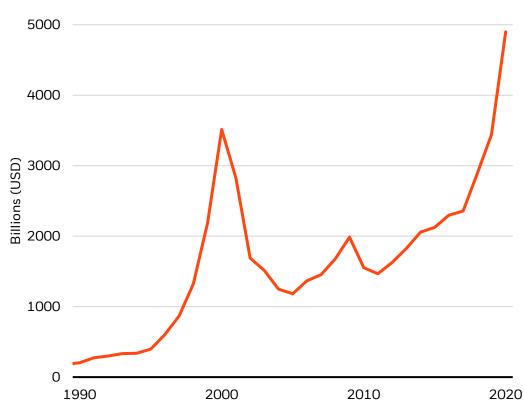
Implications: We expect more borrowers to turn to private credit as it becomes relatively better priced. We see the recent repricing as a chance to be nimble.

For illustrative purposes only. Forward looking estimates may not come to pass. Source: BlackRock Investment Institute, October 2023. This material represents an assessment of the market environment at a specific time and is not intended to be a forecast of future events or a guarantee of future results. This information should not be relied upon by the reader as research or investment advice regarding any funds, strategy or security in particular.

Al may prove to be a value driver for public companies

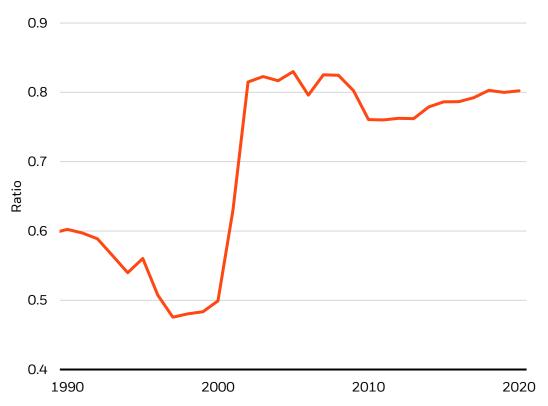
The value of AI patents from public companies has surged and it could suggest they're submitting higher quality patents. Excitement for AI could spread to private markets too.

Value of public company Al patents. 1990-2020



Sources: BlackRock Investment Institute, with data from United States Patent and Trademark Office (USPTO) and <u>Dimitris Papanikolaou</u>, Professor of Finance at Kellogg School of Management, September2023. Notes: This chart shows the aggregate USD\$ value of Al patents granted to public firms and is measured as stock market reaction around the day each patent is granted.

Share of non-public company Al patents, 1990-2020

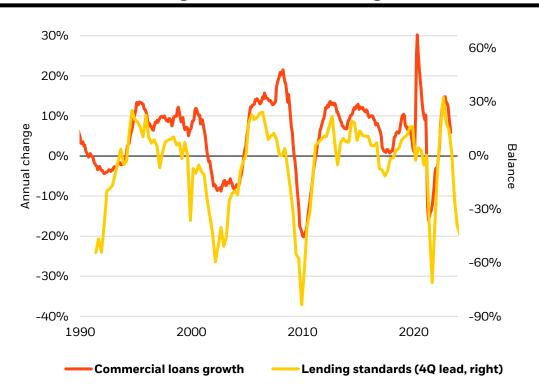


Sources: BlackRock Investment Institute, with data from United States Patent and Trademark Office (USPTO) and <u>Dimitris Papanikolaou</u>, Professor of Finance at Kellogg School of Management, September 2023. Notes: This chart shows the number of AI patents granted to non-public companies divided by the total number of AI patents granted by the USPTO.

