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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Russia-Ukraine War Plus U.S. Inflation Complicate Financial Outlook

COVID Eases, but War Intrudes. For months, we have been concerned about the economic impact of a non-economic event, the COVID-19 pandemic. Now, even as the force of that virus appears to be diminishing rapidly, another non-economic situation is hitting the world's population, the attack by Russia on Ukraine. While this situation has no direct economic base, it certainly will have economic consequences across a number of countries and markets, not just those in neighboring territories. Indeed, despite the fact that the war began just a couple of days before the production of this publication, among Blue Chip Financial Forecast panelists, the largest share, almost half, replied that among a list of causes, the war poses the greatest risk to global financial stability. Other causes the panelists could have selected include the more obvious ones concerning the current pace of inflation and central bank policy responses, speculation over the potential emergence of yet another COVID variant and possible financial turmoil in Chinese property markets.

Inflation Still Strong, Fed Tightening Likely Imminent. Even as there is much about the Ukraine/Russia war and COVID to retain our concern and attention, standard economic issues have risen to the fore as well. In the twelve months through January, the personal consumption expenditure price index rose 6.1%. That was the largest 12-month increase in this inflation gauge since February 1982. This is the price index currently targeted by the Federal Reserve, so its movements and trends receive significant attention among the financial market community. The Blue Chip Financial Forecast panel believes this inflation gauge will moderate, with a consensus forecast of a 5.1% annual rate this quarter over Q4 2021, slowing to 2.4% by Q4 of this year.

A tightening of monetary policy is certainly a major cause of the expected slowdown in inflation. In comments at the press conference following the last meeting of the Federal Open Market Committee (FOMC), Fed Chair Powell basically announced that the Committee had decided to raise the federal funds rate at its next meeting on March 15-16. Indeed, in one of this month's Special Questions, the entire Blue Chip survey panel thinks that the first rate increase would come at that meeting. By the fourth quarter, the panel forecasts that the fed funds rate would average 1.3%. This is up from 1.0% in the February forecast and 0.7% in the January survey.

Quantitative Easing Shifts Toward Quantitative Tightening. The Fed is also expected to reduce its holdings of Treasury and mortgage-backed securities. They began to reduce their purchases in November, and, also according to Mr. Powell's recent statements, the purchases would conclude in March. In addition, in the panel's responses to a Special Question, the Fed would actually begin to reduce its holdings of Treasuries in Q2, further tightening policy.

Moreover, the tempering of inflation is thought to be accomplished without a dramatic economic reaction, such as a recession. Specifically, GDP growth from Q4 2021 through Q4 2022 is forecast at 2.9%, with the slowest individual quarter seen in the current quarter at a 1.9% annual rate. Growth across 2021 was 5.6%, so there would be much slower growth, but importantly growth is still seen to be positive.

Short-Term Rates Likely to Rise. As the federal funds rate is raised by the Fed, other short-term interest rates are expected to rise. Specifically, according to the Blue Chip panel, the new SOFR rate is seen rising from its current 0.05% to 0.2% for this quarter as a whole and then to 1.2% by the fourth quarter. So the increase in the cost of funds would not be dramatic, but certainly meaningful.

Bond Yields to Rise, Spreads Uneven. Bond yield changes are expected to be somewhat more uncertain than usual. The Blue Chip forecast calls for the 10-year Treasury yield to rise from its recent level just barely below 2% to 2.4% by the fourth quarter. Such a move would stand to reason as inflation hovers at a higher pace than expected before through late this year and as the Fed is tightening monetary policy commensurately. At the same time, for the Treasury market in particular, the flight to safety into Treasuries might encourage investors to park their funds in that market, reducing those yields below what would otherwise be suggested by the inflation situation. Notably, the reality of the Ukraine situation mostly emerged after the Blue Chip survey was compiled. So some further adjustment in yield prospects might be expected now which might not have been captured in the survey results due simply to the timing of the forecast compilation.

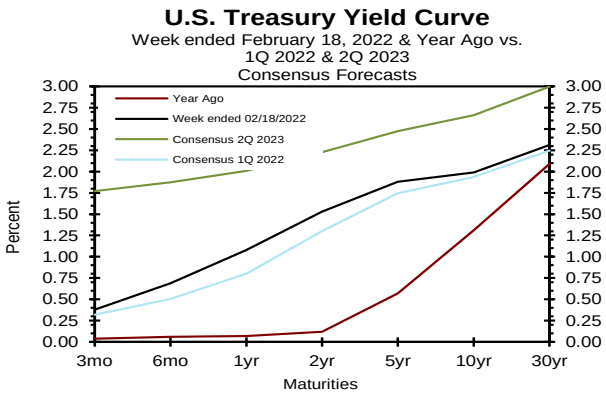
Even given the caution we express here, the forecasts do exhibit some widening of the yield spread between corporate bonds and Treasuries. In Q4 2021, the Aaa corporate yield averaged 86 basis points above 30-year Treasuries. More recently, the fourth week of February, that spread was 1.41%. The current Blue Chip forecast suggests it would be 1.20% in Q4 2022.

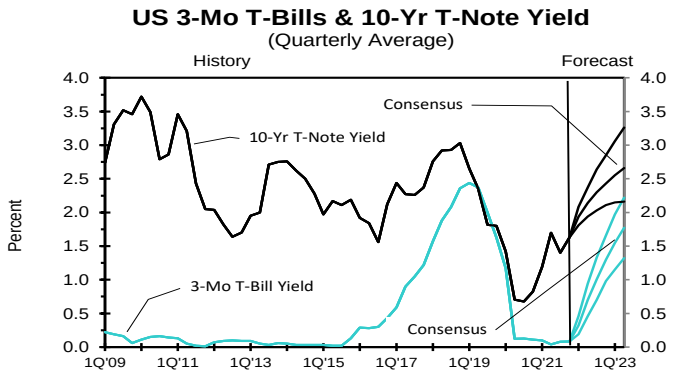
Carol Stone, CBE (Haver Analytics, New York, NY)

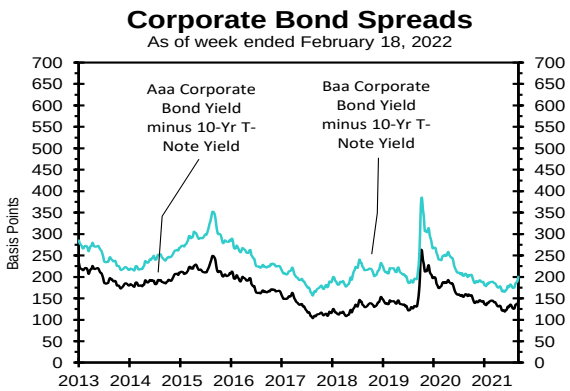
Consensus Forecasts of U.S. Interest Rates and Key Assumptions

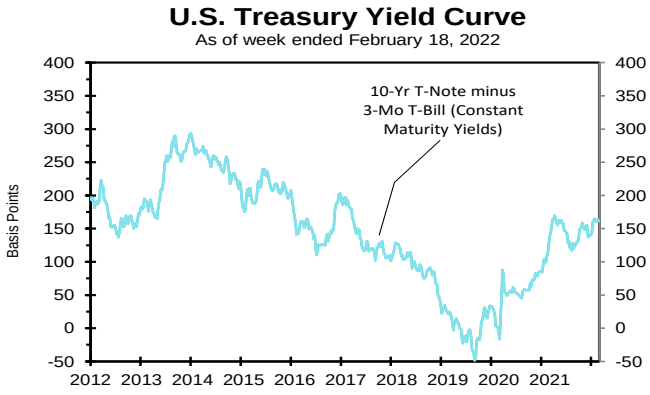
	History: Average For Week Ending				History: Average For Month				Consensus Forecasts-Quarterly Avg.					
Interest Rates	Feb 18	Feb 11	Feb 4	Jan 28	Jan	Dec	Nov	*Latest Qtr* 4Q 2021	1Q 2022	2Q 2022	3Q 2022	4Q 2022	1Q 2023	2Q 2023
Federal Funds Rate	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	**0.2**	**0.6**	**1.0**	**1.3**	**1.6**	**1.8**
Prime Rate	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	**3.4**	**3.7**	**4.1**	**4.3**	**4.6**	**4.8**
SOFR	0.05	0.05	0.05	0.04	0.05	0.05	0.05	0.05	**0.2**	**0.5**	**0.9**	**1.2**	**1.4**	**1.7**
Commercial Paper, 1-mo.	0.08	0.08	0.08	0.07	0.07	0.06	0.05	0.06	**0.2**	**0.6**	**0.9**	**1.2**	**1.5**	**1.7**
Treasury bill, 3-mo.	0.38	0.31	0.21	0.19	0.06	0.05	0.05	0.05	**0.3**	**0.7**	**1.0**	**1.3**	**1.5**	**1.8**
Treasury bill, 6-mo.	0.69	0.64	0.49	0.41	0.15	0.07	0.06	0.09	**0.5**	**0.8**	**1.1**	**1.4**	**1.7**	**1.9**
Treasury bill, 1 yr.	1.08	0.98	0.80	0.69	0.30	0.18	0.11	0.20	**0.8**	**1.1**	**1.4**	**1.6**	**1.8**	**2.0**
Treasury note, 2 yr.	1.53	1.42	1.20	1.09	0.68	0.51	0.39	0.53	**1.3**	**1.6**	**1.8**	**2.0**	**2.1**	**2.2**
Treasury note, 5 yr.	1.88	1.84	1.66	1.60	1.23	1.20	1.11	1.18	**1.7**	**2.0**	**2.1**	**2.3**	**2.4**	**2.5**
Treasury note, 10 yr.	1.99	1.95	1.83	1.79	1.47	1.56	1.58	1.54	**1.9**	**2.1**	**2.3**	**2.4**	**2.6**	**2.7**
Treasury note, 30 yr.	2.31	2.25	2.14	2.11	1.85	1.94	2.06	1.95	**2.2**	**2.5**	**2.6**	**2.7**	**2.9**	**3.0**
Corporate Aaa bond	3.43	3.31	3.19	3.14	2.79	2.79	2.85	2.81	**3.2**	**3.4**	**3.7**	**3.9**	**4.0**	**4.1**
Corporate Baa bond	4.00	3.85	3.70	3.64	3.26	3.25	3.31	3.27	**3.9**	**4.2**	**4.4**	**4.6**	**4.8**	**4.9**
State & Local bonds	3.08	2.97	2.92	2.85	2.57	2.57	2.59	2.58	**2.6**	**2.9**	**3.0**	**3.2**	**3.3**	**3.4**
Home mortgage rate	3.92	3.69	3.55	3.55	3.10	3.07	3.07	3.08	**3.7**	**3.9**	**4.1**	**4.2**	**4.4**	**4.5**
	History								Consensus Forecasts-Quarterly					
Key Assumptions	1Q 2020	2Q 2020	3Q 2020	4Q 2020	1Q 2021	2Q 2021	3Q 2021	4Q 2021	1Q 2022	2Q 2022	3Q 2022	4Q 2022	1Q 2023	2Q 2023
Fed's AFE $ Index	111.3	112.4	107.2	105.1	103.4	102.9	105.0	107.0	**107.8**	**108.0**	**108.1**	**107.8**	**107.5**	**107.2**
Real GDP	-5.1	-31.2	33.8	4.5	6.3	6.7	2.3	7.0	**1.9**	**3.9**	**3.1**	**2.6**	**2.4**	**2.3**
GDP Price Index	1.6	-1.5	3.6	2.2	4.3	6.1	6.0	7.1	**4.8**	**3.8**	**3.1**	**2.8**	**2.6**	**2.5**
Consumer Price Index	1.3	-3.4	4.8	2.2	4.1	8.2	6.7	7.9	**5.8**	**3.9**	**3.1**	**2.7**	**2.5**	**2.4**
PCE Price Index	1.3	-1.6	3.7	1.5	3.8	6.5	5.3	6.3	**5.1**	**3.5**	**2.8**	**2.4**	**2.3**	**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. All interest rate data are sourced from Haver Analytics. Historical data for Fed's Advanced Foreign Economies Index are from FRSR H.10. Historical data for Real GDP, GDP Price Index and PCE Price Index are from the Bureau of Economic Analysis (BEA). Consumer Price Index history is from the Department of Labor's Bureau of Labor Statistics (BLS).









----------Policy Rates[1]----------

	History			Consensus Forecasts Months From Now:		
	Latest:	Month Ago:	Year Ago:	3	6	12
U.S.	0.13	0.13	0.13	**0.61**	**0.99**	**1.63**
Japan	-0.10	-0.10	-0.10	**-0.10**	**-0.07**	**-0.03**
U.K.	0.50	0.25	0.10	**0.77**	**0.88**	**1.15**
Switzerland	-0.75	-0.75	-0.75	**-0.75**	**-0.75**	**-0.60**
Canada	0.25	0.25	0.25	**0.65**	**1.01**	**1.54**
Australia	0.10	0.10	0.10	**0.12**	**0.21**	**0.46**
Euro area	0.00	0.00	0.00	**-0.05**	**-0.05**	**0.04**

----------10-Yr. Government Bond Yields[2]------

	History			Consensus Forecasts Months From Now:		
	Latest:	Month Ago:	Year Ago:	3	6	12
U.S.	1.92	1.75	1.34	**1.98**	**2.12**	**2.37**
Germany	0.18	-0.06	-0.31	**0.17**	**0.25**	**0.42**
Japan	0.22	0.14	0.11	**0.18**	**0.21**	**0.26**
U.K.	1.46	1.20	0.74	**1.44**	**1.56**	**1.85**
France	0.69	0.33	-0.07	**0.58**	**0.67**	**0.85**
Italy	1.85	1.36	0.62	**1.66**	**1.73**	**1.87**
Switzerland	0.25	0.00	-0.28	**0.05**	**0.13**	**0.29**
Canada	1.88	1.79	1.21	**2.05**	**2.20**	**2.44**
Australia	2.24	1.90	1.39	**2.14**	**2.27**	**2.46**
Spain	1.21	0.69	0.30	**1.05**	**1.14**	**1.33**

----------Foreign Exchange Rates[3]----------

	History			Consensus Forecasts Months From Now:		
	Latest:	Month Ago:	Year Ago:	3	6	12
U.S.	107.93	107.14	102.60	**108.0**	**108.0**	**107.0**
Japan	115.08	113.72	105.58	**115.4**	**115.9**	**116.8**
U.K.	1.36	1.36	1.40	**1.35**	**1.36**	**1.36**
Switzerland	0.92	0.91	0.89	**0.92**	**0.93**	**0.92**
Canada	1.27	1.25	1.26	**1.26**	**1.25**	**1.25**
Australia	0.72	0.72	0.79	**0.72**	**0.72**	**0.73**
Euro	1.13	1.13	1.21	**1.13**	**1.13**	**1.13**

	Consensus Policy Rates vs. US Rate			Consensus 10-Year Gov't Yields vs. U.S. Yield	
	Now	In 12 Mo.		Now	In 12 Mo.
Japan	-0.23	**-1.66**	Germany	-1.74	**-1.95**
U.K.	0.38	**-0.49**	Japan	-1.70	**-2.11**
Switzerland	-0.88	**-2.23**	U.K.	-0.46	**-0.52**
Canada	0.13	**-0.09**	France	-1.23	**-1.52**
Australia	-0.03	**-1.17**	Italy	-0.07	**-0.50**
Euro area	-0.13	**-1.59**	Switzerland	-1.67	**-2.07**
			Canada	-0.04	**0.07**
			Australia	0.32	**0.09**
			Spain	-0.71	**-1.03**

Forecasts of panel members are on pages 10 and 11. Definitions of variables are as follows: [1]Monetary policy rates. [2]Government bonds are yields to maturity. [3]Foreign 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.

