



Local Government Investing in a (Kind of) Post-COVID World

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The Federal Open Market Committee (FOMC)

- Body within the Federal Reserve that sets monetary policy
- Consists of twelve members – seven members of the Board of Governors of the Federal Reserve System; the president of the Federal Reserve Bank of New York; and four of the remaining eleven Reserve Bank presidents who serve one-year terms on a rotating basis



The Fed Chairman



What is it You Do?

The Federal Reserve (The Fed)

- Five key functions:
 - Conducts the nation's monetary policy
 - Helps maintain the stability of the financial system
 - Supervises and regulates financial institutions
 - Fosters payment and settlement system safety and efficiency
 - Promotes consumer protection and community development

Three key entities in the Federal Reserve System

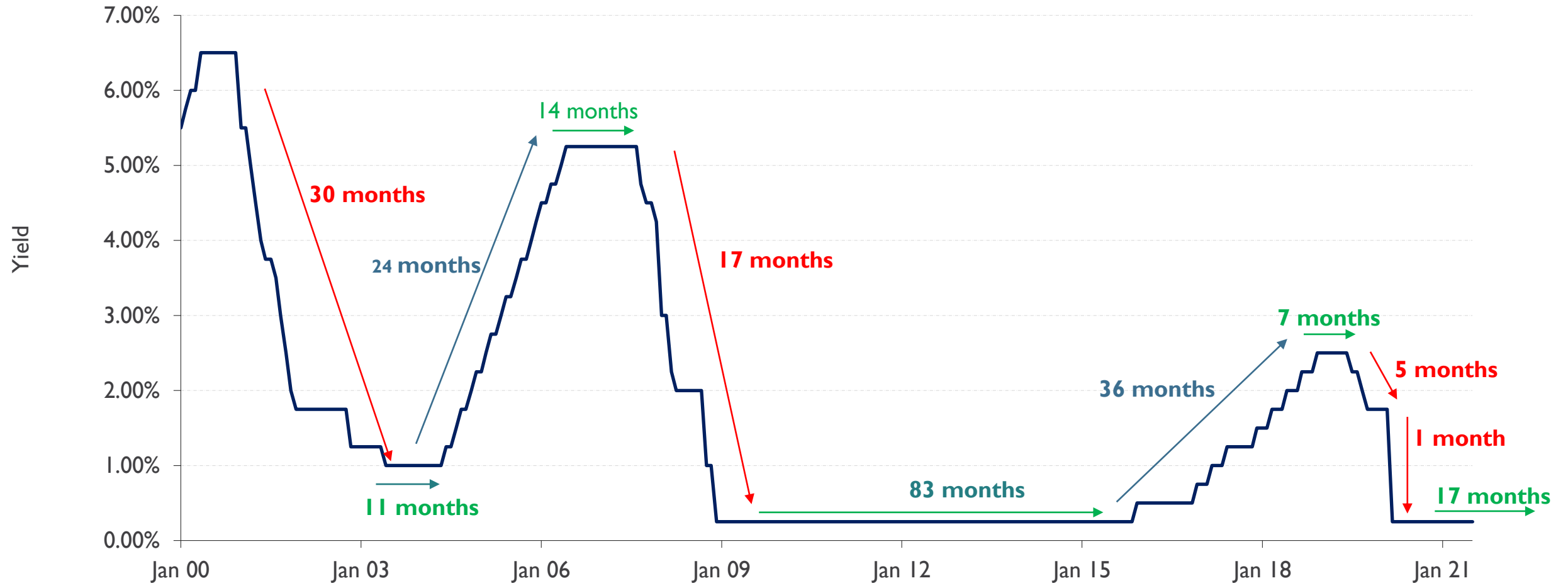
- The Board of Governors
- The Federal Reserve Banks
- The FOMC

Fed and the Three Tools of Monetary Policy

- Using the three tools, the Federal Reserve influences the demand for and the supply of balances that depository institutions hold at Federal Reserve Banks and alters the Federal Funds Rate (the interest rate at which depository institutions lend balances at the Federal Reserve to other depository institutions overnight)
 - Open Market Operations (FOMC)
 - Purchase and sale of securities in the open market by a central bank
 - Discount Rate (Board of Governors)
 - The interest rate charged to commercial banks and other depository institutions on loans they receive from their regional Federal Reserve Bank's lending facility – the discount window
 - Reserve Requirements (Board of Governors)
 - The percentage of deposits that commercial banks and other depository institutions must hold as reserves

FOMC Rate Cycle: January 2000 – July 2021

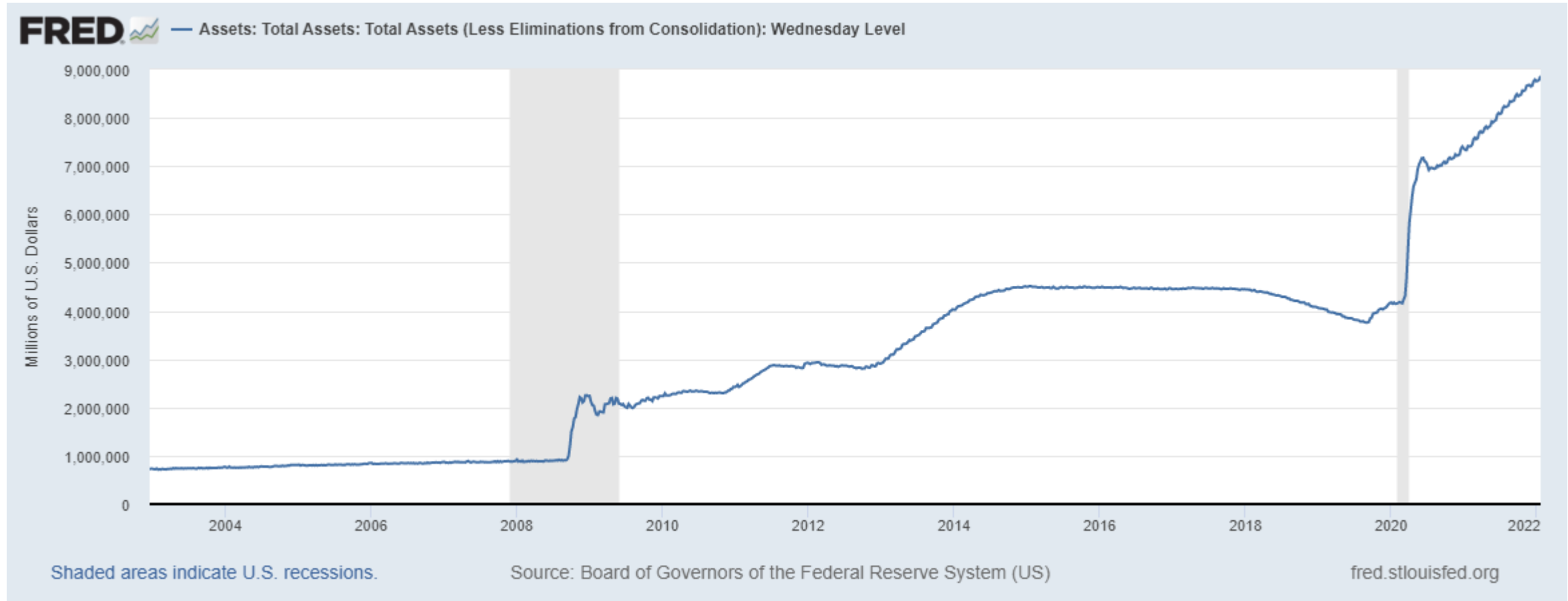
Federal Funds Rate



QE – Quantitative Easing

- ❏ Unconventional monetary policy
- ❏ An open market operation strategy
- ❏ Fed buys treasuries (or other securities) from the market in order to lower interest rates and increase the money supply
- ❏ Increases money supply by flooding financial institutions with capital to promote increased lending and liquidity
- ❏ Considered when short-term interest rates are at or approaching zero
- ❏ Does not involve the printing of new banknotes
- ❏ Generally causes a depreciation in the value of the dollar

The Fed's Balance Sheet - \$9 Trillion Dollars



And Now a Fed Tapering....

- The gradual slowing of the pace of the Federal Reserve's large-scale asset purchases
- Does not refer to an outright reduction of the Fed's balance sheet, only to a reduction in the pace of its expansion
- Motivation is to slowly remove the monetary stimulus
- Fed Chair Powell confirmed in January 2022 that the plan is to end asset purchases in early March 2022

Interest on Reserve Balances (IORB)

- Balances held at the Fed in excess of the reserve requirement that earn interest at a specified rate (currently 15 basis points)
- By adjusting the IORB rate, the Federal Reserve attempts to move the Federal Funds Rate into the target range (currently 0 to 25 basis points) set by the FOMC
- If overnight repo rates are less than the IORB rate, banks are incentivized to hold excess deposits at the Fed, reducing the pressure on the overnight repo rate

Incorporating the FED & Economic Data in the Investment Process

Fed Balance Sheet

Policy

PolicyMembers



Activity

Calendar

Statements

Minutes

Beige Book

FOMC Policy

FOMC Decisions

Monetary Policy Releases

Speeches & Testimony

FOMC Speak

Website

Aggregates

Balance Sheet

Money Supply

Reserves

Reserve Balance Factors

Bank Assets

Dealer Positions

Consumer Credit

Foreign Holdings

Debt Outstanding

Snapshot

Latest FOMC Decision

January 26, 2022

Funds Rate Upper Bou... 0.25 (No Change)

Funds Rate Lower Bou... 0.00

Discount Rate 0.25

Policy Concern - -

FOMC Vote 9:0

Side-by-Side Statements

Interest Rates on Reserve Balances

IORB 0.15

Temporary Open Market Operations

Award Rate (%) 0.05

Total Bids Accepted 88.00

Total Accepted Amoun... 1654.85

4) Events

5) News

6) Research

7) Blogs

8) Releas...

