

U.S. Property Performance Monitor

Third Quarter 2022

IN A NUTSHELL

- Total returns for U.S. core real estate, as measured by the NCREIF Property Index (NPI), moderated to 0.57% in the third quarter of 2022 from 3.2% in the previous quarter. The quarterly return consisted of 0.93% from income and negative 0.37% from appreciation – the first negative appreciation return since the second quarter of 2020. Yet trailing four-quarter returns remained healthy (16.1%).
- Total returns for industrial property (trailing four quarters) were the highest of any sector, followed by apartment returns. The retail and office sectors lagged behind, albeit with substantial variation by market and subtype.
- Sun Belt and Mountain West markets generally outperformed while New York, Chicago, Washington, DC, and San Francisco struggled.

Private Real Estate Property Returns

- Core real estate total returns continued to post strong performance, averaging 16.1% (trailing four quarters) in the third quarter of 2022, a deceleration from 21.5% in the second quarter.¹
- The industrial sector's total returns (34.6%) remained high, yet decelerated from their annual peak of 51.9% in the first quarter of 2022. Apartment returns (18.2%) outpaced the overall NPI's yet moderated from their recent high (24.4%) reached in the previous quarter. Retail continued to increase (6.7%) and returns registered the fifth positive quarter since 2019. Office returns (3.2%) deteriorated further and were the lowest among sectors, amid high vacancies and concerns over the effects of remote work.
- Relative to other major asset classes, private real estate meaningfully outperformed stocks (-15.5%) and bonds (-14.6%) over the past year as investors favored its diversification and inflation-hedging qualities.
- Property fundamentals were strong in the third quarter, as evidenced by overall vacancy for the NPI falling to its lowest level in history (5.3%). Industrial vacancies dropped to a low of 1.5%, the lowest ever recorded. Net Operating Income (NOI) increased by 7.9% (trailing four quarters), a moderation from the previous quarter (11.5%) but healthy relative to historical norms. NOI growth was led by Apartment (17.6%), Industrial (13.6%) and Retail (4.1%). Office NOI growth was negative (-0.8%) as a result of sector's struggle with high vacancies and weak demand.
- Geographic trends were largely unchanged. Regional markets generally benefitting from lower costs and in-migration (e.g., Sun Belt and Mountain West) performed well. Gateway markets with comparatively higher costs (e.g., New York, Chicago, Washington, DC, and San Francisco) generally underperformed.

¹ NCREIF Property Index as of September 30, 2022. Past performance is no guarantee of future results

The brand DWS represents DWS Group GmbH & Co. KGaA and any of its subsidiaries, such as DWS Distributors, Inc., which offers investment products, or DWS Investment Management Americas, Inc. and RREEF America L.L.C., which offer advisory services. There may be references in this document which do not yet reflect the DWS Brand.

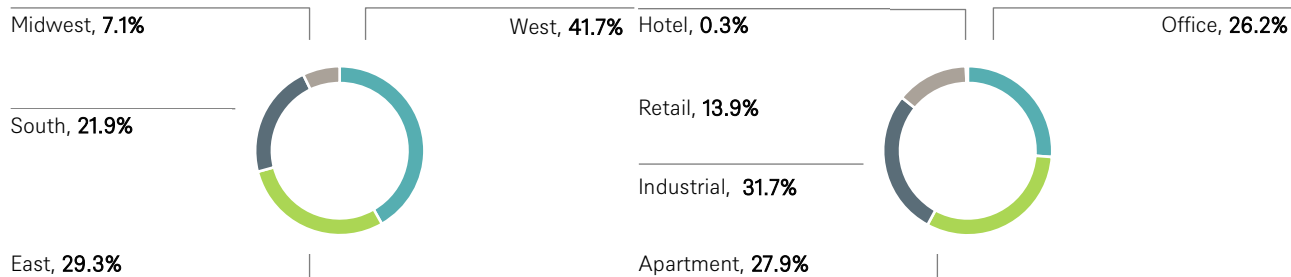
Please note certain information in this presentation constitutes forward-looking statements. Due to various risks, uncertainties and assumptions made in our analysis, actual events or results or the actual performance of the markets covered by this presentation report may differ materially from those described. The information herein reflects our current views only, is subject to change, and is not intended to be promissory or relied upon by the reader. There can be no certainty that events will turn out as we have opined herein.

