MOODY'S INVESTORS SERVICE

CREDIT OPINION
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City of Detroit, MI

Update to credit analysis following upgrade to Ba1 positive

Summary

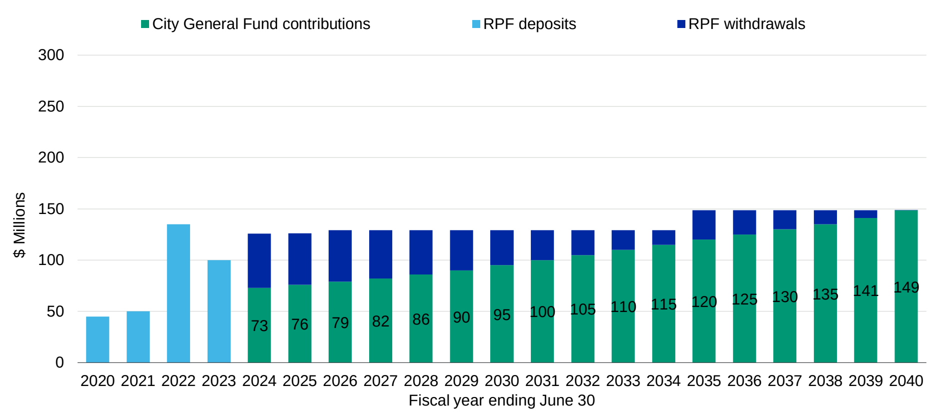
Detroit's (Ba1 positive) credit profile continues to improve, benefitting from solid budget management and revenue growth. Available fund balance and cash are strong and leverage ratios are in line with other big cities. The city also received a tremendous amount of federal ARPA funding, which it will use to improve infrastructure and services and remediate blight.

Still, Detroit faces three key credit constraints: a local economy and tax base that are heavily exposed during economic downturns, in part because of its high poverty and unemployment, very low resident income and wealth ratios and high reliance on the domestic auto manufacturing sector; an economically sensitive and potentially volatile revenue structure with a limited ability to raise new revenue; and rising expenditure pressures, including a pension ramp that will spike if assets underperform.

The city is well positioned to manage its rising pension contributions for at least the next few years because it has stockpiled ample funds in a dedicated trust to help gradually absorb the costs into its budget (exhibit 1).

Exhibit 1

Detroit will gradually absorb the increased pension contributions with the help of its retiree protection fund (RPF)



Base case assumes level 6.75% annual returns, 20-year Police and Fire Retirement System (PFRS) and 30-year General Retirement System (GRS) amortization and general fund contributions starting at $73 million in fiscal 2024. ADC net of $18.7 million of contributions from external sources and Detroit Water and Sewerage Department and library contributions. RPF is based on mark-to-market amount reported in fiscal 2022 audit plus $100 million addition in fiscal 2023 and 1.25% investment income annually until the balance is exhausted.

Source: Moody's Investors Service

On April 5, we upgraded the city's issuer and general obligation unlimited tax (GOULT) ratings to Ba1 positive from Ba2 positive.

Credit strengths

» Strong budget management practices including annual conference to estimate revenue, long-range financial planning and conservative budgetary assumptions, producing multiple consecutive years of budget surplus

» Very strong cash and available fund balance ratios compared to peers

» Robust revenue growth driven by a share of statewide online gaming and sports betting taxes and good income tax growth despite remote work disruptions

» Improved full value per capita and unemployment rate because of renewed economic development in city, particularly downtown, and major investments by auto manufacturers in battery and electric vehicle production in both city and region over past few years

Credit challenges

» Rising pension costs now that pension holiday is over, costs will spike if assets underperform

» Income taxes, the city's main source of revenue, are economically sensitive and potentially volatile during an economic downturn

» Median family income and full value per capita is among the lowest of large US cities; although improved, poverty is very high and unemployment is still almost double the national level

» Labor force is concentrated in auto manufacturing

Rating outlook

The outlook is positive because of ongoing strengthening of the city's financial operations including robust revenue growth and increasing reserves. The city's rating is likely to move upward if the economy is resilient if there is an economic slowdown and the city is able to continue to make progress in absorbing pension contributions and inflationary cost growth into its budget without adversely impacting its financial operations.

Factors that could lead to an upgrade

» Prudent deployment of the city's retiree protection fund sustained over multiple years and continued absorption of pension contributions into the city's budget.

» Material revenue growth that enables the city to manage its growing expenditure needs

» Strengthening of full value per capita, median family income and population trends

Factors that could lead to a downgrade

» Material growth in leverage, fixed costs or capital needs

» Draws on operating reserves, leaving inadequate reserves to mitigate current and future challenges

» Failure to sustain progress toward absorbing pension contributions

» Negative changes in the city's economic profile, such as a material decline in full value or an acceleration of depopulation trends

