

## Transportation Infrastructure

Moderate traffic growth despite affordability risks

January 9, 2024

This report does not constitute a rating action.



### What's changed?

**For now, pent-up travel demand outweighs affordability risks.** Volumes for most transportation assets continue to increase despite a material rise in user fees and an erosion in disposable income. This has helped transportation assets recover to pre-pandemic levels.

**Supply chains have normalized, and most countries should resume investments.** However, the construction industry is still grappling with high costs, labor availability, rising interest rates, and liquidity risks.

### What are the key assumptions for 2024?

**Continued revenue growth is led by inflation-linked tariff increases.** Companies should be able to pass through inflation to tariffs, translating into more typical financial metrics.

**Limited demand impact despite low economic growth.** Traffic growth will likely slow compared to the pandemic recovery as economic conditions hit consumers' wallets.

**Pressure on free cash flow** from high real interest rates and increased financing costs.

### What are the key risks around the baseline?

**Recession and affordability risks.** A weaker economic performance than we currently forecast could weaken disposable income and travel demand, as well as goods transportation.

**Geopolitical tensions.** An escalation or spillover effects of the Russia-Ukraine war, Israel-Hamas conflict, or China-U.S. tensions could weigh on global trade, commodity prices, and travel.

**Hike in real interest rates and credit spreads.** We expect a prolonged period of elevated interest rates, but an additional hike in interest rates or worse financing conditions are key risks.

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## Cross-Sector Outlook

We continue to expect the majority of infrastructure issuers to continue to pass through inflation into their tariffs. We think this raises affordability risks after two years of elevated inflation and slower economic growth in most countries. We expect the transportation infrastructure sector's operating margin to remain stable or improve as inflation eases and revenue grows.

We forecast traffic growth to slow, aligned with historical pre-pandemic elasticity to each respective country's GDP, following a full pre-pandemic recovery for most assets as of 2023, with transit an outlier in the U.S.. At this point, we don't expect a significant negative impact on global trade and air traffic due to increased global geopolitical tensions, including the Israel-Hamas war, Venezuela's territorial dispute with Guyana, the persistent U.S.-China tensions, and the Russia-Ukraine conflict. Still, we see downside risk to investment appetite, global trade, and traffic stemming from the potential escalation of these events.

Delayed monetary easing will pressure financing costs for new investments and refinancing risk. Even though many infrastructure issuers took advantage of low interest rates in 2022 to refinance and extend debt maturities, prolonged elevated real interest rates and higher financing costs will weigh on capital spending and higher debt service costs.

Capital expenditures (capex) and debt issuance are tepid but gaining steam, as many companies will increase spending to facilitate growth globally.

## Industry Outlook: Airports

### Ratings trends and outlook

Over 85% of our rated portfolio (including U.S. and Canada public finance) has a stable outlook, mainly because passenger volumes are close to or have exceeded pre-pandemic levels. While we forecast slower growth compared to the recovery after the pandemic's peak, a higher baseline of traffic will support stronger cash flows in line with the sector's historical EBITDA margin performance above 50%. This should help mitigate higher interest rates so that credit metrics remain commensurate with issuers' current rating levels.

Lower GDP growth prospects and high inflation will pressure consumers' disposable income, but we still expect pent-up demand to drive passengers' willingness to travel in 2024.

### Main assumptions about 2024 and beyond

#### 1. Passenger traffic still growing

We expect demand growth to slow given that passenger volumes have reached pre-pandemic levels. We now expect volumes to grow in line with historical correlation to GDP.

#### 2. Execution of capex plans

Many airports that deferred investment plans--both maintenance and expansion--to maintain financial flexibility during the pandemic will now have to resume them at higher costs due to inflation and expensive financing conditions.

**Asia-Pacific passenger numbers are close to or have exceeded pre-pandemic numbers** in most markets, and retail revenues are rising in tandem. However, airline capacity and labor shortages remain a potential brake on growth in some markets. Capex will expand in many countries in the next one to two years, and some airports have resumed paying dividend distributions. This will offset some of the improvements in metrics.

**Australia and New Zealand:** Our base case remains that full passenger recovery could happen by fiscal 2025 at most airports. Airlines are adding back capacity, which should boost recovery. Pacific airports reap benefits from their strong property inflation-linked rentals and car-parking facilities. However, inflation and higher interest rates are a drag on the economy and could pinch consumer demand--we factor this into our base-case expectations. EBITDA margins will keep improving and inch toward pre-COVID-19 levels in the next 12-24 months. We expect some airports to undertake sizable capex after a couple of years of deferrals and low spending.

**Hong Kong:** We think revenues and margins will improve over the next 12 months. We estimate passenger numbers will return to pre-pandemic levels by the end of 2024. This recovery will drive both aeronautical and retail revenue growth in 2024. We expect capex to fall after the completion of the Hong Kong International Airport's Terminal 2 expansion by 2024.

**India:** Passenger traffic has already exceeded pre-pandemic levels for both international and domestic. Margins should return to pre-COVID-19 levels by at least fiscal 2025 (ends March 31, 2025), if not earlier. Margins should also benefit from an increase in retail space and offerings following the completion of terminal expansions this year.

**South Korea:** At Incheon International Airport, operating performance and financial metrics are likely to improve over the next 24 months, backed by a faster recovery in passenger traffic than we expected. We anticipate a full recovery in traffic to pre-pandemic levels by the end of 2024, and all revenue streams for the airport--including revenues from duty-free shops--should recover in the next two years. We expect capex to peak this year and substantially decline in 2025 once the expansion is complete.

**In Europe, the rated airports portfolio has performed strongly throughout 2023.** Activity has recovered gradually, reinforcing credit metrics. The portfolio now mostly has stable outlooks, which compares positively to last year, when the majority had negative outlooks.

From third- to fourth-quarter 2023, our rated portfolio had passenger traffic of 90% to 105% of 2019's activity during the same period. In terms of segments, business travel--which represented 15% of passenger traffic in 2019--has had a slower recovery and we expect it to recover to pre-pandemic levels by 2025. Short-haul leisure travel has compensated for business travel in some destinations, boosting recovery of domestic airports.

European airports started the pandemic with high leverage, typical of capital-intensive infrastructure assets, which increased further in 2020 and 2021 because most of the rated airports were cash flow negative. Generally, we expect our rated airports to conclude 2023 with adjusted net debt 15% to 20% higher than at the end of 2019. This higher leverage is the main reason our portfolio of European airports is rated one to two notches below pre-pandemic ratings.

In addition to this, some airports now face a backlog of capex that was delayed over the last three years, which they will need to finance at a higher cost. The need to make up for that underspending is likely to delay recovery in credit quality at our rated airports versus recovery of the airlines we rate. (For further information please see "[European Air Travel Defies Economic Pressures On Robust Demand](#)," published June 7, 2023.)

We'll continue to monitor the impact of the mobility transition (referring to the shift of traffic and mobility to sustainable transport with renewable sources) on European airports, mostly in terms of long-term growth expectations. We view short-haul flights as more vulnerable, particularly when railway transport is a competitive alternative. France has already restricted short-haul flights when there are high-speed railway alternatives, although the impact was limited because routes banned accounted for only 3% of French domestic flights. Spain is evaluating a similar initiative.

We view long-haul flights as more resilient to the transition given there are no alternatives to them. Ultimately and most likely, we think the mobility transition may fuel more expensive air fares, and we remain uncertain about long-haul flight growth potential over the long term because of users' preferences. For example, according to the 2023 Deloitte corporate travel study, four in 10 European companies and a third of U.S. companies say they need to reduce travel per employee by more than 20% to meet their 2030 sustainability targets.

**North American ratings and financial metrics have largely recovered** from pandemic lows, along with demand, although there's still some lag in international passengers and the difficult-to-measure domestic business travel. Overall, domestic passenger traffic is robust, and the 2023 U.S. Federal Aviation Administration (FAA) forecast expects annual average growth of 2.7% for next 20 years (including a bump up in 2023). This compares favorably with the FAA 2019 passenger forecast that assumed a lower rate of 1.8% for the same time period due to economic uncertainties and the subsequent impact on demand for air travel.

However, we anticipate some headwinds (see the "Main assumptions about 2024 and beyond" section below). We expect revenue growth will be balanced against increased financing costs and large step-ups in operations and maintenance expenses, as well as renewed capital spending to modernize and expand capacity. Debt capacity returned to very strong levels but remained generally weaker than pre-pandemic levels given increased debt issuance for large capital programs. The U.S. airport industry had approximately \$140 billion in outstanding debt as of year-end 2022 (up 9% from 2021 and 17% from 2020), with many large hub airports continuing to issue new-money debt in 2023. Year-to-date, 20 airports across all hub sizes have issued a total of \$10.7 billion of debt with an average principal amount of \$544 million.

Our economic outlook no longer includes a recession for the U.S. but projects a shallower, more protracted slowdown, which could translate into softening U.S. domestic airline travel. After declining in fiscal years 2020 and 2021 (ending Dec. 31), median growth in passenger traffic was 66% in fiscal 2022, and we expect passenger traffic will fully recover to pre-pandemic levels in fiscal 2024. Airports with high pre-pandemic passenger growth or serving warm weather and leisure domestic destinations generally experienced stronger recoveries than those serving international markets or metro areas more heavily affected by the decline in regional business travel.

