DAY 3 - WEDNESDAY

Earnings per share drives stock price

Net income / # shares stock = EPS

EPS x market multiple = Stock Price

What else drives stock price?

Budgeting and Planning

Profit Plan Worksheet

	Results for Qtr Ending 12/31/20	Plan for Quarter Ending 3/31/21
Interest Income	9.264	
Loans	8.445	
Securities: Taxable Income	.246	
Securities: Tax-exempt Income	.256	
Funds Sold	.316	
Interest Expense	4.382	
Checking & Savings Accounts	1.088	
Time Accounts	3.014	
Certificates of Deposit	.281	
Borrowed Funds	0	
FHLB Borrowing	0	
Capital Notes	0	
Net Interest on Swaps	0	
Net Interest Income	4.881	
Service Charges & Other Income	1.992	
Loan Loss Provision	.449	
Operating Expenses	6.651	
Salaries and Benefits	4.684	
Advertising - Promotion	.100	
Occupancy & Other Op. Expenses	1.867	
Operating Earnings	-.226	
Gains/Losses on Asset Sales	0	
Income Taxes	-.162	
Net Income	-.064	
Number of Outstanding Shares	2,000,000	
Earnings Per Share	-.032	

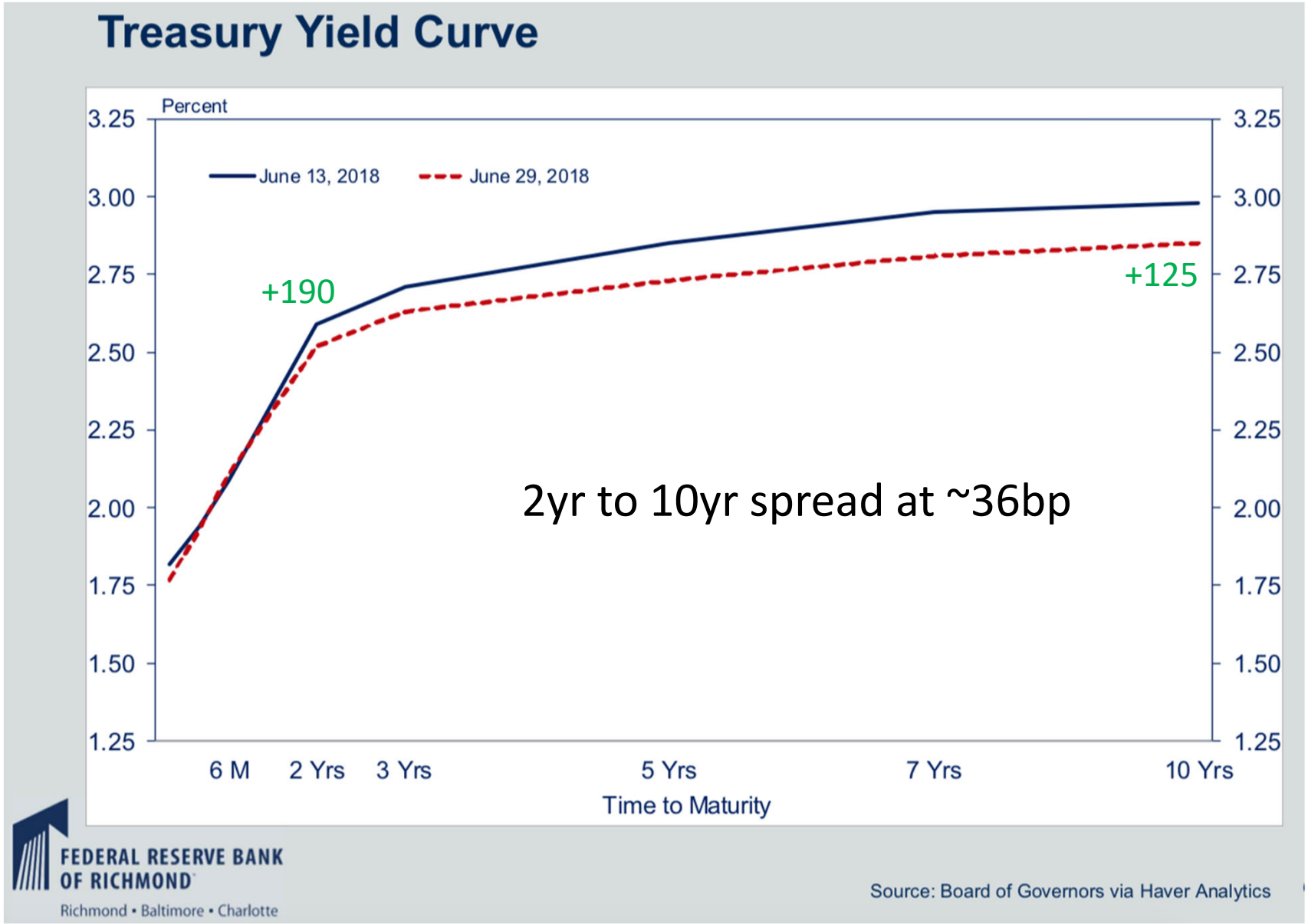
Interest Rates

- What Interest rates?
  - Fed Funds Target rate — FRB-FOMC
  - WSJ Prime Rate — Top Banks
  - Libor (sunset 2021?) — ICE*
  - US Treasury — Marketplace
  - Swap Curve — Marketplace
  - Deposit rates — Your Bank/Market
- SOFR - Secured Overnight Financing Rate
- Do all these rates move at the same time?
- Do all these rates move in tandem?