International. A major escalation in the crisis concerning Russia and Ukraine has added another layer of uncertainty to the global economic outlook. A full-scale invasion of Ukraine by the Russian military has prompted NATO policymakers to impose severe sanctions on Russia, some targeting the domestic banking sector. And this has generated capital flight, a significant depreciation in the ruble, and a sharp increase in interest rates from Russia's central bank. It is still too soon to establish the broader economic impact from this crisis but it could potentially undermine business and consumer confidence in Europe, further choke supply chain channels in some sectors, energy in particular, and further lift headline inflation rates from already high levels.

Incoming economic data in the meantime have been offering mixed messages about the current state of the world economy. Flash February Purchasing Managers' surveys, for example, suggest the pace of global economic activity is still being influenced by the Omicron variant of COVID-19. Still-high case numbers in Japan generated a slump in its composite PMI in January from an already weak level while in contrast US, Euro area and UK PMIs registered a sharp service-sector led improvement with ebbing COVID cases. Another noteworthy feature of most of those surveys has been the broadly based improvement in suppliers' delivery times, suggesting that supply side bottlenecks may have started to ease. That being said, there has been little evidence to date to suggest this is now generating a de-escalation of cost and price pressures.

Against this backdrop central banks are likely to be conflicted about their next steps. On the one hand, the Russia/Ukraine crisis could derail a European and broader global growth revival and further ignite financial instability. By sticking with their existing plans for a policy normalization campaign, central banks might jeopardize a global recovery. On the other hand, those inflation messages from incoming economic data, together with the possibility of even higher commodity prices, suggest a still-high risk that medium-term inflation expectations might be further unmoored. Sticking with their existing plans for policy normalization might therefore be more apt for many central banks, notwithstanding the downside risks to growth.

Prior to the sharp escalation of these geopolitical risks, plans for monetary policy have become more hawkish. The Fed, for example, has responded to broadening price and wage pressures with heavier signals that it will raise rates further in 2022 than previously expected. That follows its decision in December to accelerate the taper of its asset purchases. The Bank of England, in the meantime, hiked its Bank Rate for the second consecutive month in February, from 25bps to 50bps, the first back-to-back rate hikes at scheduled monthly meetings since 2004. Notably, four of the nine committee members voted for a larger 50bp hike as well. The ECB and the BoJ have yet to embark on a concerted campaign of policy normalization but the former has announced it will end its net asset purchases under its Pandemic Emergency Purchase Program in March 2022 and both central banks have delivered a more hawkish assessment of inflation recently.

Among the world's major economies, China remains an outlier. Firstly, its economy has remained sluggish thanks not only to relatively restrictive COVID policies but also due to an ongoing retrenchment in the property sector as well. Secondly, incoming inflation data have been softer than expected, pulled down by weak food prices and ebbing domestic demand. Thirdly, and largely because of these growth and inflation factors, the PBOC has embarked on a monetary policy easing campaign. Although the PBOC left its key policy rates unchanged after its recent February meeting, this followed two consecutive months in which rates had been reduced.

The BCFF panel is looking for meaningful increases in the policy interest rate in the US, the UK and Canada over the next 12 months with the largest increase expected in the US. The panel expects only a modest increase in Australia and essentially no change in policy rates in Japan, the Euro area and Switzerland over the next 12 months.

First Quarter 2022

Interest Rate Forecasts

Key Assumptions

Blue Chip Financial Forecasts Panel Members	Percent Per Annum -- Average For Quarter: 1 Federal Funds Rate	2 Prime Bank Rate	3 SOFR Rate	4 Com. Paper 1-Mo.	5 Treas. Bills 3-Mo.	6 Treas. Bills 6-Mo.	7 Treas. Bills 1-Yr.	8 Treas. Notes 2-Yr.	9 Treas. Notes 5-Yr.	10 Treas. Notes 10-Yr.	11 Treas. Bond 30-Yr.	12 Aaa Corp. Bond	13 Baa Corp. Bond	14 State & Local Bonds	15 Home Mtg. Rate	Avg. For Qtr. A. Fed's Adv Fgn Econ $ Index	(Q-Q % Change) (SAAR) B. Real GDP	C. GDP Price Index	D. Cons. Price Index	E. PCE Price Index
Naroff Economic Advisors	0.6 H	3.8 H	0.25	0.1 L	0.4	0.7 H	0.9	1.2	1.8	1.8	2.2	na	na	2.0	3.9	108.0	1.5	3.9	5.2	4.9
Scotiabank Group	0.5	3.5	0.30	na	0.5	na	na	1.3	1.8	2.0	na	na	na	na	na	na	1.6	5.7	3.2	3.1
Bank of America	0.4	na	na	na	na	na	na	1.6	1.9	1.9	2.3	na	na	na	na	na	1.0	5.9	8.2 H	5.3
Barclays	0.4	3.5	na	na	na	na	na	1.7	1.9	2.0	2.3	na	na	na	na	na	2.0	6.1	7.7	6.6
BNP Paribas Americas	0.4	na	na	na	na	na	na	1.4	na	2.0	2.3	na	na	na	na	na	2.0	na	7.5	na
Chan Economics	0.4	3.4	0.35	0.3	0.4	0.5	0.7	1.1	1.6	1.9	2.2	2.9	3.6	2.7	3.6	107.6	1.2	4.4	4.5	4.3
Goldman Sachs & Co.	0.4	na	0.45 H	na	0.2	na	na	1.4	1.9	2.0	2.2	na	na	na	na	na	2.0	6.5	7.7	6.0
ING	0.4	na	na	na	0.7 H	na	na	1.6	1.9	2.0	2.2	na	na	na	na	na	1.7	na	na	na
J.P. Morgan Chase	0.4	na	na	na	na	na	na	1.1	1.3 L	1.8	2.1	na	na	na	na	na	1.5	4.2	7.3	6.3
Mizuho Research Institute	0.4	na	na	na	na	na	na	na	1.8	na	na	na	na	na	na	na	na	na	na	na
Nomura Securities, Inc.	0.4	3.5	na	na	na	na	na	1.6	2.0	2.1	na	na	na	na	na	na	2.2	4.4	8.0	6.7
Wells Fargo	0.4	3.4	0.30	0.4	0.4	0.5	0.8	1.4	1.8	2.0	2.3	3.3	3.8	2.7	3.8	na	0.7	4.1	4.9	4.1
ACIMA Private Wealth	0.3	3.5	0.25	0.4	0.4	0.5	0.8	1.8 H	1.7	1.8	2.1	3.1	3.8	1.8 L	3.8	107.0	3.0	1.2 L	2.0 L	1.2 L
NatWest Markets	0.3	3.4	na	0.4	0.6	0.7 H	0.8	1.5	1.9	2.1	2.2	3.9 H	4.9 H	3.2 H	4.0 H	na	2.5	6.0	8.1	7.0
Action Economics	0.2	3.3	na	0.2	0.3	0.6	0.9	1.4	1.8	2.0	2.3	3.1	3.9	2.7	3.9	107.1	3.8 H	5.7	7.7	6.5
Bank of the West	0.2	3.3	0.13	0.1 L	0.3	0.5	0.8	1.2	1.7	1.9	2.2	3.1	3.8	2.9	3.6	107.9	2.0	4.0	6.7	5.9
BMO Capital Markets	0.2	3.3	0.10	na	0.3	0.6	0.9	1.3	1.8	1.9	2.2	na	na	na	3.6	107.4	1.5	5.7	7.8	7.2 H
Chmura Economics & Analytics	0.2	3.3	0.15	0.2	0.3	0.6	0.9	1.3	1.8	2.1	2.4	3.3	na	na	3.8	na	2.7	5.9	6.8	5.6
Economist Intelligence Unit	0.2	3.3	na	0.6 H	0.3	0.5	0.8	1.3	2.0	2.1	2.4	na	na	na	3.4	na	3.8 H	7.5 H	4.8	na
Fannie Mae	0.2	3.3	na	na	0.4	0.6	1.0	1.4	1.8	1.9	2.2	na	na	na	3.7	na	1.3	5.6	6.9	5.6
Georgia State University	0.2	3.3	na	na	0.1 L	0.3	1.0	1.4	1.7	2.0	2.3	3.2	3.9	na	3.4	na	1.2	3.6	6.6	4.9
GLC Financial Economics	0.2	3.4	0.17	0.2	0.2	0.2 L	0.3 L	0.6 L	1.3 L	1.6 L	2.0 L	2.9	3.4 L	2.6	3.1 L	108.2	2.3	4.3	2.3	4.0
Grant Thornton/Diane Swonk	0.2	3.3	0.12	0.3	0.2	0.4	0.7	1.3	2.1 H	2.4 H	2.7 H	3.7	4.4	na	4.0 H	na	1.5	4.4	3.7	4.0
Loomis, Sayles & Company	0.2	3.3	0.11	0.4	0.4	0.6	0.8	1.2	1.6	2.0	2.2	3.2	3.8	2.9	3.5	107.9	1.1	4.6	5.9	5.1
MacroFin Analytics & Rutgers Bus School	0.2	3.4	0.07	0.2	0.4	0.7 H	1.1 H	1.6	1.9	2.0	2.3	3.4	3.9	3.0	3.9	107.9	2.0	4.1	4.1	4.6
Oxford Economics	0.2	3.3	0.16	na	0.3	0.3	0.9	1.4	1.8	1.9	2.3	2.6 L	na	na	3.7	107.6	1.3	4.4	7.6	6.0
The Northern Trust Company	0.2	3.3	0.09	0.2	0.2	0.5	0.7	1.1	1.6	1.9	2.2	3.1	3.8	2.9	3.5	108.0	1.5	5.8	7.0	6.1
Thru the Cycle	0.2	3.3	0.17	0.1 L	0.3	0.5	0.9	1.3	1.7	1.9	2.2	3.2	3.8	2.8	3.7	108.2	2.6	5.0	6.4	5.1
AIG	0.1 L	3.3	0.10	na	0.1 L	0.4	0.8	1.2	1.7	1.9	2.2	na	3.8	na	3.5	na	2.5	4.6	4.2	4.4
Amherst Pierpont Securities	0.1 L	3.3	0.09	0.2	0.3	0.6	0.9	1.3	1.8	1.9	2.2	3.2	3.9	2.4	3.7	107.9	2.0	5.7	8.2 H	6.1
Daiwa Capital Markets America	0.1 L	3.3	0.07	0.2	0.3	0.6	0.8	1.3	1.7	1.9	2.2	3.2	3.9	na	3.7	107.0	2.5	5.8	5.9	5.6
DePrince & Assoc.	0.1 L	3.3	0.15	0.2	0.3	0.6	0.8	1.3	1.7	1.9	2.2	3.2	3.8	2.5	3.7	106.2 L	3.0	5.8	6.1	5.6
IHS Markit	0.1 L	3.3	0.10	na	na	na	0.7	1.1	1.6	1.8	2.1	na	na	na	3.5	na	1.7	3.8	4.2	4.4
Moody's Analytics	0.1 L	3.3	0.07	0.1 L	0.2	0.3	0.6	0.9	1.5	1.8	2.5	3.1	3.8	2.2	3.5	na	0.5 L	3.9	4.6	4.0
PNC Financial Services Corp.	0.1 L	3.3	0.11	na	0.3	0.6	0.9	1.4	1.8	1.9	2.3	na	3.9	2.4	3.8	108.6	3.1	3.4	3.4	3.5
Regions Financial Corporation	0.1 L	3.3	0.25	0.2	0.4	0.6	0.9	1.3	1.8	1.9	2.2	3.3	4.0	2.8	3.8	107.8	1.8	5.1	6.4	5.3
Societe Generale	0.1 L	3.3	0.10	na	0.3	0.5	0.8	1.3	1.7	1.9	2.2	na	na	na	3.7	na	1.2	4.0	5.2	4.6
TS Lombard	0.1 L	3.2 L	0.05 L	0.1 L	0.2	0.2 L	0.5	0.8	1.4	1.8	2.2	2.9	3.8	2.1	3.6	110.0 H	1.5	4.0	4.0	4.0
Via Nova Investment Mgt.	0.1 L	3.3	0.13	0.1 L	0.2	0.4	0.6	1.1	1.7	1.9	2.2	3.2	3.7	2.8	3.7	107.5	2.0	4.6	4.7	4.1
March Consensus	**0.2**	**3.4**	**0.16**	**0.2**	**0.3**	**0.5**	**0.8**	**1.3**	**1.7**	**1.9**	**2.2**	**3.2**	**3.9**	**2.6**	**3.7**	**107.8**	**1.9**	**4.8**	**5.8**	**5.1**
Top 10 Avg.	0.4	3.5	0.27	0.3	0.5	0.6	0.9	1.6	1.9	2.1	2.4	3.4	4.1	2.9	3.9	108.3	3.0	6.1	7.9	6.5
Bottom 10 Avg.	0.1	3.3	0.08	0.1	0.2	0.4	0.6	1.0	1.5	1.8	2.2	3.0	3.7	2.3	3.5	107.3	1.1	3.6	3.6	3.6
February Consensus	0.2	3.3	0.15	0.2	0.3	0.4	0.6	1.1	1.6	1.8	2.2	3.0	3.7	2.6	3.5	108.0	2.2	4.3	4.4	4.0
Number of Forecasts Changed From A Month Ago:																				
Down	2	1	4	2	4	3	2	1	1	1	5	2	3	3	1	7	15	4	1	2
Same	35	30	14	14	10	7	7	8	11	13	15	3	5	7	6	7	14	9	6	5
Up	2	2	8	6	18	19	21	29	25	24	16	17	14	9	23	5	9	23	30	28
Diffusion Index	50%	52%	58%	59%	72%	78%	82%	87%	82%	80%	65%	84%	75%	66%	87%	45%	42%	76%	89%	87%

