

## The role of liquid real assets in defined contribution (DC) plans

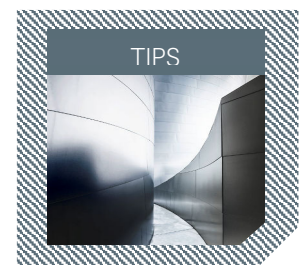
In a sea of standalone options, diversified liquid real assets funds may be a best fit

### Real assets, real benefits

While there is not a clearly defined market definition or universally standard benchmark for liquid real assets, this investment class generally covers highly liquid companies whose business models are linked to assets that have a tangible, intrinsic worth. These include listed real estate, listed infrastructure, commodities, and TIPS. Throughout this paper, we will illustrate how liquid real assets can offer investors a competitive risk-return profile through various market environments, diversification potential, and stable and predictable return streams while helping investors maintain purchasing power. Further, we will show that given these unique attributes, liquid real assets can be well-suited for defined contribution (DC) plans.

### Real assets can provide holistic exposure to an attractive opportunity set

Defined contribution (DC) plans are retirement plans funded by contributions from employees, employers, or a combination. DC plans typically offer a variety of investment options from which employees can choose, which are determined by the plan sponsor. Today, real assets remains curiously absent from many DC plan menus, though some may offer standalone options, such as real estate funds or TIPS. In order to simplify and diversify plan menus, fiduciaries might consider a holistic liquid real assets solution. A holistically-managed real assets investment strategy can seek to optimize a real assets allocation, providing access to an opportunity set that offers competitive total returns, lower volatility (relative to broader equities or standalone real assets classes), and a diverse set of value opportunities. Real assets funds invest in listed securities, which satisfy liquidity requirements, yet still exhibit relatively low correlation to equities and amongst each other. Further, real assets have historically performed well during inflationary periods, delivering strong returns throughout the full market cycle.



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 and LatAm, 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.

## What makes a DC plan “successful”?


A 2023 study conducted by Callan analyzed attributes of “successful” DC plans. **Investment-focused** attributes, such as performance and diversification, consistently ranked among the most important considerations. Portfolio construction, performance, fees, and the usage of tactical asset allocation were also cited among the top 10 most important attributes in the evaluation process and selection of investment funds on a DC menu. The study also determined that “successful” plans were **participant-focused**, as evidenced by high utilization and contribution rates, as well as **cost-focused** (i.e. cost effective). Below, we frame real assets in the context of these categories and key attributes, to illustrate how real assets characteristics might contribute to DC plan “success.”

## Real assets can help position DC plans for success

Liquid real assets are uniquely placed to help DC plans meet strategic objectives. They can provide investors diversification potential to better withstand various economic regimes and capital market conditions, yet in a highly liquid wrapper so that the daily pricing and dealing requirements of DC schemes can be met. Real assets have historically acted as a natural inflation hedge, helping investors maintain purchasing power while ensuring adequate retirement income via stable and predictable income streams. Finally, a holistically-managed strategy can offer flexibility to shift exposure to better adapt to new market conditions.

 <b>Investment Focused</b>	Enhance Performance	Generate Income	Hedge inflation risk	Bridge style gap(s)
	Strong, inflation linked returns over the long-term	Yields historically stable, in-line or above global equities	Helps mitigate purchasing power loss for entire portfolio	Low correlation to traditional asset classes
	Manages opportunity cost risk if traditional markets rally	Good utilization of tax-efficient DC plan structure	Enables capital efficiency in the hedge	Differentiated drivers or risk and potential return
 <b>Participant Focused</b>	Investment concept is easily understood (contractual income from tangible assets) Opportunities to invest in socially positive outcomes (i.e. schools, hospitals)			
 <b>Cost Focused</b>	Cost efficient versus private alternatives (no large upfront costs) with daily liquidity Reduce fees by offering holistic exposure to real assets classes in a single program			

**Liquid real assets are aligned with how DC plans are evolving!**



Liquid real assets are further equipped to adapt to a changing DC plan space. As sponsors look to reduce the number of DC plan options, real assets can offer exposure to multiple asset classes in a single wrapper. A single, cost-efficient structure should appeal to plan sponsors who are bearing a larger share of expenses versus plan participants, such as administrative and advisory fees. Finally, with an ever-increasing focus on compliance, we believe a single comprehensive liquid real assets solution represents an attractive opportunity to reduce the cost and complexity of compliance reviews. Liquid real assets remain a well-suited option for DC plans, and should warrant consideration by plan sponsors.