Interest Rate Risk

- What is Interest Rate Risk?
  - Risk to earnings and the value of a bank to changes in interest rates
- Why is it Important?
  - 1980s Savings and Loan Crisis/ended rate controls
- What are the two key measures of interest rate risk?
- How does the balance sheet contribute to or help to mitigate interest rate risk?

Yield Curve – 2 Years Ago



Yield Curve – 1 Year Ago

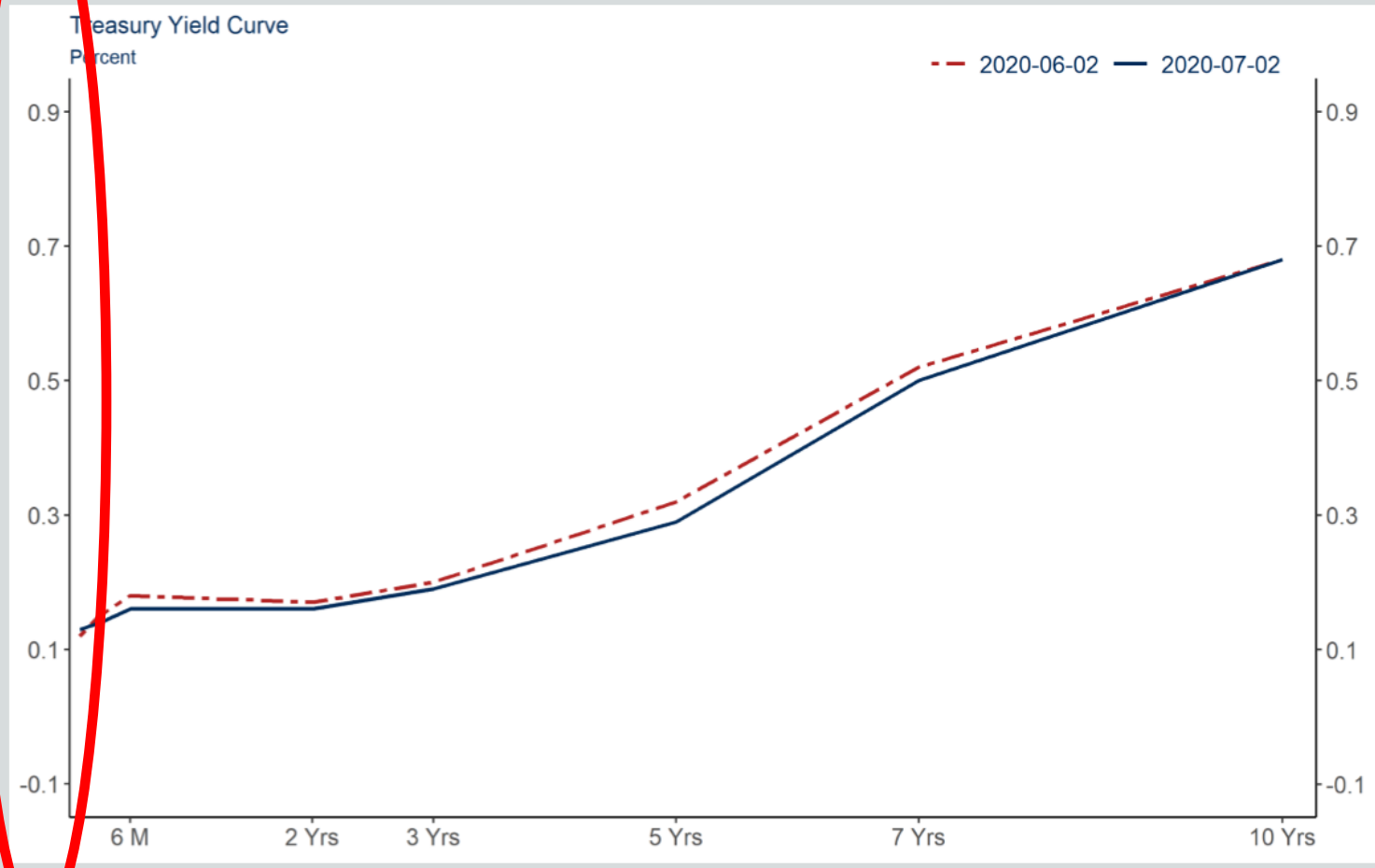
Treasury Yield Curve

FEDERAL RESERVE BANK OF RICHMOND