Marketing Material. In EMEA for Professional Clients (MiFID Directive 2014/65/EU Annex II) only; no distribution to private/retail customers. In Switzerland for Qualified Investors (art. 10 Para. 3 of the Swiss Federal Collective Investment Schemes Act (CISA)). In APAC for institutional investors only. In Australia and New Zealand for Wholesale Investors only.

In the Americas for Institutional Client and Registered Rep use only, not for public viewing or distribution. In Israel for Qualified Clients (Israeli Regulation of Investment Advice, Investment Marketing and Portfolio Management Law 5755-1995). For investors in Bermuda: This is not an offering of securities or interests in any product. Such securities may be offered or sold in Bermuda only in compliance with the provisions of the Investment Business Act of 2003 of Bermuda which regulates the sale of securities in Bermuda.

NPI Market Capitalization

Index market value U.S. \$ 957.0 billion – Property count 10,602



Recent Performance Trends

	Quarter	12 months trailing	
	3Q 2022	3Q 2022	2Q 2022
Private Real Estate (NPI)	0.6%	16.1%	21.5%
Broad Equities (large cap)	-4.9%	-15.5%	-10.6%
Bonds	-4.8%	-14.6%	-10.3%
Listed Real Estate	-10.8%	-16.3%	-5.9%
10-Year Treasury ²	3.8%	3.8%	3.0%
12-Month LIBOR ³	4.8%	4.8%	3.6%
CPI (SA)	0.5%	8.2%	9.0%

Sources: NCREIF, Standard and Poor's, Barclay's, NAREIT, and Federal Reserve as of September 30, 2022.

² These figures represent annual yields.

³ These figures represent annual yields.

This information is subject to change at any time, based upon economic, market and other considerations and should not be construed as a recommendation. Past performance is not indicative of future returns. Forecasts are not a reliable indicator of future performance. Forecasts are based on assumptions, estimates, opinions, and hypothetical models that may prove to be incorrect. Investments come with risk. The value of an investment can fall as well as rise and your capital may be at risk. You might not get back the amount originally invested at any point in time. Source: DWS International GmbH.

NCREIF Property Index (NPI) Performance by Sector and Region

- Industrial total returns of 34.6% (trailing four quarters) were lower than the 47.7% in the second quarter of 2022 yet remained among the strongest recorded by any other sector in the history of the NPI. NOI growth accelerated to a new all-time high (since 1983) of 13.6% (year-over-year) in the third quarter as vacancies slipped to 1.5%, also a record (since 1988). E-commerce has been a pivotal driver of the sector's impressive performance.
- Apartments were the second-best performing sector, producing total returns of 18.2% (trailing four quarters). Vacancies ticked up and NOI growth slipped back in the third quarter, but at 5.9% and 17.6% (year-over-year), respectively, they remained near record levels. A housing shortage, of both single-family and rental apartment units, has continued to benefit apartments. An ongoing migration of ageing Millennials to the suburbs, a trend that first surfaced in 2015 and accelerated with the pandemic, helped Garden (24.2%) to outperform High-Rise (14.9%) assets.
- Total returns for retail property were 6.7% in the third quarter of 2022 (trailing four quarters). Neighborhood (8.7%) and community (10.9%) centers outperformed as vacancies fell to their lowest level in at least 17 years. Malls (about half the index) generated the weakest returns.
- Office performance continued to be modest in the third quarter, delivering total returns of 3.2% (trailing four quarters). Suburban outperformed CBDs by a wide margin (6.3% vs. 0.8%, respectively). Workplace occupancy remained depressed, and NOI losses are starting to materialize as tenants reassess their space needs at lease expiration.
- Regional dynamics were generally unchanged. The West led the pack (19.2%), followed closely by the South (19.1%). Returns in the East and Midwest lagged the index over the past year.

