



Ohio Deferred Compensation LifePath Overview

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Appendix

I. Relationship Summary

Ohio Deferred Compensation Relationship Summary

Ohio Deferred Compensation	Assets Under Management \$
LifePath Index Retirement Fund N	921,720,859
LifePath Index 2025 Fund N	557,300,092
LifePath Index 2030 Fund N	703,091,232
LifePath Index 2035 Fund N	348,876,722
LifePath Index 2040 Fund N	387,745,760
LifePath Index 2045 Fund N	189,819,881
LifePath Index 2050 Fund N	202,852,214
LifePath Index 2055 Fund N	154,685,313
LifePath Index 2060 Fund N	25,175,475
Total Ohio Deferred Compensation Plan Assets	3,491,267,548

As of 31 March 2022

II. BlackRock Update

We have a history of innovating to continually address clients' needs.

30+ years ago	20 years ago	10 years ago	Last 5 years	Today
<p>Founded as a fixed income manager and introduced the first risk-managed fixed income solutions.</p> <p>Pioneered index and quantitative investing to help simplify investing.</p> <p>Developed our risk and portfolio construction technology, Aladdin®, making investing more transparent.</p>	<p>Created the industry's first target date fund, helping millions of people prepare for their retirement.</p> <p>Introduced iShares® ETFs, democratizing investing.</p>	<p>Expanded our product offerings to provide clients more choice through landmark acquisitions of MLIM and BGI*.</p> <p>Launched Financial Markets Advisory business to help solve the complex financial challenges of governments, central banks, and financial institutions.</p>	<p>Enhanced our capabilities around whole portfolio solutions by launching an OCIO platform and expanding our portfolio construction advisory services.</p> <p>Introduced sustainability as a central part of how we invest, integrating ESG throughout our active investment platform.</p> <p>Set a new standard in transparency for alternatives through eFront acquisition, extending Aladdin's® capabilities to provide whole portfolio analysis.</p>	<p>Entrusted to manage more assets than any other asset manager in the world.</p> <p>\$10tn AUM</p> <p>17,500+ Employees</p> <p>100 Countries with BlackRock clients</p> <p>35 Countries with BlackRock offices</p>

Data as of 31 December 2021. All figures are represented in USD.
Timeline includes history from predecessor entities.
*Merrill Lynch Investment Managers and Barclays Global Investors.

We are designed to deliver: our investment platform seeks to enhance outcomes, returns, convenience, value and transparency for clients.

Investment solutions designed to meet every client need

Active Equities
\$507bn

Active Fixed Income
\$1,107bn

Cash Management
\$755bn

Multi-Asset
\$816bn

Alternatives
\$329bn¹

iShares® & Index
\$6,550bn

Financial Markets Advisory
\$9bn

Investment teams directly benefit from firm-wide resources

BlackRock Capital Markets

BlackRock Investment Institute

BlackRock Investment Stewardship

BlackRock Sustainable Investing

Data & Technology

Global Trading

Public Policy

Risk & Quantitative Analysis

Securities Lending

Transition Management

Source: BlackRock. Assets under management as of 31 December 2021. All figures are represented in USD.

¹ Alternatives AUM may include committed capital, in addition to invested capital, which remains subject to drawdown.

BlackRock's focus on the future of retirement security

3 big goals for the next decade

1 Expanding access

Help every eligible American gain access to a workplace retirement savings plan

2 Encouraging savings

Help Americans save and invest each year, starting at the very beginning of their careers

3 Enhancing security

Provide the option of a paycheck for life to help retirement savings last

How we plan to achieve these goals

At BlackRock:

- New products and solutions
- Partnerships across the ecosystem
- Thought leadership, advocacy and impactful messaging

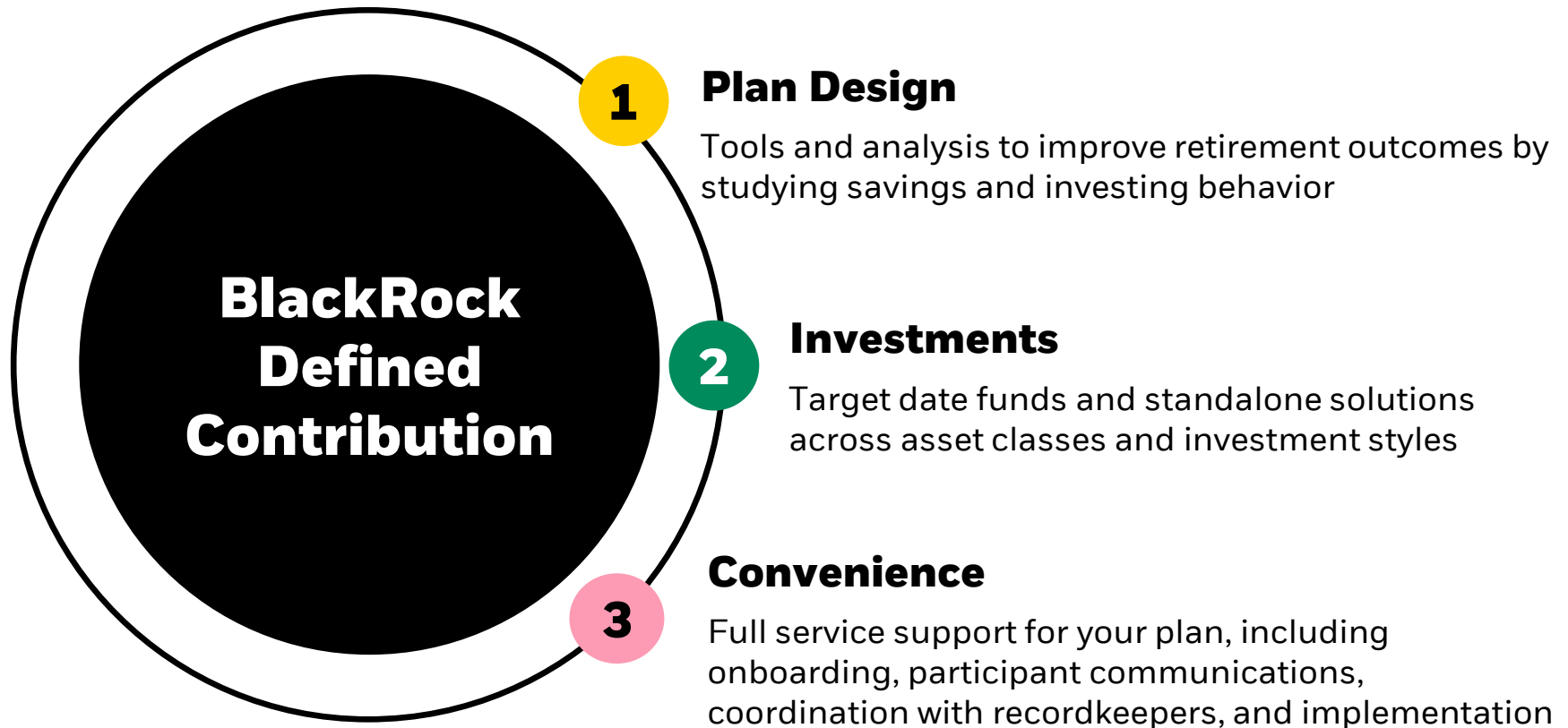
And beyond:

- Private sector: Innovate to reestablish the connection and trust between companies and employees
- Public sector: Create common-sense bipartisan commitment to improve economic security
- Not for profit sector: Amplify efforts to build financial literacy, fund research and ensure policy is founded in evidence

For illustrative purposes only.

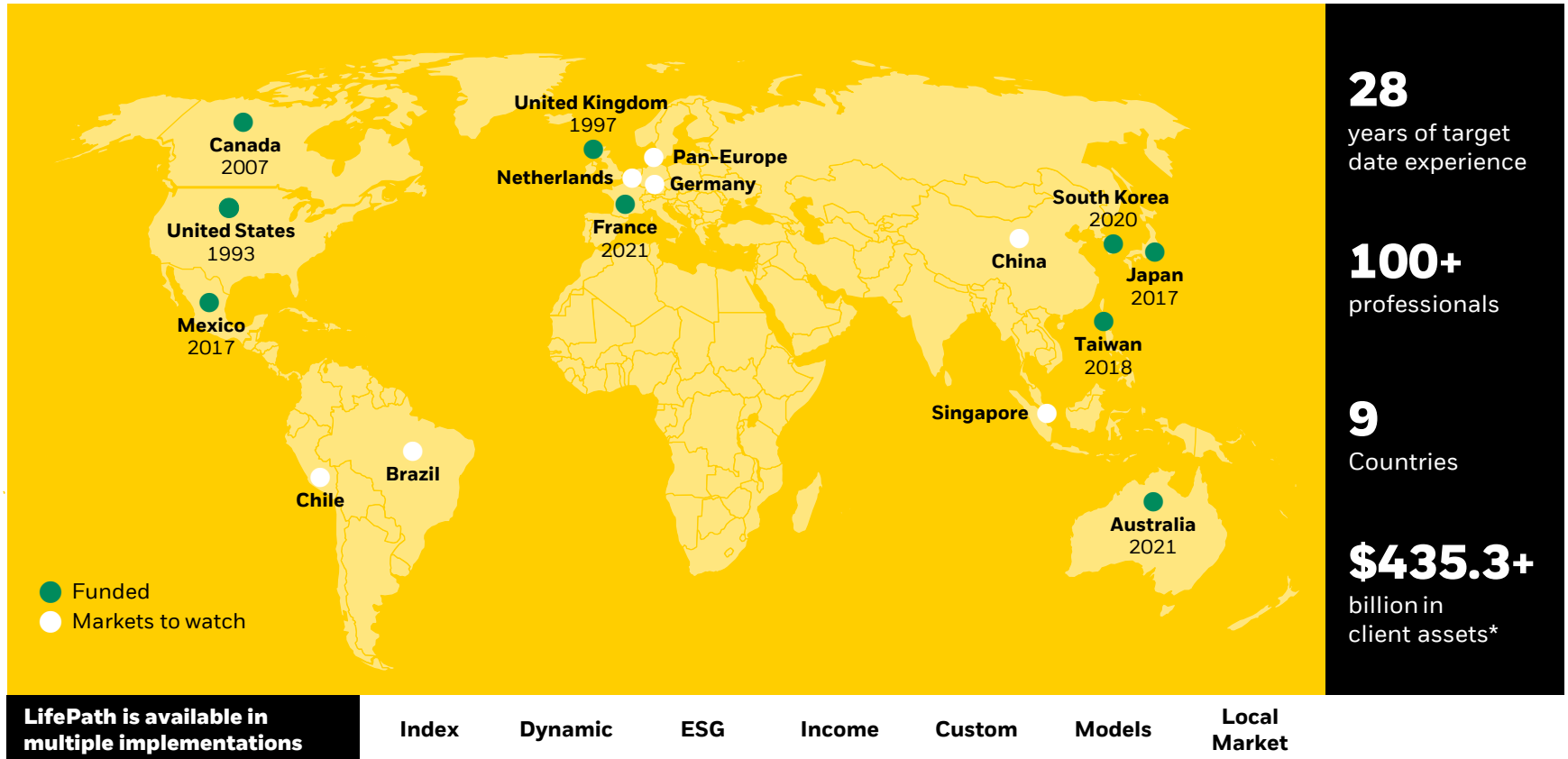
III. LifePath® Overview

A multi-pronged approach is needed to improve outcomes



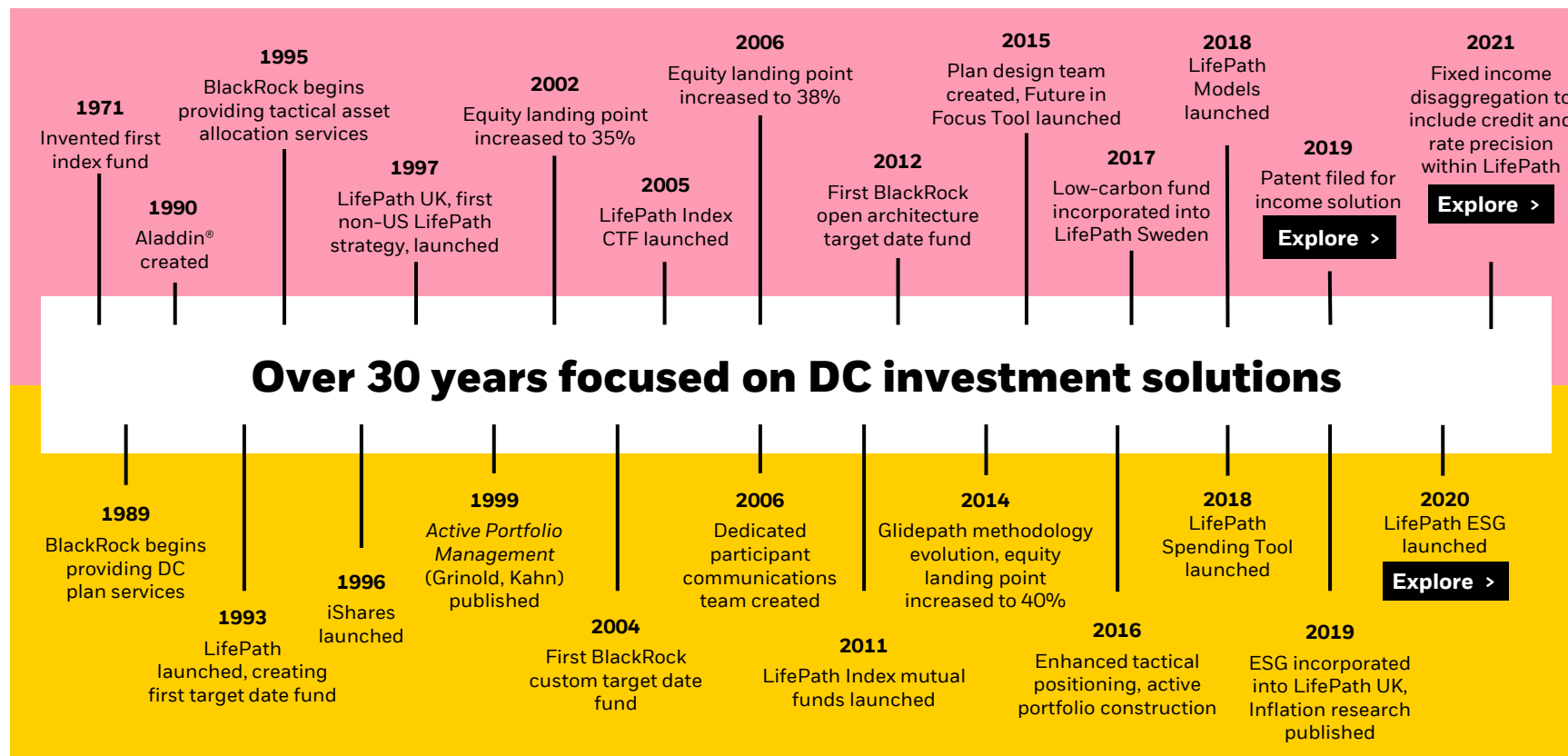
For illustrative purposes only.

Long history of building global retirement solutions



*As of 31 December 2021. Includes assets under advisement of co-manufactured target date fund products where BlackRock provides the glidepath, asset allocation, or underlying fund management.

Continuous improvement is needed in changing markets



Source: BlackRock. Represents a non-exhaustive list of milestones relevant for defined contribution investors. Does not include LifePath asset allocation and vehicle enhancements.