Key indicators

Exhibit 2

Detroit (City of) MI

	2019	2020	2021	2022	BaAndBelow Medians
Economy					
Resident income ratio (%)	50.0%	50.8%	52.4%	N/A	65.7%
Full Value ($000)	$14,662,922	$19,428,551	$21,269,506	$21,889,025	$3,511,463
Population	674,841	672,351	645,658	N/A	37,641
Full value per capita ($)	$21,728	$28,896	$32,942	N/A	N/A
Economic growth metric (%)	N/A	-1.5%	-1.0%	N/A	-1.4%
Financial Performance					
Revenue ($000)	$2,047,178	$2,018,550	$2,071,828	$2,321,082	$86,921
Available fund balance ($000)	$684,740	$674,415	$706,773	$819,293	$10,079
Net unrestricted cash ($000)	$845,409	$921,246	$1,370,767	$1,779,685	$16,806
Available fund balance ratio (%)	33.4%	33.4%	34.1%	35.3%	17.7%
Liquidity ratio (%)	41.3%	45.6%	66.2%	76.7%	35.5%
Leverage					
Debt ($000)	$2,796,477	$2,848,833	$3,001,737	$2,885,020	$68,306
Adjusted net pension liabilities ($000)	$3,621,644	$4,347,158	$5,388,012	$4,552,296	$283,719
Adjusted net OPEB liabilities ($000)	$3,245	$4,883	$4,498	$2,765	$22,830
Other long-term liabilities ($000)	$287,185	$267,633	$345,667	$384,855	$7,807
Long-term liabilities ratio (%)	327.7%	370.0%	421.8%	337.2%	363.2%
Fixed costs					
Implied debt service ($000)	$190,278	$203,890	$204,012	$210,541	$5,181
Pension tread water contribution ($000)	$136,278	$156,967	$182,828	$143,079	$9,426
OPEB contributions ($000)	$91	$110	$115	$107	$985
Implied cost of other long-term liabilities ($000)	$17,760	$20,939	$19,166	$24,245	$205
Fixed-costs ratio (%)	16.8%	18.9%	19.6%	16.3%	18.7%

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 Economic Growth metric cited above compares the five-year CAGR of real GDP for Detroit-Warren-Dearborn, MI to the five-year CAGR of real GDP for the US.
Sources: US Census Bureau, Detroit (City of) MI's financial statements and Moody's Investors Service, US Bureau of Economic Analysis

Profile

The City of Detroit is the county seat of Wayne County, located in the southeastern region of Michigan's Lower Peninsula. The city is situated on the Detroit River, directly across from the city of Windsor, Ontario, Canada. According to the 2020 census, the city has a population of just under 640,000, making it one of the 30 largest cities in the US and the largest city in Michigan (Aa1 stable). The city emerged from bankruptcy in 2014.

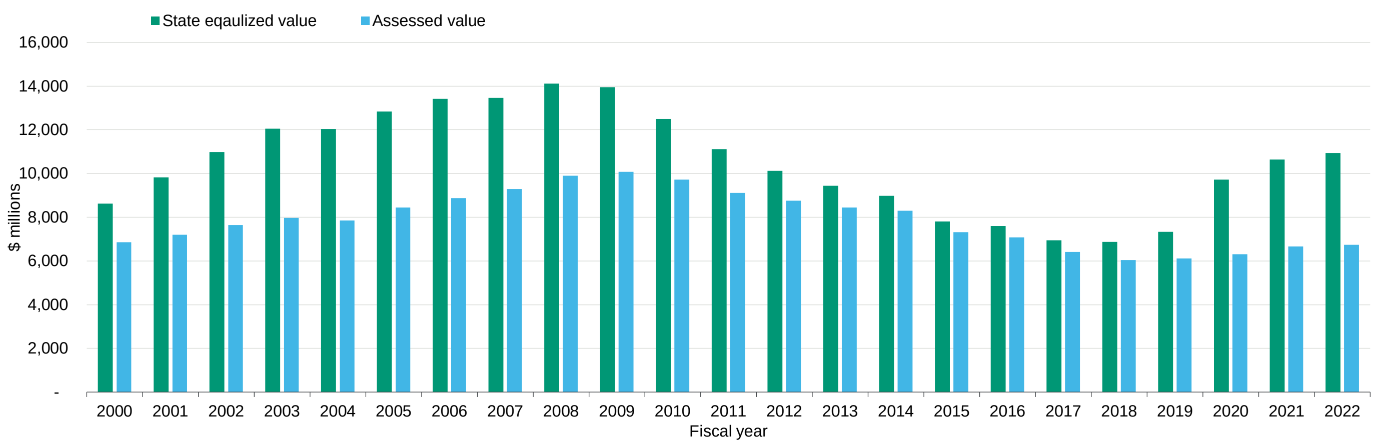
Detailed credit considerations

Economy: very low resident wealth and income and high poverty; new development driving tax base growth and improved unemployment

Detroit's local economy will remain a comparative weakness because of its high poverty, very low full value per capita and resident income ratios and high reliance on the domestic auto industry. But the city's economic recovery is real, sustained over several years and likely to continue given the pipeline of downtown development projects and the substantial investments made by automakers in battery and electric vehicle manufacturing in both the city and region. For example, Waymo, a subsidiary of Alphabet Inc. (Aa2 stable), opened a self-driving car facility; General Motors (Baa3 stable) is reconfiguring its Detroit-Hamtramck Assembly Center into Factory Zero, a fully dedicated electric vehicle assembly plant; Stellantis (Baa2 stable) retooled it facilities to build an all-electric Jeep; Ford Motor Company (Ba2 stable) restored Michigan Central Station and is developing an adjacent innovation center for as many as 5,000 employees. Despite rising prices and potential economic softening, North American auto demand has remained strong through February 2023, which has helped sustain regional employment.

Recent economic development is also broader than just auto manufacturing and the city's tax base is now growing after a decade of decline and stagnation (exhibit 2). Amazon.com, Inc. (A1 stable) redeveloped the old state fair grounds and is currently hiring 1,200 employees. Huntington National Bank (A3 stable) relocated it headquarters to downtown in a new 21-story building. Henry Ford Hospital is planning a major multibillion dollar expansion with a new facility, patient tower and a medical research facility in partnership with Michigan State University Health Sciences. Other projects include major downtown investments in new hotels, retail, commercial and condos and apartments.

