

CREDIT OPINION

26 May 2023

Update

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RATINGS

Nordrhein-Westfalen, Land of

Domicile	Germany
Long Term Rating	Aa1
Type	LT Issuer Rating
Outlook	Stable

Please see the [ratings section](#) at the end of this report for more information. The ratings and outlook shown reflect information as of the publication date.

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Land of Nordrhein-Westfalen (Germany)

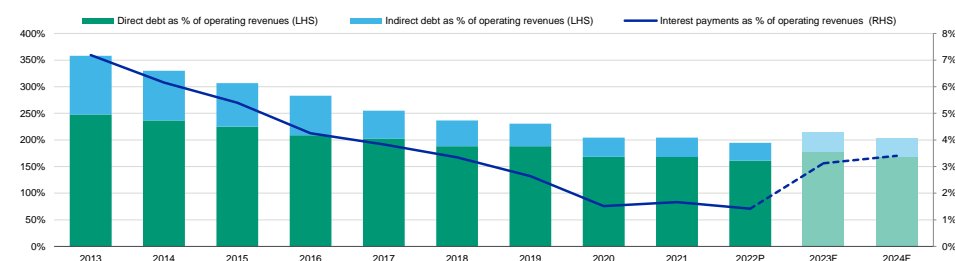
Update to credit analysis

Summary

The credit profile of the [Land of Nordrhein-Westfalen](#) (NRW, Aa1 stable) reflects its well-diversified and strong regional economy, as well as its excellent market access and sound debt management. 2023 performance will be characterized by efforts to balance fiscal discipline, against providing support to public services, and addressing social pressures. While the land has very high debt at around 200% of operating revenues, we expect a more decisive debt reduction from 2024 onwards, though mainly attributable to increased operating revenues - also due to inflation effects - rather than nominal debt reduction (see Exhibit 1). Similar to all German regions, NRW's financial flexibility is limited and we caution over demographic pressures of its ageing population with related pension costs. The credit profile also reflects our assessment of a very high likelihood that the [Government of Germany](#) (Aaa stable) would provide support in acute liquidity stress.

Exhibit 1

Nordrhein-Westfalen's very high debt levels are expected to decrease from 2024 onwards



2022P - preliminary data; 2023-24F - Moody's forecast.

Sources: Issuer, German Statistics Office, German Ministry of Finance and Moody's Investors Service

Credit strengths

- » Largest regional economy in Germany, subject to energy and emission transition
- » Excellent market access and debt management

Credit challenges

- » Budgetary performance challenged by efforts to address social pressures
- » Very high debt level, some contingent liabilities and social risks from demographics
- » Low revenue and expenditure flexibility

Rating outlook

The rating outlook is stable, reflecting our assumption that NRW will reach financial surpluses from 2024 at least and maintain its commitment to reduce its debt burden over the coming years.

Factors that could lead to an upgrade

Upward rating pressure could arise if there is a significant improvement in NRW's financial performance, above all more decisive efforts of debt reduction, combined with a sustained track record of balanced financial budgets.

Factors that could lead to a downgrade

The following factors, although unlikely at present, could lead to a downgrade of Land of NRW's rating: a significant deterioration in the land's fiscal metrics leading to a substantial increase in debt levels, any alterations in the fundamental supportive structure of the Länder (regional governments) sector or a downgrade of Germany's sovereign rating.

Key indicators

Exhibit 2

Land of Nordrhein-Westfalen

	2019	2020	2021	2022P	2023F	2024F
Population (in mn)	17.9	17.9	17.9	18.0	18.0	18.1
GDP per capita (in EUR)	39,987	39,427	41,440	43,910	46,500	48,900
GDP per capita as % of national average	95.7	96.3	95.7	95.5	95.9	95.9
Intergovernmental revenues as % of operating revenues	15.3	30.6	25.0	15.8	13.2	12.9
Interest payments as % of operating revenues	2.6	1.5	1.7	1.4	3.1	3.4
Gross operating balance (GOB) as % of operating revenues	9.8	-4.0	2.5	7.4	7.9	9.1
Capital expenses (Capex) as % of total expenses	11.0	9.7	8.9	11.7	10.8	11.4
Financing result (surplus or deficit) as % of total revenues	2.0	-12.7	-4.9	-2.3	-0.6	0.2
Net direct and indirect debt (NDID) as % of operating revenues	230.5	204.5	204.4	194.7	215.1	203.6
Short-term direct debt as % of total direct debt	11.4	10.6	9.3	8.6	8.1	8.1

2022P - preliminary data; 2023-24F - Moody's forecast.