Sources: Callan 2023 Defined Contribution Trends Survey. DWS. As of 8/31/2023. Diversification does not ensure a profit or protect against a loss.

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.

## Liquid real assets are a good fit for target-date funds

Liquid real assets have also become a suitable consideration for target-date funds. In fact, standalone real assets options have been gaining traction in recent years. For example, based on surveys conducted by investment consultants such as Callan Associates and management consulting firms such as Casey Quirk, a vast majority of target-date funds used by defined contribution plans now feature a real estate allocation. While a limited number of target-date funds invest in real estate through “direct” or “private” investment vehicles, most of these asset allocation products provide real estate exposure exclusively through investments in stock exchange-listed equity Real Estate Investment Trusts (REITs) because of their daily market pricing, low cost, liquidity, and long-term record of performance. Liquid real assets solutions can offer investors these same benefits while enabling access to a wider, more diversified opportunity set that stands to benefit from changing global market dynamics.

### Real Estate Exposure: Target-Date Products

Target date fund providers	Maximum real estate allocation*
BlackRock	21.5%
State Farm	16.7%
PIMCO	13.3%
AXA (1290 Retirement)	11.0%
GuideStone	10.2%
AB	9.3%
Great-West	9.1%
ClearTrack	9.0%
JPMorgan	8.9%
MFA	8.6%
Principal	8.5%
Prudential	8.5%
Schwab	8.4%
Columbia Retirement	7.9%
Nationwide	7.8%

Sources: NAREIT analysis of Morningstar Direct data. December 31, 2020 (latest available). Highlights target date funds providers with the most significant REIT allocations. \* The maximum real estate allocation represents the maximum each target date fund provider will hold in real estate. DWS has no affiliation with the firms mentioned in this table.

### Benchmarking is often cited as a challenge for including real assets in a DC plan offering







Looking to the value proposition of real assets as an effective inflation hedge, it is thereby reasonable that inflation could be used as a benchmarking tool to assess the long-term effectiveness of a comprehensive strategy. Further, there are long-running metrics for inflation, namely the Consumer Price Index (CPI), which affords fiduciaries the ability to assess real assets performance and sensitivity to inflation throughout a wide array of historical macroeconomic regimes and capital market cycles. Please refer to page 6 for more information on the relationship between real assets and inflation.

## Real assets: the whole is greater than the sum of its parts

An effective real assets program requires active adjustments as market conditions change. A holistic and comprehensive approach can optimize the benefits of a real assets allocation versus standalone exposure. Experienced investment managers have the opportunity to strategically diversify by asset class (or sub-asset class) and tactically shift among and within asset classes.

### ATTRIBUTES OF A HOLISTIC REAL ASSETS PROGRAM

	 Return potential	 Diversification benefit	 Higher beta to inflation	 Attractive income
<b>Attribute</b>	<ul style="list-style-type: none"> <li>_ should be meaningful over the long-term</li> <li>_ manages opportunity cost risk if “traditional” markets rally</li> </ul>	<ul style="list-style-type: none"> <li>_ low correlation to rest of portfolio</li> <li>_ differentiated drivers of risk and potential return<sup>1</sup></li> </ul>	<ul style="list-style-type: none"> <li>_ helps mitigate lost purchasing power for the entire portfolio<sup>2</sup></li> <li>_ enables capital efficiency in the hedge<sup>2</sup></li> </ul>	<ul style="list-style-type: none"> <li>_ historically offered yields in line or above global equities</li> <li>_ historically stable and predictable in nature</li> </ul>
<b>Asset classes</b>	_ REITs, infrastructure, global natural resource equities	_ TIPS, commodities	_ commodities, global natural resources equities, REITs	_ REITs, infrastructure, global natural resource equities

Source: DWS. **Past performance is not a guarantee of future results.** These are the attributes of an effective hypothetical program and do not directly represent any DWS product. Real return defined as percentage return on an investment that is adjusted for inflation. No assurance can be made that investment objective will be achieved.

