Chicago Region Employment Forecast: 2021 Update

Final Report

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EBP

Contents

1. Introduction 1
2. Methodology 2
   2.1. Benchmarking Historical Employment 2
   2.2. Measuring Temp Jobs 7
   2.3. Measuring Remote Work 11
   2.4. Forecast Development 13
3. Employment Forecast 15
   3.1. Baseline Forecast 15
   3.2. Alternative Scenarios 17

1. Introduction

The Chicago Metropolitan Agency for Planning (CMAP) is the official regional planning organization for the northeastern Illinois counties of Cook, DuPage, Kane, Kendall, Lake, McHenry, and Will. The agency developed and currently leads the implementation of metropolitan Chicago's comprehensive regional plan, ON TO 2050. To aid in the travel modeling required for the comprehensive plan, the forecast's horizon year is 2050. The forecast covers the greater 21-county "Modeling Region" (see Table 1 and Figure 1) that includes the core 7-county CMAP area.[1] CMAP retained the EBP Team (Project Team) to produce regional employment forecasts for this update.

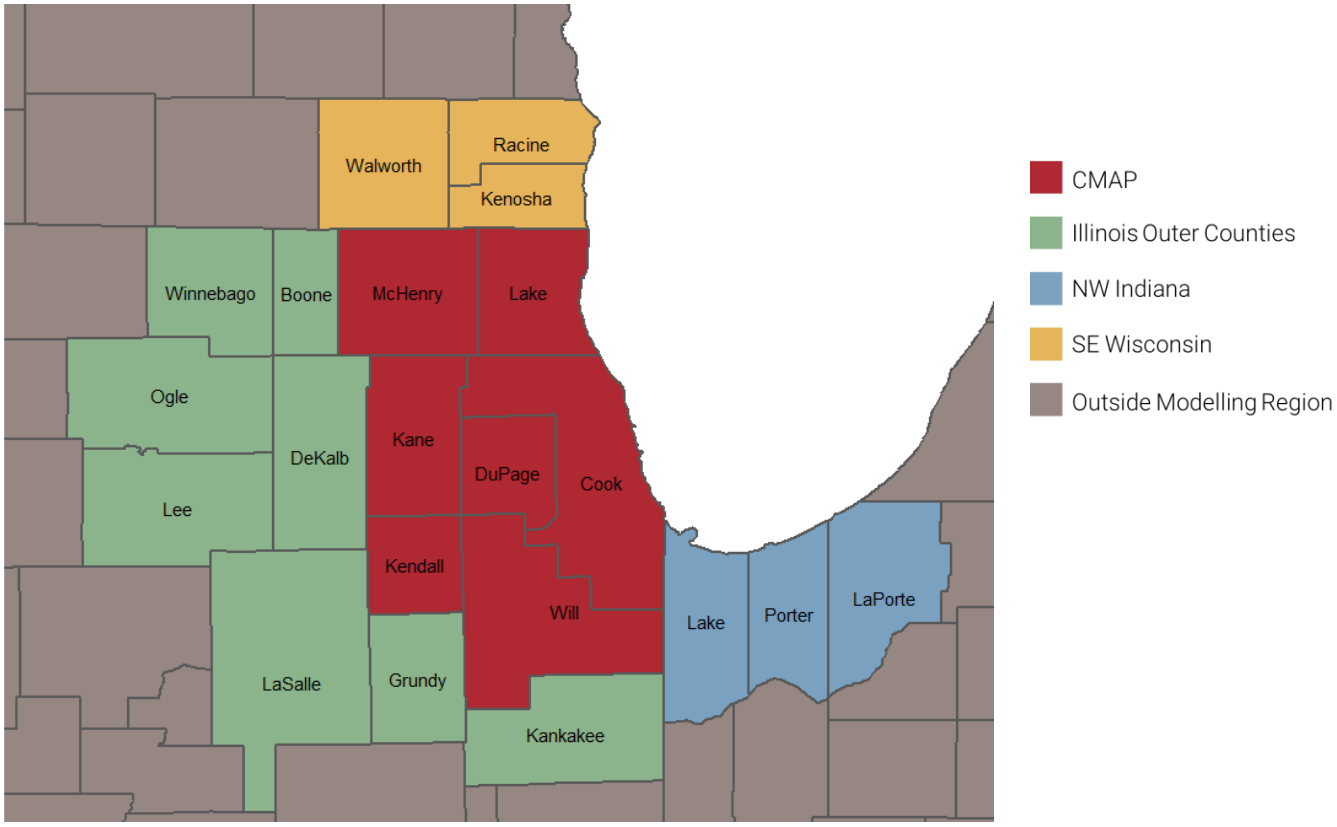
This document outlines the methodological approach used to develop the regional population and employment projections for the region and summarizes the resulting forecast scenarios.

Table 1: Regional Definitions for the 21-county Modeling Region

Subregion	Counties
CMAP	Cook, DuPage, Kane, Kendall, Lake, McHenry, Will
Illinois Outer Counties	Boone, DeKalb, Grundy, Kankakee, La Salle, Lee, Ogle, Winnebago
NW Indiana	Lake, LaPorte, Porter
SE Wisconsin	Kenosha, Racine, Walworth

[1] The greater CMAP region also includes the townships of Sandwich, Somonauk and Aux Sable. The employment forecast is based on county-level geography and does not report on these townships.

Figure 1: Map of CMAP Model Subregions



2. Methodology

2.1. Benchmarking Historical Employment

Benchmarking refers to the process of estimating the most likely historical employment values using publicly available data sources. For reasons including data coverage, and the regularity and method of collection, no single data source provides a complete picture of historical employment. Moreover, each data source has its own limitations and is susceptible to bias. We therefore devote considerable attention to establishing a historical employment series that leverages the strengths of each source.

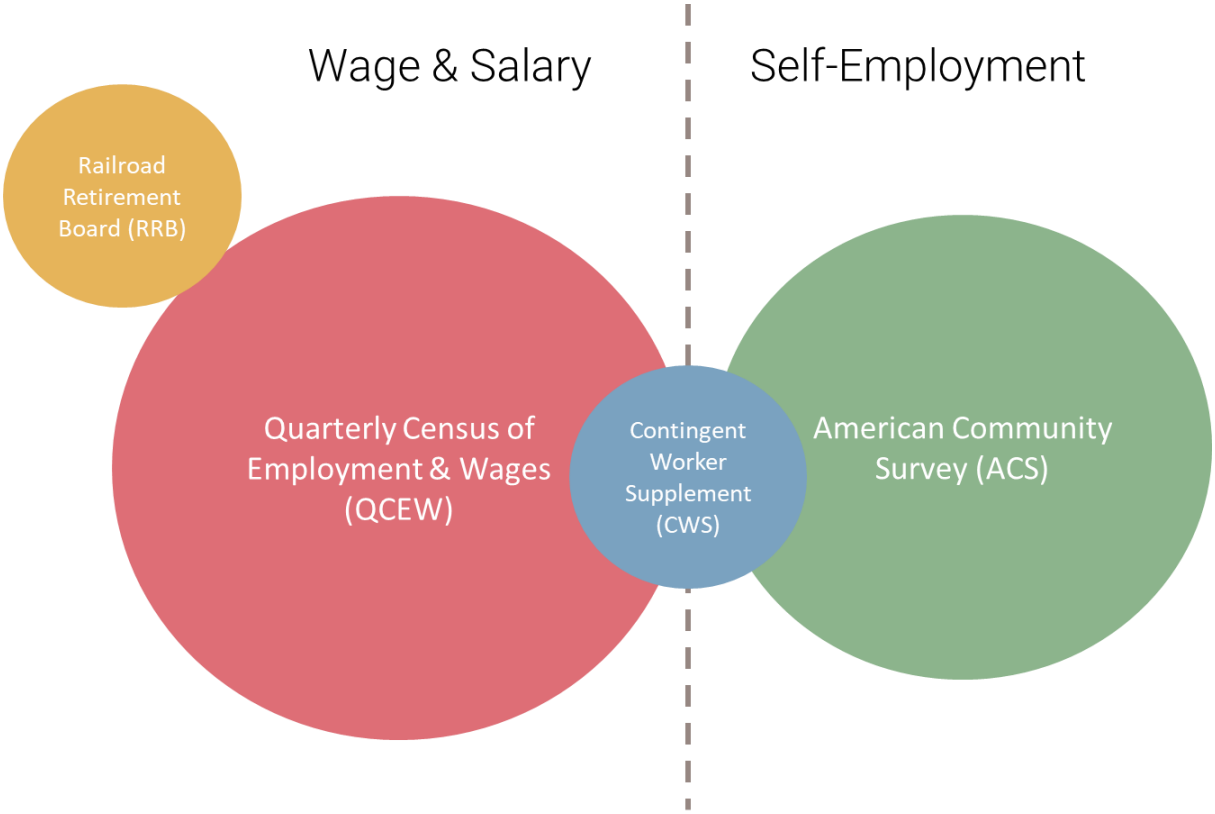
The reason for developing a historical or benchmark series is that forecasts necessarily begin at a historical "jump off point" with employment in future years changing in relation to the last year of the historical series. The jump off point for this forecast was 2020.

Robust data with industry-level detail is essential for understanding the differential growth rates of geographies with distinct economic characteristics. Because publicly available employment data are unavailable for some county-industry combinations, the adopted benchmarking process uses certain state and regional level information to fill in gaps. Our adopted process also ensures that the forecast reflects place-of-work employment. The forecast process uses a

combination of the following data sources to establish historical place-of-work employment (also shown in Figure 2):

- Quarterly Census of Employment and Wages (QCEW) for county-level wage and salary employment for most industries by place of work.
- Railroad Retirement Board (RRB) for railroad workers not covered by QCEW.
- American Community Survey (ACS) for self-employed workers by place of residence.
- Contingent Worker Supplement (CWS) for the occupational distribution of temp jobs. This includes wage and salary and self-employed workers.

Figure 2. Data Sources for Historical Employment



We describe each of the data sources and our reasons for using them below. The Contingent Worker Supplement is discussed in a subsequent section on measuring temp jobs.

2.1.1. Quarterly Census of Employment and Wages

The Quarterly Census of Employment and Wages (QCEW) program (formerly known as ES-202) is a joint effort involving the U.S. Bureau of Labor Statistics (BLS) and state unemployment insurance agencies. QCEW collects employment and wage data based on work location from

employers covered under Unemployment Insurance (UI) laws. These employers represent over 97 percent of all wage and salary jobs in Illinois.[2]

QCEW provides monthly and annual average employment at a detailed industry level and national, state, and county geographic levels. Although CMAP has historically used March employment to avoid seasonal employment surges (e.g., retail during the holidays), the project team uses annual averages for this effort to: (a) capture employment on a typical day of the year, and (b) smooth out cyclical patterns associated with industries like construction and tourism.

QCEW data excludes active-duty military personnel, elected officials, private household workers, railroad workers, and self-employed workers. For CMAP, coverage of railroad employment is particularly important given the region's outsize influence in the nation's rail network. As discussed later, coverage of such employees requires using a unique data source.

Because QCEW is a near census, it has the advantage of being virtually free of sampling error. However, it does suppress data when reported employment could expose data for a single employer, that typically happens in sparsely populated geographies and industries. QCEW also reports some employment as "unclassifiable" at either the industry or county level. For these reasons, the project team developed a methodology for imputing suppressed data using relative industry distributions from the entire region.

QCEW is also subject to "headquarter bias" at a sub-state level. This can happen when multi-establishment employers report all employees as working at a single (usually primary) location, that can cause over- or under-estimation of employment in certain counties. However, QCEW claims there is likely minimal bias, even in a place with many corporate headquarters like the Chicago region. This is because QCEW and its state agency partners: (a) scrutinize major corporations that are known to have multiple worksites spread across counties, and (b) use data collected from the Multiple Worksite Report (BLS 3020) to re-assign jobs to individual worksites.[3]

2.1.2. Railroad Retirement Board

Railroad workers are uncounted in QCEW and other publicly available data sources because they are covered under a special unemployment insurance program established by the Railroad Unemployment Insurance Act (RUIA). The project team uses the Chicago-based U.S. Railroad

2 U.S. Bureau of Labor Statistics, "Quarterly Census of Employment and Wages, Questions and Answers (Q&A)," accessed February 24, 2021, https://www.bls.gov/cew/questions-and-answers.htm. Dave Bieneman and Waleed Almousa, "Quarterly Census of Employment and Wages (QCEW) Overview," Illinois Department of Employment Security, accessed February 26, 2021, https://www2.illinois.gov/ides/lmi/Quarterly%20Census%20of%20Employment%20%20Wages%20QCEW/QCEW_Overview.pdf.

3 Phone conversation with Ric Wise on April 1, 2021 (ric.wise@bls.gov, 202-691-6432).

Retirement Board (RRB), administrator of rail workers' unemployment insurance, as the source for county railroad employment estimates.[4]

Due to the definition of "employer" under the RUIA, employment statistics provided by RRB include workers employed by both the Rail Transportation (NAICS 482) sector and the Business, Professional, Labor, Political, and Similar Organizations (NAICS 8139) sector. Therefore, we use state-level information on RRB class of employer to distinguish employees who work for railroads and railroad-support firms from employees that are members of associations and unions.

Because RRB provides county employment estimates for years 1998-2019 only, the project team used the average annual growth rate from 2010-2019 to estimate 2020 RRB-covered employment. Freight railroads recovered quickly from the initial shock of the COVID-19 pandemic in 2020, with overall rail freight traffic now exceeding 2019 volumes.[5] As such, these workers are assumed to be largely insulated from the economic impacts of the pandemic when compared to self-employed workers, for which QCEW trends were used to estimate 2020 employment.

2.1.3. American Community Survey

Since QCEW does not include self-employed workers, the project team used the American Community Survey (ACS) as the source for self-employment jobs (i.e., jobs held by self-employed workers). The ACS is a household-based survey, and thus provides county-level information based on the residential location of the respondent. For the self-employed and related classifications for which ACs is used in this study, we have assumed that these workers are home-based. Thus, the ACS provides the best available estimate of the location of self-employed workers. In ACS Table C24070: Industry by Class of Worker for the Civilian Population, the categories "Self-employed in own incorporated business workers" and "Self-employed in own not incorporated business workers and unpaid family workers" provide counts for each county for the years 2010-2019 based on the ACS 5-Year Estimates.

CWS data indicate whether the respondent was working as an independent contractor, independent consultant, or free-lance worker

These county-level estimates are provided on an industry basis for most industry sectors at a 2-digit NAICS level. However, ACS combines certain 2-digit sectors. In these cases, the project team allocated self-employment jobs to the constituent sectors at the 2-digit NAICS using the industry distribution specific for independent contractors available in the Contingent

[4] To view employment statistics, see U.S. Railroad Retirement Board, "Annual Railroad Retirement Act and Railroad Unemployment Insurance Act Data," accessed February 24, 2021, https://rrb.gov/FinancialReporting/FinancialActuarialStatistical/Annual.

[5] "The U.S. Railroads and COVID-19: Keeping Supply Chains Moving", May 2021. Accessed December, 2021. https://www.aar.org/wp-content/uploads/2021/07/AAR-NUTC-Freight-Rail-COVID-Supply-Chain-Report-May-2021.pdf.

Worker Survey (CWS) (see Table 2). This reallocation process provided employment counts by county, year, and 2-digit NAICS code for 2010-2019.

The project team did not reallocate self-employment jobs to certain NAICS sectors where there was low or zero representation in the CWS. We determined that it is unlikely that self-employed workers would be engaged in these industries. The NAICS codes and descriptions of industries with no self-employed workers are as follows:

- NAICS 21 Mining, Quarrying, and Oil and Gas Extraction
- NAICS 22 Utilities
- NAICS 55 Management of Companies and Enterprises
- NAICS 92 Public Administration

For the year 2020, we determined that linear extrapolation from the trends for 2010-2019 is not appropriate since the COVID-19 pandemic and resulting business closures created employment trends in 2020 that were significantly different from prior years. For this reason, we applied the percentage change observed in QCEW between 2019-2020 to project self-employed 2020 levels (using industry- and county-specific rates).

2.1.4. Other Data Sources Considered

The project team reviewed several other county-level data sources to determine their usefulness for establishing historical employment. We briefly discuss these sources and their limitations below.

- Bureau of Economic Analysis (BEA): BEA employment data is typically used to study economic production rather than measure place-of-work job activity that is necessary for travel modeling. Thus, it includes industry sectors and workers that are inconsistent with BLS definitions, including private household workers, students, and interns.
- County Business Patterns (CBP): CBP data represents employment during a single point in time each year—the week of March 12. In contrast, QCEW provides annual average employment as discussed above. Single point-in-time estimates instead of 12-month averages are problematic because they do not account for seasonality, a shortcoming that afflicts both payroll employment and self-employment (e.g., salaried carpenters and self-employed carpenters, both of whom may become unemployed during winter months when construction slows).
- Current Employment Statistics (CES): CES provides state-level estimates of employment, hours, and earnings for nonfarm wage and salary workers. The data is derived from a monthly survey of about 145,000 businesses and government agencies. Although the CES is suppression free, the data is only provided at a state level, which is insufficient for this project. The project team developed a suppression-fill methodology that utilizes QCEW data alone (described later).

- Nonemployer statistics (NES): NES data represents the number of businesses with no paid employees by county. This could potentially be used as a proxy for the number of employees who are self-employed, but a single self-employed person might have multiple businesses, resulting in double counting. The number of businesses reported by NES for the 21-county forecast region ranges from about 770,000 in 2010 to 870,000 in 2018. Given that this may be an overcount, we use the American Community Survey for self-employment, which reports self-employment in the region to be around 430,000 in 2018.

2.2. Measuring Temporary Jobs

CMAP has a special interest in (a) measuring the number of temp jobs in the forecast region and (b) properly classifying them into the industries employees work in instead of the industry temp agencies operate in (NAICS 561320).[6] Temp workers are part of the broader "on-demand" workforce; these workers typically have relatively high levels of autonomy and are compensated per task in short-term durations.[7] Accurately defining, measuring, and classifying temp jobs is important for CMAP travel modeling and policymaking purposes.

To achieve CMAP's goal, the project team began by reviewing several data sources that measure the on-demand workforce. In our review, we considered the following factors:

- Industry detail: whether temp jobs are measured at a six-digit NAICS level, which is a requirement of CMAP's (for the latest available year, but not for future years).
- Geographic detail: whether the data source provides county-level detail or, if not, the ability to generate county-level estimates.
- Comprehensiveness: whether the data source separates temp jobs from other on-demand jobs.

The project team used the Contingent Worker Supplement (CWS) to reclassify temp jobs in the forecast region. To accomplish this, the project team isolated temp jobs from their existing NAICS classification in the QCEW (561320) and reclassified the jobs using a profile of temp workers developed using the CWS. As we discuss below, although the CWS has important limitations, it is the best option available for accomplishing the temp job reclassification.

6 The number of temp jobs has grown overall in recent years. For more information, see Tian Luo, Amar Mann, and Richard J. Holden, "What happened to temps? Changes since the Great Recession," Monthly Labor Review, U.S. Bureau of Labor Statistics, February 2021, https://www.bls.gov/opub/mlr/2021/article/temp-help.htm.

7 Institute for Work & the Economy and National Governors Association, accessed February 16, 2021, http://metadataetc.org/gigontology/.

2.2.1. Contingent Worker Supplement

The Contingent Worker Supplement is a questionnaire administered by the Census Bureau for the U.S. Bureau of Labor Statistics (BLS) every few years. The Census Bureau last administered the CWS in May 2017 and plans to administer it again in 2022.

The CWS is a supplement to the Current Population Survey (CPS), commonly known as the "household survey," that provides the figures behind the federal government's monthly jobs report. Through a series of questions regarding the nature of respondents' work, the CWS provides an estimate of workers whose primary job is in a contingent or alternative employment arrangement. The CWS estimates contingent arrangements in three ways, ranging from the narrowest definition (Estimate 1) to the broadest definition (Estimate 3). We provide definitions and national statistics for these CWS categories in Table 2. Contingent Arrangements as a Percent of U.S. Employment and Table 3. Alternative Employment Arrangements as a Percent of U.S. Employment below.[8]

Some workers are in both contingent and alternative employment arrangements. That is, they are in one of the arrangements listed in Table 3 and their job is short-term (contingent). According to the CWS, this group ranges from 3 percent of independent contractors to 42 percent of temp workers.