Structurally higher demand for private credit ahead

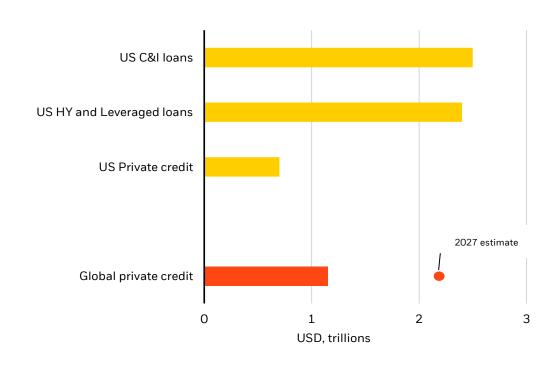
We see companies turning to alternative sources of credit as bank credit becomes less readily available. We expect demand for private credit to increase sharply.

Commercial loan growth and lending standards



Source: BlackRock Investment Institute, FED, with data from Haver, September 2023. Notes: The chart shows growth in commercial and industrial loans and results from FRB Senior Loan Officers Survey – net percentage balance tightening in standards for commercial and industrial loans large and middle-market firms (RHS).

Comparison of global debt markets, 2023



Source: BlackRock Investment Institute with data from Bloomberg, St. Louis Federal Reserve, ICE Bank of America, Pitchbook LCD and Preqin. September 2023. Notes: The measures used to size the markets are:outstanding stock of commercial and industrial (C&I) loans from the St. Louis Fed; total market value for index proxies Bloomberg US high yield corporate index, Morningstar LSTA USD Leveraged loans index, and the value of assets under management of private credit funds (historical private credit numbers exclude uninvested cash, so called "dry powder")

Tactical granular views: equities

Six to 12-month tactical views on selected assets vs. broad global asset classes by level of conviction

Equities	View	Commentary
Developed markets		
U.S.		We are underweight the broad market – still our largest portfolio allocation. We don't think earnings expectations reflect the macro damage we expect. We recognize momentum is strong near-term.
Europe		We are underweight. The ECB keeps tightening in a slowdown and the support to growth from lower energy prices is fading.
UK	Neutral	We are neutral. We find that attractive valuations better reflect the weak growth outlook and the Bank of England's sharp rate hikes to deal with sticky inflation.
Japan	+1	We are overweight. We think stronger growth can help earnings top expectations. Stock buybacks and other shareholder-friendly actions may keep attracting foreign investors.
Pacific ex-Japan	Neutral	We are neutral. China's restart is losing steam and we don't see valuations compelling enough to turn overweight.
DM AI mega force	+1	We are overweight. We see a multi-country and multi-sector Al-centered investment cycle unfolding set to support revenues and margins.
Emerging markets	Neutral Neutral	We are neutral given a weaker growth trajectory. We prefer EM debt over equity.
China	Neutral	We are neutral. Growth has slowed. Policy stimulus is not as large as in the past. Yet we believe it should stabilize activity, and valuations have come down. Structural challenges imply deteriorating long-term growth. Geopolitical risks persist.
Underweight Neutral	Overweight • Previous view	

Past performance is not a reliable indicator of current or future results. It is not possible to invest directly in an index. Note: Views are from a U.S. dollar perspective. This material represents an assessment of the market environment at a specific time and is not intended to be a forecast or guarantee of future results. This information should not be relied upon as investment advice regarding any particular fund, strategy or security.

Tactical granular views: fixed income

Six to 12-month tactical views on selected assets vs. broad global asset classes by level of conviction