Second Quarter 2022

Interest Rate Forecasts

Key Assumptions

Blue Chip Financial Forecasts Panel Members	Percent Per Annum -- Average For Quarter: Short-Term: 1 Federal Funds Rate	2 Prime Bank Rate	3 SOFR Rate	4 Com. Paper 1-Mo.	5 Treas. Bills 3-Mo.	6 Treas. Bills 6-Mo.	7 Treas. Bills 1-Yr.	Intermediate-Term: 8 Treas. Notes 2-Yr.	9 Treas. Notes 5-Yr.	10 Treas. Notes 10-Yr.	Long-Term: 11 Treas. Bond 30-Yr.	12 Aaa Corp. Bond	13 Baa Corp. Bond	14 State & Local Bonds	15 Home Mtg. Rate	Avg. For Qtr.: A. Fed's Adv Fgn Econ $ Index	(Q-Q % Change) (SAAR): B. Real GDP	C. GDP Price Index	D. Cons. Price Index	E. PCE Price Index
Scotiabank Group	1.0 H	4.0 H	0.80 H	na	1.0	na	na	1.6	1.9	2.1	na	na	na	na	na	na	5.5	5.4	5.5	5.2
Bank of America	0.9	na	na	na	na	na	na	1.9	2.0	2.0	2.3	na	na	na	na	na	5.0	4.7	5.1	3.4
Barclays	0.9	4.0 H	na	na	na	na	na	1.8	1.9	1.9 L	2.2	na	na	na	na	na	4.0	3.4	4.2	3.4
BNP Paribas Americas	0.9	na	na	na	na	na	na	1.7	na	2.1	2.4	na	na	na	na	na	5.5	na	6.3 H	na
Goldman Sachs & Co.	0.9	na	0.75	na	0.4	na	na	1.6	2.0	2.1	2.3	na	na	na	na	na	2.5	4.4	5.7	4.1
ING	0.9	na	na	na	1.2	na	na	1.7	2.1	2.3	2.4	na	na	na	na	na	3.7	na	na	na
Mizuho Research Institute	0.9	na	na	na	na	na	na	na	2.0	na	na	na	na	na	na	na	na	na	na	na
Nomura Securities, Inc.	0.9	4.0 H	na	na	na	na	na	1.9	2.1	2.2	na	na	na	na	na	na	4.3	2.9	4.4	3.7
Fannie Mae	0.8	4.0 H	na	na	1.1	1.3	1.5	1.8	2.0	2.0	2.3	na	na	na	4.0	na	4.3	4.9	4.1	4.1
J.P. Morgan Chase	0.8	na	na	na	na	na	na	1.7	2.1	2.1	2.4	na	na	na	na	na	3.8	2.7	3.7	3.4
NatWest Markets	0.8	3.9	na	0.9	1.3 H	1.4 H	1.5	1.8	2.1	2.2	2.3	4.0 H	5.0 H	3.3 H	4.1	na	4.0	4.8	4.8	3.8
Oxford Economics	0.8	4.0 H	0.79	na	0.8	0.9	1.2	1.5	2.0	2.1	2.5	2.7 L	na	na	4.2	107.3	3.7	3.6	5.0	4.1
Wells Fargo	0.8	3.8	0.60	0.9	0.7	0.8	1.0	1.6	2.0	2.1	2.4	3.4	4.0	2.8	3.9	na	3.1	2.8	3.8	2.8
DePrince & Assoc.	0.7	3.8	0.72	0.8	0.8	1.0	1.3	1.8	2.0	2.2	2.4	3.5	4.3	2.9	3.9	106.6	3.6	4.2	4.4	4.1
Action Economics	0.6	3.8	na	0.6	0.8	0.9	1.1	1.6	2.0	2.2	2.5	3.3	4.1	2.8	4.1	107.7	3.7	3.9	4.5	4.2
Amherst Pierpont Securities	0.6	3.7	0.53	0.6	0.8	1.2	1.7 H	2.1 H	2.3	2.4	2.8	3.8	4.6	2.9	4.3 H	109.0	6.0	4.9	5.7	4.3
Bank of the West	0.6	3.8	0.57	0.5	0.7	0.8	1.2	1.6	1.9	2.1	2.6	3.4	4.1	3.2	3.9	108.5	3.0	2.9	3.8	3.5
BMO Capital Markets	0.6	3.8	0.50	na	0.7	1.0	1.2	1.5	1.9	2.0	2.3	na	na	na	3.7	107.4	3.5	5.3	5.7	5.4 H
Chan Economics	0.6	3.6	0.60	0.6	0.7	0.8	1.0	1.4	1.9	2.2	2.5	3.2	3.9	3.0	3.9	107.2	3.0	3.7	3.8	3.6
Chmura Economics & Analytics	0.6	3.8	0.61	0.7	0.7	0.9	1.2	1.7	2.1	2.6 H	2.9	3.8	na	na	4.1	na	2.9	5.4	6.3 H	4.8
Daiwa Capital Markets America	0.6	3.8	0.57	0.7	0.7	1.0	1.3	1.7	2.1	2.2	2.3	3.4	4.1	na	3.9	106.0 L	4.5	4.8	5.0	4.8
Economist Intelligence Unit	0.6	3.8	na	1.1 H	0.8	1.0	1.3	1.7	2.5 H	2.6 H	2.9	na	na	na	3.9	na	2.5	5.7 H	2.8	na
Georgia State University	0.6	3.7	na	na	0.5	0.7	1.3	1.7	2.1	2.3	2.6	3.6	4.5	na	3.9	na	4.0	2.8	4.1	2.6
GLC Financial Economics	0.6	3.7	0.48	0.6	0.5	0.5	0.6 L	0.9 L	1.7	1.9 L	2.3	3.1	3.6 L	2.9	3.5 L	108.4	5.7	3.5	2.3	3.6
Naroff Economic Advisors	0.6	3.8	0.55	0.5	0.7	0.8	1.1	1.5	1.9	2.0	2.4	na	na	2.1	4.0	108.6	3.5	3.3	3.7	3.6
PNC Financial Services Corp.	0.6	3.7	0.56	na	0.8	1.0	1.3	1.8	2.0	2.2	2.6	na	4.2	2.7	4.1	109.4	3.5	3.5	3.5	3.4
The Northern Trust Company	0.6	3.7	0.50	0.6	0.7	0.9	1.0	1.3	1.7	1.9 L	2.4	3.3	4.0	3.2	3.6	107.0	4.5	3.4	3.5	3.2
ACIMA Private Wealth	0.5	3.8	0.50	0.6	0.7	0.6	0.9	1.8	1.8	1.9 L	2.2	3.2	3.8	1.9 L	3.9	107.0	2.0 L	1.1 L	2.0	1.0
Grant Thornton/Diane Swonk	0.5	3.6	0.30	0.6	0.5	0.7	1.0	1.6	2.2	2.5	2.7	3.8	4.3	na	4.0	na	3.2	3.9	1.7	2.5
IHS Markit	0.5	3.7	0.51	na	na	na	0.9	1.3	1.7	1.9 L	2.1 L	na	na	na	3.5 L	na	4.3	3.8	1.5	2.4
Loomis, Sayles & Company	0.5	3.6	0.41	0.7	0.7	0.9	1.0	1.4	1.9	2.1	2.3	3.3	4.0	3.1	3.6	108.0	4.2	4.3	3.3	3.1
MacroFin Analytics & Rutgers Bus School	0.5	3.5 L	0.30	0.5	0.7	0.7	1.1	1.6	2.0	2.3	2.6	3.9	4.4	3.3 H	4.2	108.1	3.3	3.2	2.9	2.6
Regions Financial Corporation	0.5	3.7	0.49	0.5	0.7	0.8	1.2	1.6	1.9	2.1	2.4	3.5	4.3	3.0	4.1	108.1	5.0	4.4	4.4	4.5
Societe Generale	0.5	3.7	0.53	na	0.7	0.9	1.1	1.5	1.8	1.9 L	2.2	na	na	na	3.7	na	3.9	2.1	1.2 L	0.9 L
Thru the Cycle	0.5	3.6	0.40	0.5	0.6	0.9	1.2	1.6	1.9	2.3	2.5	3.5	4.1	3.1	4.0	108.8	3.6	3.9	4.1	5.4 H
AIG	0.4	3.5 L	0.35	na	0.3 L	0.7	1.1	1.4	1.8	2.0	2.3	na	3.9	na	3.7	na	3.4	3.8	1.8	2.4
TS Lombard	0.4	3.5 L	0.30	0.3 L	0.3 L	0.3 L	0.6 L	1.0	1.6 L	2.0	2.4	3.1	4.0	2.3	3.8	112.0 H	2.5	3.0	3.0	3.0
Moody's Analytics	0.3 L	3.5 L	0.26 L	0.3 L	0.4	0.5	0.7	1.0	1.6 L	2.1	3.1 H	3.6	4.5	2.8	3.6	na	6.1 H	3.6	3.3	3.2
Via Nova Investment Mgt.	0.3 L	3.6	0.33	0.3 L	0.4	0.6	0.8	1.3	1.9	2.2	2.4	3.4	3.9	3.0	3.9	107.0	4.5	3.5	3.6	3.2
March Consensus	**0.6**	**3.7**	**0.51**	**0.6**	**0.7**	**0.8**	**1.1**	**1.6**	**2.0**	**2.1**	**2.5**	**3.4**	**4.2**	**2.9**	**3.9**	**108.0**	**3.9**	**3.8**	**3.9**	**3.5**
Top 10 Avg.	0.9	3.9	0.66	0.8	0.9	1.1	1.4	1.8	2.2	2.4	2.7	3.7	4.4	3.1	4.1	108.9	5.2	5.0	5.5	4.7
Bottom 10 Avg.	0.4	3.6	0.36	0.5	0.5	0.6	0.9	1.3	1.8	1.9	2.3	3.2	3.9	2.6	3.7	107.1	2.8	2.7	2.3	2.3
February Consensus	0.5	3.6	0.40	0.5	0.5	0.6	0.9	1.3	1.7	2.0	2.3	3.2	3.9	2.8	3.7	108.2	4.0	3.4	3.4	3.1
Number of Forecasts Changed From A Month Ago:																				
Down	1	1	1	0	2	2	2	2	1	0	2	0	1	2	1	7	16	3	7	7
Same	15	13	9	9	10	7	5	6	8	13	12	7	8	5	8	7	11	11	8	5
Up	23	19	16	13	20	20	23	30	28	25	22	15	13	12	21	5	11	22	22	23
Diffusion Index	78%	77%	79%	80%	78%	81%	85%	87%	86%	83%	78%	84%	77%	76%	83%	45%	43%	76%	70%	73%