Source: Issuer, German Statistics Office, German Ministry of Finance and Moody's Investors Service

Detailed credit considerations

The credit profile of NRW, as expressed in its Aa1 stable rating, combines its BCA of aa3 and a very high likelihood of extraordinary support coming from the federal government in the event that the land faces acute liquidity stress.

Baseline Credit Assessment

Largest regional economy, subject to energy and emission transition

Because of its size and economic relevance, NRW determines a large part of Germany's economy. NRW is by far the most populous land in Germany, with around 18 million inhabitants, or around 22% of the national population. Its GDP makes up around 21% of Germany's GDP and its per capita GDP is just below the German average (95%). 20 of the largest 50 German companies are headquartered in NRW.

The land's economy tends to grow in line with the German average, despite the structural decline and ongoing transition of its emission-intensive heavy industry (steel and coal), which is located primarily in NRW. That said, the current energy crisis required the reactivation of coal power plants. While this change is temporary and will anticipate the definite shut down (to 2030 from before 2038), it will affect NRW's economy positively for the time being.

In 2022, the land's real GDP growth increased by 1.1%, which compares relatively weak to the national average (+1.8%) and was one of the lowest among the German regions. This can be attributed to the manufacturing industry (excluding construction) where

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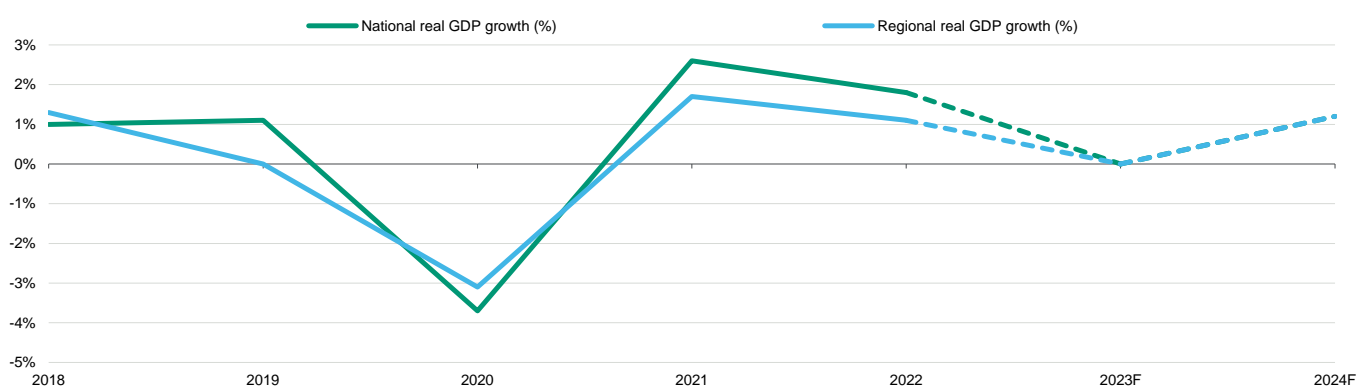
economic output declined by 1.7% in the full 2022, counterbalanced at least by the service sector which recorded a real GDP growth of 2.2%. While real GDP grew in H1 by 2.5% (national average 2.8%), on back of the emerging energy crises, in H2 2022 especially the manufacturing industry - relying still on Russian gas for heating, industry and power generation - suffered substantially.

We expect NRW's manufacturing sector and heavy industry (steel and coal) will continue to suffer from higher energy prices and transition costs to adhere to net zero targets. NRW committed to net zero targets by 2050 (Germany at national level 2045). As such, the land is actively promoting investments in innovative and green technologies, initiating also several decarbonization projects, including the creation of a Hydrogen Hub in the Ruhr region. Besides costs, we expect also opportunities to arise in the medium term from investments in innovation and green technologies, which are experiencing global demand and could move up the value chain of employment for the land. A cleaner environment should also have positive effects on public health.

Overall we expect NRW's real GDP to continue to move roughly in line with the national average (2023F: 0%, 2024:1.2%).

Exhibit 3

NRW's and Germany's real GDP growth rates are closely connected, also because of the size of the region's economy



2023-24F - Moody's forecast.