Richmond • Baltimore • Charlotte

Source: Board of Governors via Haver Analytics

Current Yield Curve – 7/2/20

Treasury Yield Curve



FEDERAL RESERVE BANK OF RICHMOND
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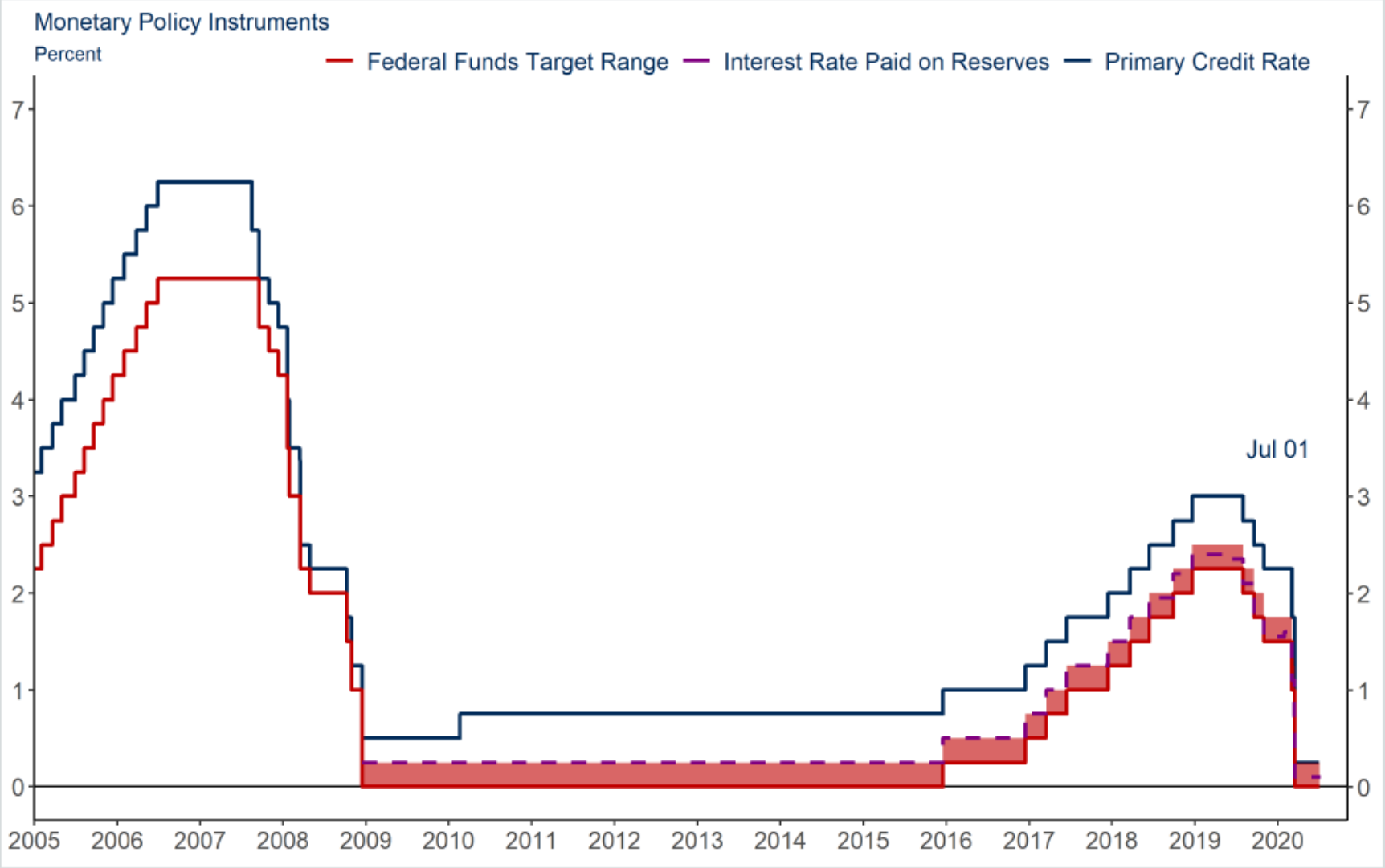
Source: Board of Governors via Haver Analytics

Monetary Policy Instruments



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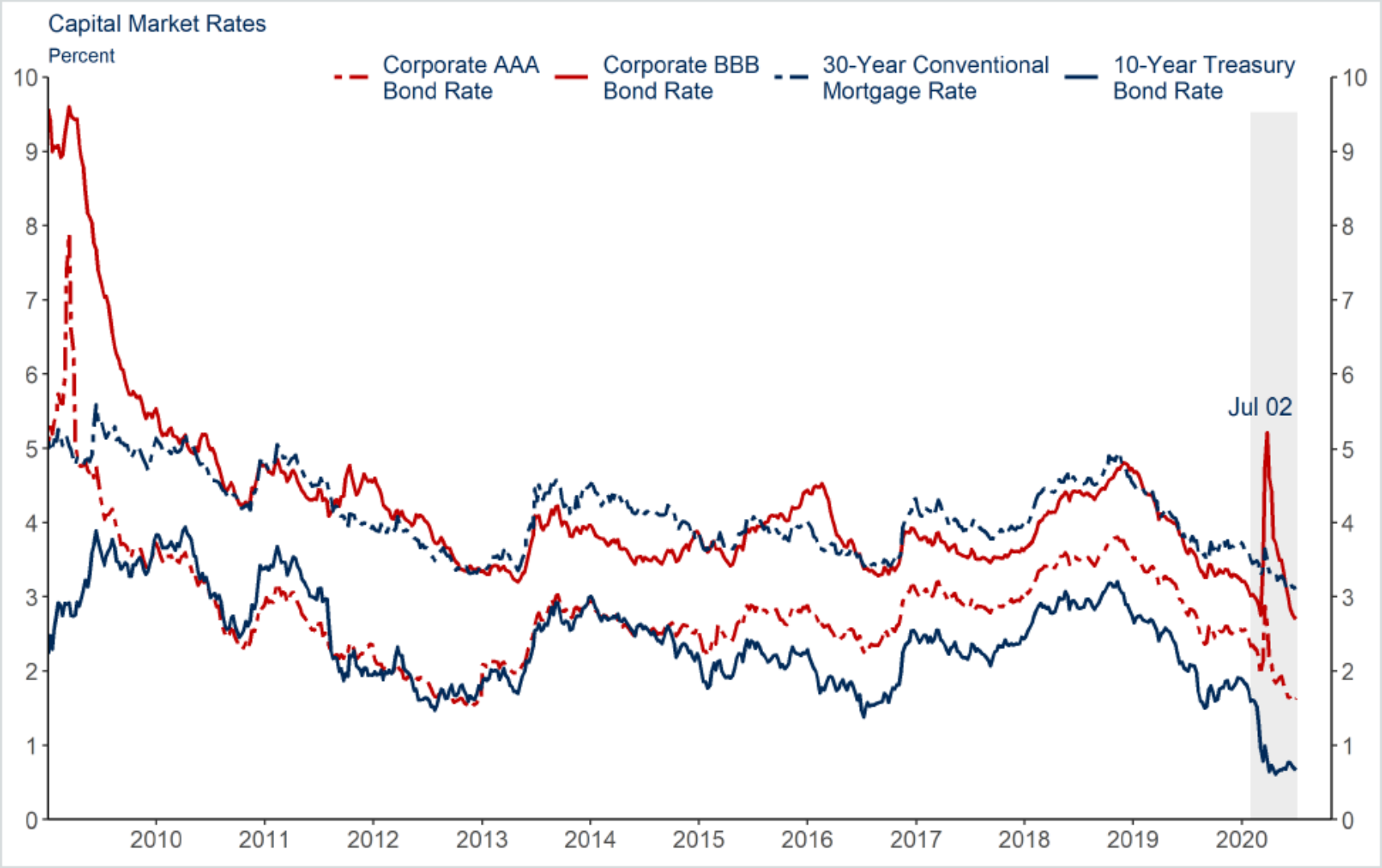
Source: Board of Governors via Haver Analytics

