

GLOBAL METRO FIGURES 2024

MAY | 2025

INTRODUCTION

As of 31 December 2023, at least one metro line was available in 202 urban agglomerations across the world, with 13 new agglomerations opening a metro system in the period 2021-23, reinforcing the role of metros as crucial assets for efficient and sustainable mobility at the global level. Although at least one new line was opened in almost all UITP regions, Asia-Pacific still has the lion's share, especially China, where the network length in 2021-23 increased by 37% compared to December 2020.

After a tremendous fall in ridership due to the 2019 coronavirus disease (COVID-19) pandemic and resulting travel restrictions and adaptation to a 'new normal', ridership figures in 2023 were finally back to 2019 levels, achieved at a different pace and with different recovery rates based on the specific regional contexts, as detailed in this document.

For this metro statistics brief, UITP has collected exhaustive data on a series of key indicators for global urban rail systems running on an exclusive right-of-way, including network length, fleet size, number of lines, and ridership. A dedicated 'City selection' section compares and ranks urban agglomerations based on selected indicators.

A paragraph on automated metros provides a snapshot of GoA4 lines worldwide. Other indicators (annual passenger-kilometre (km), annual car-km, and annual vehicle-km) have been collected by UITP, but the limited coverage does not allow for regional comparison. Figures, in this case, are only available in the full data set in UITP MyLibrary.



► Brussels, Belgium

METHODOLOGICAL NOTE

Definition of metros

In this statistics brief, metros are defined by UITP as *'high capacity urban guided transport systems, mostly on rails, powered with electricity and running on an exclusive right-of-way, with trains composed of a minimum of two cars and with a total capacity of at least 100 passengers per train'*. Suburban railways (such as the Paris RER, Berlin S-Bahn, and Kuala Lumpur International Airport express line) are not included. Systems that are based on light rail vehicles, monorail, or magnetic levitation (maglev) technology are included if they meet all other above-mentioned criteria. Suspended systems are not included. A total of 237 urban guided networks are covered in this brief, divided into the following: 217 metro networks; 15 monorails; 8 people movers; 5 light rails; and 2 maglev systems. For simplicity, they are all referred to as 'metros' here.

Methodological note on regions

Data has been collected at the urban level and aggregated at the national and regional level. Regions presented in the statistics brief are based on UITP regional divisions, except for Iran and Australia, which for statistical reasons are included in the Middle East and North Africa (MENA) and Asia-Pacific regions respectively. Compared to the previous version of this brief (2022), Turkey is part of the Eurasia division, and Pakistan is part of the MENA region.

Definition of 'city'

As there is no globally accepted definition of 'city', UITP has adopted the definition of 'urban agglomeration' provided by the United Nations and the related population dataset. An urban agglomeration is defined as *"a type of urban settlement defined by the de facto population contained within the contours of a contiguous territory inhabited at urban density levels without regard to administrative boundaries. It usually incorporates the population in a city or town plus that in the suburban areas lying outside of but being adjacent to the city boundaries"*.¹

Collected data has been aggregated according to the urban agglomeration definition, even if the systems are operated in different cities (hereafter urban 'agglomerations' and 'cities' are used interchangeably for the sake of simplicity). As a result, the 237 analysed urban rail networks can be grouped into 202 urban agglomerations and provide access to metro services for 1.12 billion inhabitants.

METRO GLOBAL DEVELOPMENTS, 2021-2023

As indicated in the introduction, 13 urban agglomerations opened a metro service between 2021 and 2023, including the first metro network in Sub-Saharan Africa (in Lagos, Nigeria in 2023). In 2023, the total number of km of metros surpassed the 20,000km threshold, with an 18% increase compared to the end of 2020. There were similar increases in other indicators: number of lines (+12%); number of stops (+13%); and number of cars (+15%).

