

Blue Chip Financial Forecasts[®]

**Top Analysts' Forecasts Of U.S. And Foreign Interest Rates, Currency Values
And The Factors That Influence Them**

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BLUE CHIP FINANCIAL FORECASTS®

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Fed Fights Inflation; Recession Prospects for 2023 at 44%

Supply-side Issues Continue to Weigh on Economy. U.S. economic activity and inflation continue to be impacted by several forces. These remain, as they have been for at least the last two years, to be mainly supply-side issues: the effect of the war in Ukraine on oil markets and now food supply, since Ukraine is a major provider of wheat for global markets. Furthermore, the COVID pandemic has continued to leave long shadows with China's zero-COVID policy restraining world trade growth and further blocking global supply-chain channels.

Fed Raising Rates More To Fight Inflation. The steep climb in inflation that has resulted from these developments is now generating an increasingly forceful policy response from the Federal Reserve as well as other central banks. At the last meeting of the Federal Open Market Committee on June 14-15, the increase in the federal funds rate was a substantial 75 basis points, putting the rate in the range of 1.50%-1.75%. The Committee expects further hikes in the period ahead. Indeed their own forecasts suggest the rate could reach 3.4% by year-end 2022 and then 3.8% by year-end 2023.

The Blue Chip panel has a similar vision of the interest rate pattern this year, with the federal funds rate averaging 3.1% in Q4 2022 and 3.5% in Q1 2023. So the rate at this year-end would be about 3.3%. However, the panel does not appear to believe that much further tightening would be necessary across 2023. Their fed funds rate consensus forecast during that year shows it steady at 3.5% until the fourth quarter, when it would go down just to 3.4%. The FOMC members, by contrast are forecasting a rate of 3.8% in late 2023. The difference between the Blue Chip panel's forecasts and the FOMC is not trivial but nevertheless does not imply a marked difference in policy rate expectations.

Tighter Monetary Policy Expected To Be Effective. Following an estimate of 5.8% at an annual rate in Q2 2022, the panel's inflation forecast shows the PCE price index rising in Q3 at a 5.2% annual rate, then moderating to 3.6% in Q4. In 2023, it is expected to continue the moderating trend, showing an increase Q4 over Q4 of 2.6%; in other words, the panel is expecting inflation to edge back toward the Fed's target pace of 2%.

But will the tightening of monetary policy that helps bring about this moderation of inflation generate a recession?

Blue Chip Forecast Show Weak Growth, but No Recession. The Blue Chip forecasts for GDP do not show any more quarterly declines following the -1.6% seasonally adjusted annual rate of decline in Q1 this year. But growth is still expected to be quite sluggish and well below potential. The Blue Chip panel projects growth this year of 1.2%, Q4 over Q4, and 1.3% across 2023. However, the margin of error between sub-trend growth outcome and a recession is small.

In fact, the answers to a Special Question this month about the probability of recession illustrate this. Panelists' answers for recession probability this year in the U.S. are just 31%, ranging from 16% for the bottom 10 and 48% for the top 10. For 2023, the expectation does increase markedly to 44%, ranging from 27% for the bottom 10 to 64% for the top 10.

Further, in another Special Question, the panel indicates that they believe that as the Fed removes its monetary accommodation, there is a 55% probability that it can do so without invoking a recession.

Long-Term Interest Rates Seen Just Slightly Higher as Inflation Moderates. The combination of Fed tightening and higher inflation usually means longer-term interest rates are higher relative to recent history and also relative to recent forecasts. However, the increased aggressiveness of expected Fed action has raised the risk of recession sufficiently to generate a slight reversal in longer-term rates. Ten-year Treasuries climbed from 2.75% in April to 2.90% in May and averaged as much as 3.36% in mid-June. But they have eased visibly since then, back to right at 3% on June 30. The forecast continues that general notion, with yields on the 10-year note and the 30-year Treasury bond projected to remain below 4% through the course of next year.

Credit Spreads Forecast Suggest Financial Stability Maintained. Increases in corporate bond yields and mortgage rates are expected, but the upward movement is not seen to be all that large. Aaa corporate yields recently hovered just above 4.5% and the Blue Chip panel looks for them to rise gradually to 5.1% by early 2023 and generally stay there through that year. The spread to 30-year Treasuries could climb from 120 basis points to 140. This might suggest that investors will remain confident that there should be no substantial credit difficulties going forward.

Mortgage rates, measured by the Freddie Mac 30-year rate, climbed sharply in the last few weeks, but then dropped by 11 basis points to 5.70% in the very latest reading, published on June 30. This is the highest level since late 2008 in the midst of the Great Recession. The Blue Chip panel expects some further increase to 6%, which would be sustained across much of 2023. Thus, while the markets would have some further response to recent high inflation, that is expected to be limited.

Carol Stone, CBE (Haver Analytics, New York, NY)

Consensus Forecasts of U.S. Interest Rates and Key Assumptions

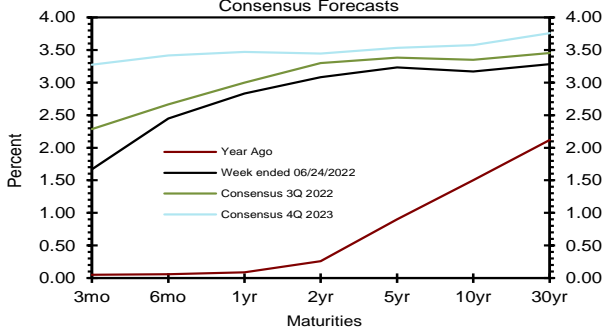
Interest Rates	History								Consensus Forecasts-Quarterly Avg.					
	Average For Week Ending				Average For Month				Latest Qtr	3Q 2022	4Q 2022	1Q 2023	2Q 2023	3Q 2023
	Jun 24	Jun 17	Jun 10	Jun 3	May	Apr	Mar	2Q 2022*	2022	2022	2023	2023	2023	2023
Federal Funds Rate	1.58	0.83	0.83	0.83	0.77	0.33	0.20	0.73	2.4	3.1	3.5	3.5	3.5	3.4
Prime Rate	4.75	4.00	4.00	4.00	3.94	3.50	3.37	3.90	5.4	6.2	6.6	6.7	6.6	6.5
SOFR	1.45	1.00	0.76	0.79	0.72	0.29	0.16	0.69	2.1	2.9	3.4	3.5	3.4	3.3
Commercial Paper, 1-mo.	1.60	1.40	1.00	0.87	0.80	0.44	0.32	0.80	2.2	3.0	3.4	3.4	3.4	3.3
Treasury bill, 3-mo.	1.67	1.70	1.30	1.17	0.99	0.76	0.45	1.08	2.3	3.0	3.4	3.4	3.4	3.3
Treasury bill, 6-mo.	2.45	2.30	1.81	1.65	1.49	1.26	0.86	1.62	2.7	3.3	3.5	3.6	3.5	3.4
Treasury bill, 1 yr.	2.83	2.94	2.34	2.14	2.06	1.89	1.34	2.18	3.0	3.5	3.7	3.7	3.6	3.5
Treasury note, 2 yr.	3.08	3.27	2.83	2.63	2.62	2.54	1.91	2.71	3.3	3.6	3.7	3.6	3.6	3.4
Treasury note, 5 yr.	3.23	3.45	3.07	2.91	2.87	2.78	2.11	2.95	3.4	3.6	3.6	3.6	3.6	3.5
Treasury note, 10 yr.	3.17	3.36	3.05	2.92	2.90	2.75	2.13	2.93	3.3	3.5	3.6	3.6	3.6	3.6
Treasury note, 30 yr.	3.28	3.38	3.18	3.09	3.07	2.81	2.41	3.04	3.5	3.6	3.7	3.8	3.8	3.8
Corporate Aaa bond	4.58	4.68	4.39	4.27	4.37	4.01	3.63	4.30	4.7	5.0	5.1	5.1	5.1	5.1
Corporate Baa bond	5.30	5.38	5.05	4.94	5.05	4.63	4.23	4.97	5.6	6.0	6.2	6.2	6.2	6.2
State & Local bonds	4.05	4.08	3.77	3.73	3.96	3.70	3.30	3.87	4.0	4.3	4.4	4.5	4.5	4.4
Home mortgage rate	5.81	5.78	5.23	5.09	5.23	4.98	4.17	5.23	5.7	5.9	6.0	5.9	5.8	5.7

Key Assumptions	History								Consensus Forecasts-Quarterly					
	3Q 2020	4Q 2020	1Q 2021	2Q 2021	3Q 2021	4Q 2021	1Q 2022	2Q 2022**	3Q 2022	4Q 2022	1Q 2023	2Q 2023	3Q 2023	4Q 2023
Fed's AFE \$ Index	107.2	105.1	103.4	102.9	105.0	107.0	108.4	113.6	115.3	115.4	115.1	114.6	114.0	113.8
Real GDP	33.8	4.5	6.3	6.7	2.3	6.9	-1.6	2.9	2.1	1.6	1.2	1.0	1.3	1.6
GDP Price Index	3.6	2.2	4.3	6.1	6.0	7.1	8.2	5.9	5.2	3.9	3.4	2.8	2.7	2.6
Consumer Price Index	4.8	2.2	4.1	8.2	6.7	7.9	9.2	7.6	6.0	3.8	3.3	2.7	2.5	2.5
PCE Price Index	3.7	1.5	3.8	6.5	5.3	6.4	7.1	5.8	5.2	3.6	3.1	2.5	2.4	2.3

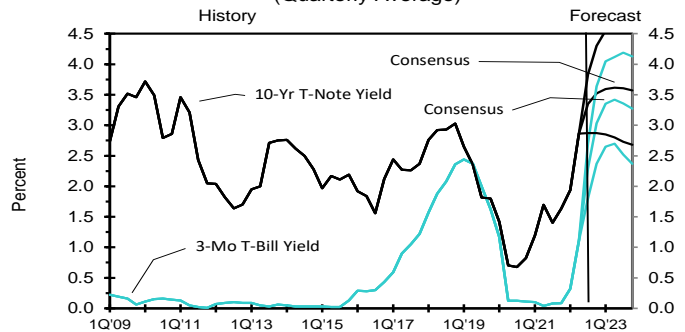
Forecasts for interest rates and the Federal Reserve's Advanced Foreign Economies Index represent averages for the quarter. Forecasts for Real GDP, GDP Price Index, CPI and PCE Price Index are seasonally-adjusted annual rates of change (saar). Individual panel members' forecasts are on pages 4 through 9. Historical data: Treasury rates from the Federal Reserve Board's H.15; AAA-AA and A-BBB corporate bond yields from Bank of America-Merrill Lynch and are 15+ years, yield to maturity; State and local bond yields from Bank of America-Merrill Lynch, A-rated, yield to maturity; Mortgage rates from Freddie Mac, 30-year, fixed; SOFR from the New York Fed. *Interest rate data for 2Q 2022 based on historical data through the week ended June 24. **Data for 2Q 2022 for the Fed's AFE \$ Index based on data through the week ended June 24. Figures for 2Q 2022 Real GDP, GDP Chained Price Index, Consumer Price Index, and PCE Price Index are consensus forecasts from the June 2022 survey.