Detailed Property Type NPI Performance

	No. of props.	Market value U.S.\$ (Mil)	Trailing four quarters		
			Total return	Income	Apprec.
Apartment					
Garden	855	87,612	24.2%	4.1%	19.6%
High Rise	1,147	151,985	14.9%	3.6%	11.1%
Low Rise	275	27,477	19.0%	3.9%	14.7%
Industrial					
R&D	39	2,174	19.8%	4.3%	15.0%
Flex	203	6,449	32.4%	4.3%	27.2%
Warehouse	4,711	287,158	34.8%	3.3%	30.7%
Office					
CBD	479	137,350	0.8%	4.1%	-3.2%
Suburban	1,249	113,268	6.3%	4.6%	1.7%
Retail					
Community	204	14,319	10.9%	5.4%	5.3%
Neighborhood	594	25,115	8.7%	5.0%	3.5%
Power	181	13,982	9.7%	6.0%	3.6%
Regional	54	12,943	2.9%	4.5%	-1.5%
Super Regional	73	48,437	5.3%	4.8%	0.5%

Source: NCREIF Property Index as of September 30, 2022. Past performance is no guarantee of future results.

This information is subject to change at any time, based upon economic, market and other considerations and should not be construed as a recommendation. Past performance is not indicative of future returns. Forecasts are not a reliable indicator of future performance. Forecasts are based on assumptions, estimates, opinions, and hypothetical models that may prove to be incorrect. Investments come with risk. The value of an investment can fall as well as rise and your capital may be at risk. You might not get back the amount originally invested at any point in time. Source: DWS International GmbH.

Returns by Property Type and Region

	Annual returns								Standard deviation	
	Total	1 year Income	Apprec.	3 years	5 years	10 years	20 years	Since inception ⁴	20 years	Since inception ⁵
Property type										
Apartment	18.2%	3.8%	14.0%	11.1%	9.0%	9.2%	8.7%	10.3%	9.0%	7.6%
Industrial	34.6%	3.3%	30.6%	25.2%	20.6%	16.7%	12.1%	10.9%	11.5%	9.1%
Office	3.2%	4.3%	-1.0%	3.6%	4.8%	7.0%	7.3%	8.0%	9.0%	9.2%
Retail	6.7%	5.0%	1.6%	0.2%	1.2%	6.2%	8.4%	8.8%	8.8%	6.9%
Total Index	16.1%	4.0%	11.7%	9.9%	8.6%	9.5%	8.9%	9.2%	8.6%	7.4%
Region										
East	11.3%	3.9%	7.2%	7.4%	6.4%	7.4%	8.1%	9.7%	8.9%	8.8%
Midwest	9.8%	4.3%	5.3%	5.6%	5.0%	7.2%	7.0%	7.8%	6.9%	5.9%
South	19.1%	4.3%	14.3%	11.0%	9.4%	10.2%	9.0%	8.5%	8.0%	6.9%
West	19.2%	3.8%	15.0%	12.1%	10.7%	11.3%	10.1%	9.9%	9.4%	8.3%
Total Index	16.1%	4.0%	11.7%	9.9%	8.6%	9.5%	8.9%	9.2%	8.6%	7.4%

Source: NCREIF Property Index as of September 30, 2022. Past performance is not indicative of future returns.

⁴ Index returns start in 1978, equivalent to a 44.75 year calculation.

⁵ Index returns start in 1978, equivalent to a 44.75 year calculation.

This information is subject to change at any time, based upon economic, market and other considerations and should not be construed as a recommendation. Past performance is not indicative of future returns. Forecasts are not a reliable indicator of future performance. Forecasts are based on assumptions, estimates, opinions, and hypothetical models that may prove to be incorrect. Investments come with risk. The value of an investment can fall as well as rise and your capital may be at risk. You might not get back the amount originally invested at any point in time. Source: DWS International GmbH.

Market Analysis – Benchmark Insights and Portfolio Implications

The NCREIF Property Index is a value-weighted index of property returns and as such, a large portion of the index is located in just 20 markets. Local economic growth will affect properties located in the same market similarly, so we can estimate the effect of property geographical location on the overall index. Large metros, by value, will likely have the largest impact on the index, although small metros with particularly strong or weak performance may boost or weigh on returns from time to time. The tables on the following page list out which markets had the strongest positive and negative effect on returns during the past four quarters.

Apartments

The pandemic reinforced demographic trends underpinning apartment markets. Over the past year, the Sun Belt (e.g., Phoenix, Austin, Fort Lauderdale, Miami, Atlanta) and Denver, benefitting from in-migration, were the largest positive contributors. Gateway locations with comparatively higher costs (e.g., New York, Chicago, and San Francisco) lagged, although Boston and Seattle fared better.

