NCSL's Fiscal Institute Symposium 2023 Rating in Times of Volatility

November 16, 2023 1:30 - 2:10 p.m.





Geoffrey Buswick

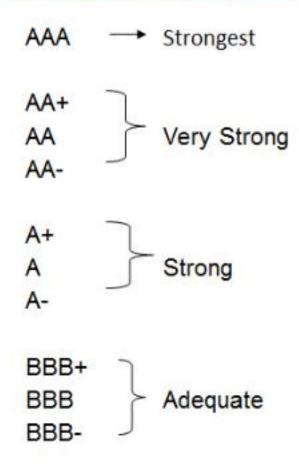
Managing Director & U.S. Governments Sector Lead

Understanding S&P Global's Ratings

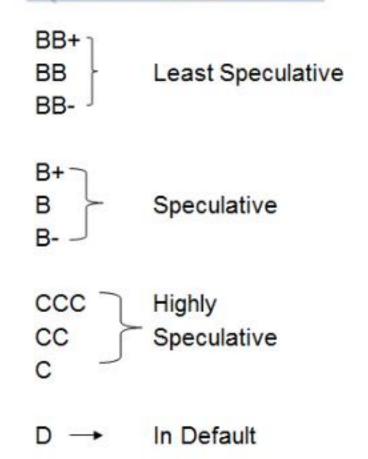
- An issuer's ability and willingness to pay debt in a timely manner
- Credit ratings are forward looking
- S&P Global ratings are opinions, not guarantees of credit quality or exact measures of the probability that a particular issuer or particular debt issue will default
- The Ratings scale is relative and based on the creditworthiness of an issuer or credit quality of an individual debt issue, from strongest to weakest, within a universe of credit risk
- Criteria provide the analytic framework to derive the rating opinion

Ratings 101 | S&P Global's Ratings Scale

Investment-Grade



Speculative-Grade



Short-term U.S. Public Finance note ratings: SP-1+, SP-1, SP-2 & SP-3

U.S. Public Finance (USPF) Q4 2023 Sector Summary -- States

What we're watching

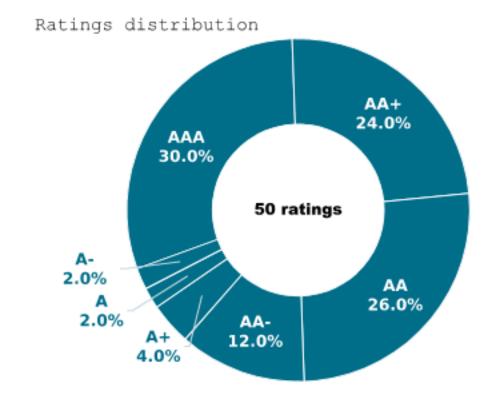
- With revenues slowing and inflationary pressures holding, we're watching for current and out-year budgetary challenges
- Federal criticism of Medicaid redetermination actions in some states could force a change in eligibility rolls

Trends

- Reserves holding steady at all-time highs or even increasing in fiscal 2024
- Jobs are still hard to fill, and retention actions like benefit enhancements and across-the-board wage increases could have long-term budgetary impacts

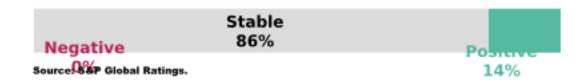
Rest of year expectations

- The national economy will feel the effects of labor shortage and work stoppages and growth will slow, affecting state revenue collections
- Continued credit stability with some strengthening possible, as ratings on seven states have a positive outlook



Source: S&P Global Ratings.

Outlook distribution



USPF | Credit Conditions: Fall 2023

What we're watching

- Higher interest rates and inflation remain headwinds for most issuers from a debt issuance and operating/capital budget perspective
- Extreme weather events continue, requiring swift response and resource allocation. Cost and availability of property insurance are emerging as a challenge

Trends

- Credit conditions have been largely stable, and upgrades have exceeded downgrades this year for most sectors
- The U.S. economy has been resilient, but we expect slower growth ahead. Federal budget deliberations and increased geopolitical tensions could further limit growth
- Federal stimulus and healthy financial reserves continue to provide significant flexibility

Rest of year expectations

 Our baseline U.S. economic forecast is now for a shallower but more protracted slowdown rather than a recession; however, we don't expect this to disrupt credit stability for most issuers