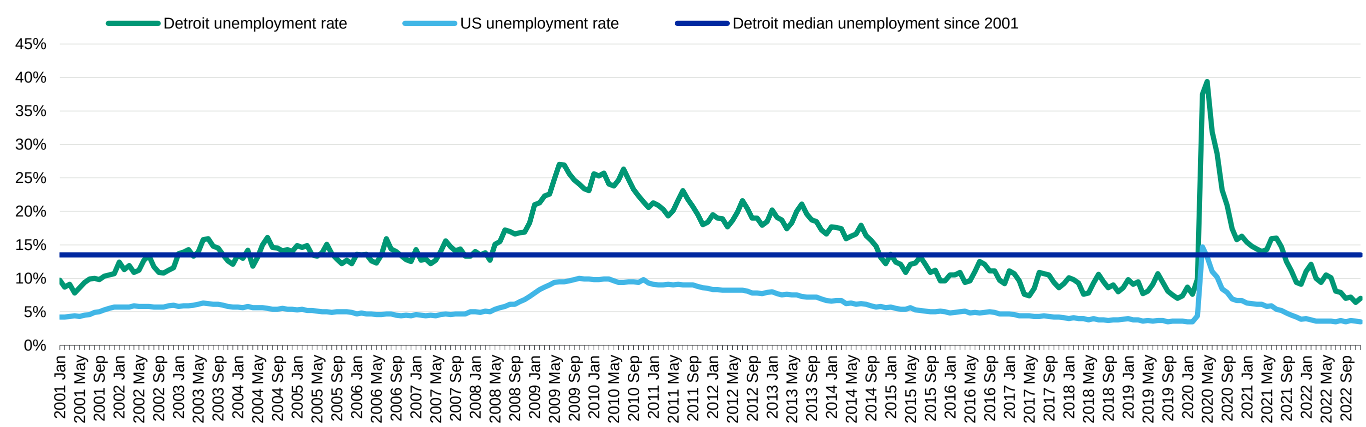
Exhibit 3
Detroit's tax base is growing



Source: Moody's Investors Service

While the city's unemployment rate remains persistently higher than the US level, it was only about 7% in December 2022, down substantially from its pandemic-level highs and the lowest it has been in almost two decades (see exhibit). Similarly, poverty rates, while still remaining very high, have also improved, down to 32% in 2021 from 40% in 2014.

Exhibit 4
Detroit's unemployment rate substantially improved, but still outpaces the nation
Monthly unemployment since January 2001

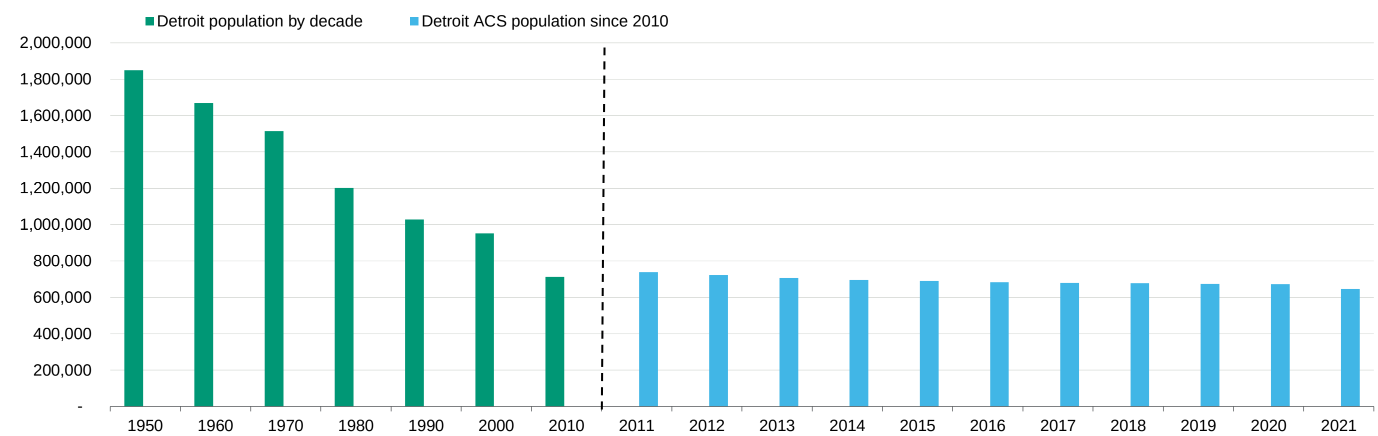


Source: Bureau of Labor Statistics

Detroit has made substantial process toward remediating blight across the city. The city's land bank currently owns 7,000 blighted properties, down from 47,000 in 2014 and the city expects to have demolished or sold the remaining properties by the end of fiscal 2024. The city is also preparing to take action on the estimated 5,000 blighted properties in private hands and it is also using American Rescue Plan Act (ARPA) funds to demolish blighted commercial properties and to clear alleys and other dumping sites.

The city is losing population at a much less rapid pace, with population falling by 6% between 2010 and 2020 according to the American Community Survey (ACS) compared with an average of 14% in each of the decades between 1950 and 2010.