Industrial

Performance remained impressive, with every market delivering high double-digit total returns over the trailing four quarters. Major port markets, including Riverside (56.2%), Los Angeles (52.2%), Orange County (46.5%), and Miami (37.3%) were particularly noteworthy. On a relative basis, major inland distribution hubs (i.e., Atlanta, Chicago, and Dallas) underperformed, although returns were still elevated. Markets in Noth West (e.g., Seattle and Portland) generally underperformed over the trailing four quarters. The worst-ranked major industrial market, Chicago (19.2%), nevertheless outperformed the overall NPI.

Office

Markets with outsized exposure to technology and life sciences (i.e., Boston, San Diego, Seattle, Austin and San Jose) continued to make the largest contribution to sector returns. Further, demographic tailwinds and corporate expansions continued to benefit Sun Belt office markets such as Miami, Charlotte and Dallas. Conversely, values slipped in several gateway markets, including Chicago, Washington D.C., and New York, collectively subtracting 120 basis points from sector returns.

Retail

Over the past year, tenant mix generally governed retail property performance as service-oriented, daily-needs shopping centers proved relatively resilient to e-commerce. Conversely, Malls and lifestyle shopping centers were challenged by store closures and bankruptcies. Case in point, metros with the largest negative contribution to sector returns (e.g., San Francisco, Washington, DC, New York and Los Angeles) had notable mall exposure. Markets which performed well on a relative basis (e.g., Las Vegas, Atlanta, Phoenix and Dallas) benefitted from demographic tailwinds. Additionally, tech and life science markets such as Seattle and San Diego posted strong returns.

Apartment			Industrial			Office			Retail		
Metro	Metro returns ⁶	Impact on sector returns	Metro	Metro returns ⁷	Impact on sector returns	Metro	Metro returns ⁸	Impact on sector returns	Metro	Metro returns ⁹	Impact on sector returns
Phoenix	30.8%	30	Riverside	56.2%	299	Boston	6.5%	38	Las Vegas	10.5%	24
Austin	25.8%	28	Los Angeles	52.2%	166	San Diego	16.5%	27	Atlanta	12.9%	15
Fort Lauderdale	30.8%	25	Orange County	46.5%	45	Seattle	5.4%	12	Seattle	13.4%	15
Miami	27.4%	19	Miami	37.3%	9	Austin	8.4%	12	San Diego	9.9%	14
Atlanta	21.5%	17	Baltimore	34.8%	0	San Jose	5.6%	9	Phoenix	10.6%	13
Dallas	20.8%	15	Las Vegas	34.9%	0	Miami	8.4%	5	Dallas	9.0%	10
Denver	21.0%	15	San Diego	34.8%	0	Oakland	5.7%	4	Houston	7.8%	8
San Diego	23.1%	13	Phoenix	34.2%	-1	Charlotte	7.4%	3	Baltimore	8.4%	3
Orange County	22.4%	11	Philadelphia	32.8%	-3	Dallas	4.4%	3	Riverside	7.4%	1
Raleigh	23.5%	11	Washington, DC	31.6%	-4	San Francisco	3.5%	3	Orlando	7.0%	1
Boston	17.9%	-2	New York	33.8%	-7	Los Angeles	3.3%	1	San Jose	4.7%	-5
Houston	16.4%	-6	Boston	29.6%	-7	Minneapolis	2.2%	-1	Oakland	4.8%	-5
Seattle	15.6%	-12	Atlanta	30.7%	-14	Denver	2.1%	-3	Orange County	4.5%	-6
Oakland	11.1%	-14	Portland	23.3%	-18	Atlanta	1.1%	-4	Miami	3.3%	-9
San Jose	10.0%	-20	Denver	17.1%	-26	Orange County	-1.4%	-6	Boston	2.4%	-10
Washington, DC	13.8%	-35	Oakland	27.8%	-27	Houston	1.0%	-7	Los Angeles	4.9%	-11
Los Angeles	12.4%	-40	Houston	19.4%	-31	Portland	-3.1%	-7	Chicago	4.1%	-16
San Francisco	5.1%	-43	Dallas	28.5%	-39	Chicago	-2.5%	-28	San Francisco	-1.0%	-17
Chicago	8.7%	-52	Seattle	26.8%	-47	Washington, DC	0.4%	-34	New York	1.1%	-25
New York	11.3%	-65	Chicago	19.2%	-115	New York	-0.2%	-58	Washington, DC	2.3%	-35

Source: NCREIF Property Index as of September 30, 2022.