Table 2. Contingent Arrangements as a Percent of U.S. Employment

Contingent Arrangements	Percent of Total Employed (U.S.), 2017
Contingent workers are those who do not have an implicit or explicit contract for ongoing employment. Persons who do not expect to continue in their jobs for personal reasons such as retirement or returning to school are not considered contingent workers, if they would have the option of continuing in the job were it not for these personal reasons.	
Estimate 1: Wage and salary workers who expect their job will last for an additional year or less and who had worked at their jobs for 1 year or less. Self-employed workers and independent contractors are excluded from this estimate. Temporary help and contract workers are included in this estimate based on the expected duration and tenure of their employment with the temporary help or contract firm, not with the specific client to whom they are assigned.	1.3%
Estimate 2: (includes Estimate 1): Workers, including the self-employed and independent contractors, who expect their employment to last for an additional year or less and who had worked at their jobs (or been self-employed) for 1 year or less. Temporary help and contract workers are included in this estimate based on the expected duration and tenure with the client to whom they are assigned, instead of their tenure with the temporary help or contract firm.	1.6%
Estimate 3: (includes Estimate 1 and Estimate 2): Workers who do not expect their jobs to last. Wage and salary workers are included even if they already had held the job for more than 1 year and expect to hold the job for at least an additional year.	3.8%

[8] U.S. Bureau of Labor Statistics, Contingent and Alternative Employment Arrangements News Release, June 7, 2018, https://www.bls.gov/news.release/conemp.htm.

Contingent Arrangements	Percent of Total Employed (U.S.), 2017
The self-employed and independent contractors are included if they expect their employment to last for an additional year or less and they had been self-employed or independent contractors for 1 year or less.	

Table 3. Alternative Employment Arrangements as a Percent of U.S. Employment

Alternative Employment Arrangements	Percent of Total Employed (U.S.), 2017
Independent contractors: Workers who are identified as independent contractors, independent consultants, or freelance workers, regardless of whether they are self-employed or wage and salary workers.	6.9%
On-call workers: Workers who are called to work only as needed, although they can be scheduled to work for several days or weeks in a row.	1.7%
Temporary help agency workers: Workers who are paid by a temporary help agency, whether or not their job is temporary.	0.9%
Workers provided by contract firms: Workers who are employed by a company that provides them or their services to others under contract, are usually assigned to only one customer, and usually work at the customer's worksite.	0.6%
All alternative employment arrangements	10.1%

The project team used the Estimate 1 worker definition in Table 2 to create a national profile of temp employment at a 2-digit NAICS level.[9] We then aggregated employment to a 2-digit NAICS level and use the profile to reclassify forecast region jobs to the appropriate sectors (e.g., some professional services jobs might move to educational services to reflect teachers who work on-call). As mentioned previously, we also used CWS estimates of the industry distribution of independent contractors to allocate ACS self-employment jobs to 2-digit NAICS sectors. Per CMAP's requests, the project team has provided a forecast version with temp jobs reclassified (for modeling purposes) and a version without reclassification (for public consumption).

There are several primary advantages to using the CWS to measure temp jobs:

- The project team is aware of no other data source that measures the number of temp jobs at a six-digit NAICS level. This was essential to account for sub-sector trends as the composition of two-digit NAICS sectors can change over time.
- The CWS asks respondents about the nature of their work. This information enabled the project team to reclassify temp jobs into the industries temporary employers operate in, instead of the temporary help services industry (NAICS 561320). This is also a CMAP requirement.

[9] The project team used the Estimate 1 definition in Table 1 instead of the temp help agency workers definition in Table 2 so that the reclassification profile includes workers employed by both temporary help agencies and contract firms.

- The CWS indicates whether a worker is self-employed or a wage and salary employee. This information enabled the project team to create a forecast that includes wage and salary workers only. This is another CMAP requirement.

The CWS has the following limitations:

- While the CWS does provide geo-identifiers for each response, county-level sample sizes are too small to create reliable employment estimates and the program discourages sub-national analysis. The national sample size is robust at over 46,000 observations.
- As mentioned previously, the Census Bureau administered the CWS over the course of one month in May 2017 and will not administer it again until 2022. It is possible that industries have changed since 2017 with respect to their reliance on contingent and alternative employment arrangements.
- Also mentioned previously is the fact that the CWS asks about a person's "sole or main job" (i.e., the job where they typically work the most hours). This means it is likely to mis- or undercount some part-time jobs. However, as discussed earlier, only about 5 percent of workers hold multiple jobs.
- The CWS potentially undercounts the number of workers in alternative employment arrangements. A similar survey conducted in 2015 estimated that 13.7 percent of workers are engaged in one of the four arrangements listed in Table 3, compared with 10.1 percent according to the CWS (in 2017).[10] However, the 2015 survey was based on a significantly smaller sample size than the CWS and is likely less representative of the workforce as a result.

2.2.2. Other Data Sources Considered

The project team reviewed the following data sources to determine their usefulness for measuring and classifying temp jobs:

- Gallup Education Consumer Pulse Survey
- Federal Reserve Bank of Boston Survey of Informal Work Participation (SIWP)
- Federal Reserve Board Enterprising and Informal Work Activities (EIWA)
- Federal Reserve Board Survey of Household Economics and Decisionmaking (SHED)

None of these data sources provide the level of geographic and industry detail necessary for meeting CMAP's needs. They are generally designed for national analysis at a more aggregate industry level than 6-digit NAICS.

[10] Katz, Lawrence F., Krueger Alan B. 2019. "Understanding Trends in Alternative Work Arrangements in the United States" RSF: The Russell Sage Foundation Journal of the Social Sciences December 2019, 5 (5) 132-146; DOI: https://doi.org/10.7758/RSF.2019.5.5.07.

2.3. Measuring Remote Work

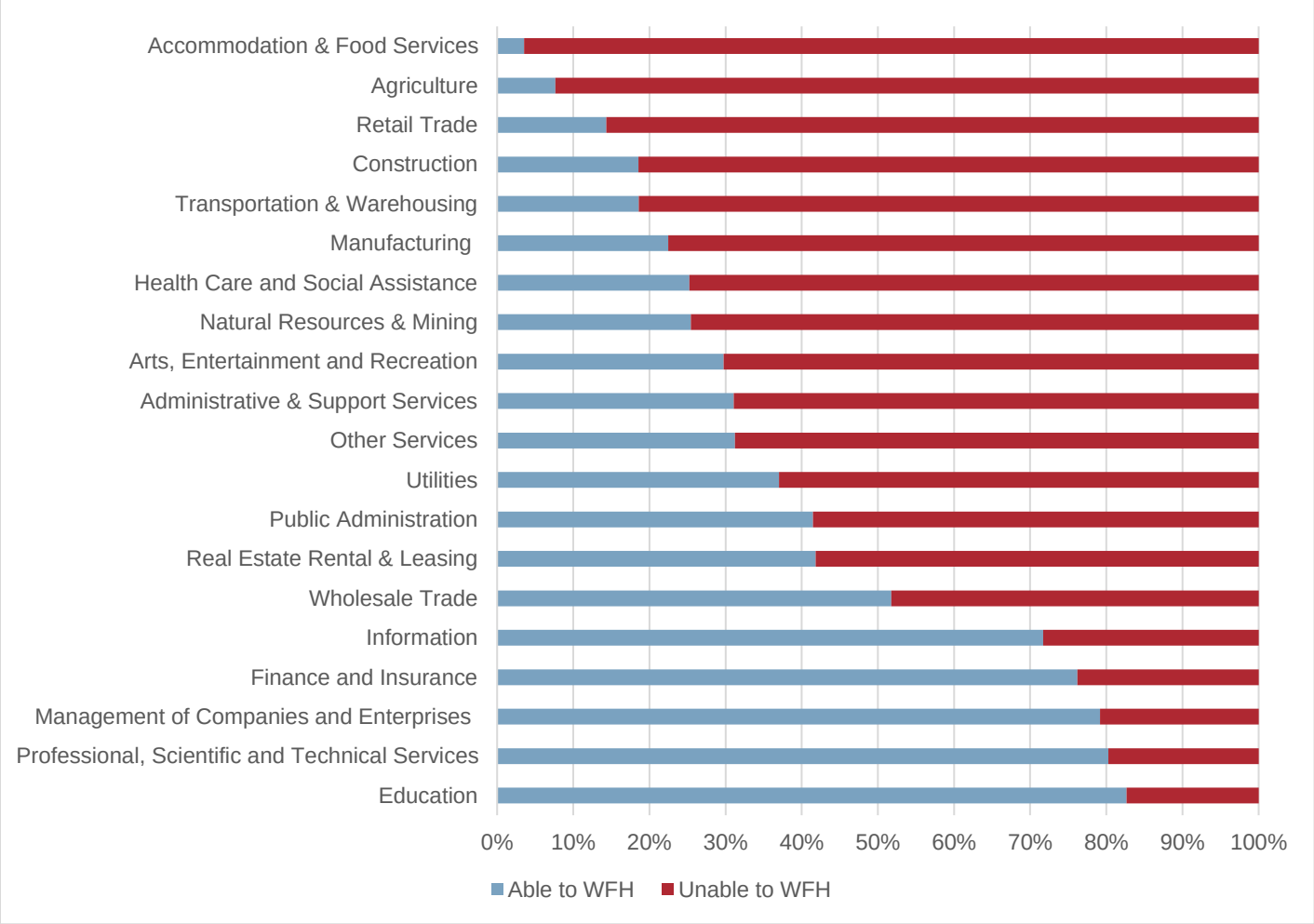
CMAP is interested in measuring the potential number of jobs performed remotely in the forecast region. After the COVID-19 pandemic began, remote work became much more common, with one study finding that about half of workers who were employed pre-COVID-19 were working from home between April-May 2020.[11] Although many employees will likely return to a physical work setting once it becomes safe to do so, high levels of remote work could persist, especially at companies that have made significant investments in remote work capabilities and seen increased productivity. This is especially common in some industries such as professional services or information technology. For this reason, it is helpful to know how many workers in CMAP's forecast region are likely to work from home in future years. The project team designed the following process to generate this estimation:

1. The first step is to estimate potential ability to work from home. For this estimate, we use research by Jonathan Dingel and Brent Neiman at the University of Chicago to estimate the number of workers who could potentially work remotely. Dingel and Neiman use data from the Occupational Information Network (O*NET), a U.S. Department of Labor database, to estimate the work-from-home potential for nearly 1,000 occupations across 88 industries (at a 3-digit NAICS level).[12] The study is novel because it considers multiple factors to determine the likelihood that a given occupation can be performed entirely from home. The authors derive a work-from-home potential equal to 37% of all jobs. The resulting percentages by industry are shown in Figure 3.

[11] Erik Brynjolfsson, John J. Horton, Adam Ozimek, Daniel Rock, Garima Sharma, and Hong-Yi TuYe, "COVID-19 and Remote Work: An Early Look at US Data," National Bureau of Economic Research, June 2020, https://www.nber.org/papers/w27344.

[12] Jonathan I. Dingel and Brent Neiman, "How Many Jobs Can be Done at Home?," Becker Friedman Institute, University of Chicago, June 19, 2020, https://bfi.uchicago.edu/working-paper/how-many-jobs-can-be-done-at-home/.

Figure 3. Estimated Remote Work Ability by Industry



2. The second step is to determine employees' willingness and interest in working from home.[13] Research by Jose Maria Barrero, Nicholas Bloom, and Steven J. Davis attempted to answer this question using their Survey of Working Arrangements and Attitudes conducted between May 2020 and March 2021, that captured over 30,000 responses.[14] We use data from Barrero et al. to estimate the likelihood that a worker in a given 2-digit NAICS sector will likely want to work from home a given number of weekdays, conditional on their ability to do so.

Barrero et al.'s estimates of work-from-home ability are higher than Dingel and Neiman's. However, the Barrero et al. methodology was based on fewer questions than the extensive O*NET data found in Dingel and Neiman. Therefore, we paired Dingel and Neiman's estimates of

[13] This notably does not reflect employers' preferences regarding working from home.

[14] Jose Maria Barrero, Nicholas Bloom, and Steven J. Davis, "Why Working From Home Will Stick," Becker Friedman Institute, University of Chicago, April 22, 2021, https://bfi.uchicago.edu/working-paper/why-working-from-home-will-stick/.

the percent of each sector's jobs that are work-from-home with Barrero et al.'s estimates of desire to work from home. For a specific industry, we determined the likely number of jobs performed at home for a given number of days by multiplying Dingle and Neiman shares by the percent of those desiring to work from home from Barrero et al.

2.4. Forecast Development

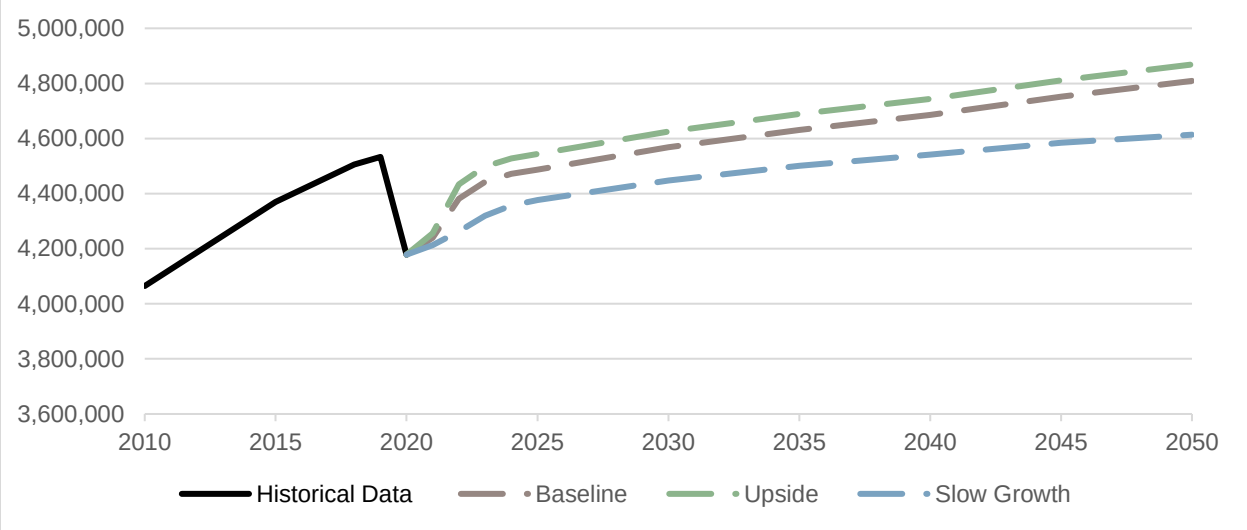
After benchmarking historical employment, the project team produced three forecast scenarios: a base case scenario, high growth scenario, and low growth scenario. The base case represents the most likely outcome. The high growth and low growth scenarios represent the range of plausible outcomes based on future uncertainty. The upside and baseline scenarios are probabilistic in nature and driven by macroeconomic and fiscal trends rather than regional policy interventions. The baseline scenario is intended to serve as the official forecast used for land use and travel modeling activities at CMAP.

Scenarios have been derived using county-level forecasts provided by Moody's Analytics (May 2021 vintage) that were then aggregated to the four county groupings specified earlier. Moody's develops a baseline and several alternative forecast scenarios that it updates monthly. The baseline forecast incorporates important macroeconomic trends related to monetary policy, fiscal policy, the strength of the U.S. dollar, energy prices, and the COVID-19 pandemic.[17] The baseline forecast is probabilistic; there is a 50-percent chance the economy will perform better than forecasted and a 50-percent probability that it will perform worse.

Moody's also develops 10 "narrative-driven" alternative forecast scenarios that reflect a range of possible outcomes. These scenarios incorporate various underlying assumptions related to the key macroeconomic drivers mentioned above. CMAP decided to use Moody's Alternative Scenario 0 (S0) for its high growth scenario. This scenario is designed so that there is only a 4 percent probability that Chicago's regional economy will perform better than the forecast. CMAP decided to use Moody's Scenario 5 (S5) for its slow growth scenario. S5 is designed so that Chicago's regional economy underperforms its potential indefinitely. A document describing Moody's baseline and alternative scenarios in more detail is included as Appendix A.

The project team used Moody's growth rates for each scenario to extrapolate the historical employment series to 2050. Figure 4 shows the relative growth of each scenario used for this forecast.

Figure 4. Comparison of Forecast Scenarios



Numbers reflect employment forecast for the 7-county CMAP region.

2.4.1. Forecasting Agricultural Employment

Moody's provides county-level agricultural employment forecasts for the baseline scenario only. As such, the project team has derived the upside and slow growth scenarios from Moody's county-level agriculture gross domestic product (GDP) forecasts. To develop equivalent forecasts for the two alternative scenarios, we calculate the ratios between Moody's baseline and alternative GDP forecasts, and then apply those ratios to the baseline employment forecast. This methodology implicitly assumed that productivity would be constant across future scenarios for the agricultural sectors.

2.4.2. Addressing Data Suppression

QCEW employment data is sometimes suppressed for private industry sectors and state and local government sectors.[15] We identified suppressed sector employment levels by county and by year. Where multiple sectors were suppressed in a county and year, we use the annual total of private employment for that county to determine the total "missing" employment. To estimate which sectors will get a distribution of the missing workers, we use annual distributions of employment by sector (among the counties in scope) to weight among the sectors suppressed.

Estimating sector-level employment among state and local government workers required a different methodology because the sum of state or local government employment is sometimes

[15] Private industry suppression is primarily in counties outside the 7-county CMAP region. There are two exceptions to this: In Kendall County, two private industries are suppressed in the 2020 data. There are also two private industries suppressed in McHenry County in the 2020 data.

suppressed at the county level.[16] To address this, we first estimated control totals for each county's levels of state government workers and local government workers. Then, we use the national ratio of state to local government employment to allocate suppressed employment for individual counties. Where data was available for unsuppressed counties, we used it to weight industries. Where data for an industry is suppressed across all counties in a given year, we weighted using the national average for that industry among state or local government workers, respectively.

3. Employment Forecast

3.1. Baseline Forecast

Employment in the 21-county modeling area under the Baseline forecast is estimated to reach 5.7 million by 2050, a 15 percent increase over its 2020 level (Table 4). The 7-county CMAP region is expected to contribute 84 percent of the 21-county region's growth, with outer counties in Illinois, Indiana, and Wisconsin contributing the rest. In the 7-county CMAP region, forecasts suggest that total employment will reach 4.8 million by 2050.[17] Outer counties in Illinois will likely see employment growth consistent with the CMAP region while Wisconsin counties experience relatively stronger growth. The NW Indiana subregion will experience limited employment growth in the coming decades.

Table 4. Regional Employment Totals

	2010	2020	2030	2040	2050	2020-2050 Difference	Aggregate Growth	CAGR
CMAP	**4,064,635**	**4,178,398**	**4,568,258**	**4,685,656**	**4,809,114**	**+630,716**	**15%**	**0.47%**
Outer Illinois	332,590	322,251	352,540	363,934	375,064	+52,813	16%	0.51%
NW Indiana	305,613	297,158	325,972	330,035	329,017	+31,859	11%	0.34%
SE Wisconsin	179,335	192,631	215,782	224,754	233,531	+40,900	21%	0.64%
Modeling Area Total	4,882,173	4,990,438	5,462,552	5,604,378	5,746,725	+756,288	15%	0.47%

Wage and salaried workers make up almost 92% of the workforce in the greater Chicago region. Table 5 summarizes expected growth for this kind of employment only.

[16] The sum of 2020 state or local government employment is suppressed in the following counties: DeKalb County, Illinois, DuPage County, Illinois, Kane County, Illinois, Kankakee County, Illinois, Lake County, Illinois, Will County, Illinois, and Walworth County, Wisconsin.

[17] This value reflects a forecast in which temp workers have been reallocated to industries better reflecting their occupational activities. Alternative versions in which this reallocation was not performed were also provided.

Table 5. Total Wage & Salary Employment by Region

	2010	2020	2030	2040	2050	2020-2050 Difference	Aggregate Growth	CAGR
CMAP	**3,710,020**	**3,840,071**	**4,193,338**	**4,296,317**	**4,406,281**	**566,210**	**15%**	**0.46%**
Outer Illinois	300,194	296,012	323,305	333,170	342,799	46,787	16%	0.49%
NW Indiana	280,378	275,150	301,401	304,719	303,571	28,421	10%	0.33%
SE Wisconsin	161,669	176,583	197,790	205,548	213,172	36,589	21%	0.63%
Modeling Area Total	4,452,261	4,587,816	5,015,834	5,015,834	5,265,823	678,007	15%	0.46%

Table 6 breaks down regional employment growth by industry for the core 7-county CMAP region. The core CMAP region is expected to have high growth in-service industries such as accommodation, food services, and recreation (43% aggregate growth). Growth in service industries is based largely on expected population growth. Professional industries, such as administrative, professional, and technical services are expected to grow by around 32% over the next 30 years. Industry growth rates in sectors such as manufacturing and transportation are driven by macroeconomic factors, including global and national trade effects.

