

Federal Retirement Thrift Investment Board

State Street Global Advisors

February 23, 2022

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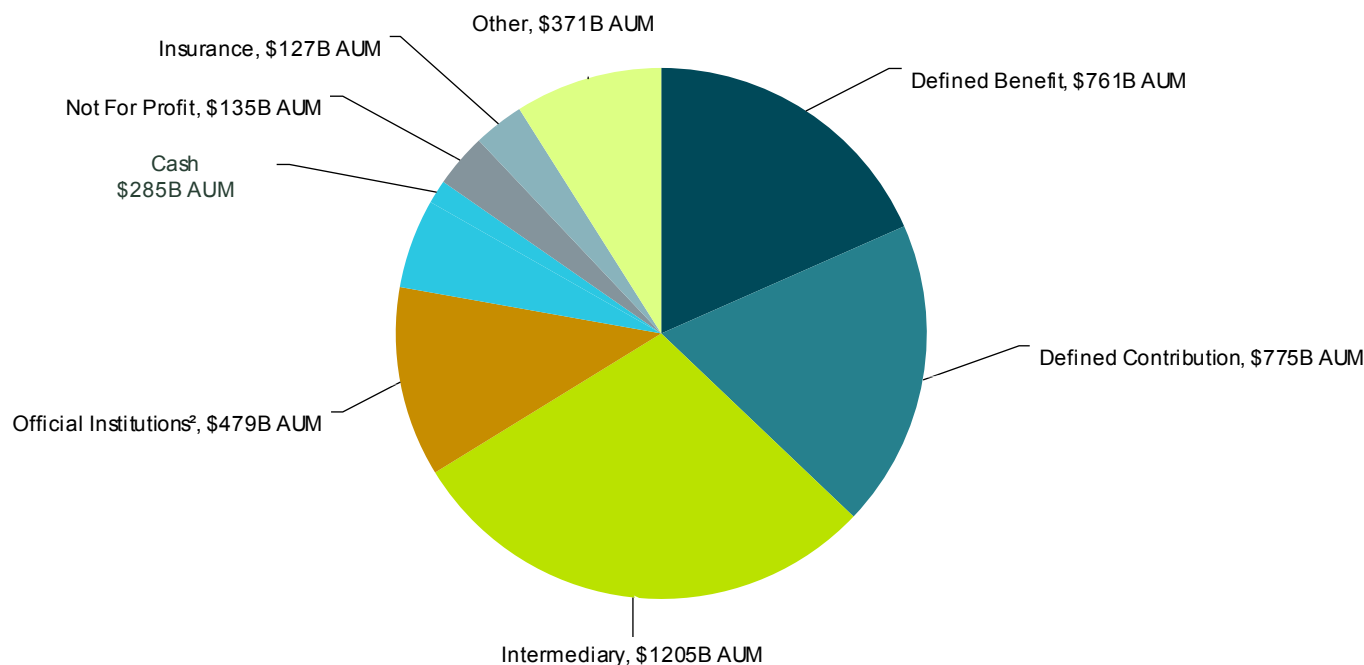
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Director of
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State Street Speakers

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US \$4.14 Trillion in Assets Under Management¹

Clients by AUM



¹This figure is presented as December 31, 2021 and includes approximately \$61.43 billion of assets with respect to SPDR products for which State Street Global Advisors Funds Distributors, LLC (SSGA FD) acts solely as the marketing agent. SSGA FD and State Street Global Advisors are affiliated.

²Official Institutions is a client type that includes all plan type assets including DB and DC.

Thrift Savings Plan and SSGA

Our Understanding

Your (Participants') Objectives

- Committed to improving participants' ability to retire with dignity and achieve their targeted retirement outcomes
- Explore and implement plan design and benefit policy enhancements.
- Drive improvements in participant retirement readiness.
- Optimize business processes for continuous improvement.

Aligning Goals

- Achieve flawless operations, help participants make smart choices, create excellent relationships with participants and make FRTIB a great place to work
- Participant focused, Operate with Integrity, Collaboration

Today's Discussion

- Firm Update
 - Global Market Outlook
-

Who We Are & Our Approach

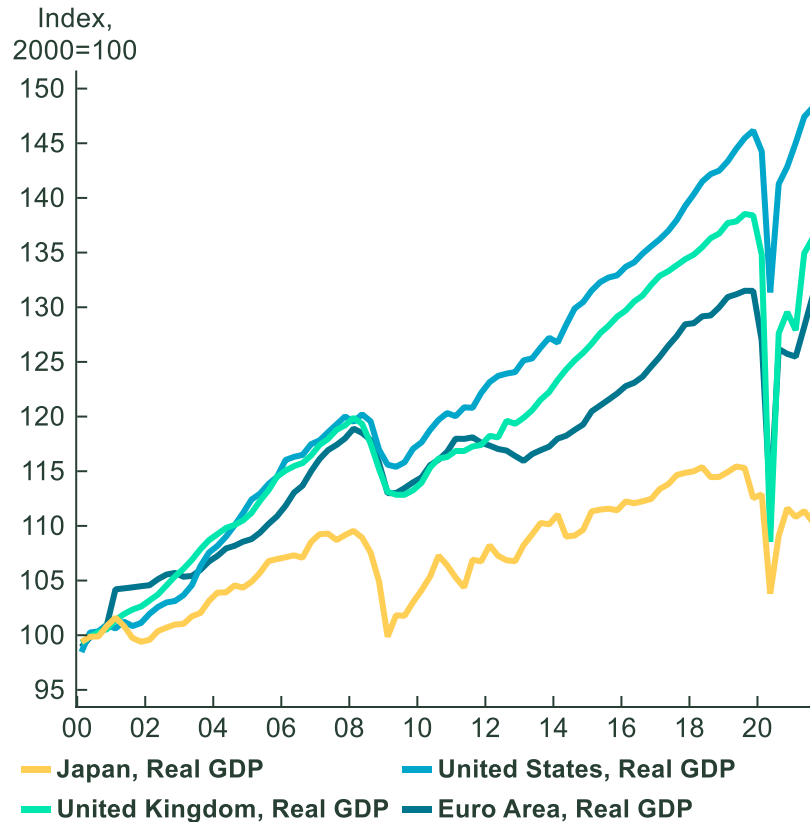
- Founded in 1978, SSGA manages over \$4 trillion in assets. SSGA employs over 2,500+ employees across 28 countries globally. Our parent company, State Street Corporation is the largest global custodian bank overseeing \$43.7 trillion assets under custody.
 - Our mission is to invest responsibly to enable economic prosperity and social progress.
 - We take a consultative approach with our clients to develop outreach strategies and communications that resonate with Participant Engagement on their journey to financial wellness.
-
- We aim to be the leading provider of asset intelligence to owners and managers of the world's capital. We accomplish this by understanding every relationship, your goals and challenges.
-

