

CREDIT OPINION

8 July 2022

Update



Send Your Feedback

RATINGS

TAG Immobilien AG

Domicile	Hamburg, Germany
Long Term Rating	Baa3 , Possible Downgrade
Type	LT Issuer Rating - Dom Curr
Outlook	Rating(s) Under Review

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.

Contacts

Oliver Schmitt +49.69.70730.732
VP-Sr Credit Officer
oliver.schmitt@moodys.com

Anton Horozov +49.69.70730.755
Associate Analyst 1
anton.horozov@moodys.com

Anke Rindermann +49.69.70730.788
Associate Managing Director
anke.rindermann@moodys.com

TAG Immobilien AG

Update following review for downgrade

Summary

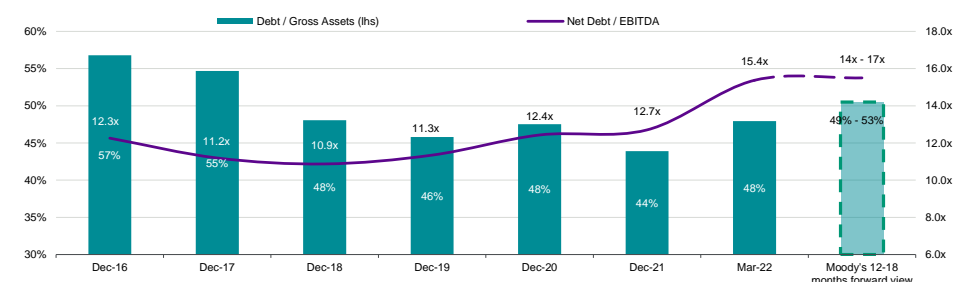
We placed TAG Immobilien AG's (TAG) Baa3 long term issuer rating on review for downgrade as a result of mounting refinancing pressure, also considering a weaker outlook for its business profile and some credit metrics.

TAG's rating reflects the company's focus on regulated affordable housing in [Germany](#) (Aaa stable) that generates stable rental income and represents more than 80% of its operations by value and rental income. TAG benefits from broad income diversification in a portfolio of more than 87,000 units, across a number of regions in Germany. Once the company has successfully addressed the refinancing wall in 2023, TAG has a longer dated debt maturity profile. TAG's debt/gross assets ratio has weakened with the ROBYG acquisition but we expect it to remain around 50% after the use of debt and equity in the next year.

In addition to addressing its immediate liquidity needs, TAG will need to match its organic growth path in Poland with the availability of funding and needs to manage its capital structure in a higher interest rate environment. The capital spending and funding decisions will be meaningful for net debt/EBITDA, which we expect to remain elevated between 14-17x. TAG's fixed charge coverage will start to deteriorate clearly below 4x as maturities are refinanced at higher interest rates.

Exhibit 1

We expect TAG's leverage to weaken Moody's-adjusted leverage metrics



Source: Moody's Financial Metrics™ and Moody's Investors Service estimates

Credit strengths

- » Dominant share of business in the stable and regulated rental housing activities in Germany, generating stable cash flow from a portfolio diversified across several German regions, with limited correlation to GDP
- » Continued investment appetite for German residential properties
- » Moderate debt/gross assets and commitment to a sustainable capital structure
- » Long-dated debt funding structure outside of shorter term maturities and access to German long-term bank debt

Credit challenges

- » Increased refinancing risk and funding requirements in the next 18 months
- » Challenging operating environment in its Polish development business, which is elevated compared to other property owners
- » Rising interest rates putting pressure on fixed charge coverage and potentially property values
- » Lack of a substantial unencumbered assets base given TAG's focus on secured debt
- » A large share of the company's assets in the weaker economic regions of Germany
- » Moderating rental growth
- » Sensitivity of the residential sector to social and political considerations, which can lead to tightening rental regulation or increased energy investment requirements

Rating outlook

The review for downgrade is a result of mounting refinancing pressure including the refinancing of a bridge facility used to fund its recent ROBYG acquisition. We caution that weaker capital markets may make it more challenging for TAG and certainly more costly to refinance maturing debt, putting pressure on the group's rating in addition to shorter term liquidity needs. We are also concerned about the business outlook for its Polish operations given high inflation and significantly rising interest rates.

The review process will focus on management's success in addressing refinancing needs by a variety of measures including asset sales and raising liquidity from debt and equity markets as well as the way the company is going to manage its capital structure in a higher interest rate environment. The review will also focus on prospects for its Polish development business, as well as the liquidity of the capital markets in the next few months, which could lead to permanently increased financing costs.