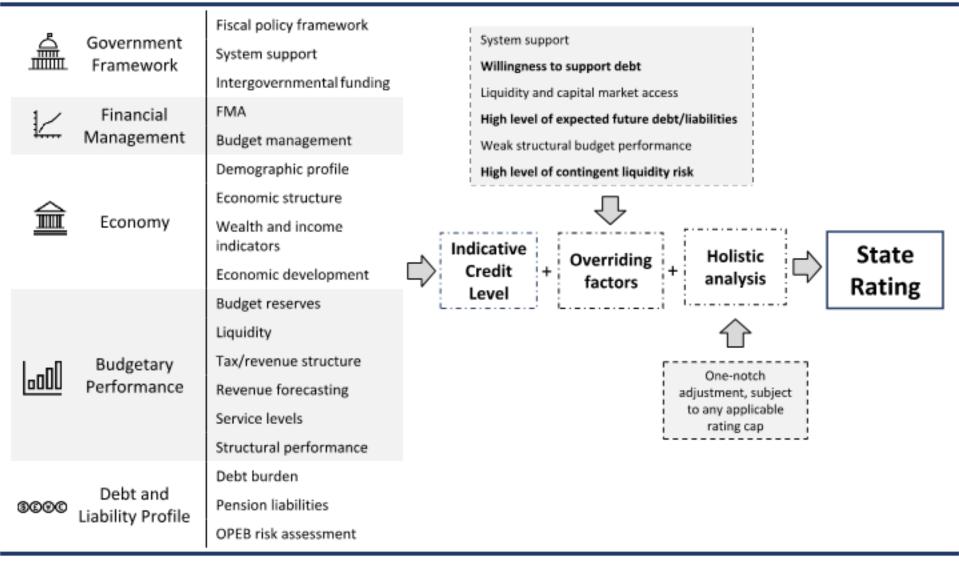
S&P Global Ratings' U.S. Economic Forecast Overview Key indicators

As of September 2023	2019	2020	2021	2022	2023f	2024f	2025f	2026f
Real GDP (annual average % change)	2.3	-2.8	5.9	2.1	2.3	1.3	1.4	1.8
Change from June (percentage point)					0.5	0.0	-0.1	-0.1
Real GDP Q4/Q4 (annual average % change)	2.6	-1.5	5.7	0.9	2.2	1.1	1.6	1.9
Change from June (percentage point)					0.9	-0.4	0.0	0.0
Consumer spending (annual average % change)	2.0	-3.0	8.3	2.7	2.5	1.4	1.5	2.1
Equipment investment (annual average % change)	1.3	-10.5	10.3	4.3	-0.8	1.4	1.7	2.2
Nonresidential structures investment (annual average % change)	2.3	-10.1	-6.4	-6.6	7.6	1.1	0.5	3.2
Residential investment (annual average % change)	-1.0	7.2	10.7	-10.6	-11.1	0.7	3.2	1.8
Core CPI (annual average % change)	2.2	1.7	3.6	6.2	4.7	2.6	2.3	2.3
Core CPI Q4/Q4 (annual average % change)	2.3	1.6	5.0	6.0	3.7	2.4	2.3	2.3
Unemployment rate (%)	3.7	8.1	5.4	3.6	3.6	4.1	4.7	4.8
Housing starts (mil.)	1.3	1.4	1.6	1.6	1.4	1.4	1.4	1.4
Light vehicle sales (mil.)	17.0	14.5	15.0	13.8	15.2	15.2	15.5	15.6
10-year Treasury (%)	2.1	0.9	1.4	3.0	3.9	4.0	3.6	3.6
<u> </u>								

Note: All percentages are annual averages, unless otherwise noted. Core CPI is consumer price index excluding energy and food components. f--Forecast.

Sources: Bureau of Economic Analysis, Bureau of Labor Statistics, The Federal Reserve, S&P Global Market Intelligence Economic Simulink, S&P Global Ratings Economics' forecasts.

U.S. States | U.S. State Ratings Methodology (GO)



Governments | Post-COVID Landscape Key Risks – October 2023



Inflation

Higher cost of living erodes income and potentially discretionary spending which could lower consumption-based taxes.



Interest Rates

Higher borrowing costs have contributed to lower debt issuance while higher mortgage rates are increasing housing costs.



Federal Policy

Diminished federal stimulus flows and the potential for a federal government shutdown loom large.



Event Risks

Cyber attacks and extreme weather events will continue to challenge management. Cost and availability of insurance are emerging as a challenge.



Demographics

The aging U.S. population will add to service delivery costs and continue to challenge government staffing.



Real Estate

Fluctuations in commercial real estate values and housing affordability present potential revenue challenges over time.