3) News

100) Fed's Harker Backs March Hike, Less Conv... BN 07:28

101) Projections for Treasury Auction Cuts Dive... BN 07:23

102) Fed's Bostic Will 'Adapt' His Policy View... BN 07:16

FOMC Forecasts

Real GDP (yoy%) 2.30 2.90 2.30 -3.40 5.50 4.00 2.20

Core PCE (yoy%) 1.69 2.00 1.69 1.43 4.40 2.70 2.30

Unemployment (%) 4.36 3.89 3.68 8.09 4.30 3.50 3.50

Next FOMC Decision

March 16, 2022

at 11:00

Delayed Rates

Fed Funds Effectiv... 0.08

ICAP Market O/N R... 0.07

Overnight Bank Fu... 0.07

Futures Implied Rate

March 2022 0.220

June 2022 0.680

September 2022 0.950

Forward Guidance

Board of Gov. Fed Funds... 0.00

Forward Guidance Chart ... 0.00

BE U.S. Primer

Toolbox

COVID-19 QE Measures

ECST Balance Sheet Items

ECST CB Liquidity Swaps

NSN Fed Lending - Key F...

HTTP Fed Reports to Cong...

NSN BE Global Stimulus ...

Fed Bond Holdings

DEBT SOMA Maturity Distri...

NI MBS Holdings

HTTP MBS Operations Sch...

Fed Funds Analytics

DOTS FOMC Dots Projectio...

WIRP Probability of Fed F...

MIPR Market Implied Poli...

ECFC Analyst Forecasts

NSN BE Fed Spectrometer

U.S. Interest Rates

BTMM Bond Market

FWCM Fwd Curve Matrix

CG Trs'y Curve

NDX Selected Rates

XLTP OIS Implied Probabi...

Calendar

2022

Announcement Date

Time

Rate (%)