Factors that could lead to an upgrade

A rating upgrade is unlikely at this point, given the current review for downgrade, but could occur if:

- » TAG materially improves its liquidity position, and bases the Polish business on a self-funded model even assuming sustainably lower sales proceeds
- » Gross debt/total assets decreases towards levels well below 45%, supported by the company's financial policy, and if net debt/EBITDA materially declines aided by a growing earnings contribution from a stabilized residential rental business
- » A reduction in the company's development to hold and to sell volume towards levels below 10% of total asset
- » Fixed-charge coverage is maintained above 3.0x, and
- » Increased unencumbered asset ratio and coverage of unsecured debt from unsecured assets in Germany

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.moody's.com> for the most updated credit rating action information and rating history.

Factors that could lead to a downgrade

- » Failure to address the majority of refinancing requirements for the next 12 months in addition to the refinancing of the bridge facility within the next 3 months, including equity proceeds
- » Failure to align the capital structure to a higher interest rate environment, including gross debt/assets well below 50% and net debt/EBTIDA below the mid teens, and sufficient high quality unencumbered assets, and a further improvement of these factors in the medium term, if the interest rate environment remains elevated.
- » A material weakening in the operating environment for the German residential market
- » Weak sales in the Polish business requiring more funding for the Polish operations, or further weakening of the long term prospects of its Polish business model
- » Fixed charge cover falls below 2.75x

Key indicators

Exhibit 2

TAG Immobilien AG

TAG Immobilien AG

USD Millions	FY Dec-17	FY Dec-18	FY Dec-19	FY Dec-20	FY Dec-21	LTM Mar-22	Moody's 12-18 month forward view
Real Estate Gross Assets	5,578.3	5,767.6	6,338.7	7,926.2	8,061.2	8,872.1	\$9,000 - \$9,500
Amount of Unencumbered Assets	15.7%	14.0%	12.3%	15.4%	15.7%	24.9%	15% - 25%
Debt / Real Estate Gross Assets	54.7%	48.1%	45.8%	47.5%	43.9%	47.9%	49% - 52%
Net Debt / EBITDA	11.2x	10.9x	11.3x	12.4x	12.7x	15.4x	14x - 17x
Secured Debt / Real Estate Gross Assets	41.7%	36.8%	33.7%	30.5%	29.2%	33.5%	25% - 35%
EBITDA / Fixed Charges	2.8x	3.7x	4.4x	4.3x	4.7x	4.6x	3.0x - 4.0x

All figures and ratios are calculated using Moody's estimates and standard adjustments. Moody's 12-18-month forward view is Moody's opinion and does not represent the views of the issuer. Periods are financial year-end unless indicated. LTM = Last 12 months.

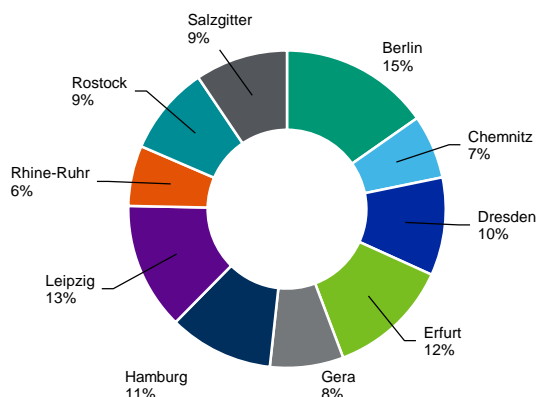
Source: Moody's Financial Metrics™ and Moody's Investors Service estimate

Profile

TAG Immobilien AG (TAG) owns and manages a large and diversified multifamily residential rental portfolio of about 87,600 units, mainly located in the east and north of Germany. The company entered the Polish market via the acquisitions of the developers Vantage Development SA in 2019 and ROBYG S.A. in 2022. As of 31 March 2021, TAG's gross asset value amounted to around €7.5 billion. Headquartered in Hamburg, TAG is listed in the MDAX at the Frankfurt Stock Exchange. TAG had a market capitalisation of €1.6 billion as of 6 July 2022, which represents a material discount to its reported EPRA net tangible assets.

Exhibit 3

TAG's portfolio is mostly located in Eastern and Northern Germany Property fair value split by geography



As of March 2022.
Source: Company

Detailed credit considerations

Supportive operating environment through a focus on stable and regulated market

The German residential sector is one of the most stable asset classes in the European real estate industry, with high demand and limited supply supporting rents and values. While the potential for tighter regulations is a threat to property values and cash flow growth, it will also probably intensify the supply and demand imbalance.

The German rental market is highly regulated — reletting rents and rent increases for existing tenants are capped with reference to a local index (Mietspiegel) calculated by local authorities, reflecting the location and quality of the units. Rent increases are mostly capped to 15% over a period of three years (5% a year; allowance made for modernisation, the cap on which is 8% per year). From a longer-term perspective, prices and rents for residential properties have been more stable in Germany than in any other large developed economy even after taking into account recent increases. Since 1970, German house prices have increased broadly in line with inflation, but have never declined more than 3% in any given year.

Average rents remain affordable despite recent rent and value increases. Nevertheless, affordability fluctuates in tandem with the absolute amount of household income, which exposes lower-income households in particular to higher rental cost-to-income ratios. Affordability has clearly declined in the past five years in Germany as a whole, with rental growth exceeding income growth, resulting in political and regulatory activity aiming to reduce rental growth.