Exhibit 5
Population outflow has largely stabilized compared to prior decades



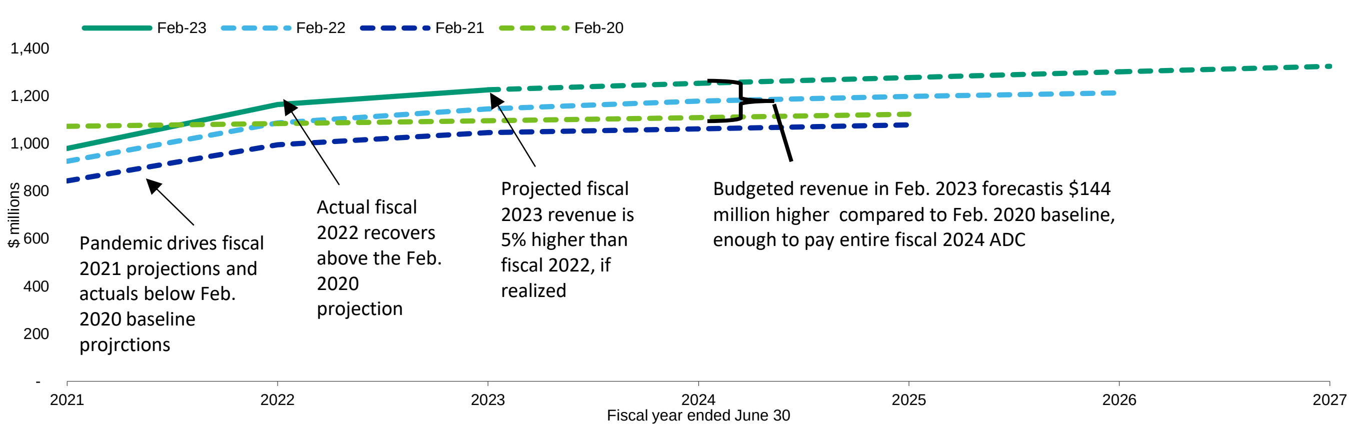
Source: US Census, American Communities Survey, Moody's Investors Service

Financial operations: growing revenue help mitigate rising expenditure pressures, solid operating track record strong reserves

The city's financial position will remain strong for at least the next few years because its robust revenue growth will help absorb its rising expenditure needs. Also, the city received substantial federal aid that will enable programmatic and capital investments. The city will continue to face inflationary cost pressure, however, and is vulnerable to an economic slowdown because of its revenue structure and the importance of asset returns to its pension funding plan. The city's ample reserves and sophisticated revenue-setting process will provide it with tools to respond to adverse developments.

Each of the city's key revenues – income, wagering and property taxes and state revenue sharing – have recovered above pre-pandemic levels. The city projects recurring general fund revenue of $1.25 billion in fiscal 2024, about $144 million or 13% higher than what it projected in its pre-pandemic February 2020 revenue conference. The incremental growth is more than enough to cover the entirety of the city's 2024 ADC.

Exhibit 6
Revenues have recovered above pre-pandemic levels and estimates
Comparison of Feb. Revenue Conference Estimates using February 2020 projections as a baseline



Source: City of Detroit, Moody's Investors Service

Revenues are boosted by a share of statewide internet gaming and sports betting taxes that will likely bring in roughly $70 million in fiscal 2023. These revenues are new as of fiscal 2021 and fiscal 2022 was the first year of full collections. Also income tax collections were improved through increased compliance efforts, which has largely offset the revenue lost to remote work.

The revenue growth makes room in the city's budget for rising costs. Fiscal 2024 general fund expenditures are up $150 million, driven primarily by growing pension contributions, wage increases and other inflationary costs. For instance, the city added $26 million to its 2024 budget for higher police salaries to be more competitive with neighboring communities. Future wage and benefit increases are likely to maintain competitiveness.

Increased pension contributions will likely be a significant expenditure pressure for the next few years. Since exiting bankruptcy, the city has enjoyed a pension contribution holiday, with contributions made by external sources. This holiday is now ending and the city will resume making actuarially determined contributions (ADCs) in fiscal 2024, as called for by its bankruptcy “plan of adjustment.”

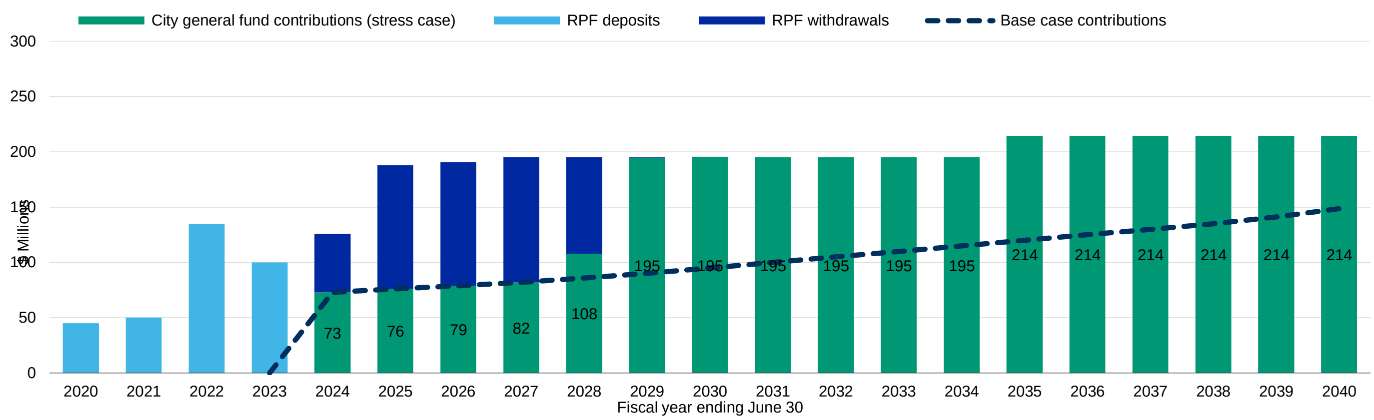
The city has prepared to resume pension contributions by accumulating a mark-to-market value of about $357 million in its “retiree protection fund (RPF)” by the end of fiscal 2022 and it contributed another $100 million in fiscal 2023. The city will draw on the fund to more gradually fit pension costs into its budget (See exhibit 1 in Summary). This reserve is restricted and not included in our measure of available fund balance.