For

Against

Policy

Concern

1) January 26 11:00 0.00 - 0.25 9 0 --

2) March 16 11:00 -- -- -- --

3) May 4 11:00 -- -- -- --

4) June 15 11:00 -- -- -- --

5) July 27 11:00 -- -- -- --

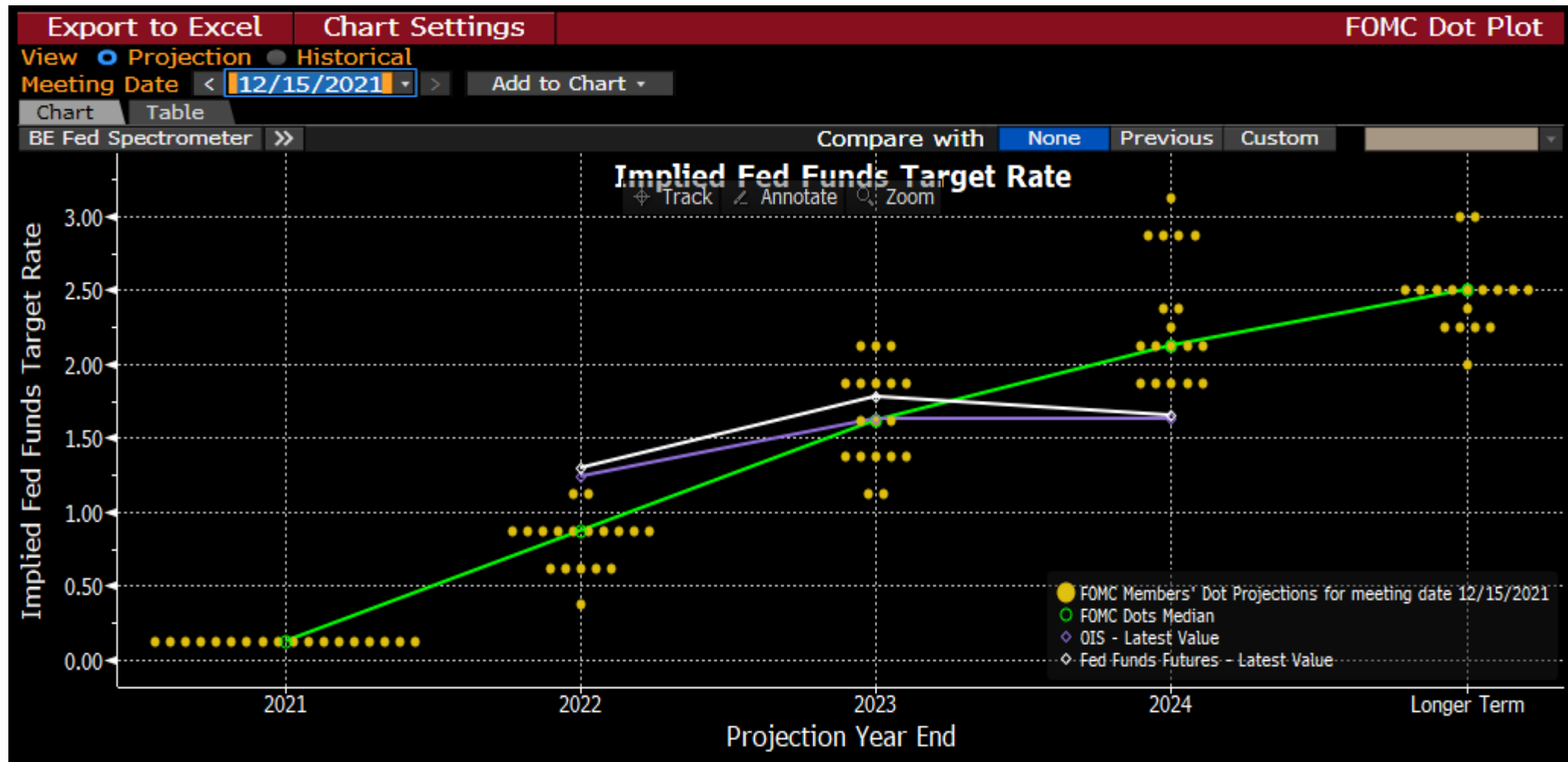
6) September 21 11:00 -- -- -- --

7) November 2 11:00 -- -- -- --

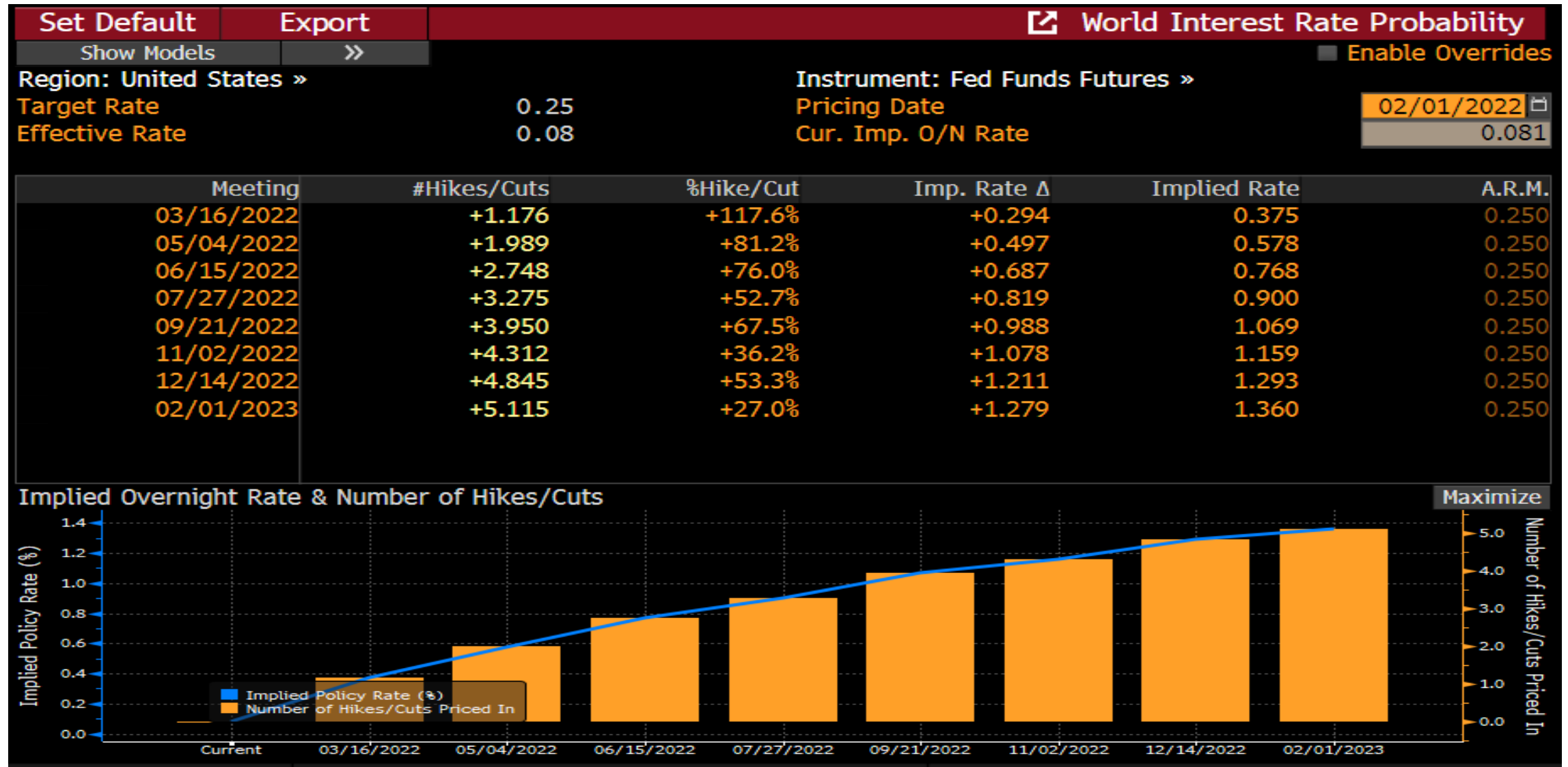
8) December 14 11:00 -- -- -- --

Related Information

The FED and the DOT Plot





The Impact of the FED and Market Expectations



Break-even Analysis – Evaluating Bond Offerings vs Expected Fed Action

Settlement Date			2/2/2022	2/1/22 11:54 AM			Cash At Maturity	NPV	IRR
Maturity Date			1/31/2027			Over-Night Cash Value	52,735,394.11	-	1.192%
Par Value Purchased			50,000,000.00						
Price Paid			99.39843750			Bond Cash Value	53,861,555.38	-	1.676%
Coupon Rate			1.500%						
Price + Accrued (to Buy)			49,703,362.40			Bond Less Over-Night	1,126,161.26	-	0.4842%
Over-Night Investment Rate			0.0300						
Day Count			360.0			Conclusion	Buy Bond	Stay Cash	Buy Bond
Enter most recent coupon date	----->		1/31/2022	375,000.000					
			7/31/2022	375,000.000					
			1/31/2023	375,000.000		Day Count			
# of Fed Rate Increases	5		7/31/2023	375,000.000		For Accrued	49,699,218.75	Price	
			1/31/2024	375,000.000		2	4,143.65	Accrued	
Increases in 2022	4		7/31/2024	375,000.000					
			1/31/2025	375,000.000			49,703,362.40	Total Paid	
Increases in 2023	1		7/31/2025	375,000.000					
			1/31/2026	375,000.000					
Increases in 2024	-		7/31/2026	375,000.000		Bid Savings	(688,082.70)		
			1/31/2027	375,000.000		IRR Savings	18,781.43		
		-	0.250						
Fed Rate Increase Dates	Low	High							
1/26/2022	-	-	0.250						
3/16/2022	0.250	0.250	0.500						
5/4/2022	0.250	0.500	0.750						
6/15/2022	0.250	0.750	1.000						
7/27/2022	-	0.750	1.000						
9/21/2022	0.250	1.000	1.250						
11/2/2022	-	1.000	1.250						
12/14/2022	0.250	1.250	1.500						
1/26/2023	-	1.250	1.500						
3/16/2023	-	1.250	1.500						
5/4/2023	-	1.250	1.500						
6/15/2023	-	1.250	1.500						

The U.S. Department of the Treasury

-  Mission is to maintain a strong economy and create economic and job opportunities by promoting the conditions that enable economic growth and stability at home and abroad; strengthen national security by combating threats and protecting the integrity of the financial system; manage the U.S. government's finances and resources effectively
-  Operates and maintains systems that are critical to the nation's financial infrastructure such as the production of coin and currency, the disbursement of payments to the American public, revenue collection, and the borrowing of funds necessary to run the Federal government

Secretary of the Treasury



The Debt Ceiling



- ❏ Debt limit is the total amount of money that the U.S. government is authorized to borrow to meet its existing legal obligations including social security and Medicare benefits, military salaries, interest on the national debt, tax refunds, and other payments
- ❏ Does not authorize new spending commitments
- ❏ Simply allows the government to finance existing legal obligations
- ❏ Failing to increase the debt limit would cause the government to default on its legal obligations

Appreciation/Depreciation of the Dollar

- Appreciation: increase in the value of one currency regarding another currency
 - Reasons include government policy, interest rates, trade balances, and business cycles
- Takes place when exchange rates change, allowing for the purchase of more units of a currency
- A standard currency quote lists two currencies as a rate or fraction
- When a currency appreciates, exports cost rise; goods being exported will likely drop
- When a currency appreciates, imports will become cheaper; a dollar will go further

Economic Indicators and the Bond Market Effect

	Number and Direction		Effect in Terms of Price	
Gross Domestic Product (GDP)	↑	↓	↓	↑
Initial Unemployment Claims	↑	↓	↑	↓
Unemployment Rate	↑	↓	↑	↓
Consumer Price Index (CPI)	↑	↓	↓	↑
Producer Price Index (PPI)	↑	↓	↓	↑
Consumer Sentiment	↑	↓	↓	↑
Housing Starts	↑	↓	↓	↑
Retail Sales	↑	↓	↓	↑
Industrial Production and Capacity Utilization	↑	↓	↓	↑
Durable Goods	↑	↓	↓	↑
New Home Sales	↑	↓	↓	↑

Good news is bad news for bonds

Sources for Monitoring Economic Data – Bloomberg ECO


1) Calendars ▾

2) Alerts

3) Export ▾



4) Settings ▾

Economic Calendars

 United States


Browse

































10:09:49

02/01/22  - 02/08/22 

Economic Releases ▾

All Economic Releases ▾

View ☒ Agenda ☐ Weekly 

	Date	Time	A	M	R	Event	Period	Surv(M)	Actual	Prior	Revised
21)	02/01	06:45				Markit US Manufacturing PMI	Jan F	55.0	55.5	55.0	--
22)	02/01	07:00				Construction Spending MoM	Dec	0.6%	0.2%	0.4%	0.6%
23)	02/01	07:00				ISM Manufacturing	Jan	57.5	57.6	58.7	58.8
24)	02/01	07:00				ISM Prices Paid	Jan	67.0	76.1	68.2	--
25)	02/01	07:00				ISM New Orders	Jan	58.0	57.9	60.4	61.0
26)	02/01	07:00				ISM Employment	Jan	53.0	54.5	54.2	53.9
27)	02/01	07:00				JOLTS Job Openings	Dec	10300k	10925k	10562k	10775k
28)	02/01					Wards Total Vehicle Sales	Jan	13.00m	--	12.44m	--
29)	02/02	04:00				MBA Mortgage Applications	Jan 28	--	--	-7.1%	--
30)	02/02	05:15				ADP Employment Change	Jan	184k	--	807k	--
31)	02/03	04:30				Challenger Job Cuts YoY	Jan	--	--	-75.3%	--
32)	02/03	05:30				Nonfarm Productivity	4Q P	3.9%	--	-5.2%	--
33)	02/03	05:30				Unit Labor Costs	4Q P	1.0%	--	9.6%	--

Sources of Economic Data – Federal Reserve Bank Websites

FEDERAL RESERVE BANK of NEW YORK

Serving the Second District and the Nation

About the New York Fed

Markets & Policy Implementation

Economic Research

Financial Institution Supervision

Financial Services & Infrastructure

Outreach & Education

home > economic research >

Data and Indicators

The Research and Statistics Group provides the following links to online sources of economic data produced by the New York Fed and other Reserve Banks.

KEY DATA FROM THE NEW YORK FED



Business Leaders Survey

A monthly survey of service firms in New York State, northern New Jersey and southwestern Connecticut, conducted by the New York Fed.



Empire State Manufacturing Survey

A monthly survey of manufacturers in New York State, conducted by the New York Fed.

Supplemental Survey Report

Summary of responses to topical questions from the *Empire State Manufacturing Survey* and the

DYNAMIC DATA AND MAPS FROM THE NEW YORK FED

Eight Different Faces of the Labor Market

New monthly release provides timely updates on national labor market conditions. Dynamic charts depict trends in eight key categories: unemployment, employment, hours, labor demand, job availability, job loss rate, wages, and mismatch.



The Labor Market for Recent College Graduates

This interactive web feature presents a wide range of job market metrics for recent college graduates, including trends in unemployment rates, underemployment rates, and wages. Data are updated regularly and available for download.

For-Profits in the Higher Education Landscape

Interactive maps and charts shed light on the unprecedented growth, market share, student loans, tuition pricing, federal grants, and more for for-profit

TOOLS AND INDICATORS FROM THE NEW YORK FED



Economic Indicators Calendar

A calendar showing the date and time of key economic data releases. Links to data sources are provided when available.



Underlying Inflation Gauge (UIG)

The New York Fed Staff UIG measures capture sustained movements in inflation from information contained in a broad set of price, real activity, and financial data. We share estimates and downloadable data on a monthly basis.

FROM OTHER RESERVE BANKS

FRED (Federal Reserve Economic Data)

OFFSITE

A database developed by the St. Louis Fed that consists of more than 213,000 U.S. and international economic time series. Users can download and interact with the data.

Real-Time Data Set for Macroeconomists

OFFSITE

A data set developed by the Philadelphia Fed that consists of vintages, or snapshots, of time series of major macroeconomic variables.

WWW.NEWYORKFED.ORG/RESEARCH/DATA_INDICATORS

WWW.STLOIUSFED.ORG

Economic Indicators Calendar

Provides the date and time of key economic data releases. When available, links on the calendar direct you straight to the data source (often [OFFSITE](#)).

← PREVIOUS MONTH

FEBRUARY 2022

NEXT MONTH →

Monday	Tuesday	Wednesday	Thursday	Friday
	01	02	03	04
	<div>CoreLogic Home Price Index (08:00)</div>	<div>ADP National Employment Report (08:15)</div>	<div>Initial Claims (08:30)</div>	<div>Employment Situation (08:30)</div>
	<div>Construction PDF (10:00)</div>		<div>Productivity & Costs (Preliminary) (08:30)</div>	
	<div>ISM Manufacturing (10:00)</div>		<div>ISM Non-Manufacturing (10:00)</div>	
	<div>JOLTS (10:00)</div>		<div>Manufacturing, Shipments, And Orders (10:00)</div>	
	<div>Dallas Fed Texas Retail Outlook Survey (10:30)</div>			