Fixed income	View	Commentary
Short U.S. Treasuries	+1	We are overweight. We prefer short-term government bonds for income as interest rates stay higher for longer.
Long U.S. Treasuries	-1	We are underweight. We see long-term yields moving up further as investors demand greater term premium.
U.S. inflation-linked bonds	+1	We are overweight and prefer the U.S. over the euro area. We see market pricing underestimating sticky inflation.
Euro area inflation-linked bonds	1	We prefer the U.S. over the euro area. Markets are pricing higher inflation than in the U.S., even as the European Central Bank has signaled more interest rate hikes ahead.
Euro area govt bonds	+1	We are overweight. Market pricing reflects policy rates staying higher for longer even as growth deteriorates. Widening peripheral bond spreads remain a risk.
UK gilts	+1	We are overweight. Gilt yields are holding near their highest in 15 years. Markets are pricing in restrictive Bank of England policy rates for longer than we expect.
Japanese govt bonds	-1	We are underweight. We see upside risks to yields from the Bank of Japan winding down its ultra-loose policy.
China govt bonds	Neutral	We are neutral. Bonds are supported by looser policy. Yet we find yields more attractive in short-term DM paper.
Global IG credit	.1	We are underweight. We prefer to take risk elsewhere as spreads remain tight.
U.S. agency MBS	+1	We're overweight. We see agency MBS as a high-quality exposure within diversified bond allocations.
Global high yield	-1	We are underweight. Spreads do not fully compensate for slower growth and tighter credit conditions we anticipate.
Asia credit	Neutral	We are neutral. We don't find valuations compelling enough to turn more positive.
EM hard currency	+1	We are overweight. We prefer emerging hard currency debt due to higher yields. It is also cushioned from weakening local currencies as EM central banks start to cut policy rates.
EM local currency	Neutral	We are neutral. Yields have fallen closer to U.S. Treasury yields. Plus, central bank rate cuts could put downward pressure on EM currencies, dragging on potential returns.
Underweight Neutral	Overweigh	_

Past performance is not a reliable indicator of current or future results. It is not possible to invest directly in an index. Note: Views are from a U.S. dollar perspective. This material represents an assessment of the market environment at a specific time and is not intended to be a forecast or guarantee of future results. This information should not be relied upon as investment advice regarding any particular fund, strategy or security.

BlackRock Investment Institute



Jean Boivin Head – BlackRock Investment Institute 66

To build robust portfolios, you need to connect the dots between economics, markets, return drivers, policy and geopolitics.

"



We generate macro, market and portfolio research to help our portfolio managers and clients navigate markets and build robust portfolios We share our insights through publications on:

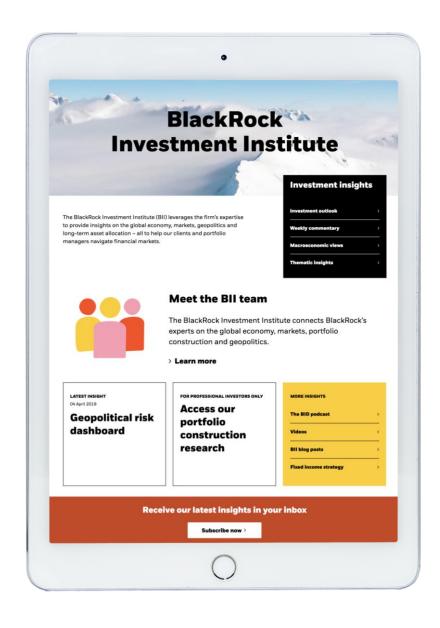
- Macro and market framing
- Portfolio design and return expectations for institutional and professional investors
- Policy and politics



We are the connective tissue for BlackRock's portfolio managers and experts, setting up debates on market topics and structural trends via:

- Daily global meeting
 - Global experts share market views and debate a weekly question
- Global Outlook Forum
 - BlackRock's top 100 market experts gather twice a year to discuss the macro and market outlook

We have impact: We reached 283,000 clients across some 600 events in 2022, and had over 1 million webpage views. We also share our insights across media and social platforms.



Get BlackRock Investment Institute content:

blackrock.com/BII

Social content for a U.S. audience:



BLKInsights app



@blackrock



The Bid podcast

BlackRock Investment Institute

The <u>BlackRock Investment Institute</u> (BII) leverages the firm's expertise to provide insights on the global economy, markets, geopolitics and long-term asset allocation – all to help our clients and portfolio managers navigate financial markets. BII offers strategic and tactical market views, publications and digital tools that are underpinned by proprietary research.