Capital Market Rates



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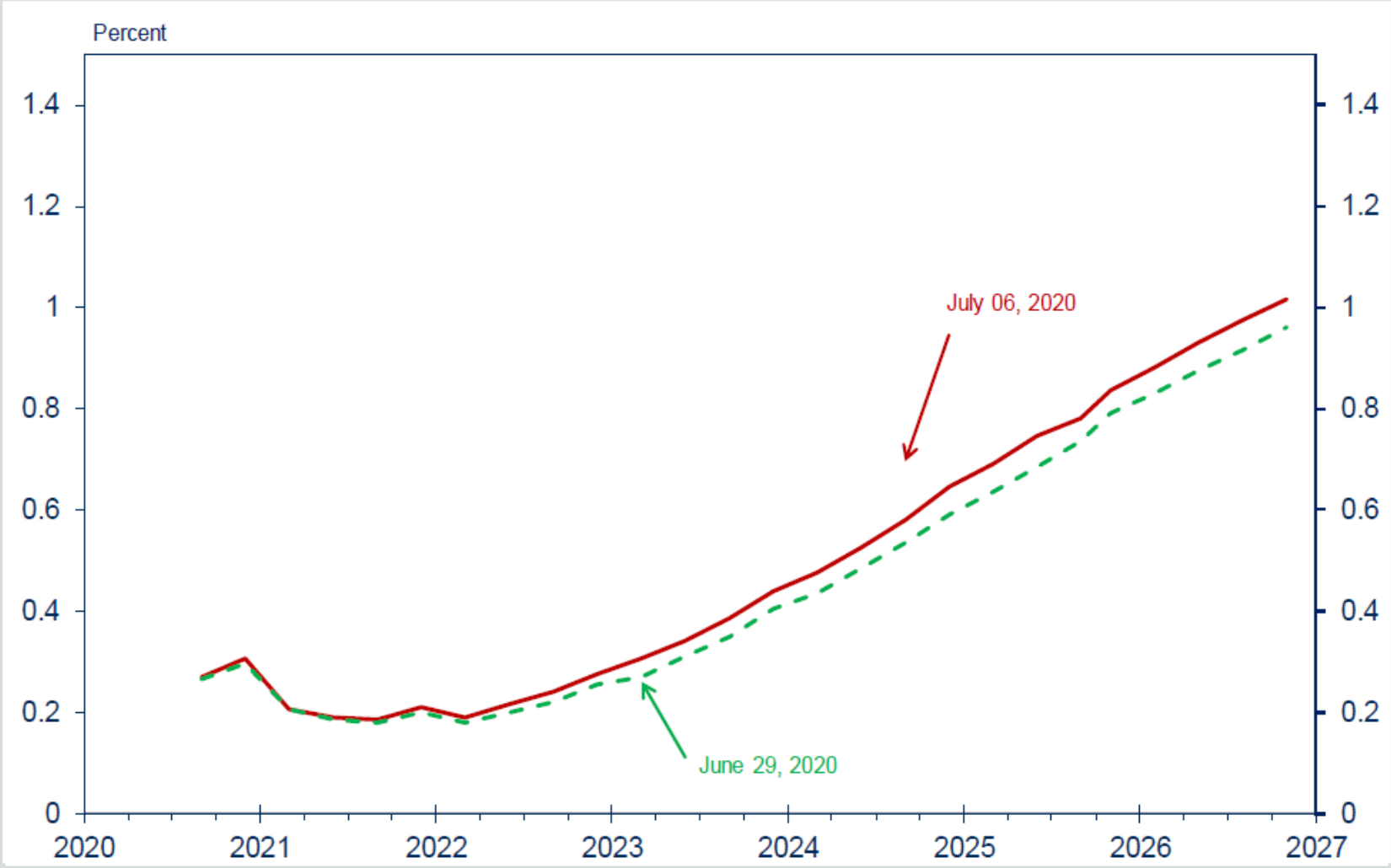
Source: BofA Merrill Lynch & Board of Governors via Haver Analytics