Table 6. Total Forecast Employment by Industry for the CMAP Region

NAICS Code	Industry Description	Employment - 2020	Employment - 2050	Aggregate Growth	CAGR
11	Agriculture	11,844	10,771	-9%	-0.32%
21	Natural Resources & Mining	1,736	1,599	-8%	-0.27%
22	Utilities	13,633	10,091	-26%	-1.00%
23	Construction	204,489	237,666	16%	0.50%
31-33	Manufacturing	368,531	297,751	-19%	-0.71%
42	Wholesale Trade	210,407	200,089	-5%	-0.17%
44-45	Retail Trade	398,745	476,170	19%	0.59%
48-49	Transportation & Warehousing	283,901	326,427	15%	0.47%
51	Information	80,346	82,118	2%	0.07%
52	Finance and Insurance	229,675	282,804	23%	0.70%
53	Real Estate Rental & Leasing	83,292	103,092	24%	0.71%
54	Professional, Scientific and Technical Services	377,557	497,008	32%	0.92%
55	Management of Companies and Enterprises	65,155	86,171	32%	0.94%
56	Administrative & Support Services	231,642	307,197	33%	0.95%
61	Education	381,184	424,423	11%	0.36%

NAICS Code	Industry Description	Employment - 2020	Employment - 2050	Aggregate Growth	CAGR
62	Health Care and Social Assistance	559,607	616,739	10%	0.32%
71	Arts, Entertainment and Recreation	82,010	117,667	43%	1.21%
72	Accommodation & Food Services	282,801	405,908	44%	1.21%
81	Other Services	175,629	193,531	10%	0.32%
92	Public Administration	135,790	131,891	-3%	-0.10%
99	Unknown	423	NA	NA	NA

Job losses in manufacturing are expected with our forecast showing a decline of approximately 70 thousand jobs (-20%) over the next 30 years driven by national macroeconomic trends. Agriculture & natural resources, very small industries in the metropolitan area, are also expected to shrink.

3.2. Alternative Scenarios

A summary of employment forecasts for the CMAP region for each of the alternative scenarios is displayed in Table 7. The Slow Growth scenario reflects a larger deviation from the baseline, with a 2050 employment estimate approximately 4% lower than that of the baseline. Conversely, the Upside scenario is only 1% higher than the baseline, reflecting the ceiling on growth as determined by underlying assumptions about population growth in the region.

Table 7. Alternative Scenario Forecasts for CMAP Region

Scenario	2050 Employment	Aggregate Growth	Regional CAGR	Difference from Baseline 2050 Employment
Baseline	4,809,114	+630,716	*0.47%*	-
Upside	4,868,734	+690,336	0.51%	+1.2%
Slow Growth	4,613,859	+435,461	0.33%	-4.1%

Summaries of each alternative forecast as well as more detailed data for all scenarios have been provided to CMAP.

In the short term, there are significant variations between these alternatives relating to recovery from the COVID-19 pandemic. In both the upside and baseline scenarios, the economy is expected to make a strong recovery over the next 5 years, with stable long-term growth for the next 25 years. The upside forecast is based on a more rapid economic recovery than expected in the baseline forecast. The stimulus initiatives provided at the federal level provide a significant

rebound in both household spending and business investment. The slow growth forecast is based on assumptions tied to a weaker than expected post-COVID-19 recovery and higher than expected unemployment levels compared to the baseline forecast. A number of other trade and macroeconomic factors are considered in each of alternative scenario and discussed in the Moody's documentation. Together, these three scenarios reflect a full range of plausible outcomes. The baseline forecast reflects the most likely outcome, but there is an equal probability that the region will perform better or worse than this forecast.

Appendix A: Moody's Scenarios Documentation

MOODY'S
ANALYTICS

May 2021

U.S. Macroeconomic Outlook Baseline and Alternative Scenarios

UPDATED MONTHLY

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THE U.S. MACROECONOMIC OUTLOOK SCENARIOS ARE WRITTEN BY EDWARD FRIEDMAN

1 » Forecast Assumptions

2 » Baseline Forecast

6 » Alternative Scenario 0 – Upside – 4th Percentile

9 » Alternative Scenario 1 – Upside – 10th Percentile

12 » Alternative Scenario 2 – Downside – 75th Percentile

15 » Alternative Scenario 3 – Downside – 90th Percentile

18 » Alternative Scenario 4 – Downside – 96th Percentile

21 » Scenario 5 – Slower-Trend Growth Scenario

23 » Scenario 6 – Stagflation Scenario

25 » Scenario 7 – Next-Cycle Recession Scenario

27 » Scenario 8 – Low Oil Price Scenario

29 » Scenario CF – Consensus Scenario

Forecast Assumptions

BY MARK ZANDI

Monetary policy

The Federal Reserve remains steadfast to its highly accommodative monetary policy. Short-term rates are firmly at the zero lower bound, and the Fed remains engaged in quantitative easing—the purchase of Treasury and agency mortgage-backed securities—to keep long-term interest rates down.

The Fed has wound down a range of credit facilities it stood up early in the crisis to support different parts of the credit market. These included facilities used during the financial crisis such as a commercial paper facility and a facility to support money market funds along with new facilities to help the struggling corporate bond and municipal bond markets. These have successfully supported credit markets. Credit spreads are close to their historical norms, bond issuance sturdy, and credit availability ample.

The Fed's efforts insulated the financial system from the problems in the economy. This is significantly different from the financial crisis over a decade ago, when the financial system collapsed and required a government bailout. That exacerbated the downturn and was a key to the slow recovery. This time, the financial system has managed through relatively gracefully, limiting economic damage and hastening recovery.

Moody's Analytics expects Fed officials to begin preparing financial markets for a tapering of its QE policy sometime this summer when it is clear the U.S. has achieved COVID-19 herd resilience. Actual tapering will begin in early 2022. The Fed's zero-interest-rate policy will remain in place until the economy is clearly near full employment and core inflation is firmly above the Fed's 2% target, which is not expected until early 2023.

Ten-year Treasury yields have risen to near 1.6% as global bond investors discount prospects for much stronger growth. Rates should slowly rise, particularly after the U.S. is clearly beyond the pandemic later this summer and investors begin to anticipate the Fed's QE tapering. Ten-year yields should rise to 2% by the end of this year, 2.5% by year-end 2022, and reach their estimated long-run equilibrium of 3.75% by mid-decade.

Fiscal policy

Highly expansionary fiscal policy—deficit-financed discretionary fiscal policy—will provide a large boost to the economy this year. The American Rescue Plan, which became law in mid-March, and the COVID-19 relief fiscal package that lawmakers agreed to in late December together will add nearly $1.9 trillion in fiscal support to the economy in 2021, and another $800 billion in 2022.

Total fiscal support to the economy throughout the pandemic, also including the massive CARES Act from March 2020 and several other smaller fiscal packages, ultimately will total well over $5 trillion. That equals an astounding almost 25% of pre-pandemic 2019 GDP—approximately three times that provided during the global financial crisis, and substantially more than provided by any other country in the world.

We expect President Biden and Congress to pass another fiscal package this year, fashioned on his campaign's Build Back Better economic agenda. This package, which we expect to include approximately $3 trillion in new spending on infrastructure and social programs and tax law changes including higher corporate tax rates and higher taxes on the well-to-do, will add several hundred billion dollars to the deficit over the next decade. Given Democrats' 50-50 margin in the Senate, this plan will likely become law using the arcane budget reconciliation process.

The federal government will have a deficit of well over $3 trillion this fiscal year, and over $2 trillion in fiscal 2022. The ratio of publicly traded debt to GDP has surged to near 100% and will soon breach the all-time high of 106% reached briefly after World War II. Lawmakers are appropriately not focused on the red ink given the need to respond to the crisis. But, once the pandemic is clearly behind us, addressing the nation's fragile fiscal situation will be critical.

U.S. dollar

The U.S. dollar has come off its early pandemic highs as the safe-haven demand for the currency abated, but it remains strong.

On a real broad trade-weighted basis, the dollar is still more than half a standard deviation above its long-run average since it began to freely float in the early 1970s. Its value is expected to remain strong while the pandemic is a threat, since the virus will do more damage to the global economy than to the U.S. economy. Emerging-market currencies will be especially vulnerable.

The dollar will weaken further on the other side of the pandemic, but geopolitical uncertainties including the U.S. trade war with China will ensure that any decline will be modest. The dollar's reserve currency status will remain intact for the foreseeable future.

Energy prices

Global oil prices have pushed up to $65 per barrel. Global oil demand has firmed as the worst of the pandemic-related global downturn is over, and the supply side of the global energy market has significantly reduced oil production. Further increases in oil prices post-pandemic are likely as the recovering global economy's stronger demand for oil conflates with rationalized global supplies. The potential for price spikes this year and in 2022 are meaningful. However, given ample global reserves, oil prices should eventually settle near their estimated long-run equilibrium level of $55-$60 per barrel.

COVID-19 pandemic

The pandemic remains a significant headwind to the global economy. The worst of the economic fallout from the virus is likely behind the U.S., but until effective vaccines are widely adopted, travel, tourism and trade will remain impaired and the global economy will struggle.

While there is a high degree of uncertainty, under our baseline outlook we anticipate the U.S. will effectively achieve herd immunity or herd resilience from the virus this summer.

Baseline Forecast

This scenario is the baseline forecast of Moody's Analytics. Since it is a baseline, by definition the probability that the economy will perform better than this projection is equal to 50%, the same as the probability that it will perform worse.

Key assumptions

- We adjusted our epidemiological assumptions to anticipate that total confirmed COVID-19 cases in the U.S. will be 34.5 million, compared with the 36.3 million in the previous baseline. Daily new infections are still expected to have already peaked. The abatement date is June 21, compared with August 1 in the April baseline. We believe herd resiliency, which is 65% or a greater share of the adult population being fully vaccinated or previously infected, occurs on July 17.
- The forecast assumes Democrats pass a Build Back Better package in late 2021 that is implemented in early 2022. The package would look similar to what President Biden has proposed but with some changes. It would raise the corporate tax rate to 25%, not 28% as proposed. It would repeal the $10,000 limit on the state and local tax deduction, a costly measure that would be financed by prescription drug reform of the sort Biden called for in his first address to a joint session of Congress.
- The Federal Reserve keeps the target range for the fed funds rate at 0% to 0.25% until early 2023. The Fed does not taper its asset purchases until early 2022, but it announces its plans in the final three months of this year.
- The 10-year U.S. Treasury yield is expected to steadily increase over the next few years.

Key risks

- A significant and persistent tightening in financial market conditions is among the largest downside risks to the baseline forecast.
- The fiscal multipliers, particularly for infrastructure spending, are smaller than expected.
- Labor supply constraints are more binding than anticipated, slowing job growth and boosting wages along with inflation.
- On the upside, herd resiliency is achieved sooner than expected.
- Also on the upside, the demographic tailwind is more powerful for the housing market.
- A large savings cushion provides a bigger than expected boost to consumer spending even in the absence of additional fiscal stimulus.

Epidemiological assumptions

- 34.5 million confirmed cases.
- New infections peaked in January.
- 1.8% confirmed case fatality rate.
- 3.47% hospitalization rate.
- 0.63% ICU use rate.
- 0.21% ventilator use rate.
- Infections abate in June.
- Herd resiliency in July.

The May U.S. baseline forecast assumes Democrats pass a Build Back Better package in late 2021 that is implemented in early 2022. The package would look similar to what President Biden has proposed but with some changes. It would raise the corporate tax rate to 25%, not 28% as proposed. It would repeal the $10,000 limit on the state and local tax deduction, a costly measure that would be financed by prescription drug reform of the sort Biden called for in his first address to a joint session of Congress.

The principal macroeconomic benefits of the American Families Plan would take some time to develop. The increase in labor force participation from childcare support and paid leave is most significant in the middle of the decade. The impact of increased college enrollment and graduation rates does not materialize until later in the decade, and the universal pre-K education does not reap meaningful benefits until the children grow up and are working some 20 years from now.

On the flip side, the drag from higher taxes on well-to-do households is small. High-income, wealthy households have arguably never been in a better financial position given the long-run skewing of wealth distribution and the surge in asset values during the pandemic. Moreover, the effective tax rate for the top 1% has progressively fallen since World War II, and the AFP would only nudge it back to where it was in the mid-1990s.

By 2030, the AFP would increase real GDP by approximately $100 billion and employment by 840,000 jobs. Labor force participation is 0.3 percentage point higher, providing the labor supply needed to meet the increase in labor demand.

COVID-19 assumptions

We adjusted our epidemiological assumptions to anticipate that total confirmed COVID-19 cases in the U.S. will be 34.5 million, compared with the 36.3 million in the previ-

ous baseline. Daily new infections are still expected to have already peaked. The abatement date is June 21, compared with August 1 in the April baseline. We believe herd resiliency, which is 65% or a greater share of the adult population being fully vaccinated or previously infected, occurs on July 17. We did not make a formal assumption about herd resiliency in the April baseline.

Our assumption, based on the Israeli experience, is that at this herd-resiliency level, the U.S. will still have newly confirmed COVID-19 cases but the local outbreaks will be relatively small without taxing the health system or leading to lockdowns. From an economic forecasting perspective, this may be the relevant measure. Epidemiologists doubt we will achieve true herd immunity any time soon—if ever.

Minor tweak to 2021 GDP

We now look for real GDP to rise 6.8% this year, compared with the 6.4% in the April baseline. We have been consistently revising our forecast higher for GDP this year because of changes to our fiscal policy assumptions, but the adjustment in May reflects the advance estimate of first-quarter GDP. Real GDP rose 6.4% at an annualized rate in the first quarter.

The fiscal stimulus impacted first-quarter real GDP strongly. Real consumer spending jumped 10.7% at an annualized rate, compared with the 2.3% gain in the prior three months. This is among the largest increases since the 1960s. The strength in consumer spending is not surprising because of the 61.3% annualized gain in disposable income in the first quarter. Disposable income got a big boost from government transfer payments, including Economic Impact Payments that boosted incomes by $1.929 trillion at an annualized rate. Expanded unemployment programs added $275 billion at an annualized rate.

Inventories subtracted 2.6 percentage points from first-quarter GDP. Some of this is likely attributed to supply chain disruptions and the global semiconductor shortage. As this fades, businesses will need to replenish inventories, which should be a positive for manufacturing and GDP.

We cut our forecast for GDP growth in 2022 from 5.3% to 4.8%. Risks to the forecast are weighted to the upside because of the lack of inventory build this year. The global semiconductor shortage bit into inventories during the first quarter and will likely continue to do so through the remainder of this year. Inventories lend a downside risk to our forecast for GDP this year but are an upside for 2022 and 2023. There is the potential that supply issues become a big problem, particularly for autos. Auto industrial production is trailing sales. Therefore, inventories could continue to decline. We did not make any changes to our forecast for the change in private inventories over the next few years, but this might need to be revisited as lean inventories need to be replenished, and that could add more to GDP growth next year than expected.

The consensus has begun to catch up with our forecast for this year, but we remain higher. The Bloomberg consensus is for real GDP to rise 6.3% this year. The range of forecasts for GDP growth this year is 2.2% to 8%. Our May baseline also has GDP growth stronger than the consensus for next year. The median estimate is for GDP to rise 4% in 2022 and the range is from 2% to 6.1%.

The May forecast has real GDP surpassing its pre-COVID-19 level next quarter. The official forecast is for GDP to rise 10.6% at an annualized rate in the second quarter. However, the first estimate from our high-frequency GDP model, separate from our official forecast, is for GDP to rise 13% at an annualized rate, after increasing 6.4% at an annualized rate during the prior three months. As a reminder, the high-frequency GDP model was constructed via the bean-counter approach. As source data are released, the model's estimate becomes more reliable.

Employment forecast

The May baseline incorporates the April employment report, which showed the unemployment rate rose from 6% to 6.1%. However, we have turned more optimistic about the path for the unemployment rate. The forecast is for the unemployment rate to fall faster than in the prior baseline because of stronger job growth over the next few years.

The unemployment rate is expected to average 4.5% in the fourth quarter, the same as in the April baseline and lower than the Bloomberg consensus of 4.8%. However, we now look for the unemployment rate to average 3.5% in the fourth quarter of 2022, 40 basis points lower than in the April baseline. The unemployment rate averages 3.5% in the fourth quarter of 2023, compared with the 3.8% in the April baseline.

We now look for growth in nonfarm employment to increase by an average of 503,000 this year, similar to the April baseline. Risks to the forecast are roughly balanced. The lesson from April is that job growth might be spread out more evenly through the rest of this year. The expansion of unemployment insurance benefits ends in September, which should help ease some of the labor supply issues. Also, we still anticipate that herd resilience will be achieved this summer, which will be key for labor supply. Roughly half of the drop in the labor force is because of people not searching for work because of the pandemic.

Employment recoups all of the decline from the recession in the third quarter of 2022, three months sooner than in the prior baseline. However, there will still be an employment gap. Had the recession not occurred and trend job growth remained at 200,000 at the time, employment in the first half of 2023 will still be millions lower than this counterfactual level.

Business investment and housing

The forecast for real business equipment spending was revised upward for this year, reflecting the new data for the first quarter. There were few revisions to real business equipment spending over the next several years. Real nonresidential structures spending is now expected to decline by less than in the April baseline, but the contours of the forecast after this year did not change appreciably. We still expect an increase in nonresidential structures investment next year, rising around 20%, but this reverses little of the decline that has occurred since the pandemic began.

We did not make any significant changes to our forecast for nonresidential structures investment over the next couple of years. The commercial price index is now expected to rise nearly 4% this year, compared with the 2% decline in the April baseline. The change to the forecast reflects the incoming data that have been stronger than anticipated. Prices are expected to be little changed next year and resume rising in 2023.

The outlook for house prices was unrevised for this year but lowered for the years from 2022 to 2025, as housing supply is expected to catch up with demand. The forecast for new-home sales was revised higher over the next few years because of the stronger rebound in March after weather weighed on sales in February. Also, fundamentals are still supportive for housing demand. Mortgage rates are low, and demographics are turning increasingly favorable. There are about 39 million people who are age 26 to 34, or 12.5% of the total U.S. population, which suggests a noticeable tailwind for demand, as the average age of a first-time homebuyer is in their early 30s.

Inflation and the Fed

We did not make notable changes to the forecast for growth in the core personal consumption expenditure deflator over the next few years. We still anticipate that it will run above the Fed's 2% objective by 20 basis points this quarter, but price pressures moderate in the second half of this year. The forecast still assumes a transitory acceleration in the core personal consumption expenditure deflator in the second quarter because of favorable year-over-year comparisons and supply chain disruptions. Higher commodity and energy prices will also boost inflation this quarter, with the latter bleeding into core prices via higher transportation costs. We expect year-over-year growth in the core personal consumption expenditure deflator in 2022 and 2023 to be weaker than in the April baseline.

There were no changes to our assumptions about monetary policy. The Fed is unlikely to announce its plans about tapering its monthly asset purchases until late this year. Actual tapering will likely occur in the first half of 2022. The Fed is still expected to raise the target range for the fed funds rate in the first quarter of 2023. The pace of tightening is identical to that in the April baseline, but risks are weighted toward a more gradual pace of tightening.

The Fed will aim for inflation to exceed its 2% objective. How large of an overshoot is allowed before liftoff will also be important in gauging the pace of tightening. If the Fed allows a larger overshoot, then the pace of tightening will likely be similar to a traditional tightening cycle, 25 basis points per quarter, because inflation should continue to accelerate even after the first rate hike. If the Fed does not allow too much of an overshoot, then the tightening cycle will be less aggressive.

There were no significant changes to the forecast for the 10-year U.S. Treasury yield. The forecast is for the 10-year Treasury yield to end this year around 2% and reach just shy of 2.5% next year.

We have revised the forecast higher for the Dow Jones Industrial Average because of the fiscal stimulus and acceleration in corporate profits. Stock prices are forecast to rise by 3.3% more over the course of 2021 compared with the April baseline.

Risks to the stock market forecast for this year are weighted to the downside. Biden is seeking to increase the capital gains tax rate from 20% to 39.6% for those earning more than $1 million. The size of the increase is still up for debate, but a rise will have some implications for U.S. equity markets based on past experiences. Equity prices will likely drop ahead of the effective date of the capital gains tax rate as people realize their capital gains before the higher rate is implemented. We saw this at the end of 1986 and 2012 ahead of the January 1 increases in 1987 and 2013. However, this is a one-off adjustment, as after the capital gains tax became effective in 1987 and 2013, equity prices resumed climbing. Because the proposed capital tax increase reverses only some of its prior decline, it is unlikely to weigh on investors' attitude toward equities, particularly if U.S. Treasury yields remain low and equity risk premiums remain high.