- Defined Contribution Update
 - Investment Update
-

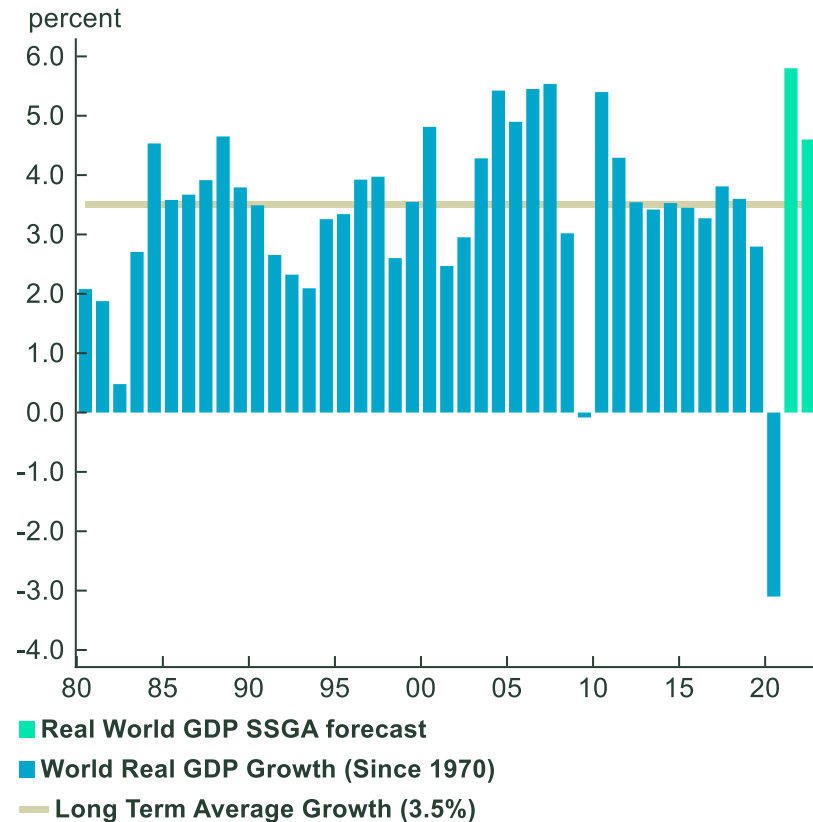
Market Review & Macroeconomic Outlook

Uneven Recovery Continues but Slows

Uneven Recovery, Part 2

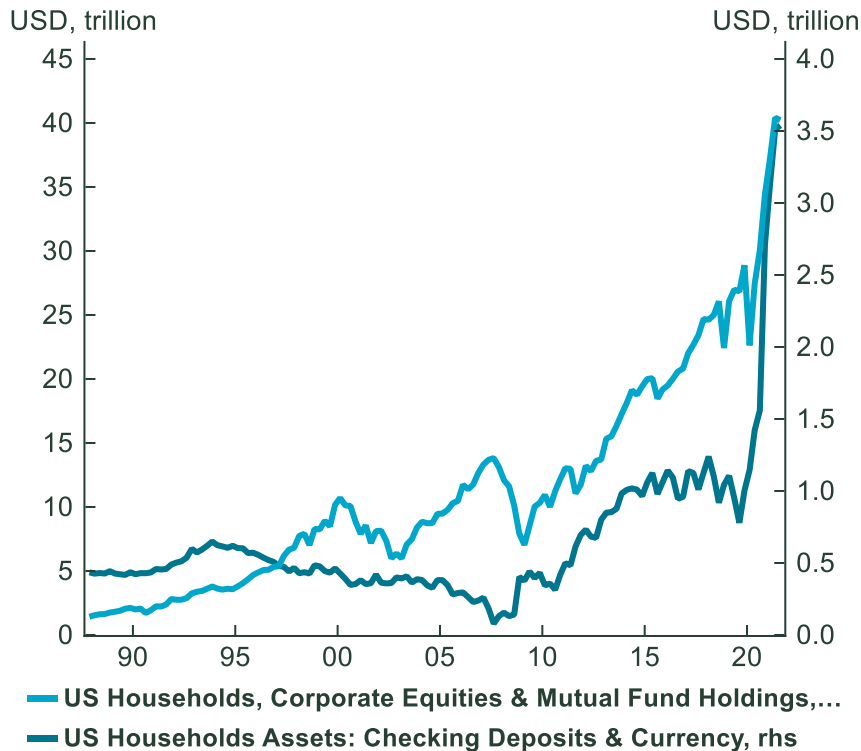


But Momentum Slows



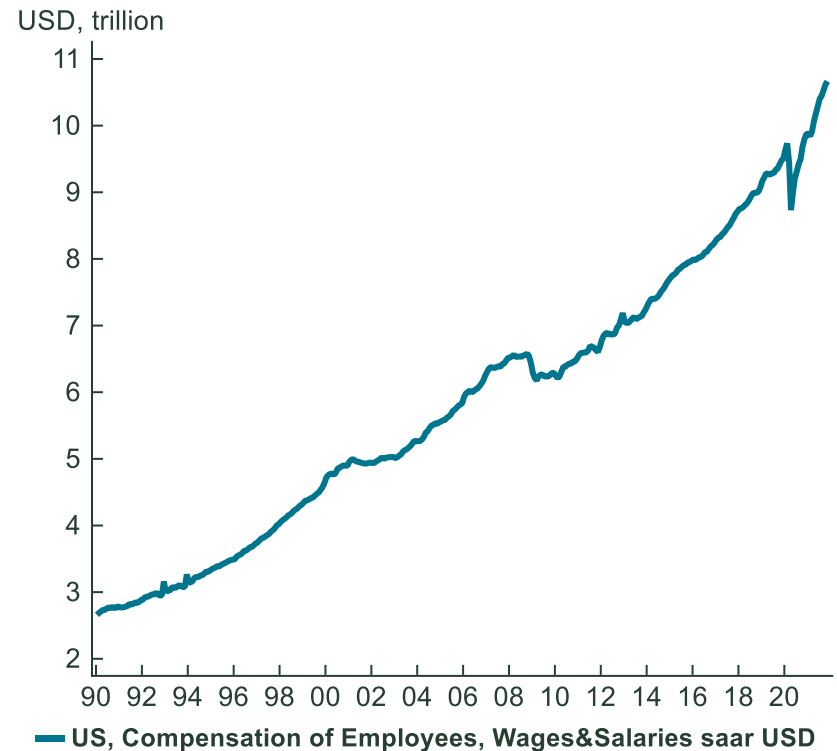
Continuity: Healthy Household Finances

US Households Are Asset Rich



Sources: Macrobond, SSGA Economics, Fed
Updated as of 1/18/2022

US Wage and Salary Income At Record

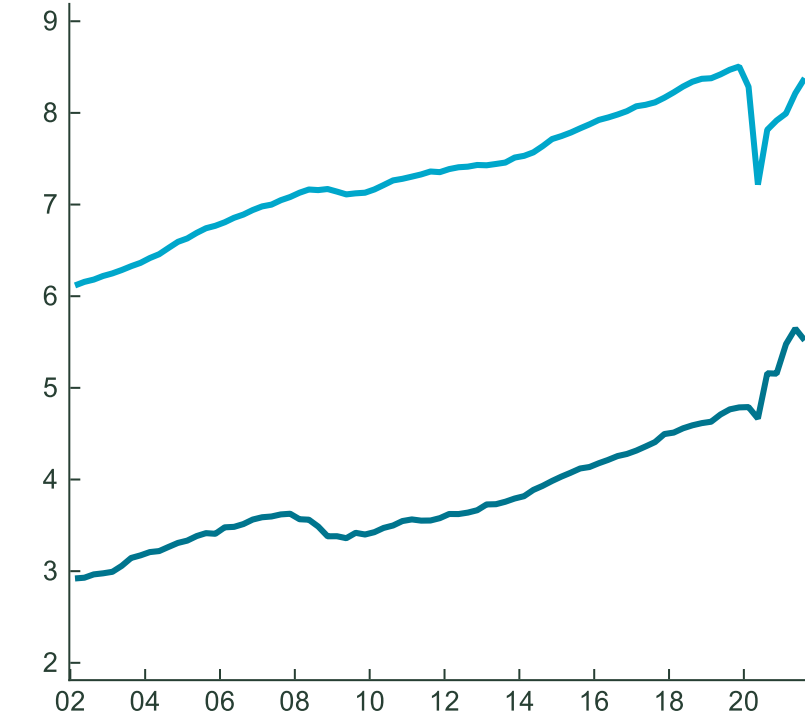


Sources: SSGA Economics, BEA, BLS
Updated as of 1/18/2022