Third Quarter 2022

Interest Rate Forecasts

Key Assumptions

Blue Chip Financial Forecasts Panel Members	Percent Per Annum -- Average For Quarter: 1 Federal Funds Rate	2 Prime Bank Rate	3 SOFR Rate	4 Com. Paper 1-Mo.	5 Treas. Bills 3-Mo.	6 Treas. Bills 6-Mo.	7 Treas. Bills 1-Yr.	8 Treas. Notes 2-Yr.	9 Treas. Notes 5-Yr.	10 Treas. Notes 10-Yr.	11 Treas. Bond 30-Yr.	12 Aaa Corp. Bond	13 Baa Corp. Bond	14 State & Local Bonds	15 Home Mtg. Rate	A. Avg. For Qtr. Fed's Adv Fgn Econ $ Index	(Q-Q % Change) (SAAR) B. Real GDP	C. GDP Price Index	D. Cons. Price Index	E. PCE Price Index
Scotiabank Group	1.5 H	4.5 H	1.30 H	na	1.4	na	na	1.9	2.0	2.3	na	na	na	na	na	na	3.9	4.3	4.6	4.2
Bank of America	1.4	na	na	na	na	na	na	2.1	2.0	2.2	2.3	na	na	na	na	na	3.0	4.1	3.3	2.3
BNP Paribas Americas	1.4	na	na	na	na	na	na	1.9	na	2.2	2.5	na	na	na	na	na	3.5	na	5.3	na
Goldman Sachs & Co.	1.4	na	1.30 H	na	0.8	na	na	1.8	2.1	2.2	2.3	na	na	na	na	na	2.5	3.1	3.5	2.7
Mizuho Research Institute	1.4	na	na	na	na	na	na	na	2.2	na	na	na	na	na	na	na	na	na	na	na
Nomura Securities, Inc.	1.4	4.5 H	na	na	na	na	na	2.1	2.2	2.3	na	na	na	na	na	na	3.9	2.1	2.4	2.0
J.P. Morgan Chase	1.3	na	na	na	na	na	na	2.0	2.3	2.3	2.5	na	na	na	na	na	3.5	2.1	2.3	2.2
Chmura Economics & Analytics	1.2	4.3	1.22	1.2	1.2	1.4	1.7	2.1	2.4	2.9	3.3	4.1	na	na	4.3	na	2.9	5.2 H	5.7 H	4.6 H
DePrince & Assoc.	1.2	4.3	1.24	1.3 H	1.3	1.4	1.6	2.0	2.2	2.3	2.6	3.7	4.5	3.1	4.1	107.2	3.0	3.9	4.1	3.8
Oxford Economics	1.2	4.3	1.16	na	1.2	1.2	1.4	1.6	2.1	2.3	2.6	2.8 L	na	na	4.2	106.7	3.2	2.4	2.4	2.2
Amherst Pierpont Securities	1.1	4.2	1.05	1.2	1.4	1.8 H	2.2 H	2.4 H	2.6	2.7	3.1	4.1	5.0	3.1	4.7 H	110.0	4.0	4.1	3.9	3.2
Barclays	1.1	4.3	na	na	na	na	na	1.9	1.9	1.9	2.2	na	na	na	na	na	3.5	2.0	1.9	1.6
Economist Intelligence Unit	1.1	4.3	na	1.3 H	1.3	1.5	1.8	2.2	3.0 H	3.1 H	3.4 H	na	na	na	4.4	na	2.5	4.4	1.6 L	na
Fannie Mae	1.1	4.3	na	na	1.5 H	1.6	1.7	2.0	2.0	2.1	2.3	na	na	na	4.0	na	2.9	3.8	3.9	3.7
ING	1.1	na	na	na	1.5 H	na	na	1.8	2.1	2.3	2.4	na	na	na	na	na	3.3	na	na	na
NatWest Markets	1.1	4.2	na	1.2	1.3	1.4	1.5	2.0	2.2	2.3	2.3	4.1	5.1 H	3.3	4.1	na	3.0	4.6	2.9	2.7
The Northern Trust Company	1.1	4.2	1.01	1.1	1.2	1.4	1.5	1.6	1.9	2.1	2.6	3.6	4.5	3.5	3.9	105.0 L	3.5	3.1	3.2	2.8
Wells Fargo	1.1	4.1	0.90	1.2	1.0	1.1	1.3	1.9	2.1	2.2	2.4	3.5	4.1	2.9	4.0	na	3.6	2.5	3.3	2.5
Bank of the West	1.0	4.1	0.91	0.9	1.0	1.1	1.5	1.9	2.2	2.4	2.9	3.7	4.4	3.6 H	4.2	108.6	2.5	2.6	2.8	2.7
BMO Capital Markets	1.0	4.1	0.85	na	1.0	1.3	1.4	1.6	1.9	2.1	2.4	na	na	na	3.8	107.5	3.0	3.2	3.5	3.3
Action Economics	0.9	4.1	na	0.9	1.0	1.2	1.4	1.6	2.0	2.2	2.6	3.3	4.2	2.8	4.1	107.7	3.2	3.0	2.8	2.6
Chan Economics	0.9	3.9	0.85	0.8	1.0	1.1	1.3	1.7	2.2	2.5	2.8	3.5	4.2	3.3	4.2	107.0	2.6	3.2	3.3	3.2
Daiwa Capital Markets America	0.9	4.1	0.87	1.0	1.0	1.2	1.5	1.9	2.3	2.5	2.5	3.7	4.4	na	4.2	106.0	3.4	4.0	4.0	3.8
Georgia State University	0.9	4.1	na	na	0.8	1.0	1.5	1.9	2.3	2.6	2.9	3.9	4.9	na	4.2	na	2.5	2.0	3.6	2.4
GLC Financial Economics	0.9	4.0	0.81	0.9	0.9	0.9	1.0	1.3	2.0	2.1	2.6	3.5	4.1	3.1	3.9	108.5	2.8	4.0	2.2	3.1
Grant Thornton/Diane Swonk	0.9	4.1	0.79	0.9	0.9	1.2	1.3	1.8	2.4	2.7	2.9	4.0	4.5	na	4.2	na	2.0 L	2.7	1.8	2.2
IHS Markit	0.9	4.0	0.84	na	na	na	1.1	1.5	1.9	2.1	2.4	na	na	na	3.7 L	na	2.9	3.0	1.9	2.2
Naroff Economic Advisors	0.9	4.0	0.80	0.7	0.7	1.0	1.3	1.6	2.0	2.1	2.5	na	na	2.2	4.2	109.0	2.3	2.6	3.2	3.1
PNC Financial Services Corp.	0.9	4.0	0.90	na	1.0	1.3	1.5	1.9	2.1	2.3	2.7	na	4.4	2.9	4.2	109.7	2.7	3.3	2.9	2.7
Regions Financial Corporation	0.9	3.8	0.77	0.7	0.9	1.0	1.4	1.7	2.1	2.2	2.6	3.7	4.6	3.3	4.3	108.3	4.7 H	2.9	2.9	3.0
Societe Generale	0.9	4.0	0.86	na	1.0	1.1	1.4	1.7	1.9	2.0	2.3	na	na	na	3.7 L	na	2.0 L	2.6	2.7	2.4
Loomis, Sayles & Company	0.8	3.9	0.71	1.0	1.0	1.2	1.3	1.6	2.0	2.2	2.4	3.4	4.1	3.2	3.7 L	108.0	3.0	3.0	2.9	2.8
MacroFin Analytics & Rutgers Bus School	0.8	3.8	0.50 L	0.8	1.0	1.0	1.4	1.9	2.3	2.5	2.8	4.3 H	4.9	3.5	4.5	108.4	2.6	2.6	2.5	2.1
Thru the Cycle	0.7	3.8	0.57	0.6 L	0.8	1.0	1.3	1.7	2.2	2.5	2.7	3.7	4.3	3.3	4.3	109.0	2.8	3.5	5.0	4.4
AIG	0.6	3.8	0.59	na	0.6	1.0	1.3	1.5	1.8	2.0	2.3	na	4.0 L	na	3.7 L	na	3.6	2.7	2.0	2.2
Moody's Analytics	0.6	3.7 L	0.52	0.6 L	0.7	0.8	1.0	1.2 L	1.8	2.2	3.2	3.8	4.8	3.1	3.8	na	2.9	3.1	2.7	2.7
TS Lombard	0.6	3.7 L	0.55	0.6 L	0.3 L	0.3 L	0.8 L	1.2 L	1.8	2.3	2.6	3.3	4.2	2.5	4.1	114.0 H	3.0	2.5	2.5	2.5
Via Nova Investment Mgt.	0.6	3.8	0.58	0.6 L	0.7	0.9	1.1	1.5	2.1	2.4	2.6	3.7	4.2	3.3	4.2	106.5	3.5	2.8	2.7	2.6
ACIMA Private Wealth	0.5 L	3.8	0.50 L	0.6 L	0.7	0.8	0.9	1.7	1.7 L	1.8 L	2.0 L	3.3	4.0 L	1.8 L	3.8	107.0	2.5	1.3 L	1.8	1.2 L
March Consensus	**1.0**	**4.1**	**0.85**	**0.9**	**1.0**	**1.1**	**1.4**	**1.8**	**2.1**	**2.3**	**2.6**	**3.7**	**4.4**	**3.0**	**4.1**	**108.1**	**3.1**	**3.1**	**3.1**	**2.8**
Top 10 Avg.	1.3	4.3	1.10	1.1	1.3	1.4	1.7	2.1	2.4	2.6	3.0	3.9	4.7	3.3	4.3	109.4	3.8	4.2	4.4	3.7
Bottom 10 Avg.	0.7	3.8	0.61	0.7	0.7	0.9	1.1	1.5	1.9	2.0	2.3	3.4	4.1	2.8	3.8	106.9	2.4	2.2	2.0	2.0
February Consensus	0.8	3.9	0.66	0.7	0.8	0.9	1.1	1.4	1.9	2.1	2.5	3.4	4.2	2.9	3.9	108.3	3.2	3.0	2.8	2.7
Number of Forecasts Changed From A Month Ago:																				
Down	0	0	2	2	2	2	2	2	3	1	3	1	2	2	0	6	17	4	7	7
Same	17	15	9	7	11	6	5	9	6	11	10	5	5	5	10	7	12	13	10	9
Up	22	18	15	13	19	21	23	27	28	26	23	16	15	12	20	6	9	19	20	19
Diffusion Index	78%	77%	75%	75%	77%	83%	85%	83%	84%	83%	78%	84%	80%	76%	83%	50%	39%	71%	68%	67%

Fourth Quarter 2022

Interest Rate Forecasts

Key Assumptions

Blue Chip Financial Forecasts Panel Members	Percent Per Annum -- Average For Quarter															Avg. For	(Q-Q % Change) (SAAR)			
	Short-Term							Intermediate-Term			Long-Term									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	A.	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. Bond 30-Yr.	Aaa Corp. Bond	Baa Corp. Bond	State & Local Bonds	Home Mtg. Rate	Fed's Adv Fgn Econ $ Index	Real GDP	GDP Price Index	Cons. Price Index	PCE Price Index
Scotiabank Group	2.0 H	5.0 H	1.80 H	na	2.0 H	na	na	2.2	2.3	2.4	na	na	na	na	na	na	4.0 H	3.0	5.6 H	4.2
Bank of America	1.9	na	na	na	na	na	na	2.3	2.3	2.3	2.3	na	na	na	na	na	2.0	4.3	3.1	2.7
Goldman Sachs & Co.	1.9	na	1.60	na	1.0	na	na	1.9	2.2	2.3	2.4	na	na	na	na	na	2.0	2.4	2.9	2.0
Nomura Securities, Inc.	1.9	5.0 H	na	na	na	na	na	2.2	2.3	2.4	na	na	na	na	na	na	2.1	1.9	1.3	1.6
J.P. Morgan Chase	1.8	na	na	na	na	na	na	2.3	2.4	2.5	2.5	na	na	na	na	na	2.5	2.1	2.4	2.1
Amherst Pierpont Securities	1.6	4.7	1.54	1.7 H	1.9	2.2 H	2.6 H	2.7 H	2.9	3.0	3.4	4.3	5.2	3.4	5.0 H	111.0	3.5	3.6	3.4	3.0
BNP Paribas Americas	1.6	na	na	na	na	na	na	2.0	na	2.3	2.6	na	na	na	na	na	2.3	na	3.9	na
Oxford Economics	1.6	4.7	1.59	na	1.6	1.6	1.7	1.8	2.3	2.4	2.6	3.0 L	na	na	4.3	105.8	1.7	1.8	1.4	1.5
Chmura Economics & Analytics	1.5	4.7	1.56	1.6	1.6	1.7	1.9	2.3	2.5	2.9	3.5 H	4.2	na	na	4.5	na	3.9	4.8 H	5.2	4.4 H
DePrince & Assoc.	1.5	4.6	1.59	1.6	1.6	1.7	1.9	2.2	2.3	2.5	2.8	3.9	4.6	3.2	4.3	107.8	2.4	3.4	3.6	3.3
Barclays	1.4	4.5	na	na	na	na	na	1.9	1.9	1.9	2.2	na	na	na	na	na	2.5	1.5	1.2	1.0 L
ING	1.4	na	na	na	1.7	na	na	1.9	2.1	2.3	2.4	na	na	na	na	na	3.4	na	na	na
Mizuho Research Institute	1.4	na	na	na	na	na	na	na	2.2	na	na	na	na	na	na	na	na	na	na	na
The Northern Trust Company	1.4	4.5	1.34	1.4	1.5	1.7	1.7	1.9	2.1	2.3	2.8	3.8	4.7	3.8 H	4.1	104.0 L	2.3	2.8	2.9	2.5
Wells Fargo	1.4	4.3	1.10	1.4	1.2	1.3	1.6	2.0	2.2	2.2	2.5	3.5	4.1	2.9	4.0	na	3.6	2.3	2.6	2.3
Daiwa Capital Markets America	1.3	4.4	1.22	1.3	1.3	1.6	1.8	2.1	2.5	2.7	2.8	4.0	4.7	na	4.5	105.0	3.0	3.5	3.5	3.3
NatWest Markets	1.3	4.4	na	1.4	1.6	1.7	1.8	2.2	2.3	2.4	2.4	4.2	5.1	3.4	4.2	na	2.5	4.1	2.7	2.7
Action Economics	1.2	4.3	na	1.2	1.3	1.4	1.5	1.7	2.1	2.3	2.6	3.4	4.2	2.8	4.1	107.8	3.0	2.5	2.5	2.3
Bank of the West	1.2	4.3	1.17	1.1	1.3	1.3	1.7	2.1	2.4	2.6	3.1	3.9	4.6	3.8 H	4.4	108.4	2.4	2.3	2.5	2.4
BMO Capital Markets	1.2	4.3	1.15	na	1.3	1.5	1.5	1.6	1.9	2.1	2.4	na	na	na	3.8	107.5	2.5	2.3	2.7	2.4
Economist Intelligence Unit	1.2	4.3	na	1.6	1.4	1.6	1.9	2.3	3.1 H	3.2 H	3.5 H	na	na	na	4.5	na	2.5	4.0	1.2	na
Fannie Mae	1.2	4.3	na	na	1.7	1.7	1.9	2.0	2.1	2.1	2.3	na	na	na	4.0	na	2.6	3.2	2.8	2.8
Georgia State University	1.2	4.3	na	na	1.0	1.2	1.6	2.0	2.6	3.0	3.3	4.2	5.3 H	na	4.6	na	1.9	2.1	2.8	2.2
Grant Thornton/Diane Swonk	1.2	4.3	0.99	1.2	1.1	1.4	1.6	2.1	2.6	2.9	3.1	4.2	4.7	na	4.5	na	2.5	2.1	1.5	1.5
PNC Financial Services Corp.	1.2	4.3	1.17	na	1.3	1.5	1.7	2.0	2.2	2.4	2.8	na	4.4	3.0	4.2	109.9	2.8	2.8	2.6	2.4
Chan Economics	1.1	4.1	1.10	1.1	1.2	1.3	1.5	1.9	2.4	2.7	3.0	3.7	4.4	3.5	4.4	106.9	2.3	3.0	3.1	3.0
GLC Financial Economics	1.1	4.2	0.96	1.1	1.1	1.1	1.2	1.5 L	2.1	2.3	3.0	4.4	5.0	3.2	4.1	108.0	2.0	4.0	2.1	3.1
IHS Markit	1.1	4.3	1.07	na	na	na	1.3	1.6	2.0	2.3	2.6	na	na	na	3.9	na	2.7	2.3	1.5	1.6
Loomis, Sayles & Company	1.1	4.3	1.06	1.3	1.3	1.5	1.6	1.9	2.1	2.3	2.5	3.5	4.2	3.3	3.8	108.0	2.9	2.4	2.3	2.1
Naroff Economic Advisors	1.1	4.3	1.08	1.0	1.1	1.3	1.5	1.7	2.1	2.3	2.6	na	na	2.3	4.3	108.5	2.0	2.5	2.7	2.4
Regions Financial Corporation	1.1	4.1	1.03	1.0	1.2	1.3	1.5	1.9	2.2	2.3	2.7	3.9	4.8	3.4	4.4	108.1	3.6	2.7	2.4	2.5
Societe Generale	1.1	4.3	1.13	na	1.3	1.4	1.6	1.9	1.9	2.0	2.3	na	na	na	3.7 L	na	2.6	2.7	2.7	2.4
TS Lombard	1.1	4.2	1.05	1.1	1.2	1.2	1.5	1.7	2.4	2.5	2.7	3.4	4.3	2.6	4.3	112.0 H	3.0	2.8	2.8	2.8
MacroFin Analytics & Rutgers Bus School	1.0	4.0	0.70 L	1.0	1.2	1.3	1.7	2.2	2.6	2.8	3.1	4.8 H	5.3 H	3.8 H	4.7	108.8	2.5	2.2	2.4	2.0
AIG	0.9	4.0	0.87	na	0.8 L	1.2	1.5	1.6	1.9	2.1	2.4	na	4.0 L	na	3.8	na	2.4	2.2	1.0 L	1.6
Thru the Cycle	0.9	4.0	0.82	0.9	1.0	1.2	1.4	1.6	2.0	2.4	2.6	3.6	4.3	3.2	4.2	109.2	2.3	2.9	4.4	3.5
ACIMA Private Wealth	0.8 L	3.3 L	0.75	0.9	0.9	0.8 L	0.9 L	1.7	1.7 L	1.8 L	2.0 L	3.3	4.1	1.8 L	3.8	106.0	1.5 L	1.2 L	1.9	1.1
Moody's Analytics	0.8 L	4.0	0.80	0.9	0.9	1.0	1.3	1.5 L	2.0	2.4	3.4	4.0	5.1	3.3	3.9	na	2.5	2.8	2.5	2.5
Via Nova Investment Mgt.	0.8 L	4.1	0.83	0.8 L	0.9	1.1	1.3	1.8	2.4	2.7	2.9	3.9	4.4	3.5	4.4	106.0	3.0	2.5	2.5	2.5
March Consensus	**1.3**	**4.3**	**1.15**	**1.2**	**1.3**	**1.4**	**1.6**	**2.0**	**2.3**	**2.4**	**2.7**	**3.9**	**4.6**	**3.2**	**4.2**	**107.8**	**2.6**	**2.8**	**2.7**	**2.4**
Top 10 Avg.	1.7	4.7	1.46	1.5	1.7	1.7	1.9	2.3	2.6	2.9	3.2	4.2	5.0	3.5	4.6	109.2	3.4	3.8	3.9	3.3
Bottom 10 Avg.	1.0	4.0	0.88	1.0	1.0	1.1	1.3	1.6	2.0	2.1	2.3	3.5	4.2	2.8	3.9	106.5	2.0	1.9	1.5	1.6
February Consensus	1.0	4.1	0.93	1.0	1.1	1.1	1.3	1.6	2.0	2.2	2.6	3.6	4.4	3.1	4.0	107.9	2.6	2.8	2.7	2.5
Number of Forecasts Changed From A Month Ago:																				
Down	0	1	1	1	3	2	2	2	2	0	1	0	1	1	0	5	10	9	12	14
Same	16	13	8	8	10	8	4	8	9	13	12	8	8	8	11	8	18	15	13	12
Up	23	19	17	13	19	19	24	28	26	25	23	14	13	10	19	6	10	12	12	9
Diffusion Index	79%	77%	81%	77%	75%	79%	87%	84%	82%	83%	81%	82%	77%	74%	82%	53%	50%	54%	50%	43%