Looking ahead to 2024, we will monitor the staying power of airport demand and activity levels. After air travel demand surged in the post-pandemic economic recovery and airfare prices spiked globally, domestic U.S. demand has shown signs of easing from strong 2022 levels, with average annual airfare prices moderating in 2023 compared to 2022. While "revenge spending" after the pandemic's peak triggered economic strength during summer 2023, leisure spending began to level off toward the end of August. This spending pattern has applied to air travel as well.

However, leisure spending levels vary by region, income levels, and even airline. The trend of air travel demand will be a key credit factor because continued growth will support the multitude of rising costs. Conversely, weakening or stagnating demand will challenge management teams to maintain financial margins commensurate with credit quality.

Similarly, we will evaluate North American airlines' growing capital programs. Capital spending to maintain assets or improve long-term capacity has resumed after a short pause. In particular, airport operators have accelerated terminal projects at the behest of airlines scrambling to regain market share. In tandem with its expectation of passenger growth over the next 10 years, Airports Council International-North America estimates U.S. airports have \$151 billion of capital needs over the next five years (a 31% increase from the 2021-2025 period), most of which consist of terminal projects. S&P Global Ratings-rated airport issuers have indicated to us that these terminal upgrades or enhancements are critical for them to stay competitive both globally and domestically, to accommodate more airlines and passengers, and to continue toward the industry-stated goal of decarbonization by 2050.

The credit profiles of Canadian airport authorities (CAAs) have stabilized during 2023, although a number of ratings remain below their pre-pandemic levels. Passenger growth for most CAAs recovered to 85%-90% of 2019 levels in 2023. We expect this ratio will reach at least 95% in 2024, while recovery in international and business segments continues to lag the strong rebound in domestic travel to date.

We expect the Canadian economy will slow further in 2024 and forecast growth of 0.8% for the year, before it picks up to 1.4% in 2025. The Canadian economy has cooled rapidly in recent months, and we maintain our view that this is just the beginning of a drawn-out, sluggish growth path for the next several quarters as the cumulative lagged effect of higher interest rates and a slowdown in global demand work through the economy.

We will continue to monitor the possible impact of economic headwinds on demand for air travel. No impact has materialized in passenger volumes so far, and we expect any impact to be temporary and that CAAs will take decisive action to mitigate weaker financial performance, if required. Investment in capex is beginning to increase at a measured pace as CAAs focus on deferred spending and optimizing existing facilities before undertaking larger capital projects. In addition, we expect CAAs to focus on reducing their debt burden to increase capacity for future borrowing needs.

**Latin America:** Mexico and the Caribbean passenger traffic continues to grow above pre-pandemic levels, still boosted by domestic and short-haul demand to and from the U.S., while Brazil has fully recovered to pre-pandemic levels driven by domestic traffic. Despite inflationary pressure on disposable income, we continue to forecast traffic growth to be aligned with GDP, driven by customers' willingness to travel.

Most of the expansion investments will be concentrated in Brazil and Mexico. We expect investments to construct new terminals in the existing facilities of Guadalajara and Monterrey in Mexico, and to meet the growing unattended demand still stemming from the cancellation of the new Mexico City Airport in 2018, since the existing asset was already saturated. In addition, we expect the execution of investments committed under the new regional airport concessions granted in 2020-2022 in Brazil.

## Credit metrics and financial policy

Overall, a combination of increased EBITDA and lower absolute debt contributed to stronger credit metrics in 2023. However, we project prolonged high interest rates and financing costs to fund either the execution of capex or debt refinancing will slightly push metrics down in 2024 and 2025.

**Asia-Pacific:** We expect Australian and New Zealand airports' credit metrics to remain stable on the back of passenger growth and improving earnings. The higher interest rates in Australia could lead to some uptick in overall interest costs on a portfolio basis, but the impact on financial metrics should be manageable. In the Pacific, most airports' metrics are now above their downside triggers and have recommenced dividend distributions to shareholders.

A substantial proportion of interest-rate exposure has been fixed for the Airport Authority in Hong Kong (which operates the Hong Kong International Airport), allowing the airport to manage the modest increases in interest rates we expect over the next one to two years. In India, leverage should steadily improve in the next two years, but remain higher than pre-pandemic levels. Recent tender offers to repurchase U.S. dollar debt with cheaper domestic funding will help cut interest-rate costs, and we consider foreign exchange exposure manageable. Key credit drivers for Indian airports are timely tariff implementation that incorporates investment in expansion capex, and dividend payouts in light of stronger cash flow.

**Europe:** We expect credit metrics for our European rated airport portfolio to strengthen gradually in 2023-2025 thanks to traffic growth, supportive tariffs, and companies' deleveraging efforts. After 2025 we expect metrics to moderate, reflecting a significant increase in capex, potential resumption of dividends, refinancing amid higher interest rates, and most significantly, traffic growth commensurate with European GDP dynamics and environmental regulations.

**North America:** The spend-down of U.S. financial assistance to U.S. airport operators is largely complete, with a return to business-as-usual rate-setting practices and the corresponding financial metrics. We expect financial performance and coverage levels to continue to improve from pandemic lows back to strong levels (greater than 1.25x).

Debt levels will continue to increase with expanding capital programs. However, as revenues also grow under largely cost-recovery business terms with airline tenants, we expect overall debt capacity (measured as debt to net revenues) to remain strong. Significant federal aid allowed airports to bolster cash reserves as demand recovered with unrestricted days' cash on hand generally staying steady or improving to 400 to 800 days, a range we consider very strong and comparable with pre-pandemic levels.

In Canada, revenues have grown at a quicker pace relative to volumes because increases in airport improvement fees and aeronautical rates implemented since 2020 are now having a material impact on financial performance as activity levels rise. Despite the notable improvement in financial metrics, the accumulation of debt in the past three years as well as higher costs and economic headwinds will make the path to pre-pandemic rating levels challenging for some CAAs in the next year.

## Key risks or opportunities around the baseline

### 1. Economic conditions to guide mobility

Our base-case scenario includes our expectation of a soft landing for the U.S. and European economies. Should macroeconomic conditions deteriorate, consumer spending on air travel could be under pressure, particularly if ticket prices remain elevated. In addition, the mobility transition may weigh on Europe's long-term growth prospects. Lower economic and traffic is a risk for most markets but in particular Greater China, India, and South Korea. Similarly, a weaker U.S. economy could erode or stagnate demand, making it a challenge for management teams to maintain financial margins commensurate with credit quality.

### 2. Geopolitical risks

The conflict in the Middle East is likely to have a limited impact, mostly on the affected areas. For Turkey and Kazakhstan, the Russia-Ukraine war and sanctions-related partial closure of the Russian airspace has supported air traffic, because many cargo airlines used these countries to bypass Russia, and in the absence of direct flights between Russia and the EU, the remaining passenger traffic has to use connecting flights, mainly in Turkey.

### 3. Growing capital requirements and costs

The highest construction cost inflation seen in decades, along with higher labor costs, will continue to weigh on project budgets and timelines and could result in higher debt levels across the sector. In particular, labor costs and shortages and outsourcing costs are a key risk in Hong Kong and South Korea. In the U.S., although weakening economic conditions could cool inflationary impacts, the massive federal investment in infrastructure could keep input and labor prices elevated in many markets over the next few years. Furthermore, the Infrastructure Investment and Jobs Act (IIJA) requires that all infrastructure projects funded by related federal grants include manufactured end-products that are manufactured in the U.S. and the component costs must be greater than 55% of the total costs, which will further increase total airport project costs.