Diversified portfolio with broadly stable vacancy and moderating rental growth, partially located in weaker regions of Germany

TAG has a very diversified portfolio of around 87,600 units concentrated outside the largest cities in Germany. TAG focuses on affordable housing, which is mainly reflected in its relatively moderate rents in a portfolio that generates a higher yield on value than those of some of its residential peers.

Around two-thirds of TAG's residential units are located in 30 cities with more than 20,000 inhabitants, although some are suburbs of larger urban areas. A small share of the portfolio is located in cities with smaller populations. Therefore, overall, the portfolio will benefit to some extent from the urbanisation trend in Germany. The company is not located in city-center locations that will suffer from weakening demand given structural changes in the working-from-home environment.

Exhibit 4

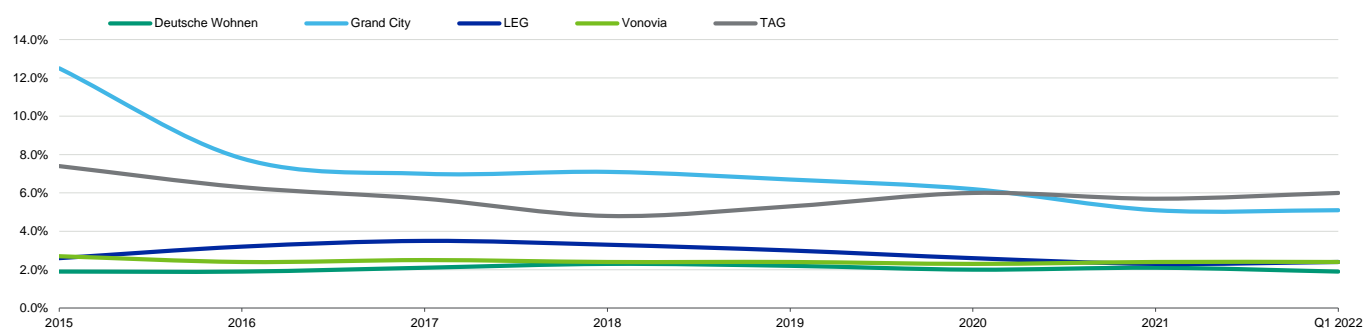
TAG's portfolio as of 31 March 2022

Region	Fair Value in EURm	FV in % total	Units	Renatable area (sqm)	Fair value per sqm (EUR)	Gross yield	Vacancy Mar-2022	Actual net cold rent (EUR/sqm)	Reletting rent (EUR/sqm)	Maintenance (EUR/sqm)	Capex (EUR/sqm)
Berlin	962.3	15.0%	10,459.0	605,327	1,589.7	4.4%	3.8%	6.0	6.6	1.9	4.8
Chemnitz	409.4	6.4%	8,042	472,060	867.3	6.3%	9.4%	5.0	5.1	1.7	2.7
Dresden	629.3	9.8%	6,085	393,836	1,597.9	4.5%	1.9%	6.1	6.3	1.0	1.6
Erfurt	785.7	12.3%	10,560	595,169	1,320.1	4.8%	1.5%	5.4	5.7	1.5	1.9
Gera	471.6	7.4%	9,450	548,475	859.8	6.7%	6.4%	5.1	5.3	1.1	4.0
Hamburg	671.1	10.5%	6,951	427,917	1,568.3	4.4%	4.6%	6.0	6.4	2.9	1.9
Leipzig	814.9	12.7%	13,133	765,743	1,064.2	5.5%	9.8%	5.4	5.7	1.7	2.7
Rhine-Ruhr	387.4	6.1%	4,132	262,428	1,476.2	4.5%	2.4%	5.7	6.0	3.6	1.2
Rostock	572.1	8.9%	8,314	466,086	1,227.5	5.2%	7.1%	5.7	6.0	2.4	5.4
Salzgitter	594.4	9.3%	9,179	563,065	1,055.7	5.8%	7.0%	5.5	5.7	1.8	2.7
Total residential	6,298.2	98.5%	86,305	5,100,106	1,234.9	5.1%	5.7%	5.6	5.8	1.9	3.0
Acquisitions	0	0.0%	0	0	0.0	0.0%	22.6%	0.0			
Others	98.1	1.5%	145	19,238	5,099.3	4.7%	3.7%	13.4			
Commercial units			1,089	137,273			14.3%	8.5			
Total	6,396.2		87,539	5,256,617	1,216.8	5.3%	6.0%	5.7			

Source: Company

About 70% of TAG's properties are located across six federal states in Eastern Germany (Berlin, Brandenburg, Mecklenburg-Vorpommern, Sachsen, Sachsen-Anhalt and Thüringen), which are economically weaker regions in terms of purchasing power. Nevertheless, there are a number of positive macroeconomic trends in TAG's target markets along GDP growth and unemployment changes compared to national average. Combined with a relatively good rent affordability on a portfolio level, TAG's ability to pick the right assets and locations will be a key driver of further rental growth and vacancy rate reduction. TAG's vacancy rate has recently increased slightly to around 6.0%, which is the higher end of the average over the last 5 years.