## Real assets have historically exhibited strong real return potential

We believe that a strong real assets foundation starts with allocations to both listed real estate and listed infrastructure. These asset classes have historically exhibited strong real returns, particularly versus their traditional global equity counterparts, over various market cycles.

### Average Calendar Year Returns Since Asset Class Inception

<b>Since 1990</b>	
<b>Global Real Estate</b>	<b>9.1%</b>
Global Equities	8.4%
<b>Average excess return</b>	<b>+0.7%</b>
<b>Since 2003</b>	
<b>Global Infrastructure</b>	<b>12.0%</b>
Global Equities	10.5%
<b>Average excess return</b>	<b>+1.5%</b>

Source: Bloomberg and DWS as of 12/31/22. Past performance is not a guarantee of future results. No assurance is made that investment objectives will be met. Asset class representation: global real estate, FTSE EPRA/NAREIT Developed Index; global infrastructure, Dow Jones Brookfield Global Infrastructure Index; global equities, MSCI World Index. Equity index returns include reinvestment of all distributions. Index returns do not reflect fees or expenses, and it is not possible to invest directly in an index

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.

## Diversification potential has been a key benefit of real assets investing

Diversification is of particular importance to DC plans, and real assets can offer a compelling means of achieving plan-level diversification goals. Where standalone real assets allocations might prove insufficient, a holistically-managed real assets allocation affords active managers the potential to enhance returns through diversification and reduce overall volatility.

For example, historically, global real estate has exhibited strong returns, but relatively high beta to global equities. Comprehensive real asset managers can seek to maximize the benefits of real assets allocation via strategic complements, such as commodity futures, which have historically offered lower beta to global equities, yet higher beta to inflation.

### Historical Characteristics by Asset Class (12/31/2002–6/30/2023)

Asset Class	Return	Volatility	Sharpe Ratio	Beta – Global Equities	Beta – Max Drawdown Inflation	
Risk Free	1.3%	0.5%	-	0.00	0.01	0.0%
<b>Real Assets Blend</b>	<b>7.6%</b>	<b>13.7%</b>	<b>0.46</b>	<b>0.80</b>	<b>1.62</b>	<b>-48.4%</b>
Global Equities	8.7%	15.3%	0.48	1.00	0.74	-54.0%
Global Fixed Income	2.7%	6.0%	0.24	0.17	-0.64	-24.2%

Past performance may not be indicative of future results.

1) Index association: **Risk Free** = Bloomberg Barclays Short Treasury Total Return Index ; **Real Assets Blend** = 15% Bloomberg Commodity Index; 15% S&P Global Natural Resources Index; 30% Dow Jones Brookfield Global Infrastructure Index; 30% FTSE/EPRA NAREIT Developed Index; 10% Barclays U.S. TIPS Index; **Global Equities** = MSCI World Index; **Global Fixed Income** = Bloomberg Barclays Global-Aggregate Total Return Index Value Unhedged USD. Sources: Bloomberg and DWS. Equity index returns include reinvestment of all distributions. Index returns do not reflect fees or expenses, and it is not possible to invest directly in an index. For illustrative purposes only. As of June 30, 2023. Represents characteristics from 12/31/2002–6/30/2023.