U.S. MACRO BASELINE FORECAST SUMMARY										
	Units	21Q2	21Q3	21Q4	22Q1	2021	2022	2023	2024	2025
Gross Domestic Product	bcw$	19,574.7	19,866.7	20,184.0	20,437.9	19,678.2	20,625.9	21,114.7	21,722.0	22,271.6
Change	%AR	*10.6*	*6.1*	*6.5*	*5.1*	*6.8*	*4.8*	*2.4*	*2.9*	*2.5*
Federal Budget	$ bil	-890.4	-703.6	-432.3	-555.2	-3,159.6	-1,789.2	-1,775.2	-1,430.8	-1,375.3
Total Employment	mil	144.9	146.9	148.7	150.0	145.9	151.4	153.9	155.1	155.7
Change	%AR	*4.3*	*5.6*	*5.0*	*3.7*	*2.6*	*3.7*	*1.7*	*0.8*	*0.4*
Unemployment Rate	%	5.9	5.2	4.5	4.0	5.4	3.7	3.5	3.6	4.0
Light Vehicle Sales	mil, SAAR	17.6	17.0	17.5	17.7	17.2	17.7	17.5	17.0	16.9
Residential Housing Starts	mil, SAAR	1.75	1.77	1.80	1.86	1.73	1.90	1.97	1.98	1.93
Median Existing-Home Price	$ ths	350.0	348.5	347.1	345.6	344.7	346.2	354.1	363.0	372.3
Change	%YA	*24.6*	*13.8*	*8.0*	*3.7*	*15.3*	*0.4*	*2.3*	*2.5*	*2.6*
Consumer Price Index	%AR	2.5	2.8	2.6	2.3	2.7	2.4	2.3	2.3	2.3
Federal Funds Rate	%	0.1	0.1	0.1	0.1	0.1	0.1	0.5	1.5	2.4
Treasury Yield: 10-Yr Bond	%	1.69	1.88	2.05	2.19	1.74	2.30	2.77	3.37	3.73
Baa Corp. - 10-Yr Treasury	DIFF	2.0	2.1	2.3	2.4	2.1	2.5	2.6	2.6	2.5
Corporate Profits With IVA & CCA	$ bil	2,376.3	2,341.4	2,334.5	2,357.2	2,356.1	2,422.3	2,575.5	2,666.4	2,784.3
Change	%YA	*30.1*	*0.7*	*1.8*	*-0.6*	*11.1*	*2.8*	*6.3*	*3.5*	*4.4*
S&P 500	1941=10	4,104.5	4,074.0	4,010.4	3,954.9	4,012.8	3,869.8	3,764.1	3,836.7	4,059.1
Change	%YA	*40.1*	*22.7*	*12.8*	*2.4*	*24.7*	*-3.6*	*-2.7*	*1.9*	*5.8*
CRE Price Index	index	292.4	289.4	286.4	287.7	286.4	302.9	329.7	353.1	364.0
NCREIF Property Index: Rate of Return	%, NSA	2.5	3.0	2.8	3.7	2.5	2.6	2.1	2.8	2.6
C&I Loans Outstanding	$ bil	2613.5	2653.7	2769.0	2959.8	2658.2	3147.7	3473.7	3645.3	3809.9
BAA spread	%	2.0	2.1	2.3	2.4	2.1	2.5	2.6	2.6	2.5

S0: Alternative Scenario 0 – Upside – 4th Percentile

This above-baseline scenario is designed so that there is a 4% probability that the economy will perform better than in this scenario, broadly speaking, and a 96% probability that it will perform worse.

Key assumptions/risks

- New cases, hospitalizations and deaths from COVID-19 recede quickly, allowing businesses to reopen rapidly, and widespread availability of vaccines contribute to faster than expected achievement of herd resiliency.
- The additional fiscal stimulus boosts overall economic activity more than expected.
- Consumer confidence rises faster than expected, and spending on air travel, retail and hotels accelerate more rapidly.
- The stronger economy results in steadily declining unemployment and consequently fewer business bankruptcies.
- Although inflation and long-term interest rates rise more than in the baseline, financial markets do not become alarmed, and equity prices continue to appreciate.
- Political and economic tensions between the U.S. and China diminish substantially.
- The economy returns to full employment by the third quarter of 2021.

Epidemiological assumptions

- 33.1 million confirmed cases.
- New infections peaked in January.
- 1.79% confirmed case fatality rate.
- 3.47% hospitalization rate.
- 0.63% ICU use rate.
- 0.21% ventilator use rate.
- Infections abate in May.
- Herd resiliency in July.

Monetary policy assumptions

- The Fed begins to raise the target range for the fed funds rate in the fourth quarter of 2022, three months earlier than in the baseline.
- Tapering of quantitative easing begins in the third quarter of 2021, causing the long-term Treasury yield to rise above 2%, which is well above the baseline.

Fiscal policy assumptions

- The American Rescue Plan Act stimulus of $1.9 trillion was enacted in March, composed of stimulus checks, enhanced unemployment benefits, public health spending, tax credits, and aid to state and local governments. This is deficit-financed.
- Build Back Better program of $2 trillion in additional spending over 10 years on infrastructure and $1 trillion on a range of social programs, including education, healthcare, housing, and child and elder care.
- Passage is assumed in the fourth quarter of 2021. Financing will include tax increases amounting to $1 trillion on corporate profits and $500 billion on high-income individuals.

The upside scenario "S0: Alternative Scenario 0 – Upside – 4th Percentile" is based on the assumption that new COVID-19 cases, hospitalizations and deaths recede faster than expected, and the wide availability of vaccines contributes to the achievement of herd resiliency.

The full removal of travel, business and other restrictions occurs earlier than anticipated. Businesses rapidly return to operation throughout the country and the unemployment rate drops. The additional stimulus has larger benefits on consumer spending and GDP growth. Business sentiment and consumer confidence rebound significantly, causing consumer spending and business investment growth to accelerate. The return to strong gains in U.S. employment cause wage rates to rise, lifting household incomes and spending more than expected. House prices rise by 8.2% over the course of 2021, compared with a 4.1% rise in the baseline.

The rapid resolution of the pandemic and the stronger U.S. growth also help the euro zone's economy to recover more quickly than in the baseline. A stronger euro zone economy boosts U.S. exports and business investment.

In the energy market, OPEC stabilizes oil supply, and stronger than expected global growth raises demand for oil, pushing the price of Brent crude oil to $75 per barrel by the third quarter of 2021, compared with the mid-$60s range in the baseline. This stimulates increased energy exploration and gains in related

manufacturing industries such as steel, rigs and energy-related equipment. Political and economic tensions between the U.S. and China diminish amid the rebounding global economy.

The 10-year Treasury yield rises more than in the baseline, to more than 2% in the third quarter of 2021. One factor is the Fed is expected to begin tapering its monthly asset purchases sooner than in the baseline. However, financial markets are not alarmed and the stock market continues to rise. The Fed begins to slowly raise the federal funds rate in mid-2022, three months earlier than in the baseline, but the slow rise keeps the economy far stronger than in the baseline.

Stronger U.S. GDP growth results in additional hiring compared with the baseline and the unemployment rate declines, returning to a full-employment rate by the third quarter of 2021. Over time, the increase in capital per worker resulting from higher investment generates significant, persistent additional growth in labor productivity, leading to above-baseline levels of output in the long term.

Real GDP growth is higher than in the baseline over the next two years. On an annual average basis, the change in real GDP is 8% in 2021 and 8.5% in 2022, compared with 6.8% and 4.8%, respectively, in the baseline.

U.S. MACRO S0 SCENARIO—DIFFERENCE FROM BASELINE										
	Units	21Q2	21Q3	21Q4	22Q1	2021	2022	2023	2024	2025
Gross Domestic Product	bcw$	0.0	338.3	554.8	757.5	223.3	958.8	863.3	701.5	657.9
Change	%AR	*0.0*	*7.4*	*4.5*	*4.0*	*1.2*	*3.6*	*-0.5*	*-0.8*	*-0.3*
Federal Budget	$ bil	-0.0	32.6	53.3	59.0	85.9	299.5	361.9	356.0	333.3
Total Employment	mil	0.0	0.9	1.6	2.0	0.6	2.3	2.5	2.6	2.6
Change	%AR	*0.0*	*2.6*	*1.9*	*1.2*	*0.4*	*1.1*	*0.1*	*0.0*	*0.0*
Unemployment Rate	%	0.0	-0.8	-1.3	-1.2	-0.5	-1.2	-1.0	-0.8	-0.6
Light Vehicle Sales	mil, SAAR	0.0	0.8	1.0	1.1	0.5	1.2	1.2	1.2	1.0
Residential Housing Starts	mil, SAAR	0.00	0.12	0.21	0.25	0.08	0.26	0.26	0.32	0.22
Median Existing-Home Price	$ ths	-0.0	9.3	14.5	19.7	6.0	25.9	35.0	35.9	36.7
Change	%YA	*-0.0*	*3.0*	*4.5*	*5.9*	*2.0*	*5.7*	*2.3*	*-0.0*	*-0.0*
Consumer Price Index	%AR	0.0	2.2	1.3	1.5	0.4	1.4	0.7	-0.0	0.0
Federal Funds Rate	%	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.4	0.0
Treasury Yield: 10-Yr Bond	%	0.00	0.48	0.64	0.76	0.28	0.78	0.67	0.45	0.27
Baa Corp. - 10-Yr Treasury	DIFF	0.0	-0.2	-0.4	-0.4	-0.1	-0.3	-0.2	-0.1	0.0
Corporate Profits With IVA & CCA	$ bil	0.0	99.5	147.1	173.9	61.6	223.0	314.5	345.3	368.3
Change	%YA	*0.0*	*4.3*	*6.4*	*7.3*	*2.9*	*6.6*	*2.9*	*0.7*	*0.3*
S&P 500	1941=10	-0.0	303.6	546.1	682.3	212.4	743.2	859.3	873.0	793.3
Change	%YA	*-0.0*	*9.1*	*15.4*	*17.7*	*6.6*	*12.7*	*3.0*	*-0.1*	*-2.8*
CRE Price Index	index	0.0	2.0	7.3	15.3	7.3	32.4	32.7	30.9	26.2
NCREIF Property Index: Rate of Return	%, NSA	0.0	0.7	3.7	2.5	1.1	2.2	-0.3	-0.4	-0.3
C&I Loans Outstanding	$ bil	0.0	37.2	83.4	157.3	30.2	240.2	395.4	414.1	420.4
BAA spread	%	0.0	-0.2	-0.4	-0.4	-0.1	-0.3	-0.2	-0.1	0.0

U.S. MACRO S0 SCENARIO—FORECAST SUMMARY										
	Units	21Q2	21Q3	21Q4	22Q1	2021	2022	2023	2024	2025
Gross Domestic Product	bcw$	19,574.7	20,205.0	20,738.9	21,195.4	19,901.5	21,584.6	21,978.0	22,423.5	22,929.5
Change	%AR	*10.6*	*13.5*	*11.0*	*9.1*	*8.0*	*8.5*	*1.8*	*2.0*	*2.3*
Federal Budget	$ bil	-890.4	-671.1	-379.0	-496.1	-3,073.7	-1,489.8	-1,413.4	-1,074.8	-1,042.0
Total Employment	mil	144.9	147.7	150.2	152.0	146.5	153.6	156.4	157.7	158.3
Change	%AR	*4.3*	*8.2*	*6.9*	*4.8*	*3.0*	*4.8*	*1.8*	*0.8*	*0.4*
Unemployment Rate	%	5.9	4.3	3.2	2.8	4.9	2.5	2.5	2.8	3.4
Light Vehicle Sales	mil, SAAR	17.6	17.8	18.5	18.8	17.7	18.9	18.7	18.1	17.9
Residential Housing Starts	mil, SAAR	1.75	1.89	2.01	2.11	1.82	2.16	2.23	2.31	2.15
Median Existing-Home Price	$ ths	350.0	357.8	361.6	365.3	350.7	372.1	389.2	398.9	409.0
Change	%YA	*24.6*	*16.8*	*12.5*	*9.6*	*17.3*	*6.1*	*4.6*	*2.5*	*2.5*
Consumer Price Index	%AR	2.5	5.1	3.9	3.8	3.1	3.9	3.0	2.3	2.3
Federal Funds Rate	%	0.1	0.1	0.1	0.1	0.1	0.2	0.9	1.8	2.4
Treasury Yield: 10-Yr Bond	%	1.69	2.36	2.69	2.95	2.02	3.08	3.45	3.82	4.00
Baa Corp. - 10-Yr Treasury	DIFF	2.0	1.9	1.9	2.0	2.0	2.2	2.4	2.5	2.5
Corporate Profits With IVA & CCA	$ bil	2,376.3	2,440.8	2,481.7	2,531.1	2,417.7	2,645.3	2,890.0	3,011.7	3,152.6
Change	%YA	*30.1*	*4.9*	*8.2*	*6.7*	*14.0*	*9.4*	*9.2*	*4.2*	*4.7*
S&P 500	1941=10	4,104.5	4,377.6	4,556.4	4,637.3	4,225.3	4,613.1	4,623.4	4,709.7	4,852.4
Change	%YA	*40.1*	*31.8*	*28.2*	*20.1*	*31.3*	*9.2*	*0.2*	*1.9*	*3.0*
CRE Price Index	index	292.4	291.4	293.7	303.1	293.7	335.3	362.4	384.0	390.2
NCREIF Property Index: Rate of Return	%, NSA	2.5	3.7	6.5	6.2	3.6	4.8	1.8	2.5	2.3
C&I Loans Outstanding	$ bil	2613.5	2691.0	2852.4	3117.1	2688.4	3387.8	3869.1	4059.4	4230.4
BAA spread	%	2.0	1.9	1.9	2.0	2.0	2.2	2.4	2.5	2.5

S1: Alternative Scenario 1 – Upside – 10th Percentile

This above-baseline scenario is designed so that there is a 10% probability that the economy will perform better than in this scenario, broadly speaking, and a 90% probability that it will perform worse.

Key assumptions/risks

- New cases, hospitalizations and deaths from COVID-19 recede at a faster pace than in the baseline, allowing businesses to reopen sooner, and widespread availability of vaccines accelerates the achievement of herd resiliency.
- The fiscal stimulus boosts the economy more than expected.
- Consumer confidence rises above the baseline, and spending on air travel, retail and hotels accelerates sooner than anticipated.
- The above-baseline growth results in steadily declining unemployment and consequently fewer business bankruptcies.
- Although inflation and long-term interest rates rise more than in the baseline, financial markets do not become alarmed, and the stock market continues to rise.
- Political and economic tensions between the U.S. and China decline amid the positive outcomes.
- The economy returns to full employment by the fourth quarter of 2021.

Epidemiological assumptions

- 33.7 million confirmed cases.
- New infections peaked in January.
- 1.79% confirmed case fatality rate.
- 3.47% hospitalization rate.
- 0.63% ICU use rate.
- 0.21% ventilator use rate.
- Infections abate in June.
- Herd resiliency in July.

Monetary policy assumptions

- The Fed begins to raise the target range for the fed funds rate in the fourth quarter of 2022, a quarter earlier than in the baseline.
- Tapering of quantitative easing begins in the fourth quarter of 2021, earlier than in the baseline, causing the long-term Treasury yield to rise above 2%.

Fiscal policy assumptions

- American Rescue Plan Act stimulus of $1.9 trillion enacted in March, composed of stimulus checks, enhanced unemployment benefits, public health spending, tax credits, and aid to state and local governments. This is deficit-financed.
- Build Back Better program of $2 trillion in additional spending over 10 years on infrastructure and $1 trillion on a range of social programs, including education, healthcare, housing, and child and elder care.
- Passage is assumed in the fourth quarter of 2021. Financing will include tax increases amounting to $1 trillion on corporate profits and $500 billion on high-income individuals.

The upside scenario "S1: Alternative Scenario 1 – Upside – 10th Percentile" is based on the assumption that coronavirus cases, hospitalizations and deaths diminish quickly and the wide availability of vaccines enables herd resiliency to be achieved faster than expected. As a result, the full removal of travel and business restrictions proceeds somewhat faster than in the baseline. More businesses quickly return to full operation, and the unemployment rate drops.

The additional stimulus boosts the economy more than expected in 2021. As a result, consumer sentiment and spending accelerate rapidly. Also, nonresidential investment increases more quickly and adds to growth in real GDP. The return to strong gains in U.S. employment causes wages to rise, lifting household incomes and spending more than expected. House prices rise by 6.2% over the course of 2021, compared with 4.1% in the baseline.

The sooner than expected easing of the pandemic also occurs in Europe and the above-average U.S. growth helps the region to recover faster than expected. As a result of the higher European demand, U.S. exports and investment increase. Further, OPEC effectively controls oil supply, and better than expected global growth supports demand, pushing the price of Brent crude oil above $70 per barrel by the third quarter of 2021. In turn, energy exploration and gains in related manufacturing industries such as steel for rigs and equipment strengthen again.

The 10-year Treasury yield rises higher than in the baseline, to more than 2%

by the fourth quarter of 2021, as the Fed tapers quantitative easing sooner than expected amid the stronger growth. However, financial markets are not alarmed, and the stock market keeps rising. The Fed begins to slowly raise the federal funds rate at the end of 2022, one quarter earlier than in the baseline, but the gradual increase allows the rebound to continue to be faster than in the baseline.

The stronger near-term growth in real GDP results in additional hiring, and the unemployment rate declines back to a full-employment rate by the third quarter of 2021. As business investment grows, rising capital per worker boosts growth in labor productivity, leading to above-baseline levels of output in the long term.

Real GDP growth is higher than in the baseline in 2021. On an annual average basis, the change in real GDP is 7.3% in 2021 and 6.5% in 2022, versus 6.8% and 4.8%, respectively, in the baseline.