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ADVISORS




Source: Internal City & County of San Francisco

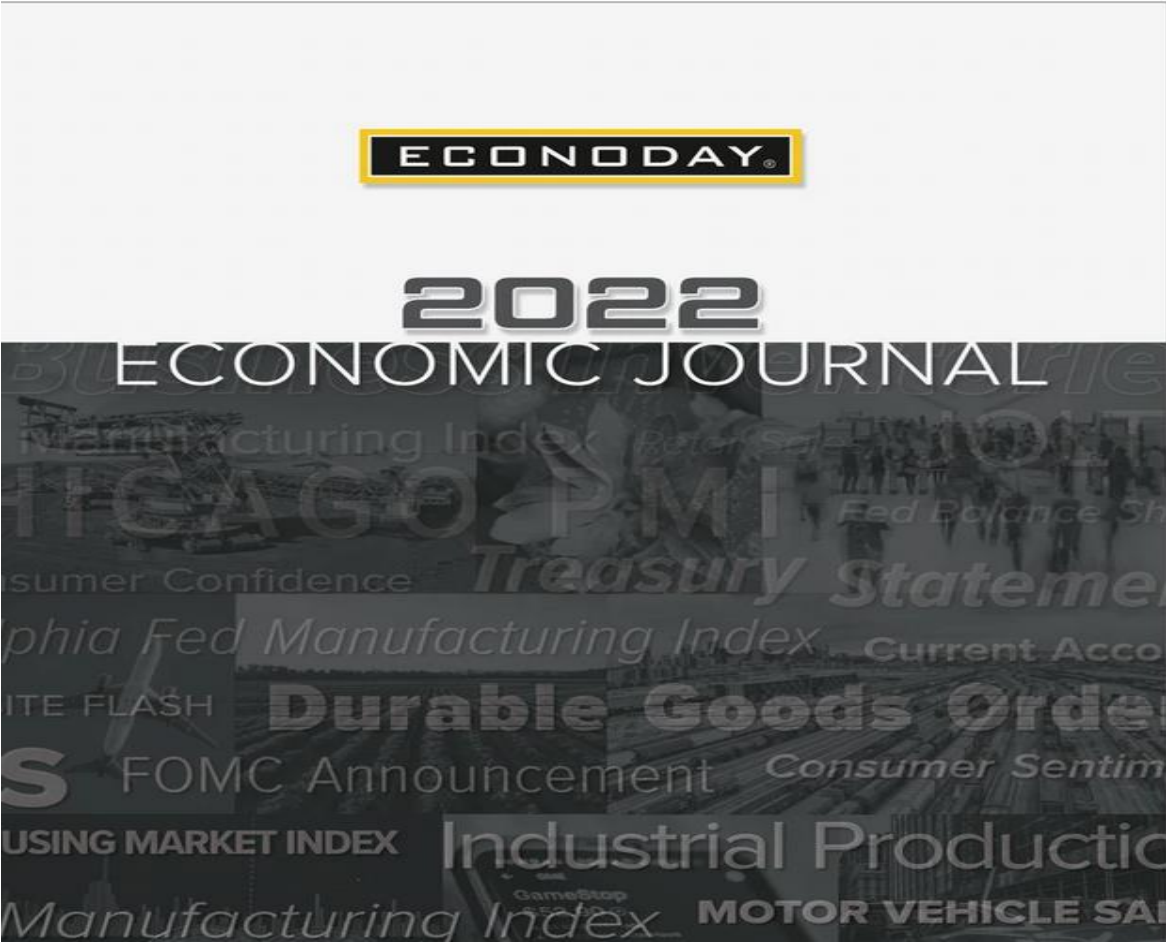
Public Trust Advisors 2022 ©

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Source for Economic Data – Econoday Economic Journal



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The cover of the 2022 Econoday Monthly Economic Journal features a collage of economic terms and data points. The year '2022' is prominently displayed at the top. Below it, the title 'ECONOMIC JOURNAL' is written in large, bold letters. The background is filled with various economic indicators and news headlines, including 'Manufacturing Index', 'Chicago PMI', 'Fed Balance Sheet', 'Consumer Confidence', 'Treasury Statement', 'Philadelphia Fed Manufacturing Index', 'Current Account', 'Durable Goods Orders', 'FOMC Announcement', 'Consumer Sentiment', 'Using Market Index', 'Industrial Production', 'GameStop', and 'Motor Vehicle Sales'.

2022 ECONODAY MONTHLY ECONOMIC JOURNAL

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MARKET-MOVING EVENTS FOR AN ENTIRE YEAR

Strategic investing and analysis are a lot easier when you can identify patterns and see how economic events and announcements correlate with specific market movements. The Econoday Journal provides a convenient and easy way to follow important economic events every day, every month, throughout the year.

- Enhanced new large format
- Spiral-Bound
- Monthly Monitor Calendar
- Space to write personal Market Impact Notes
- PLUS Our comprehensive Resource Center, featuring all the great information & insights you've come to expect from Econoday

The Fed, the Economy, and Investments



Fixed-Income Investment Risks

- 🏛️ **Duration Risk:** measures the sensitivity of a bond's price to a percentage change in interest rates
 - The higher the duration, the greater the sensitivity to changes in rates
- 🏛️ **Interest Rate Risk:** the impact of changes in interest increase/decrease the market value of a bond
 - Related to duration; market value change is inversely related to interest rate movement
- 🏛️ **Call Risk:** the risk of the bond being “called” by the issuer; call risk increases when interest rates decrease resulting in higher reinvestment rate risk due to the lower interest rate environment
 - Callable bonds may provide a higher yield at the time of purchase though the actual yield is determined at the time of call or maturity
- 🏛️ **Reinvestment Risk:** the risk of investing proceeds from a call, maturity, or coupon in a lower yielding interest rate environment
 - The shorter the time to maturity, the higher the reinvestment rate risk
- 🏛️ **Default Risk:** the risk that the issuer is unable to make the timely payment of interest and/or principal
 - Typically associated with credit issues (corporate debt)

CA Government Code 53600.5 – The Importance of Cashflow Management in the Investment Process

Objectives

When investing, reinvesting, purchasing, acquiring, exchanging, selling, or managing public funds, the primary objective of a trustee shall be to **safeguard the principal of the funds** under its control. The secondary objective shall be to meet the **liquidity needs** of the depositor. The third objective shall be to **achieve a return** on the funds under its control.

Higher degree of portfolio cashflow certainty can translate into longer portfolio average maturity and portfolio durations.

The Importance of a Cash Forecast in the Investment Process

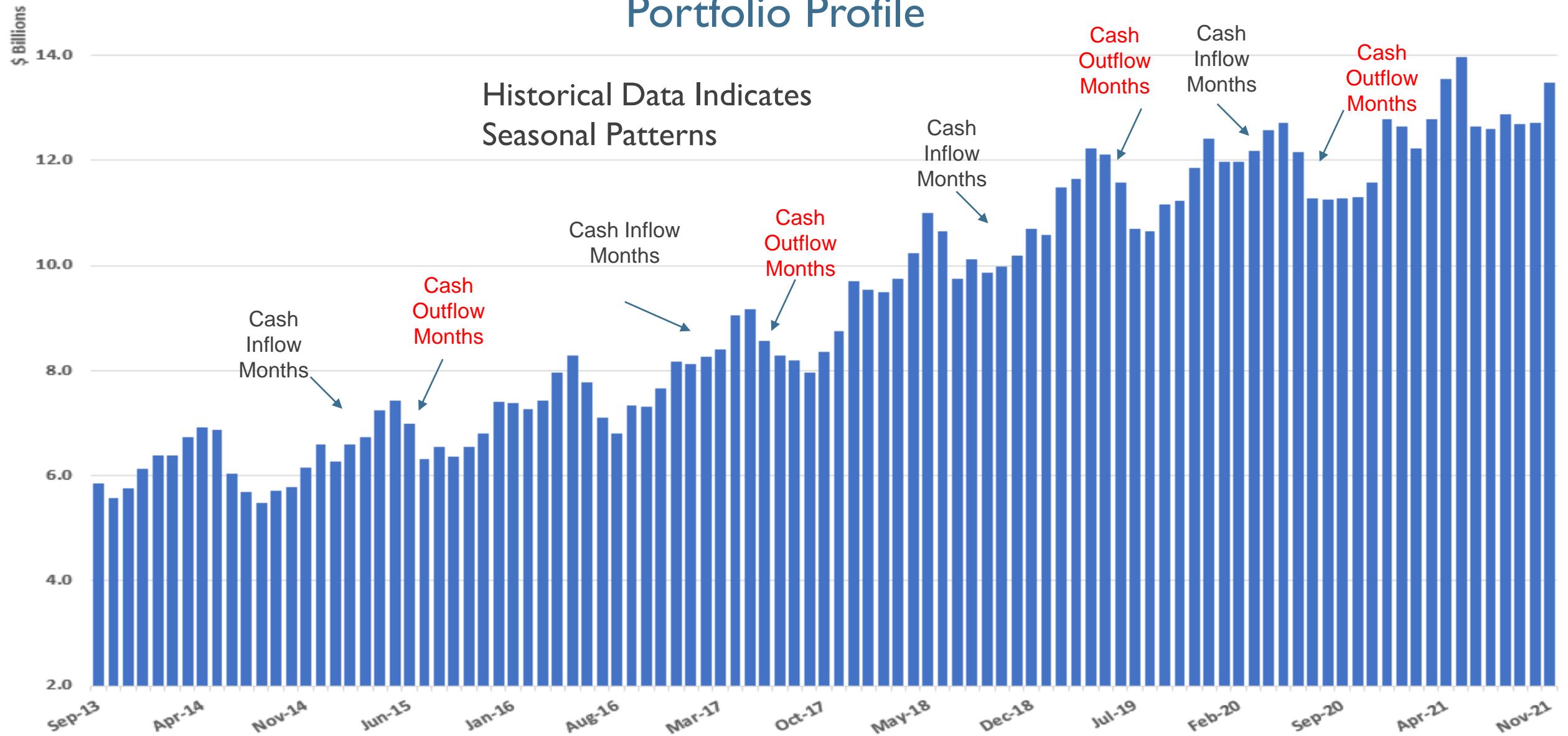
Primary Objectives:

- **Liquidity Management** – having sufficient cash available to meet cash outflows. Matching an investment maturity to a known future cash disbursement immunizes the cash flow and reduces the liquidity risk in the portfolio. Theoretically, if all cash disbursements are matched to a portfolio security maturity, liquidity risk is mitigated.
- **Managing Costs** – cash forecasting can help minimize excess bank balances and increase portfolio returns. Idle cash creates cash drag on an investment portfolio. The impact of cash drag is not readily visible and can be difficult to quantify.