U.S. Treasury Yield Curve

Week ended Jun 24, 2022 & Year Ago vs. 3Q 2022 & 4Q 2023 Consensus Forecasts

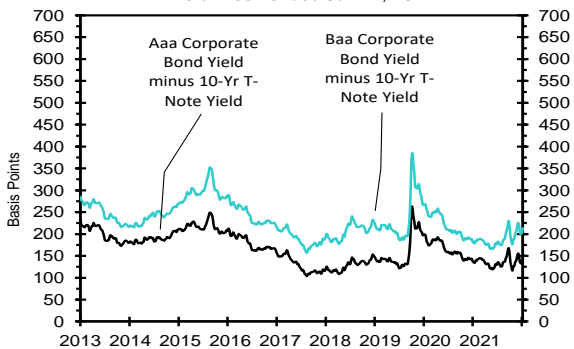


US 3-Mo T-Bills & 10-Yr T-Note Yield (Quarterly Average)



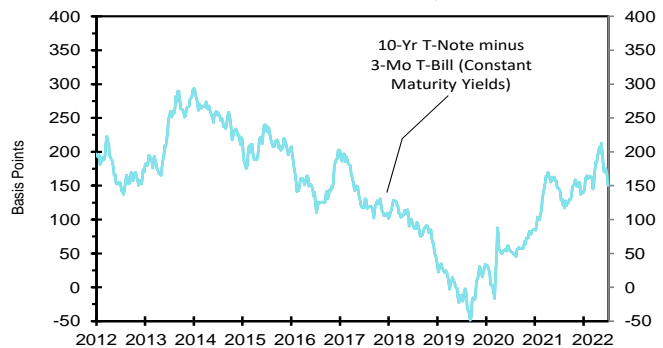
Corporate Bond Spreads

As of week ended Jun 24, 2022



U.S. Treasury Yield Curve

As of week ended Jun 24, 2022



-----Policy Rates¹-----

	History			Consensus Forecasts		
	Month	Year	Months From Now:			
Latest:	Ago:	Ago:	3	6	12	
U.S.	1.63	0.88	0.13	2.75	3.41	3.67
Japan	-0.10	-0.10	-0.10	-0.09	-0.06	-0.03
U.K.	1.25	1.00	0.10	1.45	1.67	1.70
Switzerland	-0.25	-0.75	-0.75	-0.19	0.02	0.05
Canada	1.50	1.00	0.25	2.78	3.40	3.46
Australia	0.85	0.35	0.10	1.54	2.15	2.51
Euro area	0.00	0.00	0.00	0.36	0.61	0.91

-----10-Yr. Government Bond Yields²-----

	History			Consensus Forecasts		
	Month	Year	Months From Now:			
Latest:	Ago:	Ago:	3	6	12	
U.S.	3.13	2.74	1.54	3.33	3.41	3.37
Germany	1.44	0.98	-0.15	1.54	1.58	1.58
Japan	0.24	0.24	0.06	0.26	0.28	0.25
U.K.	2.30	1.92	0.86	2.26	2.55	2.53
France	1.97	1.48	0.20	1.95	1.92	1.96
Italy	3.57	2.90	0.92	3.25	3.23	3.17
Switzerland	1.19	0.74	-0.21	1.09	1.26	1.31
Canada	3.33	2.79	1.46	3.36	3.44	3.41
Australia	3.72	3.26	1.52	3.40	3.66	3.70
Spain	2.60	2.02	0.46	2.43	2.44	2.53

-----Foreign Exchange Rates³-----

	History			Consensus Forecasts		
	Month	Year	Months From Now:			
Latest:	Ago:	Ago:	3	6	12	
U.S.	115.41	112.95	103.61	116.7	115.9	114.7
Japan	135.22	127.14	110.78	133.1	131.1	127.7
U.K.	1.23	1.26	1.39	1.24	1.24	1.27
Switzerland	0.96	0.96	0.92	0.96	0.96	0.96
Canada	1.29	1.27	1.23	1.25	1.25	1.26
Australia	0.69	0.72	0.76	0.71	0.71	0.70
Euro	1.05	1.07	1.19	1.06	1.05	1.09

Consensus Policy Rates vs. US Rate

	Now	In 12 Mo.
Japan	-1.73	-3.69
U.K.	-0.38	-1.97
Switzerland	-1.88	-3.62
Canada	-0.13	-0.21
Australia	-0.78	-1.16
Euro area	-1.63	-2.75

Consensus 10-Year Gov't Yields vs. U.S. Yield

	Now	In 12 Mo.
Germany	-1.69	-1.80
Japan	-2.89	-3.12
U.K.	-0.83	-0.85
France	-1.16	-1.41
Italy	0.44	-0.20
Switzerland	-1.94	-2.06
Canada	0.19	0.04
Australia	0.59	0.33
Spain	-0.53	-0.84

International. The world economy is still adjusting to some powerful forces—the COVID pandemic and the Russian invasion of Ukraine—that have intensified inflationary pressures in recent months. Policy responses to these pressures, however, have also been magnifying the risks of a global recession. Indeed, the greater willingness of some central banks to lean against inflation in recent weeks has heightened financial stability risks—particularly in emerging economies—as financial markets have both lifted their expectations for central bank policy rates and reduced their expectations for global growth.

The latest flash PMI surveys for June underscored some of the world economy's current vulnerabilities. Specifically, the data showed that economic growth slowed sharply in the US, Euro area and UK in June, and with further weakness likely in coming months. Forward-looking indicators, such as gauges of new orders and business expectations, declined to levels that have previously been associated with a contraction in GDP. Those same surveys, however, equally suggested that inflationary pressures remain elevated, indeed they were a key factor cited by many companies as triggering the recent erosion of economic growth. That said, cost and price pressures have eased a little of late thanks to both some loosening of supply side constraints as well as due to reduced demand.

Against this backdrop policymakers face some difficult challenges. A further swift removal of monetary policy accommodation designed to lean against inflation could aggravate the downside risk for global growth not least given the central role played by broken supply chains in the world's current inflation malaise. That would be a "hawkish" approach. A more hesitant "dovish" approach, however, designed to temporarily shore up economic activity, could further magnify inflation tensions by lifting wage pressures in labor markets that are, by many measures, already tight.

Central banks in advanced economies that are presently in the hawkish camp include the US Fed as evidenced by both its decision in mid-June to raise the federal funds rate by a lofty 75bps and its earlier step to reduce its balance sheet. The latest interest rate steps from a number of smaller central banks including Canada's, Australia's, New Zealand's and Switzerland's suggest they too fall into this category. This camp has also been joined in recent weeks by the ECB following communications telegraphing several policy rate hikes in the months ahead. This has not come without difficulties, however, insofar as the prospect of higher debt service costs has heightened Euro area fragmentation risks. Active discussions at the ECB about policy tools that could be deployed to prevent yield spreads in periphery debt markets from widening too much have certainly not gone unnoticed.

Half-way between these two camps lies the Bank of England. It stuck with a further policy rate hike of 25bps at its June meeting and signaled that there will be more to follow. But perhaps more significantly, its forward guidance has been far less precise than that of the ECB or the Fed. For example, rather than providing specific clues as to how much and when the Bank may tighten in the coming months, it simply said that the extent and pace of future tightening would depend on the outlook for the economy and inflation.

Meanwhile, lying very firmly in the dovish camp, remain the Bank of Japan and China's PBOC. This is partly because of bigger challenges from the COVID pandemic, and, in China's case, its relatively restrictive lockdown policy. In addition, inflationary pressures in both Japan and China have been benign which has offered more leeway for its central banks to maintain accommodative monetary policies.

As for other emerging economies, a number of central banks in Latin America, Eastern Europe and other parts of Asia have continued to respond quickly to rising inflation with tighter monetary policy. This, though, has stoked concerns about financial instability and capital outflows. After all, many of these economies are highly vulnerable to firm food and energy prices, weaker world trade, tighter US Fed policy and a firm US dollar.

Forecasts of panel members are on pages 10 and 11. Definitions of variables are as follows: ¹Monetary policy rates. ²Government bonds are yields to maturity. ³Foreign exchange rate forecasts for U.K., Australia and the Euro are U.S. dollars per currency unit. For the U.S. dollar, forecasts are of the U.S. Federal Reserve Board's AFE Dollar Index.