Sources: German Statistics Office and Moody's Investors Service

Excellent market access and debt management

NRW has excellent access to capital markets because of a sophisticated state treasury, as well as excellent liquidity and debt management. As an active capital markets issuer, the region has financial relationships with a broad range of investors, which are willing to grant it continued access to liquidity based on their confidence in the German Länder solidarity and debt brake mechanism. Its bonds are eligible for the European Central Bank's public-sector purchasing programme, which supports the very low interest levels. Since 2019, NRW has been able to issue three bonds with a very long maturity of 100 years, and a couple of 50 year bonds, which reduces refinancing risk for the land and, at the same time, locked in relatively low interest payments. This is strongly positive in view of the current increasing interest rate environment. Weighted average remaining maturity stands at 19.3 years, which compares very favourably to the German sovereign at 7.7 years.

In the money markets, NRW has access to the inter-Länder liquidity pool, whereby individual Länder offer their surplus cash to other Länder, as well as access to the German state financing agency (BRD Finanzagentur GmbH).

The land's access to capital markets is supported by a broad set of instruments and currencies. Since 2015, the land has issued several sustainability bonds and is committed to allocate the proceeds for a range of sustainability-related initiatives. The issuance of sustainability bonds is credit positive because it widens NRW's investor base, and helps communicate and support its sustainable development policy.

Budgetary discipline is a constitutional requirement (debt-brake mechanism) that mandates each region to maintain structurally balanced budgets since 2020. However, the federal constitutional requirement was suspended for 2020, 2021 and 2022 because of the extraordinary emergency situation, in order to alleviate economic and social impact of the pandemic. Accordingly, NRW's special fund (Sondervermögen NRW-Rettungsschirm), which was set up with a supplementary budget in 2020 to fund pandemic-related

additional expenditure and tax revenue losses (with a volume of up to Eur 25 billion), has been phased out at year-end 2022; the fund had effectively raised Eur 19.9 billion in total through borrowings.

Budgetary performance challenged by efforts to address social pressures

The coronavirus pandemic and the resulting economic and financial effects impacted NRW, requiring debt funding to cover tax revenue shortfalls and higher spending in the years 2020-2022.

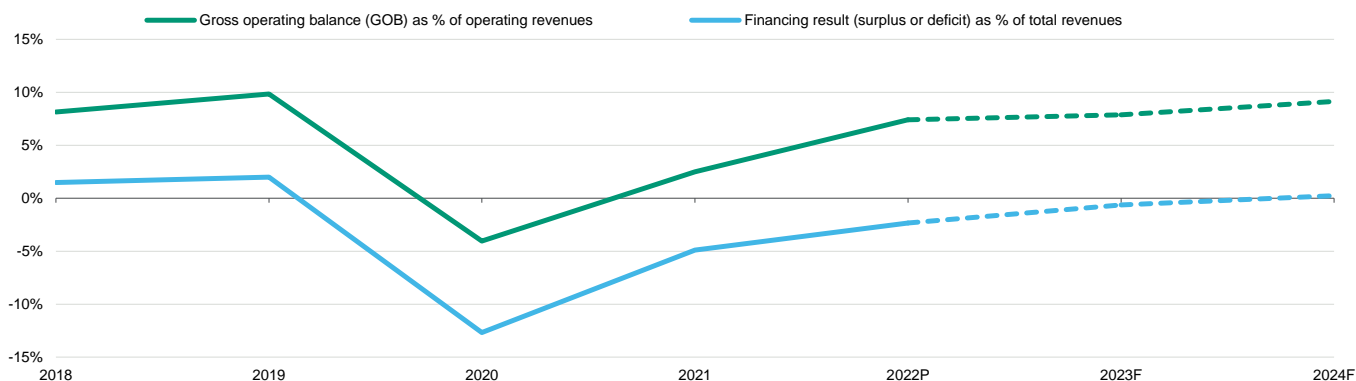
The land had envisioned debt consolidation from 2023. But with geopolitical and economic risk from the ongoing Russia-Ukraine military conflict resulting in slowing economic growth, in combination with high inflation and rising interest rates, the land now expects more uncertainty around the predictability, planning of budget and its execution. The currently still high inflationary environment will affect the land's budget by nominally boosting tax revenues, but moreover also increasing cost. Yet, we expect the state to manage to achieve financial surpluses from 2024.