# Ratings Trends: Airports

Chart 1  
Ratings distribution

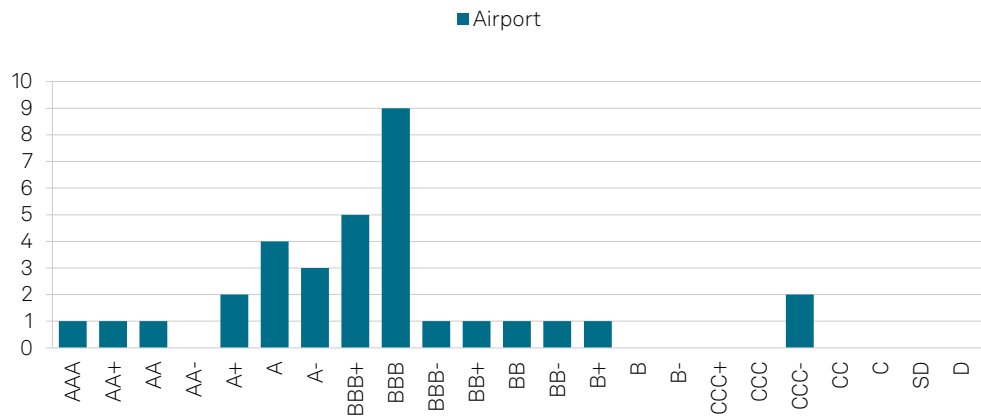


Chart 2  
Ratings outlooks

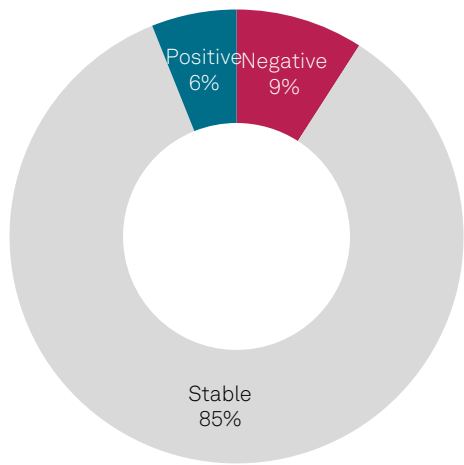
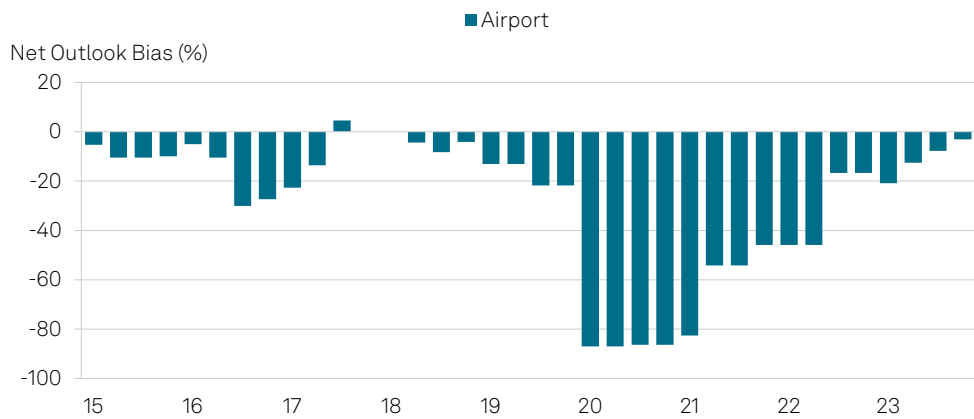


Chart 3  
Ratings outlook net bias



Source: S&P Global Ratings. Ratings data measured at quarter-end.



# Industry Credit Metrics: Airports

Chart 4  
Debt / EBITDA (median, adjusted)

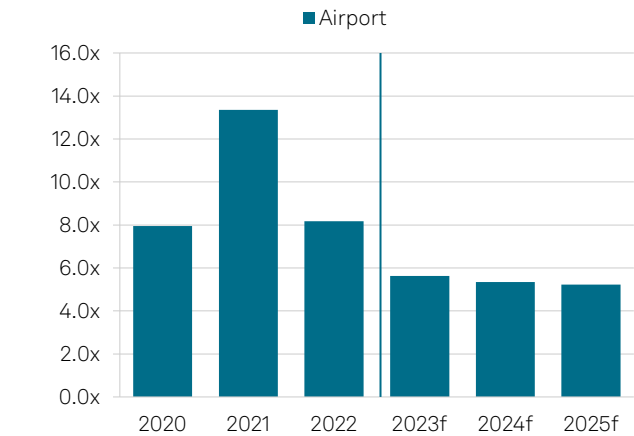


Chart 5  
FFO / Debt (median, adjusted)

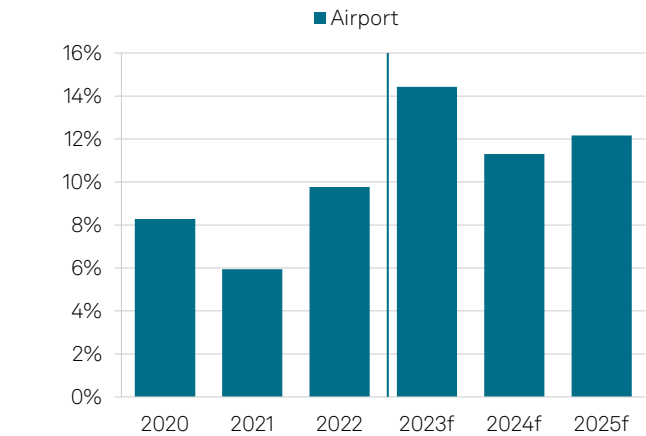


Chart 6  
Cash flow and primary uses

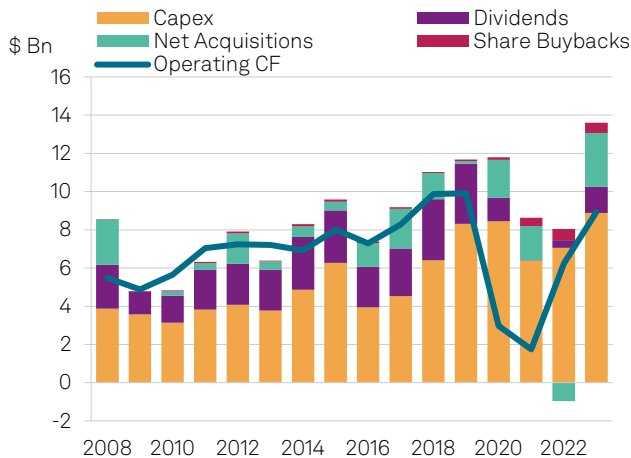


Chart 7  
Return on capital employed



Source: S&P Global Ratings, S&P Capital IQ.  
Revenue growth shows local currency growth weighted by prior-year common-currency revenue share. All other figures are converted into U.S. dollars using historical exchange rates. Forecasts are converted at the last financial year-end spot rate. FFO--Funds from operations. Most recent (2023) figures for cash flow and primary uses and return on capital employed use the last 12 months' data.

# Industry Outlook: Ports

## Ratings trends and outlook

Ports in general have a larger buffer in their credit metrics to withstand potential downturn risk from an economic slowdown. As a result, about 60% of our rated portfolio has a stable outlook and 25% a positive one. In EMEA, the few negative outlooks are more connected to external factors rather than the asset's stand-alone performance. Given ports' relevance to their local economies, most of our rated ports have strong links to the credit quality of their respective sovereign, either because of material ownership or because the rating on the country caps the issuer credit rating.

## Main assumptions about 2024 and beyond

### 1. Global trade to continue in spite of economic slowdown

Slowing global growth and high inflation will weigh on trade in the coming 12 months, leading to flat to negative volumes. The exception is in the U.S., where we expect positive growth in cargo and containers as recession fears abate and port operators rebound from a lower 2023 base. The risk of escalating geopolitical tensions poses threats to supply chains, which could, in turn, result in lower volumes across containers and other cargo segments.

### 2. Pricing increases will be limited given the difficult economic conditions

Because volumes have a negative bias, price increases like we've seen in 2023 will become more difficult to implement. We believe that many ports will be focusing on operational efficiency to maintain profitability.

### 3. Capital investment to boost future growth

In general, ports are well placed to absorb macroeconomic strains due to their relatively lower leverage compared to airports, and so are able to perform expansion capex without quickly diminishing capital buffers.

**Trade volumes in both Australia and New Zealand have slowed** in the past 12-18 months amid challenging global economic conditions. We expect container volume growth in Australia to be flat to negative on the back of constrained domestic demand, mainly due to high inflation and interest rates weighing on households.

For those ports that are exposed to export trade, softer economic conditions in China will also lead to a decline in export volumes from China to Australia and New Zealand. Export volumes from Australian coal should remain stable but could be further affected by weather events like the extreme rainfall in 2022. Capex will remain elevated across most of the Australian ports. Some ports are investing in improving logistics, automation, and upgrading infrastructure, whereas others are significantly investing in property projects.

**The sector will be stable over the next 12-18 months in China (including Hong Kong).** Trade volume growth should continue to diverge between different regions due to the route and cargo mix. We expect tariffs to remain generally stable with potential for modest adjustment. Any significant tariff hike is unlikely as the export pressure remains high and, in mainland China, policy is directed at keeping logistics costs affordable.

Trade volume growth in the Guangdong-Hong Kong-Macao Greater Bay Area will be subject to the recovery in demand from the U.S. and Europe. Hong Kong trade volumes are likely to bottom

out, but we think a strong recovery is unlikely in the next 12 months. An increasing proportion of domestic volumes and non-containerized cargo could modestly reduce port operators' margins.

**India's container ports to outperform most others in the region.** Cargo volumes have been growing despite challenging global market conditions, primarily led by containers. Improving operational efficiency supports stable margins.

**European ports' strong competitive position will allow them to withstand credit headwinds in 2024.** This has also been the case in previous weaker economic cycles and during recent trade disruptions, from the pandemic to effects of geopolitical conflicts. Thus, we see them as well positioned to accommodate the expected slow growth of trade volume next year given the region's uncertain economic conditions.

As freight rates and volumes in the region near 2019 levels, the downside risk will likely relate to escalating geopolitical conflicts, either through potential disruptions in the port services or stronger downward pressure on volumes due to deteriorated business and consumer confidence. Although we don't expect a lot of headroom for tariff escalation despite the persistent inflation, margins for cargo operations should remain robust due to ports' efficiency and competitiveness. At the same time, exposure to other activities of a less stable nature, such as logistics, could hurt margins.

Most of our European portfolio has low leverage ratios that can accommodate discretionary expansion plans even amid difficult economic conditions and higher financing costs.

