NCSL's Fiscal Institute Symposium 2023

Rating in Times of Volatility

November 16, 2023

1:30 – 2:10 p.m.

S&P Global
Ratings

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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

Understanding Credit Ratings | S&P Global Ratings (spglobal.com)

Ratings 101 | S&P Global's Ratings Scale

Investment-Grade		Speculative-Grade	
AAA	Strongest	BB+, BB, BB-	Least Speculative
AA+, AA, AA-	Very Strong	B+, B, B-	Speculative
A+, A, A-	Strong	CCC, CC, C	Highly Speculative
BBB+, BBB, BBB-	Adequate	D	In Default

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**

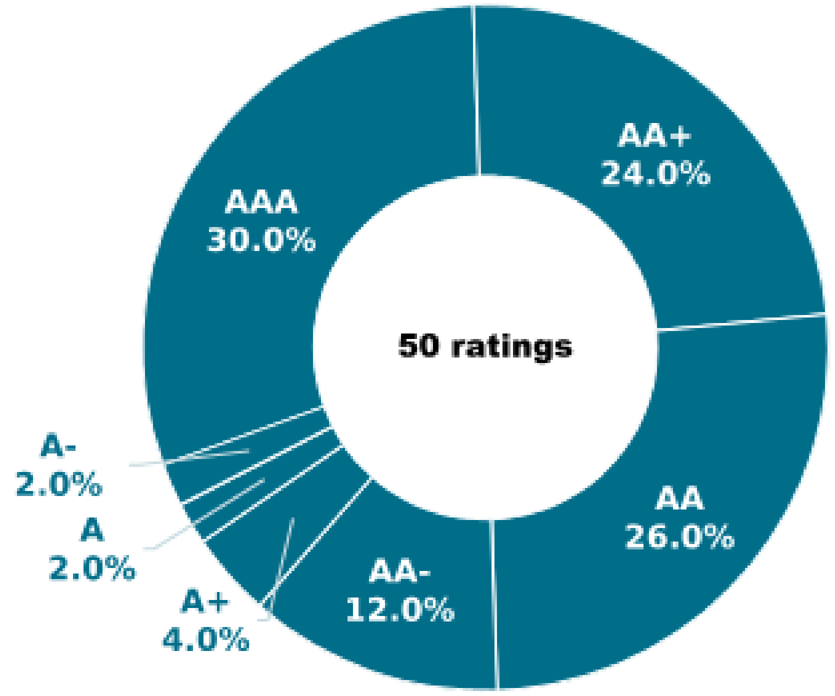
Trends

- **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**

Ratings distribution



Source: S&P Global Ratings.

Outlook distribution

Source: S&P Global Ratings.

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

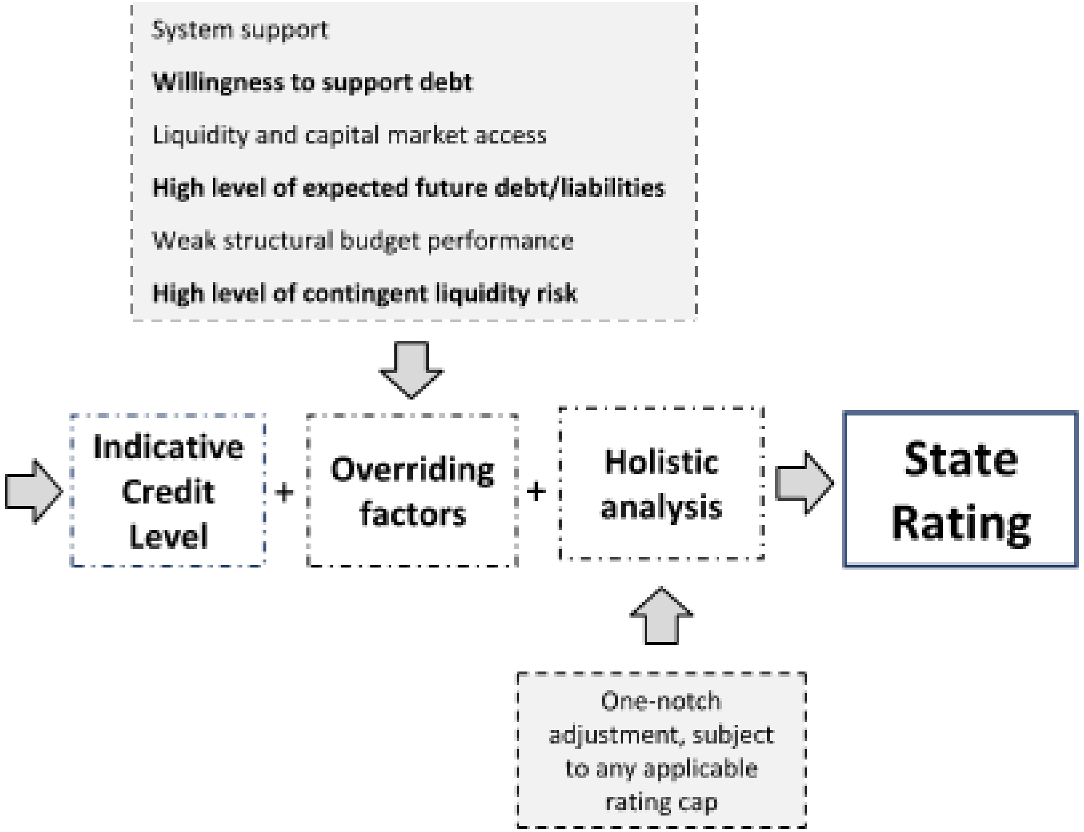
S&P Global Ratings' U.S. Economic Forecast Overview
Key indicators