Although the ADC is currently manageable, it will spike if pension assets underperform. In a severe stress scenario, the city will deplete the RPF more rapidly and will have to dedicate more of its budget to pension contributions (see exhibit). In our stress scenario below, the RPF would deplete by fiscal 2028 and the city would need to make the full ADC out of its budget in fiscal 2029. The fiscal 2029 budget contribution would be $195 million, about $105 million more than the city is currently projecting, a difference of roughly 4.5% of fiscal 2022 total revenue.

Exhibit 7

A material one-year decline in pension assets would increase pension costs and likely speed depletion of the RPF

RPF withdrawals run out in fiscal 2028 and city must contribute the full ADC starting in fiscal 2029

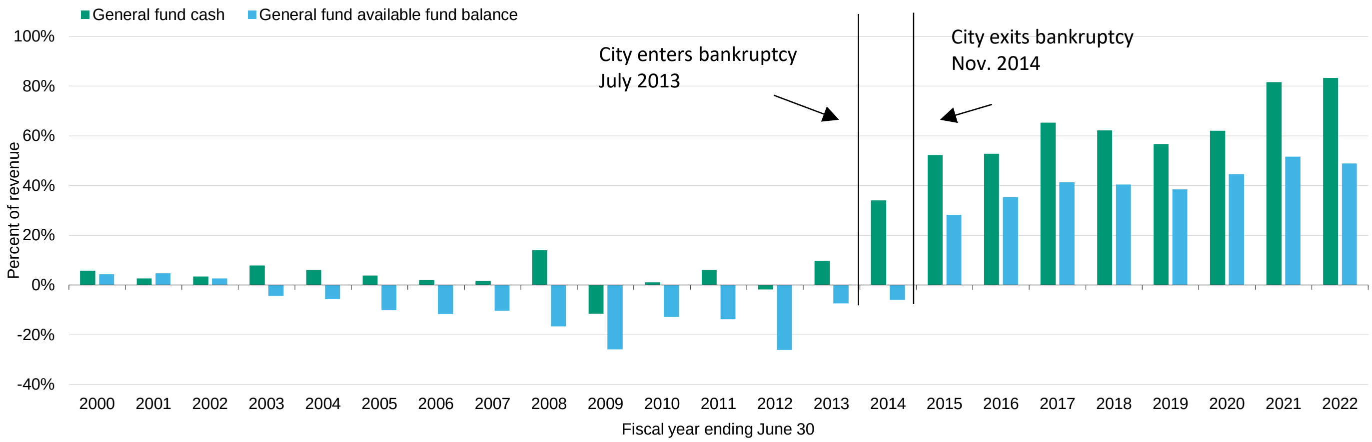


Stress scenario assumes 15% loss in fiscal 2023 followed by level 6.75% annual returns thereafter as well as 20-year PFRS and 30-year GRS amortization. Budget contributions are the same as the baseline scenario. ADC net of $18.7 million of contributions from external sources and DWSD and library contributions. RPF is based on mark-to-market amount reported in fiscal 2022 audit plus $100 million addition in fiscal 2023 and 1.25% investment income.

Source: Moody's Investors Service

The general fund is the city's main operating fund, accounting for 50% of total revenue and the bulk of the city's fund balance. The city projects that ongoing general fund revenues will exceed ongoing expenditure by at least a $41 million in fiscal 2023 based on year-to-date, and it has a track record of surplus operations since it exited bankruptcy in November 2014. The city's assigned fund balance includes $79 million for continuing appropriations and $105 million for subsequent years budget, indicating an intention to spend down some reserves.

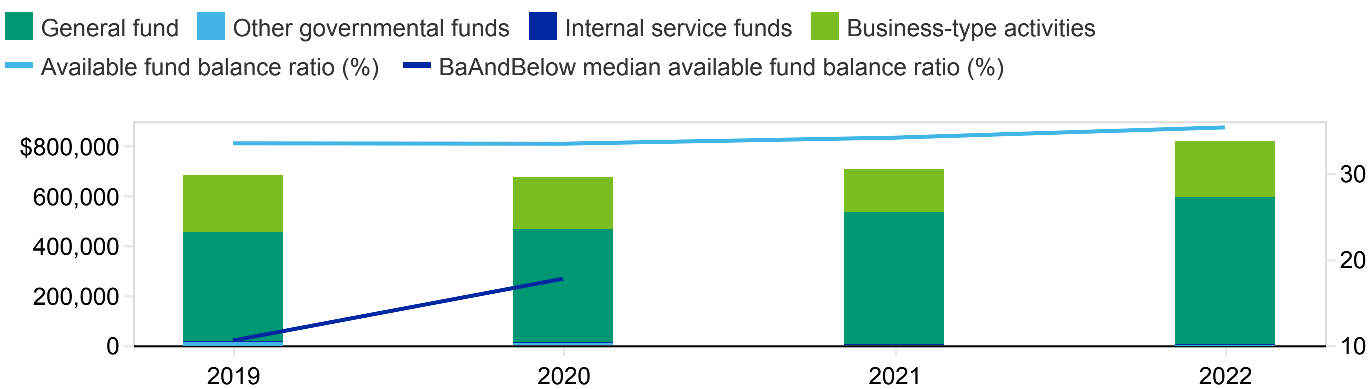
Exhibit 8
Detroit's general fund reserves are stronger today than any point over the past 20 years



Source: Moody's Investors Service

Available fund balance across the entity is also strong at about 35% of total revenue. About three-quarters of the city's revenue is governmental activities and the remaining quarter is business-type activities, primarily water and sewer.