Third Quarter 2022

Interest Rate Forecasts

Key Assumptions

Blue Chip Financial Forecasts Panel Members	-----Percent Per Annum -- Average For Quarter-----															Avg. For --Qtr-- A.	----- (Q-Q % Change) ----- ----- (SAAR) -----																								
	-----Short-Term-----					-----Intermediate-Term-----					-----Long-Term-----						Fed's Adv Fgn Econ \$ Index	B. Real GDP	C. GDP Price Index	D. Cons. Price Index	E. PCE Price Index																				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15																										
	Federal Rates	Prime Bank Rate	SOFR Rate	Com. Paper 1-Mo.	Treas. Bills 3-Mo.	Treas. Bills 6-Mo.	Treas. Bills 1-Yr.	Treas. Notes 2-Yr.	Treas. Notes 5-Yr.	Treas. Notes 10-Yr.	Treas. Bonds 30-Yr.	Aaa Corp. Bond	Baa Corp. Bond	State & Local Bonds	Home Mtg. Rate																										
Mizuho Research Institute	3.1	H	na	na	na	na	na	na	3.5	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na															
Bank of America	2.9	na	3.2	H	na	na	na	3.5	3.5	3.5	3.5	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na														
BNP Paribas Americas	2.9	na	na	na	na	na	na	3.2	na	3.1	3.3	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na														
Goldman Sachs & Co.	2.9	na	na	na	2.1	na	na	3.1	3.3	3.3	3.3	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na														
NatWest Markets	2.9	6.0	H	na	3.0	H	3.1	H	3.2	3.3	3.3	3.2	3.2	4.3	5.3	3.5	4.3	L	na	na	na	na	na	na	na	na	na														
Nomura Securities, Inc.	2.9	6.0	H	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na														
ING	2.8	na	na	na	na	na	na	3.3	3.5	3.3	3.3	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na														
Barclays	2.6	5.8	na	na	na	na	na	3.3	3.3	3.2	3.3	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na														
Economist Intelligence Unit	2.6	5.5	na	2.5	2.5	3.0	3.3	3.5	3.5	3.6	3.7	na	na	na	na	5.9	na	na	na	na	na	na	na	na	na	na	na														
TS Lombard	2.6	5.7	2.6	2.6	2.9	2.9	3.2	3.6	4.3	4.0	4.1	4.9	5.7	4.0	5.8	125.0	H	2.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0														
Via Nova Investment Mgt.	2.6	5.8	2.6	2.7	2.8	3.3	H	4.0	H	4.4	H	4.6	H	4.6	H	4.7	H	6.0	H	6.6	H	5.6	H	7.0	H	115.0	2.5	4.0	4.0	3.9											
ACIMA Private Wealth	2.5	5.5	2.5	2.6	2.6	2.5	2.4	2.3	L	2.3	L	2.0	L	2.1	L	4.3	5.5	1.0	L	6.0	115.0	1.5	5.0	4.5	5.0	115.0	1.5	5.0	4.5	5.0											
Action Economics	2.5	5.7	1.4	L	2.6	2.3	2.6	2.8	3.1	3.2	3.4	3.4	4.5	5.5	3.2	5.7	113.5	2.3	6.0	6.2	5.0	113.5	2.3	6.0	6.2	5.0	113.5	2.3	6.0	6.2	5.0										
Bank of the West	2.5	5.7	2.4	2.5	2.5	2.7	3.1	3.6	3.8	3.7	3.8	5.0	5.9	4.8	6.0	116.2	1.0	3.8	6.2	5.3	116.2	1.0	3.8	6.2	5.3	116.2	1.0	3.8	6.2	5.3											
BMO Capital Markets	2.5	5.7	2.1	na	2.3	2.8	3.0	3.2	3.3	3.3	3.4	na	na	na	5.6	115.0	1.5	8.3	H	9.2	115.0	1.5	8.3	H	9.2	115.0	1.5	8.3	H	9.0	H										
Wells Fargo	2.5	5.5	2.3	2.5	2.6	3.0	3.3	3.4	3.4	3.7	3.6	4.9	5.8	4.4	5.8	na	1.7	6.3	9.3	H	6.2	na	1.7	6.3	9.3	H	6.2	na	1.7	6.3	9.3	H	6.2								
Fannie Mae	2.4	5.5	na	na	2.9	3.1	3.1	3.3	3.3	3.2	3.3	na	na	na	5.7	na	2.1	6.5	8.4	6.4	na	2.1	6.5	8.4	6.4	na	2.1	6.5	8.4	6.4	na	2.1	6.5	8.4	6.4						
GLC Financial Economics	2.4	5.5	2.2	2.3	2.4	2.4	2.9	3.5	3.5	3.5	3.3	4.5	5.1	L	3.9	6.0	111.4	1.8	5.2	3.8	L	4.6	111.4	1.8	5.2	3.8	L	4.6	111.4	1.8	5.2	3.8	L	4.6							
Comera Bank	2.3	5.5	na	na	2.4	2.7	3.0	3.4	3.2	3.0	3.8	4.9	5.8	na	5.8	na	1.6	6.2	6.2	5.2	na	1.6	6.2	6.2	5.2	na	1.6	6.2	6.2	5.2	na	1.6	6.2	6.2	5.2						
Daiwa Capital Markets America	2.3	5.4	1.4	L	1.5	2.3	3.0	3.3	3.8	3.9	3.8	3.9	4.9	5.9	na	6.4	115.0	0.9	5.0	7.0	6.0	115.0	0.9	5.0	7.0	6.0	115.0	0.9	5.0	7.0	6.0	115.0	0.9	5.0	7.0	6.0					
Georgia State University	2.3	5.4	na	na	1.9	2.4	2.9	3.7	3.7	3.7	3.8	5.4	6.3	na	5.5	na	1.1	5.0	4.7	4.3	na	1.1	5.0	4.7	4.3	na	1.1	5.0	4.7	4.3	na	1.1	5.0	4.7	4.3						
Loomis, Sayles & Company	2.3	5.5	2.3	2.4	2.6	3.1	3.2	3.2	3.1	3.2	3.3	4.3	5.3	4.2	5.8	115.9	2.3	6.4	7.2	5.8	115.9	2.3	6.4	7.2	5.8	115.9	2.3	6.4	7.2	5.8	115.9	2.3	6.4	7.2	5.8						
MacroFin Analytics & Rutgers Bus School	2.3	5.4	2.2	2.4	2.4	2.7	3.2	3.8	3.8	3.9	4.0	5.3	5.9	4.7	6.0	116.5	2.4	4.6	4.2	4.1	116.5	2.4	4.6	4.2	4.1	116.5	2.4	4.6	4.2	4.1	116.5	2.4	4.6	4.2	4.1						
Amherst Pierpont Securities	2.2	5.3	2.1	2.4	2.4	3.1	3.5	3.4	3.7	3.6	3.7	4.6	5.6	3.8	5.8	116.0	4.7	H	5.3	7.4	5.6	116.0	4.7	H	5.3	7.4	5.6	116.0	4.7	H	5.3	7.4	5.6	116.0	4.7	H	5.3	7.4	5.6		
Grant Thornton/Diane Swonk	2.2	5.4	2.2	0.6	L	0.6	L	1.9	2.0	L	2.3	L	2.7	2.9	3.0	4.0	5.3	na	5.2	na	1.7	5.4	4.5	4.3	na	1.7	5.4	4.5	4.3	na	1.7	5.4	4.5	4.3							
Oxford Economics	2.2	5.4	2.3	na	2.4	2.4	3.1	3.3	3.2	3.2	3.2	3.8	L	na	na	5.7	115.6	2.0	na	4.7	3.9	115.6	2.0	na	4.7	3.9	115.6	2.0	na	4.7	3.9	115.6	2.0	na	4.7	3.9					
RDQ Economics	2.2	5.3	2.2	2.3	2.5	2.9	3.2	3.4	3.3	3.2	3.4	4.4	5.3	4.2	5.4	115.2	4.4	4.3	4.8	4.2	115.2	4.4	4.3	4.8	4.2	115.2	4.4	4.3	4.8	4.2	115.2	4.4	4.3	4.8	4.2						
Regions Financial Corporation	2.2	5.1	2.1	2.1	2.1	2.6	2.9	3.3	3.5	3.4	3.6	4.6	5.3	4.2	5.9	114.1	1.3	5.8	8.1	6.1	114.1	1.3	5.8	8.1	6.1	114.1	1.3	5.8	8.1	6.1	114.1	1.3	5.8	8.1	6.1						
The Northern Trust Company	2.2	5.4	2.2	2.3	2.5	2.8	3.1	3.4	3.5	3.5	3.9	4.8	5.9	4.9	5.5	116.0	2.4	5.5	7.0	6.0	116.0	2.4	5.5	7.0	6.0	116.0	2.4	5.5	7.0	6.0	116.0	2.4	5.5	7.0	6.0						
Thru the Cycle	2.2	5.3	2.1	2.3	2.3	2.7	2.9	3.1	3.2	3.2	3.3	4.6	5.4	4.2	5.7	116.1	2.6	4.7	7.5	5.7	116.1	2.6	4.7	7.5	5.7	116.1	2.6	4.7	7.5	5.7	116.1	2.6	4.7	7.5	5.7						
Chmura Economics & Analytics	2.1	5.3	2.2	2.2	2.1	2.6	3.0	3.6	3.6	3.6	3.7	4.8	na	na	5.9	112.9	2.0	7.8	8.4	6.2	112.9	2.0	7.8	8.4	6.2	112.9	2.0	7.8	8.4	6.2	112.9	2.0	7.8	8.4	6.2						
DePrince & Assoc.	2.1	5.3	2.0	2.2	2.3	2.8	3.1	3.5	3.6	3.4	3.4	4.5	5.5	3.8	5.6	114.2	2.7	4.0	4.9	3.8	114.2	2.7	4.0	4.9	3.8	114.2	2.7	4.0	4.9	3.8	114.2	2.7	4.0	4.9	3.8						
PNC Financial Services Corp.	2.0	5.2	2.0	na	2.1	2.6	3.1	3.4	3.5	3.3	3.4	na	na	3.9	5.6	110.7	L	2.7	4.6	4.4	4.3	110.7	L	2.7	4.6	4.4	4.3	110.7	L	2.7	4.6	4.4	4.3	110.7	L	2.7	4.6	4.4	4.3		
Societe Generale	1.9	5.1	1.9	na	2.2	2.5	2.9	3.2	3.0	3.1	3.3	na	na	na	na	na	na	1.4	4.4	6.9	6.4	na	1.4	4.4	6.9	6.4	na	1.4	4.4	6.9	6.4	na	1.4	4.4	6.9	6.4					
Swiss Re	1.9	5.1	2.4	1.9	2.0	2.4	2.6	3.0	2.9	2.8	2.9	4.6	5.4	na	5.5	117.8	1.3	5.5	5.1	na	117.8	1.3	5.5	5.1	na	117.8	1.3	5.5	5.1	na	117.8	1.3	5.5	5.1	na	117.8	1.3	5.5	5.1	na	
Chan Economics	1.7	4.7	L	1.7	1.7	1.9	2.4	2.9	3.5	3.6	3.7	3.8	4.6	5.4	5.9	115.0	2.0	4.5	5.5	4.9	115.0	2.0	4.5	5.5	4.9	115.0	2.0	4.5	5.5	4.9	115.0	2.0	4.5	5.5	4.9	115.0	2.0	4.5	5.5	4.9	
J.P. Morgan Chase	1.7	na	na	na	na	na	na	2.7	2.8	2.7	2.8	na	na	na	na	na	na	2.0	3.2	L	7.2	6.4	na	2.0	3.2	L	7.2	6.4	na	2.0	3.2	L	7.2	6.4	na	2.0	3.2	L	7.2	6.4	
S&P Global Market Intelligence	1.7	4.9	1.7	na	1.6	1.7	L	2.2	2.7	2.9	2.9	3.0	na	na	na	5.2	na	2.2	5.4	4.5	4.3	na	2.2	5.4	4.5	4.3	na	2.2	5.4	4.5	4.3	na	2.2	5.4	4.5	4.3					
Moody's Analytics	1.6	L	4.7	L	1.5	1.6	1.6	1.8	2.4	2.8	3.0	3.3	4.6	5.6	3.7	5.2	na	3.6	4.1	3.8	L	3.5	L	3.6	4.1	3.8	L	3.5	L	3.6	4.1	3.8	L	3.5	L	3.6	4.1	3.8	L	3.5	L
Scotiabank Group	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.6	5.6	5.9	4.6	na	2.6	5.6	5.9	4.6	na	2.6	5.6	5.9	4.6	na	2.6	5.6	5.9	4.6	na	2.6	5.6	5.9	4.6
July Consensus	2.4	5.4	2.1	2.2	2.3	2.7	3.0	3.3	3.4	3.3	3.5	4.7	5.6	4.0	5.7	115.3	2.1	5.2	6.0	5.2	115.3	2.1	5.2	6.0	5.2	115.3	2.1	5.2	6.0	5.2	115.3	2.1	5.2	6.0	5.2	115.3	2.1	5.2	6.0	5.2	
Top 10 Avg.	2.8	5.7	2.5	2.6	2.7	3.1	3.4	3.7	3.9	3.8	4.0	5.1	6.0	4.6	6.1	117.0	3.1	6.5	8.1	6.5	117.0	3.1	6.5	8.1	6.5	117.0	3.1	6.5	8.1	6.5	117.0	3.1	6.5	8.1	6.5	117.0					