⁶ Four-quarter cumulative returns ending third quarter 2022.

⁷ Four-quarter cumulative returns ending third quarter 2022.

⁸ Four-quarter cumulative returns ending third quarter 2022.

⁹ Four-quarter cumulative returns ending third quarter 2022.

This information is subject to change at any time, based upon economic, market and other considerations and should not be construed as a recommendation. Past performance is not indicative of future returns. Forecasts are not a reliable indicator of future performance. Forecasts are based on assumptions, estimates, opinions, and hypothetical models that may prove to be incorrect. Investments come with risk. The value of an investment can fall as well as rise and your capital may be at risk. You might not get back the amount originally invested at any point in time. Source: DWS International GmbH.

Appendix – Historical Performance

	12 months trailing				
	9/30/2022	9/30/2021	9/30/2020	9/30/2019	9/30/2018
Private Real Estate (NPI)	16.1%	12.2%	2.0%	6.2%	7.2%
Broad Equities (large cap)	-15.5%	30.0%	15.1%	4.3%	17.9%
Bonds	-14.6%	-0.9%	7.0%	10.3%	-1.2%
Listed Real Estate	-16.3%	31.5%	-12.2%	20.7%	4.7%
10-Year Treasury ¹⁰	3.8%	1.5%	0.7%	1.7%	3.1%
12-Month LIBOR ¹¹	4.8%	0.2%	0.4%	2.0%	2.9%
CPI (SA)	8.2%	5.4%	1.4%	1.7%	2.4%

Sources: NCREIF, Standard and Poor's, Barclay's, NAREIT, and Federal Reserve as of September 30, 2022.

¹⁰ These figures represent annual yields.

¹¹ These figures represent annual yields.

This information is subject to change at any time, based upon economic, market and other considerations and should not be construed as a recommendation. Past performance is not indicative of future returns. Forecasts are not a reliable indicator of future performance. Forecasts are based on assumptions, estimates, opinions, and hypothetical models that may prove to be incorrect. Investments come with risk. The value of an investment can fall as well as rise and your capital may be at risk. You might not get back the amount originally invested at any point in time. Source: DWS International GmbH.

Real Estate Research Team

Office Locations

Chicago

222 South Riverside Plaza
34th Floor
Chicago
IL 60606-1901
United States
Tel: +1 312 537 7000

Frankfurt

Mainzer Landstrasse 11-17
60329 Frankfurt am Main
Germany
Tel: +49 69 71909 0

London

Winchester House
1 Great Winchester Street
London EC2N 2DB
United Kingdom
Tel: +44 20 754 58000

New York

875 Third Avenue
26th Floor
New York
NY 10022-6225
United States
Tel: +1 212 454 3414

San Francisco

101 California Street
24th Floor
San Francisco
CA 94111
United States
Tel: +1 415 781 3300

Singapore

One Raffles Quay
South Tower
20th Floor
Singapore 048583
Tel: +65 6538 7011

Tokyo

Sanno Park Tower
2-11-1 Nagata-cho
Chiyoda-Ku
18th Floor
Tokyo
Japan
Tel: +81 3 5156 6000

Teams

Global

Kevin White, CFA

Global Co-Head of Real Estate Research

Simon Wallace

Global Co-Head of Real Estate Research

Americas

Brooks Wells

Head of Research, Americas

Joseph Pecora, CFA

Apartment Research

Ross Adams

Industrial Research

Sharim Sohail

Property Market Research

Liliana Diaconu, CFA

Office & Retail Research

Europe

Ruben Bos, CFA

Property Market Research

Tom Francis

Property Market Research

Siena Golan

Property Market Research

Rosie Hunt

Property Market Research

Carsten Lieser

Property Market Research

Martin Lippmann

Property Market Research

Asia Pacific

Koichiro Obu

Head of Real Estate Research, Asia Pacific

Natasha Lee

Property Market Research

Hyunwoo Kim

Property Market Research

Seng-Hong Teng

Property Market Research

This information is subject to change at any time, based upon economic, market and other considerations and should not be construed as a recommendation. Past performance is not indicative of future returns. Forecasts are not a reliable indicator of future performance. Forecasts are based on assumptions, estimates, opinions, and hypothetical models that may prove to be incorrect. Investments come with risk. The value of an investment can fall as well as rise and your capital may be at risk. You might not get back the amount originally invested at any point in time. Source: DWS International GmbH.