Exhibit 5

Development vacancy rates
TAG compared with its peers

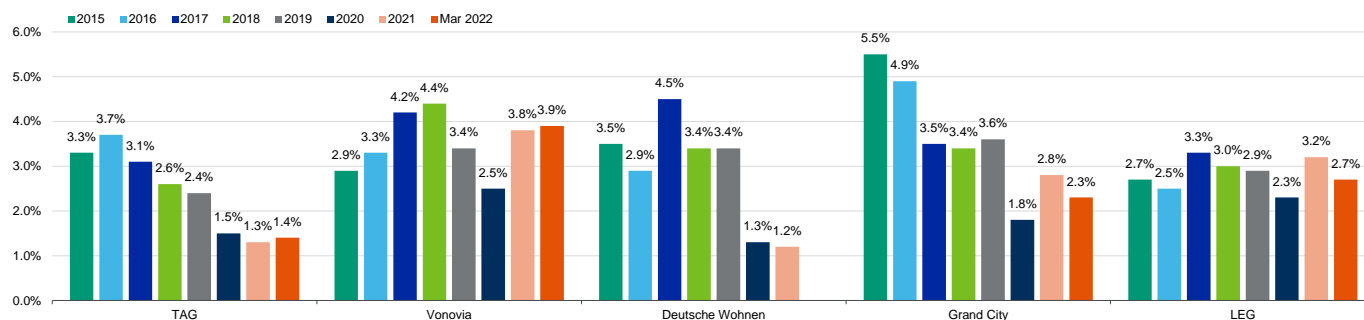
Source: Company reports

TAG's rental growth has been in decline in the recent years, settling around the 1.5% mark from 2-4% until 2019. TAG's capital spending was lower than peers, which contributed to lower rental growth. Reducing rental growth is a trend affecting a number of companies in the sector. TAG's rents are lower than those of its peers, but remain affordable compared with average household incomes. We expect sustained rental income growth in Germany of 1-2% during the next two years, driven by targeted investments, rent increases for standing tenants and moderate occupancy gains.

Exhibit 6

Like-for-like rental growth

TAG and its peers



Source: Company reports

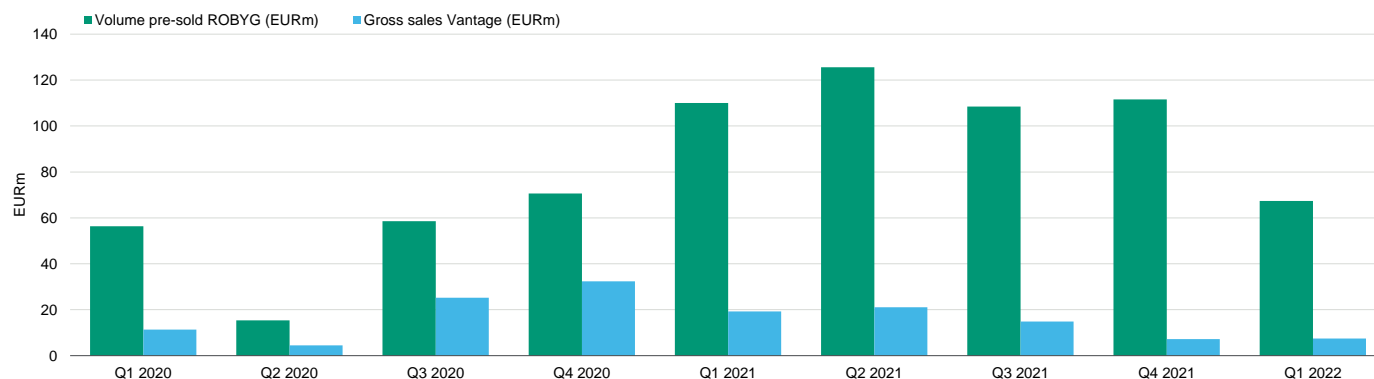
Deteriorating operating environment in TAG's Polish business

TAG has entered the Polish residential property market with the acquisition of Vantage Development S.A., a formerly listed Polish residential real estate developer, in November 2019. End of 2021, TAG agreed to purchase ROBYG S.A., the largest Polish residential developer. Over time, TAG intends to reduce the developments earmarked to sell and increase developments for its own balance sheet, a process already well advanced with the development pipeline of Vantage. Nevertheless the development exposure will be elevated for the next 2-3 years, accounting for up to 37,300 units for development over the next decade.