U.S. MACRO S1 SCENARIO—DIFFERENCE FROM BASELINE										
	Units	21Q2	21Q3	21Q4	22Q1	2021	2022	2023	2024	2025
Gross Domestic Product	bcw$	0.0	119.4	258.4	378.1	94.4	437.5	244.1	141.7	184.1
Change	%AR	*0.0*	*2.6*	*2.9*	*2.4*	*0.5*	*1.7*	*-1.0*	*-0.5*	*0.2*
Federal Budget	$ bil	-0.0	14.3	29.0	39.1	43.3	183.7	213.3	209.8	194.6
Total Employment	mil	0.0	0.4	0.9	1.2	0.3	1.4	1.4	1.4	1.4
Change	%AR	*0.0*	*1.1*	*1.5*	*0.8*	*0.2*	*0.7*	*0.0*	*0.0*	*-0.0*
Unemployment Rate	%	0.0	-0.2	-0.5	-0.8	-0.2	-0.7	-0.5	-0.5	-0.4
Light Vehicle Sales	mil, SAAR	0.0	0.5	0.6	0.8	0.3	0.7	0.7	0.8	0.8
Residential Housing Starts	mil, SAAR	0.00	0.07	0.12	0.15	0.05	0.15	0.16	0.19	0.11
Median Existing-Home Price	$ ths	-0.0	4.7	7.3	10.2	3.0	12.8	14.7	15.1	15.5
Change	%YA	*-0.0*	*1.5*	*2.3*	*3.1*	*1.0*	*2.8*	*0.5*	*-0.0*	*-0.0*
Consumer Price Index	%AR	0.0	1.5	1.0	1.1	0.2	0.7	0.0	-0.0	-0.0
Federal Funds Rate	%	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.0
Treasury Yield: 10-Yr Bond	%	0.00	0.07	0.23	0.24	0.07	0.29	0.35	0.13	0.02
Baa Corp. - 10-Yr Treasury	DIFF	0.0	-0.1	-0.3	-0.3	-0.1	-0.2	-0.1	-0.1	0.0
Corporate Profits With IVA & CCA	$ bil	0.0	91.2	127.0	149.7	54.6	177.5	213.2	212.3	221.7
Change	%YA	*0.0*	*3.9*	*5.5*	*6.3*	*2.6*	*5.0*	*0.9*	*-0.3*	*-0.0*
S&P 500	1941=10	-0.0	221.4	440.6	545.9	165.5	555.9	637.1	620.9	534.2
Change	%YA	*-0.0*	*6.7*	*12.4*	*14.1*	*5.1*	*9.5*	*2.2*	*-0.6*	*-2.8*
CRE Price Index	index	0.0	1.3	3.5	7.4	3.5	16.4	14.1	13.7	12.3
NCREIF Property Index: Rate of Return	%, NSA	0.0	0.3	1.8	1.9	0.5	1.1	-0.6	-0.2	-0.0
C&I Loans Outstanding	$ bil	0.0	25.1	51.0	97.3	19.0	124.9	151.9	159.4	166.6
BAA spread	%	0.0	-0.1	-0.3	-0.3	-0.1	-0.2	-0.1	-0.1	0.0

U.S. MACRO S1 SCENARIO—FORECAST SUMMARY										
	Units	21Q2	21Q3	21Q4	22Q1	2021	2022	2023	2024	2025
Gross Domestic Product	bcw$	19,574.7	19,986.1	20,442.4	20,816.1	19,772.7	21,063.4	21,358.8	21,863.8	22,455.7
Change	%AR	*10.6*	*8.7*	*9.5*	*7.5*	*7.3*	*6.5*	*1.4*	*2.4*	*2.7*
Federal Budget	$ bil	-890.4	-689.3	-403.3	-516.0	-3,116.3	-1,605.5	-1,561.9	-1,221.0	-1,180.7
Total Employment	mil	144.9	147.2	149.6	151.2	146.3	152.7	155.3	156.6	157.2
Change	%AR	*4.3*	*6.7*	*6.5*	*4.5*	*2.8*	*4.4*	*1.7*	*0.8*	*0.4*
Unemployment Rate	%	5.9	5.0	4.0	3.2	5.3	3.0	3.0	3.1	3.6
Light Vehicle Sales	mil, SAAR	17.6	17.5	18.1	18.5	17.5	18.5	18.2	17.7	17.7
Residential Housing Starts	mil, SAAR	1.75	1.83	1.92	2.01	1.78	2.05	2.13	2.17	2.04
Median Existing-Home Price	$ ths	350.0	353.2	354.4	355.9	347.7	359.0	368.9	378.1	387.8
Change	%YA	*24.6*	*15.3*	*10.3*	*6.8*	*16.3*	*3.2*	*2.8*	*2.5*	*2.6*
Consumer Price Index	%AR	2.5	4.4	3.6	3.4	3.0	3.1	2.3	2.3	2.3
Federal Funds Rate	%	0.1	0.1	0.1	0.1	0.1	0.1	0.8	1.8	2.4
Treasury Yield: 10-Yr Bond	%	1.69	1.95	2.28	2.43	1.81	2.59	3.13	3.49	3.75
Baa Corp. - 10-Yr Treasury	DIFF	2.0	2.0	2.0	2.1	2.0	2.3	2.5	2.5	2.5
Corporate Profits With IVA & CCA	$ bil	2,376.3	2,432.6	2,461.5	2,506.9	2,410.6	2,599.8	2,788.6	2,878.8	3,006.0
Change	%YA	*30.1*	*4.6*	*7.3*	*5.7*	*13.7*	*7.8*	*7.3*	*3.2*	*4.4*
S&P 500	1941=10	4,104.5	4,295.4	4,451.0	4,500.8	4,178.3	4,425.8	4,401.2	4,457.6	4,593.3
Change	%YA	*40.1*	*29.3*	*25.2*	*16.5*	*29.8*	*5.9*	*-0.6*	*1.3*	*3.0*
CRE Price Index	index	292.4	290.8	289.9	295.2	289.9	319.3	343.8	366.8	376.4
NCREIF Property Index: Rate of Return	%, NSA	2.5	3.3	4.6	5.6	3.0	3.7	1.6	2.7	2.6
C&I Loans Outstanding	$ bil	2613.5	2678.9	2820.0	3057.1	2677.2	3272.6	3625.6	3804.7	3976.5
BAA spread	%	2.0	2.0	2.0	2.1	2.0	2.3	2.5	2.5	2.5

S2: Alternative Scenario 2 – Downside – 75th Percentile

In this scenario, there is a 75% probability that the economy will perform better, broadly speaking, and a 25% probability that it will perform worse.

Key assumptions/risks

- New cases, hospitalizations and deaths from COVID-19 diminish more slowly than anticipated, delaying the reopening of some businesses in some areas of the country.
- Fewer people than expected agree to receive the vaccines, delaying achievement of herd resiliency, and concerns about resistant strains rise.
- As a result, consumers are slower to return to spending on air travel, retail and hotels than in the baseline.
- The stimulus is less effective than expected because of the slower consumer spending. More of the funds end up in savings and thus fiscal multipliers are smaller than assumed in the baseline.
- Unemployment begins to increase again in the third quarter of 2021.
- The elevated stock price-to-earnings ratio amid rising unemployment causes the stock market to fall.
- The economy returns to full employment more slowly than in the baseline, by the fourth quarter of 2022.

Epidemiological assumptions

- 46.6 million confirmed cases.
- New infections peaked in January.
- 1.77% confirmed case fatality rate.
- 3.47% hospitalization rate.
- 0.63% ICU use rate.
- 0.21% ventilator use rate.
- Infections abate in October.
- Herd resiliency in July.

Monetary policy assumptions

- The Fed keeps the federal funds rate near 0% until the second quarter of 2024, a year later than in the baseline.
- The Fed manages the long-term Treasury yield to prevent the 10-year Treasury yield from rising above 2% throughout 2021 and 2022.

Fiscal policy assumptions

- American Rescue Plan Act stimulus of $1.9 trillion was enacted in March, composed of stimulus checks, enhanced unemployment benefits, public health spending, tax credits, and aid to state and local governments. This is deficit-financed.
- Build Back Better program of $1.5 trillion in additional spending over 10 years on infrastructure and $750 million on a range of social programs, including education, healthcare, housing, and child and elder care. The $1.5 trillion and $750 million figures are 25% less than in the baseline because of disagreements in Congress.
- Passage is assumed in the fourth quarter of 2021. Financing will include tax increases amounting to $1 trillion on corporate profits and $500 billion on high-income individuals.

In the downside 25% scenario "S2: Alternative Scenario 2 – Downside – 75th Percentile," new infections, hospitalizations and deaths recede more slowly than in the baseline. Further, fewer people than expected are willing to be vaccinated, delaying the achievement of herd resiliency. Concerns rise about resistant strains.

As a result, some businesses reopen more slowly, and consumers remain reluctant to spend on air travel, retail and hotels. The stimulus is less effective than expected, causing real consumer spending to rise less than in the baseline. This occurs as consumers save more of the economic payments.

Consequently, the unemployment rate rises starting in the third quarter of 2021 and reaches a peak of 6.6% in the fourth quarter of 2021. Concerns about the elevated stock valuations amid rising unemployment cause equity prices to fall more than in the baseline. House prices rise by 2.7% over the course of 2021, compared with 4.1% in the baseline.

The recovery follows a similarly slower path in Europe, with a slower than expected rebound in travel, hospitality and retail. Lower than expected European growth reduces U.S. exports to Europe. Additionally, despite the OPEC agreement over oil supply, the slower recovery in demand causes oil prices to fall back to the mid-$50 per barrel range by the end of 2021, compared with

the mid-$60 range in the baseline. This lowers the pace of the recovery in U.S. energy-related investment.

The Fed keeps the target range for the fed funds rate near 0% until the second quarter of 2024, more than a year longer than in the baseline.

Growth in real GDP, on an annual average basis, in this scenario is 6.2% in 2021 and 2.9% in 2022, compared with 6.8% and 4.8%, respectively, in the baseline. Reduced business investment lowers productivity so that the level of real GDP remains below the baseline indefinitely.

U.S. MACRO S2 SCENARIO—DIFFERENCE FROM BASELINE										
	Units	21Q2	21Q3	21Q4	22Q1	2021	2022	2023	2024	2025
Gross Domestic Product	bcw$	0.0	-139.1	-317.6	-440.4	-114.2	-489.1	-503.9	-467.1	-440.2
Change	%AR	*0.0*	*-2.9*	*-3.7*	*-2.5*	*-0.6*	*-1.9*	*-0.0*	*0.2*	*0.2*
Federal Budget	$ bil	-0.0	-20.2	-36.7	-37.0	-56.9	-142.0	-96.3	-22.2	6.3
Total Employment	mil	0.0	-2.1	-4.1	-4.7	-1.6	-4.1	-4.2	-3.8	-3.0
Change	%AR	*0.0*	*-6.0*	*-5.5*	*-1.3*	*-1.1*	*-1.7*	*-0.0*	*0.3*	*0.5*
Unemployment Rate	%	0.0	1.2	2.2	2.2	0.8	1.4	1.0	0.7	0.1
Light Vehicle Sales	mil, SAAR	0.0	-0.9	-1.2	-1.5	-0.5	-1.2	-0.7	-0.5	-0.4
Residential Housing Starts	mil, SAAR	0.00	-0.06	-0.13	-0.17	-0.05	-0.19	-0.22	-0.02	0.09
Median Existing-Home Price	$ ths	-0.0	-3.7	-5.0	-5.9	-2.2	-6.5	-6.9	-7.0	-7.2
Change	%YA	*-0.0*	*-1.2*	*-1.5*	*-1.8*	*-0.7*	*-1.3*	*-0.1*	*0.0*	*0.0*
Consumer Price Index	%AR	0.0	-1.6	-1.6	-0.7	-0.3	-0.7	-0.1	0.1	0.0
Federal Funds Rate	%	0.0	0.0	-0.0	-0.0	-0.0	-0.0	-0.4	-0.6	-0.0
Treasury Yield: 10-Yr Bond	%	0.00	-0.01	-0.15	-0.26	-0.04	-0.46	-0.51	-0.12	0.00
Baa Corp. - 10-Yr Treasury	DIFF	0.0	0.0	0.1	0.1	0.0	0.1	0.0	-0.0	0.0
Corporate Profits With IVA & CCA	$ bil	0.0	-34.0	-52.6	-63.7	-21.6	-68.3	-59.0	-50.2	-58.0
Change	%YA	*0.0*	*-1.5*	*-2.3*	*-2.7*	*-1.0*	*-2.0*	*0.6*	*0.4*	*-0.2*
S&P 500	1941=10	-0.0	-58.9	-62.0	-65.7	-30.2	-74.2	-81.4	-103.8	-146.6
Change	%YA	*-0.0*	*-1.8*	*-1.7*	*-1.7*	*-0.9*	*-1.1*	*-0.2*	*-0.6*	*-1.0*
CRE Price Index	index	0.0	-1.3	-6.9	-15.6	-6.9	-24.9	-19.3	-17.6	-6.5
NCREIF Property Index: Rate of Return	%, NSA	0.0	-0.9	-2.3	-2.2	-0.8	-1.1	0.0	0.3	0.3
C&I Loans Outstanding	$ bil	0.0	-54.9	-68.8	-88.4	-30.9	-99.1	-100.4	-76.2	-70.9
BAA spread	%	0.0	0.0	0.1	0.1	0.0	0.1	0.0	-0.0	0.0

U.S. MACRO S2 SCENARIO—FORECAST SUMMARY										
	Units	21Q2	21Q3	21Q4	22Q1	2021	2022	2023	2024	2025
Gross Domestic Product	bcw$	19,574.7	19,727.6	19,866.4	19,997.6	19,564.1	20,136.8	20,610.8	21,254.9	21,831.4
Change	%AR	*10.6*	*3.2*	*2.8*	*2.7*	*6.2*	*2.9*	*2.4*	*3.1*	*2.7*
Federal Budget	$ bil	-890.4	-723.9	-469.0	-592.1	-3,216.6	-1,931.2	-1,871.5	-1,453.0	-1,368.9
Total Employment	mil	144.9	144.7	144.5	145.3	144.4	147.3	149.7	151.4	152.7
Change	%AR	*4.3*	*-0.4*	*-0.5*	*2.3*	*1.5*	*2.0*	*1.6*	*1.1*	*0.9*
Unemployment Rate	%	5.9	6.3	6.6	6.2	6.3	5.1	4.5	4.4	4.0
Light Vehicle Sales	mil, SAAR	17.6	16.1	16.3	16.2	16.7	16.5	16.8	16.5	16.5
Residential Housing Starts	mil, SAAR	1.75	1.71	1.67	1.69	1.69	1.72	1.75	1.96	2.02
Median Existing-Home Price	$ ths	350.0	344.8	342.1	339.7	342.5	339.7	347.3	356.0	365.2
Change	%YA	*24.6*	*12.6*	*6.5*	*1.9*	*14.6*	*-0.8*	*2.2*	*2.5*	*2.6*
Consumer Price Index	%AR	2.5	1.2	1.0	1.6	2.4	1.8	2.3	2.4	2.4
Federal Funds Rate	%	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.9	2.3
Treasury Yield: 10-Yr Bond	%	1.69	1.87	1.90	1.93	1.70	1.84	2.26	3.25	3.73
Baa Corp. - 10-Yr Treasury	DIFF	2.0	2.1	2.5	2.5	2.2	2.6	2.6	2.6	2.5
Corporate Profits With IVA & CCA	$ bil	2,376.3	2,307.4	2,282.0	2,293.5	2,334.4	2,354.0	2,516.5	2,616.3	2,726.3
Change	%YA	*30.1*	*-0.8*	*-0.5*	*-3.3*	*10.1*	*0.8*	*6.9*	*4.0*	*4.2*
S&P 500	1941=10	4,104.5	4,015.1	3,948.3	3,889.2	3,982.6	3,795.6	3,682.7	3,732.9	3,912.5
Change	%YA	*40.1*	*20.9*	*11.1*	*0.7*	*23.7*	*-4.7*	*-3.0*	*1.4*	*4.8*
CRE Price Index	index	292.4	288.1	279.5	272.1	279.5	278.0	310.5	335.5	357.6
NCREIF Property Index: Rate of Return	%, NSA	2.5	2.1	0.5	1.5	1.7	1.5	2.2	3.1	2.8
C&I Loans Outstanding	$ bil	2613.5	2598.9	2700.2	2871.4	2627.3	3048.6	3373.4	3569.1	3739.1
BAA spread	%	2.0	2.1	2.5	2.5	2.2	2.6	2.6	2.6	2.5

S3: Alternative Scenario 3 – Downside – 90th Percentile

In this scenario, there is a 90% probability that the economy will perform better, broadly speaking, and a 10% probability that it will perform worse.

Key assumptions/risks

- New cases, hospitalizations and deaths from COVID-19 diminish much more slowly than expected, delaying the reopening of many businesses in some areas of the country.
- More people than anticipated refuse to receive the vaccines, significantly delaying achievement of herd resiliency, and worries about resistant strains rise.
- As a result, consumer spending on air travel, retail and hotels declines.
- The stimulus is less effective than expected because of the lower consumer spending. More of the funds end up in savings and thus fiscal multipliers are smaller than assumed in the baseline.
- Unemployment begins to increase again in the third quarter of 2021 and consumer confidence falls.
- The elevated stock price-to-earnings ratio amid rising unemployment causes the stock market to fall sharply.
- Consumer spending drops significantly in the third of 2021, and the economy falls into recession.
- Political and economic tensions with China rise again.
- The economy does not return to full employment until the third quarter of 2026.

Epidemiological assumptions

- 59.1 million confirmed cases.
- New infections peaked in January 2021.
- 1.83% confirmed case fatality rate.
- 3.47% hospitalization rate.
- 0.63% ICU use rate.
- 0.21% ventilator use rate.
- Infections abate in January 2022.
- Herd resiliency in July.

Monetary policy assumptions

- The Fed keeps the target range for the fed funds rate near 0% through the third quarter of 2025.
- To support the economy, the Fed adopts yield curve control or alters its Treasury purchases to put additional downward pressure on the 10-year Treasury yield, which declines back to 1.3% by late 2021 and stays below 2% until 2024.

Fiscal policy assumptions

- Disagreements in Congress prevent any additional fiscal support package beyond the American Rescue Plan Act passed in March.

In the downside 10% scenario "S3: Alternative Scenario 3 – Downside – 90th Percentile," new infections, hospitalizations and deaths from COVID-19 diminish much more slowly than expected. Further, more people than anticipated refuse the vaccines, delaying herd resilience significantly. Additionally, concerns build about the emergence of resistant strains. As a result, some businesses in some parts of the country are much slower to reopen.

Spending on air travel, retail and hotels falls again, and the economy to fall into recession in the third quarter of 2021. The unemployment rate starts to rise again. The combination of rising joblessness and elevated stock market valuations causes financial markets to sell off and stock prices fall sharply. The decline in consumer spending deepens because of the negative wealth effect.

Rising unemployment causes unit auto sales to fall back to 14.7 million units at an annual rate by 2022, compared with 17.7 million in the baseline. Real GDP continues to decline through the first quarter of 2022, and the unemployment rate peaks at 9.2% in the third quarter of 2022. The rising unemployment and pent-up bankruptcies cause house prices to drop cumulatively by 6.6% from the second quarter of 2021 to the second quarter of 2022. After recovery begins, it does not accelerate until mid-2023.

The economies of Europe also weaken for similar reasons, and in some cases slow vaccine distribution aggravates the situation. Populism in Europe rises, once again raising uncertainties about the longevity of the euro zone. This contributes to the economic and financial stress faced by heavily indebted nations in the region, especially Italy. These developments lower corporate earnings of foreign subsidiaries of U.S. companies.

Additionally, the decline in global energy demand more than offsets the

OPEC agreement over oil supply, and the Brent oil price drops back to the mid-$30 per barrel range by early 2022, reducing investment in exploration. Further, the re-emergence of political and economic tensions between the U.S. and China contributes to the overall weakness in the U.S. economy.

The Fed keeps the target range for the fed funds rate near 0% until the third quarter of 2025, more than two years longer than in the baseline. Consumer spending on air travel and in retail establishments is subdued for a long time because of concerns about COVID-19. The economy does not return to full employment until the second quarter of 2026. The change in real GDP, on an annual average basis, is 4.9% in 2021 and -0.3% in 2022, compared with 6.8% and 4.8%, respectively, in the baseline. Reduced business investment lowers productivity so that the level of real GDP remains below the baseline indefinitely.