Global investment team focused on LifePath®

Multi-Asset Strategies & Solutions Group (MASS)

Nicholas Nefouse, CFA

Head of Retirement Solutions and Global Head of LifePath

Research

Chris Chung, CFA

Head of Retirement Solutions Portfolio Management

Partha Mamidipudi, PhD

Head of Human Capital Research

Vincent Cocula, PhD

Head of Lifecycle Research

Andrew Ang, PhD

Advisor & Senior Researcher on Human Capital

Lisa O'Connor, CFA

Head of Model Portfolio Solutions & Deputy CIO for Solutions

Americas

Michele Freed, PhD
Michael Gates, CFA
Eric Neis, PhD
Kasey Ng, CFA
Ritika Puri
Keren Shen
Fiona Sloof
Xia Wang
Shirley Xu
Lin Zeng
Han Zhang
Lei Zhang, PhD

Europe

Antonio Arduini
Claire Gallagher, PhD, CFA
Rafael Iborra
Andrea Stragiotti
Fanni Vagasi
John Wang, PhD, CFA

Asia Pacific

Ilyas Chabane
Christopher Downing, PhD
Kaly Fong, CFA, FRM
Yulin Huang, PhD
Debika Pall
Riddhi Shah

Portfolio Implementation

Greg Savage, CFA

Global Head of Index Asset Allocation

US/Canada

Index/ESG

Amy Whitelaw

Head of Americas Portfolio Engineering

LifePath Dynamic

Philip Green

Head of Global Tactical Asset Allocation

Europe

Stephen Walker

Head of EMEA Index Asset Allocation

Asia Pacific

Yuichi Chiguchi

Head of Japan Multi-Asset Strategies Group

Kevin Jo-Kai Huang

CIO of BlackRock Taiwan

Latin America

Jose Luis Ortega, CFA

Head of Mexican Multi-Asset and Fixed Income

Investment Strategy

Stacey Tovrov

Head of Investment Strategy

Americas

KC Boas
Anna Caruso
Gregory Donohue
Vinitha Kaushik, CFA
Farzan Qureshi
James Sichenzia
Joseph Szalay, CFA, CAIA

Asia Pacific

Robert Ronneberger, CFA

Latin America

Jorge del Valle Papis

Europe

Anoushka Bhatiani, CFA
Dominic Byrne, CAIA
Evelin Kovacs
Anastasios Loukas
Eliz Nordman

Platform Strategy

Andrew Spradling

Head of Platform Strategy

Risk & Quantitative Analysis (RQA)

Julien Pouzieux, FRM

Head of RQA Multi-Asset Strategies & Solutions Americas

Ola Folarin, CFA

Jeffrey Jiayi Tu, CFA
Chaitanya Wadi
Rory van Zwanenberg, CFA, FRM

Ali Nakhle, CFA, FRM

Head of Risk & Quantitative Analysis for EII

Helen Hope

Antonello Russo
Robert Sentinella, PhD, CFA

As of January 2022.

IV. Building LifePath®

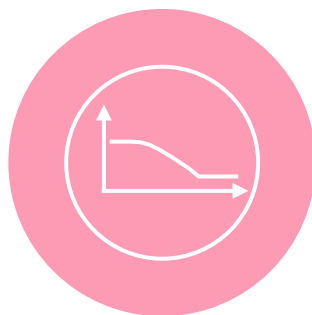
Robust process for constructing target date funds



Objective



Demographics



Glidepath



Asset Classes



Implementation

For illustrative purposes only.

Saving for retirement is about more than risk and return

74%

of participants believe the purpose of retirement savings is to **maintain their current spending**¹

Consistent spending

69%

of pre-retirees² prefer investments that **limit losses in down markets**¹

Downside protection

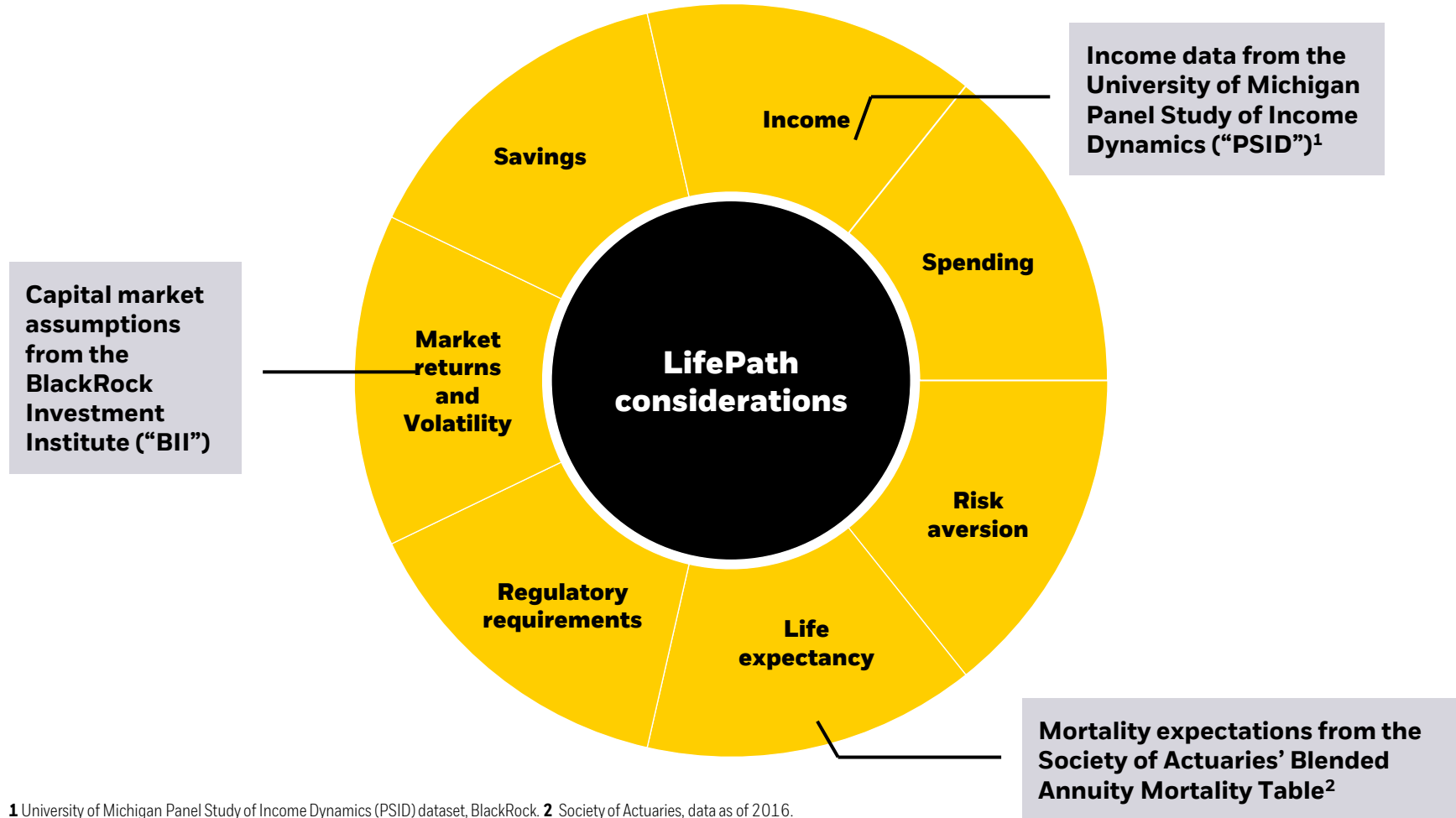
25%

chance of at least one person per couple **living to 94**³

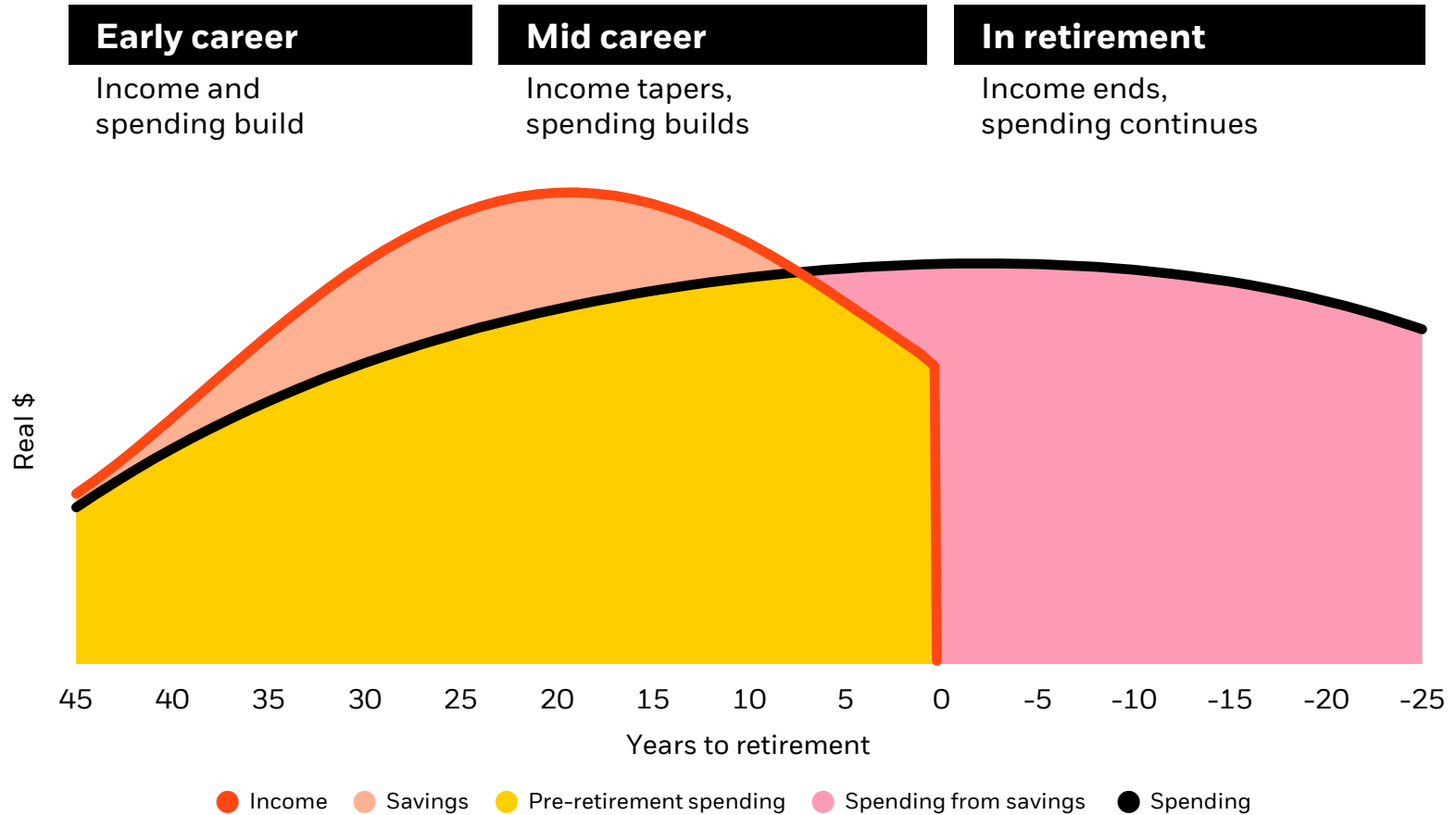
Address longevity

¹. Source: BlackRock 2017 Pulse Survey. ². Ages 55-65. ³. Source: Social Security Administration, data as of 2019.

Blends real-world data with investor preferences

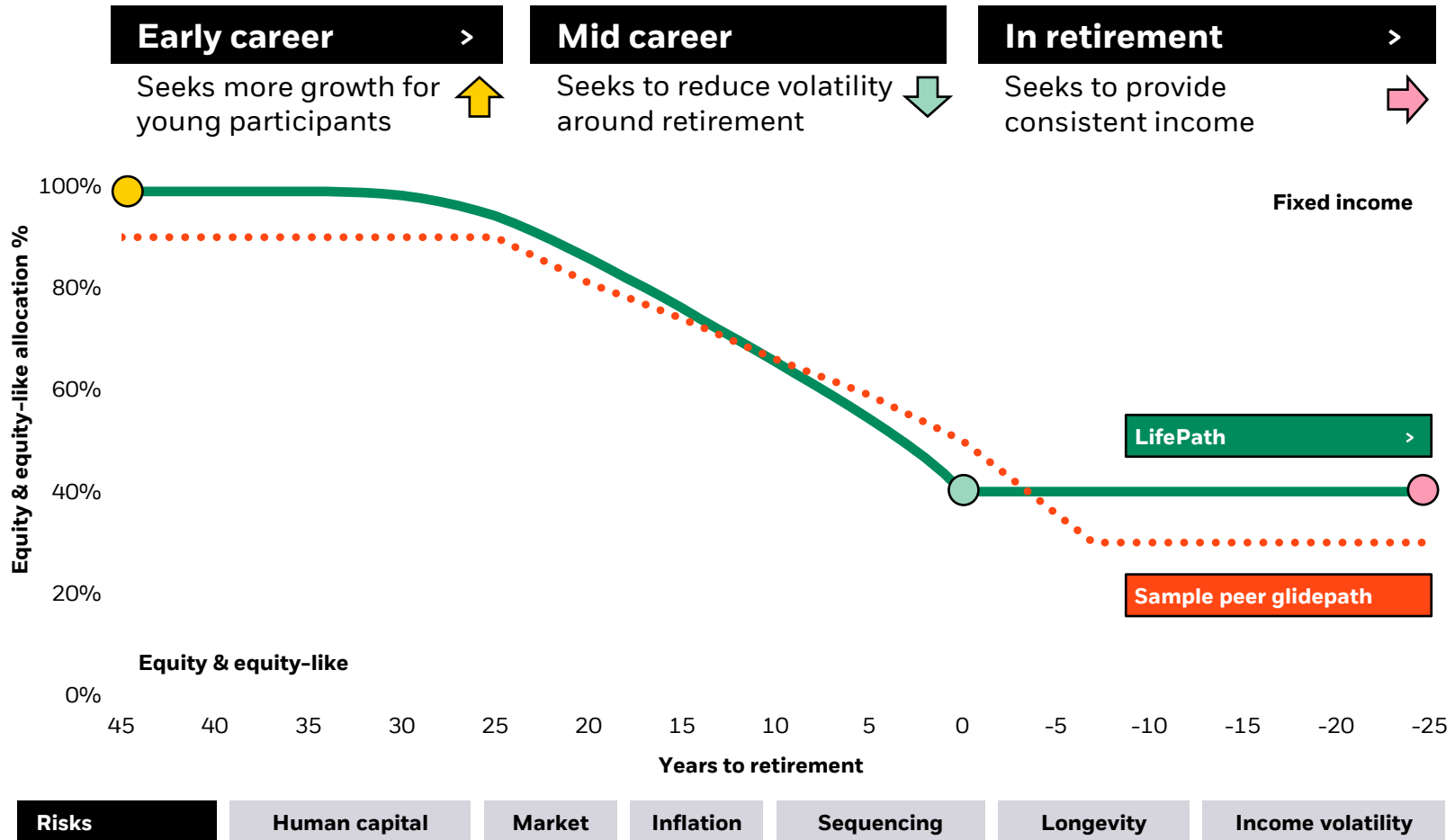


LifePath seeks consistent spending across a lifetime



Source: University of Michigan Panel Study of Income Dynamics (PSID) dataset, BlackRock.

With glidepath risk, when is as important as how much



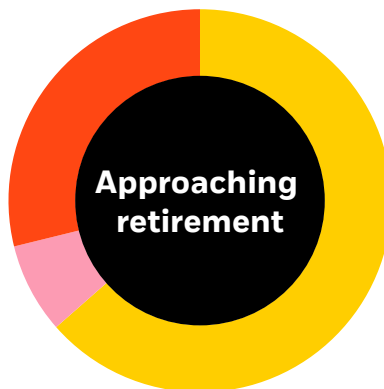
For illustrative purposes only.