**We expect a stable trend for our ratings on North American ports in 2024** after a post-pandemic contraction in cargo and container growth in 2023 for many operators. Most global supply chains recovered and returned to typical seasonal volume fluctuations. Some industries experienced shifts in source manufacturing trade patterns, but U.S. port operators are already inherently exposed to volatility due to normal business and economic cycles, fluctuating trade patterns and supply chains, drastic variations in commodity prices, and changes in bilateral and multilateral trade policies.

Despite these factors, many of the not-for-profit ports we rate have very strong enterprise value due to their critical role in various industries and the overall health of the U.S. economy. They also have strong financial metrics--particularly debt service coverage (DSC) and low debt levels compared with other transportation sectors. As a result, the U.S. port sector has generally demonstrated financial strength for many years, which has provided a cushion to absorb volatility on the path toward long-term growth and the maintenance of creditworthiness.

With 2023 volumes at the largest U.S. ports likely down 10%-12%, we anticipate moderate growth in 2024, with a return to more predictable performance by port operators as risks of recession abate. Port congestion, supply chain issues, and logistics delays are no longer an issue as trade patterns return to normal, although continuing conflict in the Middle East could disrupt shipping through the Suez Canal, with ripple effects.

The shift of international trade back to U.S. West Coast ports from U.S. East Coast ports has been influenced by drought conditions in the Panama Canal region and resolution of West Coast labor issues in August 2023. Attention now shifts to labor negotiations for U.S. East Coast ports, since the current collective bargaining agreement expires on Sept. 30, 2024. The last U.S. East and Gulf Coast labor action was in 1977 and, like on the West Coast, the progress of labor negotiations is not easily predicted.

We will also monitor drought conditions in the Panama Canal region, which has limited slots for cargo lines using that facility. Longer term, we still have moderate uncertainty regarding Asia trade due to the continuation of U.S. tariffs on Chinese imports and continued export control

restrictions that have added tension to the already strained relationship between the world's two largest economies.

**Latin America:** We expect flat volumes for Brazilian ports in 2024, because higher exports of agricultural and protein will be partially mitigated by lower import volumes. Similar to other regions, potential pressure on global trade will limit the ability to adjust tariffs. In Peru, the negative effect of the El Niño climate pattern should hit both agricultural and pisciculture production, hampering export volumes.

## Credit metrics and financial policy

In general, we think the lower leverage of ports relative to other transportation infrastructure asset classes should allow them to better withstand the difficult economic conditions without changes in credit quality. In all market regions, ports' credit metrics have sufficient buffer to absorb capex increases.

Ongoing higher inflation is likely to increase operating and financing costs in Australia and New Zealand. Higher inflation-linked increases across the rated portfolio for landlord ports (ports where a port authority rents or leases to private companies) have supported revenues and credit metrics. In India, sustained high capex due to growth expansion in international ports and the logistics segment could increase credit risks. Geopolitical tensions could hurt trade volumes, but we think credit metrics have sufficient buffers given recent deleveraging efforts.

We anticipate flat to slow growth in operating revenues in 2024, supporting very strong financial metrics for North American ports, especially for larger container ports. We generally rate these ports in our 'AA' category, and they maintain stronger financial metrics because of their larger size, activity volumes, and pricing power. Some also receive some form of tax revenue to support their operations.

## Key risks or opportunities around the baseline

### 1. Slower economic growth in the U.S. and China, weakening demand from other economies

Known or still developing risks to the global economy below our baseline could weaken the port sector. These risks include weakening economic conditions and lingering inflationary pressures. A further pick-up in Chinese domestic consumption could offset some pressure on exports, but China and Hong Kong trade volume remains heavily driven by exports. Weak end-user demand from advanced economies could drag on throughput growth. This may be partially offset by intra-Asia trade involving intermediate goods.

### 2. Geopolitical risks

Disruptions to global supply chains from geopolitical tensions is a key risk for Chinese ports. Overseas trade counterparty demand from the U.S. and Europe could also be at risk. Furthermore, China-U.S. tensions remain a key risk since the U.S. may seek goods from alternative countries. Manufacturing migration to other markets such as Southeast Asia and Latin America could pose a longer-term risk for China's trade patterns, even if it takes some time to materialize.

### 3. Emerging risks

Port operators and their shipping tenants will need to manage labor relations, the movement by shipping lines to reduce carbon emissions, and evolving cyber and physical risk issues requiring spending for asset hardening and resiliency efforts.

# Ratings Trends: Ports

Chart 8  
Ratings distribution

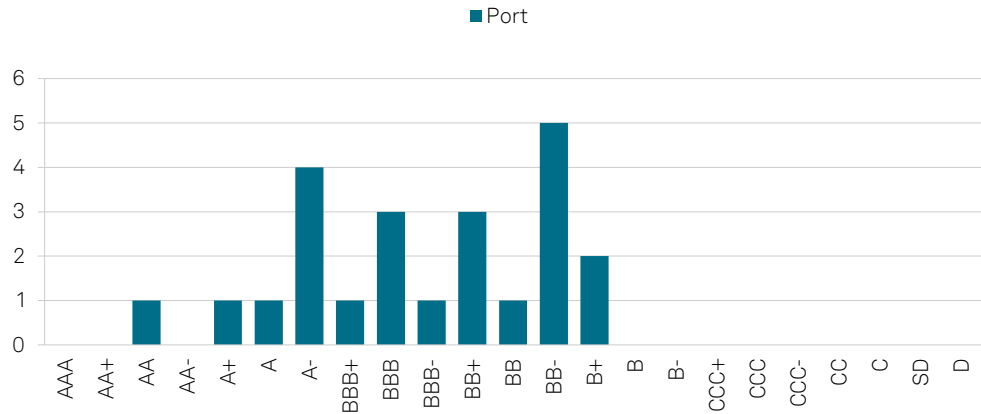


Chart 9  
Ratings outlooks

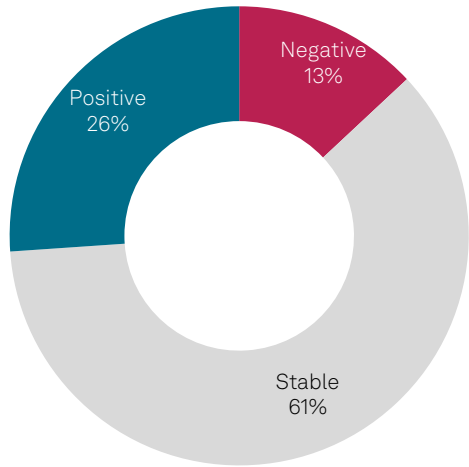
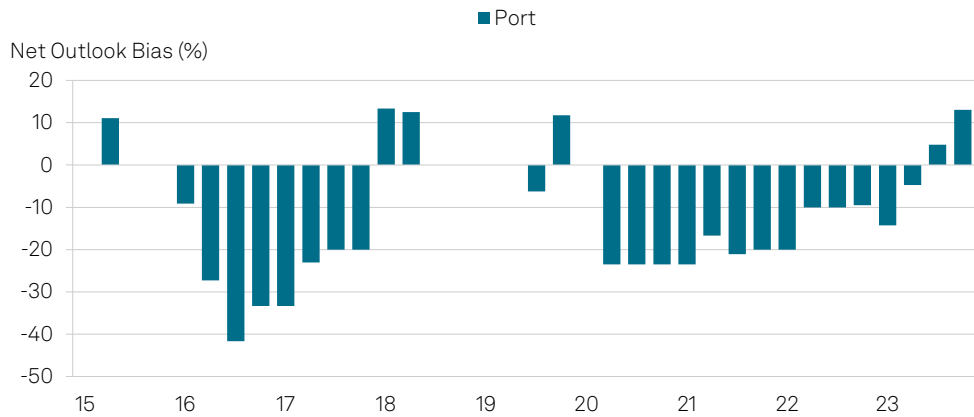


Chart 10  
Ratings outlook net bias



Source: S&P Global Ratings. Ratings data measured at quarter-end.

# Industry Credit Metrics: Ports

Chart 11  
Debt / EBITDA (median, adjusted)

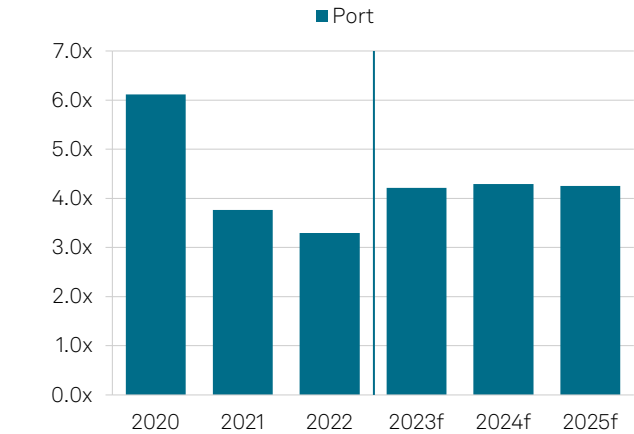


Chart 12  
FFO / Debt (median, adjusted)