First Quarter 2023

Interest Rate Forecasts

Key Assumptions

Blue Chip Financial Forecasts Panel Members	Percent Per Annum -- Average For Quarter: Short-Term 1 Federal Funds Rate	2 Prime Bank Rate	3 SOFR Rate	4 Com. Paper 1-Mo.	5 Treas. Bills 3-Mo.	6 Treas. Bills 6-Mo.	7 Treas. Bills 1-Yr.	Intermediate-Term 8 Treas. Notes 2-Yr.	9 Treas. Notes 5-Yr.	10 Treas. Notes 10-Yr.	Long-Term 11 Treas. Bond 30-Yr.	12 Aaa Corp. Bond	13 Baa Corp. Bond	14 State & Local Bonds	15 Home Mtg. Rate	Avg. For ---Qtr.--- A. Fed's Adv Fgn Econ $ Index	(Q-Q % Change) (SAAR) B. Real GDP	C. GDP Price Index	D. Cons. Price Index	E. PCE Price Index
J.P. Morgan Chase	2.3 H	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.5	2.2	2.4	2.1
Scotiabank Group	2.3 H	5.3 H	2.05	na	2.2	na	na	2.3	2.4	2.5	na	na	na	na	na	na	3.3	2.8	1.6	1.9
Amherst Pierpont Securities	2.1	5.2	2.08 H	2.2 H	2.4 H	2.6 H	2.9 H	2.9 H	3.1	3.2	3.6	4.5	5.5	3.6	5.1 H	111.5 H	3.2	3.3	3.2	2.9
Bank of America	2.1	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	1.8	4.2	2.9	2.5
BNP Paribas Americas	2.1	na	na	na	na	na	na	2.1	na	2.3	2.6	na	na	na	na	na	2.1	na	2.6	na
Goldman Sachs & Co.	2.1	na	1.85	na	1.0	na	na	2.1	2.3	2.3	2.4	na	na	na	na	na	2.0	2.9	2.1	2.5
Nomura Securities, Inc.	2.1	5.3 H	na	na	na	na	na	2.3	2.4	2.5	na	na	na	na	na	na	1.9	2.0	1.2 L	1.8
Chmura Economics & Analytics	2.0	5.1	2.02	2.0	2.0	2.1	2.2	2.5	2.6	3.1	3.8 H	4.4	na	na	4.8	na	2.2	4.2	4.8 H	4.0 H
Oxford Economics	2.0	5.2	2.04	na	2.1	2.1	2.1	2.2	2.4	2.5	2.7	3.1 L	na	na	4.5	104.9	2.1	2.0	1.7	1.6
Mizuho Research Institute	1.9	na	na	na	na	na	na	na	2.4	na	na	na	na	na	na	na	na	na	na	na
DePrince & Assoc.	1.8	4.9	1.84	1.8	1.9	1.9	2.0	2.3	2.4	2.7	3.0	4.1	4.8	3.4	4.5	108.5	2.3	3.2	3.4	3.2
The Northern Trust Company	1.8	5.0	1.76	1.8	1.7	1.8	1.9	2.1	2.3	2.4	3.0	3.9	4.8	4.0	4.2	103.0 L	2.3	2.2	2.2	2.1
ING	1.7	na	na	na	1.9	na	na	2.0	2.1	2.3	2.5	na	na	na	na	na	2.7	na	na	na
Barclays	1.6	4.8	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.0	2.0	2.1	1.7
NatWest Markets	1.6	4.7	na	1.7	1.8	1.9	2.0	2.3	2.4	2.4	2.4	4.2	5.2	3.4	4.2	na	4.0 H	6.0 H	2.8	2.8
TS Lombard	1.6	4.7	1.55	1.6	1.9	1.9	2.1	2.2	2.7	2.8	3.0	3.7	4.6	2.9	4.6	110.0	2.8	2.8	2.8	2.8
Wells Fargo	1.6	4.7	1.60	1.6	1.5	1.6	1.8	2.1	2.2	2.3	2.5	3.6	4.2	3.0	4.1	na	2.6	2.1	1.9	2.1
BMO Capital Markets	1.5	4.6	1.40	na	1.5	1.7	1.6	1.7	2.0	2.2	2.5	na	na	na	3.9	107.7	2.4	2.0	2.2	2.0
Daiwa Capital Markets America	1.5	4.7	1.47	1.6	1.6	1.8	2.1	2.3	2.7	2.9	2.9	4.2	4.9	na	4.7	105.0	2.5	3.3	3.1	2.9
Economist Intelligence Unit	1.5	4.6	na	1.8	1.6	1.8	2.1	2.6	3.3 H	3.5 H	3.8 H	na	na	na	4.8	na	2.1	1.4 L	2.4	na
Loomis, Sayles & Company	1.5	4.7	1.46	1.7	1.7	1.9	2.0	2.1	2.2	2.4	2.6	3.6	4.3	3.4	3.9	108.0	2.6	2.2	2.1	2.0
Regions Financial Corporation	1.5	4.5	1.33	1.2	1.4	1.5	1.7	2.0	2.3	2.4	2.8	4.0	4.9	3.6	4.5	107.8	2.8	2.3	2.3	2.3
Action Economics	1.4	4.6	na	1.4	1.5	1.6	1.6	1.8	2.0	2.3	2.7	3.4	4.3	2.9	4.2	107.8	2.8	2.0	2.4	2.1
Bank of the West	1.4	4.5	1.35	1.3	1.4	1.4	1.8	2.2	2.5	2.8	3.3	4.2	4.9	4.0	4.5	107.9	2.4	2.1	2.3	2.2
Chan Economics	1.4	4.4	1.35	1.3	1.5	1.6	1.8	2.2	2.7	3.0	3.3	4.0	4.7	3.8	4.7	106.7	2.2	2.8	2.9	2.8
Fannie Mae	1.4	4.5	na	na	1.8	1.9	2.0	2.1	2.1	2.1	2.3	na	na	na	4.0	na	2.4	3.0	3.0	2.6
Georgia State University	1.4	4.5	na	na	1.2	1.3	1.7	2.1	2.6	3.0	3.3	4.1	5.4	na	4.7	na	2.0	2.5	2.4	2.1
Grant Thornton/Diane Swonk	1.4	4.6	1.30	1.4	1.3	1.7	1.9	2.3	2.8	3.0	3.3	4.3	4.8	na	4.6	na	1.4	2.4	2.4	1.9
MacroFin Analytics & Rutgers Bus School	1.4	4.3	0.79	1.4	1.6	1.7	2.1	2.6	3.0	3.2	3.5	5.4 H	6.0 H	4.2 H	5.1 H	109.0	2.2	2.2	2.2	2.0
Naroff Economic Advisors	1.4	4.5	1.30	1.2	1.4	1.5	1.7	1.8	2.2	2.4	2.8	na	na	2.5	4.4	107.9	1.8	2.2	2.5	1.9
PNC Financial Services Corp.	1.4	4.5	1.42	na	1.5	1.7	1.8	2.1	2.3	2.5	2.8	na	4.5	3.1	4.3	110.2	1.3 L	2.5	2.5	2.4
Societe Generale	1.4	4.6	1.38	na	1.5	1.6	1.8	2.0	1.9	2.0	2.3	na	na	na	3.7 L	na	2.8	2.7	2.6	2.3
GLC Financial Economics	1.3	4.4	1.09	1.3	1.3	1.3	1.4	1.7	2.3	2.5	3.3	4.4	5.2	3.4	4.4	107.7	2.5	2.8	2.4	3.6
AIG	1.2	4.3	1.13	na	1.0	1.5	1.7	1.9	2.0	2.2	2.5	na	4.1 L	na	3.9	na	2.2	2.3	2.2	1.8
IHS Markit	1.1	4.3	1.13	na	na	na	1.4	1.8	2.2	2.4	2.7	na	na	na	4.1	na	2.4	2.3	2.3	1.8
Moody's Analytics	1.1	4.3	1.06	1.1	1.1	1.2	1.5	1.7	2.1	2.5	3.5	4.1	5.2	3.5	4.0	na	2.9	2.3	2.3	2.4
Thru the Cycle	1.1	4.3	1.03	1.1	1.1	1.2	1.3	1.4 L	1.7 L	2.1	2.4	3.4	4.2	3.0	3.9	108.0	2.6	2.7	3.1	3.0
Via Nova Investment Mgt.	1.1	4.3	1.08	1.1	1.2	1.4	1.6	2.0	2.6	2.9	3.1	4.1	4.6	3.7	4.6	106.0	3.0	2.4	2.4	2.3
ACIMA Private Wealth	0.8 L	3.3 L	0.75 L	0.9 L	0.9 L	0.8 L	0.9 L	1.7	1.7 L	1.7 L	2.0 L	3.3	4.1 L	1.8 L	3.8	105.0	3.0	1.7	2.3	1.5 L
March Consensus	**1.6**	**4.6**	**1.43**	**1.5**	**1.5**	**1.7**	**1.8**	**2.1**	**2.4**	**2.6**	**2.9**	**4.0**	**4.8**	**3.3**	**4.4**	**107.5**	**2.4**	**2.6**	**2.5**	**2.3**
Top 10 Avg.	2.1	5.0	1.83	1.8	2.0	2.0	2.2	2.4	2.8	3.1	3.5	4.4	5.2	3.7	4.8	108.9	3.1	3.6	3.2	3.1
Bottom 10 Avg.	1.2	4.2	1.07	1.2	1.2	1.3	1.5	1.8	2.0	2.2	2.4	3.6	4.4	2.9	3.9	106.2	1.8	2.0	1.9	1.8
February Consensus	1.3	4.3	1.15	1.2	1.3	1.3	1.5	1.8	2.1	2.4	2.7	3.7	4.5	3.2	4.1	107.6	2.5	2.6	2.5	2.4
Number of Forecasts Changed From A Month Ago:																				
Down	1	0	1	3	2	4	2	1	3	0	0	0	1	1	0	5	13	7	11	10
Same	14	12	8	6	11	6	7	11	7	12	11	6	7	8	9	8	14	19	17	15
Up	24	21	17	13	19	19	21	23	24	23	22	16	14	10	21	6	10	9	8	9
Diffusion Index	79%	82%	81%	73%	77%	76%	82%	81%	81%	83%	83%	86%	80%	74%	85%	53%	46%	53%	46%	49%