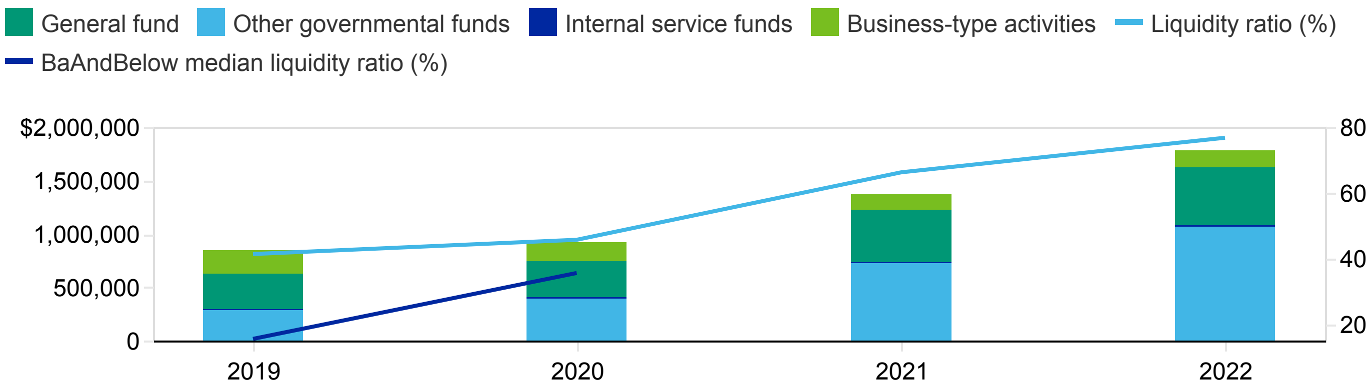
Exhibit 9
Fund Balance



Our measure of available fund balance does not include either the $800 million of ARPA funds or the restricted funds the city has set aside in its retirement protection fund.
Source: Moody's Investors Service

Liquidity
The city's cash position was very strong in fiscal 2022. The city had roughly $1.8 billion across governmental and business-type activities, roughly 77% of total revenue. Cash was bolstered by roughly $800 million of one-time federal funds that will be spent down over time. Without those funds, cash would be about $979 million or still very strong 42% of revenue.

Exhibit 10
Cash



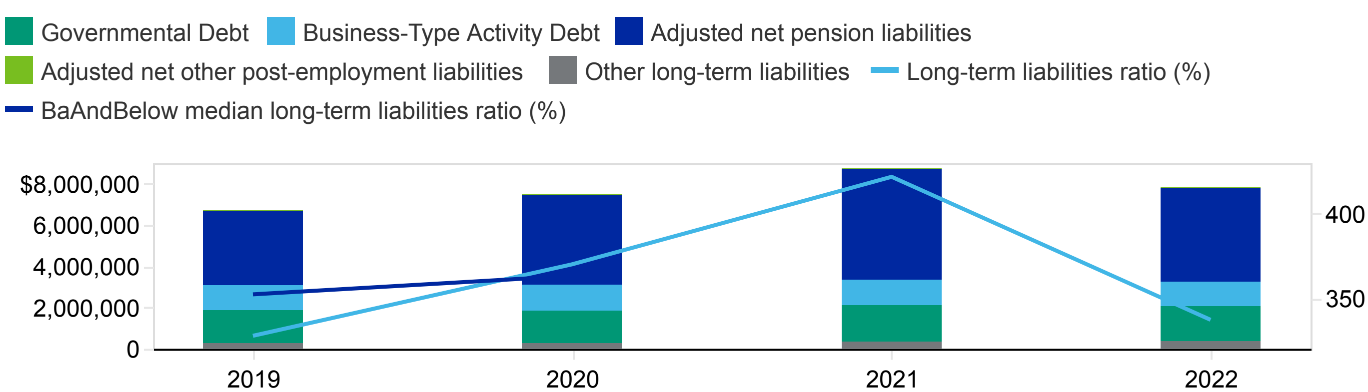
Source: Moody's Investors Service

Leverage: leverage ratio in line with other big cities

The city's total leverage ratio will remain in line with other large cities. The city's debt service schedule is declining, which combined with tax base growth will enable it to reduce its debt millage by one mill in fiscal 2024 and another in fiscal 2025. The city had roughly $146 million of unauthorized but unissued debt remaining at the end of fiscal 2022, which it will likely issue in the coming years.

The city's total leverage at the end of fiscal 2022 was roughly split between governmental and business-type activities. The bulk of the business-type activity debt is related to water and sewer contractual obligations to the Great Lakes Water Authority, MI (senior lien A1 positive). Detroit's water and sewer retail operations pay debt service on the city's allocated share of GLWA's debt and the payable revenue are pledged to GLWA's bonds.