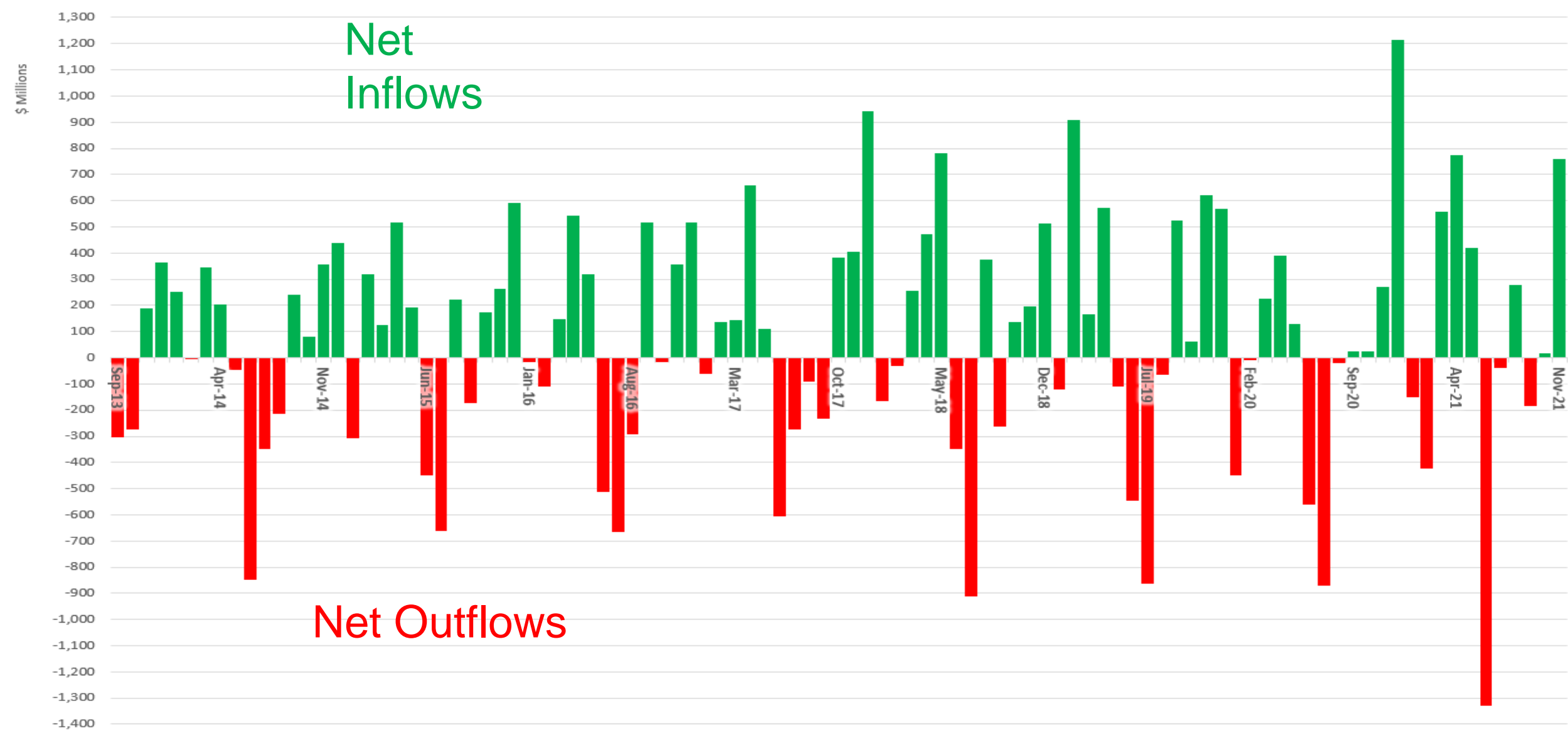
Developing a Cash Forecast – A Dynamic Process

- Examine historical data to identify seasonality/trends
- Gather information on future cash disbursements and cash receipts from the pool participants
- Use statistical extrapolation to predict a pattern of future cash flows (i.e. Moving Average, Exponential Smoothing)
- Create a model incorporating all cash disbursement, cash receipt, and portfolio information
- Update model as new information becomes available

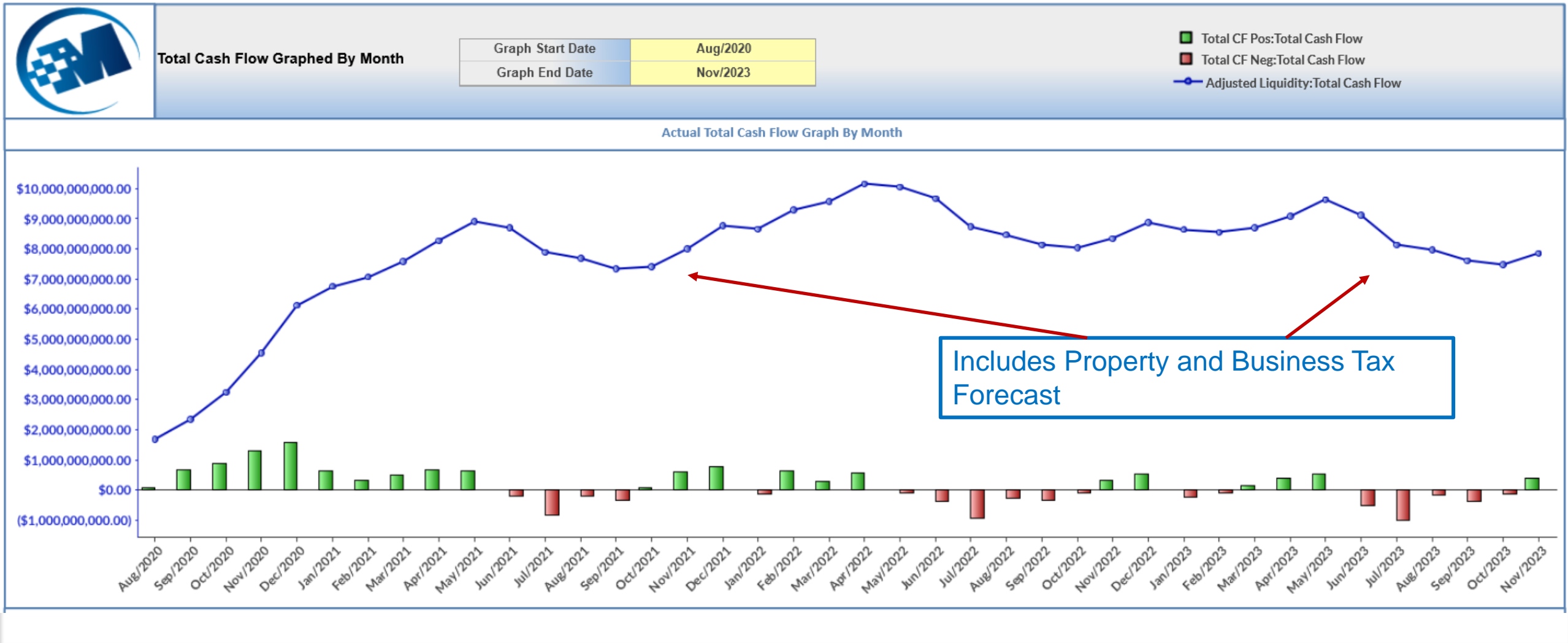
City & County of San Francisco - End of Month Portfolio Balances and Cashflow Portfolio Profile



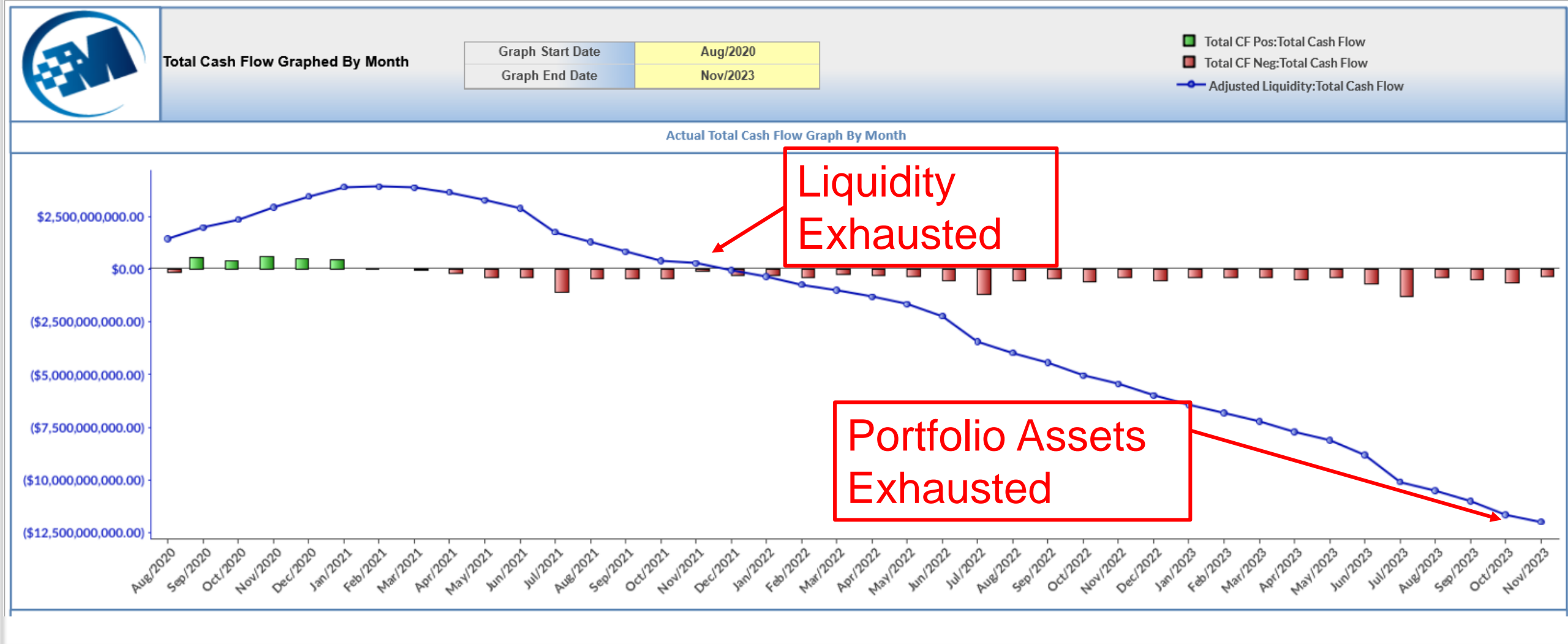
CCSF Pooled Fund – Month-to-Month Portfolio Changes and Net Inflows/Outflows