First Quarter 2023

Interest Rate Forecasts

Key Assumptions

Blue Chip Financial Forecasts Panel Members	Percent Per Annum -- Average For Quarter															Avg. For --Qtr.-- A. Fed's Adv Fgn Econ \$ Index	(Q-Q % Change) B. Real GDP C. GDP Price Index D. Cons. Price Index E. PCE Price Index				
	Short-Term					--Intermediate-Term--					Long-Term						B.	C.	D.	E.	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15						
	Federal Funds Rate	Prime Bank Rate	SOFR Rate	Com. Paper 1-Mo.	Treas. Bills 3-Mo.	Treas. Bills 6-Mo.	Treas. Bills 1-Yr.	Treas. Notes 2-Yr.	Treas. Notes 5-Yr.	Treas. Notes 10-Yr.	Treas. Bonds 30-Yr.	Aaa Corp. Bond	Baa Corp. Bond	State & Local Bonds	Home Mtg. Rate						
Chmura Economics & Analytics	4.5 H	7.5	4.6 H	4.5 H	4.5 H	4.3 H	4.4 H	4.5 H	4.7	4.4	4.4	4.6	5.3	na	na	6.3	112.3	0.8	6.5 H	6.7 H	4.6 H
TS Lombard	4.5 H	7.6 H	4.4	4.5 H	4.3 H	4.3	3.9	3.5	3.4	3.5	3.6	4.4	5.2 L	3.5	5.3	120.0 H	-0.5	4.0	4.0	4.0	
Wells Fargo	4.3	7.3	4.2	4.2	4.3 H	4.4 H	4.3	4.2	4.1	3.8	3.8	5.1	6.0	4.5	5.9	na	0.3	3.1	3.1	3.0	
Bank of America	3.9	na	3.4	na	na	na	na	3.5	3.5	3.4	3.4	na	na	na	na	na	1.3	4.7	2.8	2.6	
NatWest Markets	3.9	7.0	na	4.0	4.1	4.2	4.3	3.4	3.2	3.1	3.0	4.3	5.3	3.4	4.2 L	na	1.2	4.0	2.3	3.2	
Oxford Economics	3.8	6.9	3.8	na	3.9	3.9	4.0	3.9	3.5	3.3	3.1	3.9 L	na	na	6.2	115.1	1.0	na	0.8 L	1.0 L	
RDQ Economics	3.8	6.9	3.8	3.9	4.2	4.4 H	4.2	3.9	3.5	3.3	3.6	4.5	5.4	4.4	5.6	116.3	3.5 H	4.2	4.5	3.9	
The Northern Trust Company	3.8	7.0	3.8	3.9	4.0	4.1	4.3	4.5	4.5	4.5	5.0	6.0	6.9	6.1 H	6.5	117.0	1.5	2.8	2.7	2.9	
Amherst Pierpont Securities	3.7	6.9	3.7	3.8	3.9	4.1	4.3	4.2	4.3	4.2	4.5	5.4	6.5	4.5	6.4	117.5	2.8	4.1	4.2	4.0	
Georgia State University	3.6	6.8	na	na	3.2	3.4	3.8	4.2	4.3	4.3	4.3	5.9	7.1	na	6.2	na	1.3	4.0	3.5	3.0	
Grant Thornton/Diane Swonk	3.6	6.8	3.6	1.0 L	1.0 L	2.8	2.7	2.7	2.8	3.1	3.2	4.3	5.5	na	5.3	na	0.4	3.2	3.0	2.8	
ING	3.6	na	na	na	na	na	na	3.5	3.0	2.8	3.0	na	na	na	na	na	0.2	na	na	na	
Loomis, Sayles & Company	3.6	6.8	3.6	3.7	3.9	4.1	3.9	3.3	3.3	3.4	3.5	4.5	5.4	4.3	5.9	115.9	2.0	3.6	3.6	3.5	
Mizuho Research Institute	3.6	na	na	na	na	na	na	na	na	3.5	na	na	na	na	na	na	na	na	na	na	
Nomura Securities, Inc.	3.6	6.8	na	na	na	na	na	na	na	na	na	na	na	na	na	na	-1.6	2.5	3.3	2.6	
Regions Financial Corporation	3.6	6.4	3.4	3.5	3.5	3.7	3.9	4.0	4.1	4.0	4.2	5.4	6.3	4.9	6.5	113.6	1.1	3.4	3.5	3.6	
Bank of the West	3.5	6.7	3.4	3.5	3.5	3.7	3.9	4.2	4.4	4.4	4.4	5.7	6.6	5.5	6.6	115.3	0.8	2.9	3.5	3.2	
Daiwa Capital Markets America	3.5	6.7	2.2 L	2.3	3.6	4.1	4.3	4.9 H	4.8	4.8	4.8	6.3	7.3 H	na	7.3	116.0	-0.1	3.5	4.3	4.3	
DePrince & Assoc.	3.5	6.6	3.3	3.5	3.6	3.8	3.9	4.2	4.0	3.8	3.6	5.0	5.9	4.2	5.9	114.2	2.1	2.8	3.4	2.7	
PNC Financial Services Corp.	3.5	6.7	3.5	na	3.4	3.5	3.5	3.4	3.4	3.4	3.4	na	5.9	4.1	5.5	108.6 L	1.6	3.1	3.0	2.8	
Action Economics	3.4	6.5	3.1	3.4	3.1	3.1	3.1	3.2	3.3	3.5	3.5	4.6	5.6	3.2	5.8	115.2	1.7	2.3	3.0	2.5	
Barclays	3.4	6.5	na	na	na	na	na	3.1	3.1	3.0	3.1	na	na	na	na	na	1.0	2.3	2.1	2.0	
BMO Capital Markets	3.4	6.5	3.4	na	3.3	3.4	3.4	3.4	3.5	3.5	3.6	na	na	na	5.8	114.6	0.3	3.8	4.3	4.1	
BNP Paribas Americas	3.4	na	na	na	na	na	na	3.0	na	3.2	3.4	na	na	na	na	na	1.6	na	3.9	na	
Comerica Bank	3.4	6.5	na	na	3.4	3.6	3.7	3.7	3.2	2.8	3.8	4.8	5.8	na	5.8	na	1.6	3.6	3.9	3.5	
Economist Intelligence Unit	3.4	6.5	na	3.3	3.4	3.8	4.0	4.0	4.0	3.9	4.1	na	na	na	6.1	na	1.2	na	3.2	na	
Goldman Sachs & Co.	3.4	na	na	na	2.8	na	na	3.3	3.2	3.2	3.3	na	na	na	na	na	1.0	3.5	2.8	2.8	
ACIMA Private Wealth	3.3	6.3	3.3	3.4	3.3	2.1 L	2.0 L	2.0 L	1.9 L	1.9 L	2.0 L	4.8	7.0	0.9 L	5.5	117.0	-2.0 L	1.0 L	0.8 L	1.0 L	
Fannie Mae	3.2	6.3	na	na	3.1	3.1	3.2	3.3	3.3	3.2	3.3	na	na	na	5.5	na	1.1	3.7	3.1	3.1	
J.P. Morgan Chase	3.2	na	na	na	na	na	na	3.6	3.6	3.5	3.4	na	na	na	na	na	1.8	2.2	2.8	2.6	
Via Nova Investment Mgt.	3.2	6.4	3.2	3.3	3.3	3.6	4.4	4.9 H	5.1 H	5.1 H	5.2	6.5 H	7.1	6.1 H	7.4 H	114.0	2.3	3.0	3.0	2.7	
MacroFin Analytics & Rutgers Bus School	3.0	6.1	2.9	3.2	3.2	3.4	3.9	4.5	4.7	4.9	5.3 H	6.5 H	7.3 H	5.7	6.8	117.0	2.0	3.0	3.0	2.9	
Societe Generale	3.0	6.2	3.0	na	3.2	3.2	3.2	3.2	3.0	3.1	3.4	na	na	na	na	na	1.3	3.2	3.7	3.4	
Thru the Cycle	3.0	6.2	3.0	3.2	3.1	3.2	3.1	2.9	2.8	2.9	3.0	4.3	5.2 L	4.0	5.5	115.3	1.9	3.2	3.1	3.2	
Chan Economics	2.9	5.9	2.9	2.9	3.1	3.6	4.1	4.7	4.8	4.9	5.0	5.8	6.6	5.7	7.1	114.6	2.5	3.7	4.4	4.1	
Swiss Re	2.9	6.1	3.1	2.9	2.7	2.8	2.8	2.9	2.8	2.8	3.0	4.5	5.4	na	5.1	116.0	0.5	2.8	2.8	na	
GLC Financial Economics	2.8	5.9	2.6	2.7	2.8	2.9	3.2	3.8	4.0	4.0	4.1	5.4	6.5	4.6	6.4	111.6	2.3	4.0	2.3	2.9	
S&P Global Market Intelligence	2.8	6.0	2.8	na	2.5	2.7	2.9	3.1	3.1	3.0	3.2	na	na	na	5.2	na	1.4	3.3	3.1	2.8	
Moody's Analytics	2.5 L	5.7 L	2.5	2.5	2.3	2.4	2.7	2.9	3.1	3.2	3.5	4.7	5.8	3.9	5.1	na	2.3	2.7	2.3	2.3	
Scotiabank Group	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.4	4.0	4.6	3.2	
July Consensus	3.5	6.6	3.4	3.4	3.4	3.5	3.7	3.7	3.6	3.6	3.7	5.1	6.2	4.4	6.0	115.1	1.2	3.4	3.3	3.1	
Top 10 Avg.	4.0	7.1	3.9	4.0	4.1	4.2	4.3	4.5	4.5	4.6	4.7	5.9	6.9	5.2	6.7	116.8	2.4	4.3	4.5	4.0	
Bottom 10 Avg.	2.9	6.1	2.8	2.7	2.7	2.8	2.9	2.9	2.9	2.9	3.0	4.4	5.5	3.6	5.2	113.4	-0.2	2.4	2.2	2.2	
June Consensus	2.8	5.9	2.7	2.8	2.7	2.9	3.1	3.2	3.3	3.3	3.5	4.8	5.7	4.1	5.6	114.0	1.8	3.1	3.0	2.8	
<u>Number of Forecasts Changed From A Month Ago:</u>																					
Down	0	0	0	1	1	1	4	3	4	5	6	3	3	3	3	5	28	6	10	9	
Same	4	3	5	4	4	3	2	4	6	7	6	6	3	5	4	6	9	13	10	7	
Up	35	30	21	18	27	27	25	30	26	26	25	16	18	11	23	10	2	16	18	19	
Diffusion Index	95%	95%	90%	87%	91%	92%	84%	86%	81%	78%	76%	76%	81%	71%	83%	62%	17%	64%	61%	64%	

