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CREDIT OPINION
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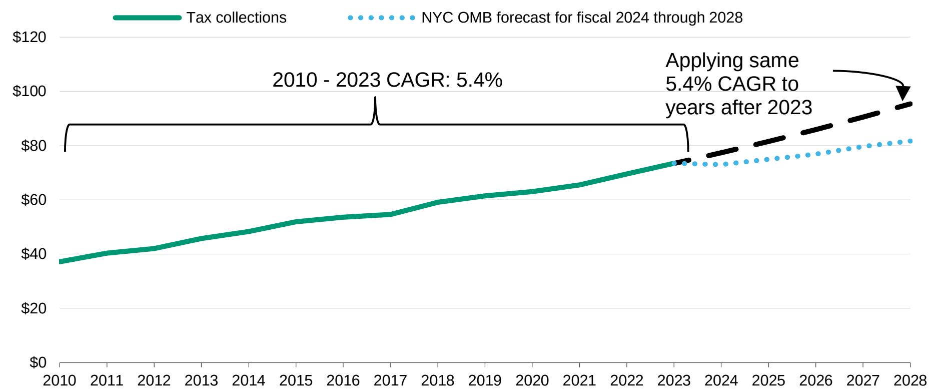
New York (City of) NY

Update to analysis

Summary

The Aa2 issuer rating reflects New York City's post-pandemic economic recovery, including record-high private employment, positive trends in assessed property values despite commercial real estate challenges, steady tax revenue growth (see Exhibit 1), and strong tourism metrics. The expanding economy is driven by the city's competitive advantages: a young, highly-skilled labor pool that over time has helped make New York City households wealthier; strong higher education and medical centers that also contribute higher paying jobs; and strong domestic and international transportation links that support New York City's position as a global economic, financial and cultural hub.

Exhibit 1
Tax revenue is forecast to grow steadily but below trend
Actual and forecast tax revenue ($ billions)



Source: New York City Office of Management & Budget; Moody's Investors Service

Very strong institutional strength and financial governance have allowed successful implementation of budget control measures to close budget gaps in the current and succeeding fiscal year primarily caused by the migrant crisis. Projected gaps remain in fiscal years 2026 through 2028 but are manageable in size and based on a restrained revenue forecast. New York City's financing responsibilities are broader than most local governments, since it is a city, five counties and the nation's largest school district and its debt burden is above-average because of this operational scope. Despite those responsibilities, the city's fixed costs for debt service, pensions and retiree healthcare are among the strongest of the nation's largest local governments.

The city's strengths are balanced by several challenges. Commercial real estate, especially office space still adjusting to hybrid/remote work patterns, will see elevated vacancy rates through the fiscal 2028 horizon of the city's current financial plan. The city's high cost of living and especially its high housing costs are also a challenge. With a residential rental vacancy rate of only 1.4%, housing demand far exceeds supply and particularly pressures residents with moderate incomes who play an important role in the city's service economy. This requires significant city fiscal effort through various affordable housing programs, one of which could be implementation of an expensive rental voucher program. While budget basis reserves are healthy at more than 10% of city funds revenue, Moody's calculation of available fund balance is less than 1% of governmental fund revenue. This reflects capital spending from the general fund outpacing debt financings, causing a large deficit in the Capital Projects Fund. The city faces significant ongoing capital financing needs, including to mitigate above-average risks from storm surge, extreme rainfall and sea level rise, while staying within state-mandated debt limits.

Credit strengths

» Exceptionally large and diverse economy driven by city's position as an international center of financial services, media, hospitality and a growing high tech sector

» Solid post-pandemic economic recovery with private sector employment at record high levels and steady but slow tax revenue growth

» Strong governance and financial best practices, including conservative revenue forecasting, strong liquidity and strong pension funding practices

Credit challenges

» Budget gaps driven by the migrant crisis and end of federal pandemic-era aid that average 6.4% of city-funds revenue in fiscal years 2026-2028 require ongoing effort to close

» Commercial real estate, especially the office sector, is challenged amid shifts to hybrid/remote work

» High housing costs and significant exposure to physical climate risks, especially hurricanes and sea level rise

Rating outlook

The stable outlook reflects the city's continued economic expansion and tax revenue growth, and the expectation that strong financial management will help the City navigate ongoing budget pressures in fiscal years 2026 through 2028 driven by continued but waning costs of the migrant crisis and the end of pandemic-era federal aid. A strong institutional framework, including generally conservative revenue forecasts, frequent multiyear forecasting and multiyear phase-ins of changes in commercial property assessed values, provide the city ample time to make budget adjustments when necessary.

Factors that could lead to an upgrade

» Continued economic recovery that brings tax revenue growth closer to the 5.4% pre-pandemic trend, and ongoing structurally-balanced budgets

» Stronger reserves, including deposits to the Revenue Stabilization Fund

» Reduction of fixed costs ratio closer to Aa median of about 11%

Factors that could lead to a downgrade

» Additional spending pressure that pushes forecast budget gaps closer to 10% of city funds revenue

» Further declines in Moody's calculated available fund balance, or use of OPEB assets to balance the budget

This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the issuer/deal page on https://ratings.moodys.com for the most updated credit rating action information and rating history.