Developing a Forecast – Assuming Normal Cash Inflows Forecast




Developing a Forecast – Assuming Zero Cash Inflows



Determining an Optimal Portfolio Duration – ALM Flow Selection

		Flow Selection Type		Maximum Maturity (Yrs)		5.00				
Historical Net Cash Flow by Year		2018	2019	2020	2021	Projected Net Cash Flows by Year		Worst Outflow	Average Outflow	User Outflow
January			(\$119,847,491.40)	(\$448,647,971.30)	(\$152,567,793.13)	1	March	\$166,976,210.50	\$316,465,206.63	\$150,278,589.45
February			\$910,110,179.79	(\$7,539,007.66)	(\$424,131,996.20)		April	\$391,223,723.90	\$578,260,789.47	\$352,101,351.51
March			\$166,976,210.50	\$224,362,201.75	\$558,057,207.64		May	(\$111,065,990.48)	\$146,531,369.96	(\$122,172,589.53)
April			\$570,906,221.80	\$391,223,723.90	\$772,652,422.72		June	(\$1,328,609,209.83)	(\$811,616,924.06)	(\$1,461,470,130.81)
May			(\$111,065,990.48)	\$130,361,300.30	\$420,298,800.07		July	(\$911,426,445.57)	(\$881,149,210.02)	(\$2,500,000,000.00)
June			(\$546,499,906.34)	(\$559,741,656.00)	(\$1,328,609,209.83)		August	(\$63,582,107.76)	\$96,827,717.48	(\$69,940,318.54)
July		(\$911,426,445.57)	(\$862,520,286.80)	(\$869,500,897.70)			September	(\$522,496,417.17)	(\$253,747,720.17)	(\$574,746,058.89)
August		\$374,384,411.50	(\$63,582,107.76)	(\$20,319,151.31)			October	\$25,990,625.74	\$74,334,602.58	\$23,391,563.17
September		(\$263,481,773.40)	(\$522,496,417.17)	\$24,735,030.05			November	\$195,046,766.40	\$362,380,785.13	\$175,542,089.76
October		\$135,044,456.10	\$61,968,725.89	\$25,990,625.74			December	\$512,557,441.20	\$766,068,935.87	\$461,301,697.08
November		\$195,046,766.40	\$622,070,035.10	\$270,025,553.90			January	(\$448,647,971.30)	(\$240,354,418.61)	(\$493,512,768.43)
December		\$512,557,441.20	\$570,284,228.30	\$1,215,365,138.10			February	(\$424,131,996.20)	\$159,479,725.31	(\$466,545,195.82)
						March	\$166,976,210.50	\$316,465,206.63	\$150,278,589.45	
						April	\$391,223,723.90	\$578,260,789.47	\$352,101,351.51	
						May	(\$111,065,990.48)	\$146,531,369.96	(\$122,172,589.53)	
						June	(\$1,328,609,209.83)	(\$811,616,924.06)	(\$1,461,470,130.81)	
						July	(\$911,426,445.57)	(\$881,149,210.02)	(\$2,500,000,000.00)	

Determining an Optimal Portfolio Duration - The Duration Optimization Methodology Model

			Duration Optimization										Choose cashflow projection	
			Calculated duration				Assign immunization weights							
Duration Optimization Values by Year				Duration Estimation and Allocation Bucket Approximation							INDEX DATES			
1	Sum Present Value of Outflows	\$3,807,939,262.12	Portfolio Size	\$12,755,002,422.00	3Mo Tsy	0.237	Start Date	6/30/20						
	Sum of Asset Matched Present Values	\$3,807,939,262.12	Immunized Portfolio	\$12,755,106,724.29	6Mo Tsy	0.486	End Date	6/30/21						
	Asset Matched Weight in Portfolio	29.854%	Percent Immunized	100.00%	9Mo Tsy	0.740	Outflow Selection							
	Annualized Duration	0.531	Starting Liquidity	\$522,955,099.30	1.00Yr Tsy	0.993	OutFlow Selection	Worst Outflow						
	Weighted Duration	0.158	1Yr Min Liquidity	\$522,955,099.30	1.25Yr Tsy	1.237	Maximum Maturity (Yrs)	5.00						
2	Sum Present Value of Outflows	\$3,801,872,344.72	Weighted Average Cash Flow Duration	2.08	1.50Yr Tsy	1.480	Immunization Weight							
	Sum of Asset Matched Present Values	\$2,471,217,024.07	Cash (Liquidity Profile)	4.10%	1.75Yr Tsy	1.724	Year 1	100.00%						
	Asset Matched Weight in Portfolio	19.374%	0-1Yr	29.85%	2.00Yr Tsy	1.967	Year 2	65.00%						
	Annual Total Liquidity Coverage Required	\$1,330,655,320.65	1-3Yr	35.72%	2.25Yr Tsy	2.212	Year 3	55.00%						
	Annualized Duration	1.531	3-5Yr	30.33%	2.50Yr Tsy	2.457	Year 4	54.20%						
	Weighted Duration	0.297			2.75Yr Tsy	2.702	Year 5	49.00%						

Credit Spreads

- The yield between Treasury securities and non-Treasury securities that are identical in all respects except for credit rating is referred to as a **credit spread**
- Identical in all respects; maturities are the same with no embedded options (here we go again... so what is an embedded option you ask? Hold please!)
- Embedded option: a provision in the indenture that gives the issuer and/or the bondholder an option to take some action against the other party (i.e., right to call the issue, right to prepay, cap on a floater)

Credit Spreads Widening or Narrowing

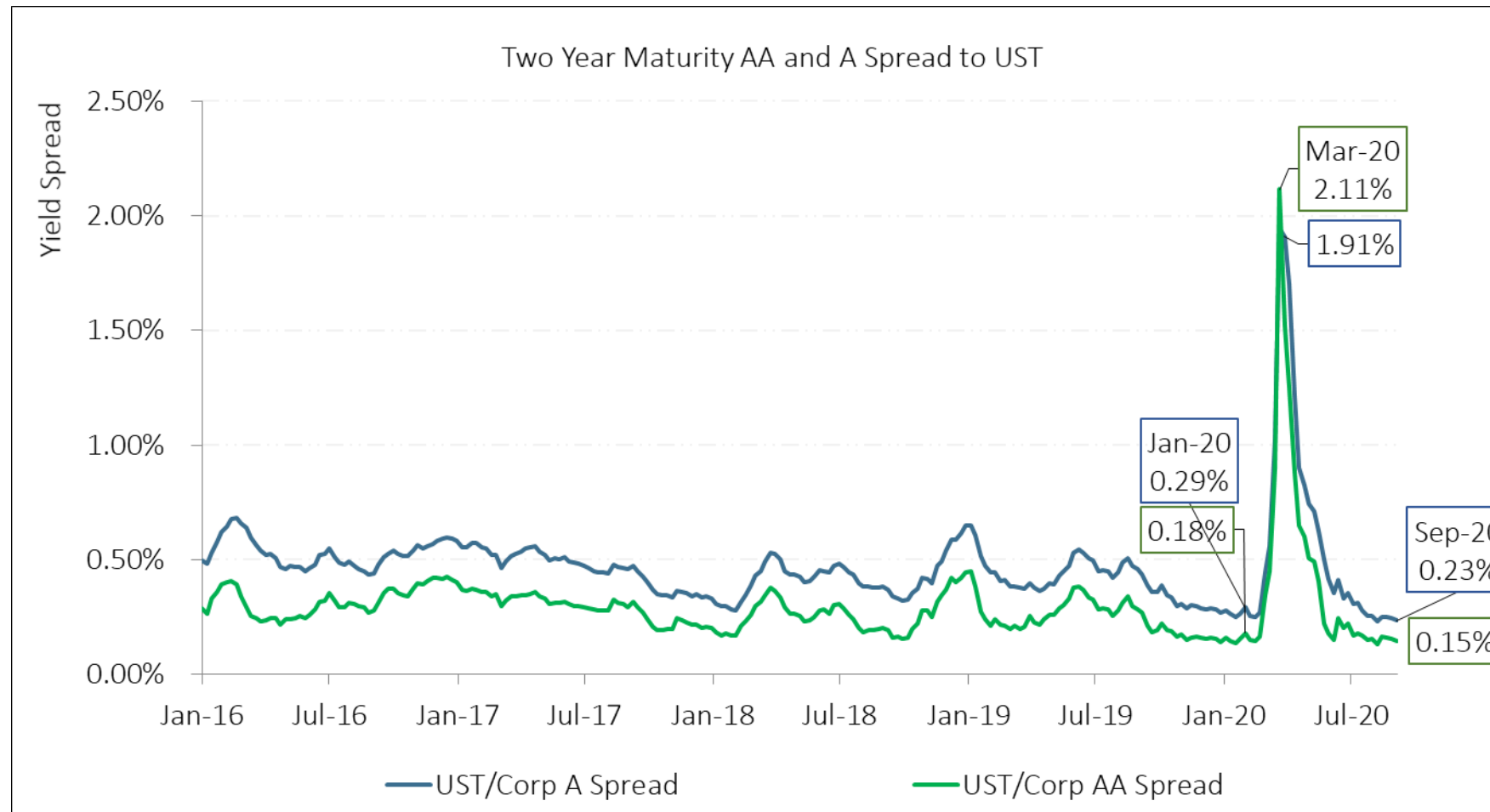
Widen or narrow relative to Treasuries

- **Widen** (become larger) in a declining or contracting economy
- **Narrow** (become smaller) during economic expansion
- **Widen** over credit concerns
- **Narrow** when demand outweighs supply
- **Widen** when investors are selling credit
- **Narrow** when investors are buying credit

 If Treasuries sell off (and thus Treasury yields increase) but spreads remain stable, the spread will **narrow** relative to Treasuries

 If Treasuries rally (and thus Treasury yields decrease) but spreads remain stable, the spread will **widen** relative to Treasuries

Credit Spreads Widen During Peak of Pandemic



Rates for 'AA' and 'A' corporate notes widened to levels not seen since the credit crisis and rebounded quickly as the Federal Reserve began implementing programs to purchase certain asset classes to ensure market liquidity.