Commodities have the potential to reduce overall portfolio volatility given their unique drivers of risk and return, which have held firm through various investment cycles. On a rolling 5-year historical basis over the past 20 years, commodities have exhibited low average correlation to global real estate (0.28) and global infrastructure (0.50) since the inception of the Dow Jones Brookfield Global Infrastructure Index. They have also exhibited low historical correlation to global equities (0.41).

### Calendar Year Performance

2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
24%	16%	0%	32%	23%	0%	29%	14%	27%	16%
16%	16%	-1%	13%	20%	-1%	25%	11%	27%	10%
4%	4%	-3%	12%	16%	-5%	23%	9%	25%	-7%
2%	3%	-3%	5%	11%	-8%	17%	1%	20%	-12%
-4%	-1%	-14%	5%	7%	-10%	8%	-3%	20%	-17%
-9%	-10%	-24%	5%	3%	-11%	8%	-7%	6%	-19%
-10%	-17%	-25%	2%	2%	-13%	6%	-8%	-7%	-24%

■ Global Real Estate ■ Global Infrastructure ■ Commodities ■ Natural Resource Equities ■ TIPS ■ Global Equities ■ Global Bonds

Diversification neither assures a profit nor guarantees against loss. Sources: Bloomberg and DWS as of 12/31/22. Past performance is not a guarantee of future results. Asset class representation: **global infrastructure**, Dow Jones Brookfield Global Infrastructure Index; **global real estate**, FTSE EPRA/NAREIT Developed Index; **commodities**, Bloomberg Commodity Index; **natural resource equities**, S&P Global Natural Resources Index; **TIPS**, Barclays U.S. TIPS Index; **global equities**, MSCI World Index; **global bonds**, Bloomberg Barclays Global Aggregate Index. Equity index returns include reinvestment of all distributions. Index returns do not reflect fees or expenses, and it is not possible to invest directly in an index.

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 assets can help preserve purchasing power

Across the asset class spectrum, real assets’ ties to inflation are rather intuitive (as illustrated further below).

Global real estate securities usually have inflation hedging ability embedded in their rental agreement structures, which generally include inflation-linked adjustments or fixed percentage increases in rents. Similarly, revenues for “pureplay” infrastructure are typically stable and predictable given their long-dated underlying contracts and monopolistic assets. Typically, these companies have the ability to pass through higher costs often linked to inflation, resulting in real earnings growth in inflationary environments. Both commodity futures and natural resource equities have a strong, direct relationship to inflation given the nature of their businesses models (raw materials inputs). Even TIPS may help provide an inflation hedge and may also help to preserve capital by offsetting equity market beta in “risk-off” environments.

### Global Real Estate

Inflationary pressures underscore the importance of pricing power (i.e. ability to raise rents)

### Global Infrastructure

Built-in rent escalators for certain contracts offer a direct link to inflation (i.e. utilities)