Asset allocation addresses key risks faced over a lifetime



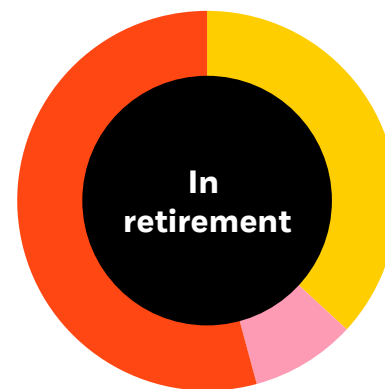
Not saving
Not saving enough
Not generating enough return

Purpose: growth



Needing to delay retirement
Market volatility
Loss of confidence in plan

Purpose: stability



Consumption volatility
Living longer than expected
Inflation

Purpose: consistent spending

Implemented with deliberate asset class exposures

U.S. Large /
Mid Cap Equities

U.S. Small
Cap Equities

International
Equities

Global Developed
Real Estate

Commodities

U.S. Inflation-
Linked Bonds

U.S. Bonds

CTF

● Economic growth

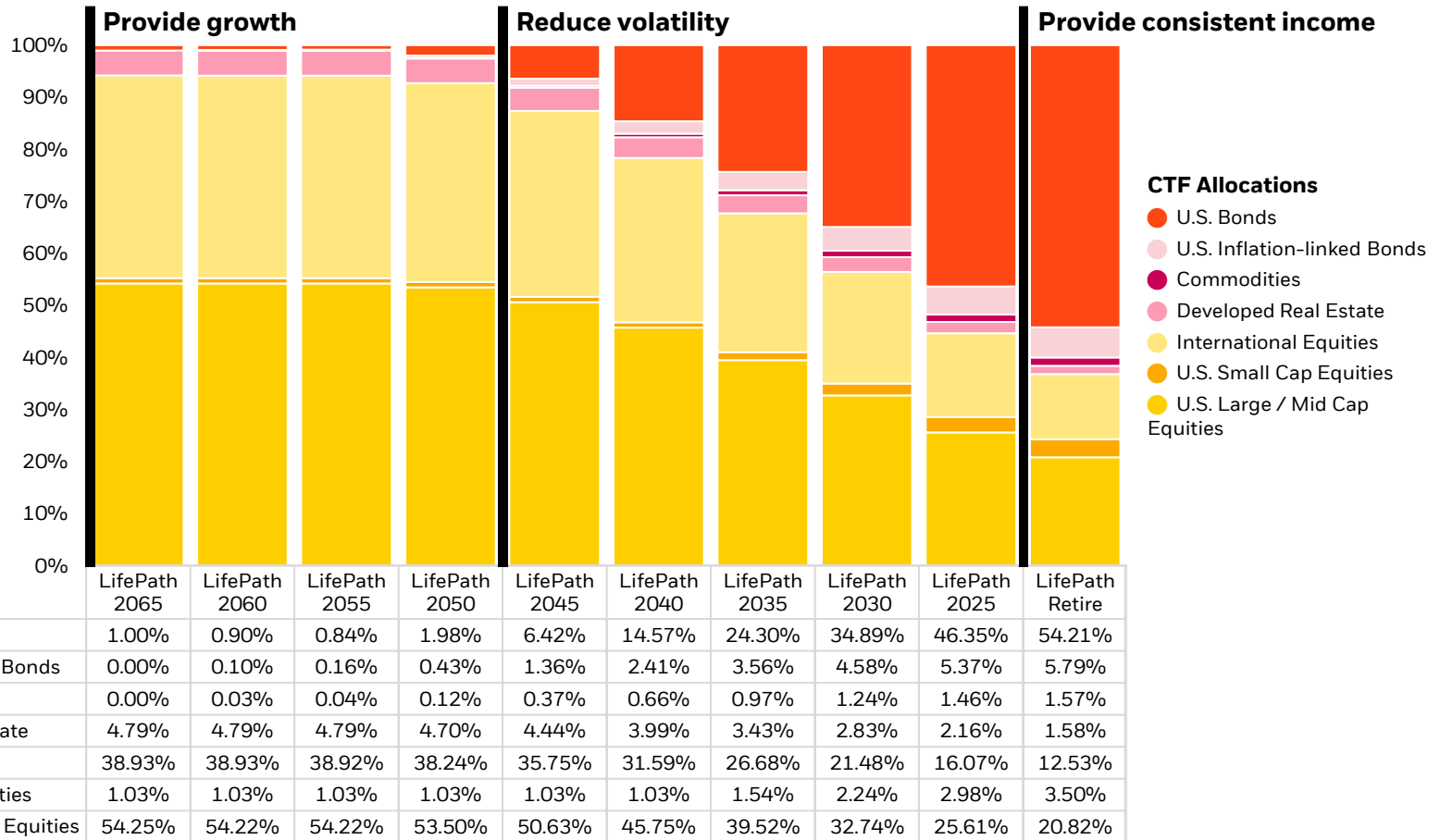
● Inflation

● Rates

For illustrative purposes only.

Each vintage is built individually

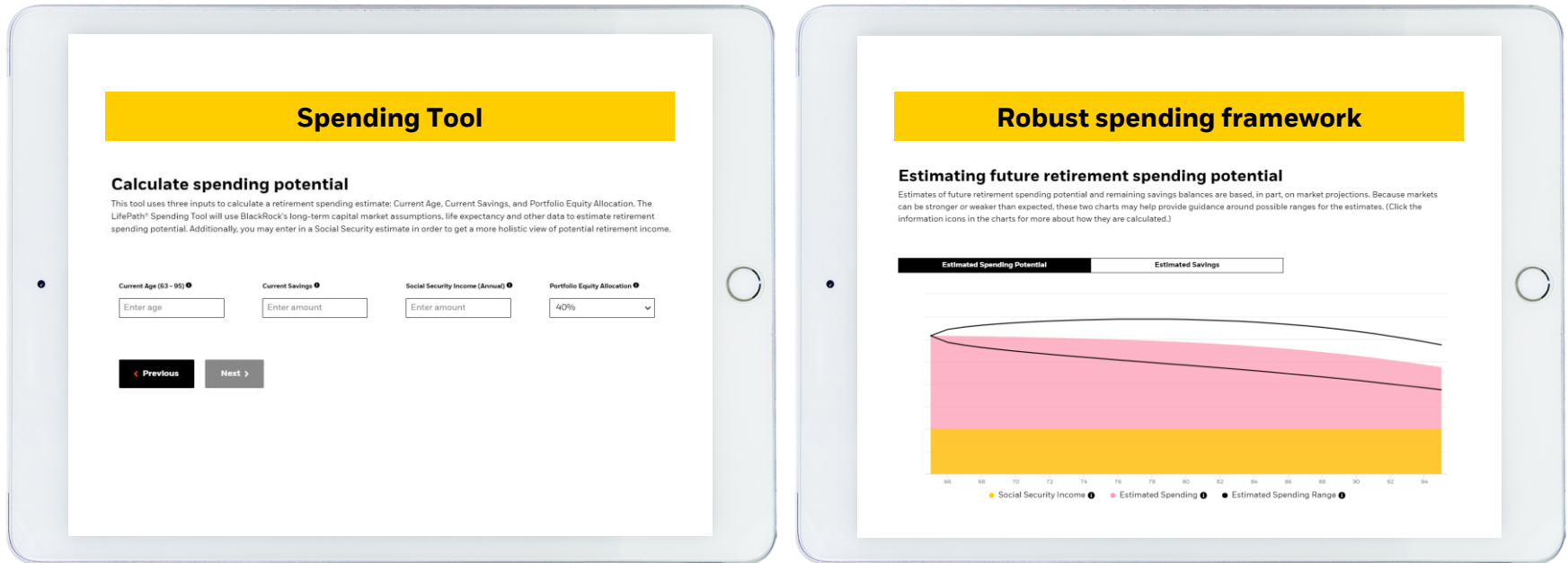
Seeks to:



Source: BlackRock. Effective target weights for Q1 2022. Asset allocation percentages are subject to change.

V. Retirement Spending

Participants want to be able to calculate retirement spending potential

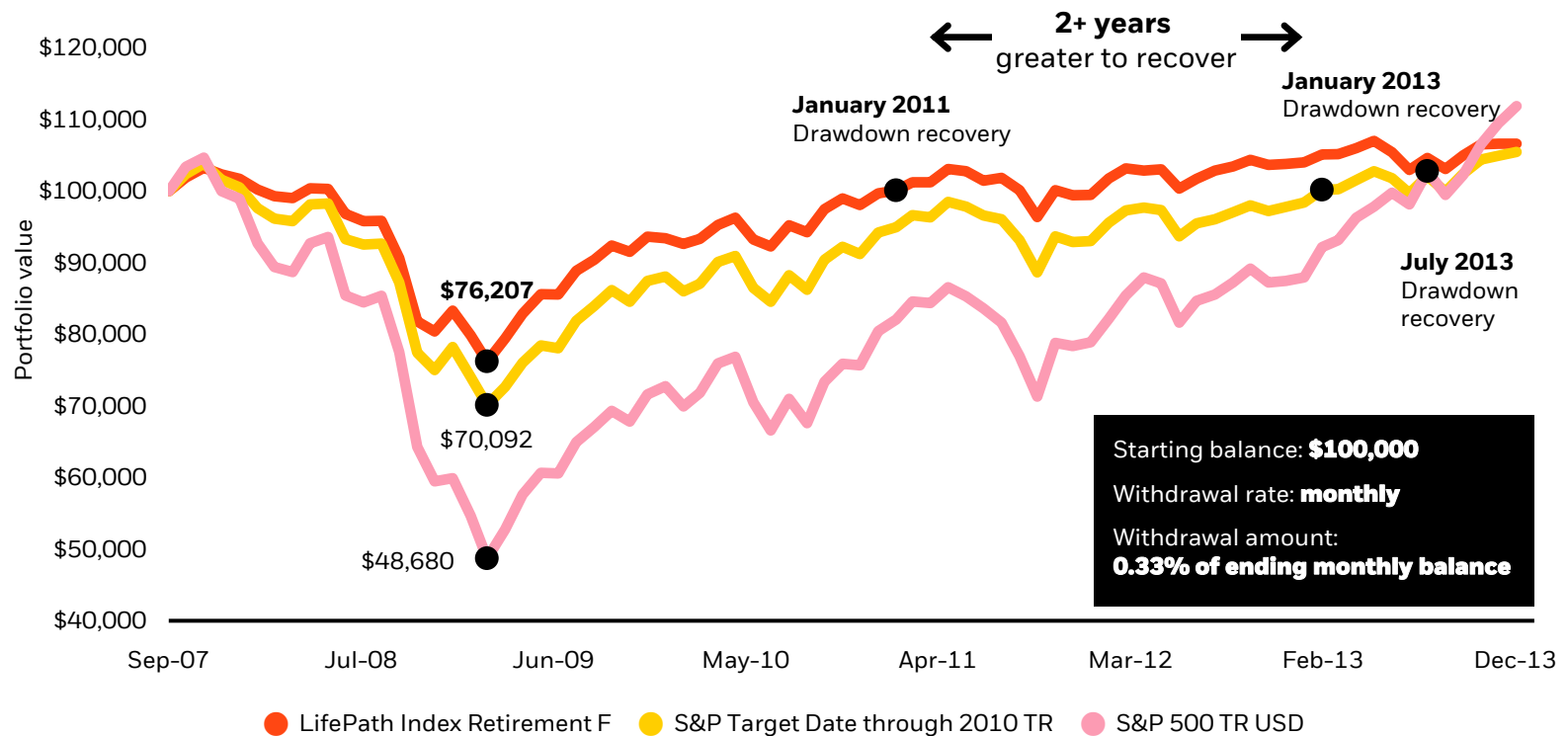


[Explore more >](#)

Source: BlackRock. For illustrative purposes only.

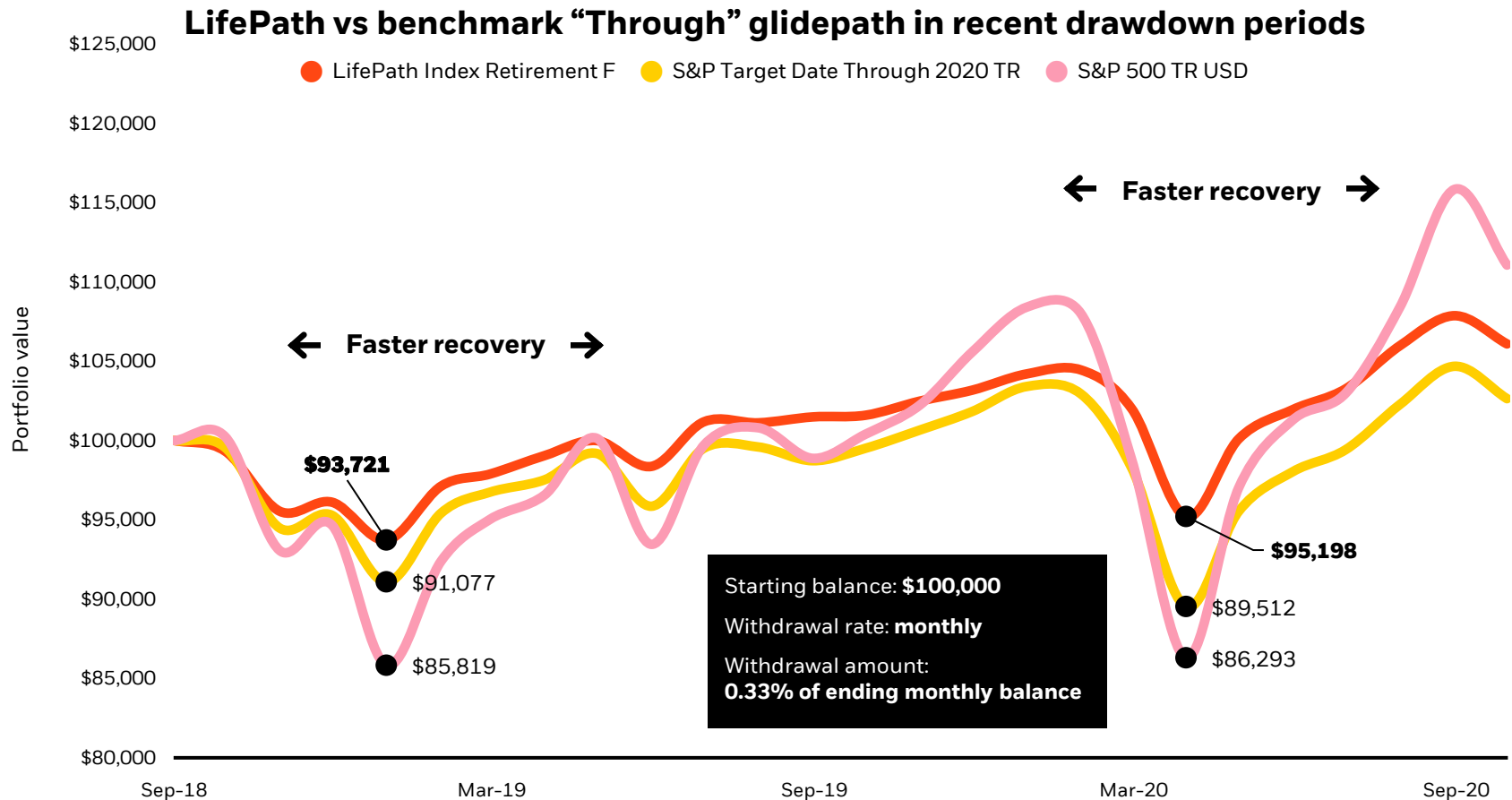
Reducing equity during drawdowns can lock-in losses

LifePath vs benchmark “Through” glidepath in the Financial Crisis



Source: BlackRock, Morningstar Direct. The time period of analysis shown above is between 1 September 2007 and 31 December 2013. The analysis assumes that starting balances on 1 September 2007 were \$100,000. All portfolios withdrew 0.33% of the total portfolio balance at month end. Past performance is not indicative of future results. S&P 500 performance included to provide overall market performance at this time and is not used as a comparison to the performance of BlackRock LifePath Index Retirement F. Index data provided for illustrative purposes only. Indexes are unmanaged and one cannot invest directly in an index.