Eurodollar Futures



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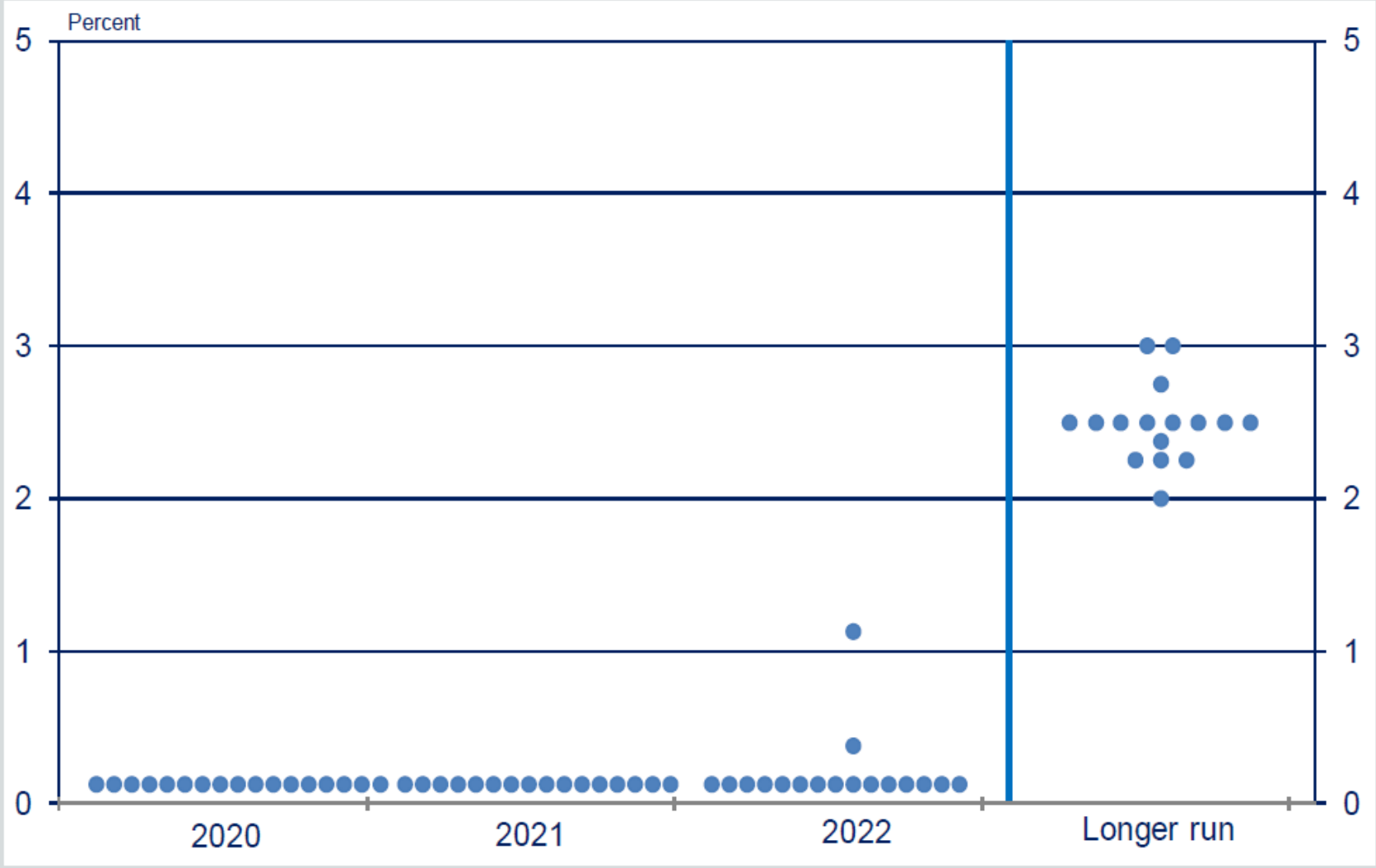
Source: CME Group via Bloomberg