U.S. States | By The Numbers



Aggregate reserves 130% higher than pre-pandemic



5.1%

U.S. (unadjusted) hourly wage gains in 2022



81.7%

Average state pension funded ratio for FYE 2021, expected to decline FY22



States with negative outlooks



States with positive outlooks

Core CPI forecast (% change)

FY23



2022





18.7 mil.

Medicaid and CHIP enrollment increase (or 26.4%) between Feb. 2020 and Aug. 2022



20.8%

State Fiscal Recovery funds still to be appropriated (as of Aug. 31) 4.7 mil.



More jobs open in Nov. than active job seekers (10.3 mil. open to 5.6 mil. actively seeking work)



5

Consecutive years with international migration to the U.S. declining



25

States in which deaths exceeded births in 2021

Cyber | Headlines & Trends

Starting Dec. 18, 2023, the U.S. Securities and Exchange Commission (SEC) will require public companies to report material cyber security incidents on a Form 8-K within four business days of materiality determination.

"The global average cost of a data breaches reached \$4.45 million in 2023--an all-time high and a 15% increase, compared with 2020." IBM Security's Cost of a Data Breach Report 2023

"74% of all breaches include the human element, with people being involved either via Error, Privilege Misuse, Use of stolen credentials or Social Engineering." Verizon's 2023 Data Breach Investigations Report

"69% of the 2,489 breaches reviewed in 2022 were done by **organized crime** (less than 10% nation-state or state-affiliated actors)." Verizon's 2023 Data Breach Investigations Report

"Sadly, too few organizations learn how valuable MFA is until they experience a breach." Jen Easterly, Director U.S. Cybersecurity and Infrastructure Security Agency

"Artificial intelligence and machine learning, while great for research & analytics (i.e. ChatGPT). However, AI tools can also be used by hackers for advanced attacks." Forbes, March 5, 2023

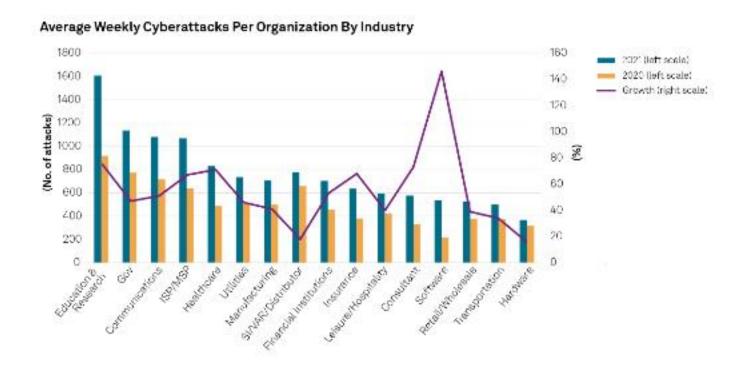
"233 days. The average time financial institutions took to detect and address data breaches." Cloudwards, Dec. 12, 2022

"The ransomware attack against Scripps Health that led to more than four weeks of electronic health record (EHR) downtime procedures and the theft of some patient data, resulted in \$112.7 million in estimated revenue loss and incremental expenses." Scripps, Aug. 10, 2021

Cyber & Crypto | Risk Management

Cyberattacks Increasing Across All Industries

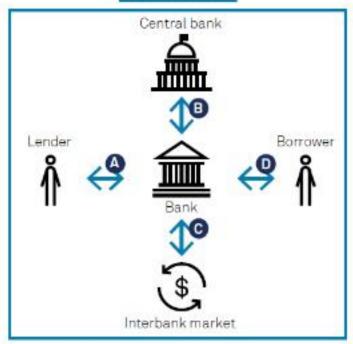
Cryptocurrency and Decentralized Finance





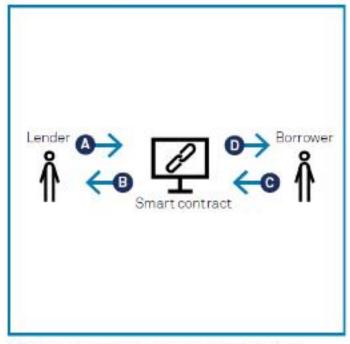
Disruptors | DeFi Uses Smart Contracts In Place Of Conventional Financial Risk Functions

Traditional



- A Lender deposits fiat money to receive interest
- Central bank provides liquidity to banks and sets interest rates based on inflation and other parameters
- Interest rates on bank loans affected by interbank market
- Loan approval and interest rate for borrower depends on collateral and borrower risk profile.