The same dynamic has played out over recent drawdowns

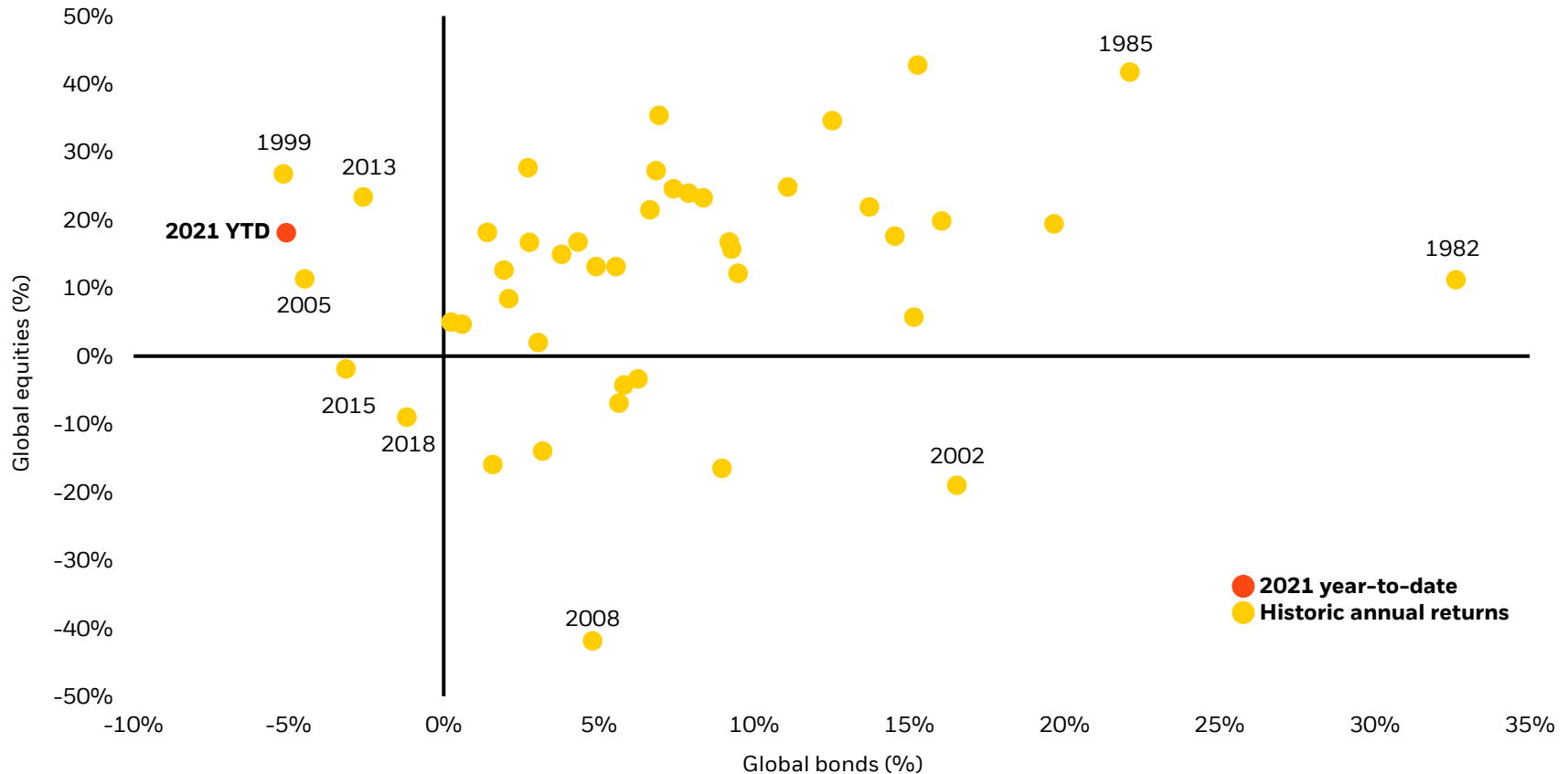


Source: BlackRock, Morningstar Direct. The time period of analysis shown above is from 1 September 2018 to 30 September 2020 when all initial investments were recovered. The analysis assumes that starting balances on 1 September 2018 were \$100,000. All portfolios withdrew 0.33% of the total portfolio balance at month-end. Past performance is not indicative of future results. S&P 500 performance included to provide overall market performance at this time and is not used as a comparison to the performance of BlackRock LifePath Index Retirement F. Index data provided for illustrative purposes only. Indexes are unmanaged and one cannot invest directly in an index.

VI. LifePath® Outcomes

A potential new market regime

Global equities vs global bonds, annual returns, 1977-2021

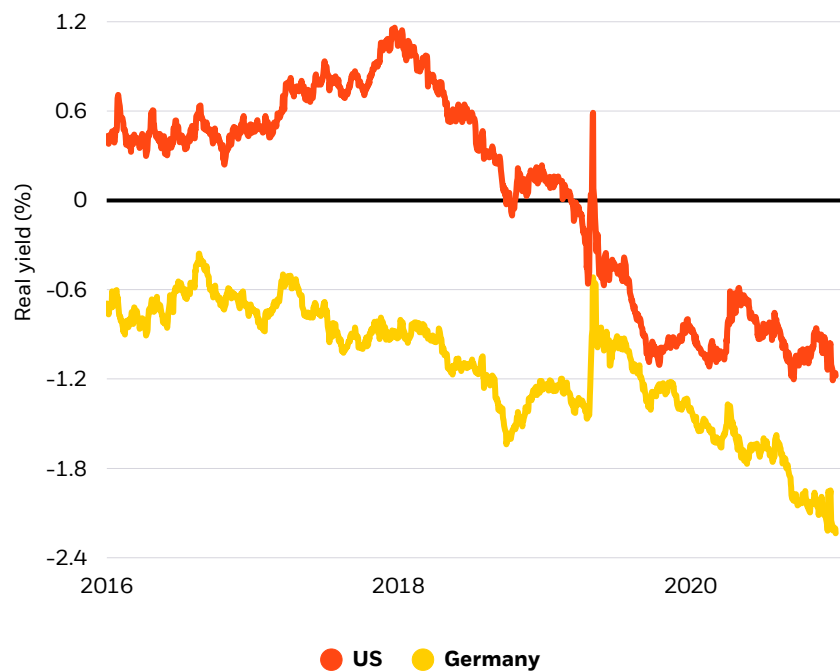


Past performance is not a reliable indicator of current or future results. Indexes are unmanaged and not subject to fees. It is not possible to invest directly in an index.

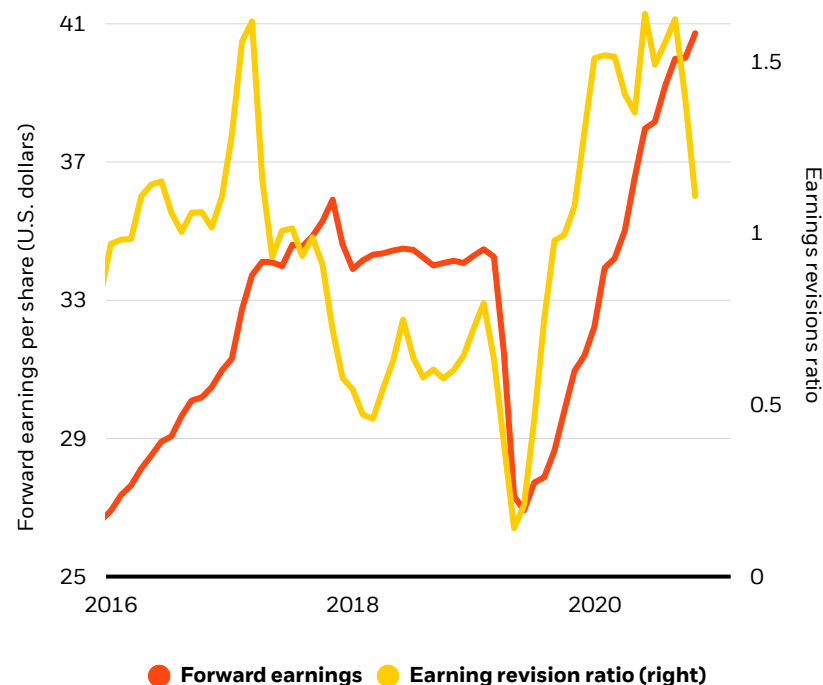
Sources: BlackRock Investment Institute with data from Refinitiv Datastream and Bloomberg, December 2021. Notes: The chart shows annual returns for global equities and bonds in U.S. dollar terms from 1977-2021. Index proxies are the MSCI All-Country World index for equities (MSCI World before 1988) and Bloomberg Global Aggregate index for bonds (U.S. Aggregate before 1991).

We still like equities yet dial down risk-taking

U.S. and German 10Y real yields, 2016-2021



Equity earnings and revisions, 2016-2021

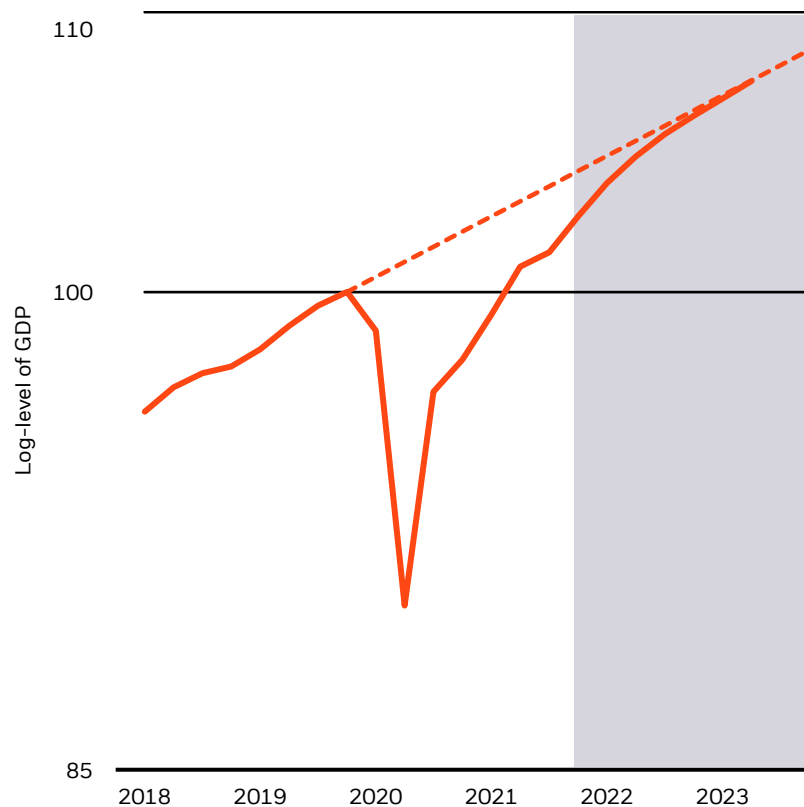


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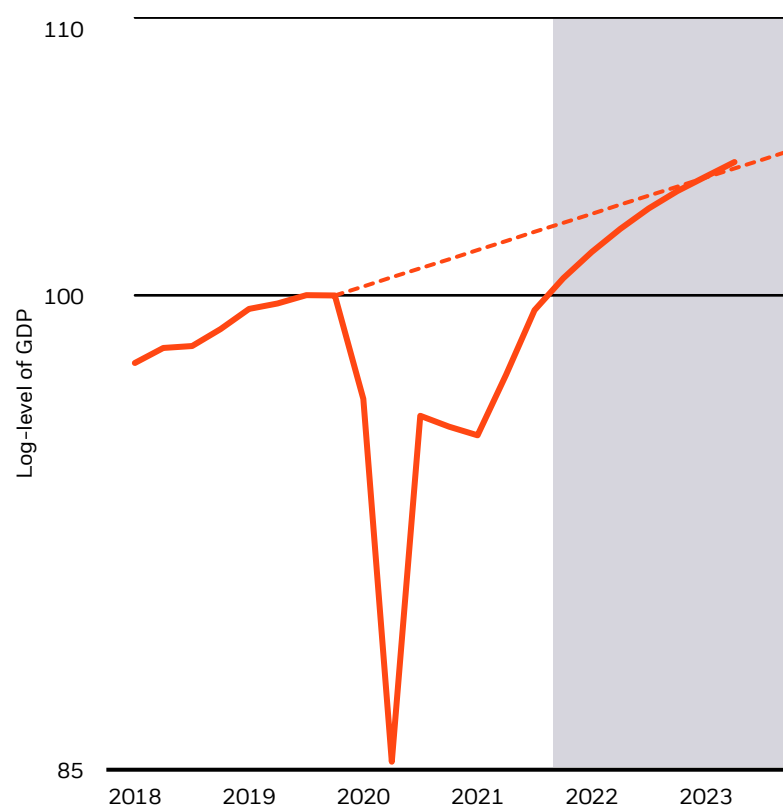
Sources: BlackRock Investment Institute, with data from Refinitiv Datastream and Bloomberg, December 2021. Notes: The chart on the left shows the real yield in Germany and the U.S. calculated as the yield spread between the respective 10-year nominal government and the 10-year inflation-protected government bonds in each market. The real yield strips out the expected impact of inflation over the next decade. The chart on the right shows the weighted average forward earnings per share for the MSCI ACWI Index in US dollars per share (orange line) and the ratio of analyst upgrades vs. downgrades, or the earnings revision ratio (yellow line). A ratio above 1 (dotted line) indicates more upgrades vs downgrades.

Restart may be delayed – but not derailed

U.S. GDP and projection, 2018–2023



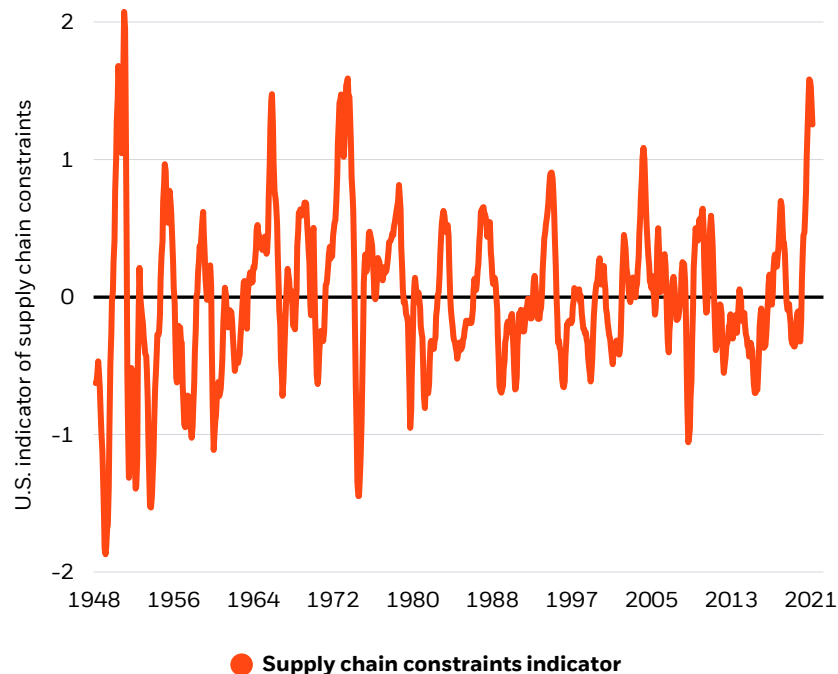
Euro area GDP and projection, 2018–2023



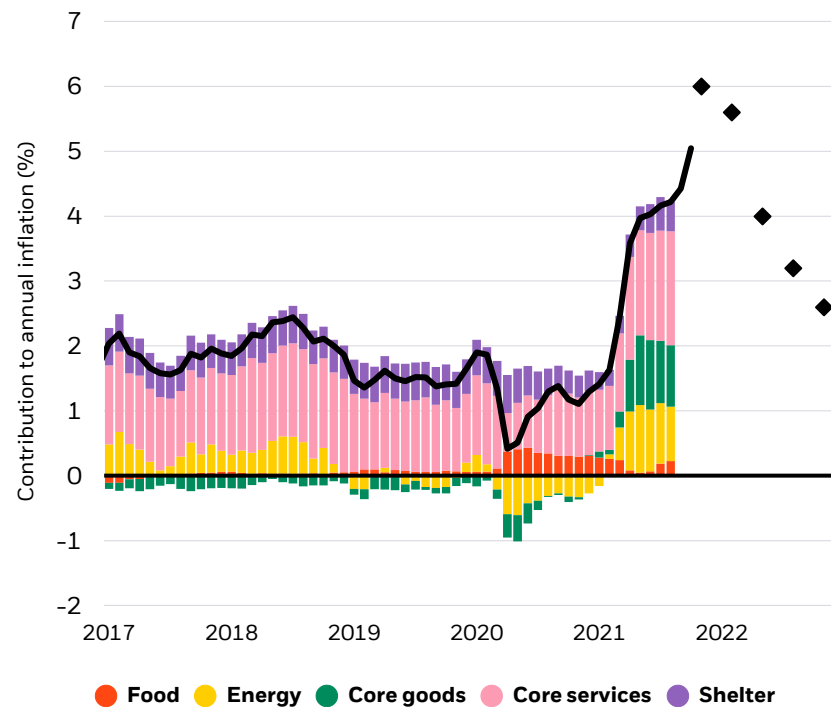
Forward looking estimates may not come to pass. Sources: BlackRock Investment Institute, U.S. Bureau of Economic Analysis, Eurostat, Reuters News with data from Haver Analytics, December 2021. Notes: charts show actual GDP and consensus projections (as of 18 November 2021) for the U.S. and Euro area in orange. The gray shaded area denotes the consensus forecast period. The dashed lines show projections of trend growth starting in Q4 2019 to illustrate what GDP might have been had it grown at pre-Covid trend from 2020 onwards. The trend growth assumptions reflect the likely growth of potential output in the run-up to the Covid-19 shock. The scale is expressed as the log-level of GDP.