General disclosure: This material is intended for information purposes only, and does not constitute investment advice, a recommendation or an offer or solicitation to purchase or sell any securities to any person in any jurisdiction in which an offer, solicitation, purchase or sale would be unlawful under the securities laws of such jurisdiction. This material may contain estimates and forward-looking statements, which may include forecasts and do not represent a guarantee of future performance. This information is not intended to be complete or exhaustive and no representations or warranties, either express or implied, are made regarding the accuracy or completeness of the information contained herein. The opinions expressed are as of October 2023 and are subject to change without notice. Reliance upon information in this material is at the sole discretion of the reader. Investing involves risks.

In the U.S. and Canada, this material is intended for public distribution. In EMEA, in the UK and Non-European Economic Area (EEA) countries: this is Issued by BlackRock Investment Management (UK) Limited, authorised and regulated by the Financial Conduct Authority. Registered office: 12 Throgmorton Avenue, London, EC2N 2DL. Tel: + 44 (0) 20 7743 3000. Registered in England and Wales No. 02020394. For your protection telephone calls are usually recorded. Please refer to the Financial Conduct Authority website for a list of authorised activities conducted by BlackRock. In the European Economic Area (EEA): this is Issued by BlackRock (Netherlands) B.V. is authorised and regulated by the Netherlands Authority for the Financial Markets. Registered office Amstelplein 1, 1096 HA, Amsterdam, Tel: 020 - 549 5200, Tel: 31-20-549-5200. Trade Register No. 17068311 For your protection telephone calls are usually recorded. In Italy, for information on investor rights and how to raise complaints please go to https://www.blackrock.com/corporate/compliance/investor-right available in Italian. In Switzerland, for qualified investors in Switzerland: This document is marketing material. Until 31 December 2021, this document shall be exclusively made available to, and directed at, qualified investors as defined in the Swiss Collective Investment Schemes Act of 23 June 2006 ("CISA"), as amended. From 1 January 2022, this document shall be exclusively made available to, and directed at, qualified investors as defined in Article 10 (3) of the CISA of 23 June 2006, as amended, at the exclusion of qualified investors with an opting-out pursuant to Art. 5 (1) of the Swiss Federal Act on Financial Services ("FinSA"), For information on art. 8 / 9 Financial Services Act (FinSA) and on your client segmentation under art. 4 FinSA, please see the following website: www.blackrock.com/finsa For investors in Israel: BlackRock Investment Management (UK) Limited is not licensed under Israel's Regulation of Investment Advice, Investment Marketing and Portfolio Management Law, 5755-1995 (the "Advice Law"), nor does it carry insurance thereunder. In South Africa, please be advised that BlackRock Investment Management (UK) Limited is an authorized financial Services provider with the South African Financial Services Board, FSP No. 43288. In the DIFC this material can be distributed in and from the Dubai International Financial Centre (DIFC) by BlackRock Advisors (UK) Limited — Dubai Branch which is regulated by the Dubai Financial Services Authority (DFSA). This material is only directed at 'Professional Clients' and no other person should rely upon the information contained within it. Blackrock Advisors (UK) Limited - Dubai Branch is a DIFC Foreign Recognised Company registered with the DIFC Registrar of Companies (DIFC Registered Number 546), with its office at Unit 06/07, Level 1, AI Fattan Currency House, DIFC, PO Box 506661, Dubai, UAE, and is regulated activities of 'Advising on Financial Products' and 'Arranging Deals in Investments' in or from the DIFC, both of which are limited to units in a collective investment fund (DFSA Reference Number F000738). In the Kingdom of Saudi Arabia, issued in the Kingdom of Saudi Arabia (BSA), authorised and regulated by the Capital Market Authority (CMA), License No. 18-192-30. Registered under the laws of KSA. Registered office: 29th floor, Olaya Towers - Tower B, 3074 Prince Mohammed bin Abdulaziz St., Olaya District, Riyadh 12213 - 8022, KSA, Tel: +966 11 838 3600. The information contained within is intended strictly for Sophisticated