Asia-Pacific is by far the region with the highest concentration of metro systems, hosting 43% of the world's urban agglomerations with at least one metro line and almost two-thirds of the global metro network length. Together, these two indicators show that metro networks in this region tend to be longer than in other regions. Europe has 21% of urban agglomerations with at least one metro line, but this region only accounts for 14% of the global metro network length. China witnessed significant growth in several supply indicators in 2021-23, continuing an already growing trend dating back to early 1980s, with its peak in the decade 2010-19. In particular, the total length of Chinese metro networks grew by 37%, the number of lines by 33%, the number of stops by 31%, and the number of cars by 34% compared to 2020. In 2023, China accounted for the 43% of the global metro network length and 30% of worldwide metro ridership.

CURRENT SITUATION (2023)

As of 31 December 2023, there were 202 urban agglomerations worldwide with at least one metro line, totalling 20,453km, as shown in Table 1. Table 1 provides an overview of some of the key indicators further analysed in this brief, divided by region. The number of metro lines worldwide reached a record high in 2023, with 831 lines in operations.

Asia-Pacific stands out in all the main indicators collected, confirming its status as a metro-oriented region. Thanks to massive investment and constantly expanding metro projects, in 2023, this region accounted for 63% of total global metro length, 58% of total global metro cars, and 58% of total global metro ridership. Figure 1 depicts the split of these indicators among different UITP regions. Europe, where the first metro opened in 1863, comes in second, with 42 agglomerations with a metro system. In 2023, the region accounted for 14% of the global metro length and 16% of global ridership, with a very good recovery rate after the COVID-19 pandemic.

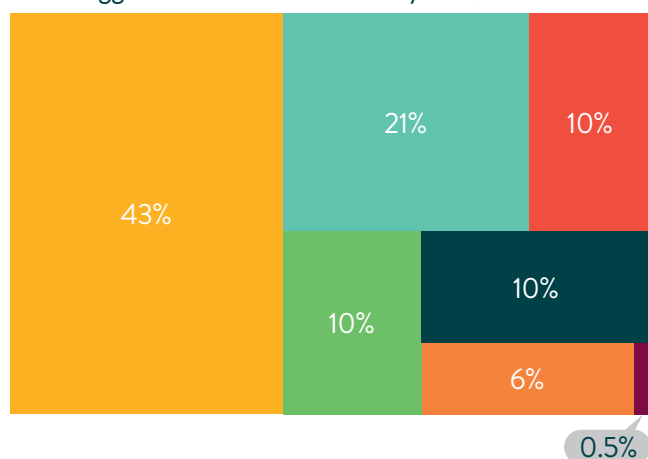
¹ United Nations, Department of Economic and Social Affairs, Population Division (2018). World Urbanization Prospects: The 2018 Revision

Table 1: Key metro metrics by region

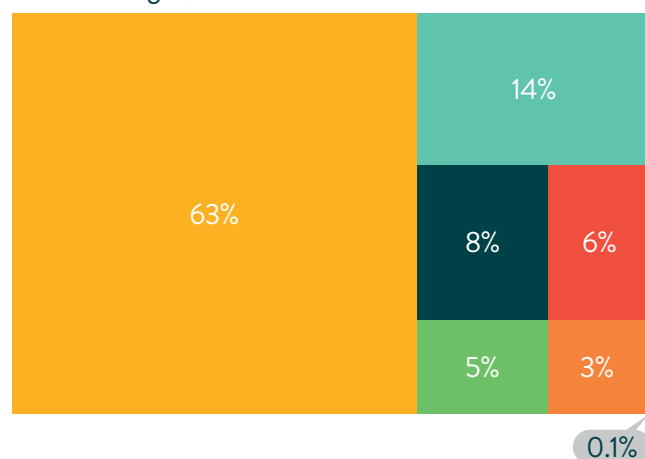
UITP REGION	NUMBER OF URBAN AGGLOMERATION	NETWORK LENGTH DOUBLE TRACK (KM)	NUMBER OF LINES	NUMBER OF STOPS/ STATIONS	NUMBER OF CARS	ANNUAL RIDERSHIP (MILLION)
Africa	1	13	1	5	8	0.58
Asia-Pacific	86	12,957	427	8,441	91,920	33,660
Eurasia	21	1,270	63	864	13,077	5,130
Europe	42	2,834	169	2,881	25,325	9,380
Latin America	20	1,080	62	888	9,865	4,720
MENA	12	681	25	486	4,294	2,590
North America	20	1,618	84	1,300	14,382	2,520
Total	202	20,453	831	14,865	158,871	58,000