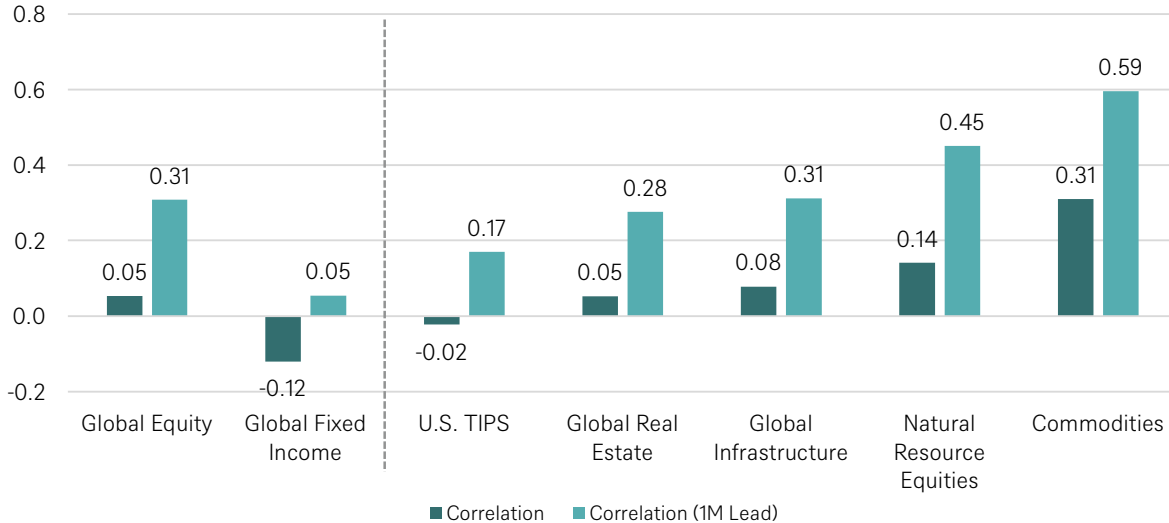
### Commodity-Futures

Inputs to production; high sensitivity  
  
Driven by global supply/ demand dynamics

### Natural Resources

Both equity beta and commodity price drive total return  
  
Higher prices = higher profits

## Liquid Real Assets Exhibit High Sensitivity to Inflation, Particularly on a Leading Basis



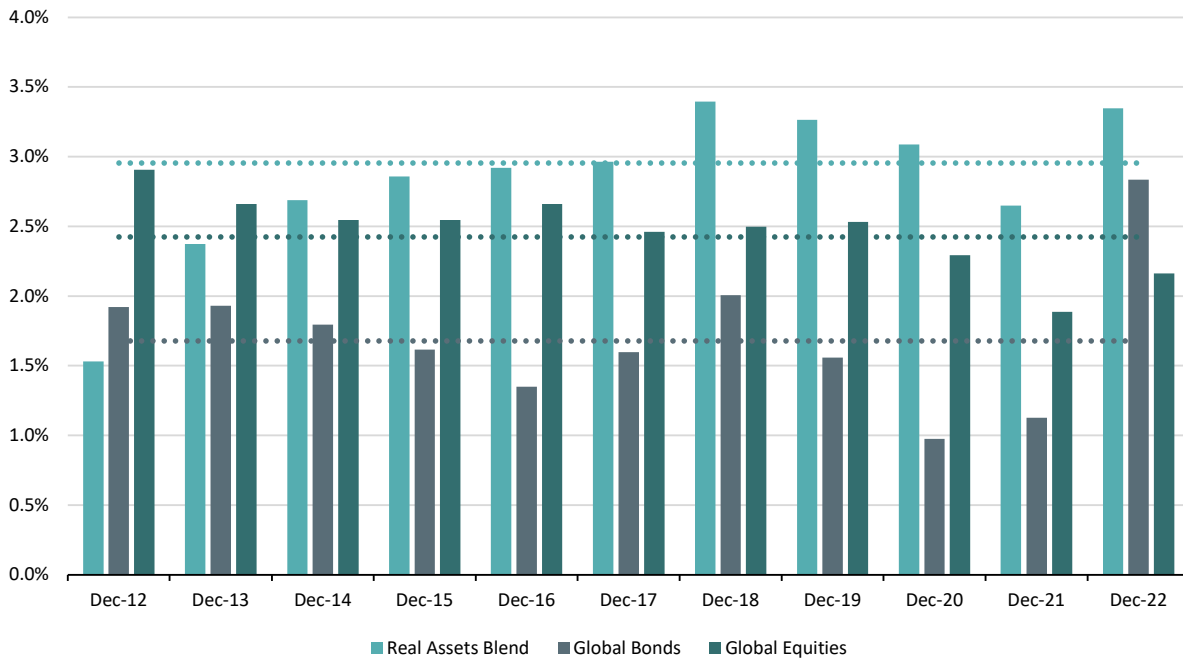
Sources: Bloomberg and DWS. Represents correlation figures from 12/31/90 or index inception to 6/30/23. **Past performance is not a guarantee of future results.** Asset class representation: **global infrastructure**, DJ Brookfield Global Infrastructure Index; **global real estate**, FTSE EPRA/NAREIT Developed Index; **commodities**, Bloomberg Commodity Index; **natural resource equities**, S&P Global Natural Resources Index; **TIPS**, Bloomberg Barclays U.S. TIPS Index; **global equities**, MSCI World Index; **global fixed income**, Bloomberg Barclays Global Aggregate Index. Equity index returns include reinvestment of all distributions. Index returns do not reflect fees or expenses, and it is not possible to invest directly in an index. The above chart is referring to the difference between coincident and leading indicators. A leading indicator represents correspondence with a future movement/change whereas a coincident indicator represents simultaneous correspondence. The reference to the one month (1M) lead in the above chart refers to the time period in which the indicator (in this case inflation) is leading (ahead of) the comparison data.