U.S. MACRO S3 SCENARIO—DIFFERENCE FROM BASELINE										
	Units	21Q2	21Q3	21Q4	22Q1	2021	2022	2023	2024	2025
Gross Domestic Product	bcw$	0.0	-469.4	-951.6	-1,312.2	-355.2	-1,350.3	-1,276.1	-1,195.1	-1,122.3
Change	%AR	*0.0*	*-9.7*	*-9.9*	*-7.3*	*-1.9*	*-5.1*	*0.6*	*0.6*	*0.5*
Federal Budget	$ bil	-0.0	-43.1	-80.7	-94.2	-123.7	-408.8	-204.9	92.1	264.8
Total Employment	mil	0.0	-3.8	-6.9	-9.1	-2.7	-10.5	-9.5	-7.0	-5.6
Change	%AR	*0.0*	*-10.4*	*-8.6*	*-6.0*	*-1.9*	*-5.4*	*0.9*	*1.8*	*1.0*
Unemployment Rate	%	0.0	2.2	3.7	4.7	1.5	5.2	3.7	2.2	1.4
Light Vehicle Sales	mil, SAAR	0.0	-1.4	-2.5	-3.0	-1.0	-3.1	-1.6	-0.8	-0.6
Residential Housing Starts	mil, SAAR	0.00	-0.20	-0.36	-0.49	-0.14	-0.65	-0.69	-0.48	-0.31
Median Existing-Home Price	$ ths	-0.0	-16.6	-22.6	-30.3	-9.8	-31.9	-33.1	-25.6	-17.6
Change	%YA	*-0.0*	*-5.4*	*-7.0*	*-9.1*	*-3.3*	*-6.6*	*-0.1*	*2.6*	*2.6*
Consumer Price Index	%AR	0.0	-2.6	-2.8	-3.1	-0.5	-1.8	-0.4	-0.1	0.4
Federal Funds Rate	%	0.0	0.0	-0.0	-0.0	-0.0	-0.0	-0.4	-1.4	-2.1
Treasury Yield: 10-Yr Bond	%	0.00	-0.40	-0.71	-0.93	-0.28	-0.99	-1.14	-1.34	-1.20
Baa Corp. - 10-Yr Treasury	DIFF	0.0	0.4	1.5	0.8	0.5	0.4	-0.0	-0.1	-0.0
Corporate Profits With IVA & CCA	$ bil	0.0	-281.3	-419.0	-543.0	-175.1	-552.6	-476.3	-428.1	-398.2
Change	%YA	*0.0*	*-12.1*	*-18.3*	*-22.9*	*-8.3*	*-17.1*	*5.9*	*3.1*	*2.2*
S&P 500	1941=10	-0.0	-549.3	-1,041.3	-1,156.6	-397.6	-1,024.4	-699.8	-609.4	-584.0
Change	%YA	*-0.0*	*-16.5*	*-29.3*	*-29.9*	*-12.4*	*-17.7*	*10.4*	*3.4*	*1.9*
CRE Price Index	index	0.0	-2.3	-15.0	-34.6	-15.0	-73.8	-67.4	-48.5	-33.7
NCREIF Property Index: Rate of Return	%, NSA	0.0	-1.8	-6.3	-6.2	-2.0	-3.6	0.5	0.7	0.6
C&I Loans Outstanding	$ bil	0.0	-166.2	-266.3	-364.8	-108.1	-385.3	-365.8	-380.3	-397.5
BAA spread	%	0.0	0.4	1.5	0.8	0.5	0.4	-0.0	-0.1	-0.0

U.S. MACRO S3 SCENARIO—FORECAST SUMMARY										
	Units	21Q2	21Q3	21Q4	22Q1	2021	2022	2023	2024	2025
Gross Domestic Product	bcw$	19,574.7	19,397.3	19,232.5	19,125.8	19,323.0	19,275.5	19,838.6	20,527.0	21,149.3
Change	%AR	*10.6*	*-3.6*	*-3.4*	*-2.2*	*4.9*	*-0.2*	*2.9*	*3.5*	*3.0*
Federal Budget	$ bil	-890.4	-746.7	-513.0	-649.3	-3,283.4	-2,198.0	-1,980.1	-1,338.8	-1,110.5
Total Employment	mil	144.9	143.1	141.8	140.9	143.3	140.8	144.4	148.1	150.1
Change	%AR	*4.3*	*-4.8*	*-3.6*	*-2.3*	*0.7*	*-1.7*	*2.5*	*2.6*	*1.4*
Unemployment Rate	%	5.9	7.3	8.1	8.7	6.9	8.9	7.2	5.9	5.4
Light Vehicle Sales	mil, SAAR	17.6	15.6	15.0	14.6	16.3	14.6	15.9	16.1	16.4
Residential Housing Starts	mil, SAAR	1.75	1.57	1.44	1.37	1.59	1.25	1.27	1.51	1.62
Median Existing-Home Price	$ ths	350.0	331.9	324.4	315.3	334.9	314.3	321.1	337.4	354.8
Change	%YA	*24.6*	*8.4*	*1.0*	*-5.4*	*12.1*	*-6.2*	*2.2*	*5.1*	*5.1*
Consumer Price Index	%AR	2.5	0.2	-0.2	-0.8	2.2	0.6	1.9	2.2	2.7
Federal Funds Rate	%	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3
Treasury Yield: 10-Yr Bond	%	1.69	1.48	1.34	1.26	1.46	1.32	1.64	2.02	2.53
Baa Corp. - 10-Yr Treasury	DIFF	2.0	2.5	3.8	3.3	2.6	3.0	2.6	2.5	2.4
Corporate Profits With IVA & CCA	$ bil	2,376.3	2,060.1	1,915.6	1,814.1	2,181.0	1,869.7	2,099.2	2,238.3	2,386.2
Change	%YA	*30.1*	*-11.4*	*-16.5*	*-23.5*	*2.9*	*-14.3*	*12.3*	*6.6*	*6.6*
S&P 500	1941=10	4,104.5	3,524.7	2,969.1	2,798.3	3,615.2	2,845.5	3,064.3	3,227.4	3,475.1
Change	%YA	*40.1*	*6.1*	*-16.5*	*-27.6*	*12.3*	*-21.3*	*7.7*	*5.3*	*7.7*
CRE Price Index	index	292.4	287.1	271.4	253.1	271.4	229.2	262.3	304.6	330.3
NCREIF Property Index: Rate of Return	%, NSA	2.5	1.2	-3.5	-2.5	0.5	-1.0	2.7	3.6	3.2
C&I Loans Outstanding	$ bil	2613.5	2487.5	2502.6	2595.0	2550.1	2762.4	3107.9	3265.0	3412.5
BAA spread	%	2.0	2.5	3.8	3.3	2.6	3.0	2.6	2.5	2.4

S4: Alternative Scenario 4 – Downside – 96th Percentile

In this scenario, there is a 96% probability that the economy will perform better, broadly speaking, and a 4% probability that it will perform worse.

Key assumptions/risks

- The numbers of new cases, hospitalizations and deaths from COVID-19 stop declining, substantially delaying the reopening of many businesses in some areas of the country.
- Many more people than anticipated refuse to receive the vaccines, significantly delaying achievement of herd resiliency, and worries about resistant strains rise.
- Consumer spending on air travel, retail and hotels declines.
- The stimulus is less effective than expected because of the lower consumer spending. Most of the funds end up in savings and thus fiscal multipliers are smaller than assumed in the baseline.
- Unemployment begins to increase again in the third quarter of 2021.
- Elevated stock price-to-earnings ratios amid rising unemployment cause financial markets to sell off, and the stock market drops precipitously.
- Consumer confidence and spending drop significantly in the third quarter of 2021, and the economy falls into recession.
- Many additional business failures cause the economy to cycle down further.
- Increased political and economic tensions between the U.S. and China contribute to the weakness in the U.S. economy.
- The economy does not return to full employment until 2031.

Epidemiological assumptions

- 74.2 million confirmed cases.
- New infections peaked in January.
- 1.96% confirmed case fatality rate.
- 3.47% hospitalization rate.
- 0.63% ICU use rate.
- 0.21% ventilator use rate.
- Infections abate in March 2022.
- Herd resiliency in August.

Monetary policy assumptions

- The Fed keeps the federal funds rate near 0% through mid-2026.
- To support the economy, the Fed buys long-term Treasuries so that the yield declines back to less than 1% over the course of 2021 and 2022 and stays below 2% through 2025.

Fiscal policy assumptions

- Disagreements in Congress prevent any additional fiscal support package beyond the American Rescue Plan Act passed in March.

The downside 4% scenario "S4: Alternative Scenario 4 – Downside – 96th Percentile" begins with the numbers of infections, hospitalizations and deaths from COVID-19 remaining elevated. Far fewer people than expected agree to be vaccinated and concerns build over the emergence of resistant strains. As a result, consumer spending on retail, air travel, restaurants and entertainment declines.

Recession begins in the third quarter of 2021 and the unemployment rate starts to rise again. Rising joblessness amid the elevated stock market valuations causes equity prices to fall sharply, further reducing consumer spending through the wealth effect. The stimulus proves ineffective because consumers are still reluctant to spend and opt to save much of the direct economic payments. Real GDP declines through the third quarter of 2022.

The unemployment rate reaches a peak of 10.4% by mid-2023. Unit auto sales drop to 11 million at an annual rate by early 2023, compared with 17.6 million in the baseline. House prices drop cumulatively by about 11% from the second quarter of 2021 through early 2023.

The economies across Europe struggle for similar reasons, and in some cases slow vaccine distribution exacerbates the problem. Populism in Europe accelerates, once again putting the euro zone's existence at risk. This contributes to the economic and financial stress faced by heavily indebted nations, especially Italy. Weakness in Europe lowers corporate earnings of foreign subsidiaries of U.S. companies, contributing to the decline in the stock market. It also

lowers U.S. exports to Europe, deepening the U.S. recession.

The extremely deep decline in global demand for energy more than overrides the OPEC supply agreement, causing the Brent oil price to decline steadily to a trough in the low-$20 per barrel in late 2022, sharply reducing U.S. energy-related investment. Further, rising political and economic tensions between the U.S. and China contribute to the overall weakness in the U.S. economy.

The Fed keeps the federal funds rate near 0% through mid-2026 in an effort to support a sustained recovery in the economy. Nonetheless, spending on air travel and in hospitality and retail establishments remains subdued for a long time because of continuing concerns about contagion. The changes in real GDP on an annual average basis are 4.6% in 2021 and -2.3% in 2022, compared with 6.8% and 4.8%, respectively, in the baseline. Reduced business investment lowers productivity so that the level of real GDP remains below the baseline indefinitely.

U.S. MACRO S4 SCENARIO—DIFFERENCE FROM BASELINE										
	Units	21Q2	21Q3	21Q4	22Q1	2021	2022	2023	2024	2025
Gross Domestic Product	bcw$	0.0	-539.4	-1,099.1	-1,506.7	-409.6	-1,805.0	-2,096.3	-2,032.3	-1,747.6
Change	%AR	*0.0*	*-11.1*	*-11.5*	*-8.3*	*-2.2*	*-7.1*	*-1.3*	*0.7*	*1.7*
Federal Budget	$ bil	-0.0	-40.3	-84.2	-100.8	-124.5	-501.6	-481.1	-226.3	-42.0
Total Employment	mil	0.0	-4.1	-7.3	-9.6	-2.9	-12.0	-15.0	-12.7	-10.7
Change	%AR	*0.0*	*-11.3*	*-9.0*	*-6.4*	*-2.0*	*-6.3*	*-2.0*	*1.7*	*1.4*
Unemployment Rate	%	0.0	2.2	3.8	4.9	1.5	5.9	6.8	4.9	3.4
Light Vehicle Sales	mil, SAAR	0.0	-1.6	-3.2	-3.7	-1.2	-5.2	-5.6	-3.6	-2.8
Residential Housing Starts	mil, SAAR	0.00	-0.23	-0.42	-0.56	-0.16	-0.79	-0.97	-0.75	-0.65
Median Existing-Home Price	$ ths	-0.0	-25.2	-37.1	-41.6	-15.6	-47.0	-54.4	-55.7	-50.4
Change	%YA	*-0.0*	*-8.2*	*-11.5*	*-12.5*	*-5.2*	*-9.5*	*-2.1*	*0.0*	*2.2*
Consumer Price Index	%AR	0.0	-3.0	-3.2	-3.5	-0.6	-2.8	-1.0	-0.4	-0.1
Federal Funds Rate	%	0.0	0.0	-0.0	-0.0	-0.0	-0.0	-0.4	-1.4	-2.3
Treasury Yield: 10-Yr Bond	%	0.00	-0.45	-0.79	-1.11	-0.31	-1.35	-1.70	-2.02	-1.90
Baa Corp. - 10-Yr Treasury	DIFF	0.0	1.1	2.4	1.5	0.9	0.9	0.1	-0.0	-0.1
Corporate Profits With IVA & CCA	$ bil	0.0	-300.4	-474.9	-648.0	-193.8	-765.9	-811.6	-774.7	-727.7
Change	%YA	*0.0*	*-12.9*	*-20.7*	*-27.3*	*-9.1*	*-26.2*	*0.2*	*3.7*	*4.3*
S&P 500	1941=10	-0.0	-770.1	-1,300.7	-1,416.8	-517.7	-1,450.3	-1,327.3	-1,267.4	-1,229.5
Change	%YA	*-0.0*	*-23.2*	*-36.6*	*-36.7*	*-16.1*	*-27.2*	*3.4*	*3.5*	*4.3*
CRE Price Index	index	0.0	-3.0	-18.9	-42.7	-18.9	-99.0	-116.2	-99.9	-75.0
NCREIF Property Index: Rate of Return	%, NSA	0.0	-2.1	-7.3	-7.4	-2.4	-5.3	-0.9	0.9	1.2
C&I Loans Outstanding	$ bil	0.0	-246.0	-435.4	-589.4	-170.3	-727.0	-951.8	-988.0	-1003.0
BAA spread	%	0.0	1.1	2.4	1.5	0.9	0.9	0.1	-0.0	-0.1

U.S. MACRO S4 SCENARIO—FORECAST SUMMARY										
	Units	21Q2	21Q3	21Q4	22Q1	2021	2022	2023	2024	2025
Gross Domestic Product	bcw$	19,574.7	19,327.2	19,084.9	18,931.2	19,268.6	18,820.9	19,018.4	19,689.7	20,524.0
Change	%AR	*10.6*	*-5.0*	*-4.9*	*-3.2*	*4.6*	*-2.3*	*1.0*	*3.5*	*4.2*
Federal Budget	$ bil	-890.4	-744.0	-516.5	-655.9	-3,284.2	-2,290.9	-2,256.3	-1,657.1	-1,417.2
Total Employment	mil	144.9	142.8	141.3	140.4	143.1	139.4	138.9	142.4	145.0
Change	%AR	*4.3*	*-5.7*	*-4.0*	*-2.7*	*0.6*	*-2.6*	*-0.3*	*2.5*	*1.8*
Unemployment Rate	%	5.9	7.4	8.3	8.9	6.9	9.6	10.3	8.5	7.4
Light Vehicle Sales	mil, SAAR	17.6	15.4	14.3	14.0	16.1	12.5	11.9	13.4	14.1
Residential Housing Starts	mil, SAAR	1.75	1.54	1.38	1.30	1.57	1.11	0.99	1.24	1.28
Median Existing-Home Price	$ ths	350.0	323.4	310.0	304.0	329.2	299.2	299.8	307.4	321.9
Change	%YA	*24.6*	*5.6*	*-3.5*	*-8.8*	*10.1*	*-9.1*	*0.2*	*2.5*	*4.7*
Consumer Price Index	%AR	2.5	-0.2	-0.6	-1.2	2.2	-0.3	1.3	1.9	2.3
Federal Funds Rate	%	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Treasury Yield: 10-Yr Bond	%	1.69	1.43	1.26	1.08	1.43	0.95	1.08	1.35	1.83
Baa Corp. - 10-Yr Treasury	DIFF	2.0	3.2	4.7	3.9	3.0	3.4	2.8	2.6	2.4
Corporate Profits With IVA & CCA	$ bil	2,376.3	2,041.0	1,859.7	1,709.2	2,162.3	1,656.4	1,763.9	1,891.8	2,056.7
Change	%YA	*30.1*	*-12.2*	*-18.9*	*-27.9*	*2.0*	*-23.4*	*6.5*	*7.3*	*8.7*
S&P 500	1941=10	4,104.5	3,303.9	2,709.6	2,538.2	3,495.1	2,419.5	2,436.8	2,569.3	2,829.6
Change	%YA	*40.1*	*-0.5*	*-23.8*	*-34.3*	*8.6*	*-30.8*	*0.7*	*5.4*	*10.1*
CRE Price Index	index	292.4	286.4	267.5	245.1	267.5	203.9	213.5	253.2	289.0
NCREIF Property Index: Rate of Return	%, NSA	2.5	0.9	-4.6	-3.7	0.1	-2.7	1.2	3.8	3.8
C&I Loans Outstanding	$ bil	2613.5	2407.7	2333.6	2370.4	2487.9	2420.6	2521.9	2657.3	2807.0
BAA spread	%	2.0	3.2	4.7	3.9	3.0	3.4	2.8	2.6	2.4

S5: Slower-Trend Growth Scenario

In this low-performance, long-term scenario, the economy underperforms its potential indefinitely.

Key assumptions/risks

- Fewer people than expected agree to be vaccinated, slowing the timing of herd resiliency. Concerns persist about resistant strains of the virus.
- As a result, spending by households, particularly on air travel, hospitality and retail, is indefinitely more restrained than in the baseline because of remaining fears about COVID-19.
- The stimulus is less effective than expected because of the lower consumer spending. Most of the funds end up in savings and thus fiscal multipliers are smaller than assumed in the baseline.
- Political and economic tensions with China rise.

Epidemiological assumptions

- 34.5 million confirmed cases.
- New infections peaked in January.
- 1.8% confirmed case fatality rate.
- 3.47% hospitalization rate.
- 0.63% ICU use rate.
- 0.21% ventilator use rate.
- Infections abate in June.
- Herd resiliency in July.

Monetary policy assumptions

- The Fed begins to raise the target range for the fed funds rate in early 2023, but the pace of tightening is less than in the baseline.
- Tapering of quantitative easing begins in mid-2023.

Fiscal policy assumptions

- American Rescue Plan Act stimulus of $1.9 trillion enacted in March, composed of stimulus checks, enhanced unemployment benefits, public health spending, tax credits, and aid to state and local governments. This is deficit-financed.
- Build Back Better program of $2 trillion in additional spending over 10 years on infrastructure and $1 trillion on a range of social programs, including education, healthcare, housing, and child and elder care.
- Passage is assumed in the fourth quarter of 2021. Financing will include tax increases amounting to $1 trillion on corporate profits and $500 billion on high-income individuals.

In the low long-term performance "S5: Slower-Trend Growth Scenario," the economy decelerates starting in the second quarter of 2021, and a strong rebound never materializes.

Many factors are responsible. First, consumers tend to avoid retail and air travel for a long time, still fearing COVID-19. Further, fewer than expected numbers of people agree to be vaccinated and concerns persist about new resistant strains of the virus. Therefore, herd resiliency is delayed. Second, households engage in more precautionary saving and therefore less spending after their painful experiences in 2020. Consequently, consumer spending is lower than in the baseline despite the stimulus. Third, wage gains are subdued because of the weakness in the labor market.

The weakness in the economy keeps capacity utilization lower than in the baseline, reducing the need for business investment. The lower capital accumulation results in productivity gains that are lower than in the baseline indefinitely.

Real GDP growth is persistently lower than in the baseline over the next decade, and the level of real GDP is permanently lower. On an annual average basis, the growth in real GDP is 6% in 2021 and 2.2% in 2022, compared with 6.8% and 4.8%, respectively, in the baseline.

The unemployment rate drifts back up to a percentage point or more above the baseline and remains somewhat elevated for years. The dislocation in the labor market hampers the typical pattern of advances in worker productivity, as employees find fewer opportunities to develop their skills while on the job. The result is productivity growth that is far weaker than in the baseline.