Summary of Economic Projections: Federal Funds Rate



FEDERAL RESERVE BANK OF RICHMOND
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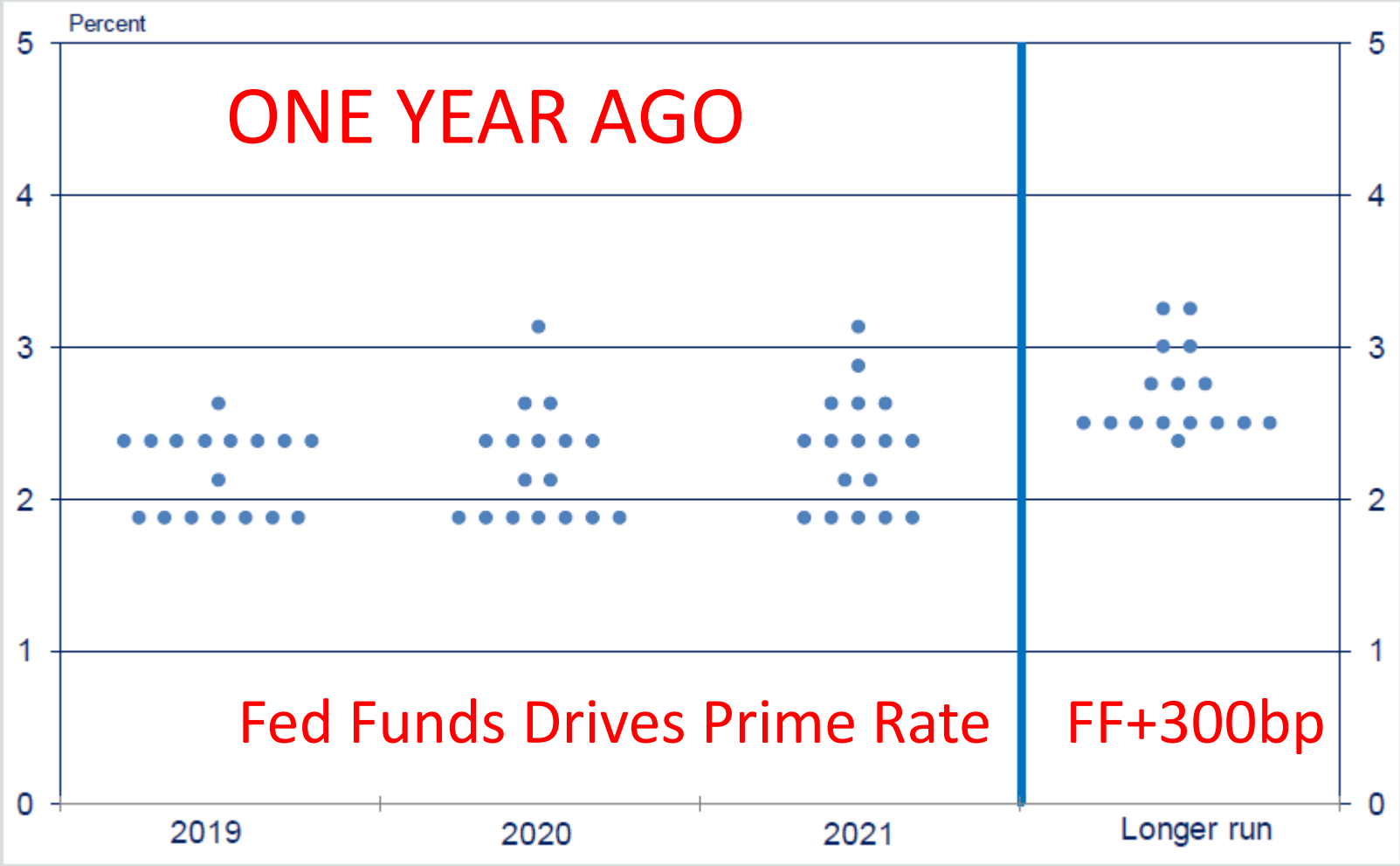
Note: Each dot in the chart represents the value of an FOMC participant's judgment of the midpoint the appropriate target range (or the appropriate target level) for the federal funds rate at the end of the calendar year. Projections made for the December 2019 meeting.

Source: Board of Governors

Summary of Economic Projections: Federal Funds Rate



FEDERAL RESERVE BANK OF RICHMOND

Note: Each dot in the chart represents the value of an FOMC participant's judgment of the midpoint of the appropriate target range (or the appropriate target level) for the federal funds rate at the end of the calendar year. Projections made for the June 2019 meeting.

Source: Board of Governors

Interest Rate Risk

- What is Interest Rate Risk?
  - Risk to earnings and the value of a bank to changes in interest rates
- Why is it Important?
  - Reg Q and the Savings and Loan Crisis (S in Camels)
- How does the balance sheet contribute to or help to mitigate interest rate risk?
- What are the two key measures of interest rate risk?

Basic Example for $100 million assets:

- What if
  - 1 Year avg. term of loan portfolio @ 4% $ 4,000,000
  - Funded with 1 Year CD @ 1.00% $(1,000,000)
  - Net spread is 4.00% $ 4,000,000
  - Rates move in one year, what happens?
- What if
  - Average loan term is 3 years @4.5% $4,500,000
  - Average funding is 6 months @ 0.50% $ (500,000)
  - Net Spread is 4.00% $4,000,000
  - Funding rates rise by 1% per year
  - What happens to Net spread in year 2?
  - What happens to Net spread in year 3?