In 2022, because of the economic recovery, catch-up effects, and the positive inflation effects on taxes, NRW's tax revenues increased by a high 8%. We expect a much lower pace (+2%) in 2023 and back to pre-pandemic levels (+4%) from 2024. In line, the state's operating balance rebounded to 7.5% of operating revenues in 2022, after a weak but positive 2.5% in 2021 and a negative 4% in 2020. We expect NRW to reach pre-pandemic levels from 2024 on, at 9.1% (operating balance % operating revenues), and the operating balance to stabilise at this sound level over the coming two years.

NRW recorded a substantial deficit in the past three years, though diminishing up to 2022 (financial deficit % operating revenues: -12.7%, -4.9%, -2.3%). We expect a minor deficit (-0.6%) in 2023 and a surplus from 2024 on.

Exhibit 4

Nordrhein-Westfalen's financial performance weakened because of the pandemic, but will recover gradually



2022P - preliminary data; 2023-24F - Moody's forecast.

Sources: Issuer, German Statistics Office, German Ministry of Finance and Moody's Investors Service

In December 2022, NRW approved its 2023 budget and a new special fund "Krisenbewältigung" at the amount of Eur 5bn. With this special fund the NRW parliament approved again a breach of the debt brake mechanism, due to "extraordinary circumstances" - though this currently legally challenged by the opposition as of March 2023. The special fund shall cover consequences of the energy crisis, in particular price increases, and the consequences of the refugee movement triggered by the Russia-Ukraine war. In addition, the fund shall fill remaining open gaps not covered in the federal relief package (e.g. potential support to local utilities). The fund has validity only for the year 2023, and the land expects a utilization of about Eur 2.3bn. Binding commitment for repayment is within 25 years.

We take comfort of the institutionalized set commitment of repayment of these special funds, pre-requisite of breaching the debt break - a credit positive.

The financial deficits related above all to the pandemic in 2020, 2021, and 2022 (Eur 11.8bn, Eur 4.7bn and Eur 2.4bn respectively) were covered by borrowing receipts that were transferred to the special fund "NRW-Rettungsschirm", which was established at Eur 25bn in March 2020 by the NRW parliament. As approved by the local parliament, and due to the exceptional circumstances, it was possible

to breach the debt brake mechanism (which foresees this possibility in exceptional circumstances). All German regions established these special purpose pandemic funds and had thought to commit to a repayment schedule. The average repayment schedule for German states stands at about 22 years. NRW committed to a 50 year plan. In line with other German regions not all funds were used, and NRW had only used some Eur 16bn up to March 2023. While this is not the final number, we do not expect substantial further outflows. Remaining current liquidity (some Eur 7bn) needs to be used for immediate debt reduction. The current debt reduction plan foresees Eur 1.6bn in 2023, Eur 3.0bn in 2024, and then a yearly debt reduction of about Eur 500mn from 2025 on.

Germany has a strong and predictable equalisation system that combines tax sharing and financial transfers, a strong credit positive. With the amended financial equalisation scheme, from 2020, the Länder sector benefitted financially because of a higher share in value-added tax revenue, higher general federal transfers and higher supplementary transfers.

Very high debt level, some contingent liabilities and social risks from demographics