Exhibit 11
Total Primary Government - Long Term Liabilities



Source: Moody's Investors Service

Legal security

The city's rated GOULT bonds are full faith and credit general obligations backed by the city's pledge to levy property taxes without limitation as to rate or amount as authorized by voters.

A portion of Detroit's outstanding GO debt is additionally backed by distributable state aid (DSA; enhanced rating of Aa2 on liens one through four and Aa3 on lien five). The outstanding bonds with this enhancement benefit from a strong legal framework that allows the city to issue debt through the Michigan Finance Authority (MFA). Detroit has entered into an intercept agreement that obligates the state treasurer to directly deposit all authorized DSA payments to a third-party trustee to satisfy debt service requirements.

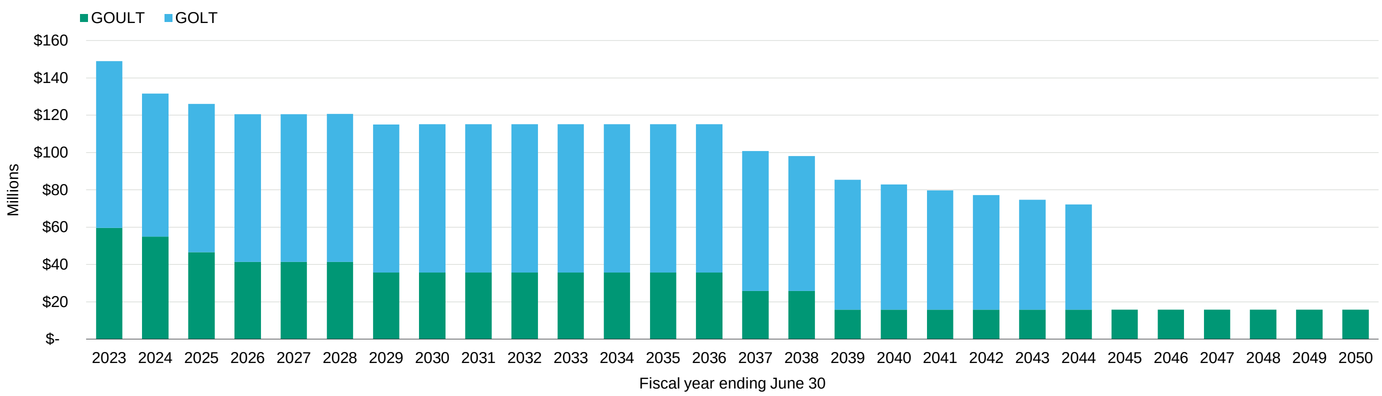
The city's $106 million Michigan Transportation Fund Bonds, Series 2017 are backed by the city's Michigan Transportation Fund distributions. The bonds are structured to be drawn on predetermined dates. The bonds were issued by the MFA and sold as a private placement to JPMorgan Chase Bank, N.A. (long-term issuer rating Aa2 stable). Following an event of default the city would have to pay interest at a stepped up interest rate. Events of default are limited to nonpayment.

Debt structure

All of the city's debt is fixed rate. Amortization is somewhat slow, under half the city's general obligation debt retired in 10 years. The debt service schedule on the GO debt is declining, which will likely be at least partially filled in with additional debt in the future (see exhibit).

Exhibit 12

General obligation debt service is declining over the next few years



Source: City of Detroit, Moody's Investors Service

State aid provides ample coverage of debt service across all five liens of DSA bonds at over 3x estimated 2023 payments. Distributions are comprised of a mix of constitutional payments and statutory payments. The more reliable constitutional payments provide ample coverage alone for liens one through three, some coverage of fourth lien bonds and fall short of sum sufficient coverage of fifth lien bonds. The fourth and fifth liens require the support of statutory payments to fully cover debt service. While statutory payments can and have been reduced, there is ample coverage to absorb moderate cuts and state payments are unlikely to be completely eliminated.

Debt-related derivatives

The city is not currently a party to any debt-related derivative agreements.

Pensions and OPEB

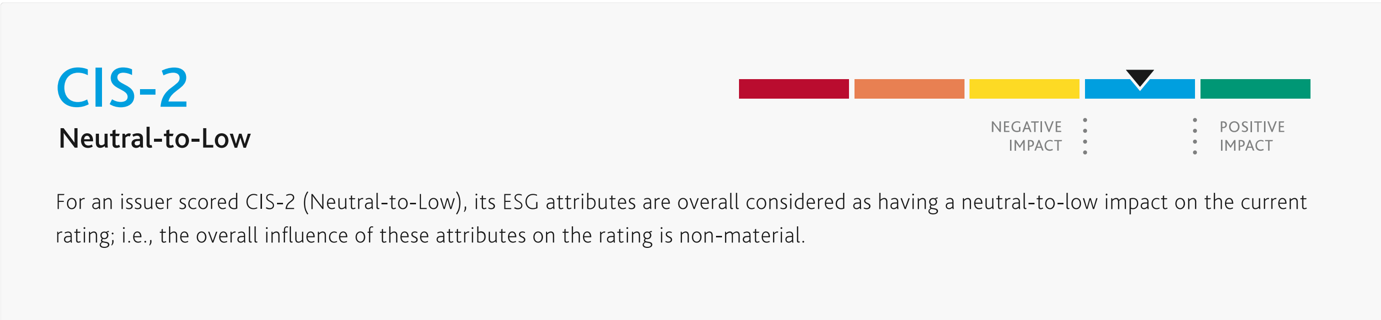
Adjusted net pension liabilities (ANPL) make up the bulk of the city's overall leverage. Detroit has two legacy pension plans: the General Retirement System (GRS) and the Police and Fire Retirement System (PFRS). Benefit accruals to the plans were halted in 2014 and all eligible employees were moved to hybrid pension plans. Detroit's other post-employment benefit (OPEB) healthcare obligations were largely eliminated in bankruptcy.