Continuity: Skewed Consumption Patterns

Goods vs. Services

USD, trillion

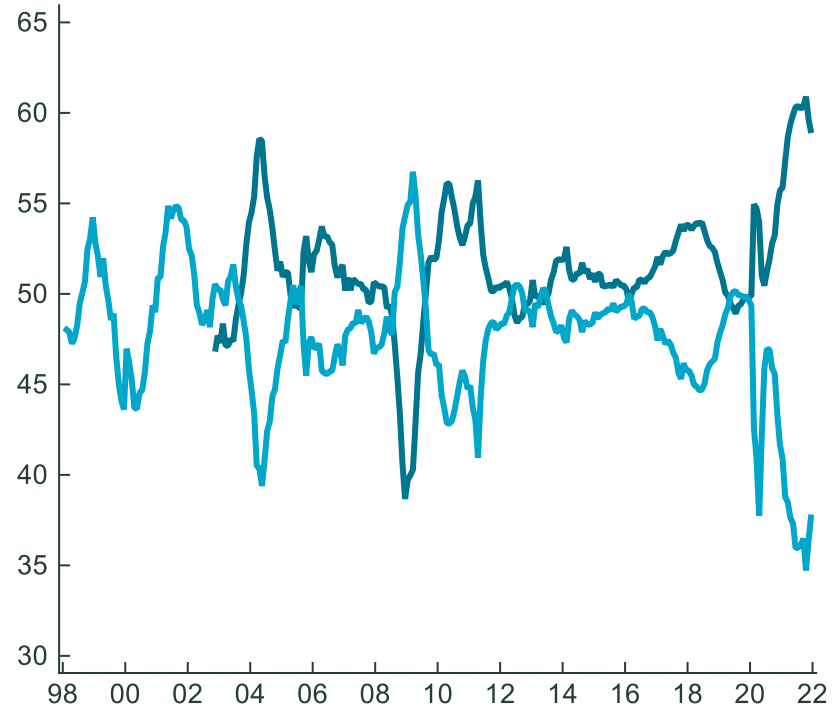


— US Real Household Consumption, Services
— US Real Household Consumption, Goods

Sources: SSGA Economics, BEA
Updated as of 1/18/2022

Unprecedented Stress

Index

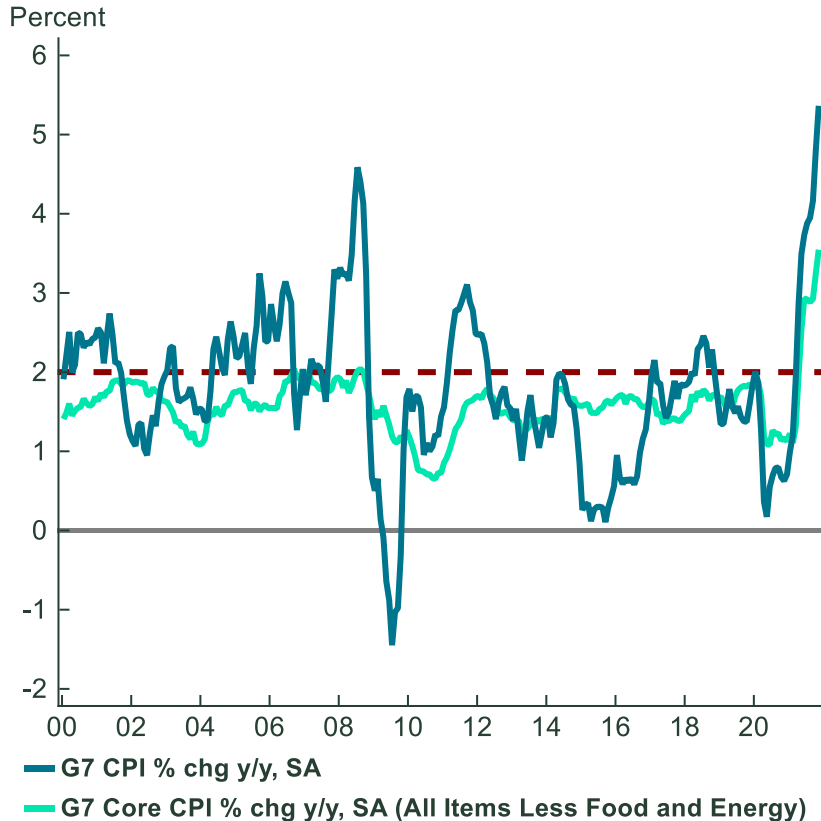


— World, Manufacturing PMI Suppliers' Delivery Times
— World, Manufacturing PMI Capacity Utilisation

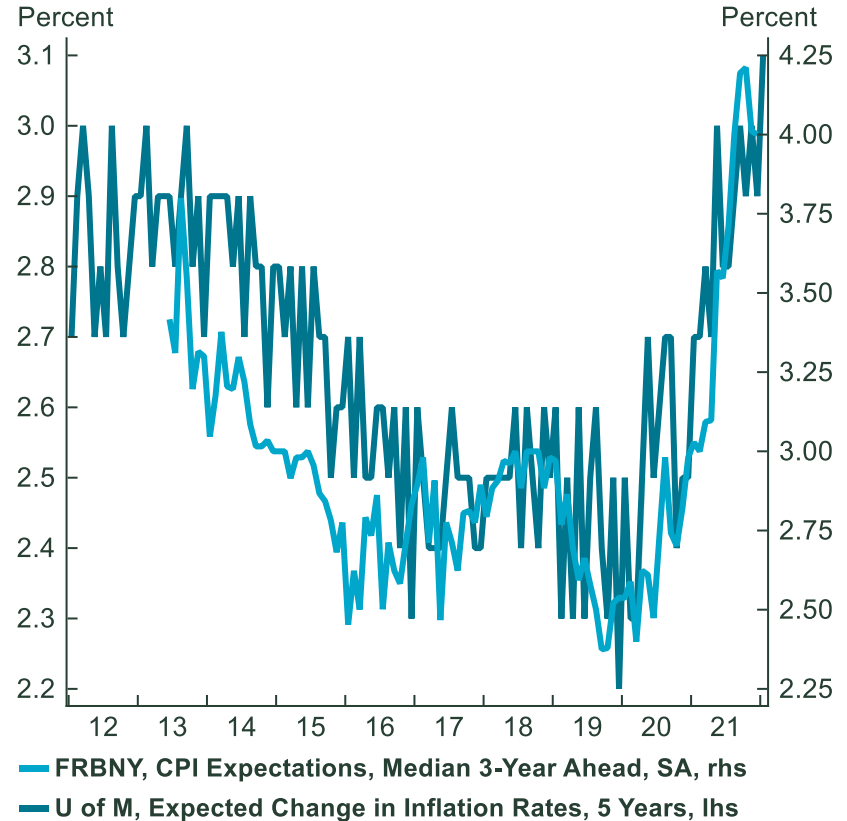
Sources: SSGA Economics, IHS Markit
Updated as of 1/18/2022

Continuity: Elevated Inflation

Cyclical Spike Or More?