» Economic events such as sustained declines in equity prices, or trends that create significant structural budget imbalances beyond those caused by the current migrant crisis

» Divergence from well-established fiscal practices and strong budgetary management

Key indicators

Exhibit 2

New York City

	2020	2021	2022	2023	Aa Medians
Economy					
Resident income ratio (%)	89.3%	89.1%	90.2%	N/A	115.0%
Full Value ($000)	$1,315,907,500	$1,369,384,200	$1,292,293,800	$1,393,644,100	$2,649,338
Population	8,379,552	8,736,047	8,622,467	N/A	22,694
Full value per capita ($)	$157,038	$156,751	$149,875	N/A	$108,666
Annual Growth in Real GDP	-3.5%	4.8%	2.5%	N/A	N/A
Financial Performance					
Revenue ($000)	$98,508,834	$104,384,318	$110,054,704	$111,073,844	$48,404
Available fund balance ($000)	$1,829,838	$2,587,187	$2,992,446	$932,798	$24,069
Net unrestricted cash ($000)	$13,472,128	$15,090,440	$14,385,889	$20,395,528	$32,092
Available fund balance ratio (%)	1.9%	2.5%	2.7%	0.8%	51.0%
Liquidity ratio (%)	13.7%	14.5%	13.1%	18.4%	69.0%
Leverage					
Debt ($000)	$101,002,408	$101,040,171	$116,497,239	$118,095,015	$34,496
Adjusted net pension liabilities ($000)	$171,684,742	$134,555,301	$113,071,370	$98,588,008	$55,543
Adjusted net OPEB liabilities ($000)	$109,000,181	$105,521,038	$84,494,377	$84,665,435	$6,316
Other long-term liabilities ($000)	$17,856,688	$18,398,873	$18,814,723	$19,170,524	$1,623
Long-term liabilities ratio (%)	405.6%	344.4%	302.5%	288.6%	244.8%
Fixed costs					
Implied debt service ($000)	$6,674,265	$7,233,051	$7,086,931	$8,136,144	$2,436
Pension tread water contribution ($000)	$6,940,768	$7,254,025	$4,575,403	$6,873,761	$1,565
OPEB contributions ($000)	$2,059,854	$3,600,387	$4,583,897	$3,282,287	$178
Implied cost of other long-term liabilities ($000)	$1,219,702	$1,278,765	$1,290,492	$1,314,017	$109
Fixed-costs ratio (%)	17.2%	18.6%	15.9%	17.7%	11.1%

For definitions of the metrics in the table above please refer to the US Cities and Counties Methodology or see the Glossary in the Appendix below. Metrics represented as N/A indicate the data were not available at the time of publication. The medians come from our most recently published US Cities and Counties Median Report. The real GDP annual growth metric cited above is for the New York-Newark-Jersey City, NY-NJ-PA Metropolitan Statistical Area [issuer specific] Metropolitan Statistical Area.
Sources: US Census Bureau, New York City's financial statements and Moody's Investors Service

Profile

New York City is the largest city in the US by population (8.34 million) and by the size of its economy (real GDP of $1.1 trillion). New York City's GDP is larger than all but four states. The size and scope of the city's operations are broader than most local governments: in addition to the city government, New York City is five counties and the nation's largest public school system, with approximately one million students.

Detailed credit considerations

Economy

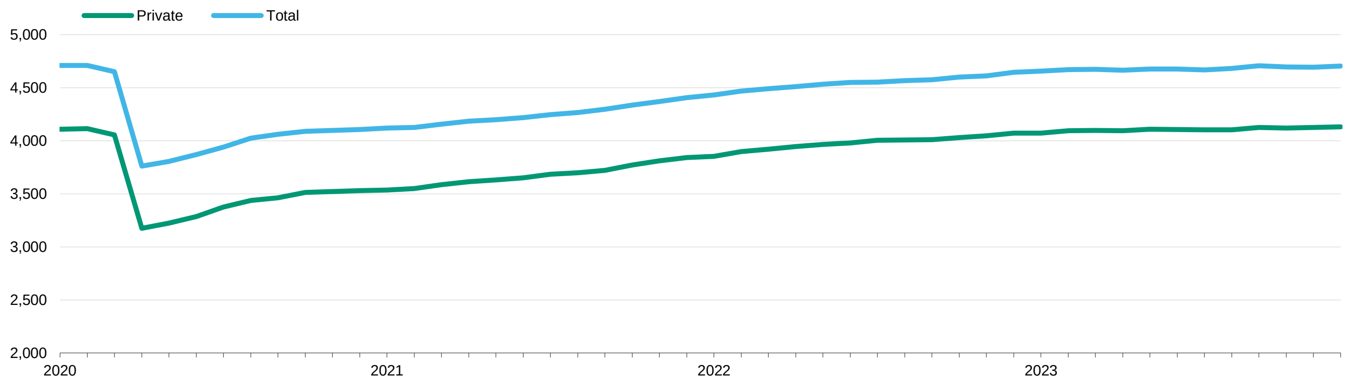
New York City's economy is colossal. The city's 2023 real GDP, spanning its five counties, is projected to stay above $1 trillion, representing 4.3% of the US economy and nearly 8% of the US GDP when considering the city's Metropolitan Statistical Area (MSA). Dwarfing Los Angeles County's economy by 130%, New York City boasts the world's second-largest metro-area economy, trailing only Tokyo, Japan.