Figure 1: Key metro indicators by regional distribution

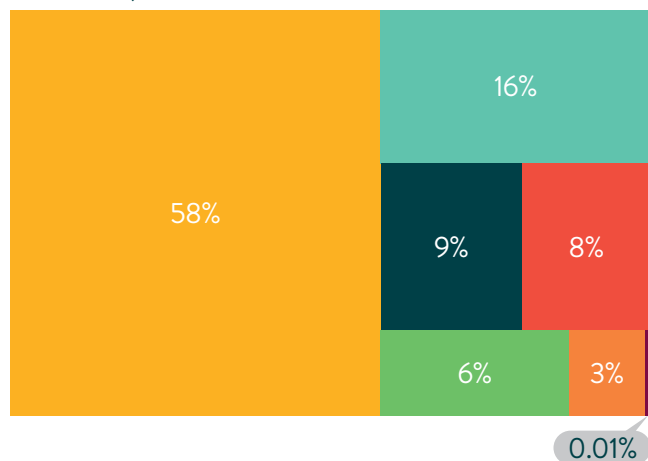
Urban agglomerations with a metro system, 2023



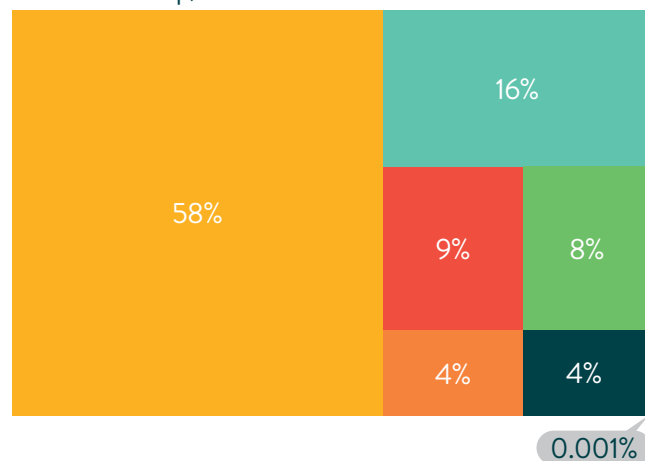
Network length, 2023



Metro cars, 2023



Annual ridership, 2023

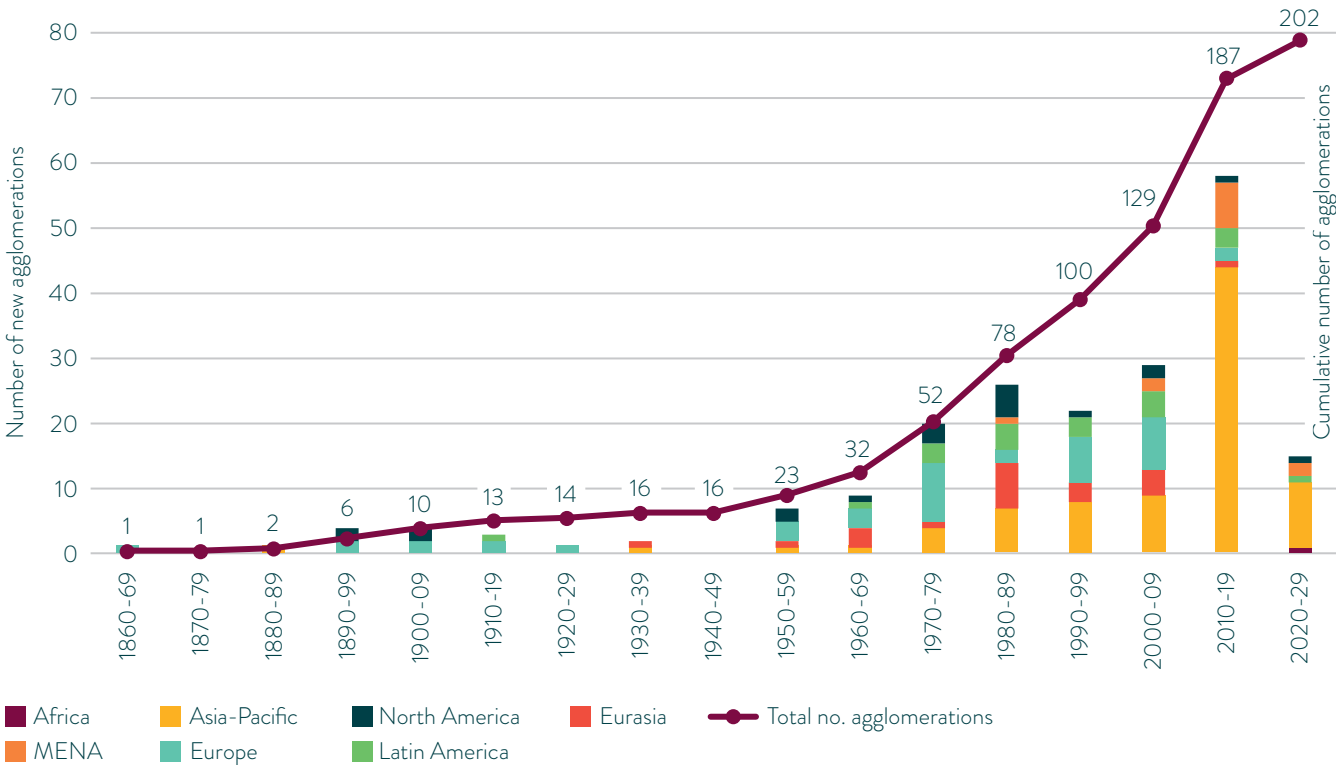


■ Africa
 ■ Asia-Pacific
 ■ Eurasia
 ■ Europe
 ■ Latin America
 ■ MENA
 ■ North America

Figure 2 shows the evolution of the number of urban agglomerations with at least one metro line, divided by decade and region. The regional split highlights the constant growth in new openings in Asia-Pacific and, from 2010 onwards, the MENA region. Between 2010 and 2023, 73 new urban agglomerations opened a metro system worldwide; almost half of these were in China, where at

least one urban agglomeration opened a metro line every year from 2010 to 2022 (in 2023, 21% of all urban agglomerations with a metro were in China). From 2010 onwards, 54 new cities inaugurated at least one line in Asia-Pacific, 9 in MENA, 4 in Latin America, 2 in Europe and North America, 1 in Sub-Saharan Africa, and 1 in Eurasia.

Figure 2: Number of urban agglomerations with metro systems by region



INFRASTRUCTURE

As of 2023, there were 20,453km of metros worldwide, a 115% increase compared to 2010 (9,512km), with an annual average global growth rate of 6% (see Figure 3 for a regional and annual breakdown). This means that, on average, over 800km of new metros per year have been opened globally, the equivalent of Shanghai's entire network. Of the 10,941km of new metros opened between 2010 and 2023, 84% are in Asia-Pacific, with more than two-thirds in mainland China. Looking at regional developments, North America has the lowest number of km of metros opened in the last 14 years (134km). Despite this, the United States (U.S.) remains the country with the second largest metro presence worldwide, calculated in km of metro lines (1,359km). China comes in first, with 8,788km. Considering only the countries with more than 500km of infrastructure, Japan ranks third (973km), followed by the Republic of Korea (926km), India (881km), Russia (646km), and Spain (532km).