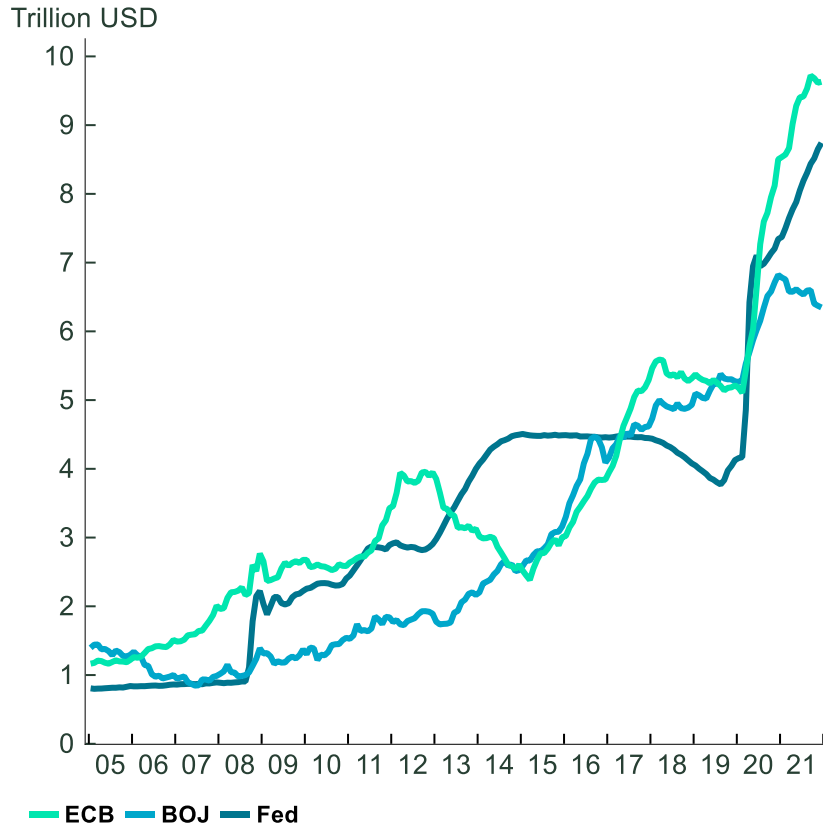


Inflation Expectations



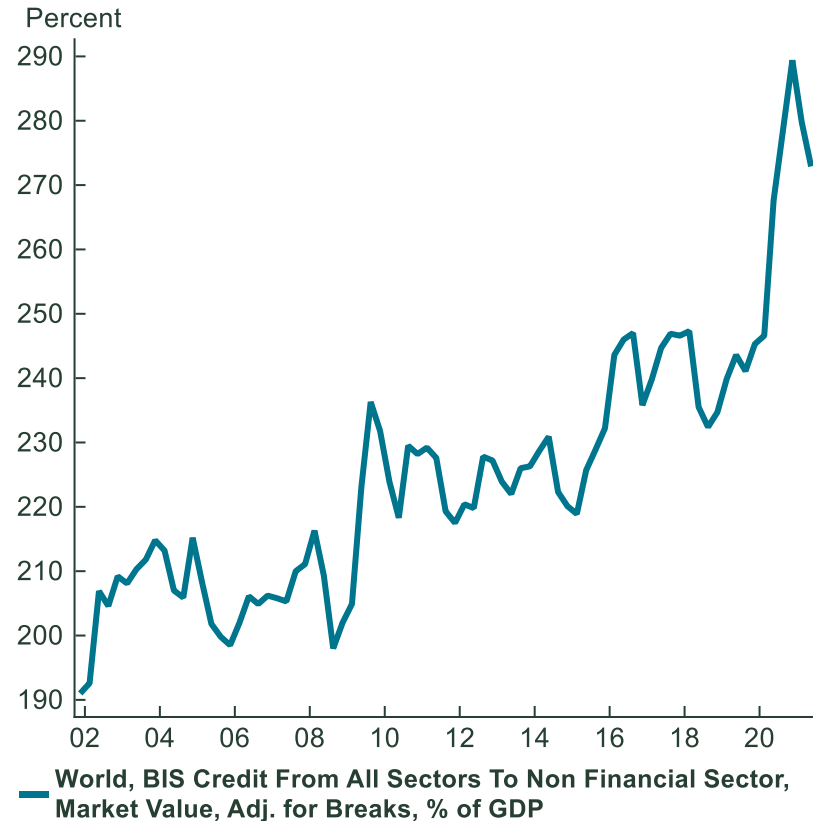
The BIG Change: Policy Backdrop Shifts

"Big-3" Balance Sheets



Sources: SSGA Economics, Federal Reserve, Bank of Japan (BOJ), ECB
Updated as of 1/18/2022

The Debt Surge



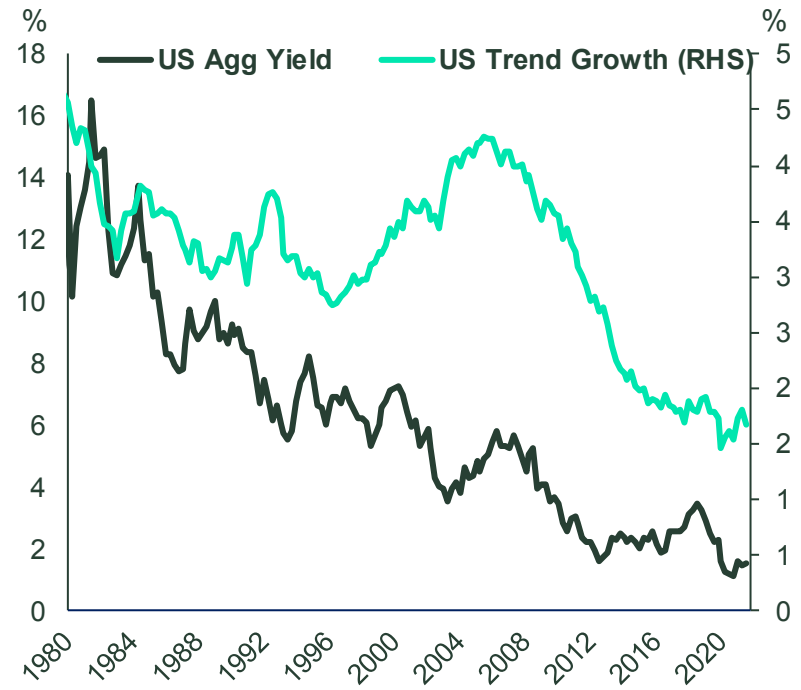
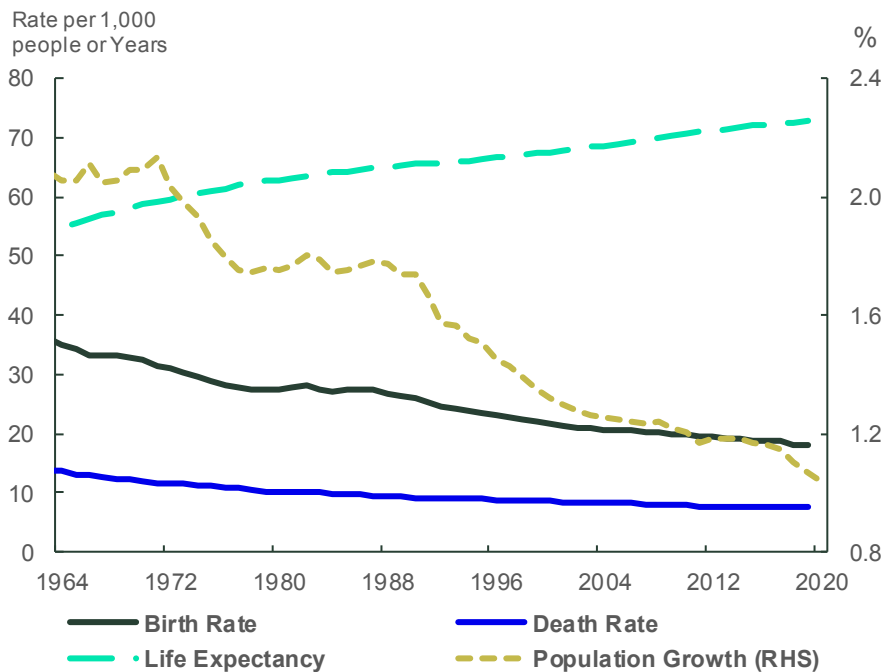
Sources: SSGA Economics, BIS
Updated as of 1/18/2022

Fixed Income Outlook

- Structural factors continue to anchor long-term rates while cyclical recovery and tight supply bring forward rate hike expectations, leading to flatter curves.
- The monetary policy pivot has been well communicated, avoiding the repeat of a taper tantrum, but inflation's "stickiness" *still* remains the great unknown.
 - Higher short-term rates
 - Curve flattening
 - US outperforms Europe
 - Improving fundamentals support tight IG spreads and "rising stars" in HY
 - Local and Hard Currency EMD offer upside

Low Rates and Growth Are Anchored by Entrenched Demographic Trends

Secular slowdown due to declining birth rates and aging populations is driving a global search for yield as rates continue to march downward.