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.

### Preserve attractive income from real assets with DC plans

In addition, real assets have historically offered attractive returns, supported by stable and predictable income streams, with yields that have been historically in line with or higher than their global equity counterparts over the long-term. We mentioned earlier that we believe that a strong real assets foundation starts with allocations to both listed real estate and listed infrastructure. Both of these asset classes offer attractive and competitive yields. REITs own, invest in, or operate various types of physical properties. These properties are leased out to tenants, and rent is collected to generate income. Companies structured as REITs are required to pay out at least 90% of their taxable income to shareholders. As a result of this structure, REIT dividend yields have historically been relatively higher and more stable. Put another way, a larger share of REIT total returns is attributable to dividends compared to other traditional equity investments. Listed infrastructure companies have also historically offered competitive yields. Similarly, listed infrastructure companies own physical, tangible assets which are required for a society to function (i.e. toll roads, ports, bridges, water treatment plants etc.). Given the essential nature of these assets, their cash flows are less sensitive to economic forces, resulting in a stable and predictable income profile, particularly for “pure-play” infrastructure companies, which directly own and operate these essential real assets. Most importantly, DC plans are an excellent place to park income-generating assets such as these, since contributions and accumulating plan earnings are tax-deferred, offering investors a tax-efficient way to save for retirement.

#### Historical Yields by Asset Class and Corresponding Historical Averages



Note: corresponding dashed lines indicate historical average yields.  
 Sources: Bloomberg and DWS; data from 12/31/12 to 12/31/22. Past performance is not a guarantee of future results. Asset class representation: global equities, MSCI World Index; global bonds, Barclays Global Aggregate Index; real assets, Real Assets Blended Benchmark, which is a proprietary DWS reference index comprised of the following blend of real assets indices: 15% Bloomberg Commodity Index, 30% Dow Jones Brookfield Global Infrastructure Index, 30% FTSE EPRA/NAREIT Developed Index, 10% Barclays U.S. TIPS Index, 15% S&P Global Natural Resources Index. Historical yields are not indicative of future 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 assets can help DC plans...