The city's post-pandemic economic recovery lagged overall but many measures now are performing more strongly than the pre-pandemic peak. Private sector employment is at a record high (see Exhibit 3). the share of New York City residents with a bachelor's degree or higher has increased to 41%, which has helped drive up median household income, the share of households with incomes of $100,000 or greater has increased to 43%, and migration trends have returned to pre-pandemic patterns.

Exhibit 3

New York City private employment slightly exceeds the pre-pandemic peak, a record high

Private and total employment (000s)

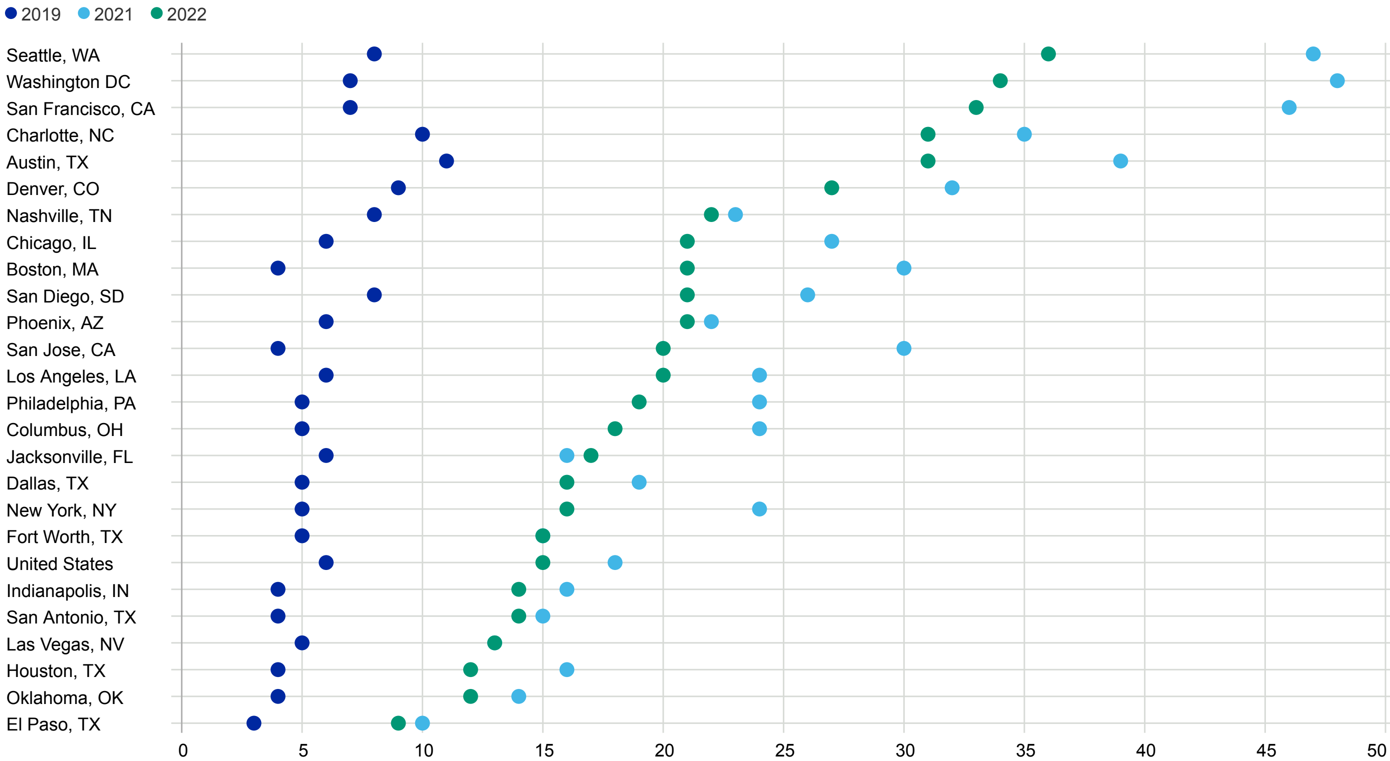


Source: Bureau of Labor Statistics

Notwithstanding those improvements, the shift to hybrid work models has changed New York City's economy. Many firms have reduced their leased office space or consolidated into newer, high end space which is impacting commercial real estate market values (see discussion on property taxes below). While hybrid work among New York employers ramped up quickly, it has declined over time and according to census data 16% of city residents worked remotely at least sometime in 2022. That figure is nearly equal to the US level and is much lower than many other cities (see Exhibit 4). Still, the data reflect residents only: persistently elevated office vacancy rates forecast to hover around 20% through fiscal 2028 highlight the impact nonresident former daily commuters who are now hybrid workers have had on New York's commercial real estate.