The operating environment of TAG's operations have weakened materially in the last 12 months, creating credit challenges. The development to sell business faces uncertainties with respect to volumes and prices achievable in the future. TAG has purchased this part of the business through ROBYG and planned to use sales proceeds to partially fund the development to hold business. Affordability for consumers to purchase flats reduced. In particular after the attack of Russia on the Ukraine, inflation rose stronger into double digit numbers. In addition, the central bank continued to raise interest rates, up to 6% in June 2022, compared to 0.1% a year earlier. This has resulted in a strongly reduced affordability for TAG's units earmarked to sell. In Q1 2021, ROBYG sold 638 units in Q1 2022, compared to 1,110 in Q1 2021. Further reduced sales would increase the funding requirements for the continued development of the units.

The growing geographic presence in a less liquid real estate market and unregulated residential market compared to Germany will introduce earnings and valuations volatility, and requires additional funding. Given the weaker operating environment, we have lowered our operating environment score for TAG to A from AA. We nevertheless recognise the solid economic backdrop of Poland and good demand for residential for rent units due to a structural undersupply, which was elevated by the influx of refugees from the Ukraine. A meaningful longer term Polish rental business will add geographical diversification to TAG's German operations, but the run-up of the business will occur slower than initially anticipated.

Exhibit 7

Sales volumes declined in Poland during Q1 2022

Constant exchange rate PLN / EUR of 0.22 used for ROBYG volumes

Source: Company data TAG and ROBYG

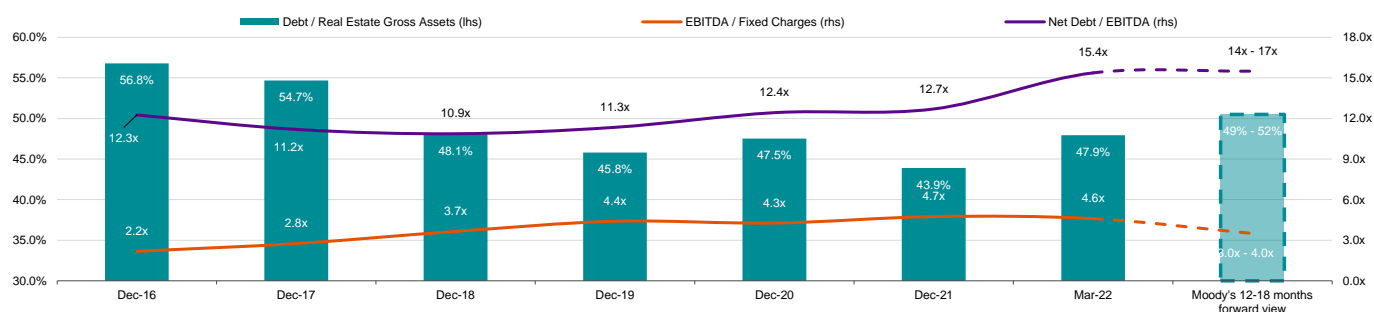
Key financial ratios weakened with the ROBYG acquisition, rising interest rates will have a meaningful impact in the next 12-18 months

TAG's financial metrics have weakened with the ROBYG transaction and are subject to further weakening with rising interest rates and less certain sales progress in Poland. TAG needs to manage its capital structure in the new financial and operating environment.

The tightened financial markets will affect TAG's fixed charge cover the most in the next 12-18 months, which we expect to decline towards 3-4x. The company will need to refinance and fund a substantial amount of debt in the next 12 months, which will impact its average interest rate payable. Given the generally lowly yielding nature of German residential operations, the high interest rate environment will require efforts to align the capital structure that recognizes the increased interest rates.

In addition, we consider lower sales proceeds in Poland as well as more uncertainty around equity capital contributions in the mid run. Net debt/EBITDA, already elevated, will suffer if Polish property sales decline, but the company has flexibility in its capital spending plan to ramp up its residential for rent business, which may offset the effect in the next 12-18 months. We do not have EBITDA concerns with respect to the German operations for the time. The balance sheet impact on Moody's-adjusted debt/gross assets will be more muted, but we overall do no longer factor in material value increases in the German portfolio.

Exhibit 8

Leverage weakened with the ROBYG acquisition, coverage set to weaken further

Source: Moody's Financial Metrics™ and Moody's Investors Service estimate

The company pays a relatively high dividend of 75% of funds from operations (FFO) compared with that of its peers.

High reliance on secured funding, resulting in a low ratio of unencumbered assets and a high secured debt ratio

TAG's unencumbered asset ratio of 25% is the lowest in the European real estate peer group, stemming from its bank debt-funded financing model. Given current tight liquidity, this disadvantage reduces financial flexibility. Most of TAG's unencumbered property assets are land bank and assets under construction in Poland, which we do not consider as available to fund shorter term liquidity

needs. The German operations benefit from bank debt that provide a very long average debt maturity and low cost of funding, but reduces flexibility and subordinates unsecured creditors, and also increases the secured debt ratio.