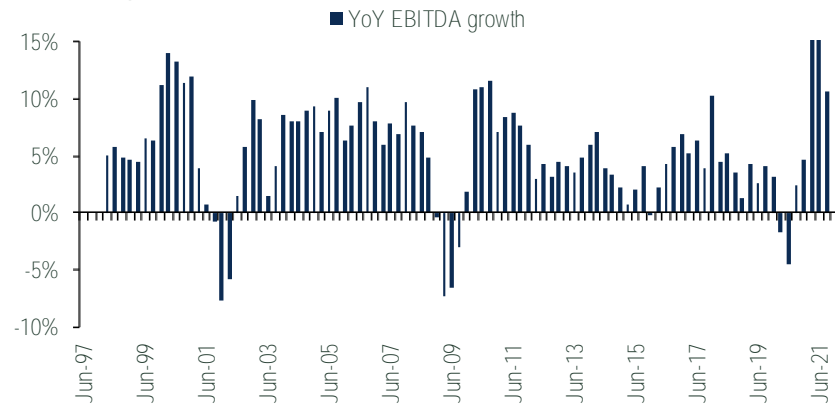


Left Chart Sources: State Street Global Advisors, World Bank. Data are annual from 1964 to 2020.

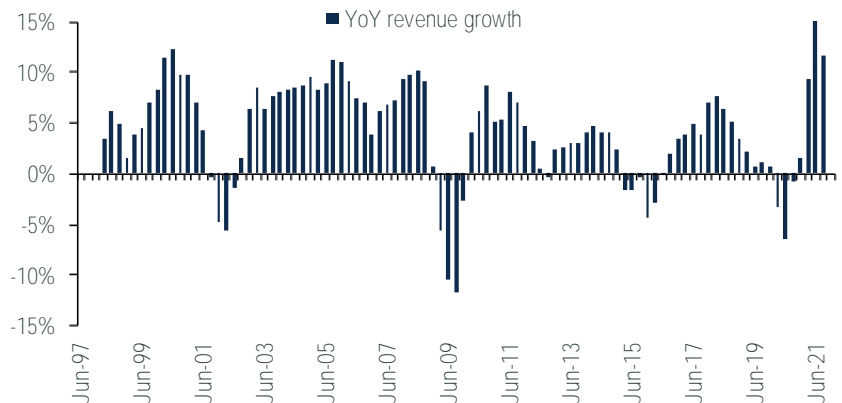
Right Chart Sources: State Street Global Advisors, Bloomberg Finance, L.P. Data are quarterly from March 1980 to September 2021. US trend growth is calculated as 10-year annualized labor force growth plus 10-year annualized labor productivity growth. US Agg yield is yield-to-worst.

Improving Fundamentals Will Continue to Support Tight IG Spread Valuations

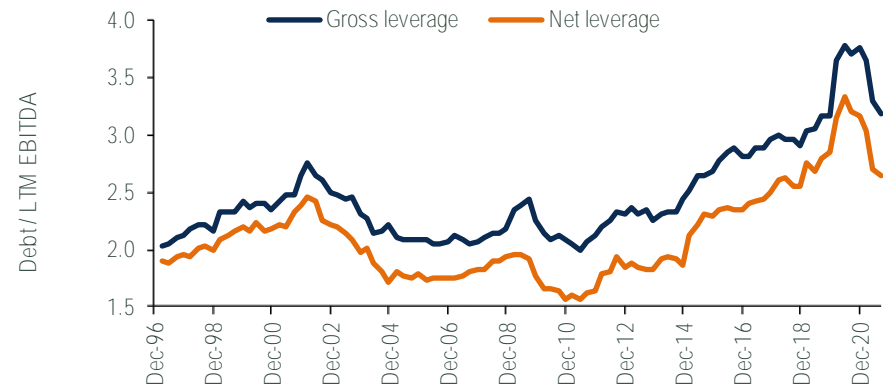
EBITDA growth continues to be robust...



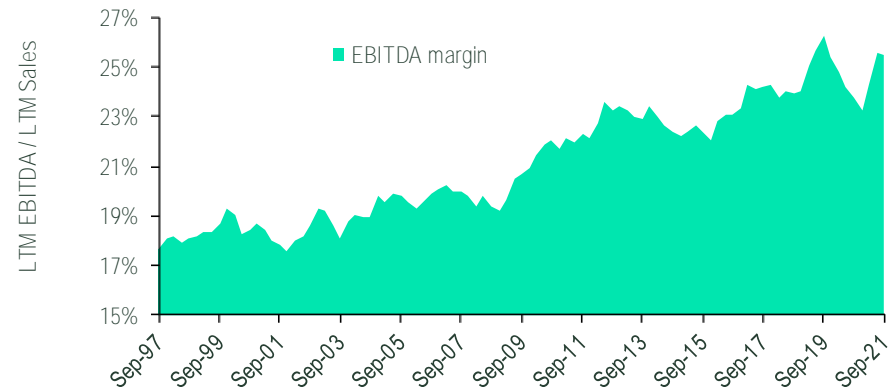
Now starting to see strong top-line growth as well...



...helping leverage ratios return to pre-COVID levels.



...leading to margins approaching all-time highs.



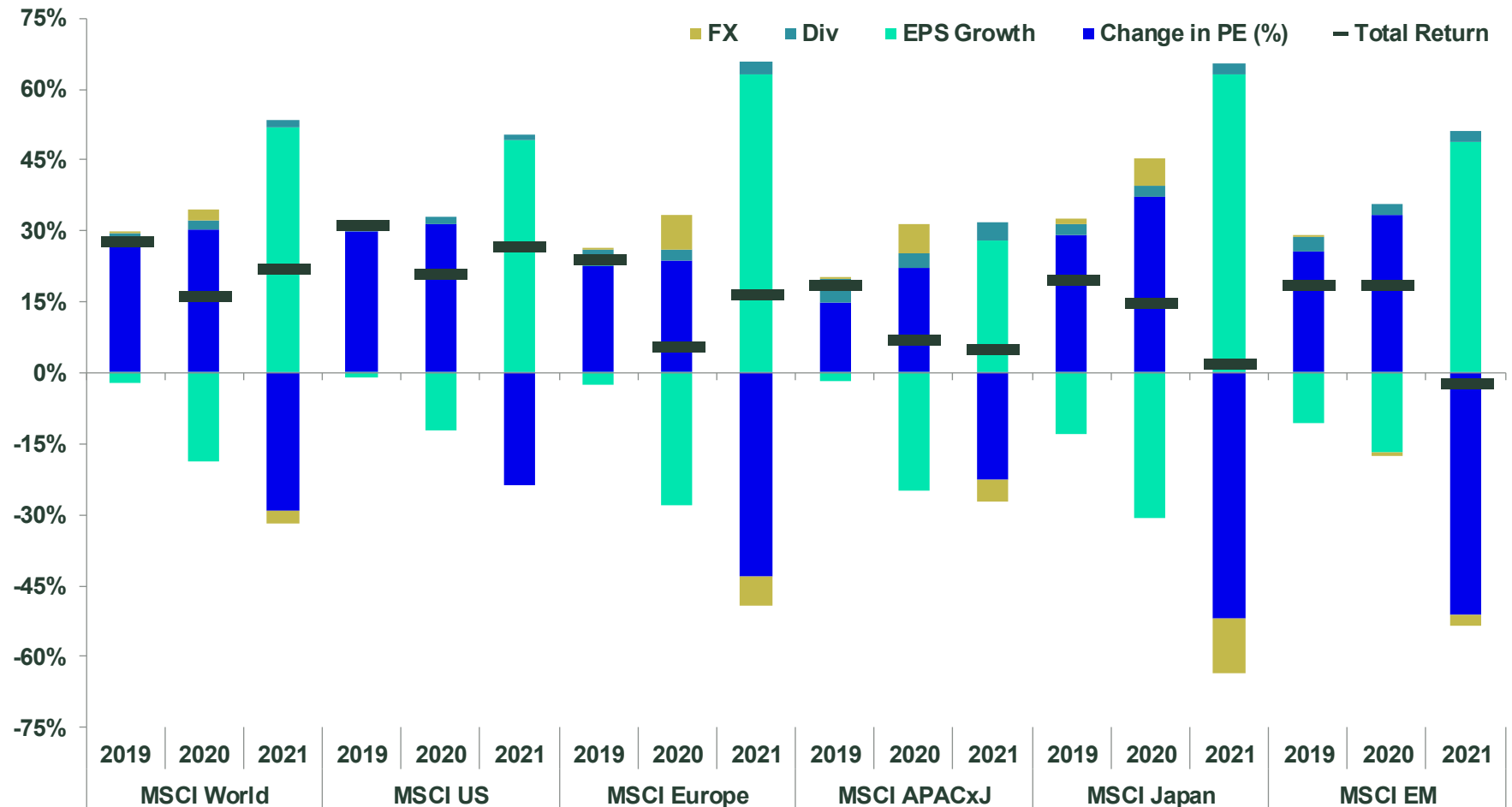
Source. Corporate fundamentals sourced from Bank of America as of June 30, 2021. Data represent median values for the broad universe of US investment grade non-financial issuers.