Supply chain disruptions near historical highs; inflationary pressures broadened

Supply chain constraints, 1948-2021



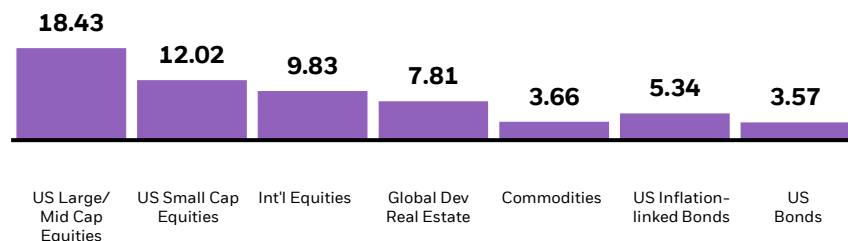
U.S. PCE inflation breakdown, 2017-2021



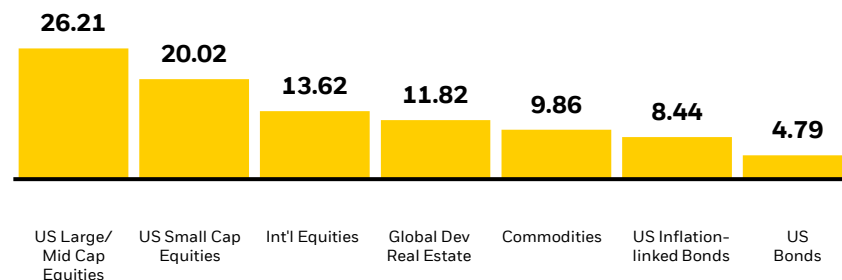
Sources: BlackRock Investment Institute, Institute for Supply Management, U.S. Bureau of Economic Analysis, Eurostat, Reuters News, with data from Haver Analytics, December 2021. The left chart shows an index of manufacturing supply chain constraints based on ISM survey indicators: supplier delivery times, backlog of orders, prices paid and inventories. The right chart shows the breakdown of U.S. headline PCE inflation into the percentage point contribution of the different components shown. The markers show consensus projections of headline inflation rates – or the total shown in the chart above. There are no consensus projections for individual component contributions. Forward looking estimates may not come to pass.

Growth and inflation-sensitive assets have delivered strong performance

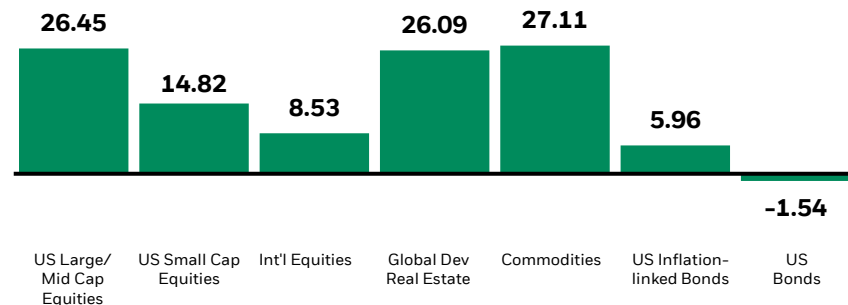
5 year asset class performance (%)



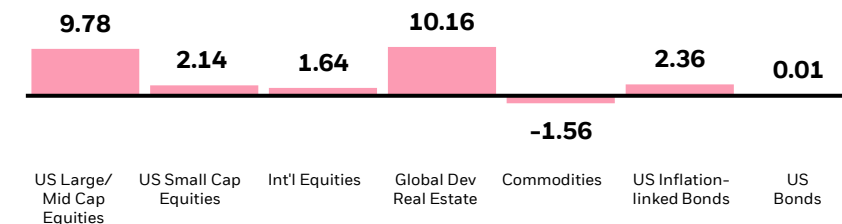
3 year asset class performance (%)



1 year asset class performance (%)



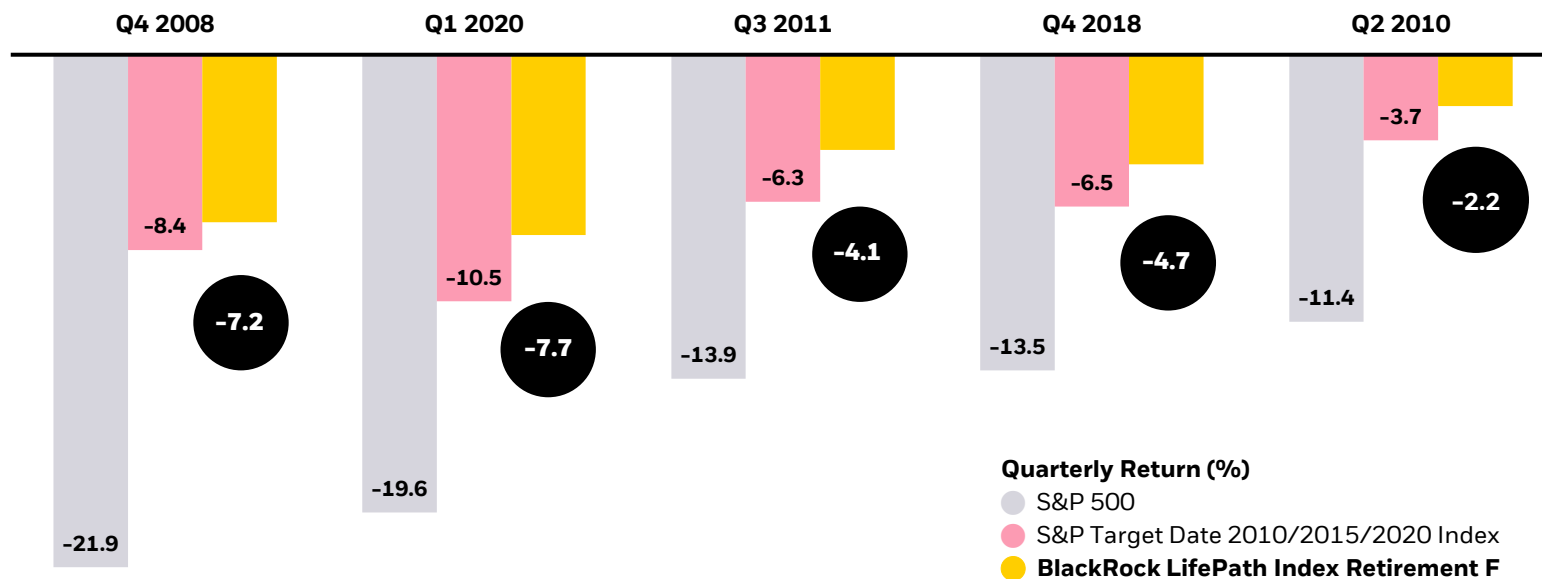
4Q'21 asset class performance (%)



Performance data quoted represents past performance and does not guarantee future results. Source: Morningstar as of 31 December 2021. Indices represented, from left to right, include Russell 1000 TR USD, Russell 2000 TR USD, MSCI ACWI ex USA IMI NR USD, FTSE EPRA Nareit Developed NR USD, Bloomberg Commodity Index TR USD, Bloomberg US Treasury US TIPS TR USD, Bloomberg US Agg Bond TR USD. Returns include reinvestment of dividends and capital gains. Index performance is shown for illustrative purposes only. It is not possible to invest directly in an index.

Historically better returns than peers during periods of equity market stress

5 worst quarterly market drawdowns (as measured by negative quarters for the S&P 500)



Source: Morningstar Direct, as of 31 December 2021. Returns are unannualized. The S&P 500 is shown for reference only and is not directly comparable to LifePath or the S&P Target Date Index. We use the S&P 500 as a measure of periods of market stress.

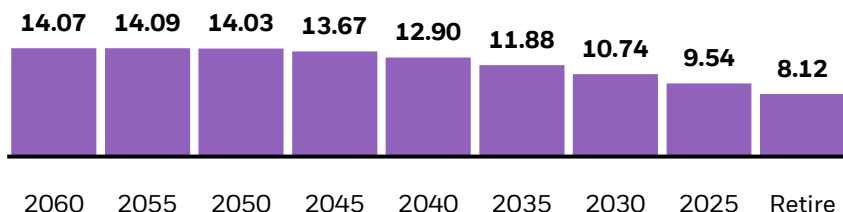
The BlackRock LifePath Index Fund F's returns are unaudited, annualized, and assume reinvestment of dividends. Although the BlackRock LifePath Index Fund F's net asset value does include an accrual for fund level administrative costs, it does not include an accrual for the investment management fee. Effective 1/1/2017, the fund level administrative costs are capped at 1 basis point (0.01%) per year. If the Fund's net asset value did include an accrual for the investment management fee, the Fund's returns would be lower. BlackRock LifePath Index Fund F is a bank maintained and managed collective trust fund.

Index performance returns do not reflect any management fees, transaction costs or expenses. S&P Target Date 2010 Index quarterly returns are used prior to 30 June 2012, S&P Target Date 2015 Index quarterly returns are used from 1 July 2012 to 30 June 2017, and S&P Target Date 2020 Index quarterly returns are used after 30 June 2017 for comparison.

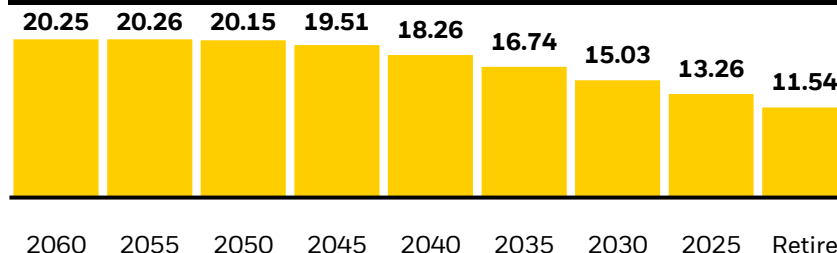
Past performance is no guarantee of future results. Indexes are unmanaged and one cannot invest directly in an index.

LifePath has delivered strong absolute returns over time

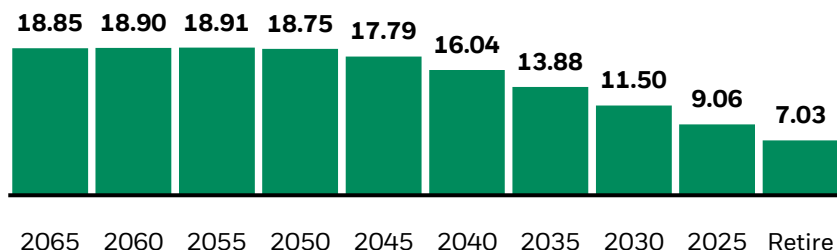
5 year vintage performance (%)



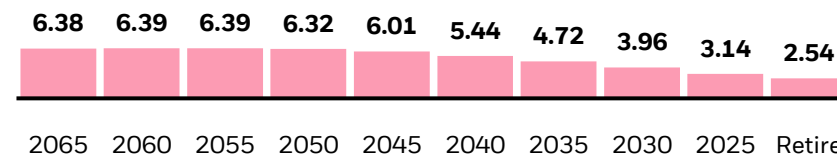
3 year vintage performance (%)



1 year vintage performance (%)



4Q'21 vintage performance (%)



Source: BlackRock, as of 31 December 2021. Fund returns are unaudited, annualized, and assume reinvestment of dividends. **Past performance is no guarantee of future results.** Although the BlackRock LifePath Index Fund F's net asset value does include an accrual for fund level administrative costs, it does not include an accrual for the investment management fee. Effective 1/1/2017, the fund level administrative costs are capped at 1 basis point (0.01%) per year. If the Fund's net asset value did include an accrual for the investment management fee, the Fund's returns would be lower. BlackRock LifePath Index Fund F is a bank maintained and managed collective trust fund. In the event that current market valuations are not readily available or such valuations do not reflect current market values, the affected investments will be valued using fair values determined in good faith. The frequency with which the fund's investments are valued using fair values is primarily a function of the types of securities and other assets in which the fund invests pursuant to its investment objective, strategies and limitations. Fair values may differ from closing prices, which are the prices on which index performance is based. Consequently, valuing the fund's investments using fair values ("fair values") may result in a difference between the fund's performance (based on the value of the fund's investments) and the performance of the underlying index (based on closing prices). **A DC Fund's performance may differ from that of its benchmark for various reasons, including, but not limited to, investment strategy and/or, in the case of an index fund, equitization of cash (e.g., by investing in futures or other instruments that serve as a proxy for index exposure).** A DC Fund's performance may differ from the performance of its benchmark more dramatically than a fund offered only to defined benefit plan investors due to several factors that are specific to funds sold to DC plan investors, including but not limited to Fair Value Pricing. Please refer to the "Important Information" slide in the Appendix for additional information, including underlying fund history and custom benchmark components.

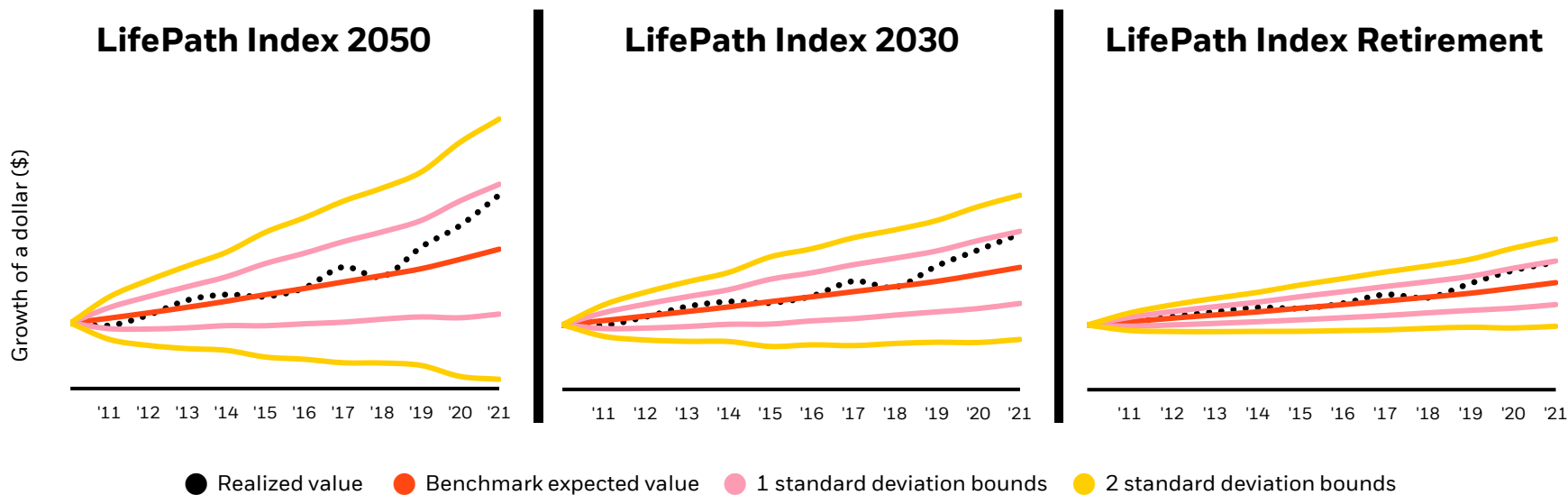
LifePath has provided tight tracking in line with expectations

		Retire	2025	2030	2035	2040	2045	2050	2055	2060	2065
5 year fund performance (%)	Fund*	8.12	9.54	10.74	11.88	12.90	13.67	14.03	14.09	14.07	-
	Custom Benchmark	8.01	9.40	10.58	11.70	12.70	13.44	13.80	13.87	13.87	-
	Tracking	0.11	0.14	0.16	0.18	0.20	0.23	0.23	0.22	0.21	-
3 year fund performance (%)	Fund*	11.54	13.26	15.03	16.74	18.26	19.51	20.15	20.26	20.25	-
	Custom Benchmark	11.43	13.14	14.90	16.59	18.10	19.33	19.96	20.09	20.09	-
	Tracking	0.11	0.12	0.13	0.15	0.16	0.18	0.18	0.17	0.16	-
1 year fund performance (%)	Fund*	7.03	9.06	11.50	13.88	16.04	17.79	18.75	18.91	18.90	18.85
	Custom Benchmark	7.04	9.07	11.51	13.85	15.99	17.71	18.61	18.81	18.80	18.79
	Tracking	-0.01	-0.01	0.00	0.03	0.05	0.08	0.13	0.11	0.10	0.07
4Q'21 fund performance (%)	Fund*	2.54	3.14	3.96	4.72	5.44	6.01	6.32	6.39	6.39	6.38
	Custom Benchmark	2.59	3.19	4.00	4.76	5.46	6.01	6.32	6.39	6.39	6.39
	Tracking	-0.06	-0.06	-0.04	-0.03	-0.01	0.00	0.01	0.00	0.00	-0.01

Source: BlackRock, as of 31 December 2021. Fund returns are unaudited, annualized, and assume reinvestment of dividends. **Past performance is no guarantee of future results.**