TAG's access to equity capital is currently weaker after substantial share price declines, but the company is committed to maintain its investment grade rating and will therefore consider both debt and equity instruments to fund the liquidity needs in the next 12-18 months. As of 30 September 2021, the company's largest shareholders were MFS Investment Management with a 9.9% share, Blackrock with 8.1% and the Capital Group with a 7.7% share.

ESG considerations

We take into account the impact of environmental, social and governance (ESG) factors when assessing companies' credit quality. The risk factors impacting TAG most are **governance concerns around a weak liquidity position, rental regulation** that considers the social needs of the tenants, and the conflict with potential increases of **environmental regulation** and investment requirements driven by the goal to decarbonise the economy.

TAG is exposed to social risk arising from affordable living requirements and rental regulation. It affects rental growth potential for companies in the sector and interferes with investment requirements due to environmental regulation. Historically the regulation served as a stabilising factor in the sector, but overboarding rental regulation would make the asset class less attractive.

TAG, alongside the German residential sector, is moderately exposed to carbon transition risk through increasing investment requirements to improve the energy performance of its buildings from a regulatory, investors and tenant perspective. The company has identified a tangible path to net-zero carbon emissions but will need to increase spending to meet its targets. The company will likely have to share CO2 taxes with its tenants going forward.

The current review for downgrade has been partially triggered by weak liquidity management as well as a weaker financial and business profile following the acquisition of a large Polish development company. TAG remains committed to its financial policy but needs to amend its capital structure in the new interest rate environment.

Liquidity analysis

Tight liquidity in the next 12-18 months with refinancing wall in 2023, limited debt maturities afterwards, higher funding requirements for TAG's development business

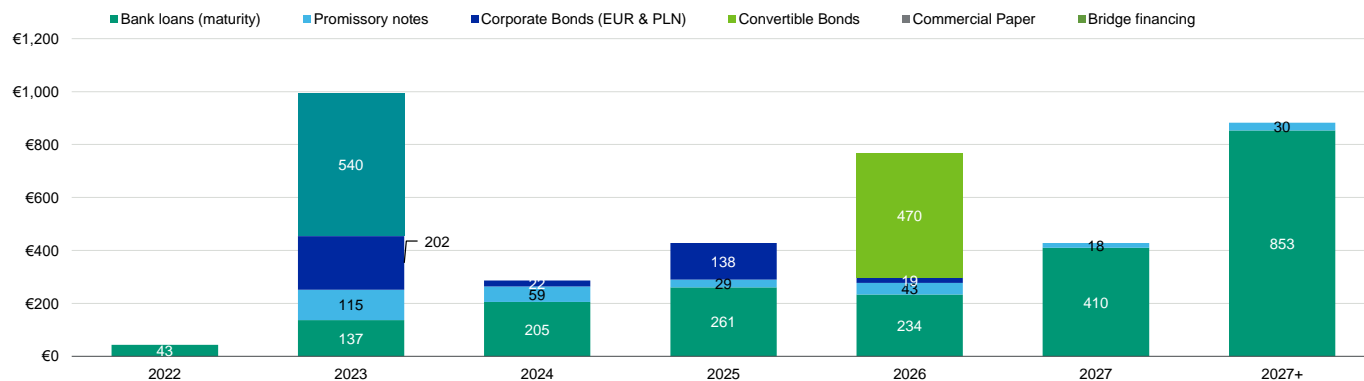
TAG's currently weak liquidity is a key driver of the review for downgrade initiated in July 2022. As of Q1 2022, the company has €205 million of unrestricted cash available, plus around €185 million of undrawn revolving credit facilities. In addition TAG receives cash from asset sales in its privatisation business in Poland. The main use of the liquidity will be debt maturities of just above €1 billion until end of 2023, including a bridge facility of up to €750 million, out of which 540 million were drawn as of 31 March 2022. In addition TAG needs to fund capital expenditure in Poland. Our understanding is that the Polish business requires some cash contributions for the next 12 to 18 months net of sales proceeds.

Outside of immediate refinancing needs, TAG benefits from a long-dated debt funding structure with largely fixed rates (5.2 years average debt maturity) and access to inexpensive German long-term bank debt. The average interest rate of 1.45% will increase with the upcoming funding requirements.

TAG has also a €500 million commercial paper programme, to which we have assigned a P-3 rating. Notes issued under this programme rank pari passu with all other unsecured and unsubordinated obligations of the company.

Exhibit 9

Debt maturities as of 31 March 2022



Source: Company

Structural considerations

Most group assets and debt are held by subsidiaries of the holding company, TAG, which is a holding company, and the issuer of two unsecured bonds of €125 million each, the convertible bonds and the promissory notes. In most cases, each mortgage loan is only guaranteed by the property held by the relevant subsidiary.

Rating methodology and scorecard factors

The principal methodology used in these ratings was REITs and Other Commercial Real Estate Firms published in July 2021. Please see the Rating Methodologies page on www.moody's.com for a copy of this methodology.