Equity Outlook

- As the US/Europe growth differential narrows, US market leadership is likely to give way.
- Decent earnings prospects and less-stretched valuations will continue to add to European equities' appeal.
- Europe and EM outpaced developed markets in the earnings recovery. Earnings momentum continues to be solid, particularly in the smaller caps.

Equity Return Decomposition

Earnings have continued to drive equity performance year to date. With the ERP ticking up, earnings must continue to come through to justify further equity rallies.



Source: State Street Global Advisors, Bloomberg, as of December 31, 2021. Chart references MSCI regional indices; MSCI EM refers to the MSCI Emerging Markets index. PE = price to earnings ratio; EPS = earnings per share.

2022: A Year of Two Halves

2022 Average: High Growth, High Inflation

- But different trajectory as peak is now behind us
- Inflation rotation & growth convergence

Fed, Not COVID, Becomes Biggest Risk

- From pandemic to endemic
- From “whatever it takes” to a policy mistake?

Inflation “Regime” Debate to Continue

- Structural forces potentially powerful but slow-moving
- Peak globalization, energy transition, equitable growth, monetary/fiscal

Eyes Increasingly on 2023

- Challenges in engineering a soft landing

Defined Contribution Industry Trends

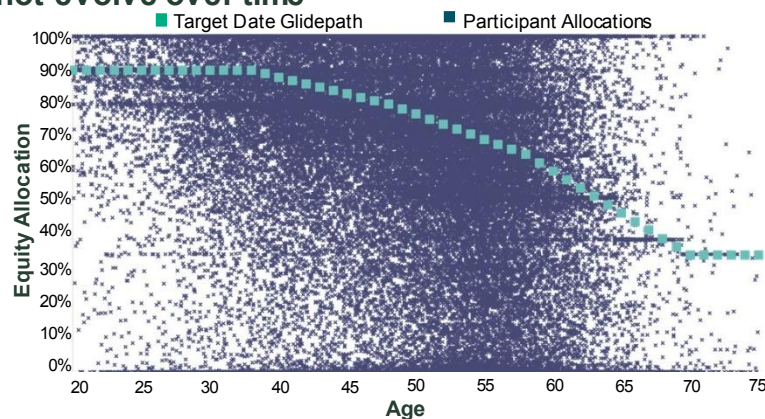
What's Working?

Role of Target Date Funds has Increased Over Time¹



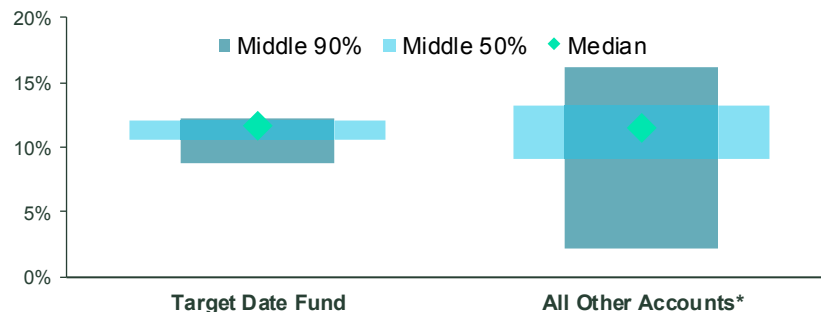
Target Date Funds now hold **29%²** of plan assets (up from **23%²** in 2016) and capture **over 60%³** of all contributions into DC plans

Participant allocations are not always optimal and may not evolve over time⁴



Target Date Funds have delivered higher median returns with lower levels of volatility

5-Year Total Return Comparison⁵



* Investors not utilizing Target Date Funds, Balanced Funds or Managed Accounts

Source: State Street Global Advisors. ¹ EBRI, 2021. ² Pension & Investments, as of November 1, 2021. ³ Cerulli 2020 Retirement Markets Report

⁴ State Street Global Advisors DC. ⁵ Vanguard, How America Saves, 2021.

Next Generation Challenges

Demographics

Participants are living longer¹

Demand

Participants are looking to their employer for assistance in the decumulation phase²

DB to DC Shift

As larger plans shift from DB-only or DB + DC to a DC-only model, sponsors want to make the shift less unsettling by offering employees an alternative guaranteed income stream

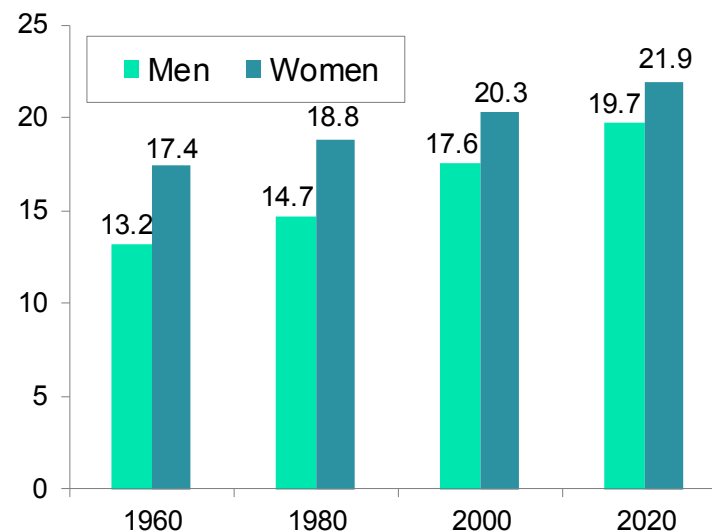
Workforce Management

Plan sponsors wish to maintain healthy workforce demographics to control costs and maintain key talent³

Keep Funds in Plan

Sponsors may look to in-plan Retirement Income solutions to maintain assets in the plan to keep costs down

Life Expectancy at Age 65, 1960-2020 ⁴



Source: State Street Global Advisors.

¹Source: OECD, life expectancy increased from 12.8 years in 1960 to 18.1 years in 2018 for males, and from 15.8 years in 1960 to 20.7 years in 2018 for females.