Exhibit 4

Remote work by New York City residents is higher than pre-pandemic but is well below many big cities
Share of residents who worked primarily from home



Source: US Census Bureau

Financial operations

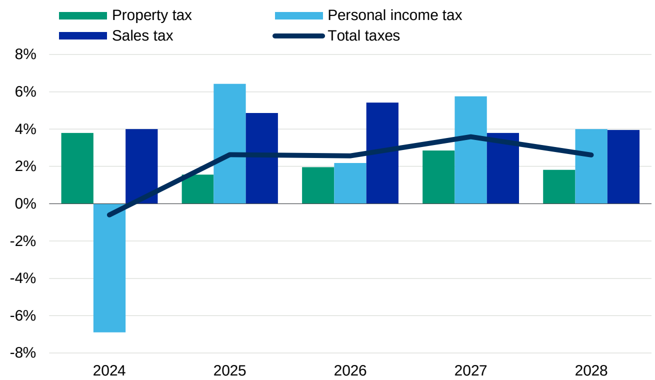
New York City conservatively forecasts tax revenue and through fiscal 2028 expects taxes to grow on average by 2.2%, below the long-term trend (see Exhibit 1). The property tax provides broad stability in the city's revenue, even amid a challenged commercial real estate market. While single family home market values are based on comparable sales, market values for large multifamily and commercial properties are based on income net of expenses and a capitalization rate and assessed values are 45% of that amount. Structural features in the property tax system play an important stabilizing role, too. For single family homes, state law limits increases in assessments to 6% annually. This is reflected in a backlog of unrealized assessed value from previous years' increases in single-family home values, which persists despite the recent decline in home values driven by rising interest rates. For multifamily and commercial properties, changes in assessed value are phased-in over five years. The result now is that even while real estate transaction taxes are sharply down, billable assessed values are increasing for all classes of property.

Personal income taxes are expected to decline in the current fiscal year even though stronger employment metrics have driven wage withholding up. Wall Street bonuses, however, are expected to be weak for a second straight year. Additionally, overpayments related to the implementation of the new pass-through entity tax that benefited collections in fiscal 2023 are having a negative impact in fiscal 2024 as those liabilities are settled. New York City's sales taxes are the strongest in the state, up 5.9% on an annual basis through December 2023. The growth is driven by the city's strong jobs performance and by recovering tourism (see Exhibits 5 and 6).

Exhibit 5

Taxes boosted by strengthening economy, but growth is still modest

Annual percentage change in tax revenue by type



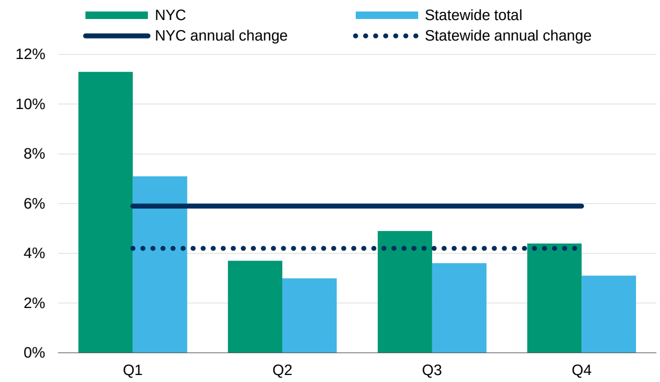
Years are fiscal years (July 1 - June 30)