Investors as defined in the CMA Implementing Regulations. Neither the CMA or any other authority or regulator located in KSA has approved this information. In the United Arab Emirates this material is only intended for -natural Qualified Investor as defined by the Securities and Commodities Authority (SCA) Chairman Decision No. 3/R.M. of 2017 concerning Promoting and Introducing Regulations. Neither the DFSA or any other authority or regulator located in the GCC or MENA region has approved this information. In the State of Kuwait, those who meet the description of a Professional Client as defined under the Kuwait Capital Markets Law and its Executive Bylaws. In the Sultanate of Oman, to sophisticated institutions who have experience in investing in local and international securities, are financially solvent and have knowledge of the risks associated with investing in securities. In Qatar, for distribution with pre-selected institutional investors or high net worth investors. In the Kingdom of Bahrain, to Central Bank of Bahrain (CBB) Category 1 or Category 2 licensed investment firms, CBB licensed banks or those who would meet the description of an Expert Investor or Accredited Investors as defined in the CBB Rulebook. The information contained in this document, does not constitute and should not be construed as an offer of, invitation, inducement or proposal to make an offer for, recommendation to apply for or an opinion or guidance on a financial product, service and/or strategy. In Singapore, this is issued by BlackRock (Singapore) Limited (Co. registration no. 200010143N). This advertisement or publication has not been reviewed by the Monetary Authority of Singapore. In Hong Kong, this material is issued by BlackRock Asset Management North Asia Limited and has not been reviewed by the Securities and Futures Commission of Hong Kong, In South Korea, this material is for distribution to the Qualified Professional Investors (as defined in the Financial Investment Services and Capital Market Act and its sub-regulations). In Taiwan, independently operated by BlackRock Investment Management (Taiwan) Limited. Address: 28F., No. 100, Songren Rd., Xinyi Dist., Taipei City 110, Taiwan. Tel: (02)23261600. In Japan, this is issued by BlackRock Japan. Co., Ltd. (Financial Instruments Business Operator: The Kanto Regional Financial Bureau. License No375, Association, Memberships: Japan Investment Advisers Association, the Investment Trusts Association, Japan, Japan Securities Dealers Association, The Kanto Regional Financial Bureau. License No375, Association Memberships: Japan Investment Advisers Association, The Investment Trusts Association, Japan, The Kanto Regional Financial Bureau. License No375, Association Memberships: Japan Investment Advisers Association, The Investment Trusts Association As Type II Financial Instruments Firms Association.) For Professional Investors only (Professional Investo information only and does not take into account your individual objectives, financial situation, needs or circumstances. In New Zealand, issued by BlackRock Investment (Australia) Limited ABN 13 006 165 975, AFSL 230 523 (BIMAL) for the exclusive use of the recipient, who warrants by receipt of this material that they are a wholesale client as defined under the New Zealand Financial Advisers Act 2008. In China, this material may not be distributed to individuals resident in the People's Republic of China ("PRC", for such purposes, excluding Hong Kong, Macau and Taiwan) or entities registered in the PRC. unless such parties have received all the required PRC government approvals to participate in any investment advisory or investment management services. For Other APAC Countries, this material is issued for Institutional Investors only (or professional/sophisticated/qualified investors, as such term may apply in local jurisdictions). In Latin America, no securities regulator within Latin America has confirmed the accuracy of any information contained herein. The provision of investment management and investment advisory services is a regulated activity in Mexico thus is subject to strict rules. For more information on the Investment Advisory Services offered by BlackRock Mexico please refer to the Investment Services Guide available at www.blackrock.com/mx

© 2023 BlackRock, Inc. or its affiliates. All Rights Reserved. BLACKROCK is a trademark of BlackRock, Inc. or its affiliates. All other trademarks are those of their respective owners.