*Although the BlackRock LifePath Index Fund F's net asset value does include an accrual for fund level administrative costs, it does not include an accrual for the investment management fee. Effective 1/1/2017, the fund level administrative costs are capped at 1 basis point (0.01%) per year. If the Fund's net asset value did include an accrual for the investment management fee, the Fund's returns would be lower. BlackRock LifePath Index Fund F is a bank maintained and managed collective trust fund. In the event that current market valuations are not readily available or such valuations do not reflect current market values, the affected investments will be valued using fair values determined in good faith. The frequency with which the fund's investments are valued using fair values is primarily a function of the types of securities and other assets in which the fund invests pursuant to its investment objective, strategies and limitations. Fair values may differ from closing prices, which are the prices on which index performance is based. Consequently, valuing the fund's investments using fair values ("fair values") may result in a difference between the fund's performance (based on the value of the fund's investments) and the performance of the underlying index (based on closing prices). **A DC Fund's performance may differ from that of its benchmark for various reasons, including, but not limited to, investment strategy and/or, in the case of an index fund, equitization of cash (e.g., by investing in futures or other instruments that serve as a proxy for index exposure). A DC Fund's performance may differ from the performance of its benchmark more dramatically than a fund offered only to defined benefit plan investors due to several factors that are specific to funds sold to DC plan investors, including but not limited to Fair Value Pricing.**

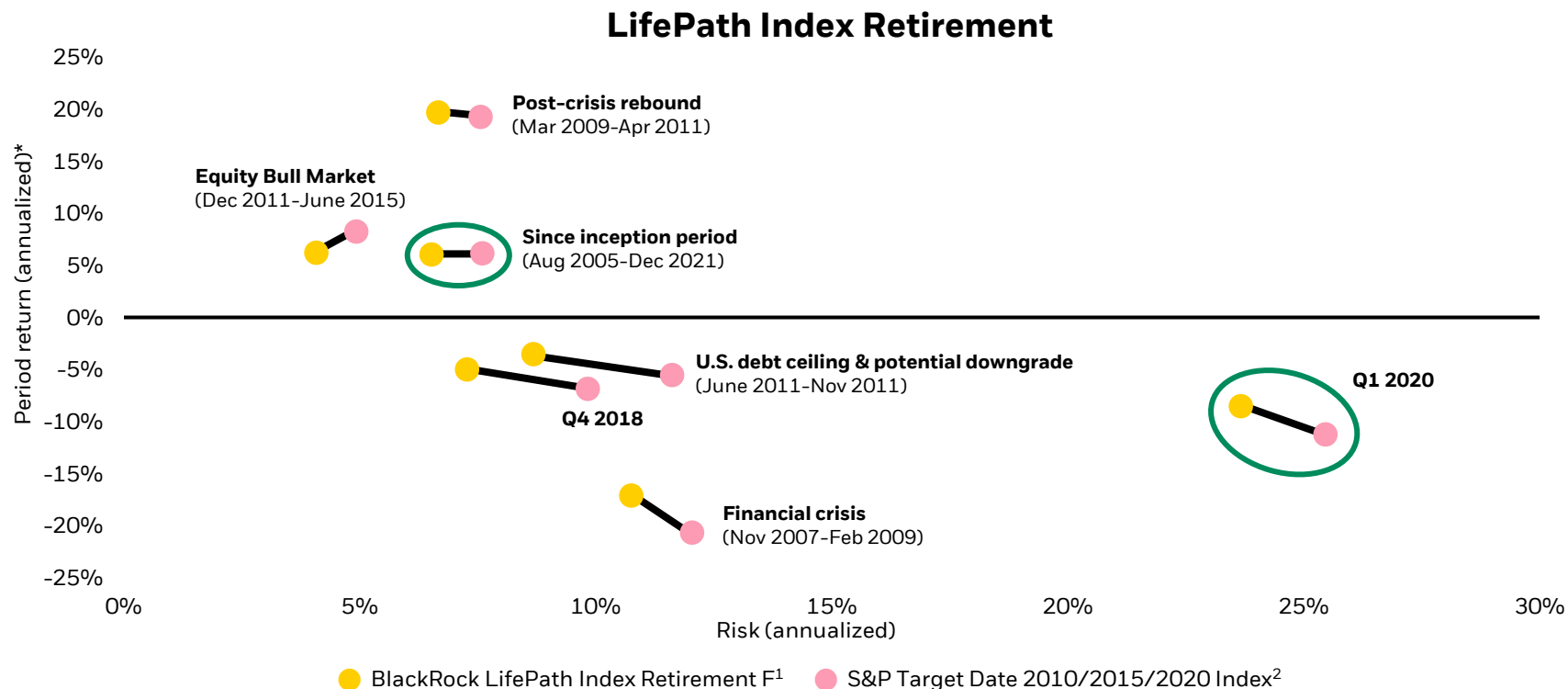
Historic returns have been in line with our expectations



LifePath outcomes have been consistent with our expectations

As of 31 December 2021. Analysis of a growth of a dollar in the LifePath Index Retirement, 2030, and 2050 Fund F for the period since 2011. **Past performance is no guarantee of future results.** Benchmark Expected Values are based on statistical analysis of historical data and may change over time. Benchmark expected value is calculated based on the expected return of each asset class in the custom benchmark. Custom benchmark performance returns do not reflect any management fees, transactions costs, or expenses. Custom benchmarks are unmanaged and one cannot invest directly in custom benchmarks for the vintage shown compounded over time. Returns might not always fall within secondary bounds. Please see the slide titled "Important Information" in the Appendix for additional disclosures.

LifePath has delivered less risk since inception with comparable returns



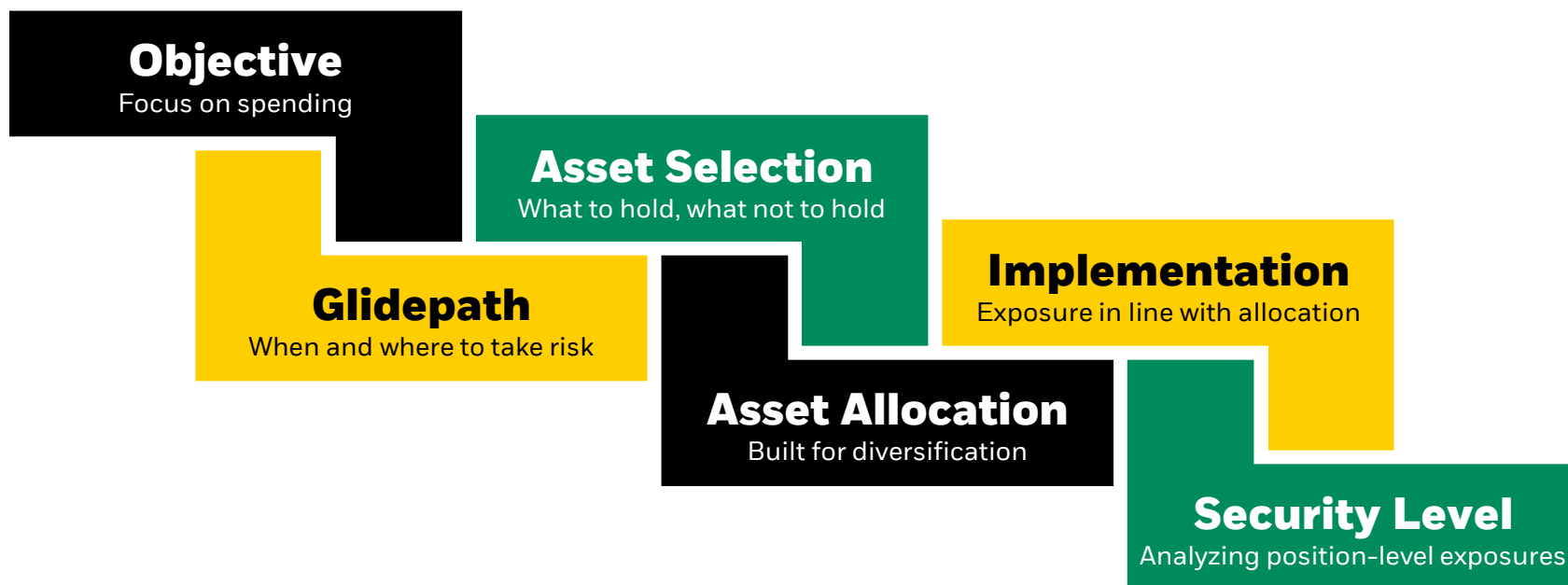
Source: Morningstar Direct, as of 31 December 2021. *Returns of less than one year are unannualized. Monthly data is used except periods less than 12 months, which use weekly data.

¹The BlackRock LifePath Index Fund F's returns are unaudited, annualized, and assume reinvestment of dividends. Although the BlackRock LifePath Index Fund F's net asset value does include an accrual for fund level administrative costs, it does not include an accrual for the investment management fee. Effective 1/1/2017, the fund level administrative costs are capped at 1 basis point (0.01%) per year. If the Fund's net asset value did include an accrual for the investment management fee, the Fund's returns would be lower. BlackRock LifePath Index Fund F is a bank maintained and managed collective trust fund. ²Index performance returns do not reflect any management fees, transaction costs or expenses. S&P Target Date 2010 Index monthly returns are used prior to 30 June 2012, S&P Target Date 2015 Index monthly returns are used between 1 July 2012 and 30 June 2017, and S&P Target Date 2020 Index monthly returns are used after 30 June 2017 for comparison.

Past performance is no guarantee of future results. Indexes are unmanaged and one cannot invest directly in an index.

VII. LifePath® in Down Markets

LifePath is deliberately designed for the long-term

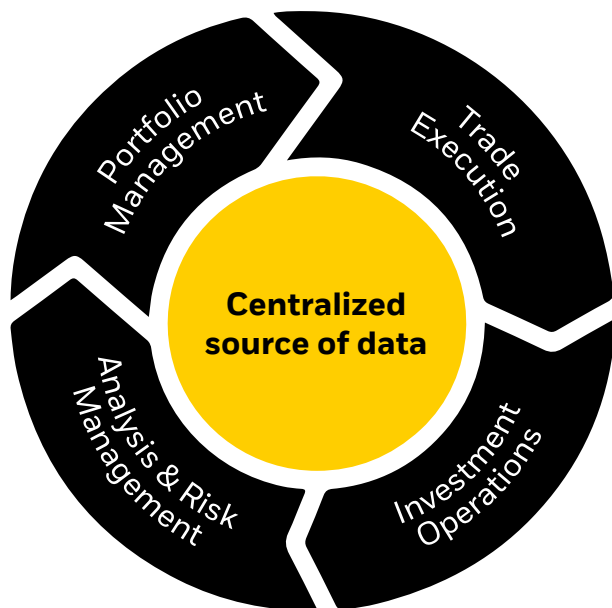


For illustrative purposes only.

Aladdin provides clarity into the whole portfolio

- Aladdin®, created in 1990, is BlackRock's proprietary investment and risk management platform
- Portfolio Managers and BlackRock's independent Risk & Quantitative Analysis ("RQA") team use Aladdin to manage and oversee the portfolio from both a top-down and bottom-up risk perspective

What Aladdin is:

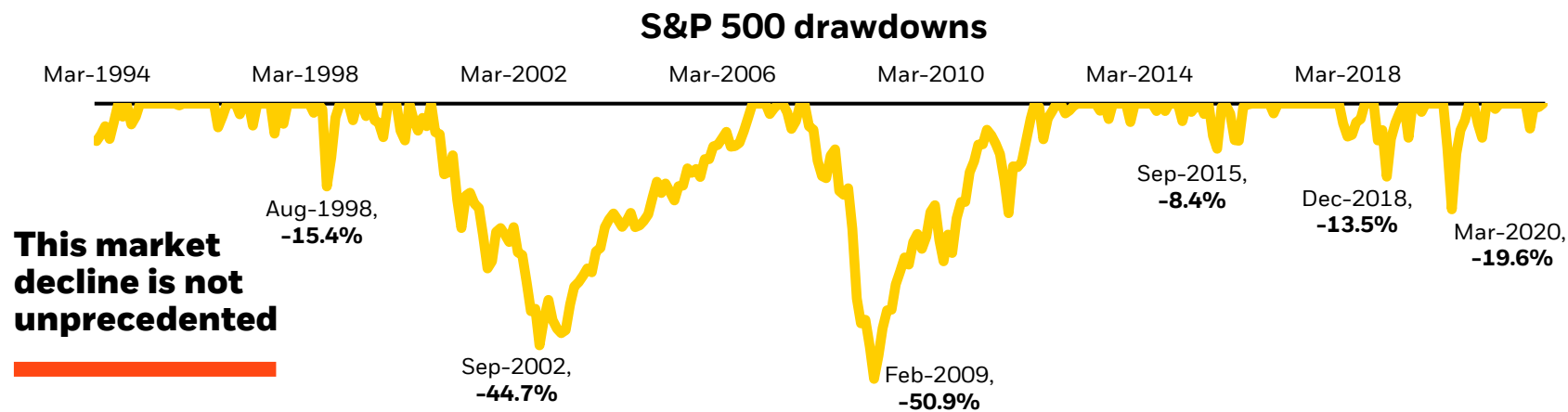


Aladdin allows us to analyze:

- ✓ Glidepath and strategic asset allocation
- ✓ Aggregate and position-level exposures
- ✓ Risk and return expectations
- ✓ Changes over time
- ✓ Impact of scenario analyses and stress tests

For illustrative purposes only.

LifePath has seen volatile markets in its 27-year history



Our diversification has helped retirees

LifePath Benchmark Performance in equity market drawdowns

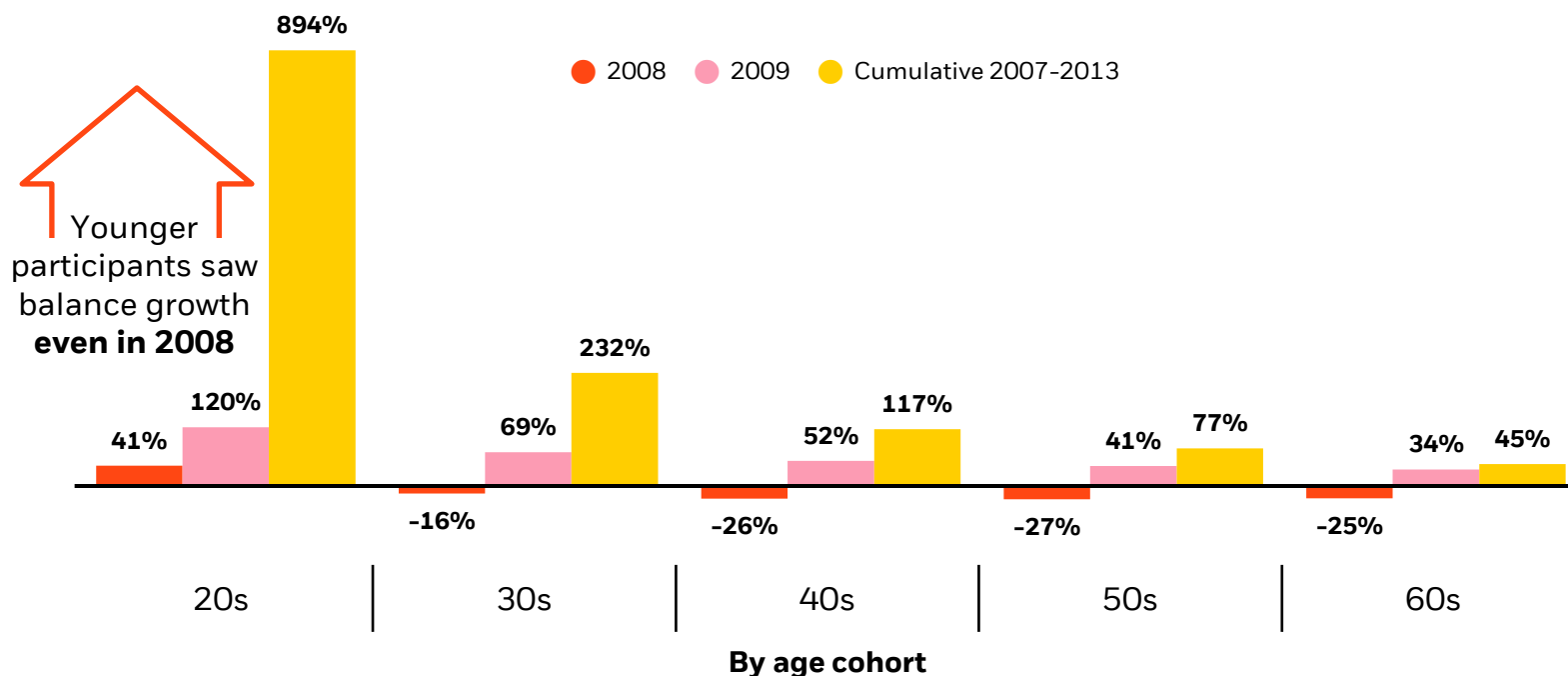
Period		LifePath Benchmark	S&P Target Date Index	S&P Target Date Through Index
Long-Term Capital Management*	Aug 1998	-2.1%	-	-
Tech Bubble*	Sep 2002	-5.2%	-	-
Financial Crisis	Feb 2009	-21.9%	-26.6%	-28.8%
Emerging Markets Volatility	Sep 2015	-4.6%	-5.2%	-5.7%
2018 Fed Tightening	Dec 2018	-5.2%	-6.6%	-7.7%
Coronavirus Pandemic	Mar 2020	-8.5%	-10.7%	-12.6%

*For additional context: the landing point for the retirement vintage has changed over time, and was 20% from 1994 to 2002, compared to the current landing point of 40%. This evolution, which has been driven by changes to our model inputs such as capital market assumptions, income data, and inflation sensitivity, has driven the shallower drawdowns in 1998 and 2002.