Source: New York City Office of Management & Budget

Exhibit 6

New York City's sales taxes outperform the state as a whole

Annual percentage change in sale tax collections



Quarters reflect calendar year 2023

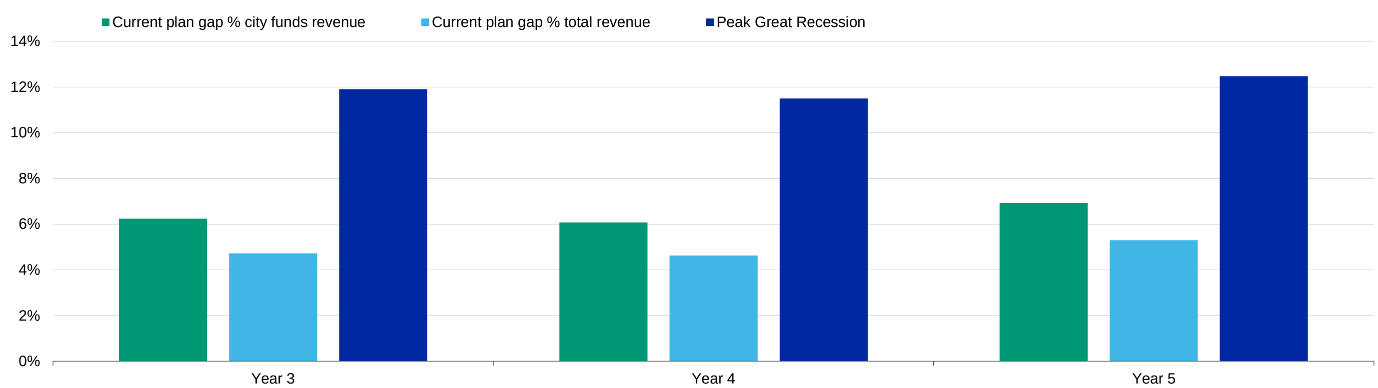
Source: New York State comptroller

New York City's regular financial plan updates routinely identify future year budget gaps. The ones it now faces are driven not by revenue challenges but by spending pressure from the rapid influx of asylum-seekers that started in spring 2022 and by the end of federal pandemic-era aid, primarily for education. The costs to care for the new migrant population escalated rapidly and in earlier iterations of the city's financial plan led to budget gaps of more than 10% in some years. In response the city implemented broad spending reductions, including a citywide hiring freeze and agency spending reductions. The city also implemented policies to shorten the length of time asylum-seeking migrants can stay in city care and to limit the costs of the services they receive. The result has been balanced budgets for fiscal 2024 (the current year) and fiscal 2025, and significant reduction in the gaps forecast in fiscal 2026-2028. The size of the gaps forecast now (averaging 6.4% of city-funds revenue and 4.9% of total revenue) are manageable in the context of the city's budget management and resources, and are much smaller, for example, than the peak budget gaps the city faced during the Great Recession (see Exhibit 7). Risks remain, however. In fiscal years 2024 and 2025 the city's budget includes more state assistance for migrant costs than the state has provided. The city, which so far is paying nearly 80% of the migrant costs, expects the state will enact significant additional aid in the current legislative session. If the state does not enact additional funding when its fiscal year starts April 1, the city will need to quickly adjust its budget again.

Exhibit 7

Forecast gaps in later years of the financial plan (fiscal years 2026-2028) are manageable, especially compared to prior periods

Budget gaps as percentage of city funds and total funds revenue



Peak forecast gaps in the Great Recession were for fiscal years 2009-2011

Source: New York City Office of Management & Budget

Liquidity

The city's liquidity position is more robust than suggested by the scorecard measure. Fiscal 2023 ending net cash was more than $20 billion, or 18% of governmental funds revenue. As of Feb. 2, 2024, the city comptroller reported current cash balances of $12 billion, equal to 17% of projected fiscal 2024 tax revenue. Although this cash buffer is smaller relative to its operations than the Aa median, it is healthy in the context of the city's budget flexibility and low risks in its debt structure. The city's cash balances also have been bolstered by the Revenue Stabilization Fund, created in fiscal 2021, which increased to nearly $2 billion in fiscal 2023, raising the city's cash low points. Unlike many local governments heavily dependent on the timing of state aid, the city has not needed to borrow for cash flow since 2004.

Leverage

Legal security

New York City's general obligation bonds are full faith and credit obligations of the city, secured by a real property tax levied without limitation as to rate or amount. All of the city's property tax is deposited into the general debt service fund, which is administered and maintained by the state comptroller. State law requires that the real property tax — which is used to pay general obligation debt service — be segregated into a general debt service fund held by the state comptroller. The state also statutorily covenants not to impair the rights of city bondholders to be paid when due. Those features do not create a statutory lien on the property tax in favor of general obligation bondholders, but are strengths in the payment mechanism that are not found in most local government general obligation bonds.

Debt structure

Unlike most other large cities, no separate school district or county government exists that also finances New York City's capital costs. When combined with pension and other post-retirement benefit liabilities (discussed below) this leads to an elevated leverage ratio for New York City compared to the Aa median.

General obligation and Transitional Finance Authority future tax secured bonds (paid by city income tax and if needed, sales tax) are 96% of New York City's outstanding bonded debt, with various appropriation bonds the remainder (see Exhibit 8). Combined general obligation and TFA debt issuance is subject to a limit based on a five-year average of taxable full value. Based on the debt limit the city's debt incurring power will decline after fiscal 2028, even after a recent re-prioritization of capital needs. In response, the governor's fiscal 2025 executive budget includes a proposal to increase in TFA's bonding capacity and the mayor is separately seeking legislation to increase TFA's borrowing capacity. As of Jan. 31, 2024, the city's and TFA's debt incurring margin was approximately $32 billion.

In recent years the city also has de-risked its debt portfolio and by the end of the current fiscal year it expects that 92% of outstanding debt will be fixed rate. The floating rate debt that comprises the remaining 8% is a mix of variable rate demand bonds with liquidity support from a broad array of highly rated banks; index rate mode bonds and other adjustable rate bonds with remarketing risk. Given the city's strong market access and strong debt management, however, those bonds pose minimal credit risk, in our opinion.