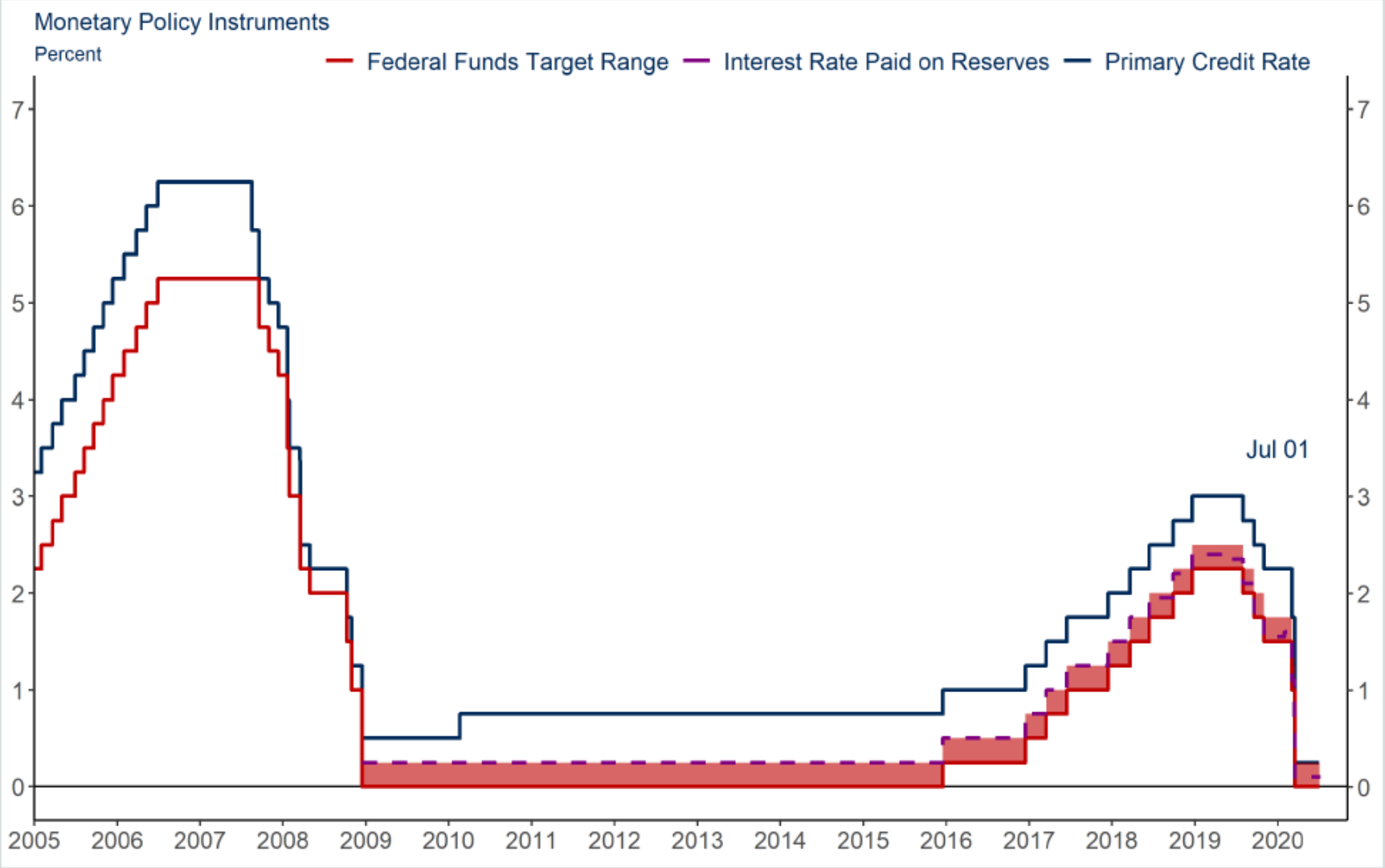
Timing is Everything

- $100 5 year fixed rate loan
- $100 1 year CD to fund
- Rates go up – what happens to income
  - Loan Customer enjoys 5 year fixed rate loan
  - Deposit Customer demands market rate years 2,3,4,and 5
- Rates go down – what happens to income
  - Loan Customer enjoys 5 year fixed rate loan OR refinances to lower rate (customer put option)
  - Deposit Customer accepts lower interest rate for renewals in years 2,3,4,and 5

Rate Sensitivity Defined

- Asset Sensitive
  - assets will reprice faster than liabilities
  - Rates go up we reprice our earning assets faster than our funding costs - Earnings go up or down?
  - Rates go down we reprice our earning assets faster than our funding costs – Earnings go up or down?
- Liability Sensitive
  - liabilities will reprice faster than our assets
  - Rates go up we reprice our funding costs faster than our earning assets- Earnings go up or down?
  - Rates go down we reprice our funding costs faster than our earning assets- Earnings go up or down?

Monetary Policy Instruments



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Source: Board of Governors via Haver Analytics

BANKING

MARCH 3, 2020 | 12:57 PM EST

The following table details the one-year gap ratio as of 4Q19 for available larger domestic commercial banks. As illustrated, the gap ratio measures the difference in concentrations of assets and liabilities re-pricing over the next year. The smallest gap ratios are comprised of a high percentage of rate-sensitive liabilities and/or a low percentage of rate-sensitive assets. We note that the analyses may not include the impact of derivative contracts and interest rate swaps.