Second Quarter 2023

Interest Rate Forecasts

Key Assumptions

Blue Chip Financial Forecasts Panel Members	Percent Per Annum -- Average For Quarter: 1 Federal Funds Rate	2 Prime Bank Rate	3 SOFR Rate	4 Com. Paper 1-Mo.	5 Treas. Bills 3-Mo.	6 Treas. Bills 6-Mo.	7 Treas. Bills 1-Yr.	8 Treas. Notes 2-Yr.	9 Treas. Notes 5-Yr.	10 Treas. Notes 10-Yr.	11 Treas. Bond 30-Yr.	12 Aaa Corp. Bond	13 Baa Corp. Bond	14 State & Local Bonds	15 Home Mtg. Rate	Avg. For Qtr. A. Fed's Adv Fgn Econ $ Index	(Q-Q % Change) (SAAR) B. Real GDP	C. GDP Price Index	D. Cons. Price Index	E. PCE Price Index
J.P. Morgan Chase	2.6 H	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	1.8	2.2	2.5	2.2
Amherst Pierpont Securities	2.4	5.5 H	2.39 H	2.5 H	2.6 H	2.8 H	3.0 H	3.1 H	3.3	3.4	3.8	4.7	5.7	3.8	5.3	111.5 H	3.2	3.2	3.0	2.7
Bank of America	2.4	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	1.5	4.3	2.9	2.6
BNP Paribas Americas	2.4	na	na	na	na	na	na	2.2	na	2.3	2.6	na	na	na	na	na	2.1	na	2.3	na
Goldman Sachs & Co.	2.4	na	2.10	na	1.2	na	na	2.2	2.4	2.4	2.5	na	na	na	na	na	2.0	2.5	3.0	2.4
Nomura Securities, Inc.	2.4	5.5 H	na	na	na	na	na	2.3	2.4	2.5	na	na	na	na	na	na	1.4	1.9	1.1 L	1.6
Chmura Economics & Analytics	2.3	5.4	2.36	2.4	2.3	2.4	2.5	2.7	2.8	3.3	3.9	4.6	na	na	5.0	na	3.4	3.9	4.1 H	3.5
Oxford Economics	2.3	5.4	2.28	na	2.3	2.4	2.4	2.4	2.5	2.6	2.7	3.2 L	na	na	4.6	104.3	1.6	2.3	2.0	2.0
Scotiabank Group	2.3	5.3	2.05	na	2.2	na	na	2.3	2.4	2.5	na	na	na	na	na	na	2.8	2.6	3.8	3.8 H
Mizuho Research Institute	2.1	na	na	na	na	na	na	na	2.4	na	na	na	na	na	na	na	na	na	na	na
TS Lombard	2.1	5.2	2.05	2.1	2.4	2.4	2.6	2.7	3.1	3.1	3.3	4.0	4.9	3.2	4.9	108.0	2.4	2.8	2.8	2.8
DePrince & Assoc.	2.0	5.1	2.05	2.1	2.1	2.1	2.1	2.4	2.5	2.8	3.2	4.2	4.9	3.5	4.6	109.2	2.3	3.0	3.2	2.9
Barclays	1.9	5.0	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.0	1.9	1.5	1.5
Daiwa Capital Markets America	1.9	5.1	1.87	2.0	2.0	2.2	2.5	2.7	3.0	3.1	3.1	4.4	5.1	na	5.0	105.0	2.3	3.0	2.9	2.7
ING	1.9	na	na	na	2.2	na	na	2.0	2.1	2.3	2.6	na	na	na	na	na	2.7	na	na	na
The Northern Trust Company	1.9	5.0	1.80	1.9	1.9	2.0	2.1	2.2	2.4	2.5	3.1	4.0	4.9	4.1	4.3	102.0 L	2.0	2.0	2.1	2.0
Wells Fargo	1.9	4.9	1.80	1.9	1.7	1.8	2.0	2.2	2.3	2.3	2.5	3.6	4.2	3.0	4.1	na	2.6	2.2	1.9	2.2
Loomis, Sayles & Company	1.8	4.9	1.71	2.0	2.0	2.2	2.2	2.2	2.3	2.4	2.6	3.6	4.3	3.4	3.9	108.0	2.5	2.3	2.4	2.1
NatWest Markets	1.8	4.9	na	1.9	2.1	2.2	2.3	2.4	2.5	2.5	2.5	4.3	5.3	3.5	4.3	na	5.0 H	4.8 H	2.5	3.0
PNC Financial Services Corp.	1.8	4.9	1.82	na	1.8	1.9	2.0	2.2	2.4	2.6	2.9	na	4.5	3.1	4.3	110.5	1.0 L	2.1	2.3	2.1
BMO Capital Markets	1.7	4.8	1.65	na	1.7	1.9	1.8	1.9	2.1	2.3	2.6	na	na	na	4.1	107.9	2.2	2.2	2.5	2.3
Economist Intelligence Unit	1.7	4.8	na	2.1	1.9	2.1	2.4	2.8	3.4 H	3.8 H	4.1 H	na	na	na	5.1	na	1.9	1.1 L	2.0	na
Fannie Mae	1.7	4.8	na	na	1.9	2.0	2.1	2.1	2.1	2.1	2.3	na	na	na	4.0	na	2.2	2.8	2.2	2.2
Grant Thornton/Diane Swonk	1.7	4.8	1.56	1.6	1.6	1.9	2.0	2.4	2.9	3.1	3.4	4.4	4.9	na	4.8	na	1.4	2.4	1.8	1.9
Action Economics	1.6	4.8	na	1.6	1.6	1.7	1.7	1.8	2.1	2.4	2.7	3.5	4.3	2.9	4.2	107.8	na	na	na	na
Bank of the West	1.6	4.8	1.61	1.6	1.7	1.7	2.1	2.4	2.8	3.1	3.6	4.4	5.2	4.2	4.8	108.0	2.3	2.1	2.2	2.1
Chan Economics	1.6	4.6	1.60	1.6	1.7	1.8	2.0	2.4	2.9	3.2	3.5	4.2	4.9	4.0	4.9	106.7	2.0	2.6	2.7	2.6
MacroFin Analytics & Rutgers Bus School	1.6	4.5	0.85	1.6	1.9	1.9	2.3	2.8	3.2	3.4	3.7	5.8 H	6.4 H	4.4 H	5.4 H	109.3	1.9	2.1	2.1	1.9
Naroff Economic Advisors	1.6	4.8	1.52	1.7	1.7	1.7	1.8	1.9	2.2	2.6	3.0	na	na	2.6	4.5	107.0	1.5	2.3	2.1	2.1
Societe Generale	1.6	4.8	1.63	na	1.8	1.9	2.0	2.0	1.9	2.0	2.3	na	na	na	3.5 L	na	2.5	2.7	2.5	2.2
GLC Financial Economics	1.5	4.6	1.52	1.5	1.5	1.6	1.6	1.9	2.5	2.7	3.5	4.5	5.2	3.5	4.4	107.6	2.9	3.3	2.5	2.9
Regions Financial Corporation	1.5	4.8	1.49	1.4	1.5	1.6	1.8	2.2	2.4	2.5	3.0	4.1	5.0	3.7	4.6	107.5	2.6	2.0	2.2	2.1
AIG	1.4	4.5	1.39	na	1.3	1.7	1.8	2.0	2.0	2.2	2.5	na	4.2	na	3.9	na	2.2	2.3	2.8	1.8
Georgia State University	1.4	4.6	na	na	1.3	1.4	1.8	2.2	2.7	3.1	3.4	4.2	5.5	na	4.8	na	2.1	2.4	2.3	2.0
IHS Markit	1.4	4.5	1.35	na	na	na	1.6	1.9	2.3	2.5	2.8	na	na	na	4.2	na	2.4	2.3	2.0	1.8
Moody's Analytics	1.3	4.5	1.30	1.4	1.4	1.5	1.8	1.8	2.3	2.7	3.6	4.2	5.4	3.6	4.2	na	2.9	2.3	2.2	2.2
Via Nova Investment Mgt.	1.3	4.6	1.33	1.3	1.4	1.6	1.8	2.2	2.8	3.1	3.3	4.4	4.9	4.0	4.9	105.0	2.5	2.4	2.3	2.2
Thru the Cycle	1.1	4.3	1.03	1.1	1.1	1.1	1.2	1.3 L	1.5 L	2.0	2.2	3.3	4.1 L	2.9	3.8	107.0	2.0	2.5	2.8	3.0
ACIMA Private Wealth	0.8 L	3.3 L	0.75 L	0.9 L	0.9 L	0.8 L	0.9 L	1.7	1.7	1.7 L	2.0 L	3.3	4.1 L	1.8 L	3.8	104.0	2.2	1.3	2.2	1.3 L
March Consensus	**1.8**	**4.8**	**1.66**	**1.7**	**1.8**	**1.9**	**2.0**	**2.2**	**2.5**	**2.7**	**3.0**	**4.1**	**4.9**	**3.4**	**4.5**	**107.2**	**2.3**	**2.5**	**2.4**	**2.3**
Top 10 Avg.	2.4	5.3	2.08	2.1	2.2	2.3	2.4	2.6	3.0	3.3	3.7	4.6	5.4	3.9	5.0	108.8	3.1	3.4	3.1	3.0
Bottom 10 Avg.	1.3	4.4	1.25	1.4	1.3	1.5	1.6	1.8	2.0	2.2	2.4	3.7	4.4	3.0	4.0	105.6	1.6	1.9	1.9	1.8
February Consensus	1.5	4.5	1.36	1.4	1.5	1.5	1.7	1.9	2.2	2.5	2.8	3.9	4.7	3.4	4.3	107.3	2.3	2.5	2.5	2.4
Number of Forecasts Changed From A Month Ago:																				
Down	0	0	1	2	2	3	2	2	3	0	0	0	1	1	1	6	13	5	6	11
Same	16	12	8	7	10	6	7	10	8	15	15	8	9	10	9	8	18	19	21	15
Up	23	21	17	13	20	20	21	23	23	20	18	14	12	8	20	5	5	10	8	7
Diffusion Index	79%	82%	81%	75%	78%	79%	82%	80%	79%	79%	77%	82%	75%	68%	82%	47%	39%	57%	53%	44%

International Interest Rate And Foreign Exchange Rate Forecasts

United States

Blue Chip Forecasters	Fed Fund Target Rate			10 Yr. Gov't Bond Yield %			Fed's AFE $ Index		
	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	0.88	1.13	--	1.90	1.90	--	--	--	--
BMO Capital Markets	0.63	0.88	1.38	2.00	2.05	2.20	107.4	107.5	107.7
IHSMarkit	--	--	--	1.91	2.16	2.49	--	--	--
ING Financial Markets	0.38	0.88	1.63	2.25	2.25	2.25	107.5	107.6	106.6
Mizuho Research Institute	0.88	1.38	1.88	1.95	2.15	2.35	--	--	--
Moody's Analytics	0.13	0.31	0.85	1.79	2.10	2.39	--	--	--
Northern Trust	0.63	1.38	1.88	1.90	2.05	2.25	108.0	106.0	104.0
Oxford Economics	0.83	1.16	2.04	2.22	2.34	2.55	107.3	106.7	104.9
Scotiabank	0.75	1.25	2.25	2.05	2.20	2.45	--	--	--
TS Lombard	0.38	0.63	1.13	1.80	2.00	2.50	110.0	112.0	112.0
Wells Fargo	0.63	0.88	1.63	2.05	2.10	2.25	--	--	--
March Consensus	**0.61**	**0.99**	**1.63**	**1.98**	**2.12**	**2.37**	**108.0**	**108.0**	**107.0**
High	0.88	1.38	2.25	2.25	2.34	2.55	110.0	112.0	112.0
Low	0.13	0.31	0.85	1.79	1.90	2.20	107.3	106.0	104.0
Last Months Avg.	0.40	0.70	1.19	1.88	2.04	2.29	108.2	108.2	107.3

Japan

Blue Chip Forecasters	Policy-Rate Balance Rate			10 Yr. Gov't Bond Yield %			Yen per US$		
	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	-0.10	-0.10	--	0.15	0.20	--	116.0	116.0	--
BMO Capital Markets	-0.10	-0.10	-0.10	0.15	0.20	0.20	115.0	116.0	116.0
IHSMarkit	--	--	--	--	--	--	116.2	116.8	117.3
ING Financial Markets	-0.10	-0.10	-0.10	0.10	0.10	0.10	117.0	118.0	121.0
Mizuho Research Institute	-0.10	-0.10	-0.10	0.17	0.19	0.20	116.0	117.0	119.0
Moody's Analytics	-0.10	-0.10	-0.10	0.12	0.13	0.06	114.0	113.5	112.1
Nomura Securities	--	--	--	--	--	--	117.0	116.0	115.0
Northern Trust	-0.10	-0.10	-0.10	0.20	0.15	0.15	114.0	113.0	112.0
Oxford Economics	-0.05	-0.05	-0.05	0.22	0.20	0.10	115.1	114.3	112.1
Scotiabank	-0.10	-0.10	-0.10	--	--	--	115.0	116.0	118.0
TS Lombard	-0.10	0.20	0.50	0.35	0.55	1.05	115.0	118.0	120.0
Wells Fargo	-0.10	-0.10	-0.10	0.15	0.15	0.20	114.0	116.0	122.0
March Consensus	**-0.10**	**-0.07**	**-0.03**	**0.18**	**0.21**	**0.26**	**115.4**	**115.9**	**116.8**
High	-0.05	0.20	0.50	0.35	0.55	1.05	117.0	118.0	122.0
Low	-0.10	-0.10	-0.10	0.10	0.10	0.06	114.0	113.0	112.0
Last Months Avg.	-0.10	-0.07	-0.03	0.13	0.16	0.23	115.1	115.4	115.6

United Kingdom

Blue Chip Forecasters	Official Bank Rate			10 Yr. Gilt Yields %			US$ per Pound Sterling		
	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	1.00	1.00	--	1.45	1.50	--	1.33	1.37	--
BMO Capital Markets	1.25	1.25	1.75	1.40	1.50	1.70	1.35	1.34	1.33
IHSMarkit	--	--	--	--	--	--	1.35	1.35	1.35
ING Financial Markets	1.00	1.00	1.00	1.50	1.50	1.50	1.37	1.35	1.36
Moody's Analytics	0.41	0.66	1.16	1.30	1.60	2.25	1.35	1.38	1.40
Nomura Securities	--	--	--	--	--	--	1.40	1.42	1.48
Northern Trust	0.50	0.75	1.00	1.50	1.75	2.00	1.33	1.36	1.38
Oxford Economics	1.00	1.25	1.25	1.61	1.65	1.82	1.39	1.40	1.42
Scotiabank	0.75	0.75	1.00	--	--	--	1.36	1.38	1.38
TS Lombard	0.50	0.75	1.25	1.44	1.60	2.10	1.29	1.27	1.25
Wells Fargo	0.50	0.50	0.75	1.30	1.40	1.55	1.32	1.30	1.28
March Consensus	**0.77**	**0.88**	**1.15**	**1.44**	**1.56**	**1.85**	**1.35**	**1.36**	**1.36**
High	1.25	1.25	1.75	1.61	1.75	2.25	1.40	1.42	1.48
Low	0.41	0.50	0.75	1.30	1.40	1.50	1.29	1.27	1.25
Last Months Avg.	0.48	0.57	0.83	1.21	1.34	1.63	1.34	1.35	1.36

Switzerland

Blue Chip Forecasters	SNB Policy Rate			10 Yr. Gov't Bond Yield %			CHF per US$		
	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	-0.75	-0.75	--	--	--	--	0.90	0.92	--
IHSMarkit	--	--	--	--	--	--	0.94	0.94	0.93
ING Financial Markets	-0.75	-0.75	-0.75	0.20	0.30	0.30	0.95	0.96	0.96
Moody's Analytics	-0.75	-0.75	-0.75	0.10	0.12	0.28	0.91	0.89	0.84
Nomura Securities	--	--	--	--	--	--	0.91	0.92	0.92
Northern Trust	-0.75	-0.75	-0.75	0.15	0.20	0.25	0.93	0.91	0.90
Oxford Economics	-0.75	-0.75	-0.50	0.30	0.34	0.45	0.92	0.92	0.93
Scotiabank	--	--	--	--	--	--	0.94	0.96	0.96
TS Lombard	-0.75	-0.75	-0.25	-0.51	-0.31	0.19	0.92	0.92	0.92
March Consensus	**-0.75**	**-0.75**	**-0.60**	**0.05**	**0.13**	**0.29**	**0.92**	**0.93**	**0.92**
High	-0.75	-0.75	-0.25	0.30	0.34	0.45	0.95	0.96	0.96
Low	-0.75	-0.75	-0.75	-0.51	-0.31	0.19	0.90	0.89	0.84
Last Months Avg.	-0.75	-0.75	-0.65	-0.13	-0.06	0.13	0.93	0.93	0.93