²Source: State Street Global Advisors. © 2018 Global Retirement Reality Report data: US sample of actively working (as opposed to retired) segment, n=826

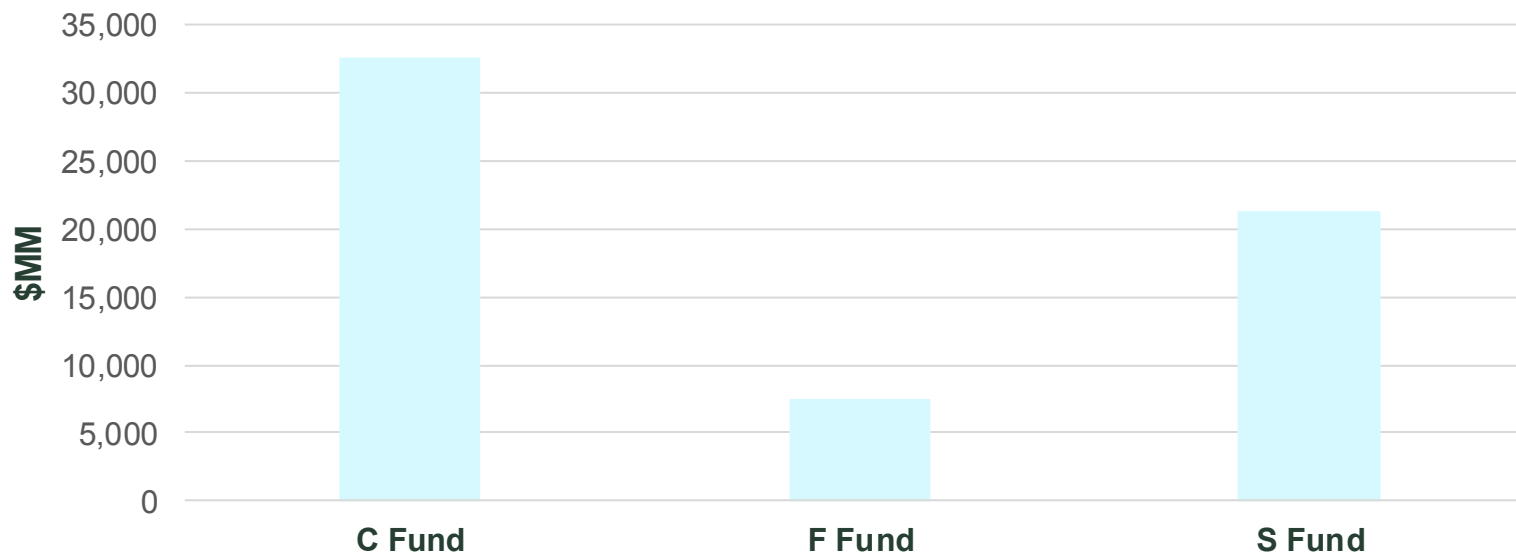
³Source: Why Employers Should Care About the Cost of Delayed Retirements, Prudential Financial, Inc. 2017

⁴Source: U.S. Social Security Administration. 2020. The Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds. Government Printing Office.

Investment Performance Summary

TSP Account Summary

Participants' AUM(\$) as of December 31, 2021



	Benchmark	AUM 12/31/2021 (\$)
TSP C Fund - Common Stock Index Investment Fund Account	S&P 500®	32,567,092,055
TSP F Fund - Fixed Income Index Investment Fund Account	Barclays Capital US Aggregate Index	7,477,293,605
TSP S Fund - Small Capitalization Stock Index Investment Fund	Dow Jones U.S. Completion Total Stock Market Index	21,345,302,535
Total		61,389,688,195

Source: SSGA

TSP Investment Return Summary

Summary of Performance

Following are the gross returns for Thrift Savings Plan portfolios versus the corresponding benchmarks as of December 31, 2021:

	One Month (%)	Three Months (%)	YTD Since Inception (%)
TSP C Fund - Common Stock Index Investment Fund Account			Apr/2021
Total Returns (Gross)	4.48	11.03	14.99
S&P 500®	4.48	11.03	14.99
Difference	0.00	0.00	0.00
TSP F Fund - Fixed Income Index Investment Fund Account			Jun/2021
Total Returns (Gross)	-0.27	0.01	0.07
Barclays Capital US Aggregate Index	-0.26	0.01	0.06
Difference	-0.01	0.00	0.01
TSP S Fund - Small Capitalization Stock Index Investment Fund Account			May/2021
Total Returns (Gross)	0.59	0.73	3.67
Dow Jones U.S. Completion Total Stock Market Index	0.55	0.66	3.61
Difference	0.04	0.07	0.07

Source: SSGA

Past performance is not a reliable indicator of future performance. Performance returns for periods of less than one year are not annualized. The performance figures contained herein are provided on a gross of fees basis. Gross of fees do not reflect the deduction of advisory or other fees which could reduce the return. The performance includes the reinvestment of dividends and other corporate earnings and is calculated in USD. Index returns reflect capital gains and losses, income, and the reinvestment of dividends.

TSP Attribution

As of December 31, 2021

	F Fund	S Fund
YTD Fund Return (%)	0.0742	3.6742
YTD Benchmark Return (%)	0.0555	3.6071
Tracking Difference (%)	0.0187	0.0671
Attribution Summary	Security Sampling	Securities Lending

Source: SSGA

Securities Lending Overview

Leading Global Service Providers

On behalf of FRTIB, State Street Global Advisors (SSGA) manages the securities lending program through State Street Bank and Trust Company's (SSBT's) Securities Finance Agency Lending Program. State Street was the first financial institution to pursue regulatory approval to permit our funds to lend their securities.¹

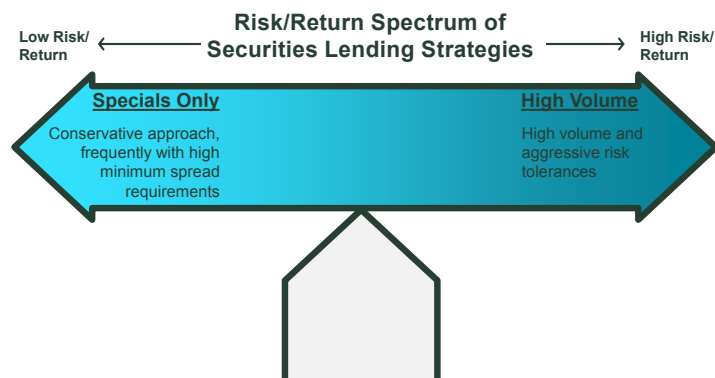
State Street Bank & Trust Securities Finance (Agent Lender)	State Street Global Advisors Cash Management Group (Cash Reinvestment)
<p>Global lending agent with established borrower relationships facilitates lending and re-investment activity</p> <ul style="list-style-type: none">• \$5.4 trillion in lendable assets²• Lending in 37 international markets, with 9 investment centers, including 5 trading desks & 3 full service operations centers²• 500+ employees dedicated to securities lending activities²• ~150 borrower relationships²	<p>Experienced cash managers with deep experience on the specific needs of securities lending collateral funds</p> <ul style="list-style-type: none">• ~\$412² billion in AUM• 40+ Year history of managing cash mandates for global clients• Experienced Global Portfolio Management team located in three investment centers around the globe
<p>The Agent Lender and its Cash Reinvestment Team are among the largest, longest tenured, and highly rated³ securities lending service providers in the industry.</p>	

¹Securities and Exchange Commission letter, "State Street Bank and Trust Company" (pub. avail. Jan. 29, 1972) <https://www.sec.gov/divisions/investment/noaction/1971/statestreet122771.pdf> ²As of September 30, 2021. ³SSBT voted best Custodial Lender per Global Total per Global Investor Beneficial Owner Survey 2021 - <https://www.globalinvestorgroup.com/MediaBrowser/GetFile/19877>

SSGA Uses a Balanced Approach to Lending for FRTIB

Program Design Approach

State Street Global Advisors' securities lending program focuses on balancing risk and returns while adapting to the characteristics of the FRTIB's lending program and its participants