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

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)

Government Framework	Fiscal policy framework
	System support
	Intergovernmental funding
Financial Management	FMA
	Budget management
Economy	Demographic profile
	Economic structure
	Wealth and income indicators
	Economic development
Budgetary Performance	Budget reserves
	Liquidity
	Tax/revenue structure
	Revenue forecasting
	Service levels
	Structural performance
Debt and Liability Profile	Debt burden
	Pension liabilities
	OPEB risk assessment



Source: S&P Global Ratings U.S. States Ratings Methodology, October 17, 2016

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

$121B
2019

$280B
2023f

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

0 States with negative outlooks

6 States with positive outlooks

Core CPI forecast (% change)

FY23
4.7%

2022
6.3%

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

Sources: National Association of State Budget Officers; S&P Global Economics; Centers for Medicare & Medicaid Services; Federal Funds Information For States; U.S. Census Bureau; Bureau of Labor Statistics

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

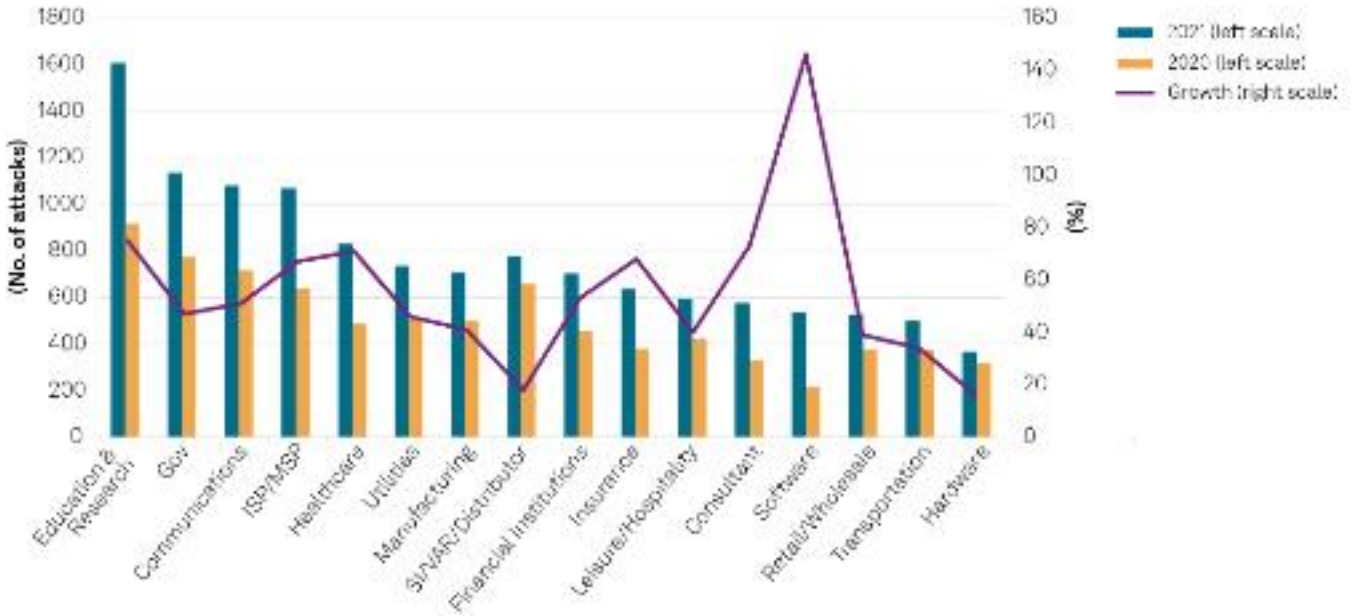
"**233 days.** The average time financial institutions took to detect and address data breaches." Cloudwards, Dec. 12, 2022