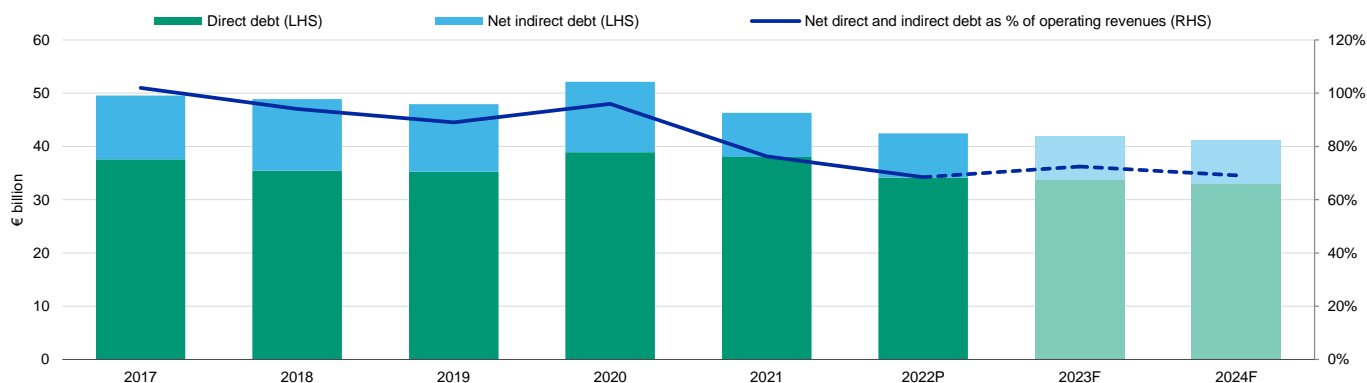
The region's direct debt stood at 161% of operating revenue in 2022. 2023 financial results will be negative, and operating revenues will decrease on the phaseout of central government support and tax relief measures above all, despite positive inflation effects on taxes. As such, we expect the land's direct debt level (compared with operating revenues) to increase up to around 180% in 2023, before likely resuming a declining trend - more attributable to increased operating revenues, rather than sizable nominal debt reduction.

The land's indirect debt exposure (mainly consisting of guarantees to non-self-supporting public entities) remained relatively stable in 2022. Overall, the land's net direct and indirect debt was 195% of operating revenue in 2022, which we expect to temporarily increase to 215% in 2023 (because of mainly the denominator effect outlined above), before likely resuming a declining trend.

Debt service (including debt repayments and interest) accounted for around 15% of the land's total revenue in 2022, which is moderate. Interest expenditure was at a strong (low value) 1.4% of operating revenue in 2022. Interest expenses are expected to increase to moderate levels (2023F: 3.1%, 2024F: 3.4%), due to the increasing interest rate environment. In the context of increasing debt costs due to changing monetary policy, this remains adequate compared with that of other German Länder and international peers.

Exhibit 5

Nordrhein-Westfalen's nominal debt levels set to increase until 2023, followed by marginal declines from 2024 on



2022P - preliminary data; 2023-24F - Moody's forecast.

Sources: Issuer, German Statistics Office, German Ministry of Finance, Erste Abwicklungsanstalt and Moody's Investors Service

The decrease in the debt burden over the last decade was driven by budget consolidation, mainly through strong tax collection and low interest cost, but also by the winding down of [Erste Abwicklungsanstalt](#) (EAA, Aa1 stable), which is guaranteed by the land and included in its indirect debt. Under the legal framework, EAA's owners, who are also the former sole owners of WestLB AG (now Portigon AG), will likely remain liable for any future losses. For both EAA and Portigon, we expect NRW to step in, if needed. This commitment was demonstrated in March 2021, when a decision was taken to increase Portigon's capital by Eur 160 million, fully provided by the land. However, based on the available information, we expect the additional cost for the EAA wind-down, as well as any additional need to step in for Portigon, to be very limited. The land's reserves in this regards stands at Eur 250 million, available for payments stemming from the guarantees for its former bank.

NRW's most significant contingent liability is [NRW.BANK](#) (Aa1/P-1 stable), which provides services to local small and medium-sized enterprises, the public sector and real estate development. The bank is well capitalised, and its regulatory Tier 1 ratio was extremely strong at 44.0% of risk-weighted assets (RWA) as of year-end 2022, which we consider an extraordinarily strong loss-absorption buffer. We deem the entity to be self-supporting. NRW owns and guarantees NRW.BANK.

In line with most other German states we caution over social risks of demographics of an ageing population. Further, as for most German states, NRW's pension obligations are only partially funded. The land established a pension fund, which we regard as a positive step in addressing the budget impact of its unfunded pension liabilities and rising pension cost. Currently, the pension fund has assets of around Eur 13 billion (at YE 2022), but may cover less than 10% of pension obligations. This level of coverage of pension liabilities may be relatively low, but is medium-to-high in the German context.

Low revenue and expenditure flexibility

As is the case for all German Länder, Nordrhein-Westfalen has a rigid expenditure structure and limited revenue-raising flexibility. Even if its regional tax base grew above the national average, it would have only a limited effect on the land's budgetary performance. The above-average tax revenue growth would be partly offset by the equalisation system. In general, more than 90% of its revenue stems from shared taxes and transfers, and the German Länder have only limited tax-setting rights.