### Enrich investment options

Diversify menu with options that have attractive total return potential



### Better serve participants

Offer participants access to a compelling set of value opportunities



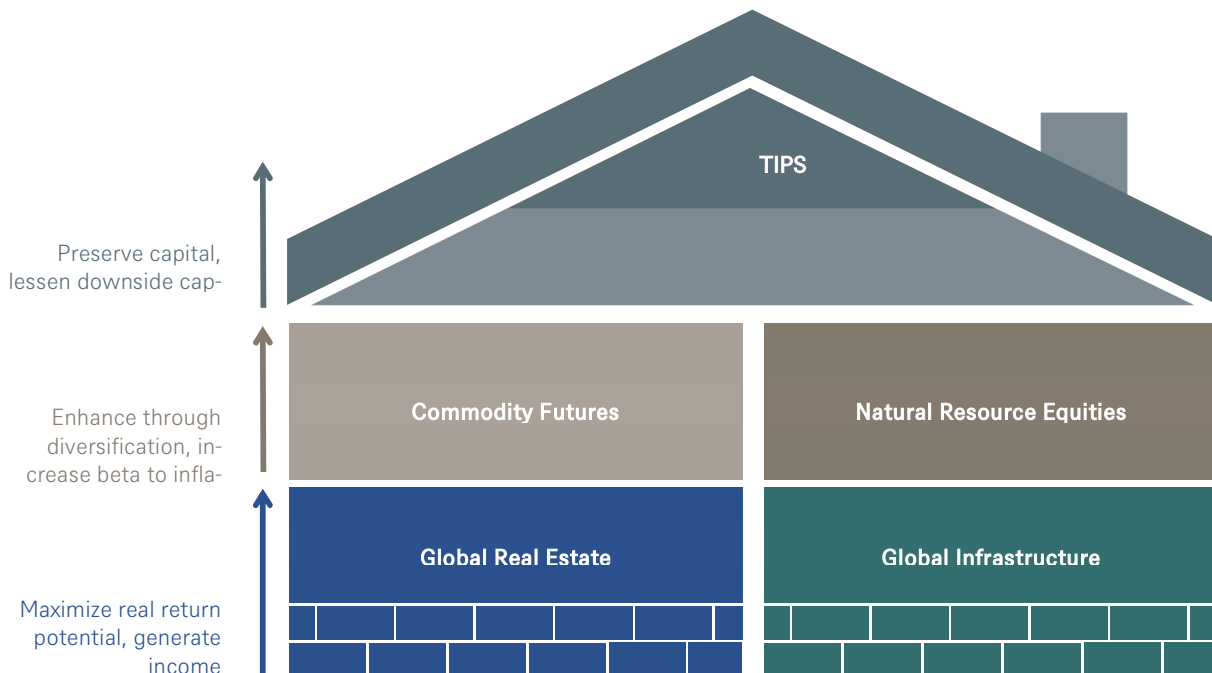
### Manage costs

Enhance and simplify plan menu with a single, holistic real assets fund option

## Liquid real assets solutions are a viable option on DC plan menus

Defined contribution plans can present unique challenges for portfolio managers. However, thanks to their long-term nature and the desire by many investors to shield their investments from inflation risks, real assets could be an intriguing addition to many plans. Our belief is that the best way to structure comprehensive real assets exposure is to think of an effective real assets portfolio like a house. A house requires a solid foundation, distinct rooms to add to the appeal and variety, and a roof to shield the overall structure from storms. In general, we believe a holistic real assets solution can help meet DC plan objectives in several ways: enhancing and simplifying plan menu options, and potentially providing the stability and yield necessary for long-term investors in DC plans to weather the wide variety of economic regimes and capital market conditions that can naturally occur during a full market cycle.

## Potential benefits of a real assets program



Source: DWS. **Past performance is not a guarantee of future results.** No assurance is made that investment objectives will be met. TIPS, Treasury Inflation-Protected Securities.

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.



<sup>1</sup> Diversification neither assures a profit nor guarantees against loss.

<sup>2</sup> Traditional portfolios of stocks and bonds are exposed to inflation risk. Commodities and TIPS have historically been the most effective inflation hedges in both the short-term and long-term; their relationship with inflation has been statistically strong. Commodity prices are a recognized driver of inflation and TIPS are inflation-linked bonds. Inflation beta measures the responsiveness of nominal returns to inflation. If an asset does not keep pace with rising inflation (exhibit inflation beta  $\geq 1$ ), its purchasing power will fall if inflation rises. Therefore, adding assets that exhibit inflation beta to a portfolio may mitigate lost purchasing power in times of rising inflation. Reducing risk comes with a cost – commodities and TIPS are among the lowest expected-return assets.