Exhibit 8

The city continues to rely heavily on TFA to finance its capital plan

Debt outstanding by type ($ millions)

Credit	Amount outstanding	% outstanding	Rating
Transitional Finance Authority future tax secured	45,627	51%	Aa1
General obligation	40,093	45%	Aa2
Hudson Yards Infrastructure Corporation	2,519	3%	Aa2
DASNY (courts and mental health facilities)	576	1%	Aa3
Health and Hospitals Corporation	479	1%	Aa3
Educational Construction Fund	290	0.3%	Aa3
NYC IDA (Stock Exchange)	52	0.1%	Aa3
Total outstanding bond principal	**$89,636**	**100%**	

Data as of June 30, 2023. Total does not add to 100% due to rounding.
Source: Audited financial statements

Debt-related derivatives

As it has reduced its use of floating rate bonds New York City also has shrunk its swap portfolio, now with one outstanding swap associated with general obligation bonds. This has a notional amount of $32 million and a marked-to-market value of -$665,294 as of Dec. 31, 2023. The counterparty is U.S. Bank National Association (A1(cr)/P-1(cr) and the swap terminates in August 2026. There are also two outstanding swaps associated with bonds paid by city appropriations issued by the Dormitory Authority of the State of New York (DASNY) with an outstanding notional amount of $125.5 million. The marked-to-market value of these two swaps was an aggregate -$8.9 million as of Dec. 31, 2023.

The swap portfolio poses minimal credit risk for the city. Rating triggers that could cause the agreements to terminate early or post collateral are low: the city's rating would have to fall below Baa3.

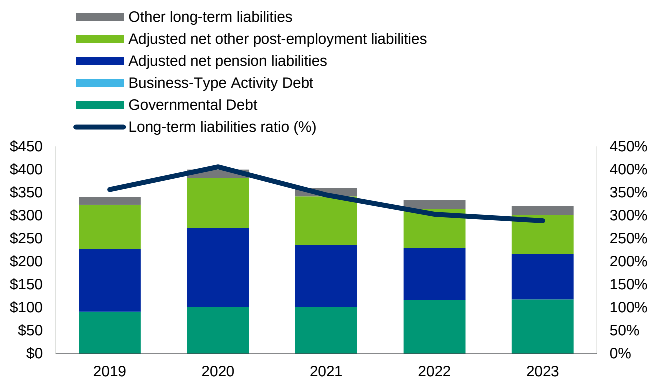
Pensions and OPEB

While New York City's leverage for debt, pensions and retiree healthcare exceeds the Aa median, its pension funding strategy is robust and effective. As a percentage of revenue New York City's total leverage is in the bottom third of the largest cities. The city consistently contributes more than the "tread water" amount, which prevents the net pension liability from increasing. In fiscal 2023 the city contributed 131% of the tread water amount, and contributions averaged 154% over the preceding four fiscal years. This approach helps keep the city's fixed costs relatively low for a large city, at just less than 18% of revenue (see Exhibits 9 and 10). The city's pension plans assume a 7% rate of return on their investments and like many public pension plans depend on assets heavily weighted toward equities to try to reach that level. This increases market volatility risk but New York City's pension plans are not overly exposed. Hypothetical 2024 pension investment returns of -25% would nearly double the tread water indicator to an amount equal to projected contributions, but even in that case the net pension liability would only grow if the city decreased its projected contributions.

Exhibit 9

Strong pension funding practices help mitigate high leverage...

Long-term liabilities (left, $ billions) and long-term liabilities ratio (right)

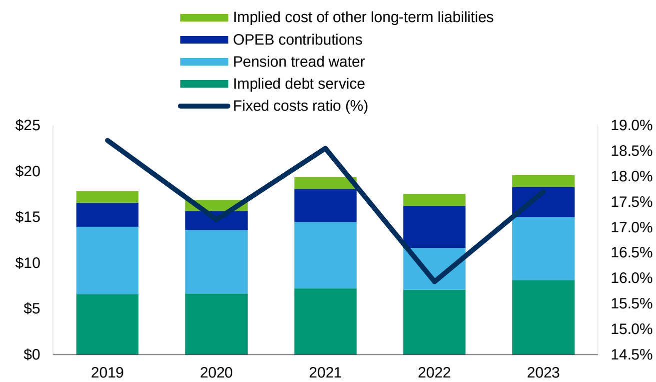


Source: Audited financial statements, Moody's Investors Service

Exhibit 10

... and keep fixed costs relatively low

Fixed costs (left, $ billions) and fixed costs ratio (right)