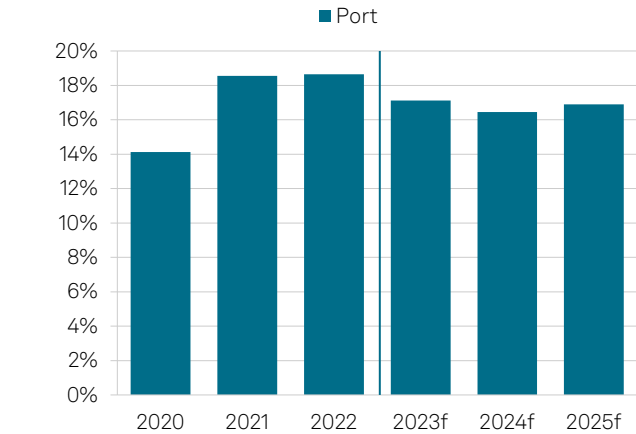


Chart 13  
Cash flow and primary uses

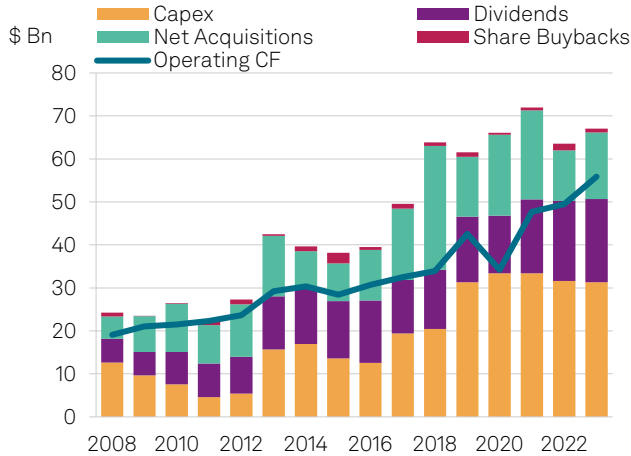
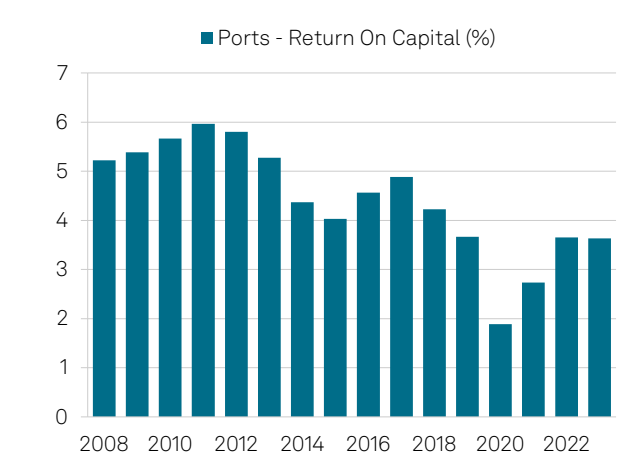


Chart 14  
Return on capital employed



Source: S&P Global Ratings, S&P Capital IQ.  
Revenue growth shows local currency growth weighted by prior-year common-currency revenue share. All other figures are converted into U.S. dollars using historical exchange rates. Forecasts are converted at the last financial year-end spot rate. FFO--Funds from operations. Most recent (2023) figures for cash flow and primary uses and return on capital employed use the last 12 months' data.

# Industry Outlook: Roads

## Ratings trends and outlook

Compared to airports, road concessionaires have recovered more quickly from the pandemic. Most assets' EBITDA already recovered to near 2019 levels in 2022. As a result, over 11% of the portfolio has a positive outlook, including several commuter toll roads in the North America, Elizabeth River Crossings Opco LLC and Autopistas Metropolitanas de Puerto Rico LLC, given their strong traffic and revenue performance. Meanwhile, most European and Latin American rated operators have stable outlooks, reflecting strong operational performance and headroom in financial metrics.

## Main assumptions about 2024 and beyond

### 1. Inflation-linked tariff increases continue to bolster toll road revenue

After significant revenue growth in 2023, most toll road operators are set to see another year with material revenue growth driven by inflation-linked toll increases. We expect revenue growth of 4%-6%.

### 2. Economic conditions and high toll fees will test traffic resilience

Given sluggish global economic prospects, we expect marginal commuter traffic growth. We also project freight traffic to remain stable or even decline for some toll roads.

### 3. Inflation and commodity prices will boost investment costs

High capital expenditures across regions will likely be driven by distinct factors such as inflation- and commodities-adjusted investments to finalize ongoing expansion; pressure to top up maturing concession portfolios in China, Europe, and Brazil; and merger and acquisition opportunities.

**We expect revenues to rise across the board in Asia-Pacific** at 5%-9% in 2024. Tariff increases may be a bigger driver of revenue than traffic growth. In China and South Korea, however, regulators may not agree to fully meet price increases sought by operators. Capital expenditures loom as the major financial consideration for toll roads that are expanding, particularly where those activities are largely debt-funded.

**Australia:** Given the inflation-linked toll increases for Australian toll roads (adjusted quarterly or annually), the higher inflation in the past 12-18 months will continue to feed into higher revenues in fiscal 2024 and fiscal 2025 (ending June 30). Traffic in Australia has already surpassed pre-COVID levels in most of the assets, although those connecting to airports or central business districts are still seeing some lag in traffic recovery. We anticipate limited opportunities for greenfield projects over the next few years.

**China:** Revenue continues to improve from the low base in 2022 in China, while volumes are by and large at or above pre-pandemic levels, driven primarily by small vehicles. However, the rebound in freight vehicle traffic is muted due to the sluggish economy. Volume remains the key revenue driver, although some newly opened roads may have the ability for discreet tariff adjustment. Toll revenue growth will likely be lower than traffic growth due to the higher mix of light vehicles versus freight vehicles. Concessions will be due to expire in the next few years, further driving investments for renewal.

**South Korea:** We expect toll roads' income to increase modestly, backed by steady traffic volume growth in South Korea that has already recovered to pre-pandemic levels. We estimate traffic volume to grow 2%-4% per year in the next three years, which is largely in line with South Korea's GDP growth.

**We expect traffic growth in European operations of 1%-4%,** coupled with toll fees increasing in line with inflation. We broadly expect light vehicles to outperform heavy vehicles in 2024, in line with the performance for 2023, reflecting that prospects for the European economy to remain close to stalling and that heavy traffic volumes are more exposed to economic downturn.

Within our rated portfolio, companies have managed to pass through inflation into toll tariffs, reinforcing operational margins and mitigating increased budgets on upcoming capex, affected by high inflation and financing costs. Our rated European road portfolio performed strongly in 2023, and we expect overall EBITDA to grow 7%-9% compared to 2022.

Finally, our European portfolio is heavily exposed to the dynamics of French toll roads, which are approaching the last 10 years of their concessions, so we expect them to gradually deleverage ahead of their maturities. This would improve credit metrics but wouldn't necessarily reflect a rise in overall creditworthiness. We expect European infrastructure companies, particularly those focused on brownfield operations, to continue monitoring acquisitions and auctions abroad given the limited pipeline in Europe through the concessional model.

**In North America, our outlooks on public-private partnership (P3) toll roads are stable and positive,** despite the uncertain economic conditions we expect in 2024. Given that P3 concession agreements typically allow inflation-linked tariff increases (sometime with a one-year lag), most toll roads saw material growth (in some cases, 10% and above) in 2023, and we anticipate another year of strong revenue growth in 2024 due to toll increases. As we anticipated, despite the high toll fee increases, most toll roads saw traffic growth in 2023 as commuters returned to work due to pent-up travel demand despite lower discretionary income. We expect continued modest growth in commuter traffic in 2024. For freight traffic, we expect growth to slow or stabilize from high growth seen during the pandemic.

We don't expect shifts in the credit quality of U.S. not-for-profit toll road operators, given the almost complete rebound in demand, supported by steady commercial vehicle traffic and toll rate increases. Toll roads have been among the most resilient transportation infrastructure asset classes in recent years, with no downgrades during the pandemic. Revenue growth will be accompanied by increased operations and maintenance expenses, as well as capital spending for capacity expansions and continued conversions to all-electronic toll collection against a backdrop of higher financing costs.

Although pent-up consumer travel demand following the pandemic might be subsiding, we continue to see stable to growing commercial vehicle traffic across the sector.

**Latin American traffic volumes in most of countries rose with 3x-4x elasticity to GDP in 2023,** driven by heavy vehicle traffic, in particular in Brazil and Mexico, where good exports were a key part of economic performance. We expect increased expansion capex from Brazilian entities that extended their maturing concession portfolios by participating in new concession auctions. We also expect maintenance investments earlier than expected, due to the degradation of pavement caused by increased heavy traffic.

We expect financing conditions to be tighter to fund these investments, given the higher interest rates across markets in Latin America countries. The negative impact of high inflation and weaker economic performance might hamper Chilean toll roads, as inflation-adjusted toll rates start to weigh on commuter traffic. Finally, we are monitoring the development of the early termination of the Rutas de Lima toll road in Peru, announced in early 2023.



## Credit metrics and financial policy

Metrics should remain generally stable in the next one to two years as growing revenues offset capex in some markets.

**Asia-Pacific:** In Australia, capex should remain elevated for the next 12-18 months as projects that are under construction move toward completion. The situation is similar in China, where maturing concessions will likely be extended in exchange for both new road construction and expansion of existing toll roads. In South Korea, capex and debt remain elevated largely due to new expressway construction scheduled to be completed over 2024-2025.