TAG's assigned rating of Baa3 is above the scorecard-indicated outcome under both our current view and forward view. This reflects our stable view of the German residential sector from a demand and supply perspective. It also reflects the German banking markets' provision of very long-term debt funding to residential companies, which lowers the scorecard-indicated outcome because of weak unencumbered assets and secured debt ratios.

Exhibit 10

Rating factors

TAG Immobilien AG

REITs and Other Commercial Real Estate Firms Industry Scorecard [1][2]		Current LTM 3/31/2022	Moody's 12-18 Month Forward View As of 6/30/2022 [3]
Factor 1 : Scale (5%)	Measure	Score	Measure Score
a) Gross Assets (USD Billion)	\$8.9	Baa	\$9 - \$9.5 Baa
Factor 2 : Business Profile (25%)			
a) Market Positioning and Asset Quality	Ba	Ba	Ba Ba
b) Operating Environment	A	A	A A
Factor 3 : Liquidity and Access To Capital (25%)			
a) Liquidity and Access to Capital	Ba	Ba	Ba Ba
b) Unencumbered Assets / Gross Assets	24.9%	B	15% - 25% B
Factor 4 : Leverage and Coverage (45%)			
a) Total Debt + Preferred Stock / Gross Assets	47.9%	Baa	49% - 53% Ba
b) Net Debt / EBITDA	15.4x	Ca	14x - 17x Ca
c) Secured Debt / Gross Assets	33.5%	B	25% - 35% Ba
d) Fixed Charge Coverage	4.6x	A	3x - 4x Baa
Rating:			
a) Scorecard-Indicated Outcome		Ba2	Ba2
b) Actual Rating Assigned			Baa3

[1] All ratios are based on adjusted financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations.

[2] As of 31 March 2022 (L).

[3] This represents a Moody's forward view, not the view of the issuer, and unless noted in the text, does not incorporate significant acquisitions and divestitures

Source: Moody's Financial Metrics™

Ratings

Exhibit 11

Category	Moody's Rating
TAG IMMOBILIEN AG	
Outlook	Rating(s) Under Review
Issuer Rating -Dom Curr	Baa3 ¹
Commercial Paper -Dom Curr	P-3 ¹
ST Issuer Rating -Dom Curr	P-3 ¹

[1] Placed under review for possible downgrade on July 4 2022

Source: Moody's Investors Service

Appendix

Exhibit 12

Moody's-Adjusted Debt Reconciliation for TAG Immobilien AG^{[1][2]}

in EUR millions	FYE Dec-2017	FYE Dec-2018	FYE Dec-2019	FYE Dec-2020	FYE Dec-2021	LTM Mar-2022
As Reported Debt	2,513.8	2,398.8	2,577.1	3,057.5	3,093.7	3,805.7
Non-Standard Public Adjustments	9.2	9.0	3.1	0.0	0.0	0.0
Pensions	5.9	5.5	5.8	5.8	5.4	5.4
Hybrid Securities	0.0	0.0	0.0	16.2	12.2	12.2
Leases	11.0	12.1	0.0	0.0	0.0	0.0
Moody's-Adjusted Debt	2,539.9	2,425.4	2,586.0	3,079.4	3,111.4	3,823.4

[1] All figures are calculated using Moody's estimates and standard adjustments.

[2] Periods are Financial Year-End unless indicated. LTM = Last Twelve Months.

Source: Moody's Financial Metrics TM

Exhibit 13

Moody's-Adjusted EBITDA Reconciliation for TAG Immobilien AG^{[1][2]}

in EUR millions	FYE Dec-2017	FYE Dec-2018	FYE Dec-2019	FYE Dec-2020	FYE Dec-2021	LTM Mar-2022
As Reported EBITDA	488.4	645.5	633.6	590.6	777.6	774.4
Non-Standard Public Adjustments	0.0	0.0	0.0	0.0	0.0	0.0
Unusual Items - Income Stmt	-286.5	-433.6	-413.5	-368.6	-540.1	-540.1
Leases	2.7	3.0	0.0	0.0	0.0	0.0
Moody's-Adjusted EBITDA	204.7	214.9	220.1	222.0	237.5	234.3

[1] All figures are calculated using Moody's estimates and standard adjustments.

[2] Periods are Financial Year-End unless indicated. LTM = Last Twelve Months.

Source: Moody's Financial Metrics TM

© 2022 Moody's Corporation, Moody's Investors Service, Inc., Moody's Analytics, Inc. and/or their licensors and affiliates (collectively, "MOODY'S"). All rights reserved.