Canada

Blue Chip Forecasters	O/N MMkt Financing Rate			10 Yr. Gov't Bond Yield %			C$ per US$		
	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	1.00	1.25	--	--	--	--	1.31	1.30	--
BMO Capital Markets	0.75	1.25	1.75	1.95	2.00	2.10	1.25	1.25	1.24
IHSMarkit	--	--	--	--	--	--	1.25	1.21	1.24
ING Financial Markets	0.75	1.25	2.00	2.20	2.30	2.40	1.24	1.23	1.21
Moody's Analytics	0.33	0.58	1.08	1.76	1.99	2.29	1.26	1.25	1.23
Nomura Securities	--	--	--	--	--	--	1.27	1.26	1.26
Northern Trust	0.50	1.00	1.50	2.00	2.25	2.50	1.28	1.25	1.24
Oxford Economics	0.75	1.00	1.25	2.18	2.39	2.65	1.28	1.28	1.26
Scotiabank	1.00	1.50	2.25	2.30	2.40	2.65	1.21	1.20	1.22
TS Lombard	0.25	0.50	1.26	1.92	2.12	2.62	1.26	1.26	1.26
Wells Fargo	0.50	0.75	1.25	2.05	2.15	2.30	1.27	1.28	1.30
March Consensus	**0.65**	**1.01**	**1.54**	**2.05**	**2.20**	**2.44**	**1.26**	**1.25**	**1.25**
High	1.00	1.50	2.25	2.30	2.40	2.65	1.31	1.30	1.30
Low	0.25	0.50	1.08	1.76	1.99	2.10	1.21	1.20	1.21
Last Months Avg.	0.50	0.83	1.25	1.93	2.14	2.39	1.26	1.25	1.24

International Interest Rate And Foreign Exchange Rate Forecasts

Australia

Blue Chip Forecasters	Official Cash Rate			10 Yr. Gov't Bond Yield %			US$ per A$		
	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	0.10	0.25	--	--	--	--	0.72	0.71	--
IHSMarkit	--	--	--	--	--	--	0.69	0.69	0.68
ING Financial Markets	0.25	0.50	1.00	2.10	2.30	2.30	0.69	0.70	0.72
Moody's Analytics	0.10	0.10	0.24	1.83	1.80	2.03	0.73	0.75	0.76
Nomura Securities	--	--	--	--	--	--	0.76	0.77	0.78
Northern Trust	0.10	0.10	0.10	2.40	2.50	2.60	0.70	0.72	0.73
Oxford Economics	0.10	0.10	0.50	2.20	2.39	2.52	0.72	0.73	0.75
Scotiabank	0.10	0.10	0.25	--	--	--	0.72	0.72	0.74
TS Lombard	0.10	0.35	0.65	2.15	2.35	2.85	0.75	0.70	0.65
March Consensus	**0.12**	**0.21**	**0.46**	**2.14**	**2.27**	**2.46**	**0.72**	**0.72**	**0.73**
High	0.25	0.50	1.00	2.40	2.50	2.85	0.76	0.77	0.78
Low	0.10	0.10	0.10	1.83	1.80	2.03	0.69	0.69	0.65
Last Months Avg.	0.10	0.10	0.12	1.98	2.10	2.29	0.73	0.72	0.73

Euro area

Blue Chip Forecasters	Main Refinancing Rate			US$ per Euro		
	In 3 Mo.	In 6 Mo.	In 12 Mo.	In 3 Mo.	In 6 Mo.	In 12 Mo.
Barclays	0.00	0.00	--	1.18	1.19	--
BMO Capital Markets	0.00	0.00	0.25	1.14	1.13	1.13
IHSMarkit	--	--	--	1.12	1.13	1.14
ING Financial Markets	0.00	0.00	0.00	1.12	1.12	1.14
Mizuho Research Institute	0.00	0.00	0.00	1.13	1.12	1.11
Moody's Analytics	0.00	0.00	0.00	1.13	1.15	1.17
Nomura Securities	--	--	--	1.16	1.18	1.20
Northern Trust	0.00	0.00	0.00	1.12	1.14	1.15
Oxford Economics	0.00	0.00	0.25	1.15	1.16	1.19
Scotiabank	0.00	0.00	0.00	1.12	1.10	1.10
TS Lombard	0.00	0.00	0.35	1.10	1.08	1.06
Wells Fargo	-0.50	-0.50	-0.50	1.11	1.09	1.07
March Consensus	**-0.05**	**-0.05**	**0.04**	**1.13**	**1.13**	**1.13**
High	0.00	0.00	0.35	1.18	1.19	1.20
Low	-0.50	-0.50	-0.50	1.10	1.08	1.06
Last Months Avg.	-0.07	-0.06	-0.02	1.12	1.12	1.12

10 Yr. Gov't Bond Yields %

Blue Chip Forecasters	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	0.30	0.30	--	--	--	--	--	--	--	--	--	--
BMO Capital Markets	0.10	0.20	0.40	--	--	--	--	--	--	--	--	--
ING Financial Markets	0.20	0.20	0.30	0.40	0.45	0.55	1.40	1.30	1.20	0.80	0.80	0.90
Mizuho Research Institute	0.20	0.25	0.20	--	--	--	--	--	--	--	--	--
Moody's Analytics	0.05	0.15	0.34	0.43	0.50	0.63	1.43	1.53	1.57	0.86	0.96	1.09
Northern Trust	0.25	0.35	0.45	0.75	0.85	0.95	1.95	2.05	2.15	1.30	1.40	1.50
Oxford Economics	0.30	0.35	0.45	0.76	0.79	0.85	2.01	2.08	2.22	1.34	1.40	1.53
TS Lombard	0.20	0.40	0.90	0.55	0.75	1.25	1.50	1.70	2.20	0.95	1.15	1.65
Wells Fargo	-0.05	0.05	0.30	--	--	--	--	--	--	--	--	--
March Consensus	**0.17**	**0.25**	**0.42**	**0.58**	**0.67**	**0.85**	**1.66**	**1.73**	**1.87**	**1.05**	**1.14**	**1.33**
High	0.30	0.40	0.90	0.76	0.85	1.25	2.01	2.08	2.22	1.34	1.40	1.65
Low	-0.05	0.05	0.20	0.40	0.45	0.55	1.40	1.30	1.20	0.80	0.80	0.90
Last Months Avg.	-0.07	0.03	0.23	0.31	0.40	0.62	1.33	1.40	1.59	0.69	0.81	1.05

Consensus Forecasts
10-year Bond Yields vs U.S. Yield

	Current	In 3 Mo.	In 6 Mo.	In 12 Mo.
Japan	-1.70	-1.80	-1.91	-2.11
United Kingdom	-0.46	-0.55	-0.56	-0.52
Switzerland	-1.67	-1.94	-1.99	-2.07
Canada	-0.04	0.06	0.08	0.07
Australia	0.32	0.15	0.15	0.09
Germany	-1.74	-1.81	-1.87	-1.95
France	-1.23	-1.41	-1.45	-1.52
Italy	-0.07	-0.33	-0.39	-0.50
Spain	-0.71	-0.93	-0.98	-1.03

Consensus Forecasts
Policy Rates vs U.S. Target Rate

	Current	In 3 Mo.	In 6 Mo.	In 12 Mo.
Japan	-0.23	-0.71	-0.92	-1.66
United Kingdom	0.38	0.16	-0.11	-0.49
Switzerland	-0.88	-1.36	-1.74	-2.23
Canada	0.13	0.04	0.02	-0.09
Australia	-0.03	-0.49	-0.77	-1.17
Euro area	-0.13	-0.66	-1.04	-1.59

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

Some Economic Implications of the War Between Russia and Ukraine

Summary

Oil prices have shot up significantly and equity prices have tumbled following the news that Russian forces have entered Ukrainian territory. Parsing out the precise economic implications of the war at this point is essentially impossible. But we lay out some data and scenarios in this report we think are instructive when contemplating how the future may play out for different economies.

We ran a simulation in which we raised oil prices by $25 per barrel above their average in Q4-2021 and held them there through the end of 2023. This shock reduced GDP growth in the United States and Germany, but not by enough to send either economy into recession. CPI inflation rates in the United States and Germany rise by roughly one percentage point in 2022.

In our second simulation, we reduced the S&P 500 index by 20% from its baseline over the next two years. The growth-reducing effects of this shock were larger in the United States than in Germany.

When both shocks occur simultaneously, as they have so far, real GDP growth downshifts considerably in the United States and CPI inflation rises. However, relative to our pre-invasion forecast, the U.S. economy still does not slide into recession.

Much will depend on the reaction of major central banks. The marked decline in sovereign bond yields which has followed the news of the invasion indicates market participants believe that central banks will now proceed more cautiously, an interpretation which seems reasonable to us.

Russia and Ukraine Are Rather Small Economically. As is widely known, Russian forces have entered Ukraine and the situation on the ground appears to be very fluid. Parsing out the precise economic implications of the war is essentially impossible. Much will depend on how the conflict unfolds as well as the economic and financial responses of the NATO allies and any counter-responses by Russia, which are all impossible to predict. But we lay out some data and scenarios in this report we think are instructive when contemplating how the future may play out for different economies.

For starters, Ukraine and Russia are relatively small economies. Nominal GDP in Ukraine totaled only $154 billion in 2019. Although the Russian economy is significantly larger at $1.7 trillion, it accounts for less than 2% of global GDP. Both of these economies pale in comparison to the sizes of the economies of the European Union and the United States. Furthermore, U.S. exports to Ukraine and Russia total only $2 billion and $6 billion, respectively, which is more or less meaningless in terms of the $24 trillion American economy. The European Union has significantly more trade exposure to the two combatants, but E.U. exports to the two countries still total less than 1% of the bloc's GDP.

Effects of Higher Oil Prices. That said, the economic implications of the conflict between Russia and Ukraine go well beyond the relatively small sizes of their economies. Russian production of crude oil totals about 10 million barrels per day, which accounts for roughly 10% of global oil production. Russia is also a major supplier of natural gas to many countries in Western Europe. As of this writing, the prices of Brent Crude Oil and West Texas Intermediate are both up about 5% or so on balance on the day. Natural gas prices in Europe have also jumped significantly relative to Wednesday's close.

We use a macroeconometric model to analyze the potential economic implications of higher oil prices. The price of Brent Crude Oil is currently about $25 per barrel higher than its average price in Q4-2021. So we raised the oil price in the model by $25 per barrel above the baseline values from Q1-2022 through the end of next year. We are not necessarily forecasting that oil prices will stay at these levels, but it is a straightforward way to think about the economic effects of higher oil prices. The results of this simulation are shown in Table 1.

If oil prices remain at current levels over the next two years, then U.S. real GDP growth in 2022 will be 0.3 percentage points weaker than otherwise. Because we currently forecast that real GDP in the United States will grow 3.4% this year, we would need to reduce our forecasted growth rate to 3.1% if oil prices remain at current levels. But the effect on U.S. GDP growth would be significantly lower in 2023 than it is this year. The rise in oil prices would raise the CPI inflation rate by a full percentage point in 2022, although the effect would essentially die out next year because oil prices would no longer be rising under this scenario. The core rate of inflation would be boosted by 0.3 percentage points this year, and the effect would linger into next year with a 0.2 percentage point increase in the core inflation rate relative to baseline.

Table 1
Scenario 1: Price of Brent Crude Oil Raised by $25 per Barrel

	United States		Germany	
Indicator*	2022	2023	2022	2023
GDP Growth	-0.3	-0.1	-0.2	-0.3
CPI Inflation	1.0	0.0	0.8	0.2
Core CPI Inflation	0.3	0.2	0.1	0.0

*Year-over-year Percent Change (Source: Wells Fargo Economics)

In sum, higher oil prices would impart only a mild stagflationary effect on the U.S. economy. Although a $25 per barrel increase in oil prices is certainly meaningful—this equates to a rise of roughly 30% relative to the average price in Q4-2021—it likely would not be enough to put the U.S. economy into the tailspins that it experienced in the wake of the oil price shocks of the 1970s. But the price of West Texas Intermediate more than doubled between October 1973 and January 1974, and it nearly trebled between early 1979 and early 1980.

The model does not explicitly contain economic variables for the European Union, so we use Germany as a proxy for the E.U. Similar to the United States, the oil price shock imparts a mild stagflationary effect on the German economy. But we should note that the results of this scenario are likely conservative, especially as it relates to Germany (and the European Union, more broadly). That is, natural gas prices are not included in the model. So if natural gas prices remain elevated, then German inflation likely would turn out to be higher and German GDP growth weaker than implied by the results in Table 1. These stagflationary effects would likely be more significant for Germany (and the broader European Union) than for the United States. Because natural gas does not really trade in a global market as oil does, prices of natural gas in the United States are not likely to rise to the same extent as they have in Europe.

Effects of Lower Equity Prices. Energy prices are not the only financial market variable that has responded to the invasion. Stock markets in most European countries closed about 4% lower on the day and, as of this writing, U.S. equity prices are also trading lower. Indeed, the S&P 500 is currently down about 12% from its record high at the beginning of the year. To simulate the effects of lower equity prices, we reduced the S&P 500 index by 20% relative to baseline between Q1-2022 and the end of 2023. Again, this is not a forecast; it is just meant to calibrate the economic effects of lower equity prices. The results of this simulation, in which we return oil prices to their baseline values (i.e., we do not raise them by $25 per barrel as we did in the first simulation), are shown in Table 2.