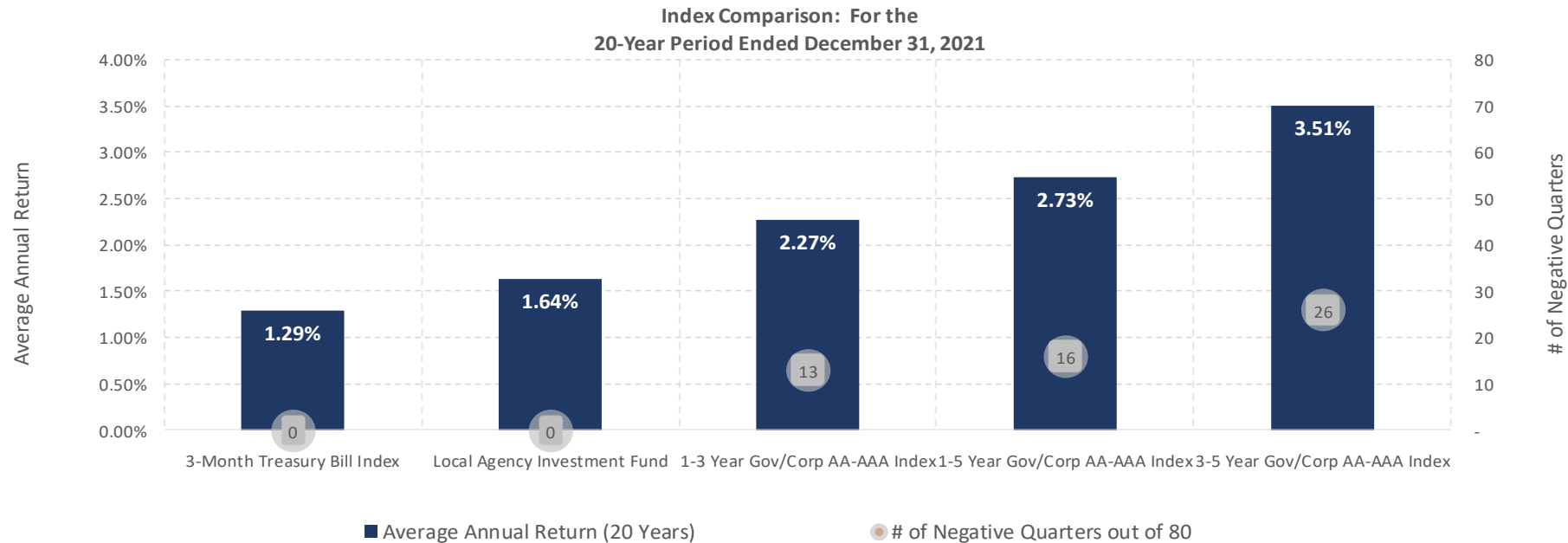
Formal Strategies Customized to Fund Characteristics & Risk Tolerance

- **Liquidity Portfolio:** invested short-term to provide liquidity for known and anticipated expenditures
 - Strategy comprised of balances maintained in LAIF and other eligible short-term securities
 - Security maturities targeted to know expenditures and laddered to provide predictable cash flow
 - Strategy entails minimal market price risk and fund easily converted to cash to cover expenditures
 - Sizing is critical to ensure sufficient liquidity while minimizing “cash drag” associated with excess liquidity
 - May include an enhanced cash component to benefit from money market curve steepness
- **Core Portfolio:** invested longer-term to enhance income and growth opportunities
 - Comprised of those funds not needed for near-term operating or CIP expenditures
 - Longer maturity/duration strategies historically generate greater returns and growth over time
 - Longer duration strategies exhibit greater interest rate risk and volatility
 - Establishment strategic maturity & duration profile consistent with objectives and risk tolerance
 - Portfolio comprised of eligible securities with active and liquid secondary markets
 - Periodic rebalancing of duration and asset allocation ensures consistency of strategy throughout market cycles
 - May include multiple duration strategies to enhance yield curve diversification and optimize return potential (e.g., 1-5 & 3-5 year)

Formal Strategies Customized to Fund Characteristics & Risk Tolerance

Summary of Total Return Performance of Select ICE BAML Fixed Income Indices

ICE Bank of America Merrill Lynch Index Description	Effective Duration ²	Yield to Worst ¹	Avg. Ann. Total Return (2001-2021)	Avg. Ann. Price Return (2001-2021)	Avg. Ann. Income Return (2001-2021)	Standard Deviation (2001-2021)	# of Years w/ Negative Total Return	# of Quarters w/ Negative Total Return	Sharpe Ratio
3-Month Treasury Bill Index	0.21	0.08%	1.29%	1.29%	0.00%	0.45%	-	-	NA
Local Agency Investment Fund	NA	0.22%	1.64%	0.00%	1.64%	0.41%	-	-	0.84
1-3 Year Gov/Corp AA-AAA Index	1.85	0.87%	2.27%	-0.41%	2.69%	1.26%	1	13	0.78
1-5 Year Gov/Corp AA-AAA Index	2.61	1.07%	2.73%	-0.12%	2.86%	1.85%	2	16	0.78
3-5 Year Gov/Corp AA-AAA Index	3.83	1.40%	3.51%	0.37%	3.14%	2.96%	2	26	0.75



Considerations for a Rising Interest Rate Environment



Adherence to proven, long-term strategies: disciplined and repeatable process

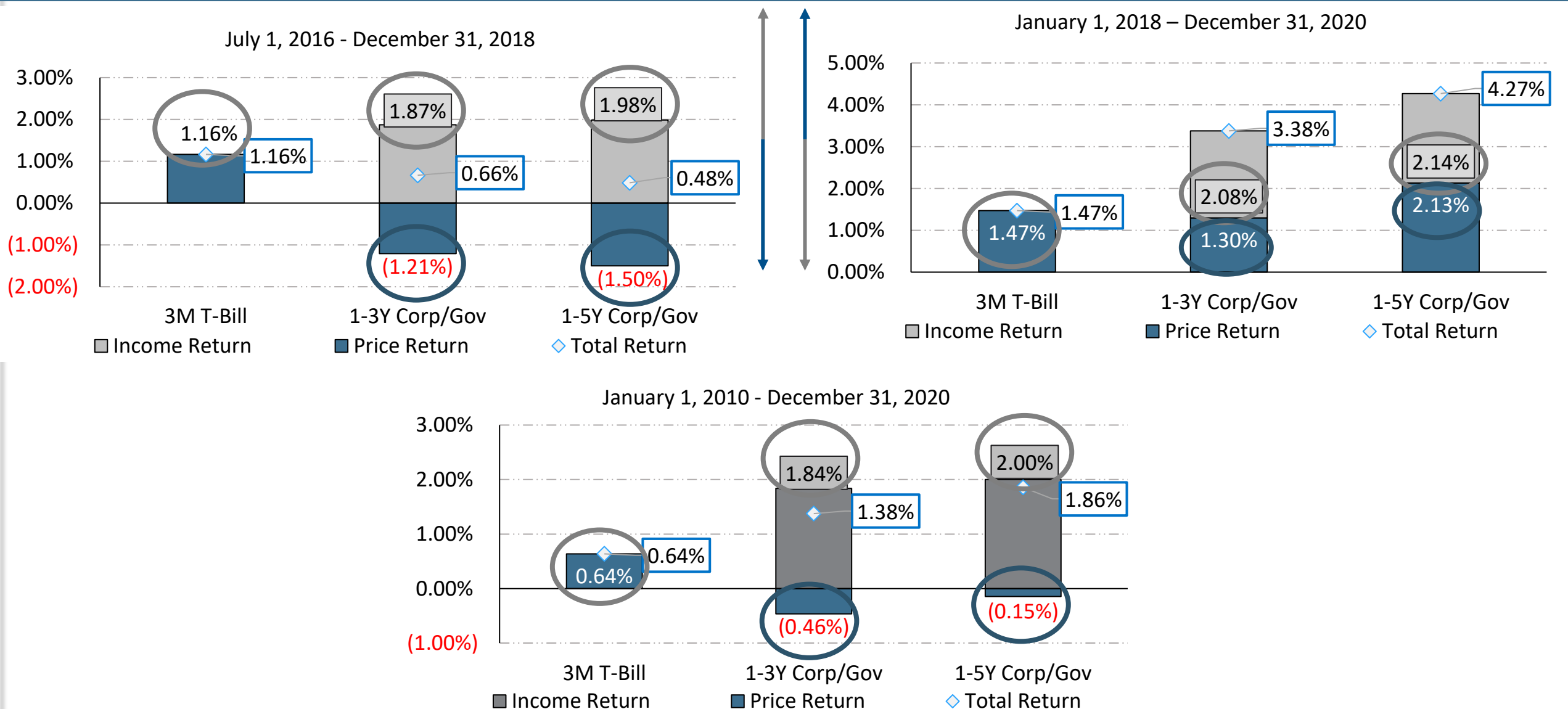
- Public Trust does not advocate attempts at market timing
- Investors should not deviate from long-term strategic portfolio strategies in attempt to capture short-term benefits
- Requires impossible ability to correctly predict the timing, pace, and magnitude of multiple interest rate changes
- Holding longer duration portfolios consistent with risk tolerance over market cycles is a proven strategy to maximize return
- Maintaining appropriate liquidity critical to ensure ability to tolerate volatility