In November 2021, PFRS reduced its amortization schedule to 20 years from 30 years, incrementally driving up pension contributions. The city is contesting the change in court and the outcome has not been decided. If PFRS were to prevail, GRS would likely reduce its schedule to match, which would increase the ADC by about 10%. Although this would reduce the city's near-term flexibility, the city will reduce its ANPL more quickly under a shorter amortization schedule, all things being equal.

ESG considerations

Detroit (City of) MI's ESG Credit Impact Score is Neutral-to-Low CIS-2

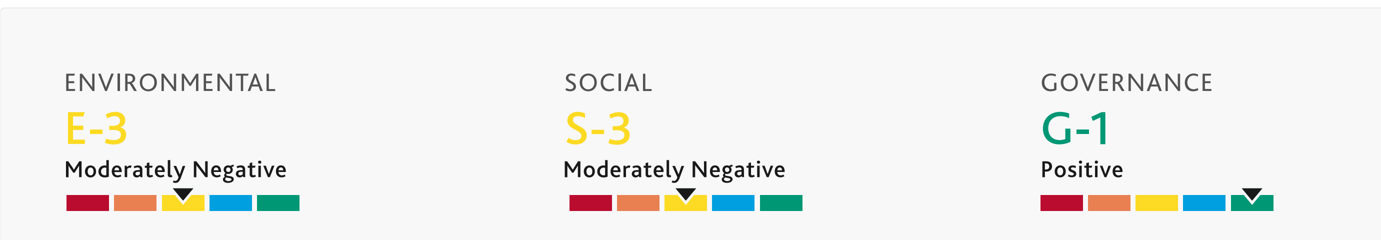
Exhibit 13
ESG Credit Impact Score



Source: Moody's Investors Service

Detroit's ESG Credit Impact Score is neutral to low (**CIS-2**), reflecting moderately negative exposure to environmental risks stemming from carbon transition, moderately negative exposure to social risks and positive governance profile.

Exhibit 14
ESG Issuer Profile Scores



Source: Moody's Investors Service

Environmental

The city's E issuer profile score is moderately negative (**E-3**). Detroit has exposure to the carbon transition risks faced by the auto manufacturers and related industrial companies that remain vital components of the local economy. While most auto manufacturers are aggressively working toward vehicle electrification, there is execution risk. The city has neutral to low exposure to other environmental risks, including physical climate risk, natural resources management and waste and pollution.

Social

The S issuer profile score is moderately negative (**S-3**), reflecting moderately negative considerations related to education, and health and safety. While somewhat improved, the city's population trends continue to be stagnant to declining, poverty is high and the unemployment rate elevated. Risks related to access to basic services have lessened in recent years. Labor, income and housing considerations pose relatively low risks.

Governance

Detroit's G issuer profile score is positive for (**G-1**), reflecting exceptional management practices such as regular revenue-estimating conferences at which city and external officials agree to the resources available to appropriate. The city annually adopts a detailed four-year budgetary forecast, which it regularly meets or exceeds. Strong transparency and disclosure practices include regular reporting on year-to-date budget-to-actuals, long-range forecasts and monthly cash flow. These practices help mitigate institutional constrains on revenue-raising ability.

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 Cities and Counties Rating Methodology includes a scorecard, which summarizes the rating factors generally most important to city and county credit profiles. Because the scorecard is a summary, and may not include every consideration in the credit analysis for a specific issuer, a scorecard-indicated outcome may or may not map closely to the actual rating assigned.

The assigned rating is different from the scorecard-indicated rating because of forward-looking information and other considerations that are not in the scorecard. Other considerations include weaknesses related to economic concentration from heavy reliance on the domestic auto manufacturing sector, a local economy and tax base that has proved to be less resilient during major economic downturns; and revenue structure that exposes the city to economic downturns and limits revenue-raising flexibility. Also considered is unusual risk posed by long-term liabilities from a scheduled ramp in pension payments; and high overlapping debt burden stemming primarily from the school system. Forward-looking considerations include the likelihood that liquidity will decline from its current peak as federal aid is spent down, and that fund balance could erode over time given rising expenditure pressures and city's significant outstanding capital needs. Lastly, other considerations including the city's history of default stemming from its bankruptcy.

Exhibit 15
Detroit (City of) MI

	Measure	Weight	Score
Economy			
Resident income ratio	52.4%	10.0%	Ba
Full value per capita	40,876	10.0%	Baa
Economic growth metric	-1.0%	10.0%	Aa
Financial Performance			
Available fund balance ratio	35.3%	20.0%	Aaa
Liquidity ratio	76.7%	10.0%	Aaa
Institutional Framework			
Institutional Framework	A	10.0%	A
Leverage			
Long-term liabilities ratio	337.2%	20.0%	A
Fixed-costs ratio	16.3%	10.0%	A
Notching factors			
No notchings applied			
Scorecard-Indicated Outcome			A2
Assigned Rating			**Ba1**

Sources: US Census Bureau, Detroit (City of) MI's financial statements and Moody's Investors Service

Appendix

Exhibit 16

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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EMEA	44-20-7772-5454

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