The tax rates, with very few exceptions, are set at the national level, and some of the expenses are also set and defined at central government level and are not adjustable by the land. Personnel expenses (including pension payments), which account for up to 40% of the land's operating expenses, are adjustable only over a very long period.

Extraordinary support considerations

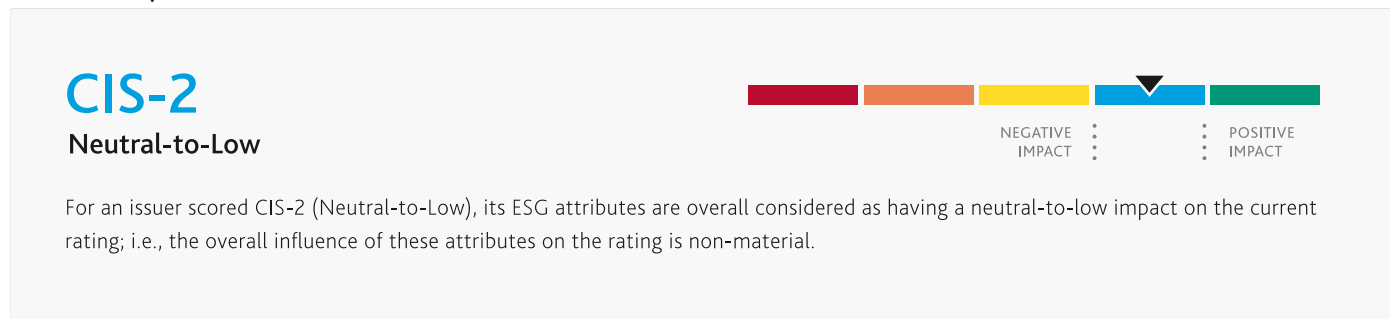
NRW has a very high likelihood of receiving extraordinary support from the federal government, which reflects our assessment of the high reputational risk for Germany as a whole in case of default by a land. Furthermore, under the Bundestreuekonzept, all German Länder must express mutual solidarity in the event that one of them or the Federal Republic faces a severe budgetary crisis. Also, the debt volumes and structure of the German Länder are extremely complex, and an event of nonpayment would be considered to have a corresponding impact on Germany as a whole. The principle of solidarity is firmly entrenched in the Grundgesetz (basic law), thereby providing a reassurance that, if required, financial support for a member in distress would be forthcoming. We have, therefore, incorporated two notches of uplift, to Aa1 from aa3, into NRW's final rating.

ESG considerations

Land of Nordrhein-Westfalen's ESG Credit Impact Score is Neutral-to-Low CIS-2

Exhibit 6

ESG Credit Impact Score

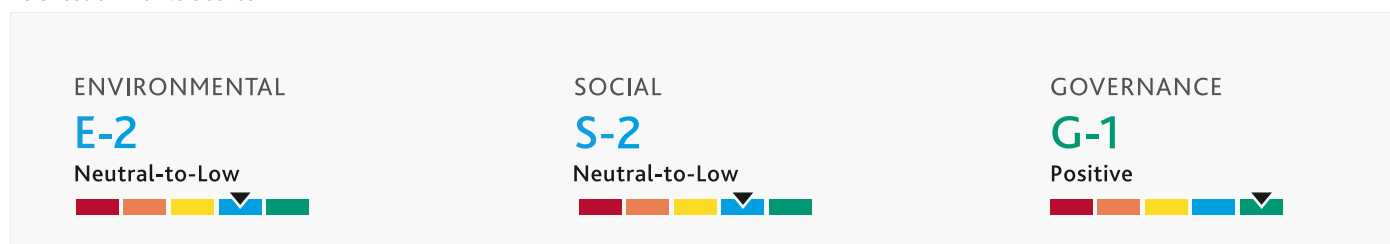


Source: Moody's Investors Service

The Land of Nordrhein-Westfalen's ESG Credit Impact Score is neutral-to-low (**CIS-2**), reflecting neutral-to-low exposure to environmental and social risk, along with very strong governance and policy effectiveness that mitigates the region's susceptibility to these risks.

Exhibit 7

ESG Issuer Profile Scores



Source: Moody's Investors Service

Environmental

The environmental issuer profile score is neutral-to-low (**E-2**), reflecting neutral-to-low risks for most environmental factors, other than physical and climate risk (which scores moderately negative). Nordrhein-Westfalen's economy is well diversified, currently transitioning away from his historical emission intense heavy industry (steel and coal).