**Europe:** The rated portfolio was cash flow negative in 2020, but by 2021 the overall debt level was already similar to that in 2019. As a result, our portfolio now benefits from stronger credit metrics.

**North America:** Most toll roads have seen material growth in their cash flows and debt service coverage ratios, driven by strong revenue performance this year. This helped absorb high interest rates for roads with refinancing risk. Some toll roads, like 407 International, continue to add leverage to offset the revenue growth, keeping creditworthiness in line with existing ratings.

U.S. not-for-profit toll roads have maintained debt coverage levels near historical levels as a result of transaction growth and toll increases accompanied by higher operations-and-maintenance expenses. Management teams continue to increase liquidity positions as a proactive approach to mitigating potential stresses, including rising construction costs and operating expenses. The rapid recovery in transactions and operating revenue allowed issuers to build cash reserves, because revenue exceeded budgeted amounts significantly in fiscal years 2021 and 2022. We expect increased capital project costs stemming from inflationary pressures will result in higher debt, but be supported by revenue growth from strong demand and toll rate increases.

## Key risks or opportunities around the baseline

### 1. Affordability and regulatory risk in emerging markets

As is typically the case, regulatory issues will be specific to markets. In China, future investment will hinge on the development of the government's "Regulations on the Administration of Toll Road" policy, which will determine concession periods and investment returns. Toll road investment plans and schedules will be subject to the final determination of regulations. In South Korea, the government's tight control of toll price increases remains a key risk. Similarly, affordability issues caused riots against toll fee increases in Brazil and Chile, and that risk remains.

### 2. Slower-than-anticipated U.S. economic growth

Toll road operators are less affected by global conditions and external shocks than by domestic economic trends. An unforeseen recession could weaken disposable income, travel demand, commuter trends, and activity associated with transporting goods. However, our baseline forecast projects a shallower and more attenuated slowdown in the U.S. than we previously expected.

### 3. Working capital and high funding costs to perform investments

Construction costs and rising operations and maintenance expenses have pressured toll road operators. Overall debt levels have increased materially for many issuers we rate. Although issuers have generally raised toll rates and increased liquidity positions as a proactive approach to mitigate future potential stresses and rising costs, credit risks related to inflation

are pressuring management teams. Furthermore, despite the high interest rates for borrowers, we expect toll operators will continue to finance projects with debt, given the meaningful revenue growth from continued demand in toll transactions and increases in toll rates that can support the additional costs.

## Ratings Trends: Roads

Chart 15  
Ratings distribution

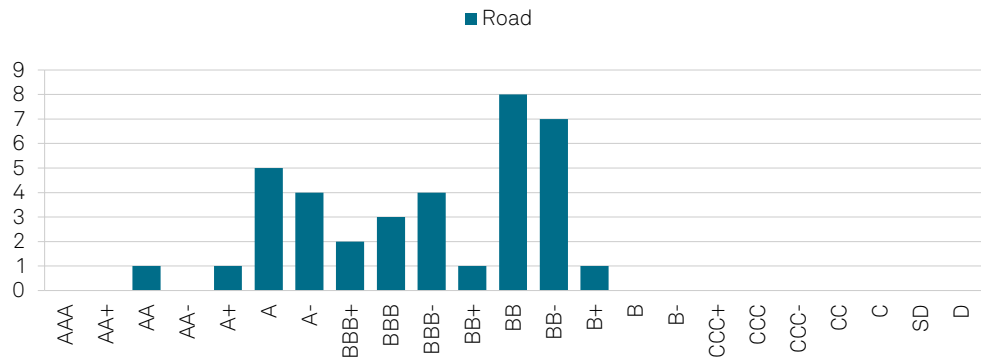


Chart 16  
Ratings outlooks

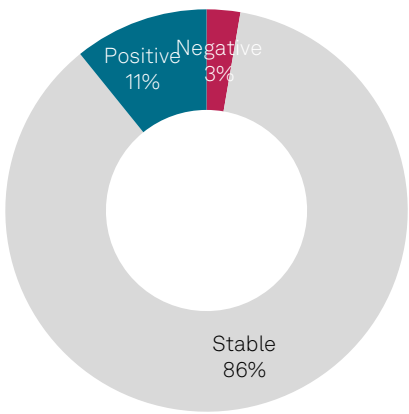
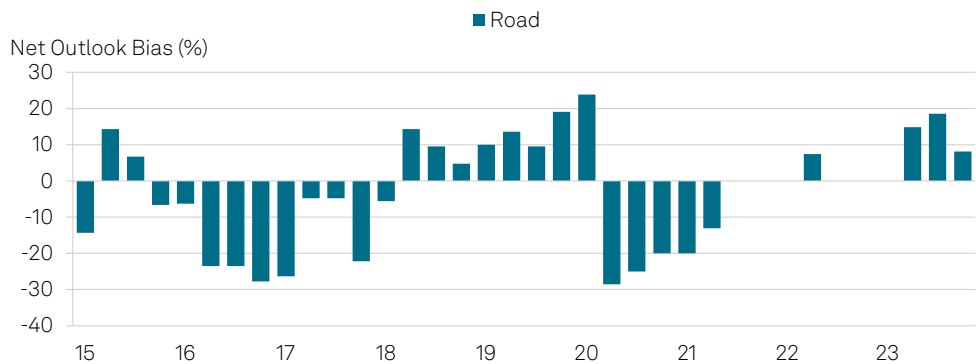


Chart 17  
Ratings outlook net bias



Source: S&P Global Ratings. Ratings data measured at quarter-end.

# Industry Credit Metrics: Roads

Chart 18  
Debt / EBITDA (median, adjusted)

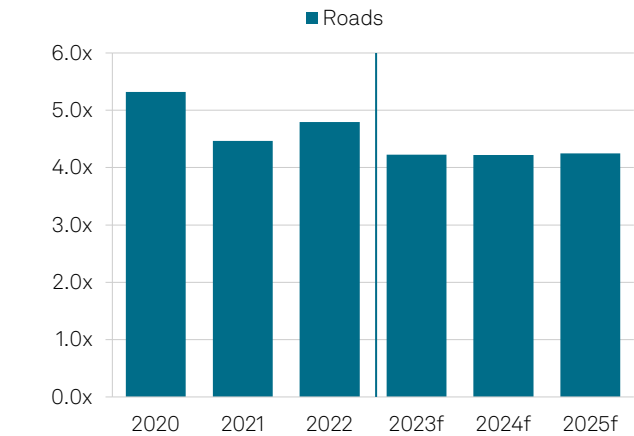


Chart 19  
FFO / Debt (median, adjusted)

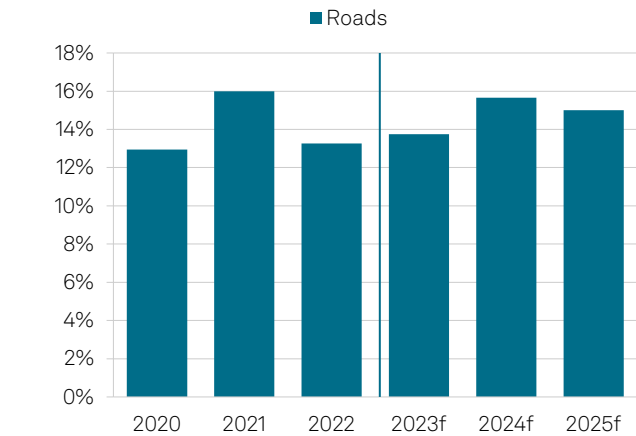


Chart 20  
Cash flow and primary uses

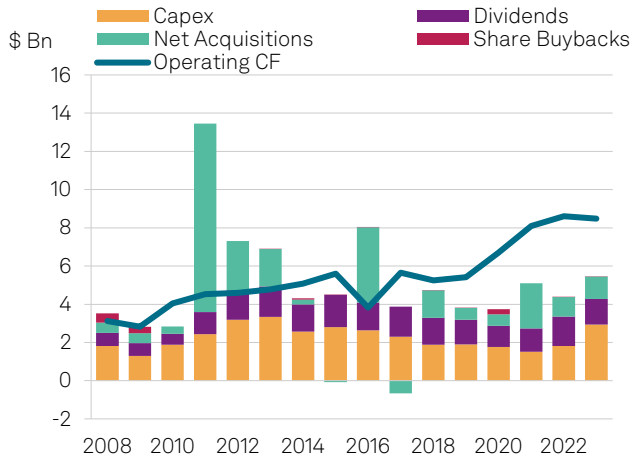
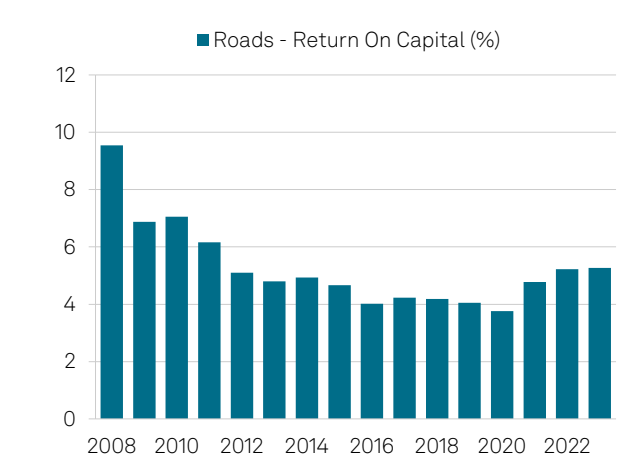


Chart 21  
Return on capital employed



Source: S&P Global Ratings, S&P Capital IQ.  
Revenue growth shows local currency growth weighted by prior-year common-currency revenue share. All other figures are converted into U.S. dollars using historical exchange rates. Forecasts are converted at the last financial year-end spot rate. FFO--Funds from operations. Most recent (2023) figures for cash flow and primary uses and return on capital employed use the last 12 months' data.