"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

Average Weekly Cyberattacks Per Organization By Industry



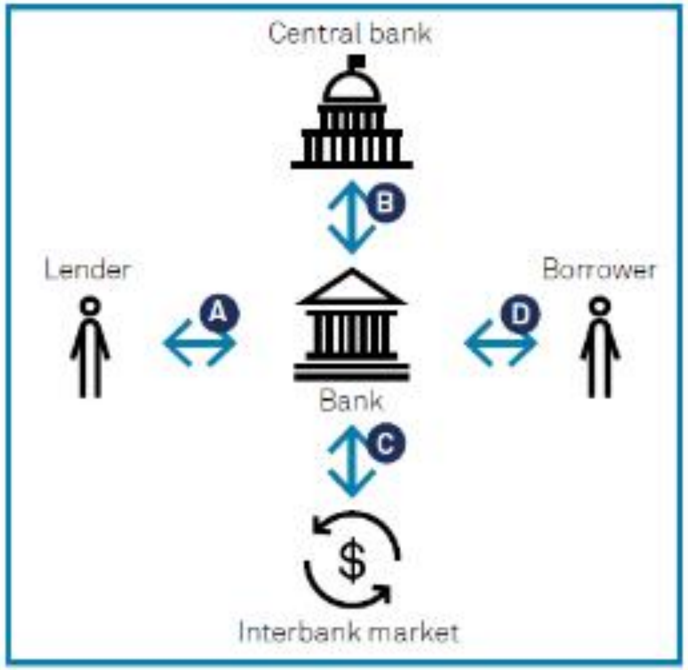
Source: Check Point Research
As Threats Rise, U.S. Public Finance Entities Take On Mounting Challenges To Secure The Digital Front Line, published Dec. 13, 2022

Cryptocurrency and Decentralized Finance

Source: Exploring Crypto And DeFi Risks In Credit Ratings, published June 30, 2022

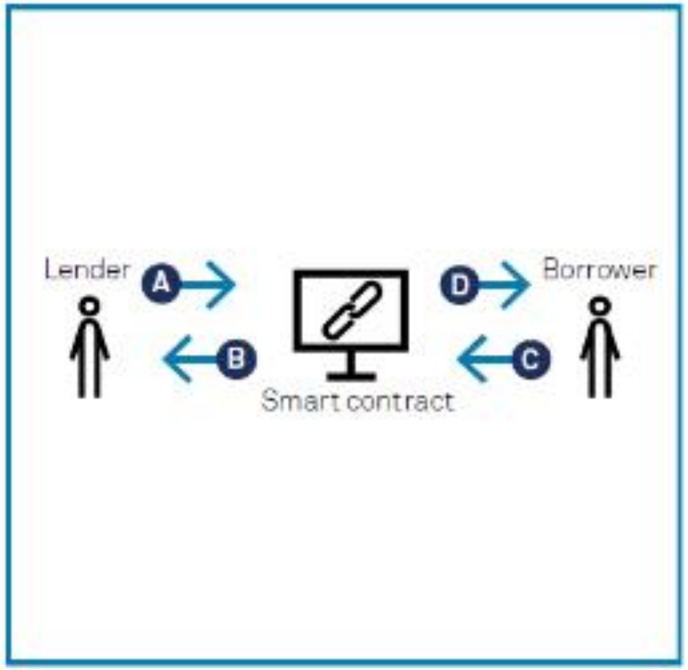
Disruptors | DeFi Uses Smart Contracts In Place Of Conventional Financial Risk Functions

Traditional



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

Decentralized



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

S&P Global Ratings

*Most DeFi borrowing solutions require an overcollateralization based on a collateral factor. A few solutions offer unsecured borrowing.

Source: S&P Global Ratings.

Q&A

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