Second Quarter 2023

Interest Rate Forecasts

Key Assumptions

Blue Chip Financial Forecasts Panel Members	-----Percent Per Annum -- Average For Quarter-----															Avg. For --Qtr.-- A.	------(Q-Q % Change)-----										
	-----Short-Term-----					-----Intermediate-Term-----					-----Long-Term-----						Fed's Adv Fgn Econ \$ Index	------(SAAR)-----									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15			B.	C.	D.	E.						
	Federal Funds Rate	Prime Bank Rate	SOFR Rate	Com. Paper 1-Mo.	Treas. Bills 3-Mo.	Treas. Bills 6-Mo.	Treas. Bills 1-Yr.	Treas. Notes 2-Yr.	Treas. Notes 5-Yr.	Treas. Notes 10-Yr.	Treas. Bonds 30-Yr.	Aaa Corp. Bond	Baa Corp. Bond	State & Local Bonds	Home Mtg. Rate			Real GDP	GDP Index	Cons. Price Index	PCE Price Index						
Chmura Economics & Analytics	4.5	H	7.5	H	4.6	H	4.5	H	4.3	4.4	4.5	4.7	4.4	4.4	4.6	5.3	na	na	6.1	112.5	-1.2	4.7	H	5.3	H	4.2	H
Wells Fargo	4.5	H	7.5	H	4.4	4.4	4.4	4.4	4.2	4.0	3.8	3.7	3.7	5.0	5.9	4.4	5.8	na	na	-2.0	L	1.4	0.7	1.5	1.5	1.5	1.5
Amherst Pierpont Securities	4.3	7.5	H	4.3	4.4	4.4	4.5	4.7	H	4.5	4.5	4.4	4.7	5.7	6.8	4.7	6.5	118.0	H	2.8	3.6	3.8	3.5	3.5	3.5	3.5	3.5
RDQ Economics	4.3	7.4	4.3	4.4	4.6	H	4.8	H	4.4	4.0	3.8	3.6	3.9	4.8	5.8	4.8	5.9	116.9	3.4	H	4.1	4.3	3.7	3.7	3.7	3.7	3.7
Bank of America	4.1	na	3.2	na	na	na	na	na	3.3	3.3	3.3	3.4	na	na	na	na	na	na	0.9	4.7	H	2.8	2.6	2.6	2.6	2.6	2.6
TS Lombard	4.0	7.1	3.9	4.0	3.5	3.5	3.4	3.3	3.4	3.5	3.6	4.4	5.2	L	3.5	5.3	118.0	H	-1.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grant Thornton/Diane Swonk	3.9	7.0	3.9	1.0	L	1.1	L	3.0	2.9	2.8	2.9	3.2	3.3	4.4	5.5	na	5.3	na	0.5	2.7	2.0	1.8	1.8	1.8	1.8	1.8	1.8
Loomis, Sayles & Company	3.9	7.0	3.8	3.8	4.0	4.1	3.8	3.3	3.3	3.3	3.4	4.4	5.4	4.3	4.3	5.7	115.9	1.7	3.2	3.0	2.8	2.8	2.8	2.8	2.8	2.8	2.8
NatWest Markets	3.9	7.0	na	4.0	4.1	4.2	4.3	3.4	3.1	3.1	3.0	4.3	5.3	3.4	4.2	L	na	na	1.8	4.0	2.0	3.2	3.2	3.2	3.2	3.2	3.2
Oxford Economics	3.9	7.0	3.9	na	3.9	4.0	3.9	3.7	3.4	3.2	3.1	4.0	na	na	6.0	6.0	114.3	0.5	na	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
The Northern Trust Company	3.9	7.0	3.8	4.0	4.0	4.1	4.3	4.5	4.5	4.5	5.0	6.0	6.9	6.1	6.5	6.5	117.5	1.3	2.7	2.6	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Daiwa Capital Markets America	3.8	6.9	2.6	2.7	3.8	4.2	4.4	5.0	4.9	4.9	4.9	6.5	7.5	H	na	7.4	116.0	-0.8	3.2	3.5	3.3	3.3	3.3	3.3	3.3	3.3	3.3
Bank of the West	3.7	6.8	3.6	3.7	3.7	3.8	4.0	4.3	4.5	4.5	4.5	5.8	6.7	5.6	6.7	6.7	115.5	0.7	2.7	3.2	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Georgia State University	3.6	6.8	na	na	3.3	3.3	3.7	4.1	4.2	4.4	4.4	5.9	7.1	na	6.2	6.2	na	na	1.7	3.4	3.1	2.6	2.6	2.6	2.6	2.6	2.6
ING	3.6	na	na	na	na	na	na	3.4	2.9	2.5	2.8	na	na	na	na	na	na	na	-1.5	na	na	na	na	na	na	na	na
Mizuho Research Institute	3.6	na	na	na	na	na	na	na	na	3.5	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Nomura Securities, Inc.	3.6	6.8	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	-1.6	2.1	2.4	1.9	1.9	1.9	1.9	1.9	1.9
PNC Financial Services Corp.	3.6	6.8	3.6	na	3.5	3.4	3.4	3.3	3.3	3.3	3.4	na	na	5.8	4.0	5.4	108.1	L	1.3	2.3	2.6	2.0	2.0	2.0	2.0	2.0	2.0
Regions Financial Corporation	3.6	6.5	3.5	3.6	3.6	3.8	3.9	4.1	4.2	4.1	4.2	5.6	6.5	5.0	6.5	6.5	113.1	0.9	2.6	2.9	3.0	3.0	3.0	3.0	3.0	3.0	3.0
DePrince & Assoc.	3.5	6.6	3.4	3.5	3.7	3.8	3.8	4.1	4.0	3.9	3.8	5.1	5.9	4.3	5.9	5.9	115.3	2.0	2.5	3.0	2.4	2.4	2.4	2.4	2.4	2.4	2.4
Action Economics	3.4	6.5	3.2	3.4	3.1	3.1	3.2	3.2	3.4	3.5	3.5	4.6	5.6	3.3	5.8	5.8	115.3	1.8	2.1	3.0	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Barclays	3.4	6.5	na	na	na	na	na	2.9	3.0	3.0	3.1	na	na	na	na	na	na	na	1.0	2.1	1.5	1.8	1.8	1.8	1.8	1.8	1.8
BMO Capital Markets	3.4	6.5	3.4	na	3.3	3.4	3.4	3.4	3.5	3.5	3.5	na	na	na	5.8	5.8	114.3	1.3	2.8	3.2	3.0	3.0	3.0	3.0	3.0	3.0	3.0
BNP Paribas Americas	3.4	na	na	na	na	na	na	2.9	na	3.1	3.4	na	na	na	na	na	na	na	1.5	na	4.6	na	na	na	na	na	na
Chan Economics	3.4	6.4	3.4	3.4	3.6	4.1	4.6	5.2	H	5.3	H	5.4	H	5.5	H	6.3	7.1	6.2	H	7.6	H	3.9	3.9	3.9	3.9	3.9	3.9
Comerica Bank	3.4	6.5	na	na	3.4	3.4	3.5	3.4	3.0	2.6	3.5	4.5	5.4	na	5.4	na	na	na	1.1	3.0	3.3	3.0	3.0	3.0	3.0	3.0	3.0
Economist Intelligence Unit	3.4	6.5	na	3.3	3.5	3.9	4.0	4.1	4.1	4.1	4.3	na	na	na	6.0	6.0	na	na	1.1	na	2.8	na	na	na	na	na	na
Goldman Sachs & Co.	3.4	na	na	na	3.0	na	na	3.3	3.2	3.2	3.3	na	na	na	na	na	na	na	1.5	3.0	3.0	2.6	2.6	2.6	2.6	2.6	2.6
J.P. Morgan Chase	3.4	na	na	na	na	na	na	3.6	3.6	3.5	3.5	na	na	na	na	na	na	na	1.3	2.2	3.5	3.1	3.1	3.1	3.1	3.1	3.1
Societe Generale	3.3	6.5	3.3	na	3.3	3.3	3.1	3.1	3.0	3.1	3.4	na	na	na	na	na	na	na	2.0	3.0	3.0	2.7	2.7	2.7	2.7	2.7	2.7
MacroFin Analytics & Rutgers Bus School	3.1	6.3	3.0	3.3	3.4	3.6	4.1	4.7	4.9	5.0	5.4	6.8	H	7.5	H	5.9	7.0	117.3	1.9	2.6	2.3	2.5	2.5	2.5	2.5	2.5	2.5
S&P Global Market Intelligence	3.1	6.3	3.1	na	2.8	2.9	3.1	3.2	3.1	3.0	3.2	na	na	na	5.1	5.1	na	na	1.6	2.8	2.1	1.9	1.9	1.9	1.9	1.9	1.9
Swiss Re	3.1	6.3	3.3	3.2	2.8	2.9	2.9	2.9	2.8	2.8	3.0	4.5	5.5	na	5.0	5.0	115.0	0.9	3.0	3.4	na	na	na	na	na	na	na
Thru the Cycle	3.1	6.2	3.1	3.3	3.1	3.1	2.9	2.8	2.8	2.9	2.9	4.3	5.2	L	4.0	5.5	113.8	1.9	2.7	2.9	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Fannie Mae	3.0	6.1	na	na	3.0	3.0	3.2	3.4	3.3	3.2	3.3	na	na	na	5.4	5.4	na	na	0.4	1.9	-1.3	L	0.3	0.3	0.3	0.3	0.3
Via Nova Investment Mgt.	3.0	6.3	3.0	3.1	3.1	3.4	4.1	4.7	4.9	4.9	5.0	6.3	6.9	5.9	7.2	7.2	112.0	2.0	3.8	2.8	2.5	2.5	2.5	2.5	2.5	2.5	2.5
GLC Financial Economics	2.9	6.0	2.7	2.9	3.0	3.0	3.3	3.9	4.1	4.2	4.4	5.9	7.0	4.9	6.7	6.7	111.0	3.2	2.6	2.9	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Moody's Analytics	2.7	5.9	2.7	2.7	2.5	2.6	2.8	2.9	3.1	3.2	3.5	4.7	5.8	3.9	5.1	5.1	na	na	2.3	2.6	2.2	2.0	2.0	2.0	2.0	2.0	2.0
ACIMA Private Wealth	2.5	L	5.5	L	2.5	L	2.6	2.6	1.9	L	1.7	L	1.6	L	1.8	L	1.9	L	2.0	L	3.5	L	6.5	0.9	L	4.5	4.5
Scotiabank Group	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.2	3.2	3.3	3.2	3.2	3.2	3.2	3.2
July Consensus	3.5	6.7	3.5	3.4	3.4	3.6	3.7	3.6	3.6	3.6	3.8	5.1	6.2	4.5	5.9	5.9	114.6	1.0	2.8	2.7	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Top 10 Avg.	4.1	7.2	4.1	4.1	4.1	4.3	4.4	4.6	4.6	4.7	4.8	6.1	7.0	5.4	6.8	6.8	116.6	2.4	3.9	3.9	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Bottom 10 Avg.	3.0	6.1	2.9	2.8	2.7	2.9	2.9	2.8	2.8	2.8	3.0	4.3	5.5	3.6	5.1	5.1	112.7	-0.9	1.8	1.2	1.4	1.4	1.4	1.4	1.4	1.4	1.4
June Consensus	3.0	6.1	2.9	3.0	2.9	3.1	3.2	3.3	3.4	3.4	3.6	4.9	5.8	4.2	5.6	5.6	113.6	1.6	2.8	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Number of Forecasts Changed From A Month Ago:																											
Down	3	3	2	2	2	2	3	3	4	5	8	3	2	3	4	4	7	26	10	8	12	12	12	12	12	12	12
Same	6	4	6	6	5	3	4	6	6	11	9	7	6	6	3	3	5	9	15	14	12	12	12	12	12	12	12
Up	30	26	17	15	25	26	24	25	23	19	17	15	16	10	23	23	9	4	10	16	11	11	11	11	11	11	11
Diffusion Index	85%	85%	80%	78%	86%	89%	84%	82%	79%	70%	63%	74%	79%	68%	82%	82%	55%	22%	50%	61%	49%	49%	49%	49%	49%	49%	49%

International Interest Rate And Foreign Exchange Rate Forecasts

Blue Chip Forecasters	Fed Fund Target Rate		
	In 3 Mo.	In 6 Mo.	In 12 Mo.
Barclays	3.13	3.38	--
BMO Capital Markets	2.88	3.38	3.38
ING Financial Markets	2.88	3.63	3.63
Mizuho Research Institute	3.13	3.38	3.63
Moody's Analytics	0.69	1.60	2.55
Northern Trust	2.63	3.63	3.88
Oxford Economics	2.25	3.33	3.88
S&P Global Market Intelligence	--	--	--
TS Lombard	4.25	4.50	4.00
Wells Fargo	2.88	3.88	4.38
July Consensus	2.75	3.41	3.67
High	4.25	4.50	4.38
Low	0.69	1.60	2.55
Last Months Avg.	1.88	2.45	3.19

Blue Chip Forecasters	Policy-Rate Balance Rate		
	In 3 Mo.	In 6 Mo.	In 12 Mo.
Barclays	-0.10	-0.10	--
BMO Capital Markets	-0.10	-0.10	-0.10
ING Financial Markets	-0.10	-0.10	-0.10
Mizuho Research Institute	-0.10	-0.10	-0.10
Moody's Analytics	-0.10	-0.10	-0.10
Nomura Securities	--	--	--
Northern Trust	-0.10	-0.10	-0.10
Oxford Economics	-0.03	-0.04	-0.05
S&P Global Market Intelligence	--	--	--
Scotiabank	-0.10	-0.10	-0.10
TS Lombard	-0.10	0.20	0.50
Wells Fargo	-0.10	-0.10	-0.10
July Consensus	-0.09	-0.06	-0.03
High	-0.03	0.20	0.50
Low	-0.10	-0.10	-0.10
Last Months Avg.	-0.09	-0.06	-0.03

Blue Chip Forecasters	Official Bank Rate		
	In 3 Mo.	In 6 Mo.	In 12 Mo.
Barclays	1.75	1.75	--
BMO Capital Markets	1.50	1.75	1.75
ING Financial Markets	1.75	1.75	1.75
Moody's Analytics	0.89	1.16	1.50
Nomura Securities	--	--	--
Northern Trust	1.75	2.00	2.00
Oxford Economics	1.45	1.91	1.84
S&P Global Market Intelligence	--	--	--
Scotiabank	1.50	1.75	2.00
TS Lombard	1.00	1.25	0.75
Wells Fargo	1.50	1.75	2.00
July Consensus	1.45	1.67	1.70
High	1.75	2.00	2.00
Low	0.89	1.16	0.75
Last Months Avg.	1.26	1.45	1.84

Blue Chip Forecasters	SNB Policy Rate		
	In 3 Mo.	In 6 Mo.	In 12 Mo.
Barclays	0.75	1.00	--
ING Financial Markets	-0.25	0.00	0.00
Moody's Analytics	-0.75	-0.75	-0.25
Nomura Securities	--	--	--
Northern Trust	0.00	0.50	0.50
Oxford Economics	-0.13	0.13	0.25
S&P Global Market Intelligence	--	--	--
Scotiabank	--	--	--
TS Lombard	-0.75	-0.75	-0.25
July Consensus	-0.19	0.02	0.05
High	0.75	1.00	0.50
Low	-0.75	-0.75	-0.25
Last Months Avg.	-0.69	-0.56	-0.18

Blue Chip Forecasters	O/N MMkt Financing Rate		
	In 3 Mo.	In 6 Mo.	In 12 Mo.
Barclays	3.50	3.50	--
BMO Capital Markets	2.75	3.25	3.25
ING Financial Markets	2.75	3.75	3.75
Moody's Analytics	1.09	1.78	2.50
Nomura Securities	--	--	--
Northern Trust	3.00	4.00	4.00
Oxford Economics	1.88	2.75	3.00
S&P Global Market Intelligence	--	--	--
Scotiabank	--	--	--
TS Lombard	4.50	4.75	4.25
Wells Fargo	--	--	--
July Consensus	2.78	3.40	3.46
High	4.50	4.75	4.25
Low	1.09	1.78	2.50
Last Months Avg.	2.00	2.46	3.07