# Industry Outlook: Railways And Mass Transit

## Ratings trends and outlook

Even though over 80% of rated railway and mass transit operator ratings have a stable outlook, traffic volumes are still below 2019 levels. We also still have negative outlooks on two railway operators in Europe, mirroring their respective sovereign ratings. In the U.S., we continue to have a negative view of the sector because many large transit agencies face headwinds from persistent lower ridership and the expected void left by the spend-down of \$71.7 billion in pandemic-related federal aid. Identifying a sustainable tax and revenue model to meet operating and long-term capital needs remains an ongoing topic of debate, setting up key decisions in the coming months that will pit service levels against available resources for 2024 and beyond.

## Main assumptions about 2024 and beyond

### 1. Organic passenger growth

For passenger rail (including metro-style rail), we expect modest passenger growth in 2024 from a new baseline of volumes, considering some level of permanent passenger loss after the pandemic.

### 2. Higher reliance on public funding

We anticipate governments may not be willing to increase the cost of using public transportation for citizens despite higher costs and accelerating capex needs, which increases the reliance on public funding for these transit companies or public providers.

### 3. Advances in mobility transition

Rail's lower greenhouse gas emissions compared with other forms of transportation positions the sector well to benefit from the energy transition and European countries' efforts to lower dependence on fossil fuels, particularly in countries with energy mixes that don't heavily rely on fossil fuels.

**Asia-Pacific:** Most markets have recovered to 2019 levels and we forecast modest passenger growth in 2024. Some assets with the ability to generate additional revenues from consumers through shopping and tourism-related activity will be comparatively better positioned.

In Australia, we expect coal volumes to remain stable, assuming no significant weather events like those seen in 2022. Coal haulage remains a significant contributor to revenue and earnings, with diversification of revenues coming from intermodal (freight) and bulk haulage. Opportunities to convert road freight to rail may emerge. Competition in the rail business segment remains high and exposed to recontracting risk. Operating costs look set to remain high in 2024 and we anticipate significant capex in the next two years.

In China, operating conditions for metro businesses in the major cities will remain stable, underpinned by the resilience in domestic operations. Demand for travel and local government financial capacity remain the key drivers of network expansion.

The increasing connection between Hong Kong and mainland China will drive strong growth in cross-boundary operations. The connection will also drive lucrative duty-free and station commercial revenue growth. Hong Kong rail ridership has hit near pre-pandemic levels for some time, while cross-boundary traffic has even exceeded historical levels.

Passenger revenue in Japan in fiscal 2023 (ending March 31, 2024) will be 85%-90% of fiscal 2018 levels, rising to 90%-95% in fiscal 2024. Noncommuter income has been getting closer to pre-pandemic levels, driven by tourism demand, but commuter income has not, in part because many people are still working from home. Average EBITDA margins of the rated companies will approach pre-pandemic levels in the next two years because of recovering passenger demand, price hikes, cost cuts, and increased earnings from nonrailway operations.

We expect rail ridership levels in Singapore to continue to rebound, achieving full recovery of pre-pandemic levels by fiscal 2026 (ending March 31, 2026). This is one year earlier than our previous expectation of full recovery by fiscal 2027, because ridership levels surpassed 90% of pre-pandemic levels by mid-2023. Some of the revenue benefits of this rebound have been offset by higher costs. Ongoing higher inflation remains a key risk as rail operators continue to be challenged by higher energy prices, labor costs, and maintenance costs.

**Europe:** Our rated portfolio relates mostly to the national incumbents, owned by their respective governments, and so is heavily focused on providing public service operations (PSOs). The portfolio maintains stable operational performance, although we expect operating margins and EBITDA to slightly decline in 2023 and 2024, mostly because of high inflation.

This is not necessarily negative, because of the government-owned nature of our rated portfolio, although issuers may rely more on the public funding they receive directly from governments. We'll monitor how governments balance the need to support heavy capex needs in railway infrastructure with their other objectives and policy goals. For example, following the German Constitutional Court ruling in November 2023, part of the payments from the government's Climate and Transformation Fund to Deutsche Bahn (DB; Germany's national rail company) has been frozen. Although we think the German government continues to support DB, exact funding mechanisms and sources are yet to be determined.

The European Commission works to foster cross-border rail traffic, including the return of night trains after decades of decline, mainly due to competition with low-cost airlines. The release of the revised technical standards to improve rail interoperability across borders in September 2023 could be an important step to boost cross-border railway services. Throughout 2023, high-speed railway in Spain is now operating in competition following the entrance of two companies, Ouigo and Iryo, adding further competition to the high-speed rail market in Europe. The competition in long-distance railway is one of the main pillars of the fourth railway package of policies published by the EU in 2016.

In many European countries, the increased use of the railway network plays a key role in reaching climate transition goals and is in some cases backed with massive government funding for railway infrastructure development and improvement (e.g., in Germany). What's more, given the Russia-Ukraine conflict, fostering the development and use of rail is an effective way for European countries to lower their dependence on imported fossil fuels, although it generally depends on the country's power mix. We have seen a surge in expected investments around railway infrastructure and service to boost its use, service quality, and punctuality and to make up for historically accumulated underinvestment. Although the funding and execution of large rail infrastructure programs is a challenge, we think this could reinforce the importance of railway across Europe in the long term.

**U.S.:** Our view of the U.S. not-for-profit mass transit sector remains negative as many large agencies struggle to balance operating funds, given depressed passenger fare revenue and the fact that pandemic-related federal assistance runs out beginning in 2024. A few transit agencies have received a combination of temporary relief and longer-term tax support amid an ongoing policy debate at the state, regional, and local levels regarding how to support operating and capital requirements with sustainable tax and revenue models.

However, year-to-date rating actions have been positive for some U.S. mass transit operators that benefit from significant tax support and are relatively less reliant on fare revenues. Specifically, sales taxes have experienced strong growth in recent years that we expect will provide ongoing financial flexibility. Overall, we believe the credit quality of transit operators that historically rely on fare revenue will depend on their long-term ability to enhance existing recurring revenue sources or establish new recurring ones, and to adjust operating expenses and capital spending as needed to achieve a sustainable fiscal balance.

Mass transit's business model for moving suburban commuters in and out of the city center five days a week--and the revenues derived from that ridership base--may have ended permanently or at least for the foreseeable future. Across the U.S., data from all transit agencies through December 2023 show ridership has recovered to approximately 77% of pre-pandemic levels, but there are wide variances between regions and between modes of transit. Heavy commuter rail systems continue to experience weaker ridership due to remote working trends, while bus and subway ridership have generally performed better.

Transit agencies have a variety of options to close the operating fund gap, including seeking more state or regional funding, new dedicated revenues or other sources, and fare increases. Although cost reductions, service cuts, and shifting capital funds to operating funds are options, most transit operators are unlikely to pursue workforce reductions. While aligning service levels with demand patterns is essential, we see only marginal gains in efforts to stimulate ridership. In many instances, transit agencies are at the mercy of large downtown employers and their decisions regarding remote work options for their employees. We've observed that depressed ridership also has a knock-on effect for cities and the economies of city centers, particularly as it relates to the retail and commercial real estate sectors.

Realistically, to close forecast operating fund deficits, large U.S. transit agencies lacking significant tax support will need access to long-term, dedicated funding above what they currently receive to support anticipated service levels. Absent that or a dramatic change in the return-to-work movement, modifications in transit schedules, fare increases, and expense reductions are unlikely to compensate for the loss of daily commuters and the revenue they generated to support transit enterprises.

### Credit metrics and financial policy

In Asia-Pacific, we expect funds from operations to debt for most rated entities to be stable because capex-to-revenue ratios have generally peaked. However, in Australia, capex will be significantly high because the two main rail players (Aurizon and Pacific National) plan to invest in developing intermodal terminals as well as on increasing their fleet size. Chinese metro capex is likely to diverge between regions, with investment continuing in more developed regions, particularly in tier-one cities with population inflows. In Hong Kong, we expect capex to pick up starting in late 2023.

## Key risks or opportunities around the baseline

### 1. Pressure on margins

Operating costs, which are usually linked to inflation, look set to remain high in most countries in 2024. For instance, personnel expenses typically account for the largest proportion of total operating expenses (on average about 50%) for our rated rail European operators. Further increases in labor costs--which increased by 6.3% year-on-year in the third quarter of 2023--could test the resilience of rail companies' operating margins.

### 2. Large capex programs to test execution and funding in Japan

In Japan, larger investment in real estate development could strain credit strength while other nonrailway business expansion could heighten revenue volatility.