AUTHORS



Kevin White, CFA
Global Co-Head of Real Estate Research



Liliana Diaconu, CFA
Office & Retail Research

This information is subject to change at any time, based upon economic, market and other considerations and should not be construed as a recommendation. Past performance is not indicative of future returns. Forecasts are not a reliable indicator of future performance. Forecasts are based on assumptions, estimates, opinions, and hypothetical models that may prove to be incorrect. Investments come with risk. The value of an investment can fall as well as rise and your capital may be at risk. You might not get back the amount originally invested at any point in time. Source: DWS International GmbH.

Important information

For North America:

The brand DWS represents DWS Group GmbH & Co. KGaA and any of its subsidiaries, such as DWS Distributors, Inc., which offers investment products, or DWS Investment Management Americas, Inc. and RREEF America L.L.C., which offer advisory services.

This material was prepared without regard to the specific objectives, financial situation or needs of any particular person who may receive it. It is intended for informational purposes only. It does not constitute investment advice, a recommendation, an offer, solicitation, the basis for any contract to purchase or sell any security or other instrument, or for DWS or its affiliates to enter into or arrange any type of transaction as a consequence of any information contained herein. Neither DWS nor any of its affiliates gives any warranty as to the accuracy, reliability or completeness of information which is contained in this document. Except insofar as liability under any statute cannot be excluded, no member of the DWS, the Issuer or any office, employee or associate of them accepts any liability (whether arising in contract, in tort or negligence or otherwise) for any error or omission in this document or for any resulting loss or damage whether direct, indirect, consequential or otherwise suffered by the recipient of this document or any other person.

The views expressed in this document constitute DWS Group's judgment at the time of issue and are subject to change. This document is only for professional investors. This document was prepared without regard to the specific objectives, financial situation or needs of any particular person who may receive it. No further distribution is allowed without prior written consent of the Issuer.

Investments are subject to risk, including market fluctuations, regulatory change, possible delays in repayment and loss of income and principal invested. The value of investments can fall as well as rise and you might not get back the amount originally invested at any point in time.

An investment in real assets involves a high degree of risk, including possible loss of principal amount invested, and is suitable only for sophisticated investors who can bear such losses. The value of shares/ units and their derived income may fall or rise.

War, terrorism, sanctions, economic uncertainty, trade disputes, public health crises and related geopolitical events have led, and, in the future, may lead to significant disruptions in US and world economies and markets, which may lead to increased market volatility and may have significant adverse effects on the fund and its investments.

For Investors in Canada. No securities commission or similar authority in Canada has reviewed or in any way passed upon this document or the merits of the securities described herein and any representation to the contrary is an offence. This document is intended for discussion purposes only and does not create any legally binding obligations on the part of DWS Group. Without limitation, this document does not constitute an offer, an invitation to offer or a recommendation to enter into any transaction. When making an investment decision, you should rely solely on the final documentation relating to the transaction you are considering, and not the document contained herein. DWS Group is not acting as your financial adviser or in any other fiduciary capacity with respect to any transaction presented to you. Any transaction(s) or products(s) mentioned herein may not be appropriate for all investors and before entering into any transaction you should take steps to ensure that you fully understand such transaction(s) and have made an independent assessment of the appropriateness of the transaction(s) in the light of your own objectives and circumstances, including the possible risks and benefits of entering into such transaction. You should also consider seeking advice from your own advisers in making this assessment. If you decide to enter into a transaction with DWS Group, you do so in reliance on your own judgment. The information contained in this document is based on material we believe to be reliable; however, we do not represent that it is accurate, current, complete, or error free. Assumptions, estimates, and opinions contained in this document constitute our judgment as of the date of the document and are subject to change without notice. Any projections are based on a number of assumptions as to market conditions and there can be no guarantee that any projected results will be achieved. Past performance is not a guarantee of future results. The distribution of this document and availability of these products and services in certain jurisdictions may be restricted by law. You may not distribute this document, in whole or in part, without our express written permission.