Source: BlackRock, Morningstar as of 31 December 2021. **Performance data quoted represents past performance and does not guarantee future results.** Drawdowns calculated using monthly returns. Drawdown periods represent the trough of each drawdown. S&P 500 represented by the S&P 500 Total Return Index. LifePath Benchmark represented by the LifePath Dynamic Retirement vintage mutual fund custom benchmark, which dates back to 1994. The LifePath Dynamic retirement vintage mutual fund custom benchmark mirrored the LifePath Index Retirement vintage custom benchmark until 2018, when commodities were removed from the LifePath Dynamic Retirement vintage mutual fund custom benchmark. S&P Target Date Index and S&P Target Date Through Index represented by the S&P Target Date 2010 Index and S&P Target Date Through 2010 Index prior to 30 June 2012, S&P Target Date 2015 Index and S&P Target Date Through 2015 Index between 1 July 2012 and 30 June 2017, and S&P Target Date 2020 Index and S&P Target Date Through 2020 Index after 30 June 2017 for comparison. Index performance returns do not reflect any management fees, transaction costs, or expenses. Returns include reinvestment of dividends and capital gains. Index performance is shown for illustrative purposes only. It is not possible to invest directly in an index.

Contributions drive balances for younger participants...

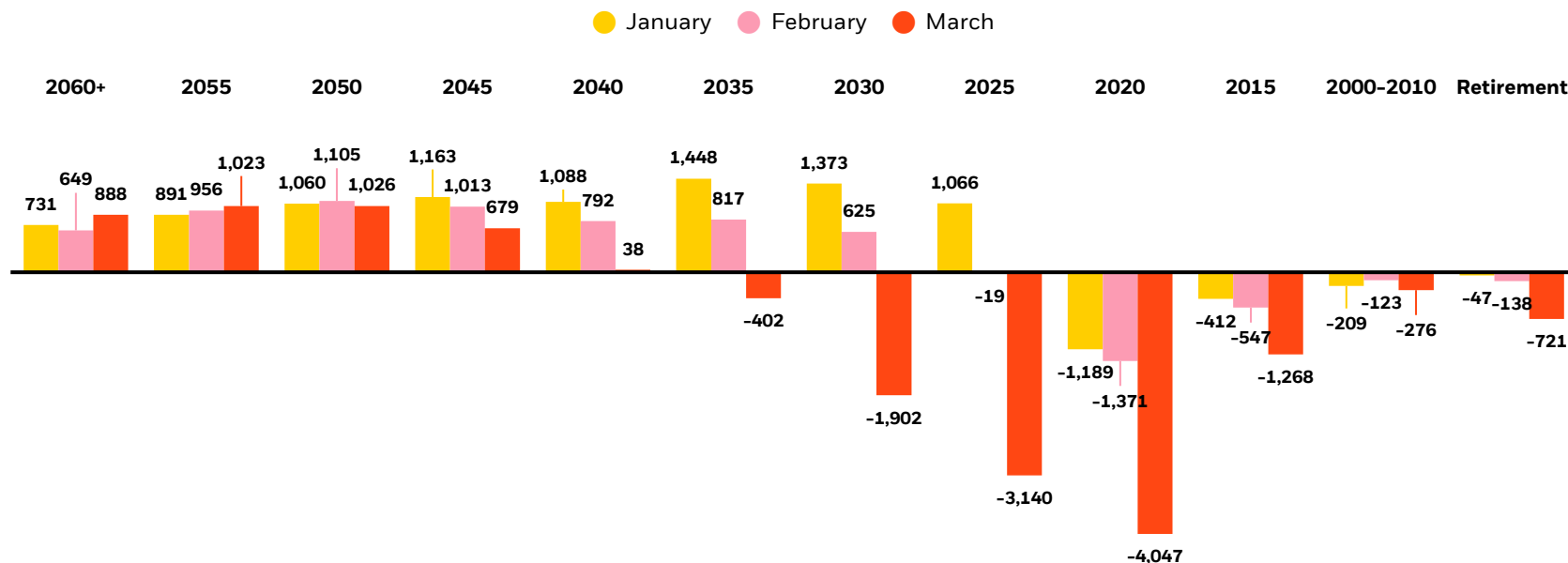
**% Change in average account balances
among consistent 401k participants (2007-2013)**



Source: EBRI Issue Brief, Sept 2015, No 418; What Does Consistent Participation in 401(k) Plans Generate? Changes in 401(k) Account Balances, 2007-2013. The full text can be accessed online [here](#). The analysis is based on a sample of 4.2 million 401(k) plan participants with account balances at the end of each year from 2007 through 2013. This represents a longitudinal sample, removing the effect of participants and plans entering and leaving the database. Data points represent the percent change in average 401(k) balance across participants of all tenure levels of each age group for the time periods outlined above. The 2007-2013 time period was selected for analysis due to its relevance in illustrating the impact of volatility on account balances across age cohorts both in a market decline and subsequent rally. Age and tenure groups are based on participant age and tenure at year-end 2007.

Younger participants tend to stay the course through volatile periods

Monthly target date net flows¹



Longer-dated vintages

Continued to see inflows throughout the first quarter in 2020.

Shorter-dated vintages

Started to sell as the market volatility deepened, likely locking in losses

¹ 2020 Target-Date Strategy Landscape, Morningstar, May 2020.

This doesn't hold, however, for participants nearing retirement

	Illustrative Younger Worker	Illustrative Near-Retiree
Age	22	60
Portfolio Balance	\$1,000	\$500,000
Impact of a 25% loss	-\$250	-\$125,000
Next Monthly Contribution	\$300	\$637
Balance in Subsequent Month	\$1,050	\$375,637
Net Gain / Loss	\$50	(\$124,363)

Higher allocations to equity can be devastating in a drawdown for near-retirees

Contributions
essentially erase loss



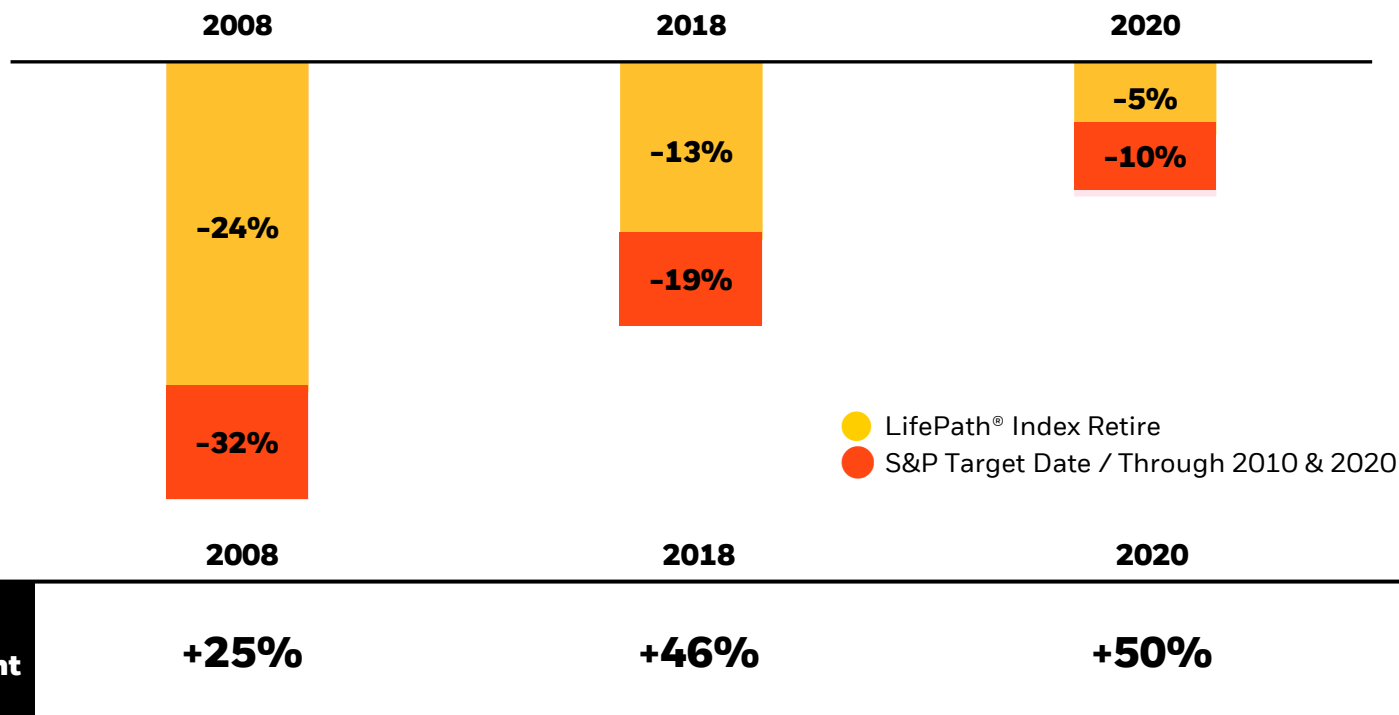
Losses are
impactful



For illustrative purposes only.

LifePath has delivered shallower drawdowns than “through” peers

2008, 2018, 2020 Drawdown case study



Source: BlackRock, S&P Dow Jones Indices LLC, Morningstar Direct. Data as of 31 December 2020.

Represents growth of \$100 invested in either the BlackRock LifePath Index Retire F or the S&P Target Date Through 2010, & 2020 TR Index over the respective time periods shown above. The BlackRock LifePath Index Fund F's returns are unaudited, unannualized, and assume reinvestment of dividends. Although the BlackRock LifePath Index Fund F's net asset value does include an accrual for fund level administrative costs, it does not include an accrual for the investment management fee. Effective 1/1/2017, the fund level administrative costs are capped at 1 basis point (0.01%) per year. If the Fund's net asset value did include an accrual for the investment management fee, the Fund's returns would be lower. BlackRock LifePath Index Fund F is a bank maintained and managed collective trust fund. Index performance returns do not reflect any management fees, transaction costs or expenses. Indexes are unmanaged and one cannot invest directly in an index. **Past performance is no guarantee of future results.**

Appendix

Lending fund underlying building blocks and holdings by vintage

Asset class	Fund name	Benchmark	Retire	2025	2030	2035	2040	2045	2050	2055	2060	2065
● U.S. Large / Mid Cap Equities	BlackRock Russell 1000 [®] Index Fund	Russell 1000 [®] Index	21.19%	26.29%	33.21%	39.76%	45.89%	50.59%	53.39%	54.05%	54.05%	54.05%
● U.S. Small Cap Equities	BlackRock Russell 2000 [®] Index Fund	Russell 2000 [®] Index	3.51%	2.99%	2.32%	1.67%	1.15%	1.06%	0.98%	0.92%	0.99%	0.93%
● International Equities	BlackRock MSCI ACWI ex-U.S. IMI Index Fund	MSCI ACWI ex-US IMI Index SM	12.83%	16.70%	22.12%	27.29%	32.02%	36.04%	38.43%	39.01%	39.02%	39.11%
● Global Developed Real Estate	BlackRock Developed Real Estate Index Fund	FTSE EPRA / NAREIT Developed Real Estate Index	1.65%	2.26%	2.95%	3.57%	4.22%	4.62%	4.92%	4.98%	4.91%	4.92%
● Commodities	BlackRock Bloomberg Commodity Index Fund	Bloomberg Commodity Index SM	1.54%	1.42%	1.21%	0.90%	0.57%	0.29%	0.10%	0.05%	0.03%	0.00%
● U.S. Inflation-Linked Bonds	BlackRock US TIPS Index Fund	Bloomberg U.S. TIPS Index	5.79%	5.32%	4.42%	3.48%	2.25%	1.23%	0.35%	0.16%	0.10%	0.00%
● U.S. Bonds	BlackRock US Debt Index Fund	Bloomberg U.S. Aggregate Bond Index	53.48%	45.01%	33.78%	23.34%	13.90%	6.17%	1.83%	0.84%	0.90%	1.00%
● Money Market	BlackRock Short-Term Investment Fund	Citigroup 3-Month Treasury Bill Index	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total	-	-	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Source: BlackRock as of 31 December 2021. Allocations represent actual portfolio holdings.

BlackRock seeks better participant outcomes via research and innovation

Asset Allocation Research

Real Assets

Build upon inflation research to optimize real asset exposure to improve ability to provide returns and hedge inflation risk

Home Country Bias

Create ability to be more dynamic in regional equity exposures by utilizing the lifecycle model and/or research related to consumption, inflation, and growth dynamics by country

Lifecycle Research

Social Security

Model how best to optimize government retirement benefits like Social Security in a participant's portfolio

Advanced Solution Methodologies

Explore model-based solution methodologies to develop new insights in Lifecycle investing – e.g., Model Predictive Control

New Developments

Lifetime Income

Establish Lifetime Income Units ("LIUs") as an asset class. Extend pricing methodologies to support multiple annuity types

Sustainability

Design and implement a proprietary approach to carbon emissions monitoring. Establish insights on how sustained carbon emissions impact portfolio risk, return, and costs

Managed Accounts

Expand implementation to incorporate personalized glidepath inputs across all financial / demographic permutations

Selected Concluded Research

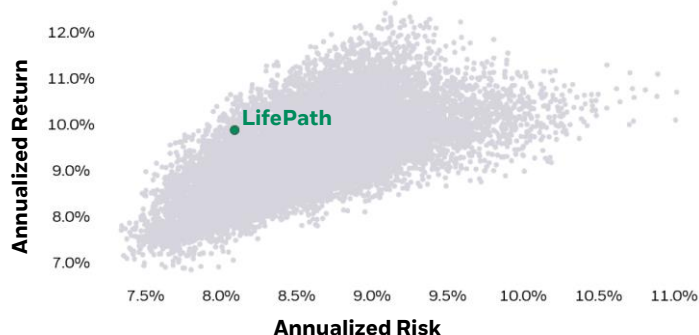
- ✓ Fixed Income Disaggregation
- ✓ Evaluation of ESG index exposures
- ✓ Incorporation of inflation factor
- ✓ Development of spending tool
- ✓ Evolved glidepath (2014)
- ✓ Inclusion of factor-based strategies
- ✓ Inclusion of Risk Parity
- ✗ Inclusion of Frontier equity markets
- ✗ Inclusion of High Yield, International Developed, and Emerging Markets debt

For illustrative purposes only.