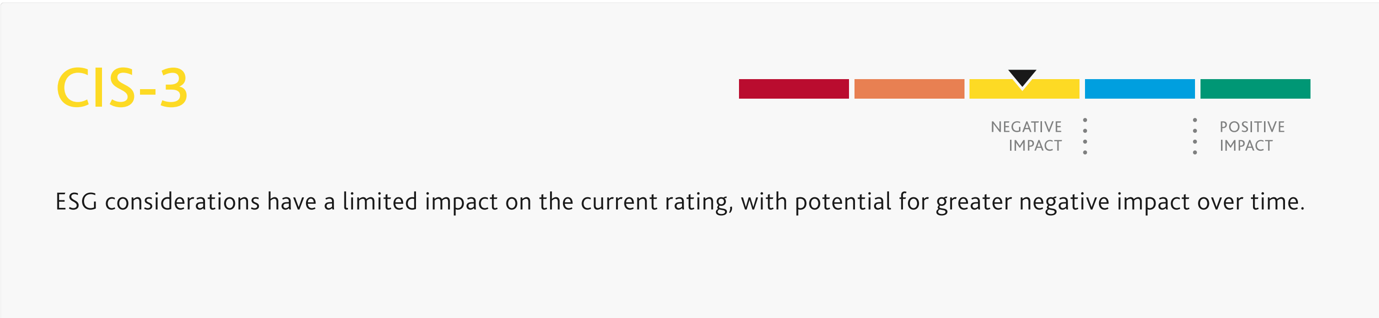


Source: Audited financial statements, Moody's Investors Service

ESG considerations

New York (City of) NY's ESG credit impact score is CIS-3

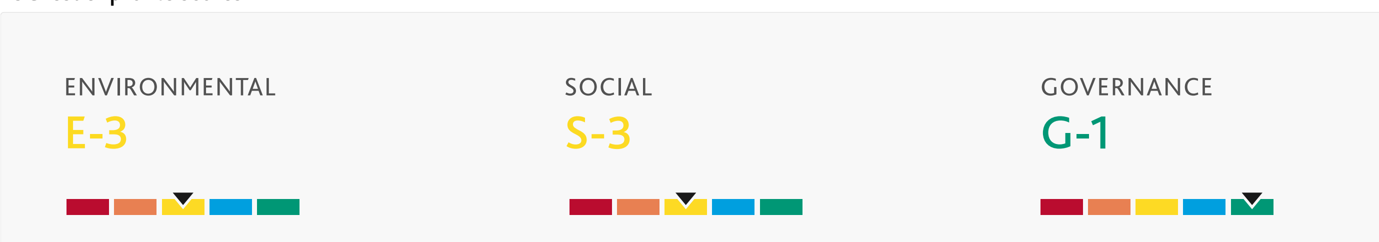
Exhibit 11
ESG credit impact score



Source: Moody's Investors Service

New York City's credit impact score of **CIS-3** reflects its above average exposure to physical climate risks and high housing costs. Those exposures could negatively impact the rating in the future if the capital projects to adapt to increased flooding and sea-level rise are not implemented or if the city's high cost of living result in sustained population declines greater than what it experienced during the pandemic.

Exhibit 12
ESG issuer profile scores



Source: Moody's Investors Service

Environmental

New York City's exposure to physical climate risks are high compared to regional and local governments as a sector, reflected in its **E-3** issuer profile. Of the physical climate risks Moody's ESG Solutions evaluates, New York City's most significant exposures are to hurricanes, sea level rise and water stress. While the local government sector overall has low exposure to environmental risks, New York City's risks are more elevated because of its location on the Eastern Seaboard and its geographic position between two tidal estuaries. While only 6.2% of the city's housing stock is in the flood plain, those data understate its storm risks. In addition, all 14 of its wastewater treatment facilities, 12 of 27 power plants, 16% of all hospital beds and a significant portion of public housing are in the flood plain. Superstorm Sandy in 2012 caused an estimated $47 billion in damage across the region it hit (which was broader than just New York City) and $26 billion in lost economic output. When updated flood maps that reflect the Sandy experience and other scientific and technical improvements are published they will likely show more of the city at flood risk. That, in turn, will require more property owners to buy flood insurance and could also slow growth in property values. In addition to economic loss, Sandy cost the city an estimated $10.7 billion for emergency response and capital repair (including the New York City Housing Authority and NYC Health + Hospitals). To adapt to its environmental risks, the city is undertaking long-term capital projects to protect infrastructure against natural disasters, especially coastal flooding, much of which is being paid for with federal funds.

Social

New York City's **S-3** issuer profile score reflects several factors. Income inequality in the five counties that make up New York City is among the highest in the nation, a driver of social spending and of policy priorities to create more affordable housing and mitigate the city's extremely high housing costs. Health and safety metrics are more favorable, however: nearly 93% of New York City's population has health insurance, slightly higher than the national rate. Similarly, on a per capita basis crime rates remain the lowest of big US cities.

Governance

New York City's **G-1** issuer profile score reflects very strong financial management that include robust institutionalized budget and financial management practices that emerged from the 1970s fiscal crisis and substantial transparency of its financial operations. The hallmark of these practices is effective multiyear planning via quarterly updates to the city's five-year financial plan, including consistently conservative revenue estimates, which gives a clear forward-looking view to potential budget challenges. The city is also known for its early adoption of new accounting standards and for being one of the most timely municipal issuers to publish its annual audited financial statements. By law, changes in property tax billable assessed value are phased-in over five years, which evens out ups and downs in the city's real estate markets and helps minimize swings in the city's tax revenue. Nonetheless, even with the city's strong governance structure, actions to structurally balance the budget can be politically difficult and the city's reserves are typically much lower than the sector and so provided limited financial resilience to its other exposures. State law that limits the amount of real property tax that a municipality may levy in any year--factor in our institutional framework for New York cities--does not apply to New York City.