For EMEA, APAC & LATAM:

DWS is the brand name of DWS Group GmbH & Co. KGaA and its subsidiaries under which they do business. The DWS legal entities offering products or services are specified in the relevant documentation. DWS, through DWS Group GmbH & Co. KGaA, its affiliated companies and its officers and employees (collectively "DWS") are communicating this document in good faith and on the following basis.

This document is for information/discussion purposes only and does not constitute an offer, recommendation, or solicitation to conclude a transaction and should not be treated as investment advice.

This document is intended to be a marketing communication, not a financial analysis. Accordingly, it may not comply with legal obligations requiring the impartiality of financial analysis or prohibiting trading prior to the publication of a financial analysis.

This document contains forward looking statements. Forward looking statements include, but are not limited to assumptions, estimates, projections, opinions, models, and hypothetical performance analysis. No representation or warranty is made by DWS as to the reasonableness or completeness of such forward looking statements. Past performance is no guarantee of future results.

The information contained in this document is obtained from sources believed to be reliable. DWS does not guarantee the accuracy, completeness, or fairness of such information. All third-party data is copyrighted by and proprietary to the provider. DWS has no obligation to update, modify or amend this document or to otherwise notify the recipient in the event that any matter stated herein, or any opinion, projection, forecast, or estimate set forth herein, changes or subsequently becomes inaccurate.

Investments are subject to various risks. Detailed information on risks is contained in the relevant offering documents.

No liability for any error or omission is accepted by DWS. Opinions and estimates may be changed without notice and involve a number of assumptions which may not prove valid.

DWS does not give taxation or legal advice.

This document may not be reproduced or circulated without DWS's written authority.

This document is not directed to, or intended for distribution to or use by, any person or entity who is a citizen or resident of or located in any locality, state, country, or other jurisdiction, including the United States, where such distribution, publication, availability, or use would be contrary to law or regulation or which would subject DWS to any registration or licensing requirement within such jurisdiction not currently met within such jurisdiction. Persons into whose possession this document may come are required to inform themselves of, and to observe, such restrictions.

© 2022 DWS International GmbH

Issued in the UK by DWS Investments UK Limited which is authorised and regulated by the Financial Conduct Authority (Reference number 429806).

© 2022 DWS Investments UK Limited

In Hong Kong, this document is issued by DWS Investments Hong Kong Limited and the content of this document has not been reviewed by the Securities and Futures Commission.

© 2022 DWS Investments Hong Kong Limited

In Singapore, this document is issued by DWS Investments Singapore Limited and the content of this document has not been reviewed by the Monetary Authority of Singapore.

© 2022 DWS Investments Singapore Limited

In Australia, this document is issued by DWS Investments Australia Limited (ABN: 52 074 599 401) (AFSL 499640) and the content of this document has not been reviewed by the Australian Securities Investment Commission.

© 2022 DWS Investments Australia Limited

For investors in Bermuda: This is not an offering of securities or interests in any product. Such securities may be offered or sold in Bermuda only in compliance with the provisions of the Investment Business Act of 2003 of Bermuda which regulates the sale of securities in Bermuda. Additionally, non-Bermudian persons (including companies) may not carry on or engage in any trade or business in Bermuda unless such persons are permitted to do so under applicable Bermuda legislation.

For investors in Taiwan: This document is distributed to professional investors only and not others. Investing involves risk. The value of an investment and the income from it will fluctuate and investors may not get back the principal invested. Past performance is not indicative of future performance. This is a marketing communication. It is for informational purposes only. This document does not constitute investment advice or a recommendation to buy, sell or hold any security and shall not be deemed an offer to sell or a solicitation of an offer to buy any security. The views and opinions expressed herein, which are subject to change without notice, are those of the issuer or its affiliated companies at the time of publication. Certain data used are derived from various sources believed to be reliable, but the accuracy or completeness of the data is not guaranteed, and no liability is assumed for any direct or consequential losses arising from their use. The duplication, publication, extraction, or transmission of the contents, irrespective of the form, is not permitted.

© 2022 DWS Group GmbH & Co. KGaA. All rights reserved. (11/22) 081344_8