U.S. MACRO S5 SCENARIO—DIFFERENCE FROM BASELINE										
	Units	21Q2	21Q3	21Q4	22Q1	2021	2022	2023	2024	2025
Gross Domestic Product	bcw$	0.0	-175.3	-418.2	-587.0	-148.4	-671.3	-853.3	-1,004.1	-1,068.0
Change	%AR	*0.0*	*-3.7*	*-5.0*	*-3.4*	*-0.8*	*-2.6*	*-0.8*	*-0.6*	*-0.2*
Federal Budget	$ bil	-0.0	-24.6	-45.1	-61.2	-69.7	-287.8	-347.3	-352.6	-354.4
Total Employment	mil	0.0	-1.4	-2.8	-4.3	-1.0	-4.7	-5.0	-4.8	-4.7
Change	%AR	*0.0*	*-3.9*	*-3.9*	*-4.1*	*-0.7*	*-2.5*	*-0.1*	*0.2*	*0.1*
Unemployment Rate	%	0.0	0.6	1.2	1.8	0.4	1.9	1.7	1.2	0.8
Light Vehicle Sales	mil, SAAR	0.0	-0.2	-1.0	-1.2	-0.3	-1.4	-1.4	-0.6	-0.2
Residential Housing Starts	mil, SAAR	0.00	-0.10	-0.20	-0.29	-0.07	-0.31	-0.39	-0.40	-0.34
Median Existing-Home Price	$ ths	-0.0	-0.3	-0.7	-1.3	-0.3	-2.0	-3.1	-6.0	-8.6
Change	%YA	*-0.0*	*-0.1*	*-0.2*	*-0.4*	*-0.1*	*-0.5*	*-0.3*	*-0.8*	*-0.7*
Consumer Price Index	%AR	0.0	-0.9	-0.9	-0.6	-0.2	-0.7	-0.6	-0.4	-0.1
Federal Funds Rate	%	0.0	-0.0	-0.0	-0.0	-0.0	0.0	-0.0	-0.2	-0.2
Treasury Yield: 10-Yr Bond	%	0.00	-0.23	-0.25	-0.27	-0.12	-0.32	-0.63	-0.36	-0.42
Baa Corp. - 10-Yr Treasury	DIFF	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1
Corporate Profits With IVA & CCA	$ bil	0.0	-51.7	-65.0	-75.1	-29.2	-80.8	-112.1	-127.5	-147.1
Change	%YA	*0.0*	*-2.2*	*-2.8*	*-3.2*	*-1.4*	*-2.2*	*-1.1*	*-0.5*	*-0.6*
S&P 500	1941=10	-0.0	-56.5	-68.2	-88.4	-31.2	-97.3	-130.5	-196.9	-271.4
Change	%YA	*-0.0*	*-1.7*	*-1.9*	*-2.3*	*-1.0*	*-1.7*	*-1.0*	*-1.8*	*-1.7*
CRE Price Index	index	0.0	-0.8	-4.2	-10.0	-4.2	-27.9	-33.3	-31.7	-27.8
NCREIF Property Index: Rate of Return	%, NSA	0.0	-0.5	-2.5	-3.1	-0.7	-1.9	-0.5	-0.2	0.0
C&I Loans Outstanding	$ bil	0.0	-14.8	-18.4	-22.9	-8.3	-27.9	-48.7	-74.7	-92.8
BAA spread	%	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1

U.S. MACRO S5 SCENARIO—FORECAST SUMMARY										
	Units	21Q2	21Q3	21Q4	22Q1	2021	2022	2023	2024	2025
Gross Domestic Product	bcw$	19,574.7	19,691.4	19,765.9	19,850.9	19,529.9	19,954.6	20,261.4	20,718.0	21,203.6
Change	%AR	*10.6*	*2.4*	*1.5*	*1.7*	*6.0*	*2.2*	*1.5*	*2.3*	*2.3*
Federal Budget	$ bil	-890.4	-728.2	-477.4	-616.4	-3,229.3	-2,077.0	-2,122.5	-1,783.4	-1,729.7
Total Employment	mil	144.9	145.5	145.9	145.7	144.9	146.6	148.9	150.4	151.1
Change	%AR	*4.3*	*1.7*	*1.1*	*-0.4*	*1.8*	*1.2*	*1.6*	*1.0*	*0.5*
Unemployment Rate	%	5.9	5.7	5.7	5.8	5.9	5.6	5.1	4.8	4.8
Light Vehicle Sales	mil, SAAR	17.6	16.8	16.5	16.5	16.9	16.3	16.1	16.3	16.7
Residential Housing Starts	mil, SAAR	1.75	1.67	1.60	1.57	1.66	1.60	1.58	1.59	1.59
Median Existing-Home Price	$ ths	350.0	348.2	346.4	344.3	344.5	344.2	351.1	357.0	363.7
Change	%YA	*24.6*	*13.7*	*7.8*	*3.3*	*15.3*	*-0.1*	*2.0*	*1.7*	*1.9*
Consumer Price Index	%AR	2.5	1.9	1.7	1.7	2.6	1.8	1.7	2.0	2.2
Federal Funds Rate	%	0.1	0.1	0.1	0.1	0.1	0.1	0.5	1.3	2.1
Treasury Yield: 10-Yr Bond	%	1.69	1.65	1.80	1.92	1.62	1.98	2.15	3.01	3.31
Baa Corp. - 10-Yr Treasury	DIFF	2.0	2.2	2.4	2.5	2.2	2.6	2.7	2.7	2.6
Corporate Profits With IVA & CCA	$ bil	2,376.3	2,289.7	2,269.6	2,282.1	2,326.9	2,341.5	2,463.4	2,538.9	2,637.2
Change	%YA	*30.1*	*-1.5*	*-1.1*	*-3.8*	*9.7*	*0.6*	*5.2*	*3.1*	*3.9*
S&P 500	1941=10	4,104.5	4,017.5	3,942.2	3,866.6	3,981.7	3,772.5	3,633.6	3,639.8	3,787.7
Change	%YA	*40.1*	*21.0*	*10.9*	*0.1*	*23.7*	*-5.3*	*-3.7*	*0.2*	*4.1*
CRE Price Index	index	292.4	288.6	282.2	277.7	282.2	275.0	296.4	321.4	336.2
NCREIF Property Index: Rate of Return	%, NSA	2.5	2.5	0.3	0.6	1.8	0.7	1.6	2.6	2.6
C&I Loans Outstanding	$ bil	2613.5	2638.9	2750.5	2936.8	2649.9	3119.8	3425.0	3570.6	3717.1
BAA spread	%	2.0	2.2	2.4	2.5	2.2	2.6	2.7	2.7	2.6

S6: Stagflation Scenario

In this stagflation scenario, inflation accelerates even as the economy remains below full employment.

Key assumptions/risks

- The combination of OPEC supply restraints and slower than expected reopenings of U.S. production and exploration facilities reduces global oil supply more than expected, causing prices to temporarily jump to nearly $90 a barrel as global oil demand starts to recover.
- Dislocations in the U.S. economy because of supply chain issues result in shortages in the supply of many goods and services, causing those prices to rise more quickly than in the baseline. Further, the trade-weighted dollar depreciates amid the rise in inflation, thereby raising import prices.
- The Fed briefly misreads the situation and starts to raise the fed funds rate in the third quarter of 2021, causing business and consumer sentiment and stock prices to fall significantly at that point.
- Renewed political and economic tensions with China lead to the threat of new tariffs.

Epidemiological assumptions

- 34.5 million confirmed cases.
- New infections peaked in January.
- 1.8% confirmed case fatality rate.
- 3.47% hospitalization rate.
- 0.63% ICU use rate.
- 0.21% ventilator use rate.
- Infections abate in June.
- Herd resiliency in July.

Monetary policy assumptions

- The Fed, misreading inflation signals, raises the target range for the fed funds rate temporarily and by a small amount in the third and fourth quarters of 2021.
- However, realizing its mistake, the Fed soon brings the fed funds rate back to near 0% and keeps it there through the end of 2022.
- The long-term Treasury yield temporarily jumps to 2.9% in the third quarter of 2021 because of the Fed tightening and increased inflation expectations.

Fiscal policy assumptions

- American Rescue Plan Act stimulus of $1.9 trillion enacted in March, composed of stimulus checks, enhanced unemployment benefits, public health spending, tax credits, and aid to state and local governments. This is deficit-financed.
- Build Back Better program of $2 trillion in additional spending over 10 years on infrastructure and $1 trillion on a range of social programs, including education, healthcare, housing, and child and elder care.
- Passage is assumed in the fourth quarter of 2021. Financing will include tax increases amounting to $1 trillion on corporate profits and $500 billion on high-income individuals

In the "S6: Stagflation Scenario," several factors cause inflation to accelerate more than in the baseline in 2021. The first is the strength of the rebound in spending amid the stimulus measures passes in December and March. Second, the combination of the OPEC agreement to limit supply and the slow restarting of oil production and exploration by U.S. energy companies results in an unexpectedly large gap between demand and supply. This causes the Brent oil price to rise faster than in the baseline, temporarily to nearly $90 per barrel in the third quarter of 2021. Third, supply chain problems in other sectors of the economy result in shortages, causing other prices to rise as well. Fourth, the trade-weighted dollar depreciates amid the rising inflation, raising import prices. Fifth, renewed political and economic tensions with China lead to the threat of new tariffs.

Worried that inflation will accelerate further, the Fed abruptly raises the target range for the fed funds rate by a modest amount in the third and fourth quarters of 2021. However, this is enough to cause financial markets to sell off. The stock market drops significantly, and consumer confidence falls again. The economy drops into recession in the fourth quarter of 2021. The Fed quickly sees its error and lowers the policy rate once again. This limits the extent and depth of the downturn. Real GDP drops 2.3% peak to trough and begins to recover in the third quarter of 2022.

On an annual average basis, changes in real GDP are 5.9% in 2021 and -0.9% in 2022, compared with 6.8% and 4.8%, respectively, in the baseline. Inflation, as measured by the CPI, is several percentage points higher than in the baseline in 2021 before beginning to decelerate.

U.S. MACRO S6 SCENARIO—DIFFERENCE FROM BASELINE										
	Units	21Q2	21Q3	21Q4	22Q1	2021	2022	2023	2024	2025
Gross Domestic Product	bcw$	0.0	-105.4	-588.4	-1,021.6	-173.4	-1,288.6	-1,496.4	-1,451.6	-1,313.7
Change	%AR	*0.0*	*-2.2*	*-9.9*	*-8.7*	*-0.9*	*-5.7*	*-0.9*	*0.4*	*0.9*
Federal Budget	$ bil	-0.0	-19.1	-70.2	-116.2	-89.4	-625.8	-673.2	-536.9	-423.1
Total Employment	mil	0.0	-1.2	-4.3	-7.0	-1.4	-8.6	-8.1	-6.6	-5.5
Change	%AR	*0.0*	*-3.5*	*-8.4*	*-7.6*	*-1.0*	*-4.9*	*0.4*	*1.1*	*0.7*
Unemployment Rate	%	0.0	0.5	2.1	3.5	0.7	4.0	2.7	1.4	1.0
Light Vehicle Sales	mil, SAAR	0.0	-0.2	-1.9	-2.7	-0.5	-3.2	-1.6	-0.4	-0.0
Residential Housing Starts	mil, SAAR	0.00	-0.20	-0.35	-0.48	-0.14	-0.63	-0.75	-0.43	-0.26
Median Existing-Home Price	$ ths	-0.0	-3.1	-9.0	-16.7	-3.0	-32.8	-49.2	-39.8	-33.4
Change	%YA	*-0.0*	*-1.0*	*-2.8*	*-5.0*	*-1.0*	*-8.7*	*-5.0*	*3.5*	*2.3*
Consumer Price Index	%AR	0.0	4.9	1.9	0.9	0.7	1.3	0.1	-0.4	-0.6
Federal Funds Rate	%	0.0	0.1	0.3	0.5	0.1	0.2	-0.0	0.0	0.0
Treasury Yield: 10-Yr Bond	%	0.00	0.42	0.85	0.21	0.32	-0.13	-0.45	-0.18	-0.03
Baa Corp. - 10-Yr Treasury	DIFF	0.0	0.1	0.4	1.1	0.1	0.7	-0.0	-0.3	-0.2
Corporate Profits With IVA & CCA	$ bil	0.0	-61.4	-212.3	-348.3	-68.4	-452.3	-557.0	-500.8	-455.0
Change	%YA	*0.0*	*-2.6*	*-9.3*	*-14.7*	*-3.2*	*-16.7*	*-3.9*	*3.8*	*3.1*
S&P 500	1941=10	-0.0	-12.9	-274.0	-655.2	-71.7	-795.3	-516.5	14.2	229.7
Change	%YA	*-0.0*	*-0.4*	*-7.7*	*-17.0*	*-2.2*	*-18.4*	*8.4*	*16.6*	*5.6*
CRE Price Index	index	0.0	4.0	3.2	-6.9	3.2	-52.7	-46.4	-30.5	-20.6
NCREIF Property Index: Rate of Return	%, NSA	0.0	-0.1	-2.0	-5.8	-0.5	-3.6	0.5	0.6	0.4
C&I Loans Outstanding	$ bil	0.0	-45.8	-138.9	-255.0	-46.2	-349.5	-345.7	-284.1	-259.5
BAA spread	%	0.0	0.1	0.4	1.1	0.1	0.7	-0.0	-0.3	-0.2

U.S. MACRO S6 SCENARIO—FORECAST SUMMARY										
	Units	21Q2	21Q3	21Q4	22Q1	2021	2022	2023	2024	2025
Gross Domestic Product	bcw$	19,574.7	19,761.3	19,595.7	19,416.4	19,504.8	19,337.3	19,618.3	20,270.4	20,957.8
Change	%AR	*10.6*	*3.9*	*-3.3*	*-3.6*	*5.9*	*-0.9*	*1.5*	*3.3*	*3.4*
Federal Budget	$ bil	-890.4	-722.8	-502.6	-671.4	-3,249.0	-2,415.1	-2,448.4	-1,967.7	-1,798.3
Total Employment	mil	144.9	145.6	144.4	143.0	144.6	142.8	145.8	148.5	150.2
Change	%AR	*4.3*	*2.1*	*-3.4*	*-3.9*	*1.6*	*-1.2*	*2.1*	*1.9*	*1.1*
Unemployment Rate	%	5.9	5.7	6.6	7.5	6.1	7.7	6.1	5.0	4.9
Light Vehicle Sales	mil, SAAR	17.6	16.9	15.6	14.9	16.7	14.5	15.9	16.5	16.9
Residential Housing Starts	mil, SAAR	1.75	1.57	1.44	1.38	1.60	1.27	1.22	1.56	1.67
Median Existing-Home Price	$ ths	350.0	345.4	338.1	329.0	341.7	313.4	305.0	323.2	338.9
Change	%YA	*24.6*	*12.8*	*5.2*	*-1.3*	*14.3*	*-8.3*	*-2.7*	*6.0*	*4.9*
Consumer Price Index	%AR	2.5	7.7	4.5	3.3	3.5	3.7	2.4	1.9	1.8
Federal Funds Rate	%	0.1	0.2	0.4	0.6	0.2	0.3	0.5	1.5	2.4
Treasury Yield: 10-Yr Bond	%	1.69	2.30	2.90	2.40	2.06	2.18	2.32	3.18	3.70
Baa Corp. - 10-Yr Treasury	DIFF	2.0	2.2	2.7	3.6	2.3	3.2	2.6	2.3	2.3
Corporate Profits With IVA & CCA	$ bil	2,376.3	2,280.0	2,122.2	2,008.9	2,287.7	1,970.0	2,018.5	2,165.6	2,329.4
Change	%YA	*30.1*	*-2.0*	*-7.5*	*-15.3*	*7.9*	*-13.9*	*2.5*	*7.3*	*7.6*
S&P 500	1941=10	4,104.5	4,061.1	3,736.4	3,299.7	3,941.1	3,074.5	3,247.6	3,850.9	4,288.8
Change	%YA	*40.1*	*22.3*	*5.1*	*-14.6*	*22.5*	*-22.0*	*5.6*	*18.6*	*11.4*
CRE Price Index	index	292.4	293.5	289.6	280.8	289.6	250.2	283.3	322.6	343.4
NCREIF Property Index: Rate of Return	%, NSA	2.5	2.9	0.7	-2.1	2.0	-1.0	2.7	3.5	3.0
C&I Loans Outstanding	$ bil	2613.5	2607.9	2630.0	2704.8	2612.0	2798.2	3128.0	3361.2	3550.5
BAA spread	%	2.0	2.2	2.7	3.6	2.3	3.2	2.6	2.3	2.3

S7: Next-Cycle Recession Scenario

This downside scenario reflects the risk of acceleration of inflation followed by a Federal Reserve policy response that would cause the next recession.

Key assumptions/risks

- The economy initially continues to recover, as in the baseline.
- However, inflation rises more than in the baseline.
- This causes the Fed to raise the fed funds rate more than in the baseline and beginning one quarter earlier.
- The tightening of credit causes the economy to drop into recession in the third quarter of 2023.

Epidemiological assumptions

- 34.5 million confirmed cases.
- New infections peaked in January.
- 1.8% confirmed case fatality rate.
- 3.47% hospitalization rate.
- 0.63% ICU use rate.
- 0.21% ventilator use rate.
- Infections abate in June.
- Herd resiliency in July.

Monetary policy assumptions

- The Fed keeps the target range for the fed funds rate near 0% through the third quarter of 2022 and then begins to raise it one quarter earlier than in the baseline amid acceleration of inflation compared with the baseline.
- The Fed manages the long-term Treasury yield to keep it below 2% in 2021 but then lets it rise more than in the baseline during 2022 and most of 2023 to a peak of 4% because of the inflation.

Fiscal policy assumptions

- American Rescue Plan Act stimulus of $1.9 trillion enacted in March, composed of stimulus checks, enhanced unemployment benefits, public health spending, tax credits, and aid to state and local governments. This is deficit-financed.
- Build Back Better program of $2 trillion in additional spending over 10 years on infrastructure and $1 trillion on a range of social programs, including education, healthcare, housing, and child and elder care.
- Passage is assumed in the fourth quarter of 2021. Financing will include tax increases amounting to $1 trillion on corporate profits and $500 billion on high-income individuals.

In the "S7: Next-Cycle Recession Scenario," the economy continues to rebound in 2021 as the stimulus boosts activity and distribution of vaccines leads to herd resiliency, just as in the baseline.

However, inflation accelerates in the second half of 2022 in this scenario compared with the baseline amid the strong growth in the economy. This causes the Fed to begin to raise the target range for the fed funds rate one quarter earlier than in the baseline. By the third quarter of 2023, the fed funds rate rises to 1.8%, 1.2 percentage points above the baseline. In addition, the 10-year Treasury rises to 4% by the third quarter of 2023, a percentage point above the baseline, amid accelerating inflation.

Real GDP declines from the third quarter of 2023 through the second quarter of 2024. The cumulative decline is approximately 2%, comparable to the postwar average prior to the COVID-19 crisis. The recovery begins when the Fed eases up on monetary policy.

U.S. MACRO S7 SCENARIO—DIFFERENCE FROM BASELINE										
	Units	21Q2	21Q3	21Q4	22Q1	2021	2022	2023	2024	2025
Gross Domestic Product	bcw$	0.0	-0.8	0.5	0.5	-0.1	0.1	-265.5	-1,149.8	-1,203.8
Change	%AR	*0.0*	*-0.0*	*0.0*	*-0.0*	*-0.0*	*0.0*	*-1.3*	*-4.2*	*-0.1*
Federal Budget	$ bil	-0.0	0.2	0.2	0.3	0.4	3.1	-84.5	-614.3	-621.8
Total Employment	mil	0.0	0.0	0.0	0.0	0.0	0.0	-1.1	-6.0	-5.3
Change	%AR	*0.0*	*0.0*	*0.0*	*-0.0*	*0.0*	*0.0*	*-0.7*	*-3.2*	*0.5*
Unemployment Rate	%	0.0	-0.0	-0.0	-0.0	-0.0	0.0	0.6	3.0	2.3
Light Vehicle Sales	mil, SAAR	0.0	0.0	0.0	0.0	0.0	0.0	-0.2	-2.4	-1.6
Residential Housing Starts	mil, SAAR	0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.20	-0.70	-0.60
Median Existing-Home Price	$ ths	-0.0	0.8	1.1	1.6	0.5	2.3	0.3	-40.8	-55.9
Change	%YA	*-0.0*	*0.2*	*0.4*	*0.5*	*0.2*	*0.5*	*-0.6*	*-11.6*	*-4.4*
Consumer Price Index	%AR	0.0	-0.0	-0.0	-0.0	-0.0	0.1	0.7	-0.6	-0.1
Federal Funds Rate	%	0.0	0.0	0.0	0.0	0.0	0.1	0.8	-0.3	-1.2
Treasury Yield: 10-Yr Bond	%	0.00	0.00	0.00	0.00	0.00	0.08	0.59	-1.20	-0.57
Baa Corp. - 10-Yr Treasury	DIFF	0.0	-0.0	-0.0	0.0	-0.0	0.0	0.2	0.9	0.5
Corporate Profits With IVA & CCA	$ bil	0.0	0.0	0.0	0.0	0.0	-0.0	-57.6	-521.0	-582.9
Change	%YA	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*-0.0*	*-2.4*	*-18.3*	*-1.8*
S&P 500	1941=10	-0.0	0.0	0.0	-0.0	0.0	-4.6	-303.4	-1042.6	-1066.1
Change	%YA	*-0.0*	*0.0*	*0.0*	*-0.0*	*0.0*	*-0.1*	*-7.7*	*-21.2*	*1.3*
CRE Price Index	index	0.0	-0.0	-0.0	-0.0	-0.0	1.1	-2.7	-49.9	-64.7
NCREIF Property Index: Rate of Return	%, NSA	0.0	-0.0	0.1	-0.0	0.0	0.1	-0.9	-3.0	0.5
C&I Loans Outstanding	$ bil	0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0
BAA spread	%	0.0	-0.0	-0.0	0.0	-0.0	0.0	0.2	0.9	0.5

U.S. MACRO S7 SCENARIO—FORECAST SUMMARY										
	Units	21Q2	21Q3	21Q4	22Q1	2021	2022	2023	2024	2025
Gross Domestic Product	bcw$	19,574.7	19,865.9	20,184.6	20,438.4	19,678.2	20,625.9	20,849.2	20,572.2	21,067.8
Change	%AR	*10.6*	*6.1*	*6.6*	*5.1*	*6.8*	*4.8*	*1.1*	*-1.3*	*2.4*
Federal Budget	$ bil	-890.4	-703.4	-432.2	-554.8	-3,159.3	-1,786.2	-1,859.7	-2,045.1	-1,997.0
Total Employment	mil	144.9	146.9	148.7	150.0	145.9	151.4	152.8	149.1	150.4
Change	%AR	*4.3*	*5.6*	*5.0*	*3.7*	*2.6*	*3.7*	*1.0*	*-2.4*	*0.9*
Unemployment Rate	%	5.9	5.2	4.5	4.0	5.4	3.7	4.0	6.6	6.3
Light Vehicle Sales	mil, SAAR	17.6	17.0	17.5	17.7	17.2	17.7	17.3	14.6	15.3
Residential Housing Starts	mil, SAAR	1.75	1.77	1.80	1.86	1.73	1.90	1.77	1.28	1.33
Median Existing-Home Price	$ ths	350.0	349.3	348.2	347.2	345.2	348.5	354.4	322.3	316.4
Change	%YA	*24.6*	*14.0*	*8.3*	*4.2*	*15.5*	*1.0*	*1.7*	*-9.1*	*-1.8*
Consumer Price Index	%AR	2.5	2.8	2.6	2.3	2.7	2.5	3.0	1.8	2.2
Federal Funds Rate	%	0.1	0.1	0.1	0.1	0.1	0.2	1.3	1.1	1.2
Treasury Yield: 10-Yr Bond	%	1.69	1.88	2.05	2.19	1.74	2.38	3.37	2.17	3.16
Baa Corp. - 10-Yr Treasury	DIFF	2.0	2.1	2.3	2.4	2.1	2.5	2.8	3.4	2.9
Corporate Profits With IVA & CCA	$ bil	2,376.3	2,341.4	2,334.6	2,357.2	2,356.1	2,422.3	2,517.8	2,145.5	2,201.5
Change	%YA	*30.1*	*0.7*	*1.8*	*-0.6*	*11.1*	*2.8*	*3.9*	*-14.8*	*2.6*
S&P 500	1941=10	4,104.5	4,074.0	4,010.4	3,954.9	4,012.8	3,865.3	3,460.8	2,794.1	2,993.0
Change	%YA	*40.1*	*22.7*	*12.8*	*2.4*	*24.7*	*-3.7*	*-10.5*	*-19.3*	*7.1*
CRE Price Index	index	292.4	289.4	286.4	287.7	286.4	304.0	327.0	303.2	299.3
NCREIF Property Index: Rate of Return	%, NSA	2.5	3.0	2.9	3.7	2.5	2.7	1.2	-0.1	3.0
C&I Loans Outstanding	$ bil	2613.5	2653.7	2769.0	2959.8	2658.2	3147.7	3473.7	3645.3	3809.9
BAA spread	%	2.0	2.1	2.3	2.4	2.1	2.5	2.8	3.4	2.9

S8: Low Oil Price Scenario

This scenario is designed as a benchmark to reflect the impact on the economy under the assumption of lower oil prices.