United States			
10 Yr. Gov't Bond Yield %			
In 3 Mo.	In 6 Mo.	In 12 Mo.	
3.10	3.00	--	
3.30	3.50	3.45	
3.30	3.00	2.50	
3.45	3.55	3.44	
2.90	3.03	3.18	
3.50	4.50	4.50	
3.15	3.25	3.15	
2.87	2.95	3.04	
4.00	3.50	3.50	
3.70	3.80	3.60	
3.33	3.41	3.37	
4.00	4.50	4.50	
2.87	2.95	2.50	
3.08	3.12	3.19	

Japan			
10 Yr. Gov't Bond Yield %			
In 3 Mo.	In 6 Mo.	In 12 Mo.	
0.40	0.45	--	
0.25	0.30	0.30	
0.20	0.20	0.20	
0.25	0.25	0.25	
0.24	0.23	0.20	
--	--	--	
0.25	0.25	0.25	
0.24	0.23	0.12	
--	--	--	
0.25	0.35	0.45	
0.25	0.25	0.25	
0.26	0.28	0.25	
0.40	0.45	0.45	
0.20	0.20	0.12	
0.26	0.26	0.25	

United Kingdom			
10 Yr. Gilt Yields %			
In 3 Mo.	In 6 Mo.	In 12 Mo.	
2.75	2.80	--	
2.40	2.75	2.70	
2.00	1.90	1.70	
1.87	2.14	2.44	
--	--	--	
2.70	2.80	2.90	
2.58	2.64	2.60	
--	--	--	
--	--	--	
1.50	3.10	3.10	
2.25	2.30	2.25	
2.26	2.55	2.53	
2.75	3.10	3.10	
1.50	1.90	1.70	
1.91	2.19	2.35	

Switzerland			
10 Yr. Gov't Bond Yield %			
In 3 Mo.	In 6 Mo.	In 12 Mo.	
--	--	--	
1.15	1.15	1.05	
0.90	1.20	1.59	
--	--	--	
1.50	1.60	1.70	
1.25	1.15	1.04	
--	--	--	
0.67	1.19	1.19	
1.09	1.26	1.31	
1.50	1.60	1.70	
0.67	1.15	1.04	
0.86	1.01	1.15	

Canada			
10 Yr. Gov't Bond Yield %			
In 3 Mo.	In 6 Mo.	In 12 Mo.	
--	--	--	
3.40	3.50	3.45	
3.25	3.40	3.00	
2.91	3.06	3.33	
--	--	--	
3.50	4.00	4.00	
2.98	3.10	3.14	
--	--	--	
--	--	--	
4.10	3.60	3.60	
3.40	3.45	3.35	
3.36	3.44	3.41	
4.10	4.00	4.00	
2.91	3.06	3.00	
3.12	3.21	3.28	

Fed's AFE \$ Index			
In 3 Mo.	In 6 Mo.	In 12 Mo.	
--	--	--	
115.0	114.9	114.1	
113.8	111.8	109.3	
--	--	--	
--	--	--	
116.0	117.0	118.0	
113.9	115.6	114.3	
--	--	--	
125.0	120.0	118.0	
--	--	--	
116.7	115.9	114.7	
125.0	120.0	118.0	
113.8	111.8	109.3	
114.0	113.4	112.4	

Yen per US\$			
In 3 Mo.	In 6 Mo.	In 12 Mo.	
130.0	128.0	--	
136.0	137.0	135.0	
130.0	128.0	126.0	
133.0	133.0	133.0	
128.1	126.8	124.0	
135.0	128.0	120.0	
133.0	135.0	137.0	
132.1	129.5	123.1	
136.8	136.6	133.6	
130.0	125.0	120.0	
140.0	135.0	125.0	
--	--	--	
133.1	131.1	127.7	
140.0	137.0	137.0	
128.1	125.0	120.0	
126.9	125.1	122.7	

US\$ per Pound Sterling			
In 3 Mo.	In 6 Mo.	In 12 Mo.	
1.22	1.24	--	
1.22	1.20	1.22	
1.24	1.26	1.29	
1.27	1.31	1.42	
1.29	1.32	1.42	
1.23	1.21	1.19	
1.24	1.22	1.23	
1.24	1.24	1.27	
1.24	1.25	1.27	
1.22	1.15	1.10	
--	--	--	
1.24	1.24	1.27	
1.29	1.32	1.42	
1.22	1.15	1.10	
1.26	1.27	1.29	

CHF per US\$			
In 3 Mo.	In 6 Mo.	In 12 Mo.	
0.93	0.94	--	
1.03	1.08	1.10	
0.96	0.92	0.84	
0.95	0.94	0.93	
0.95	0.93	0.92	
0.97	0.99	0.99	
1.00	1.01	1.00	
0.97	0.95	0.96	
0.92	0.92	0.92	
0.96	0.96	0.96	
1.03	1.08	1.10	
0.92	0.92	0.84	
0.96	0.94	0.93	

C\$ per US\$			
In 3 Mo.	In 6 Mo.	In 12 Mo.	
1.25	1.23	--	
1.26	1.24	1.25	
1.24	1.22	1.21	
1.25	1.25	1.25	
1.26	1.26	1.25	
1.29	1.31	1.33	
1.28	1.31	1.32	
1.20	1.21	1.22	
1.20	1.20	1.22	
1.30	1.30	1.30	
--	--	--	
1.25	1.25	1.26	
1.30	1.31	1.33	
1.20	1.20	1.21	
1.25	1.24	1.24	

International Interest Rate And Foreign Exchange Rate Forecasts

Blue Chip Forecasters	Official Cash Rate		
	In 3 Mo.	In 6 Mo.	In 12 Mo.
Barclays	2.25	2.50	--
ING Financial Markets	1.10	1.60	2.50
Moody's Analytics	0.40	1.17	2.00
Nomura Securities	--	--	--
Northern Trust	2.35	3.10	3.10
Oxford Economics	1.35	1.97	2.43
S&P Global Market Intelligence	--	--	--
Scotiabank	1.75	2.50	2.50
TS Lombard	1.55	2.24	2.50
July Consensus	1.54	2.15	2.51
High	2.35	3.10	3.10
Low	0.40	1.17	2.00
Last Months Avg.	0.82	1.13	1.65

Australia		
10 Yr. Gov't Bond Yield %		
In 3 Mo.	In 6 Mo.	In 12 Mo.
--	--	--
3.60	3.80	3.60
3.21	2.97	3.42
--	--	--
4.00	4.25	4.25
3.34	3.41	3.39
--	--	--
--	--	--
2.84	3.85	3.85
3.40	3.66	3.70
4.00	4.25	4.25
2.84	2.97	3.39
3.27	3.53	3.66

US\$ per A\$		
In 3 Mo.	In 6 Mo.	In 12 Mo.
0.73	0.75	--
0.70	0.72	0.74
0.72	0.71	0.72
0.69	0.69	0.74
0.69	0.69	0.69
0.72	0.73	0.75
0.72	0.71	0.65
0.72	0.74	0.74
0.70	0.65	0.60
0.71	0.71	0.70
0.73	0.75	0.75
0.69	0.65	0.60
0.72	0.72	0.71

Blue Chip Forecasters	Main Refinancing Rate		
	In 3 Mo.	In 6 Mo.	In 12 Mo.
Barclays	1.00	1.00	--
BMO Capital Markets	0.75	1.25	1.75
ING Financial Markets	0.50	0.75	1.00
Mizuho Research Institute	0.00	0.00	0.00
Moody's Analytics	0.00	0.26	1.22
Nomura Securities	--	--	--
Northern Trust	0.75	1.00	1.00
Oxford Economics	0.06	0.31	0.50
S&P Global Market Intelligence	--	--	--
Scotiabank	0.50	1.00	1.50
TS Lombard	0.00	0.25	0.50
Wells Fargo	0.00	0.25	0.75
July Consensus	0.36	0.61	0.91
High	1.00	1.25	1.75
Low	0.00	0.00	0.00
Last Months Avg.	0.06	0.21	0.48

Euro area

US\$ per Euro		
In 3 Mo.	In 6 Mo.	In 12 Mo.
1.06	1.08	--
1.05	1.05	1.06
1.05	1.08	1.12
1.08	1.08	1.08
1.08	1.10	1.19
1.08	1.12	1.18
1.06	1.04	1.02
1.07	1.05	1.06
1.04	1.04	1.05
1.08	1.10	1.10
1.00	0.85	1.00
--	--	--
1.06	1.05	1.09
1.08	1.12	1.19
1.00	0.85	1.00
1.07	1.07	1.11

Blue Chip Forecasters	10 Yr. Gov't Bond Yields %											
	Germany			France			Italy			Spain		
	In 3 Mo.	In 6 Mo.	In 12 Mo.	In 3 Mo.	In 6 Mo.	In 12 Mo.	In 3 Mo.	In 6 Mo.	In 12 Mo.	In 3 Mo.	In 6 Mo.	In 12 Mo.
Barclays	1.85	1.90	--	--	--	--	--	--	--	--	--	--
BMO Capital Markets	1.60	2.00	1.90	--	--	--	--	--	--	--	--	--
ING Financial Markets	1.20	1.20	1.10	1.65	1.60	1.40	2.95	2.70	2.10	2.00	1.90	1.80
Mizuho Research Institute	1.55	1.40	1.15	--	--	--	--	--	--	--	--	--
Moody's Analytics	0.99	1.33	1.78	1.53	1.83	2.17	2.84	3.38	3.56	2.01	2.52	2.96
Northern Trust	1.75	1.85	1.95	2.25	2.35	2.45	3.70	3.80	3.90	2.80	2.90	3.00
Oxford Economics	1.17	1.20	1.24	1.66	1.66	1.63	3.18	3.19	3.19	2.31	2.33	2.35
TS Lombard	2.30	1.80	1.80	2.65	2.15	2.15	3.60	3.10	3.10	3.05	2.55	2.55
Wells Fargo	1.45	1.55	1.70	--	--	--	--	--	--	--	--	--
July Consensus	1.54	1.58	1.58	1.95	1.92	1.96	3.25	3.23	3.17	2.43	2.44	2.53
High	2.30	2.00	1.95	2.65	2.35	2.45	3.70	3.80	3.90	3.05	2.90	3.00
Low	0.99	1.20	1.10	1.53	1.60	1.40	2.84	2.70	2.10	2.00	1.90	1.80
Last Months Avg.	1.15	1.23	1.35	1.68	1.72	1.81	3.00	3.01	2.98	2.11	2.21	2.35

	Consensus Forecasts			
	10-year Bond Yields vs U.S. Yield			
	Current	In 3 Mo.	In 6 Mo.	In 12 Mo.
Japan	-2.89	-3.07	-3.13	-3.12
United Kingdom	-0.83	-1.07	-0.85	-0.85
Switzerland	-1.94	-2.23	-2.15	-2.06
Canada	0.19	0.04	0.04	0.04
Australia	0.59	0.07	0.25	0.33
Germany	-1.69	-1.79	-1.83	-1.80
France	-1.16	-1.38	-1.49	-1.41
Italy	0.44	-0.07	-0.17	-0.20
Spain	-0.53	-0.89	-0.97	-0.84

	Consensus Forecasts			
	Policy Rates vs U.S. Target Rate			
	Current	In 3 Mo.	In 6 Mo.	In 12 Mo.
Japan	-1.73	-2.84	-3.35	-3.69
United Kingdom	-0.38	-1.29	-1.74	-1.97
Switzerland	-1.88	-2.94	-3.39	-3.62
Canada	-0.13	0.03	-0.02	-0.21
Australia	-0.78	-1.21	-1.26	-1.16
Euro area	-1.63	-2.39	-2.81	-2.75

Viewpoints:

A Sampling of Views on the Economy, Financial Markets and Government Policy
Excerpted from Recent Reports Issued by our Blue Chip Panel Members and Others

What Wage Growth Rate Is Compatible With 2% Inflation?

Our wage tracker rose 5.4% over the last year, well above the pre-pandemic pace of 3% and too high to be consistent with the Fed's 2% inflation target. But just how much does it need to slow?