### 3. Subsidy and affordability risks amid continued inflation

Regulatory risk for tariff settings due to affordability issues is a factor in times of high inflation, since concession contracts tend to be adjusted by inflation. In addition, subsidies to tariffs will depend on each government's financial capacity to offset the impact of inflation on tariffs.

## Additional ongoing financial support

In China, metro operations are highly dependent on local government operating subsidies. The credit quality of local governments could also drive investor sentiment due to metro operators' strong links with and financial reliance on these governments, influencing the ability of these entities to access the capital market.

In North America, some transit systems have received interim and longer-term financial support from lawmakers and regional stakeholders. However, for most transit agencies, identifying a sustainable tax and revenue model to meet operating and long-term capital needs remains an ongoing topic of debate, setting up key decisions in the coming months that will pit service levels against available resources for 2024 and beyond.

# Ratings Trends: Railways And Mass Transit

Chart 22  
Ratings distribution

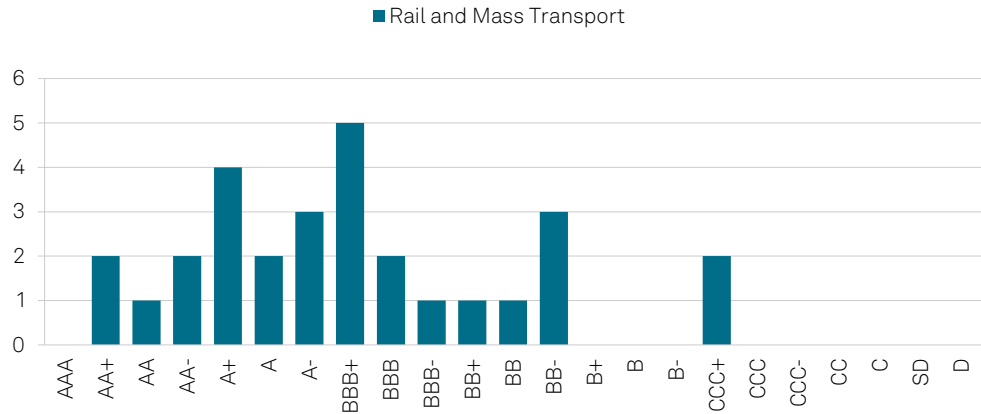


Chart 23  
Ratings outlooks

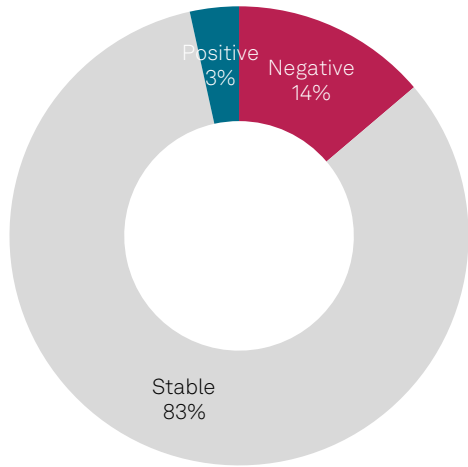
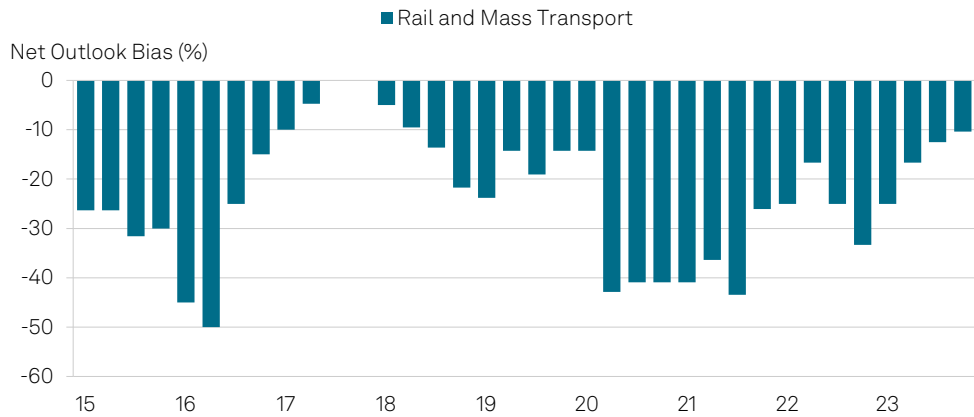


Chart 24  
Ratings outlook net bias



Source: S&P Global Ratings. Ratings data measured at quarter-end.



# Industry Credit Metrics: Railways And Mass Transit

Chart 25  
Debt / EBITDA (median, adjusted)

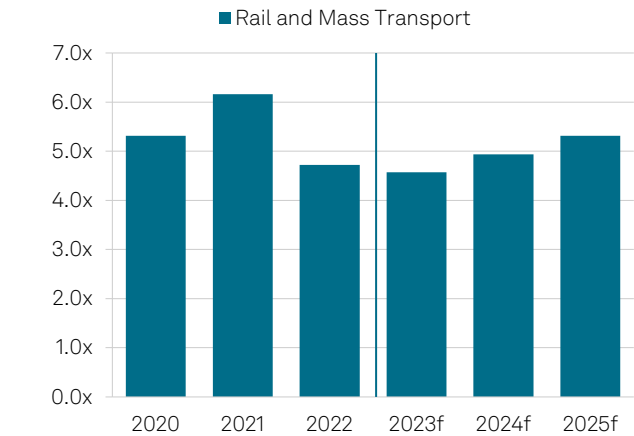


Chart 26  
FFO / Debt (median, adjusted)

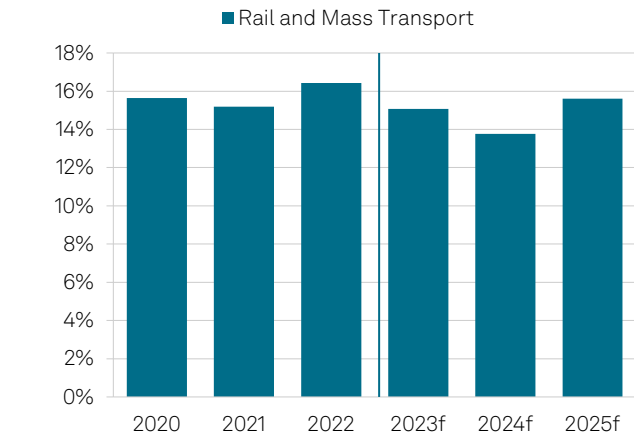


Chart 27  
Cash flow and primary uses

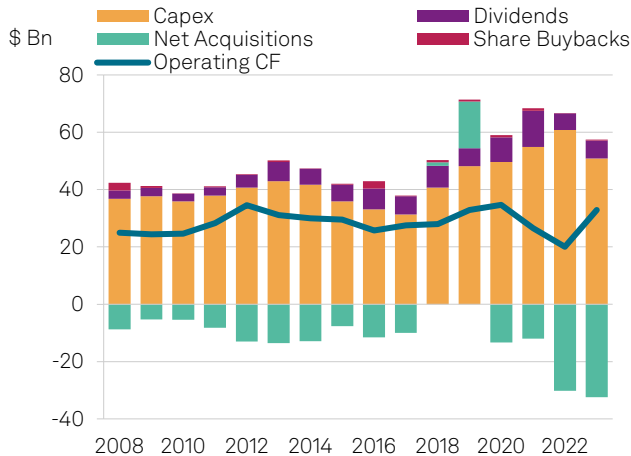
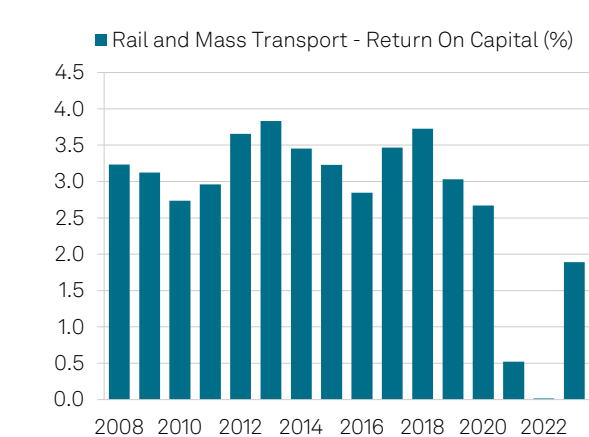


Chart 28  
Return on capital employed



Source: S&P Global Ratings, S&P Capital IQ.  
Revenue growth shows local currency growth weighted by prior-year common-currency revenue share. All other figures are converted into U.S. dollars using historical exchange rates. Forecasts are converted at the last financial year-end spot rate. FFO--Funds from operations. Most recent (2023) figures for cash flow and primary uses and return on capital employed use the last 12 months' data.

## Related Research

- [Asia-Pacific Transport Infrastructure 2024 Outlook: Capex Is Becoming A Credit Driver](#), Nov. 27, 2023
- [U.S. Transportation Infrastructure Airport Update: The Industry Is Cleared For Takeoff. With Cost Pressures On The Horizon](#), Nov. 07, 2023
- [Asia-Pacific Aviation is On A Recovery Runway](#), Nov. 1, 2023
- [Proposed Tax Tests French Infrastructure Regulatory Framework](#), Oct. 16, 2023
- [European Air Travel Defies Economic Pressures On Robust Demand](#), June 7, 2023

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