Key assumptions/risks

- Concern over COVID-19 infections globally keeps air travel greatly subdued, contributing to low global oil demand.
- The Brent oil price falls and remains below the baseline projection through 2023, averaging only half the baseline levels.

Epidemiological assumptions

- 34.5 million confirmed cases.
- New infections peaked in January.
- 1.8% confirmed case fatality rate.
- 3.47% hospitalization rate.
- 0.63% ICU use rate.
- 0.21% ventilator use rate.
- Infections abate in June.
- Herd resiliency in July.

Monetary policy assumptions

- The Fed keeps the target range for the federal funds rate near 0% through mid-2023.
- The long-term Treasury yield stays below 2% throughout 2021 and 2022, consistent with low inflation caused by low oil prices.

Fiscal policy assumptions

- American Rescue Plan Act stimulus of $1.9 trillion enacted in March, composed of stimulus checks, enhanced unemployment benefits, public health spending, tax credits, and aid to state and local governments. This is deficit-financed.
- Build Back Better program of $2 trillion in additional spending over 10 years on infrastructure and $1 trillion on a range of social programs, including education, healthcare, housing, and child and elder care.
- Passage is assumed in the fourth quarter of 2021. Financing will include tax increases amounting to $1 trillion on corporate profits and $500 billion on high-income individuals.

The "S8: Low Oil Price Scenario" assumes that despite the continuing recovery, the Brent price falls below the baseline starting in the third quarter of 2021 and remains lower over the next several years. Specifically, whereas the baseline is that the Brent price will be in the low- to mid-$60 per barrel range over the next few years, this scenario assumes that the time path is half that of the baseline during that time.

One reason is that despite the recovery elsewhere in the economy, potential travelers remain concerned about air travel because of the risk of COVID-19. Another is that global oil demand remains subdued. There is also the prospect that the easing of sanctions on Iran by the Biden administration would increase oil supply.

In terms of real economic activity in the U.S., lower oil prices have two major offsetting effects. The first is comparable to a tax cut, because lower gasoline costs increase disposable income available for other consumer spending. Moreover, the reduced energy costs overall increase the profitability of industrial production. However, on the other hand, the energy industry itself contracts, with oil exploration and related employment declining in the second half of 2021 and in 2022. Oil production also falls somewhat during that time. This latter effect has become increasingly important for the U.S. economy, as its energy industry has grown relatively quickly during the past decade.

The result of these two offsetting effects is that real GDP overall performs slightly better than in the baseline during 2021 through 2023, by which time the level of real GDP is 0.3% higher than in the baseline.

Oil prices begin to rise steadily starting in 2024, faster than the baseline, and as a result overall real GDP growth decelerates to the baseline pace over the next several years. The assumption is that oil prices rise relative to the CPI and ultimately return to the baseline level by the end of 2030. The basis for this assumption is the historical observation that although oil prices are highly volatile, over long periods the inflation-adjusted price of oil has trended neither up nor down.

U.S. MACRO S8 SCENARIO—DIFFERENCE FROM BASELINE										
	Units	21Q2	21Q3	21Q4	22Q1	2021	2022	2023	2024	2025
Gross Domestic Product	bcw$	0.0	-40.7	-18.0	6.3	-14.7	24.0	38.0	55.3	45.3
Change	%AR	*0.0*	*-0.9*	*0.5*	*0.5*	*-0.1*	*0.2*	*0.1*	*0.1*	*-0.1*
Federal Budget	$ bil	-0.0	3.3	6.0	8.9	9.3	48.2	75.7	77.6	46.1
Total Employment	mil	0.0	-0.4	-0.3	-0.2	-0.2	-0.2	-0.0	0.2	0.3
Change	%AR	*0.0*	*-1.1*	*0.2*	*0.3*	*-0.1*	*0.0*	*0.1*	*0.2*	*0.0*
Unemployment Rate	%	0.0	-0.2	-0.3	-0.3	-0.1	-0.3	-0.2	-0.2	-0.1
Light Vehicle Sales	mil, SAAR	0.0	0.3	0.5	0.6	0.2	0.7	0.5	0.2	-0.1
Residential Housing Starts	mil, SAAR	0.00	0.02	0.05	0.07	0.02	0.09	0.09	0.04	-0.01
Median Existing-Home Price	$ ths	-0.0	-0.1	-0.4	-0.8	-0.1	-0.8	-1.6	-3.5	-5.8
Change	%YA	*-0.0*	*-0.0*	*-0.1*	*-0.3*	*-0.0*	*-0.2*	*-0.2*	*-0.5*	*-0.6*
Consumer Price Index	%AR	0.0	-4.0	-1.5	-1.0	-0.6	-1.2	-0.2	0.1	0.3
Federal Funds Rate	%	0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	0.1	0.4
Treasury Yield: 10-Yr Bond	%	0.00	-0.23	-0.30	-0.37	-0.13	-0.51	-0.23	0.21	0.30
Baa Corp. - 10-Yr Treasury	DIFF	0.0	-0.0	-0.1	-0.1	-0.0	-0.1	-0.1	0.0	0.1
Corporate Profits With IVA & CCA	$ bil	0.0	9.9	8.2	26.7	4.5	41.0	53.5	14.4	-31.8
Change	%YA	*0.0*	*0.4*	*0.4*	*1.1*	*0.2*	*1.5*	*0.4*	*-1.6*	*-1.7*
S&P 500	1941=10	-0.0	116.0	114.1	177.2	57.5	201.1	250.7	215.8	122.5
Change	%YA	*-0.0*	*3.5*	*3.2*	*4.6*	*1.8*	*3.6*	*1.4*	*-1.0*	*-2.6*
CRE Price Index	index	0.0	-3.6	-3.8	-3.0	-3.8	-1.0	-2.3	-3.4	-4.7
NCREIF Property Index: Rate of Return	%, NSA	0.0	-0.1	-0.2	-0.1	-0.1	-0.1	-0.1	-0.0	-0.0
C&I Loans Outstanding	$ bil	0.0	-8.4	-14.4	-12.2	-5.7	-2.6	11.2	-0.4	-10.9
BAA spread	%	0.0	-0.0	-0.1	-0.1	-0.0	-0.1	-0.1	0.0	0.1

U.S. MACRO S8 SCENARIO—FORECAST SUMMARY										
	Units	21Q2	21Q3	21Q4	22Q1	2021	2022	2023	2024	2025
Gross Domestic Product	bcw$	19,574.7	19,826.0	20,166.0	20,444.3	19,663.6	20,649.9	21,152.7	21,777.3	22,316.9
Change	%AR	*10.6*	*5.2*	*7.0*	*5.6*	*6.7*	*5.0*	*2.4*	*3.0*	*2.5*
Federal Budget	$ bil	-890.4	-700.3	-426.3	-546.3	-3,150.3	-1,741.1	-1,699.5	-1,353.2	-1,329.2
Total Employment	mil	144.9	146.5	148.3	149.8	145.8	151.2	153.9	155.3	156.0
Change	%AR	*4.3*	*4.5*	*5.2*	*4.0*	*2.5*	*3.7*	*1.8*	*1.0*	*0.4*
Unemployment Rate	%	5.9	5.0	4.2	3.7	5.3	3.4	3.2	3.4	3.9
Light Vehicle Sales	mil, SAAR	17.6	17.3	18.0	18.3	17.4	18.4	18.0	17.2	16.8
Residential Housing Starts	mil, SAAR	1.75	1.78	1.85	1.93	1.75	1.99	2.06	2.02	1.92
Median Existing-Home Price	$ ths	350.0	348.4	346.7	344.8	344.6	345.3	352.6	359.5	366.5
Change	%YA	*24.6*	*13.7*	*7.9*	*3.5*	*15.3*	*0.2*	*2.1*	*2.0*	*1.9*
Consumer Price Index	%AR	2.5	-1.1	1.1	1.3	2.1	1.2	2.1	2.4	2.6
Federal Funds Rate	%	0.1	0.1	0.0	0.0	0.1	0.0	0.5	1.6	2.7
Treasury Yield: 10-Yr Bond	%	1.69	1.65	1.75	1.82	1.61	1.79	2.54	3.57	4.03
Baa Corp. - 10-Yr Treasury	DIFF	2.0	2.1	2.2	2.4	2.1	2.4	2.6	2.6	2.5
Corporate Profits With IVA & CCA	$ bil	2,376.3	2,351.3	2,342.7	2,383.8	2,360.6	2,463.4	2,629.0	2,680.8	2,752.6
Change	%YA	*30.1*	*1.1*	*2.1*	*0.5*	*11.3*	*4.4*	*6.7*	*2.0*	*2.7*
S&P 500	1941=10	4,104.5	4,190.0	4,124.4	4,132.2	4,070.4	4,070.9	4,014.8	4,052.5	4,181.5
Change	%YA	*40.1*	*26.1*	*16.0*	*7.0*	*26.5*	*0.0*	*-1.4*	*0.9*	*3.2*
CRE Price Index	index	292.4	285.9	282.6	284.7	282.6	302.0	327.4	349.7	359.3
NCREIF Property Index: Rate of Return	%, NSA	2.5	2.9	2.6	3.6	2.4	2.5	2.0	2.8	2.6
C&I Loans Outstanding	$ bil	2613.5	2645.4	2754.6	2947.6	2652.5	3145.1	3485.0	3644.9	3799.0
BAA spread	%	2.0	2.1	2.2	2.4	2.1	2.4	2.6	2.6	2.5

CF: Consensus Scenario

This scenario is designed to incorporate the central tendency of a range of baseline forecasts produced by various institutions. Since the result is itself a baseline, by definition the probability that the economy will perform better than this consensus is equal to the probability that it will perform worse.

The "CF: Consensus Scenario" is based on the review of a variety of surveys of baseline forecasts of the U.S. economy. These surveys vary in date of latest vintage, number of updates per year, list of variables forecast, duration of forecast, frequency of data (quarterly or annual), and the number of respondents to a survey. In the preparation of the Moody's Analytics consensus forecast, the focus is on the next three to five years, since that is the most typical duration in the surveyed results. The approach is to give greater consideration to whatever forecasts were produced most recently, since they will include the most up-to-date historical information, and to those variables for which the number of surveyed responses is largest.

Some publicly available surveys are published quarterly, including the Philadelphia Federal Reserve Survey of Professional Forecasters (First Quarter 2021 Survey of Professional Forecasters (philadelphiafed.org), February 2021) and the Federal Open Market Committee members' range of forecasts (https://www.federalreserve.gov/monetarypolicy/fomcprojtabl20210317.htm), March 2021). Beginning with the August 2017 vintage, Moody's Analytics included in its review the survey published by Focus Economics. This source provides the medians of projections by upwards of 40 major institutions, including banks and consulting firms, and is published monthly.

The publication of new historical data since the time a survey was published can result in some forecast figures changing, simply as a matter of arithmetic. This has been taken into account.

The approach of Moody's Analytics is to input consensus information for unit car sales, housing permits, the unemployment rate, CPI inflation, real GDP growth, house price increases, the fed funds rate, and the 10-year Treasury yield.

Beginning with the March 2020 consensus scenario, the consensus scenario uses futures-implied yields for the fed funds rate and the 10-year Treasury bond for the first year of the projection instead of consensus surveys. Research on the accuracy of federal funds futures in the near term is the basis for this change in methodology ("Clarity or Confusion: Fed vs. Fed Funds Futures," Regional Financial Review, Damien Moore and Ryan Sweet, July 2019). Over the next two years of the scenario, the futures projections are blended with surveyed expectations, with the weights on the surveyed expectations gradually increasing.

Although consensus survey information generally goes out no more than five years, the consensus scenario extends out for the full 30-year duration in the Moody's Analytics baseline. To accomplish this, the assumption is made that the consensus scenario would revert to the long-term trends embodied in the baseline. For most variables, for which the consensus and the baseline are close to each other at the end of the consensus projection, the reversion is within two years. When the gap is larger, the convergence may require up to two additional years.

The macro model is then simulated to expand the consensus information to the rest of the variables in the forecast.

Users of the Moody's Analytics regional scenarios should note that the regional scenario associated with the consensus scenario is the result of running it through the regional model. In other words, the "consensus" for any state or metro area is not based on the review of publicly available state-specific forecasts.

U.S. MACRO CF SCENARIO—DIFFERENCE FROM BASELINE

	Units	21Q2	21Q3	21Q4	22Q1	2021	2022	2023	2024	2025
Gross Domestic Product	bcw$	0.0	57.5	5.7	-99.1	15.8	-148.7	-207.7	-380.8	-510.6
Change	%AR	*0.0*	*1.2*	*-1.1*	*-2.1*	*0.1*	*-0.8*	*-0.3*	*-0.8*	*-0.6*
Federal Budget	$ bil	-0.0	-1.0	-6.3	-10.1	-7.3	-73.9	-144.9	-144.6	-96.7
Total Employment	mil	0.0	-0.5	-1.5	-2.1	-0.5	-2.6	-3.8	-3.9	-3.3
Change	%AR	*0.0*	*-1.3*	*-2.8*	*-1.8*	*-0.3*	*-1.5*	*-0.8*	*-0.0*	*0.4*
Unemployment Rate	%	0.0	-0.1	0.2	0.4	0.0	0.4	0.6	0.4	-0.1
Light Vehicle Sales	mil, SAAR	0.0	-0.1	-0.5	-0.4	-0.1	-0.3	-0.3	0.0	0.0
Residential Housing Starts	mil, SAAR	0.00	-0.22	-0.34	-0.36	-0.14	-0.38	-0.41	-0.42	-0.41
Median Existing-Home Price	$ ths	-0.0	3.5	6.9	8.7	2.6	11.8	20.7	27.8	26.6
Change	%YA	*-0.0*	*1.1*	*2.2*	*2.6*	*0.9*	*2.6*	*2.4*	*1.8*	*-0.5*
Consumer Price Index	%AR	0.0	-0.7	-0.8	0.1	-0.1	-0.2	-0.2	-0.2	-0.3
Federal Funds Rate	%	0.0	0.0	0.0	0.1	0.0	0.1	0.0	-0.3	-0.6
Treasury Yield: 10-Yr Bond	%	0.00	-0.05	-0.15	-0.23	-0.05	-0.24	-0.48	-0.85	-1.00
Baa Corp. - 10-Yr Treasury	DIFF	0.0	-0.0	-0.0	-0.1	-0.0	-0.1	-0.1	-0.0	0.1
Corporate Profits With IVA & CCA	$ bil	0.0	5.4	7.3	10.0	3.2	10.2	6.4	35.9	43.6
Change	%YA	*0.0*	*0.2*	*0.3*	*0.4*	*0.2*	*0.3*	*-0.2*	*1.1*	*0.2*
S&P 500	1941=10	-0.0	20.2	63.2	98.1	20.8	168.0	256.6	218.1	59.0
Change	%YA	*-0.0*	*0.6*	*1.8*	*2.5*	*0.6*	*3.7*	*2.3*	*-1.1*	*-4.2*
CRE Price Index	index	0.0	-0.6	-0.8	-1.4	-0.8	-5.7	-8.8	-11.7	-8.7
NCREIF Property Index: Rate of Return	%, NSA	0.0	-0.0	-0.1	-1.1	-0.0	-0.8	-0.3	-0.4	-0.2
C&I Loans Outstanding	$ bil	0.0	0.2	2.9	-9.8	0.8	-46.5	-88.2	-88.8	-64.3
BAA spread	%	0.0	-0.0	-0.0	-0.1	-0.0	-0.1	-0.1	-0.0	0.1

U.S. MACRO CF SCENARIO—FORECAST SUMMARY

	Units	21Q2	21Q3	21Q4	22Q1	2021	2022	2023	2024	2025
Gross Domestic Product	bcw$	19,574.7	19,924.2	20,189.8	20,338.8	19,694.1	20,477.2	20,907.0	21,341.2	21,761.0
Change	%AR	*10.6*	*7.3*	*5.4*	*3.0*	*6.9*	*4.0*	*2.1*	*2.1*	*2.0*
Federal Budget	$ bil	-890.4	-704.6	-438.6	-565.2	-3,166.9	-1,863.1	-1,920.2	-1,575.5	-1,472.0
Total Employment	mil	144.9	146.4	147.2	147.9	145.4	148.7	150.1	151.2	152.4
Change	%AR	*4.3*	*4.3*	*2.2*	*1.8*	*2.2*	*2.3*	*0.9*	*0.8*	*0.8*
Unemployment Rate	%	5.9	5.1	4.7	4.4	5.5	4.1	4.0	4.0	3.9
Light Vehicle Sales	mil, SAAR	17.6	16.9	17.0	17.3	17.1	17.4	17.2	17.0	16.9
Residential Housing Starts	mil, SAAR	1.75	1.54	1.46	1.50	1.59	1.52	1.56	1.56	1.52
Median Existing-Home Price	$ ths	350.0	352.0	354.0	354.3	347.3	358.0	374.9	390.9	398.9
Change	%YA	*24.6*	*14.9*	*10.2*	*6.3*	*16.2*	*3.1*	*4.7*	*4.3*	*2.1*
Consumer Price Index	%AR	2.5	2.2	1.8	2.4	2.6	2.2	2.1	2.1	2.1
Federal Funds Rate	%	0.1	0.1	0.1	0.1	0.1	0.2	0.5	1.2	1.8
Treasury Yield: 10-Yr Bond	%	1.69	1.83	1.90	1.96	1.69	2.06	2.30	2.52	2.73
Baa Corp. - 10-Yr Treasury	DIFF	2.0	2.1	2.3	2.4	2.1	2.4	2.6	2.6	2.6
Corporate Profits With IVA & CCA	$ bil	2,376.3	2,346.8	2,341.8	2,367.2	2,359.3	2,432.5	2,581.9	2,702.3	2,828.0
Change	%YA	*30.1*	*0.9*	*2.1*	*-0.2*	*11.3*	*3.1*	*6.1*	*4.7*	*4.6*
S&P 500	1941=10	4,104.5	4,094.2	4,073.5	4,053.0	4,033.7	4,037.8	4,020.8	4,054.8	4,118.1
Change	%YA	*40.1*	*23.3*	*14.6*	*4.9*	*25.3*	*0.1*	*-0.4*	*0.8*	*1.6*
CRE Price Index	index	292.4	288.8	285.6	286.3	285.6	297.2	320.9	341.4	355.4
NCREIF Property Index: Rate of Return	%, NSA	2.5	3.0	2.7	2.6	2.5	1.8	1.9	2.5	2.4
C&I Loans Outstanding	$ bil	2613.5	2653.9	2771.9	2950.0	2659.0	3101.2	3385.5	3556.5	3745.6
BAA spread	%	2.0	2.1	2.3	2.4	2.1	2.4	2.6	2.6	2.6

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