Potential for better risk-adjusted returns

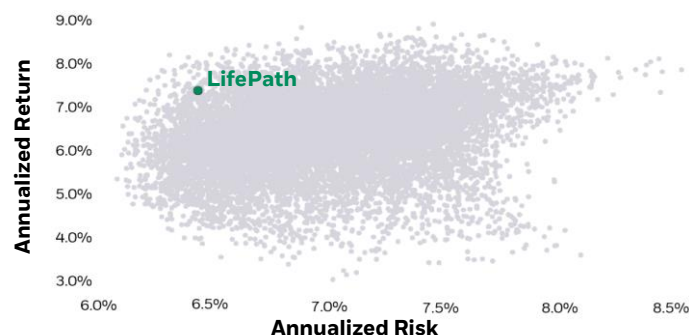
Retirement vintage 5-year risk-return cloud

LifePath outperformed 90% of similar random portfolios*



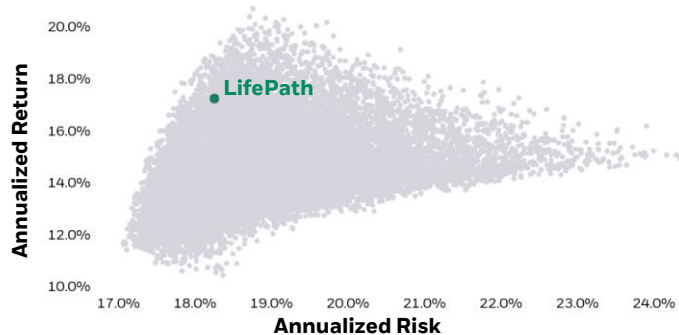
Retirement vintage 10-year risk-return cloud

LifePath outperformed 96% of similar random portfolios*



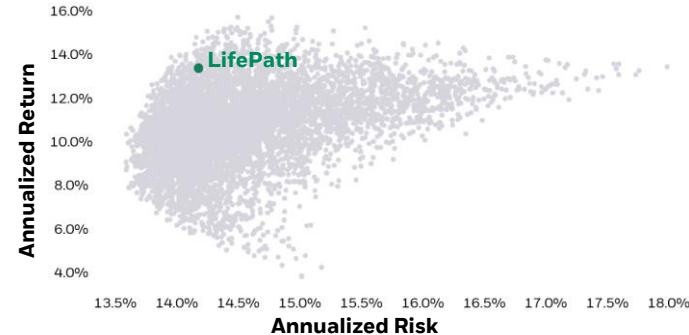
2045 vintage 5-year risk-return cloud

LifePath outperformed 97% of similar random portfolios*



2045 vintage 10-year risk-return cloud

LifePath outperformed 96% of similar random portfolios*



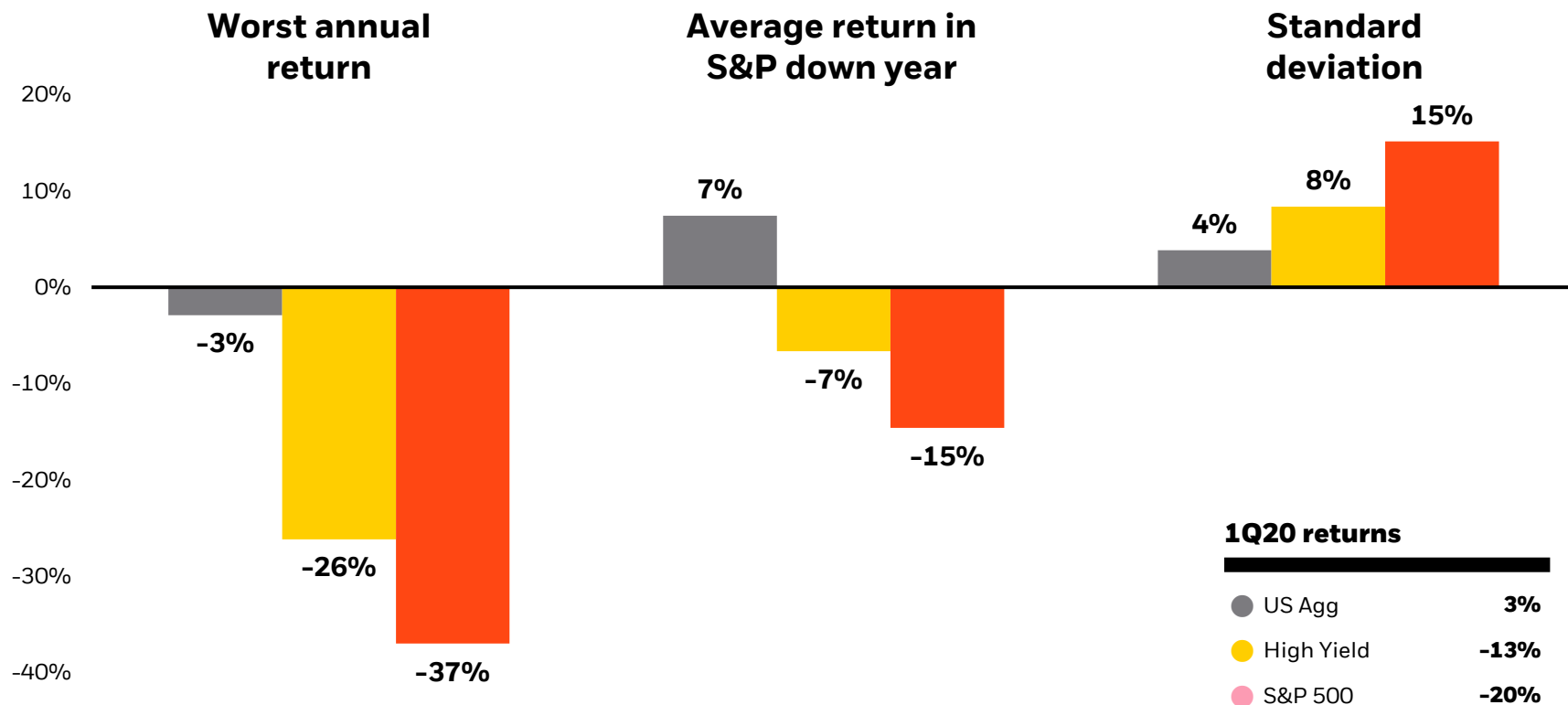
Source: BlackRock as of 31 December 2021. Analysis based on the LifePath Index Retirement CTF benchmark composite, LifePath Index 2045 CTF benchmark composite, the Bloomberg U.S. Aggregate Bond Index, Bloomberg U.S. TIPS Index, Russell 1000 Index, Russell 2000 Index, MSCI ACWI ex-US IMI Index, FTSE/EPRA NAREIT Developed Net Index, Bloomberg Commodities Index and Citigroup 3-month T-Bill Index. Random portfolios represented by 3,000,000 random portfolios generated using a random number generator combining historic benchmark returns to create an illustrative universe of possible portfolios. Similar Portfolios included above represent those with an equity allocation +/- 1% that of the LifePath Index Retirement CTF and LifePath Index 2045 CTF composite benchmark allocations. These portfolios are not representative of any product. Indexes are unmanaged, are used for illustrative purposes only and are not intended to be indicative of any fund's performance. It is not possible to invest directly in an index.

*We judge LifePath to have outperformed portfolios where LifePath would offer a higher utility. To calculate iso-utility curves, we use the following equation: $U = E(R) - \frac{1}{2} A \cdot \text{Variance}$. We take the historical returns and risk for LifePath portfolio to calculate $U(LP)$ while assuming A (risk aversion) = 1.0. The curve is then plotted using $U(LP)$ & $A = 1.0$ while varying variance. Please refer to the slide titled "Important Information" in the Appendix for additional information.

Appendix

Fixed Income

Offset equity risk: High yield bonds have not fared well in volatile markets



Source: Morningstar as of 31 December 2021. Returns represent annual returns for the S&P 500 TR USD Index ("S&P 500") and the Bloomberg US Aggregate Bond TR USD Index ("US Agg"), and the Bloomberg US Corporate High Yield Index ("High Yield") since earliest common data for all three indices. Standard deviation represents annualized monthly return figures since earliest common inception on 1 January 1986. Past performance is not indicative of future results.

Appendix

Growth for young participants

Historically, younger participants have benefited from a higher equity allocation

Balance of a 99/1 portfolio vs 90/10 after 15 years



Average 99/1 underperformance

-\$1,396 or **-0.4 years** of contributions²

Average 99/1 outperformance

+\$8,628 or **+2.4 years** of contributions²

Source: Morningstar Direct historical returns, BlackRock as of 31 December 2021. Represents difference between account balances after 15 years of individuals invested in either in a "99/1" portfolio comprised of 99% US Equity and 1% US Fixed Income or a "90/10" portfolio comprised of 90% US Equity and 10% US Fixed Income. US Equity is represented by the S&P 500 TR USD Index since inception on 1 March 1936. US Fixed Income is represented by the IA SBBI IT Govt Index prior to 1 January 1976 and by the Bloomberg US Aggregate Bond Index after 1 January 1976. Contributions assume a \$60,000 salary and 6% contribution rate, with monthly contributions. Monthly data is used since biweekly data is unavailable prior to 1988. Chart includes data for all 850 data points representing every end of 15 year periods beginning 31 March 1951 and ending 31 December 2021, a period covering nearly 70 years, and is sorted from smallest to largest.

1 Across 690 of the 850 (81.2%) available 15 year periods, the "99/1" portfolio led to a higher account balance after 15 years than the "90/10" portfolio. **2** Based on \$3,600 of contributions per year, or 6% of \$60,000

Important information

The below chart highlights the time periods utilized for the analysis on the slide titled “Contributions drive balances for younger participants...”.

Input									
Vintage	2045	2040	2035	2030	2025	2020	2015	2010	Retirement
Age in 2008/2009	25 / 26	30 / 31	35 / 36	40 / 41	45 / 46	50 / 51	55 / 56	60 / 61	65
Income in 2008/2009	\$36,341 / \$38,799	\$48,573 / \$50,903	\$59,266 / \$61,048	\$66,620 / \$67,586	\$69,601 / \$69,635	\$67,935 / \$67,074	\$62,111 / \$60,544	\$53,379 / \$51,447	-
Account balance in 2008	\$5,135	\$25,147	\$45,444	\$122,903	\$166,953	\$237,825	\$237,825	\$287,533	\$287,533

The below chart highlights the time periods utilized for the analysis on the slide titled “LifePath has delivered less risk since inception with comparable returns”.

Global Financial Crisis	Post-Crisis Rebound	US Debt Ceiling	Equity Bull Market	High Volatility	Q4 2018	Q1 2020	Since Inception Period
Nov 2007 – Feb 2009	Mar 2009 – Apr 2011	May 2011 – Nov 2011	Dec 2011 – Jun 2015	Jul 2015 – Feb 2016	Oct 2018 – Dec 2018	Jan 2020 – Mar 2020	Aug 2005 – Dec 2021

The S&P Target Date Index Series is designed to track the performance of a diversified array of financial assets and the investment opportunity generally available in target date funds. The S&P Target Date Index Series comprises multi-asset class indices, each corresponding to a particular target retirement date. The asset allocation for each index in the series is determined once a year through survey of large fund management companies that offer target date products. Each index is fully investable, with varying levels of exposure to equities, fixed income and commodities. For further information please consult the S&P Target Date methodologies at:

<https://us.spindices.com/documents/methodologies/methodology-sp-target-date.pdf>. Copyright © 2019 S&P Dow Jones Indices LLC, a division of S&P Global. All rights reserved.

Custom Benchmark Components: LifePath Index Lending and Non-Lending: The LifePath Retirement, 2025, 2030, 2035, 2040, 2045, 2050, 2055, 2060, and 2065 custom benchmarks are hypothetical representations of the performance of the LifePath Retirement, 2025, 2030, 2035, 2040, 2045, 2050, 2055, 2060, and 2065 asset classes according to their respective weighting as of the most recent quarter end. The weightings of the various indices included in the LifePath Retirement, 2025, 2030, 2035, 2040, 2045, 2050, 2055, 2060, and 2065 custom benchmarks are adjusted quarterly to reflect the funds’ changing asset allocations over time. The following indices are used to calculate the LifePath Retirement, 2025, 2030, 2035, 2040, 2045, 2050, 2055, 2060, and 2065 custom benchmarks: Russell 1000® Index, Russell 2000® Index (prior to 4/1/2017, S&P 500® Index, DJ US Completion Total Stock Market IndexSM was used), MSCI® ACWI ex-US IMI Index (prior to 4/1/2008, the MSCI® ACWI ex-US Index was used, and prior to 6/30/2007, The MSCI EAFE® Index was used), Bloomberg U.S. Aggregate Bond Index, Bloomberg U.S. Treasury TIPS Index, FTSE EPRA/NAREIT Developed Real Estate Index (prior to 4/1/2008 the MSCI U.S. REIT Index was used), Bloomberg Commodity Index and the Citigroup 3 Month T-Bill Index. On September 30, 2003, the LifePath Retirement, 2020, 2030, and 2040 funds were restructured to fund-of-fund. Prior to that date, the LifePath Retirement, 2020, 2030, and 2040 funds held portfolio securities directly. The LifePath Retirement, 2025, 2030, 2035, 2040, 2045, 2050, 2055, 2060, and 2065 custom benchmarks returns are for illustrative purposes only and do not represent actual fund performance. Custom benchmark performance returns do not reflect any management fees, transaction costs or expenses. Custom benchmarks are unmanaged and one cannot invest directly in the custom benchmarks.

Important information

IMPORTANT: The projections or other information generated by the LifePath Spending Tool regarding the likelihood of various investment outcomes are hypothetical in nature, do not reflect actual investment results and are not guarantees of future results. Spending rate estimates are for education purposes only and should not be considered individualized investment advice. Any information contained in or generated by the tool should not be construed as or relied upon as investment advice, research or a recommendation by BlackRock regarding the use or suitability of any particular asset allocation or investment strategy. The tool does not guarantee future income or protect against loss of principal. There can be no assurance that an investment strategy based on the tool will be successful.

Past performance does not guarantee future results. Investment return and principal value of an investment will fluctuate so that an investor's shares, when redeemed, may be worth more or less than the original cost. Index returns are for illustrative purposes only and do not represent actual Fund performance. Index performance returns do not reflect any management fees, transaction costs or expenses. Indexes are unmanaged and one cannot invest directly in an index. Collective fund performance assumes reinvestment of income and does not reflect management fees and certain transaction costs and expenses charged to the fund. Actual results may differ depending on the size of the account, investment restrictions, when the account is opened, and other factors. Risk controls, asset allocation models, and proprietary technology do not promise any level of performance or guarantee against loss of principal.

The LifePath products are covered by US patent 8,645,254. Other patents pending.

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The Analyst Rating scale is Gold, Silver, Bronze, Neutral, and Negative. For active funds, a Morningstar Analyst Rating of Gold, Silver, or Bronze reflects the Manager Research Group's expectation that an active fund will be able to deliver positive alpha net of fees relative to the standard benchmark index assigned to the Morningstar category. The level of the rating relates to the level of expected positive net alpha relative to Morningstar category peers for active funds. For certain peer groups where standard benchmarking is not applicable, primarily peer groups of funds using alternative investment strategies, a Morningstar Analyst Rating of Gold, Silver, or Bronze reflects the Manager Research Group's expectation that a fund will deliver a weighted pillar score above a predetermined threshold within its peer group. Analyst Ratings ultimately reflect the Manager Research Group's overall assessment, are overseen by an Analyst Rating Committee, and are continuously monitored and reevaluated at least every 14 months. For more detailed information about Morningstar's Analyst Rating, including its methodology, please go to <https://shareholders.morningstar.com/investor-relations/governance/Compliance--Disclosure/default.aspx>. **The Morningstar Analyst Rating (i) should not be used as the sole basis in evaluating a fund, (ii) involves unknown risks and uncertainties which may cause the Manager Research Group's expectations not to occur or to differ significantly from what they expected, and (iii) should not be considered an offer or solicitation to buy or sell the fund.**

Blackrock.com sites linked in this presentation are valid and representative of the desired content as of December 2021. Please accept our apologies if in the future, a link is no longer valid.

Important information

The following steps outline the methodology used to create the analysis on the slide titled “Historic returns have been in line with our expectations”. Definition of terms:

Realized Value: realized value of an investment portfolio across time

Benchmark Expected Value: expected value of a benchmark portfolio across time

Standard deviation bounds: statistical measure to quantify the expected variation or dispersion from the average (mean) or expected value. Assuming that investment portfolio returns follow a normal distribution, it is predicted that realized portfolio return will fall within 1 standard deviation from the expected return (mean) 68% of the times. The likelihood of the realized returns falling within 2 standard deviations from the expected return increases to 95%.

Description of methodology

The analysis compares the expected return that a manager sought to earn from a given benchmark investment portfolio vs. the realized return of that portfolio. When determining the asset allocation of a portfolio, the investment manager typically specifies the portfolio return that he or she expects to earn over the long-term, on average, given the particular mix of assets. The expected return computations used in this analysis are based on BlackRock's annual long-term capital markets assumptions constructed using a building block approach to assess asset class returns. The computation for the LifePath expected returns are updated on a regular basis to capture new market information.

Given uncertainties in the financial market, a manager will not be able to achieve the expected return (mean) at all times. In fact, the risk (or standard deviation) of the portfolio helps to determine the range of expected outcomes that are associated with that given portfolio. For example, a portfolio with an expected return of 7% and an expected risk of 4% can reasonably be expected to have a realized return stretching from 3% to 11% with a 68% likelihood (+/- 1 standard deviation from mean) and an actual return ranging from -1% to 15% 95% of times (+/- 2 standard deviations from mean). While a return of 3% is meaningfully different from a return of 11% both returns fall well within the expected range of outcomes for this portfolio.

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