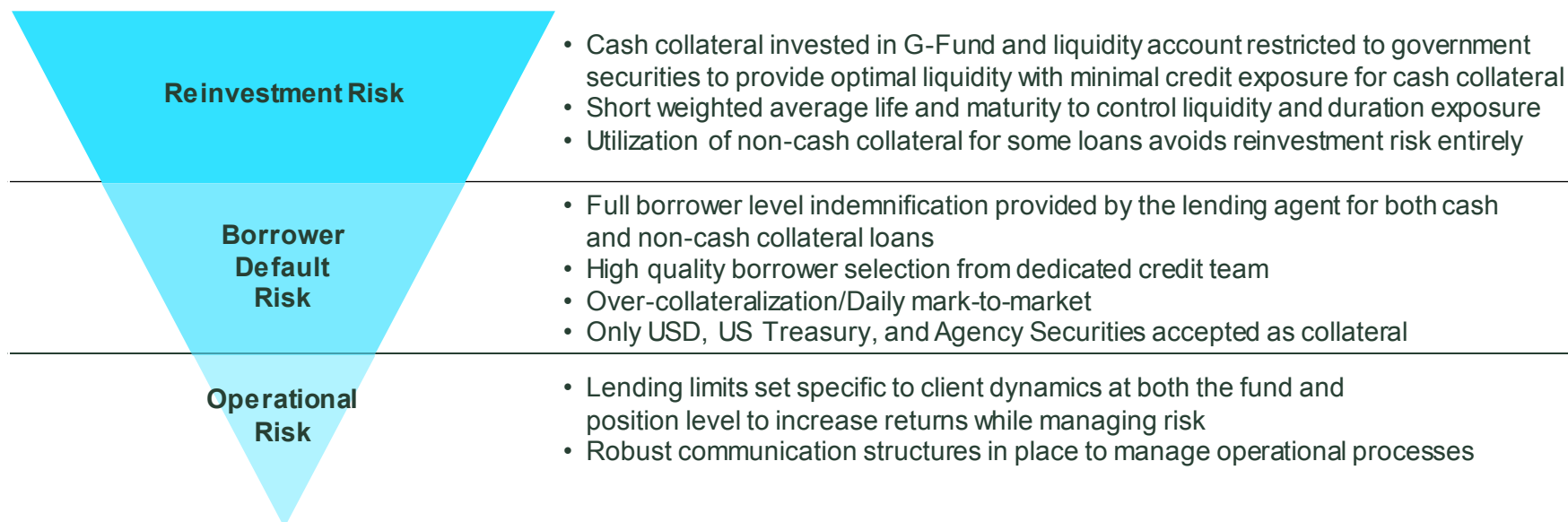
Distinguishing Program Design & Features

- 1 Leading lending agent and cash reinvestment specialists
- 2 Customized program design and reporting to align with client objectives
- 3 Robust risk management controls and oversight of the program

Securities Lending Program Design: Risk Management

We focus on income generation in a risk-controlled manner, aligning our investment philosophy with FRTIB's long-term value principles.

Robust Risk Management Controls



Securities Lending Market Update

U.S. Equity Markets:

- Positive performance in equity markets had a negative drag on the securities lending market for most of the year for easy to borrow securities. However, at the end of the year as concern about the Omicron variant increased, inflation appeared more resilient, and the Fed foreshadowed an end to its quantitative easing, volatility increased to levels not seen since January, providing some green shoots for lending markets
- Lending earnings from hard to borrow securities increased in the latter half of the year as well. While the market for hard to borrow securities has been relatively strong all year, much of the activity had been focused on IPO/SPAC markets, not commonly held in index funds. The demand broadened with the increased volatility and index rebalances, resulting in lending earnings climbing into the end of the year for FRTIB.

Fixed Income Markets:

- Quarter-end and year end activity was uneventful as Fed facilities provided ample liquidity for the markets
- U.S. Treasury General Collateral (GC) remained stable for most of the year since FRTIB F Fund launched in June with levels at or near the Overnight Bank Financing Rate.
- Specials activity in U.S. Treasuries was moderate with most securities trading about 7 bps under GC.
- Corporate bond borrowing demand has been relatively stagnant from a utilization perspective, but spreads steadily increased through the year as markets grew more concerned about the same issues impacting the equity markets (Omicron, inflation, and the Fed).

This material represents an assessment of the market environment and does not constitute a recommendation to buy or sell a security. This information should not be relied upon as research or market advice. Past performance is not a guarantee of future results.

2021 FRTIB Performance Commentary

Reinvestment:

- Cash collateral reinvestment was impacted by liquidity risk management measures instituted in management of the cash collateral through the duration of the Debt Ceiling Extraordinary Measures (August to December). Yields returned to expected levels after the Debt Ceiling was lifted in December.

C Fund:

- Supply continued to overwhelm demand for S&P 500 securities in the lending markets, limiting opportunities for lending.
- Balances increased through the year as the program was ramped up since launching in April 2021, and borrowers approved the new fund for lending. However, there were no significant special trades to drive revenue in the latter half of the year

S Fund:

- Demand for securities held in the S Fund far exceeds that of the C Fund, and as a result, the S Fund contributed the vast majority of revenues from lending.
- The S Fund benefitted from being new supply to the market at launch with very high demand spreads on specials. This honeymoon was short lived, and demand spreads returned to a muted market range through the 3^d quarter. In the 4th quarter, demand returned following index rebalances, and increased market volatility.
- S Fund utilization increased steadily throughout the year since launch in May 2021, as the program ramped up.

F Fund:

- F Fund also was ramping up since its June launch, and levelled off by August. Balances and demand spreads held relatively steady into December when the markets lightened up loan demand for year end balance sheet management.
- US Government bonds represent a majority of lending in the F Fund, but corporate bonds also contribute significantly.

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Status of Program Launch

C, S, and F Funds launched in April, May, and June respectively after a smooth transition of assets. All funds are considered fully ramped-up at year end

- The lending funds are becoming seasoned in the program having accrued queue points.
- Most borrowers are approved and activated for the lending program.

Debt Ceiling management

- The collateral reinvestment strategy was adapted for Debt Ceiling Extraordinary Measures to balance liquidity needs of the lending program and returns to lending funds. This strategy shift impacted lending program earnings from August into December.
- Collateral reinvestment strategy reverted to standard practices in December when the Debt Ceiling was increased.
- Continue to evaluate approaches for management under future potential Debt Ceiling scenarios.

Reporting items

- Daily reporting: Customization was developed in response to FRTIB requests. Initial reporting challenges were resolved by year end.
- Monthly reporting: Benchmarking reporting required adjustments in coding at 3rd party data provider. Those issues were resolved by year-end

Appendix A: Important Disclosures

Important Disclosures

Investing involves risk including the risk of loss of principal. Past performance is not a guarantee of future results.

This document contains certain statements that may be deemed forward-looking statements. Please note that any such statements are not guarantees of any future performance and actual results or developments may differ materially from those projected. The information provided does not constitute investment advice and it should not be relied on as such. It should not be considered a solicitation to buy or an offer to sell a security. It does not take into account any investor's particular investment objectives, strategies, tax status or investment horizon. You should consult your tax and financial advisor. All material has been obtained from sources believed to be reliable. There is no representation or warranty as to the accuracy of the information and State Street shall have no liability for decisions based on such information.

Investing in foreign domiciled securities may involve risk of capital loss from unfavourable fluctuation in currency values, withholding taxes, from differences in generally accepted accounting principles or from economic or political instability in other nations.

Investments in emerging or developing markets may be more volatile and less liquid than investing in developed markets and may involve exposure to economic structures that are generally less diverse and mature and to political systems which have less stability than those of more developed countries.

Currency Risk is a form of risk that arises from the change in price of one currency against another. Whenever investors or companies have assets or business operations across national borders, they face currency risk if their positions are not hedged.

Bonds generally present less short term risk and volatility than stocks, but contain interest rate risk (as interest rates rise bond prices usually fall); issuer default risk; issuer credit risk; liquidity risk; and inflation risk. These effects are usually pronounced for longer-term securities. Any fixed income security sold or redeemed prior to maturity may be subject to a substantial gain or loss.

Investing in high yield fixed income securities, otherwise known as "junk bonds", is considered speculative and involves greater risk of loss of principal and interest than investing in investment grade fixed income securities. These Lower-quality debt securities involve greater risk of default or price changes due to potential changes in the credit quality of the issuer.

Government bonds and corporate bonds generally have more moderate short-term price fluctuations than stocks, but provide lower potential long term returns.

ETFs trade like stocks, are subject to investment risk, fluctuate in market value and may trade at prices above or below the ETFs net asset value. Brokerage commissions and ETF expenses will reduce returns.

Passively managed funds invest by sampling the index, holding a range of securities that, in the aggregate, approximate the full Index in terms of key risk factors and other characteristics. This may cause the fund to experience tracking errors relative to performance of the index.

Securities lending programs and the subsequent reinvestment of the posted collateral are subject to a number of risks, including the risk that the value of the investments held in the collateral may decline in value and may at any point be worth less than the original cost of that investment.

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