Economic principles suggest that, on average, inflation should roughly equal wage growth minus productivity growth. If nonlabor costs grow at the same pace as wages, wage growth should be an accurate proxy for the growth in companies' total costs. Assuming profit margins are stable, cost growth should in turn track revenue growth well, and this implies that wage growth net of productivity growth—which implicitly adjusts for how much output is produced—should be a reasonable proxy for inflation. The usual math is therefore that with 1.5-2% productivity growth, 3.5-4% wage growth is compatible with 2% inflation.

But in practice, inflation was about 0.9pp higher than the difference between the most popular wage growth measures and productivity growth over the 20 years before the pandemic. If this gap persists, wage growth would need to slow to about 2.5-3% instead, which would require narrowing the jobs-workers gap considerably more.

We find that three factors explain most of this 0.9pp gap.

Explanation #1: Headline consumer prices grew faster than nonfarm business sector prices. Faster growth of headline PCE prices than nonfarm business sector prices—the relevant deflator for productivity—explains 0.2pp of the gap. This difference comes mostly from the fact that the nonfarm business sector deflator excludes the rental value of owner occupied dwellings, which grew faster than other consumer prices on average, but includes investment prices, which grew slower than overall consumer price inflation. The influence of the weight differential has been evident in the past year. Goods inflation has been considerably faster than that for service inflation (11.7 percent versus 4.7 percent), but because of its greater weight, the contribution to core and overall inflation from services is slightly larger than that for goods.

However, the gap between investment and consumer inflation has narrowed substantially, as the large declines in equipment prices in the late 1990s and early 2000s moderated in recent years. We expect investment prices to continue to grow in line with consumer prices, which implies that about $\frac{3}{4}$ of the 20-year gap between headline PCE and nonfarm business sector inflation should close going forward.

Explanation #2: Nonlabor costs grew faster than labor costs. Unit nonlabor payments grew about 1.1pp faster than unit labor costs, putting upward pressure on prices and contributing another 0.5pp to the gap. Corporate profits and depreciation account for the majority of nonlabor payments, and both have grown faster than labor costs over the last several years.

While profit growth has increased significantly since the pandemic began, we expect it to normalize as supply-chain disrupt

tions fade and profit margins return to their already-elevated pre-pandemic levels. Coupled with stable depreciation rates, this implies that most of the gap between nonlabor payments and labor costs should fade as wage growth increases relative to its pre-pandemic pace.

Explanation #3: Compensation per hour grew faster than the ECI and average hourly earnings. Compensation per hour—the relevant measure of labor costs in the productivity accounts—grew faster than the most popular wage measures, average hourly earnings and the employment cost index, and this explains 0.2pp of the gap.

The gap between compensation per hour and average hourly earnings reflects differences in coverage. Compensation per hour includes a broader range of benefits, bonuses, and supplements than average hourly earnings. Although these generally grew faster than wages in the early 2000s, that trend has narrowed since, and we therefore expect that average hourly earnings will continue to grow more in line with compensation per hour.

The gap between compensation per hour and the ECI, on the other hand, mostly reflects changes in the composition of the labor force, which the ECI removes by design. As the labor force shifts toward more productive industries and occupations, the positive composition effects will tend to boost compensation per hour but not the ECI. The gap between the two measures has been relatively stable over time, and we expect it to persist. Taken together, we expect about $\frac{1}{2}$ of the difference between AHE and ECI wage growth and compensation per hour to close going forward.

We estimate that 3.5% wage growth should be compatible on average with the Fed's 2% inflation target going forward, though factors other than labor costs can of course have large effects on inflation too. Our forecast implies that wage growth will moderate sufficiently over the next 2-3 years, assuming that policymakers slow growth enough to rebalance supply and demand in the labor market.

Manuel Abecasis (Goldman Sachs)

Higher Interest Rates Are Already Starting to Weigh on the Housing Market

With the Federal Open Market Committee now aggressively tightening monetary policy, both short-term and long-term interest rates have risen sharply in 2022. In particular, the interest rate on a typical 30-year fixed rate mortgage has increased from 3.2% at the beginning of the year to 5.8% by mid-June, according to Freddie Mac. Higher mortgage rates are now weighing on the housing market, contributing to the ongoing slowing in economic growth. The central bank is hoping that a softening in interest-rate sensitive industries, including housing, will bring inflation back down to 2% over the next couple of years, without pushing the U.S. economy into recession.

The FOMC moved quickly to support the economy when the coronavirus pandemic came to the United States. The committee

rapidly cut the federal funds rate—their key short-term policy rate—to close to zero. It also expanded the central bank’s balance sheet by creating money electronically, using the proceeds to purchase longer-term Treasuries and mortgage-backed securities. As a result, the interest rate on a typical 30-year fixed rate mortgage fell from around 3.6% in early 2020 before the pandemic, to a record low of 2.7% in early 2021. This, along with support for household incomes from the federal government, spurred a very strong housing market. With very low mortgage rates making it less expensive to buy a home, households used their stimulus funds to make down payments. Sales of existing home sales soared in 2021, as did prices. Construction of new single-family homes rose to 1.13 million in 2021, up from around 1 million in 2020 and below one million every year from 2008 to 2019. And low borrowing costs made it much less expensive for households to undertake home renovations and repairs. All of this supported economic growth during the first two years of recovery following the start of the pandemic.

But with inflation now well above the FOMC’s 2% objective, the Fed is trying to slow economic growth to reduce inflationary pressures in the economy. The FOMC has quickly raised the federal funds rate this year, including a 0.75 percentage point increase at the committee’s meeting on June 15, the biggest increase in the rate since 1994; this has pushed up short-term borrowing costs. The FOMC is also pushing up long-term borrowing costs. Earlier this year the central bank ended its purchases of long-term securities, and in June the Fed stopped rolling over some maturing long-term Treasuries and mortgage-backed securities, up to a cap of \$47.5 billion per month; that cap will increase to \$95 billion per month in September. Because the Fed has been telegraphing these moves to financial markets since the beginning of the year, long-term interest rates, including mortgage rates, have increased throughout 2022.

Higher mortgage rates have led to a slowing in the housing market. Existing home sales fell 17% from January to May, while housing starts fell 13% from February to May. Although house price growth remains very strong, it appears to be peaking in mid-2022 as higher prices and mortgage rates have greatly reduced housing affordability. All of these factors are weighing on overall economic growth. Reduced housing starts show up directly in GDP and falling sales of existing homes reduce consumer spending on goods and services like furniture and renovations. Slower house price growth will weigh on household wealth, acting as a brake on consumer spending growth.

Housing activity will continue to slow over the next couple of years. Tighter monetary policy will also weigh on other interest-rate sensitive industries, like business capital spending and consumer purchases of durable goods. The Fed’s hope is that this will slow economic growth to a more sustainable pace over the next couple of years and bring inflation back down to 2%, while avoiding recession—an outright contraction in the U.S. economy. But the central bank has little room for error, especially since the Russian invasion of Ukraine has pushed up inflation while simultaneously weighing on economic growth.

PNC’s baseline forecast is for slower growth over the next few years, but not recession. Real GDP growth is expected to slow

from above 5% in 2021 to below 2% this year (Q4 to Q4 basis), and then to around 1% in both 2023 and 2024. Weaker growth will lead to a slight increase in the unemployment rate in 2023 and 2024, to around 4%, up from 3.6% in May 2022. Inflation will gradually ease to 2% by mid-2024 as economic growth softens, particularly in interest-rate sensitive industries like housing. While the risk of recession this year remains low given solid consumer fundamentals, the probability is around 40% for 2023 and 2024, about double what it was prior to the Russian invasion of Ukraine.

Augustine Faucher (PNC Economics Division)

U.S. Economy Is Slowing But Not In A Recession; Fed on Course for Two More Half Percentage Point Rate Hikes in June and July

The expansion is slowing amid headwinds from Russia-Ukraine, surging energy and food prices, the end of crisis-era stimulus programs, tighter monetary policy, and Chinese lockdowns. But the U.S. is not currently in a recession, and the first quarter’s negative GDP looks like a red herring. U.S. payrolls averaged a monthly increase of nearly half a million in the first five months of 2022, the unemployment rate is a solid notch lower than at the end of 2021, and industrial production is growing solidly. However, industries that surged during the pandemic like retail, e-commerce, and housing are retrenching as consumer spending shifts from goods back to services.

Inflation likely has peaked in year-over-year terms but will stay well above the Fed’s target through the end of 2022 as Russia-Ukraine keeps food and energy prices elevated. Prices of durable goods including used cars and trucks have started to edge back down, and wage growth is slowing. Retailers are starting to discount consumer goods again after a big increase in inventories since the fall of 2021. But there is no relief in sight for food, gasoline, diesel, and other energy prices as the Russia-Ukraine conflict grinds on.

Fed policymakers are largely aligned behind two more half-percentage point rate hikes in June and July, but less certain about subsequent plans. They will likely raise the federal funds target a quarter percentage point at each of the September, November and December decisions, but could pause if inflation and growth slow sharply. Comerica forecasts a peak for the federal funds rate in 2023 at a range of 2.75%-3.00%, slightly below the consensus forecast, which sees a peak just above 3%. The Fed will likely follow through on its plan to reduce its balance sheet \$47.5 billion per month through September, then \$95 billion per month subsequently. Balance sheet reductions will likely continue at this pace at least through the end of 2023. Longer-term yields face upside risk from the Fed shrinking its balance sheet, as well as oil and food prices, and downside risks from slowing growth, a cooling housing market, slowing inflation, and reduced Treasury issuance as the fiscal deficit shrinks.

Bill Adams (Comerica)

Special Questions:

1. a. How much do you expect the FFR to be increased in total in: 2022? 313 bps 2023? 30 bps

2. a. What do you think is the neutral (long run) Fed funds rate? 2.56 %

b. When do you think the neutral FFR will be achieved?

<u>by the end 2022</u>	<u>by June 2023</u>	<u>by the end 2023</u>	<u>Later</u>
71%	11%	7%	11%

3. Do you think that by removing monetary accommodation, major central banks will be successful in slowing inflation without precipitating a recession?

	<u>Yes</u>	<u>No</u>
US	55%	45%
euro area	27%	73%
UK	27%	73%

4. What probability do you attach to a recession beginning in:

	<u>2022</u>	<u>2023</u>
the US	31%	44%
the euro area	45%	52%
Globally	43%	51%

5. How long do you expect supply-chain bottlenecks to provide a significant boost to inflation?

0-6 months	48%
7-9 months	18%
10-12 months	30%
13-24 months	3%
More than 24 months	0%

6. What is the one factor most influencing your US inflation forecast over the next 12 months? Expectations concerning...