ESG Issuer Profile Scores and Credit Impact Scores for the rated entity/transaction are available on Moodys.com. In order to view the latest scores, please click here to go to the landing page for the entity/transaction on MDC and view the ESG Scores section.

Rating methodology and scorecard factors

The US Local Government General Obligation Debt methodology includes a scorecard, a tool providing a composite score of a local government's credit profile based on the weighted factors we consider most important, universal and measurable, as well as possible notching factors dependent on individual credit strengths and weaknesses. Its purpose is not to determine the final rating, but rather to provide a standard platform from which to analyze and compare local government credits.

Exhibit 13

New York City

	Measure	Weight	Score
Economy			
Resident income ratio	90.2%	10.0%	A
Full value per capita	172,537	10.0%	Aa
Economic growth metric	-0.4%	10.0%	Aa
Financial Performance			
Available fund balance ratio	0.8%	20.0%	Ba
Liquidity ratio	18.4%	10.0%	Baa
Institutional Framework			
Institutional Framework	Aa	10.0%	Aa
Leverage			
Long-term liabilities ratio	288.6%	20.0%	A
Fixed-costs ratio	17.7%	10.0%	A
Notching factors			
No notchings applied			
Scorecard-Indicated Outcome			A3
Assigned Rating			Aa2

The Economic Growth metric cited above compares the five-year CAGR of real GDP for New York-Newark-Jersey City, NY-NJ-PA Metropolitan Statistical Area [issuer specific] Metropolitan Statistical Area to the five-year CAGR of real GDP for the US

Sources: US Census Bureau, New York City's financial statements and Moody's Investors Service

Appendix

Exhibit 14
Key Indicators Glossary

	Definition	Typical Source*
Economy		
Resident income ratio	Median Household Income (MHI) for the city or county, adjusted for Regional Price Parity (RPP), as a % of the US MHI	MHI: US Census Bureau - American Community Survey 5-Year Estimates RPP: US Bureau of Economic Analysis
Full value	Estimated market value of taxable property in the city or county	State repositories; audited financial statements; continuing disclosures
Population	Population of the city or county	US Census Bureau - American Community Survey 5-Year Estimates
Full value per capita	Full value / population	
Economic growth metric	Five year CAGR of real GDP for Metropolitan Statistical Area or county minus the five-year CAGR of real GDP for the US	Real GDP: US Bureau of Economic Analysis
Financial performance		
Revenue	Sum of revenue from total governmental funds, operating and non-operating revenue from total business-type activities, and non-operating revenue from internal services funds, excluding transfers and one-time revenue, e.g., bond proceeds or capital contributions	Audited financial statements
Available fund balance	Sum of all fund balances that are classified as unassigned, assigned or committed in the total governmental funds, plus unrestricted current assets minus current liabilities from the city's or county's business-type activities and internal services funds	Audited financial statements
Net unrestricted cash	Sum of unrestricted cash in governmental activities, business type activities and internal services fund, net of short-term debt	Audited financial statements
Available fund balance ratio	Available fund balance (including net current assets from business-type activities and internal services funds) / Revenue	
Liquidity ratio	Net unrestricted cash / Revenue	
Leverage		
Debt	Outstanding long-term bonds and all other forms of long-term debt across the governmental and business-type activities, including debt of another entity for which it has provided a guarantee disclosed in its financial statements	Audited financial statements; official statements
Adjusted net pension liabilities (ANPL)	Total primary government's pension liabilities adjusted by Moody's to standardize the discount rate used to compute the present value of accrued benefits	Audited financial statements; Moody's Investors Service
Adjusted net OPEB liabilities (ANOL)	Total primary government's net other post-employment benefit (OPEB) liabilities adjusted by Moody's to standardize the discount rate used to compute the present value of accrued benefits	Audited financial statements; Moody's Investors Service
Other long-term liabilities (OLTL)	Miscellaneous long-term liabilities reported under the governmental and business-type activities entries	Audited financial statements
Long-term liabilities ratio	Debt + ANPL + ANOL + OLTL / Revenue	
Fixed costs		
Implied debt service	Annual cost to amortize city or county's long-term debt over 20 years with level payments	Audited financial statements; official statements; Moody's Investors Service
Pension tread water contribution	Pension contribution necessary to prevent reported unfunded pension liabilities from growing, year over year, in nominal dollars, if all actuarial assumptions are met	Audited financial statements; Moody's Investors Service
OPEB contribution	City or county's actual contribution in a given period	Audited financial statements
Implied cost of OLTL	Annual cost to amortize city or county's other long-term liabilities over 20 years with level payments	Audited financial statements; Moody's Investors Service
Fixed-costs ratio	Implied debt service + Pension tread water + OPEB contributions + Implied cost of OLTL / Revenue	

*Note: If typical data source is not available then alternative sources or proxy data may be considered. For more detailed definitions of the metrics listed above please refer to the US City and Counties Methodology .
Source: Moody's Investors Service

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