The land faces physical climate risks, as reflected by the [devastating summer floods](#) in some areas of Nordrhein-Westfalen required a budget update during 2021, as well as drought. This could lead in the future to additional spending requirements and negative economic impact (e.g. due to the drought of the Rhine river in 2022 the shipment on it was partly interrupted). The 2021 devastating summer floods instead exerted additional pressure on the land's budget, with immediate emergency relief costing NRW around €200 million, but the overall burden was mitigated by the federal government, which also provided €200 million for immediate support. Furthermore, the federal and regional government set up a reconstruction aid fund (Aufbauhilfe 2021) with a volume of up to €30 billion, with a pre-funding of €16 billion provided entirely by the federal government. The remaining funding will be provided by all Länder between 2021 and 2050 through an adjustment of the value-added tax revenue sharing agreement with the federal government, which NRW estimates will result in yearly tax revenue losses of €50 million for its budget.

Social

The neutral-to-low social issuer profile score (**S-2**) reflects broadly neutral-to-low risks from most social factors, other than health and safety (which scores positive) and demographics (which scores moderately negative). As for Germany overall, the region faces a similar

trend of ageing population, resulting in declining labour supply and higher pension and social cost. We view the coronavirus pandemic as a social risk under our ESG framework, given the substantial implications for public health and safety in the region.

Governance

The positive governance issuer profile score (**G-1**) reflects the very strong national institutional and governance framework. Budgetary discipline in Germany is a constitutional requirement, which requires each of the regions to maintain structurally balanced budgets. Budget planning in Nordrhein-Westfalen is very prudent, transparent and highly predictable.

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.

All of these considerations are further discussed in the Detailed credit considerations section above. Our approach to ESG is explained in our report on how the [scores depict limited impact of ESG factors in advanced economy RLGs, negative in emerging markets](#) and our cross-sector methodology [General Principles for Assessing Environmental, Social and Governance Risks Methodology](#).

Rating methodology and scorecard factors

The assigned BCA of aa3 is close to the suggested BCA score of aa2. The scorecard-generated BCA of aa2 reflects an Idiosyncratic Risk score of 3 (presented below) on a 1-9 scale, where 1 represents the strongest relative credit quality and 9 the weakest; and a Systemic Risk score of Aaa, as reflected in the sovereign bond rating for Germany.

For details about our rating approach, please refer to [Rating Methodology: Regional and Local Governments](#), published on 16 January 2018.

Exhibit 8

Nordrhein-Westfalen, Land of Regional & Local Governments

Baseline Credit Assessment – Scorecard	Score	Value	Sub-factor Weighting	Sub-factor Total	Factor Weighting	Total
Factor 1: Economic Fundamentals				3.80	20%	0.76
Economic Strength [1]	5	95.66%	70%			
Economic Volatility	1		30%			
Factor 2: Institutional Framework				3	20%	0.60
Legislative Background	1		50%			
Financial Flexibility	5		50%			
Factor 3: Financial Position				3.25	30%	0.98
Operating Margin [2]	5	4.37%	12.5%			
Interest Burden [3]	3	1.50%	12.5%			
Liquidity	1		25%			
Debt Burden [4]	7	194.74%	25%			
Debt Structure [5]	1	8.61%	25%			
Factor 4: Governance and Management				1	30%	0.30
Risk Controls and Financial Management	1					
Investment and Debt Management	1					
Transparency and Disclosure	1					
Idiosyncratic Risk Assessment						2.64 (3)
Systemic Risk Assessment						Aaa
Suggested BCA score						aa2
Assigned BCA						aa3

[1] Local GDP per capita as % of national GDP per capita

[2] Gross operating balance/operating revenues

[3] Interest payments/operating revenues

[4] Net direct and indirect debt/operating revenues

[5] Short-term direct debt/total direct debt

Source: Moody's Investors Service; Fiscal 2022P

Ratings

Exhibit 9

<u>Category</u>	<u>Moody's Rating</u>
NORDRHEIN-WESTFALEN, LAND OF	
Outlook	Stable
Baseline Credit Assessment	aa3
Issuer Rating	Aa1
Senior Unsecured	Aa1
Other Short Term -Dom Curr	(P)P-1

Source: Moody's Investors Service

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