Overall economic growth	22%
Fiscal policy	0%
Supply-chain bottlenecks	19%
Monetary policy	22%
The behavior of energy/commodity prices	38%

7. Is COVID still a major factor in your near-term economic forecast? Yes 16% No 84%

8. In your view, which of the following factors poses the biggest risk to global financial stability at present?

A much more aggressive response from Central Banks to persistently high levels of inflation	69%
Growing alarm on outlook for global growth triggered by eg higher food+energy prices/ebbing purch power/tighter global fiscal policies	13%
The discovery of another dangerous mutation of the COVID virus that is both more transmissible and more immune to existing vaccines	0%
A further escalation of the conflict in Ukraine accompanied by even higher energy and food prices	19%
Increased tensions between the US and China	0%

2022 Historical Data

Monthly Indicator	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Retail and Food Service Sales (a)	2.7	1.7	1.2	0.7	-0.3	...	...	...	...	...	...	...
Auto & Light Truck Sales (b)	15.05	13.98	13.41	14.50	12.68	...	...	...	...	...	...	...
Personal Income (a, current \$)	0.0	0.6	0.6	0.5	0.5	...	...	...	...	...	...	...
Personal Consumption (a, current \$)	1.9	0.6	1.2	0.6	0.2	...	...	...	...	...	...	...
Consumer Credit (e)	4.1	9.2	12.7	10.1	...	...	...	...	...	...	...	...
Consumer Sentiment (U. of Mich.)	67.2	62.8	59.4	65.2	58.4	50.0	...	...	...	...	...	...
Household Employment (c)	1199	548	736	-353	321	...	...	...	...	...	...	...
Nonfarm Payroll Employment (c)	504	714	398	436	390	...	...	...	...	...	...	...
Unemployment Rate (%)	4.0	3.8	3.6	3.6	3.6	...	...	...	...	...	...	...
Average Hourly Earnings (All, cur. \$)	31.56	31.60	31.75	31.85	31.95	...	...	...	...	...	...	...
Average Workweek (All, hrs.)	34.6	34.7	34.6	34.6	34.6	...	...	...	...	...	...	...
Industrial Production (d)	2.9	7.1	4.9	6.1	5.4	...	...	...	...	...	...	...
Capacity Utilization (%)	79.0	79.5	79.9	80.9	80.8	...	...	...	...	...	...	...
ISM Manufacturing Index (g)	57.6	58.6	57.1	55.4	56.1	...	...	...	...	...	...	...
ISM Nonmanufacturing Index (g)	59.9	56.5	58.3	57.1	55.9	...	...	...	...	...	...	...
Housing Starts (b)	1.666	1.777	1.716	1.810	1.549	...	...	...	...	...	...	...
Housing Permits (b)	1.841	1.857	1.879	1.823	1.695	...	...	...	...	...	...	...
New Home Sales (1-family, c)	831	790	715	629	696	...	...	...	...	...	...	...
Construction Expenditures (a)	3.0	1.0	0.3	0.2	...	...	...	...	...	...	...	...
Consumer Price Index (nsa, d)	7.5	7.9	8.5	8.3	8.6	...	...	...	...	...	...	...
CPI ex. Food and Energy (nsa, d)	6.0	6.4	6.5	6.2	6.0	...	...	...	...	...	...	...
PCE Chain Price Index (d)	6.0	6.3	6.6	6.3	6.3	...	...	...	...	...	...	...
Core PCE Chain Price Index (d)	5.1	5.3	5.2	4.9	4.7	...	...	...	...	...	...	...
Producer Price Index (nsa, d)	10.1	10.4	11.5	10.9	10.8	...	...	...	...	...	...	...
Durable Goods Orders (a)	3.1	-0.7	0.7	0.4	0.7	...	...	...	...	...	...	...
Leading Economic Indicators (a)	-0.7	0.8	-0.1	-0.4	-0.4	...	...	...	...	...	...	...
Balance of Trade & Services (f)	-88.0	-88.1	-107.7	-87.1	...	...	...	...	...	...	...	...
Federal Funds Rate (%)	0.08	0.08	0.20	0.33	0.77	...	...	...	...	...	...	...
3-Mo. Treasury Bill Rate (%)	0.15	0.31	0.45	0.76	0.99	...	...	...	...	...	...	...
10-Year Treasury Note Yield (%)	1.76	1.93	2.13	2.75	2.90	...	...	...	...	...	...	...

2021 Historical Data

Monthly Indicator	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Retail and Food Service Sales (a)	5.5	-1.8	11.2	0.0	-0.5	0.7	-1.0	0.7	1.0	1.6	0.6	-1.6
Auto & Light Truck Sales (b)	16.78	15.93	17.64	18.30	16.89	15.47	14.66	13.09	12.29	13.05	13.04	12.54
Personal Income (a, current \$)	9.9	-7.2	21.0	-13.3	-2.0	0.3	1.3	0.4	-0.9	0.8	0.7	0.5
Personal Consumption (a, current \$)	3.3	-1.1	5.2	1.0	0.0	1.1	0.1	1.1	0.6	1.4	0.5	-0.9
Consumer Credit (e)	2.4	5.4	4.6	5.4	7.6	6.6	4.5	5.1	6.6	5.8	8.8	6.2
Consumer Sentiment (U. of Mich.)	79.0	76.8	84.9	88.3	82.9	85.5	81.2	70.3	72.8	71.7	67.4	70.6
Household Employment (c)	121	363	573	319	291	62	1092	463	639	428	1090	651
Nonfarm Payroll Employment (c)	520	710	704	263	447	557	689	517	424	677	647	588
Unemployment Rate (%)	6.4	6.2	6.0	6.0	5.8	5.9	5.4	5.2	4.7	4.6	4.2	3.9
Average Hourly Earnings (All, cur. \$)	29.93	30.04	30.06	30.20	30.36	30.52	30.67	30.76	30.92	31.11	31.23	31.38
Average Workweek (All, hrs.)	35.0	34.6	34.9	34.9	34.9	34.8	34.8	34.7	34.8	34.8	34.8	34.8
Industrial Production (d)	-2.0	-5.4	1.0	16.6	15.6	9.2	5.9	4.9	3.9	4.7	5.0	3.7
Capacity Utilization (%)	76.4	74.2	76.3	76.6	77.3	77.7	78.2	78.2	77.4	78.6	79.0	78.7
ISM Manufacturing Index (g)	59.4	60.9	63.7	60.6	61.6	60.9	59.9	59.7	60.5	60.8	60.6	58.8
ISM Nonmanufacturing Index (g)	58.5	55.9	62.2	62.7	63.2	60.7	64.1	62.2	62.6	66.7	68.4	62.3
Housing Starts (b)	1.602	1.430	1.711	1.505	1.605	1.664	1.573	1.576	1.559	1.563	1.706	1.768
Housing Permits (b)	1.843	1.743	1.773	1.765	1.691	1.661	1.655	1.772	1.615	1.698	1.729	1.896
New Home Sales (1-family, c)	911	768	881	809	740	714	726	686	732	671	756	839
Construction Expenditures (a)	3.0	-1.1	1.0	0.3	0.7	1.0	0.1	1.0	1.0	0.9	1.0	1.6
Consumer Price Index (nsa, d)	1.4	1.7	2.6	4.2	5.0	5.4	5.4	5.3	5.4	6.2	6.8	7.0
CPI ex. Food and Energy (nsa, d)	1.4	1.3	1.6	3.0	3.8	4.5	4.3	4.0	4.0	4.6	4.9	5.5
PCE Chain Price Index (d)	1.4	1.6	2.5	3.6	4.0	4.0	4.2	4.2	4.4	5.1	5.6	5.8
Core PCE Chain Price Index (d)	1.5	1.5	2.0	3.1	3.5	3.6	3.6	3.6	3.7	4.2	4.7	4.9
Producer Price Index (nsa, d)	1.6	3.0	4.1	6.5	7.0	7.6	8.0	8.7	8.8	8.9	9.9	10.0
Durable Goods Orders (a)	2.5	0.1	1.6	-2.0	2.1	1.8	0.4	1.6	-1.5	1.5	1.4	0.9
Leading Economic Indicators (a)	0.6	-0.1	1.1	1.1	0.9	0.6	1.0	0.7	0.2	0.4	0.6	0.4
Balance of Trade & Services (f)	-63.8	-65.3	-68.1	-65.7	-66.6	-71.4	-69.4	-71.4	-78.3	-68.2	-78.0	-78.9
Federal Funds Rate (%)	0.09	0.08	0.07	0.07	0.06	0.08	0.10	0.09	0.08	0.08	0.08	0.08
3-Mo. Treasury Bill Rate (%)	0.08	0.04	0.03	0.02	0.02	0.04	0.05	0.05	0.04	0.05	0.05	0.06
10-Year Treasury Note Yield (%)	1.08	1.26	1.61	1.64	1.62	1.52	1.32	1.28	1.37	1.58	1.56	1.47

(a) month-over-month % change; (b) millions, saar; (c) month-over-month change, thousands; (d) year-over-year % change; (e) annualized % change; (f) \$ billions; (g) level. Most series are subject to frequent government revisions. Use with care.

Calendar of Upcoming Economic Data Releases

Monday	Tuesday	Wednesday	Thursday	Friday
July 4 Independence Day All Markets Closed	5 Manufacturers' Shipments, Inventories & Orders (May) BEA Auto Sales (Jun) BEA Truck Sales (Jun)	6 ISM Services PMI (Jun) S&P Global Services PMI (Jun) JOLTS (May) Mortgage Applications	7 International Trade (May) Public Debt (Jun) Interest on the Public Debt (Jul) Challenger Employment Report (Jun) EIA Crude Oil Stocks Weekly Jobless Claims	8 Employment Situation (Jun) Wholesale Trade (May) Consumer Credit (May) Treasury Auction Allotments (Jun) Housing Affordability (May)
11	12 NFIB (Jun) Kansas City Fed Labor Market Conditions Indicators (Jun) Kansas City Financial Stress Index (Jun) OPEC Crude Oil Spot Prices (Jun)	13 CPI (Jun) Real Earnings (Jun) Cleveland Fed Median CPI (Jun) Monthly Treasury Statement (Jun) Transportation Services Index (May) EIA Crude Oil Stocks Mortgage Applications	14 Producer Prices (Jun) Weekly Jobless Claims	15 Advance Retail Sales (Jun) Import & Export Prices (Jun) IP & Capacity Utilization (Jun) MTIS (May) Consumer Sentiment (Jul, Preliminary) Empire State Mfg Survey (Jul)
18 Business Leaders Survey (Jul) Home Builders (Jul) TIC Data (May)	19 New Residential Construction (Jun)	20 Existing Home Sales (Jun) EIA Crude Oil Stocks Mortgage Applications	21 Philadelphia Fed Mfg Business Outlook Survey (Jul) BCI Composite Indexes (Jun) Weekly Jobless Claims	22 S&P Global Flash PMIs (Jul) Treasury Auction Allotments (Jul)
25 NABE Business Conditions Survey (Q2) Chicago Fed National Activity Index (Jun) Texas Manufacturing Outlook Survey (Jul)	26 FHFA & Case-Shiller HPI (May) New Residential Sales (Jun) H.6 Money Stock (May) Consumer Confidence (Jul) Final Building Permits (Jun) Philly Fed Nonmfg Bus (Jul) Richmond Fed Mfg/Service(Jul) Texas Service Sector (Jul) Steel Imports (Jun) FOMC Meeting	27 Advance Durable Goods (Jun) Advance Trade & Inventories (Jun) BED (Q4) Pending Home Sales (Jun) EIA Crude Oil Stocks Mortgage Applications FOMC Meeting	28 GDP (Q2, Advance) Kansas City Fed Manufacturing Survey (Jul) Weekly Jobless Claims	29 Personal Income (Jun) Employment Cost Index (Q2) Agricultural Prices (Jun) Strike Report (Jul) Dallas Fed Trimmed-Mean PCE (Jun) Chicago PMI (Jul) Consumer Sentiment (Jul, Final) Alternate Measures of Labor Underutilization (Q2)
August 1 Construction (Jun) ISM Manufacturing (Jul) S&P Global Mfg PMI (Jul)	2 Housing Vacancies (Q2) JOLTS (Jun) Senior Loan Officer Survey(Q3)	3 BEA Auto Sales (Jul) BEA Truck Sales (Jul) Manufacturers' Shipments, Inventories & Orders (Jun) ISM Services PMI (Jul) S&P Global Services PMI (Jul) EIA Crude Oil Stocks Mortgage Applications	4 International Trade (Jun) Public Debt (Jul) Challenger Employment Report (Jul) Weekly Jobless Claims	5 Employment Situation (Jul) Consumer Credit (Jun)
8 Treasury Auction Allotments (Jul)	9 Productivity & Costs (Q2) NFIB (Jul) Kansas City Fed Labor Market Conditions Indicators (Jul) Kansas City Financial Stress Index (Jul)	10 CPI & Real Earnings (Jul) Wholesale Trade (Jun) Transportation Services Index (Jun) Cleveland Fed Median CPI (Jul) Monthly Treasury Statement(Jul) EIA Crude Oil Stocks Mortgage Applications	11 Producer Prices (Jul) First Time Housing Affordability (Q2) OPEC Crude Oil Spot Prices (Jul) Weekly Jobless Claims	12 Import & Export Prices (Jul) Consumer Sentiment (Aug, Preliminary) Survey of Professional Forecasters (Q3)

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