Tactical portfolio adjustments to manage risk & return: constrained by long-term strategy

- Target liquidity portfolio maturities to anticipated rate hike dates
- Increase exposure to floating rate notes that adjust to rising interest rates
- Increase allocation to higher yielding sectors of the credit markets to bolster income (risk substitution)
- Tactically shorten core portfolio duration relative to benchmark (e.g., -15% vs. index)
- Adjust core portfolio duration distribution based upon anticipated changes in shape of the yield curve
- Bulleted, barbell, and laddered maturity distributions respond differently to non-parallel changes in yields
- Remain disciplined and don't reach for yield

Components of Total Return – Price vs Income Return



Disclosures

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Appendix

Ensuring Sufficient Liquidity

Cashflow analysis and planning: critical aspects of investment program

- Review anticipated revenues and expenditures to appropriately size and a separate liquidity portfolio
- Liquidity portfolio may be comprised on LAIF, MMF, bank deposits and dedicated liquidity securities portfolio
- Review anticipated CIP expenditures and identify those that will be paid from operating cash vs bond proceeds
- Create dedicated CIP securities portfolio as a separately managed account
- Match CIP Portfolio maturities to anticipated project expenditures
- Separately manage any project funds arising due to bond financings

Separately managed liquidity portfolio: complementary to balances held in LAIF

- Construct a separately managed liquidity portfolio ladder along the 1-year and under portion of the yield curve
- Comprised primarily of commercial paper and other eligible securities
- Target maturities to known expenditures and based upon seasonal cashflow patterns and constrained to a max WAM
- Consider anticipated timing of Fed rate increases in maturity structure
- Takes prudent advantage of yield curve slope between 1-12 months
- Close coordination to ensure liquidity remains sufficient

Daily Cash Projection Model

8/20/2020							
Opening Balance		\$8,074,230.78			CitiBank Wire Transfer Amount	MMKT Fund Limit	
					\$50,000,000.00	\$362,851,459.01	
Sources:		\$117,123,023.43	\$167,144,989.83		(\$99,956,395.50)	One Day Float	
Maturity	912796XF1	\$50,000,000.00		Investment Interest	\$21,966.40	\$1,301,753.57	
Maturity		\$0.00			(\$49,934,429.10)		
Maturity		\$0.00					
Maturity		\$0.00			Total Credits	\$117,403,530.70	
Maturity		\$0.00			1 Day Float	(\$274,852.96)	
Maturity		\$0.00			2+ Day Float	(\$5,654.31)	
Maturity		\$0.00			Same Day Credits	\$117,123,023.43	
Maturity		\$0.00					
					Sources (credits)	Uses (debits)	
Uses:		(\$45,843,882.70)	(\$145,800,278.20)	CP Issuance	\$0.00	Payroll	\$0.00
Purchase	9127964D8	(\$49,969,666.50)		Lockbox	\$0.00	Payroll Taxes	\$0.00
Purchase	9127963A5	(\$49,986,729.00)		Incoming Wires	\$0.00	Paymode	(\$11,009,659.50)
Purchase		\$0.00		Retirement	\$0.00	Retirement	\$0.00
Purchase		\$0.00		Sold MMKT	\$30,000,000.00	Purchase MMKT	\$0.00
Purchase		\$0.00		Sold MMKT	\$0.00	Purchase MMKT	\$0.00
Purchase		\$0.00		Bond Issue Proceeds	\$0.00	Deferred Comp	\$0.00
Purchase		\$0.00		Revenues	\$0.00	Outgoing Wires	(\$31,546,238.00)
Purchase		\$0.00		Cash Pro Credits	\$87,123,023.43	Cash Pro Debits	(\$3,287,985.20)
Purchase		\$0.00		Other Incoming Funds	\$0.00	Debt Service	\$0.00
Purchase		\$0.00		Total	\$117,123,023.43	Total	(\$45,843,882.70)
Purchase		\$0.00					
Purchase		\$0.00					
			(\$30,000,000.00)				
				Bank Target Bal Diff	Cash Balance + 1 Day Float		
Cash Balance			\$29,418,942.41	(\$581,057.59)	\$30,720,695.98		

Cash Forecast Model

		Cash Balance	8/20/2020	\$29,418,942.41		MMKT Fund Limit	Money Market Balance	Overnight Target
		ECA Target Balance		(\$30,000,000.00)		\$362,851,459.01	\$1,831,695,414.64	\$300,000,000.00
				(\$581,057.59)				
			USES	SOURCES	Daily Net Cash Flow	Cash Balance	Cash Balance + MMKT Funds	Spendable Cash
Friday, August 21, 2020	Payroll Taxes		(\$7,000,000.00)	\$0.00	(\$44,000,000.00)	(\$44,581,057.59)	\$1,787,114,357.05	\$1,487,114,357.05
	Kaiser Health Premium		(\$37,000,000.00)	\$0.00				
Saturday, August 22, 2020			\$0.00	\$0.00	\$0.00	(\$44,581,057.59)	\$1,787,114,357.05	\$1,487,114,357.05
Sunday, August 23, 2020			\$0.00	\$0.00	\$0.00	(\$44,581,057.59)	\$1,787,114,357.05	\$1,487,114,357.05
Monday, August 24, 2020	Maturity 313396D34		\$0.00	\$25,000,000.00	\$25,000,000.00	(\$19,581,057.59)	\$1,812,114,357.05	\$1,512,114,357.05
Tuesday, August 25, 2020	SFO Debt Service ACH		(\$50,000,000.00)	\$0.00	(\$10,178,076.33)	(\$29,759,133.92)	\$1,801,936,280.72	\$1,501,936,280.72
	Maturity 9127963Q0		\$0.00	\$50,000,000.00				
	Purchase 912796A82		(\$49,975,402.78)	\$0.00				
	ADM - Real Estate Debt Svc COP Ser 2015R1 081120		(\$5,202,673.55)	\$0.00				
	Maturity 62479LHR9		\$0.00	\$45,000,000.00				
Wednesday, August 26, 2020			\$0.00	\$0.00	\$0.00	(\$29,759,133.92)	\$1,801,936,280.72	\$1,501,936,280.72
Thursday, August 27, 2020	Maturity 912796XG9		\$0.00	\$100,000,000.00	\$100,000,000.00	\$70,240,866.08	\$1,901,936,280.72	\$1,601,936,280.72
Friday, August 28, 2020	Maturity 3130ABZE9		\$0.00	\$6,700,000.00	\$6,700,000.00	\$76,940,866.08	\$1,908,636,280.72	\$1,608,636,280.72
Saturday, August 29, 2020			\$0.00	\$0.00	\$0.00	\$76,940,866.08	\$1,908,636,280.72	\$1,608,636,280.72
Sunday, August 30, 2020			\$0.00	\$0.00	\$0.00	\$76,940,866.08	\$1,908,636,280.72	\$1,608,636,280.72
Monday, August 31, 2020	Payroll Transfer to US Bank		(\$86,000,000.00)	\$0.00	(\$167,238,238.00)	(\$90,297,371.92)	\$1,741,398,042.72	\$1,441,398,042.72
	SFO Capital Expense		(\$81,238,238.00)	\$0.00				
	Pension Payment received Northern Trust		\$0.00	\$102,000,000.00				
	Pension		(\$102,000,000.00)	\$0.00				
Tuesday, September 1, 2020	Maturity 9127963R8		\$0.00	\$50,000,000.00	\$50,000,000.00	(\$40,297,371.92)	\$1,791,398,042.72	\$1,491,398,042.72
Wednesday, September 2, 2020	Payroll Taxes		(\$36,000,000.00)	\$0.00	\$14,000,000.00	(\$26,297,371.92)	\$1,805,398,042.72	\$1,505,398,042.72
	Maturity 06367BAC3		\$0.00	\$50,000,000.00				
Thursday, September 3, 2020			\$0.00	\$0.00	\$0.00	(\$26,297,371.92)	\$1,805,398,042.72	\$1,505,398,042.72
Friday, September 4, 2020	Payroll Taxes		(\$7,000,000.00)	\$0.00	\$6,000,000.00	(\$20,297,371.92)	\$1,811,398,042.72	\$1,511,398,042.72
	Kaiser Health Premium		(\$37,000,000.00)	\$0.00				
	Maturity 459058GA5		\$0.00	\$50,000,000.00				
Saturday, September 5, 2020			\$0.00	\$0.00	\$0.00	(\$20,297,371.92)	\$1,811,398,042.72	\$1,511,398,042.72
Sunday, September 6, 2020			\$0.00	\$0.00	\$0.00	(\$20,297,371.92)	\$1,811,398,042.72	\$1,511,398,042.72
Monday, September 7, 2020			\$0.00	\$0.00	\$0.00	(\$20,297,371.92)	\$1,811,398,042.72	\$1,511,398,042.72
Tuesday, September 8, 2020	Maturity 91279463X5		\$0.00	\$50,000,000.00	\$50,000,000.00	\$29,702,628.08	\$1,861,398,042.72	\$1,561,398,042.72
Wednesday, September 9, 2020			\$0.00	\$0.00	\$0.00	\$29,702,628.08	\$1,861,398,042.72	\$1,561,398,042.72
Thursday, September 10, 2020	Maturity 912796TJ8		\$0.00	\$100,000,000.00	\$100,000,000.00	\$129,702,628.08	\$1,961,398,042.72	\$1,661,398,042.72
Friday, September 11, 2020			\$0.00	\$0.00	\$0.00	\$129,702,628.08	\$1,961,398,042.72	\$1,661,398,042.72