<sup>3</sup> Index association: Risk Free = Bloomberg Barclays Short Treasury Total Return Index ; Real Assets Blend = 15% Bloomberg Commodity Index; 15% S&P Global Natural Resources Index; 30% Dow Jones Brookfield Global Infrastructure Index; 30% FTSE/EPRA NAREIT Developed Index; 10% Barclays U.S. TIPS Index; Global Equities = MSCI World Index; Global Fixed Income = Bloomberg Barclays Global-Aggregate Total Return Index Value Unhedged USD. Sources: Bloomberg and DWS. Equity index returns include reinvestment of all distributions. Index returns do not reflect fees or expenses, and it is not possible to invest directly in an index. For illustrative purposes only. As of June 30, 2023. Represents characteristics from 12/31/2002–6/30/2023

### Index definitions

**Bloomberg Barclays U.S. Treasury Inflation-Link Bond Index** measures the performance of the U.S. Treasury Inflation Protected Securities (TIPS) market.

**Bloomberg Barclays Global-Aggregate Total Return Index** tracks the performance of the global investment-grade fixed-income market.

**Bloomberg Barclays Short Treasury Total Return Index** measures the performance of treasury bills issued by the U.S. government. U.S. Treasury bills are issued in fixed maturity terms of 4-, 13-, 26-, and 52-weeks. It is a market-value weighted index.

**Bloomberg Commodity Index** tracks the performance of futures contracts on physical commodities.

**Dow Jones Brookfield Global Infrastructure Index** tracks the performance of infrastructure companies.

**FTSE EPRA/NAREIT Developed Index** is designed to measure the stock performance of companies engaged in specific real estate activities of the North American, European and Asian real estate markets. Relevant real estate activities are defined as the ownership, trading and development of income-producing real estate.

**MSCI World Index** tracks the performance of stocks in select developed markets around the world, including the United States.

**S&P Global Natural Resources Index** includes 90 of the largest publicly-traded companies in natural resources and commodities businesses that meet specific invest ability requirements.

It is not possible to invest directly in an index.

### Definitions

Beta is the measure of the volatility or systematic risk of a security or a portfolio in comparison to the market as a whole and is used in the capital asset pricing model (CAPM).

Beta-inflation measures the change in inflation from one period to the next against the return from the asset class over the same period.

A commodity is a natural resource or agricultural product that is traded in bulk. They are sold by the companies that produce them and bought by companies that use them.

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.

Correlation is the way securities perform in relation to one another. A correlation of 1.0 indicates that two securities move in exactly the same direction, while a correlation of -1.0 indicates movements in exactly opposite directions. A zero correlation implies no relation in the movements of securities.

A drawdown is a peak-to-trough decline during a specific period for an investment,

A futures contract is a contract between two parties to buy or sell an asset for a price agreed upon today (the futures price) with delivery and payment occurring at a future point, the delivery date.

Inflation is the rate at which the general level of prices for goods and services is rising and, subsequently, purchasing power is falling.

Liquid Real Assets allow investors to gain access to exchange-traded real estate and infrastructure securities as well as to commodities in the form of commodity stocks and direct investments in commodities via futures.

Purchasing power is the value of a currency expressed in terms of the number of goods or services that one unit of money can buy. Purchasing power is important because, all else being equal, inflation decreases the number of goods or services you would be able to purchase.

A Real Estate Investment Trust (REIT) is a company that owns, and in most cases, operates income-producing real estate. REITs sell like a stock on the major exchanges and invest in real estate directly, either through properties or mortgages.

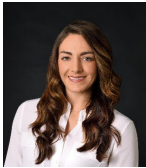
The Sharpe ratio, developed by Nobel laureate William F. Sharpe, is the average return earned in excess of the risk-free rate per unit of volatility or total risk.

Treasury Inflation Protected Securities (TIPS) provide protection against inflation. The principal of a TIPS increases with inflation and decreases with deflation, as measured by the Consumer Price Index. When a TIPS matures, you are paid the adjusted principal or original principal, whichever is greater.

---

**AUTHOR**

---



**Annie Del-Giudice**  
Senior Portfolio Management Specialist – Liquid Real Assets

---

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 product(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.

© 2023 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).

© 2023 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.

© 2023 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.

© 2023 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.

© 2023 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.

© 2023 DWS Group GmbH & Co. KGaA. All rights reserved. (9/23) 097323\_1