Table 2
Scenario 2: S&P 500 Index Decreased by 20%

	United States		Germany	
Indicator*	2022	2023	2022	2023
GDP Growth	-0.5	-0.2	-0.2	0.0
CPI Inflation	0.0	0.0	0.0	-0.1
Core CPI Inflation	0.0	0.0	0.0	-0.1

*Year-over-year Percent Change (Source: Wells Fargo Economics)

Under a scenario in which the S&P 500 remains 20% below its baseline value, U.S. real GDP growth in 2022 would turn out to be 0.5 percentage points lower than otherwise. That is, we would trim our real GDP forecast from 3.4% to 2.9%, everything else equal, and the growth impeding effect of lower equity prices would linger into next year. But this decline in share prices is not enough to send the U.S. economy into recession. Recall that the S&P 500 fell by 40% from March 2000 and October 2002, while the tech-heavy NASDAQ index nosedived by 70% over the same period. The National Bureau of Economic Research (NBER) has determined that the U.S. economy was in recession from March 2001 until November of that year, but the level of real GDP actually edged up 0.5% over that period. The 20% decline in the S&P 500 that we use in this simulation is considerably smaller than the swoon in equity prices that occurred 20 years ago. The headwinds on real GDP growth from lower share prices would likely be weaker in Germany, which seems to be plausible to us. Whereas many American households own meaningful amounts of stocks, equities comprise a lower share of household wealth in many European countries.

Combined Effects of Both Shocks. We combine both scenarios in our third simulation. That is, we raise oil prices by $25 per barrel and reduce equity prices by 20% between now and the end of 2023, and we show the results in Table 3. As seems reasonable, the combination of higher oil prices and lower equity prices has a larger effect on U.S. real GDP growth than either of the scenarios in isolation. Specifically, higher oil prices and lower equity prices shave 0.7 percentage points off of U.S. real GDP growth in 2022 and 0.2 percentage points off of the growth rate next year. The overall rate of CPI inflation in the United States is also lifted by roughly one percentage point in 2022. Economic growth in Germany downshifts in 2022 and 2023, and the rate of German inflation is boosted by nearly one percentage point in 2022. But as noted previously, the stagflationary effects in Germany could be more meaningful than suggested by the results in Table 3 if natural gas prices also remain elevated.

Table 3
Scenario 3: Price of Brent Crude Oil Raised by $25 per Barrel and S&P 500 Index Decreased by 20%

	United States		Germany	
Indicator*	2022	2023	2022	2023
GDP Growth	-0.7	-0.2	-0.3	-0.3
CPI Inflation	1.1	0.0	0.8	0.1
Core CPI Inflation	0.3	0.2	0.0	0.0

*Year-over-year Percent Change (Source: Wells Fargo Economics)

Conclusions. The results presented in the tables above are not meant to be definite forecast changes resulting from the beginning of hostilities between Russia and Ukraine. The war and the responses of the combatants and other parties (e.g., NATO countries) are likely to evolve in untold ways in the coming weeks and months. But the scenarios that are presented above give us some reasonable guideposts to use when thinking about the economic effects of the war between Russia and Ukraine, at least at this point in the conflict. In short, meaningful rises in oil prices and declines in equity prices would exert some headwinds on real GDP growth in the United States and Germany, which we use as a proxy for the European Union. But they would likely not be enough to send either economy into recession. Of course, oil prices could shoot even higher and equity prices could fall even lower than we have modeled. Clearly, the growth impeding effects of these shocks could be more significant under more extreme scenarios.

In addition, much will depend on the reaction of major central banks. The significant rise in inflation that higher oil prices will impart could lead some central banks, which already had seemed unnerved by the recent acceleration in prices, to tighten monetary policy sharply. On the other hand, slower economic growth, which seems likely to follow these shocks, could lead to some restraint among monetary policymakers. The marked decline in sovereign bond yields, which has followed the news of the invasion, indicates market participants believe that central banks will now proceed more cautiously, an interpretation that seems reasonable to us.

Wells Fargo Economics (February 24, 2022)

Special Questions:

1. a. When do you think the Fed will first raise the federal funds rate?

At Mar 15-16 meeting	At May 3-4 meeting	At Jun 14-15 meeting	At Jul 26-27 meeting	Later
100%	0%	0%	0%	0%

b. How much do you expect the FFR to be increased in: 2022? 137.3 bps 2023? 78.9 bps

c. Do you anticipate any 50bp FFR increases in:

	Yes	No
2022	12%	88%
2023	3%	97%

d. When do you expect the Fed to begin to reduce it asset holdings?

In Q2 2022	In Q3 2022	In Q4 2022	Later
35%	56%	3%	6%

2. a. What do you think is the neutral (long run) Fed funds rate? 2.34 %

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

by the end 2023	by the end 2024	by the end 2025	by the end 2026	Later
58%	23%	13%	3%	3%

3. Would directing attention toward climate change issues jeopardize the Fed's ability to achieve its dual mandate of maximum sustainable employment with stable prices? Yes 40% No 60%

4. In light of recent news concerning the Omicron variant, do you consider the balance of risks to your global inflation outlook as being:

tilted to the downside	evenly balanced	titled to the upside
24%	30%	45%

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

0-6 months	39%
7-9 months	39%
10-12 months	15%
13-24 months	6%
More than 24 months	0%

6. a. Do you think financial markets are too complacent concerning the inflation outlook? Yes 39% No 61%

b. Do you think that by removing monetary accommodation the US Fed will be successful in slowing inflation without precipitating a recession? Yes 77% No 23%

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

Persistent inflation accompanied by wage gains which depresses corporate profitability much more sharply than presently anticipated	16%
A much more aggressive response from Central Banks to persistently high levels of inflation	19%
Much more intense financial instability in China triggered by, among other things, excess leverage in the property sector	6%
A substantial further escalation of geopolitical tensions – and military conflict - between Russia and Ukraine	47%
The discovery of another dangerous mutation of the COVID virus that is both more transmissible and more immune to existing vaccines	13%

Databank:

2022 Historical Data

Monthly Indicator	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Retail and Food Service Sales (a)	3.8	....	....	....	....	....	....	....	....	....	....	....
Auto & Light Truck Sales (b)	15.02	....	....	....	....	....	....	....	....	....	....	....
Personal Income (a, current $)	0.0	....	....	....	....	....	....	....	....	....	....	....
Personal Consumption (a, current $)	2.1	....	....	....	....	....	....	....	....	....	....	....
Consumer Credit (e)	....	....	....	....	....	....	....	....	....	....	....	....
Consumer Sentiment (U. of Mich.)	67.2	62.8	....	....	....	....	....	....	....	....	....	....
Household Employment (c)	1199	....	....	....	....	....	....	....	....	....	....	....
Nonfarm Payroll Employment (c)	467	....	....	....	....	....	....	....	....	....	....	....
Unemployment Rate (%)	4.0	....	....	....	....	....	....	....	....	....	....	....
Average Hourly Earnings (All, cur. $)	31.63	....	....	....	....	....	....	....	....	....	....	....
Average Workweek (All, hrs.)	34.5	....	....	....	....	....	....	....	....	....	....	....
Industrial Production (d)	4.1	....	....	....	....	....	....	....	....	....	....	....
Capacity Utilization (%)	77.6	....	....	....	....	....	....	....	....	....	....	....
ISM Manufacturing Index (g)	57.6	....	....	....	....	....	....	....	....	....	....	....
ISM Nonmanufacturing Index (g)	59.9	....	....	....	....	....	....	....	....	....	....	....
Housing Starts (b)	1.638	....	....	....	....	....	....	....	....	....	....	....
Housing Permits (b)	1.895	....	....	....	....	....	....	....	....	....	....	....
New Home Sales (1-family, c)	801	....	....	....	....	....	....	....	....	....	....	....
Construction Expenditures (a)	....	....	....	....	....	....	....	....	....	....	....	....
Consumer Price Index (nsa, d)	7.5	....	....	....	....	....	....	....	....	....	....	....
CPI ex. Food and Energy (nsa, d)	6.0	....	....	....	....	....	....	....	....	....	....	....
PCE Chain Price Index (d)	6.1	....	....	....	....	....	....	....	....	....	....	....
Core PCE Chain Price Index (d)	5.2	....	....	....	....	....	....	....	....	....	....	....
Producer Price Index (nsa, d)	9.7	....	....	....	....	....	....	....	....	....	....	....
Durable Goods Orders (a)	1.6	....	....	....	....	....	....	....	....	....	....	....
Leading Economic Indicators (a)	-0.3	....	....	....	....	....	....	....	....	....	....	....
Balance of Trade & Services (f)	....	....	....	....	....	....	....	....	....	....	....	....
Federal Funds Rate (%)	0.08	....	....	....	....	....	....	....	....	....	....	....
3-Mo. Treasury Bill Rate (%)	0.15	....	....	....	....	....	....	....	....	....	....	....
10-Year Treasury Note Yield (%)	1.76	....	....	....	....	....	....	....	....	....	....	....

2021 Historical Data

Monthly Indicator	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Retail and Food Service Sales (a)	7.2	-2.7	11.3	0.9	-1.4	0.9	-1.6	1.2	0.7	1.8	0.7	-2.5
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	0.6	0.6	0.4
Personal Consumption (a, current $)	3.3	-1.1	5.2	1.0	0.0	1.1	0.1	1.1	0.6	1.4	0.6	-0.8
Consumer Credit (e)	-0.1	6.6	4.4	4.7	9.4	9.7	3.9	3.3	7.2	4.1	10.7	5.1
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	510
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	31.40
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	34.7
Industrial Production (d)	-1.7	-4.9	1.8	17.9	16.4	10.2	6.6	5.4	4.4	4.7	5.1	3.8
Capacity Utilization (%)	75.0	72.7	74.8	74.8	75.3	75.7	76.2	76.1	75.1	76.1	76.7	76.6
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)	1.625	1.447	1.725	1.514	1.594	1.657	1.562	1.573	1.550	1.552	1.703	1.708
Housing Permits (b)	1.883	1.726	1.755	1.733	1.683	1.594	1.630	1.721	1.586	1.653	1.717	1.885
New Home Sales (1-family, c)	993	823	873	796	733	683	704	668	725	667	749	839
Construction Expenditures (a)	3.0	-1.1	1.0	0.3	0.7	1.0	0.1	1.0	1.0	0.9	0.6	0.2
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	9.8	9.8
Durable Goods Orders (a)	2.4	1.3	1.3	-0.7	3.2	0.8	0.5	1.3	-0.4	0.1	3.2	1.2
Leading Economic Indicators (a)	0.6	-0.1	1.1	1.1	0.9	0.6	1.0	0.7	0.2	0.6	0.8	0.7
Balance of Trade & Services (f)	-65.1	-67.6	-71.6	-65.5	-67.4	-72.3	-69.7	-72.6	-80.8	-66.5	-79.3	-80.7
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
	March 1 Construction (Jan) ISM Manufacturing (Feb) IHS Markit Mfg PMI (Feb) Texas Service Sector Outlook Survey (Feb)	**2** BEA Auto Sales (Feb) BEA Truck Sales (Feb) ADP Employment Report (Feb) EIA Crude Oil Stocks Mortgage Applications	**3** Productivity & Costs (Q4) ISM Services PMI (Feb) IHS Markit Services PMI (Feb) Manufacturers' Shipments, Inventories & Orders (Jan) Challenger Employment Report (Feb) Weekly Jobless Claims	**4** Employment Situation (Feb) Public Debt (Feb)
7 Consumer Credit (Jan) Treasury Auction Allotments (Feb)	**8** International Trade (Jan) Wholesale Trade (Jan) NFIB (Feb)	**9** JOLTS (Jan) Transportation Services Index (Jan) Kansas City Financial Stress Index (Feb) EIA Crude Oil Stocks Mortgage Applications	**10** CPI & Real Earnings (Feb) Cleveland Fed Median CPI(Feb) Monthly Treasury (Feb) U.S. Financial Accounts (Q4) Weekly Jobless Claims	**11** QSS (Q4) Consumer Sentiment (Mar, Preliminary) Kansas City Fed Labor Market Conditions Indicators (Feb) Housing Affordability (Jan)
14	**15** Producer Prices (Feb) Empire State Mfg Survey (Mar) TIC Data (Jan) OPEC Crude Oil Spot Prices (Feb) FOMC Meeting	**16** Import & Export Prices (Feb) Advance Retail Sales (Feb) MTIS (Jan) FOMC Meeting Business Leaders Survey (Mar) Home Builders (Mar) FOMC Meeting EIA Crude Oil Stocks Mortgage Applications	**17** New Residential Construction (Feb) IP & Capacity Utilization (Feb) Philadelphia Fed Mfg Business Outlook Survey (Mar) Weekly Jobless Claims	**18** Existing Home Sales (Feb) ECEC (Q4) Composite Indexes (Feb)
21 QFR (Q4) Chicago Fed National Activity Index (Feb)	**22** H.6 Money Stock (Feb) Treasury Auction Allotments (Mar) Philadelphia Fed Nonmanufacturing Business Outlook Survey (Mar) Richmond Fed Mfg & Service Sector Surveys (Mar)	**23** New Residential Sales (Feb) Final Building Permits (Feb) Steel Imports for Consumption (Feb, Preliminary) EIA Crude Oil Stocks Mortgage Applications	**24** International Transactions (Q4) Advance Durable Goods (Feb) Kansas City Fed Manufacturing Survey (Mar) IHS Markit Flash PMIs (Mar) Weekly Jobless Claims	**25** Strike Report (Mar) Consumer Sentiment (Mar, Final) Pending Home Sales (Feb)
28 Advance Trade & Inventories (Feb) Texas Manufacturing Outlook Survey (Mar)	**29** Intl Investment Position (Q4) FHFA HPI (Jan) Case-Shiller HPI (Jan) JOLTS (Feb) Consumer Confidence (Mar) Texas Service Sector Outlook Survey (Mar)	**30** ADP Employment Report (Mar) GDP & Corporate Profits (Q4, 3rd Estimate) EIA Crude Oil Stocks Mortgage Applications	**31** Personal Income (Feb) Agricultural Prices (Feb) Dallas Fed Trimmed-Mean PCE (Feb) Challenger Employment (Mar) Chicago PMI (Mar) Weekly Jobless Claims	**April 1** Employment Situation (Mar) Construction (Feb) ISM Manufacturing (Mar) IHS Markit Mfg PMI (Mar)
4 BEA Auto Sales (Mar) BEA Truck Sales (Mar) Manufacturers' Shipments, Inventories & Orders (Feb)	**5** International Trade (Feb) ISM Services PMI (Mar) IHS Markit Services PMI (Mar) Kansas City Fed Labor Market Conditions Indicators (Mar)	**6** Public Debt (Mar) EIA Crude Oil Stocks Mortgage Applications	**7** Consumer Credit (Feb) Weekly Jobless Claims	**8** Wholesale Trade (Feb)

BLUE CHIP FORECASTERS

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