Decentralized



- Provides eligible crypto assets as liquidity
- Receives tokens as determined by protocol as form of interest
- Provides other eligible crypto assets as collateral*
- Receives a borrowed amount of crypto assets



Q&A



Copyright © 2023 by Standard & Poor's Financial Services LLC. All rights reserved.

No content (including ratings, credit-related analyses and data, valuations, model, software or other application or output therefrom) or any part thereof (Content) may be modified, reverse engineered, reproduced or distributed in any form by any means, or stored in a database or retrieval system, without the prior written permission of Standard & Poor's Financial Services LLC or its affiliates (collectively, S&P). The Content shall not be used for any unlawful or unauthorized purposes. S&P and any third-party providers, as well as their directors, officers, shareholders, employees or agents (collectively S&P Parties) do not guarantee the accuracy, completeness, timeliness or availability of the Content. S&P Parties are not responsible for any errors or omissions (negligent or otherwise), regardless of the cause, for the results obtained from the use of the Content, or for the security or maintenance of any data input by the user. The Content is provided on an "as is" basis. S&P PARTIES DISCLAIM ANY AND ALL EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE, FREEDOM FROM BUGS, SOFTWARE ERRORS OR DEFECTS, THAT THE CONTENT'S FUNCTIONING WILL BE UNINTERRUPTED, OR THAT THE CONTENT WILL OPERATE WITH ANY SOFTWARE OR HARDWARE CONFIGURATION. In no event shall S&P Parties be liable to any party for any direct, incidental, exemplary, compensatory, punitive, special or consequential damages, costs, expenses, legal fees, or losses (including, without limitation, lost income or lost profits and opportunity costs or losses caused by negligence) in connection with any use of the Content even if advised of the possibility of such damages.

Credit-related and other analyses, including ratings, and statements in the Content are statements of opinion as of the date they are expressed and not statements of fact. S&P's opinions, analyses, and rating acknowledgment decisions (described below) are not recommendations to purchase, hold, or sell any securities or to make any investment decisions, and do not address the suitability of any security. S&P assumes no obligation to update the Content following publication in any form or format. The Content should not be relied on and is not a substitute for the skill, judgment and experience of the user, its management, employees, advisors and/or clients when making investment and other business decisions. S&P does not act as a fiduciary or an investment advisor except where registered as such. While S&P has obtained information from sources it believes to be reliable, S&P does not perform an audit and undertakes no duty of due diligence or independent verification of any information it receives. Rating-related publications may be published for a variety of reasons that are not necessarily dependent on action by rating committees, including, but not limited to, the publication of a periodic update on a credit rating and related analyses.

To the extent that regulatory authorities allow a rating agency to acknowledge in one jurisdiction a rating issued in another jurisdiction for certain regulatory purposes, S&P reserves the right to assign, withdraw, or suspend such acknowledgement at any time and in its sole discretion. S&P Parties disclaim any duty whatsoever arising out of the assignment, withdrawal, or suspension of an acknowledgment as well as any liability for any damage alleged to have been suffered on account thereof.

S&P keeps certain activities of its business units separate from each other in order to preserve the independence and objectivity of their respective activities. As a result, certain business units of S&P may have information that is not available to other S&P business units. S&P has established policies and procedures to maintain the confidentiality of certain nonpublic information received in connection with each analytical process.

S&P may receive compensation for its ratings and certain analyses, normally from issuers or underwriters of securities or from obligors. S&P reserves the right to disseminate its opinions and analyses. S&P's public ratings and analyses are made available on its Web sites, www.spglobal.com/ratings (free of charge) and www.spglobal.com/ratings/usratings/es-s-tail-but-th-party-redistributors. Additional information about our ratings fees is available at www.spglobal.com/ratings/usratings/es-s-tail-but-th-party-redistributors. Additional information about our ratings fees is available at www.spglobal.com/ratings/usratings/es-s-tail-but-th-party-redistributors. Additional information about our ratings fees is available at www.spglobal.com/ratings/usratings/u

Australia: S&P Global Ratings Australia Pty Ltd holds Australian financial services license number 337565 under the Corporations Act 2001. S&P Global Ratings' credit ratings and related research are not intended for and must not be distributed to any person in Australia other than a wholesale client (as defined in Chapter 7 of the Corporations Act).

STANDARD & POOR'S, S&P and RATINGSDIRECT are registered trademarks of Standard & Poor's Financial Services LLC.

spglobal.com/ratings