	Rate Sensitive Assets and Liabilities							Rate Sensitive Assets and Liabilities						
Ticker	One Year Gap Ratio	RANK	Rate Sensitive Assets/ Assets	RANK	Rate Sensitive Liabilities/ Assets	RANK	Ticker	One Year Gap Ratio	RANK	Rate Sensitive Assets/ Assets	RANK	Rate Sensitive Liabilities/ Assets	RANK
HTLF	(22)%	1	34%	32	56%	1	TRMK	23%	48	35%	34	12%	60
NYCB	(18)%	2	17%	4	36%	5	WFC	23%	49	39%	49	16%	37
ISBC	(17)%	3	12%	1	29%	10	BXS	23%	50	37%	41	13%	54
VLY	(14)%	4	13%	2	27%	11	PACW	24%	51	40%	56	16%	41
CATY	(9)%	5	31%	26	40%	4	PNFP	25%	52	42%	64	18%	32
WAFD	(2)%	6	24%	14	26%	12	RNST	25%	53	39%	47	14%	48
HOPE	1%	7	36%	36	35%	7	HBAN	25%	54	36%	39	11%	70
GBCI	5%	8	17%	5	12%	64	WBS	25%	55	43%	66	18%	31
WSBC	5%	9	23%	12	17%	34	HOMB	25%	56	37%	44	12%	61
FBC	7%	10	36%	37	29%	9	FRME	25%	57	40%	52	14%	47
FRC	7%	11	22%	11	15%	43	CIT	26%	58	46%	76	20%	24
UMBF	7%	12	49%	82	42%	3	FMBI	26%	59	46%	78	20%	23
BOH	8%	13	19%	7	12%	69	UCBI	27%	60	40%	55	14%	52
SSB	9%	14	22%	8	13%	55	FIBK	27%	61	39%	46	12%	65
PB	10%	16	23%	13	13%	53	INDB	27%	62	37%	43	11%	75
BKU	10%	17	45%	73	35%	6	SNV	27%	63	50%	83	23%	20
CBU	10%	18	17%	3	7%	90	FNB	27%	64	46%	75	18%	30
SFNC	10%	19	34%	31	23%	19	TFC	28%	65	40%	51	12%	68
CVBF	11%	20	18%	6	7%	88	CBSH	28%	66	42%	62	14%	51
AX	12%	21	64%	90	52%	2	HTH	29%	67	49%	81	20%	25
SBNY	12%	22	22%	10	10%	76	USB	29%	68	43%	68	15%	46

Measuring Interest Rate Risk

- There are 2 key measures of interest rate risk:
  - Net Interest Income at risk (EAR) – measures the impact of changes in interest rates on **future net interest income**
  - Economic Value of Equity (EVE) at risk – measures the impact of changes in interest rates on the value of assets and liabilities and, therefore the **adjusted book value of equity**.

Measuring Interest Rate Risk

- Historical/ALCO Report Cards
  - Net Interest Income Analysis
  - Rate/Volume variance
- Basic Forecast
  - Repricing GAP
  - Maturity GAP
- Simulation Analysis
  - Interest Rate Shock/Ramps
  - Forecasting Net Interest Income
  - Economic Value of Equity

Third Bank Repricing Gap

	Total 12/31		Estimated Interest Rate Sensitivity				
	Amt	Inc/Exp	1 Qtr	2 Qtr	3 & 4 Qtr	1-4 Qtr	Over 1 Year
==== Assets ====							
Federal Funds Sold	8.9	.5	8.9			8.9	
Securities (Book Value)	25.0	.2	0	0	0	0	25.0
Business Loans	223.8	4.3	223.8			223.8	
Real Estate Loans	323.3	5.1	30.6	25.4	44.0	100.0	223.3
Consumer Loans	139.9	2.4	23.7	21.3	18.8	63.8	76.1
Other Loans	0	0	0			0	
All Other Assets	98.4						98.4
Total	819.4	12.6	287.0	46.7	62.8	396.6	422.8
==== Liabilities and Equity ====							
Federal Funds Borrowed	0	0	0			0	
Repos	0	0	0			0	
FHLB Borrowing	0	0	0	0	0	0	0
Certificates of Deposit	0	0	0	0	0	0	
Checking and Savings *	480.8	1.3	220.5			220.5	260.4
Time Accounts	239.0	3.0	44.7	32.3	48.4	125.3	113.7
Capital Notes	0	0					0
Equity & Other Liabilities	99.2						99.2
Total	819.1	4.2	265.1	32.3	48.4	345.8	473.2
==== Summary Positions ====							
Net Balance Sheet Position (A - L)		8.4	21.9	14.5	14.4	50.7	-50.4
Fixed Rate Swaps		0	0	0	0	0	0
Variable Rate Swaps		0	0	0	0	0	0
Interest Rate Gap		8.4	21.9	14.5	14.4	50.7	-50.4
Interest Rate Gap / Assets (%)		1.0	2.7	1.8	1.8	6.2	-6.2

Interest Rate Risk Modeling

- Calculates impact to NIM and EVE/Capital
- Adds new volume at new rates
- Accounts for basis risk for different A&L
- Accounts for Call risk in investment portfolio
- Assumptions
  - Non-maturity deposit behavior, runoff
  - Loan pre-payments
  - Integrated flat or budgeted growth

Simulation Analysis

The following table represents interest rate sensitivity on our net interest income using different rate scenarios:

Change in Prime Rate	% Change in Net Interest Income
+ 300 basis points	9.83 %
+ 200 basis points	6.76 %
+ 100 basis points	3.34 %
- 100 basis points	(4.75)%

If rates rise 100 bp will this bank lose money or make more net interest income if their simulation is correct?

Assignments

- Select 1 person from your team to be:
  - CEO – grow shareholder value, earnings, vision
  - CFO – financial stability, IRR, liquidity, investments
  - CLO/Lending – loan growth, pricing and structure
  - Deposit/Retail– grow, marketable products
- Each team and team captain
  - Read assignment before tomorrow
  - We will give each team 10 minutes to prepare
  - Select your team captain for 5 minutes of fame
  - We will vote for most compelling position