CREDIT RATINGS ISSUED BY MOODY'S CREDIT RATINGS AFFILIATES ARE THEIR CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND MATERIALS, PRODUCTS, SERVICES AND INFORMATION PUBLISHED BY MOODY'S (COLLECTIVELY, "PUBLICATIONS") MAY INCLUDE SUCH CURRENT OPINIONS. MOODY'S DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT OR IMPAIRMENT. SEE APPLICABLE MOODY'S RATING SYMBOLS AND DEFINITIONS PUBLICATION FOR INFORMATION ON THE TYPES OF CONTRACTUAL FINANCIAL OBLIGATIONS ADDRESSED BY MOODY'S CREDIT RATINGS. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS, NON-CREDIT ASSESSMENTS ("ASSESSMENTS"), AND OTHER OPINIONS INCLUDED IN MOODY'S PUBLICATIONS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. MOODY'S PUBLICATIONS MAY ALSO INCLUDE QUANTITATIVE MODEL-BASED ESTIMATES OF CREDIT RISK AND RELATED OPINIONS OR COMMENTARY PUBLISHED BY MOODY'S ANALYTICS, INC. AND/OR ITS AFFILIATES. MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS DO NOT COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS, ASSESSMENTS AND OTHER OPINIONS AND PUBLISHES ITS PUBLICATIONS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL, WITH DUE CARE, MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS, AND PUBLICATIONS ARE NOT INTENDED FOR USE BY RETAIL INVESTORS AND IT WOULD BE RECKLESS AND INAPPROPRIATE FOR RETAIL INVESTORS TO USE MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS OR PUBLICATIONS WHEN MAKING AN INVESTMENT DECISION. IF IN DOUBT YOU SHOULD CONTACT YOUR FINANCIAL OR OTHER PROFESSIONAL ADVISER.

ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT.

MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS ARE NOT INTENDED FOR USE BY ANY PERSON AS A BENCHMARK AS THAT TERM IS DEFINED FOR REGULATORY PURPOSES AND MUST NOT BE USED IN ANY WAY THAT COULD RESULT IN THEM BEING CONSIDERED A BENCHMARK.

All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating is of sufficient quality and from sources MOODY'S considers to be reliable including, when appropriate, independent third-party sources. However, MOODY'S is not an auditor and cannot in every instance independently verify or validate information received in the rating process or in preparing its Publications.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability to any person or entity for any indirect, special, consequential, or incidental losses or damages whatsoever arising from or in connection with the information contained herein or the use of or inability to use any such information, even if MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers is advised in advance of the possibility of such losses or damages, including but not limited to: (a) any loss of present or prospective profits or (b) any loss or damage arising where the relevant financial instrument is not the subject of a particular credit rating assigned by MOODY'S.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability for any direct or compensatory losses or damages caused to any person or entity, including but not limited to by any negligence (but excluding fraud, willful misconduct or any other type of liability that, for the avoidance of doubt, by law cannot be excluded) on the part of, or any contingency within or beyond the control of, MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers, arising from or in connection with the information contained herein or the use of or inability to use any such information.

NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY CREDIT RATING, ASSESSMENT, OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

Moody's Investors Service, Inc., a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by Moody's Investors Service, Inc. have, prior to assignment of any credit rating, agreed to pay to Moody's Investors Service, Inc. for credit ratings opinions and services rendered by it fees ranging from \$1,000 to approximately \$5,000,000. MCO and Moody's Investors Service also maintain policies and procedures to address the independence of Moody's Investors Service credit ratings and credit rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold credit ratings from Moody's Investors Service and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at www.moody.com under the heading "Investor Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

Additional terms for Australia only: Any publication into Australia of this document is pursuant to the Australian Financial Services License of MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657 AFSL 336969 and/or Moody's Analytics Australia Pty Ltd ABN 94 105 136 972 AFSL 383569 (as applicable). This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001. MOODY'S credit rating is an opinion as to the creditworthiness of a debt obligation of the issuer, not on the equity securities of the issuer or any form of security that is available to retail investors.

Additional terms for Japan only: Moody's Japan K.K. ("MJKK") is a wholly-owned credit rating agency subsidiary of Moody's Group Japan G.K., which is wholly-owned by Moody's Overseas Holdings Inc., a wholly-owned subsidiary of MCO. Moody's SF Japan K.K. ("MSFJ") is a wholly-owned credit rating agency subsidiary of MJKK. MSFJ is not a Nationally Recognized Statistical Rating Organization ("NRSRO"). Therefore, credit ratings assigned by MSFJ are Non-NRSRO Credit Ratings. Non-NRSRO Credit Ratings are assigned by an entity that is not a NRSRO and, consequently, the rated obligation will not qualify for certain types of treatment under U.S. laws. MJKK and MSFJ are credit rating agencies registered with the Japan Financial Services Agency and their registration numbers are FSA Commissioner (Ratings) No. 2 and 3 respectively.

MJKK or MSFJ (as applicable) hereby disclose that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MJKK or MSFJ (as applicable) have, prior to assignment of any credit rating, agreed to pay to MJKK or MSFJ (as applicable) for credit ratings opinions and services rendered by it fees ranging from JPY100,000 to approximately JPY550,000,000.

MJKK and MSFJ also maintain policies and procedures to address Japanese regulatory requirements.

REPORT NUMBER

1335432