Taipei, Chinese Taipei

Figure 3: Network length evolution, 2011-2023

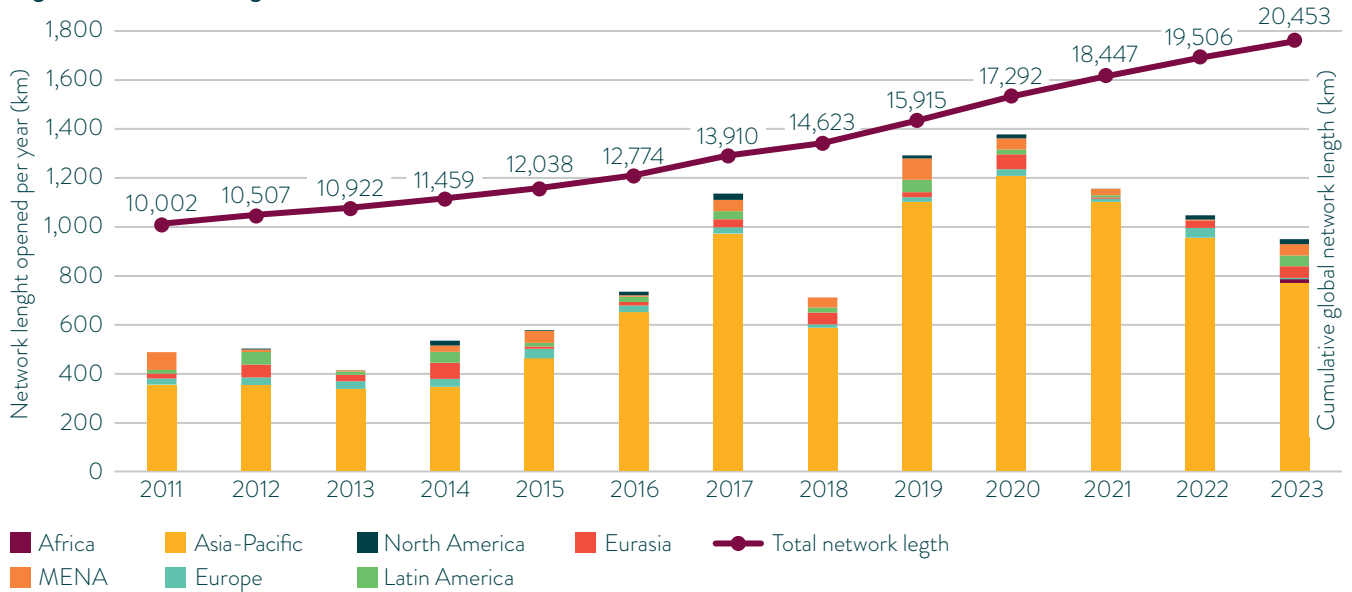


Figure 4: Network length variation compared to 2010, 2011-2023

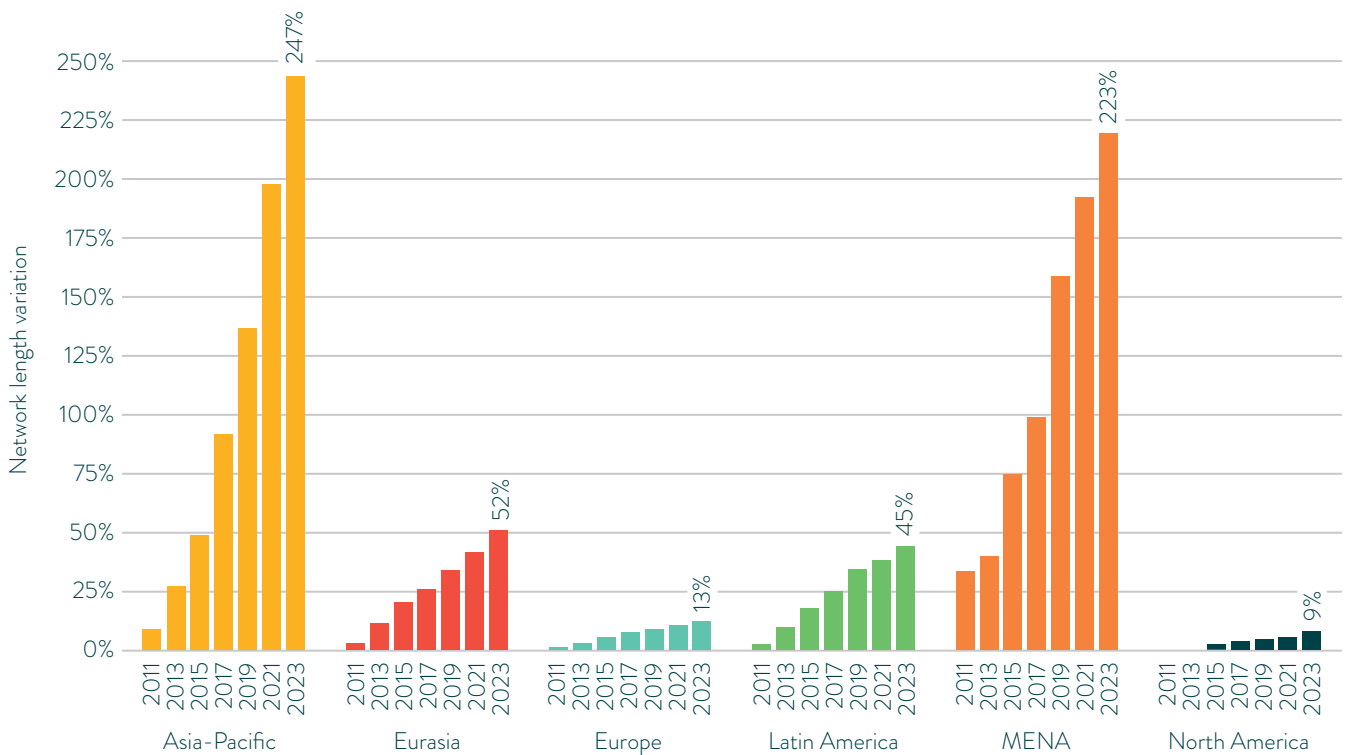


Figure 4 shows the regional network length variation compared to 2010. The bars correspond to the odd years starting from 2011 (2011, 2013, 2015, 2017, 2019, 2021, and 2023). Comparing the 2023 figures to the 2010 ones, MENA and Asia-Pacific had the highest growth in terms of number of km of metros opened (+223% for MENA; +247% for Asia-Pacific). China drove the growth in Asia-Pacific, as mentioned above. New openings and extensions in Qatar, United Arab Emirates (UAE), Pakistan, and Iran drove the MENA growth,

which is expected to continue with the completion of projects currently under development. Eurasia and Latin America rank third and fourth in terms of growth in 2023 vs. 2010, far from the triple digit percentages recorded by Asia-Pacific and MENA (+52% for Eurasia, especially driven by Turkey, Russia, and Uzbekistan; +45% for Latin America, driven by new networks in Panama, Peru, and Ecuador and expansion projects in Brazil). Growth rates in Europe and North America were the lowest (13% for Europe and +9% for North America).

NETWORK CHARACTERISTICS

The average line length globally (Figure 5) was 24.6 km in 2023, with substantial regional differences (mainly based on urban topography). At the global level, there was a 29% increase in average line length compared to 2010. Asia-Pacific (30.3km) and MENA (27km) were the regions with the longest lines, on average. Europe (16.8km) and Latin America (17.4km) were the regions with the shortest.

The global average distance between stops in 2023 was 1,376 metres, increasing by 14% compared to 2013, when the average distance was 1,211m. Asia-Pacific and

Eurasia were the regions with the largest distance between stops (1,535m for the former; 1,470m for the latter). Europe was the only region with a distance between stops below 1km (984m).

Compared to the 2018 UITP World Metro figures, regional numbers have slightly changed in only one region, Asia-Pacific, where the average line length increased from 26km in 2017 to 30.3km in 2023 and the distance between stops, from 1,414m to 1,535m. Figures for all other regions remained almost unchanged in the last six years.

Figure 5: Metro network features (average line length and average distance between stops), 2023



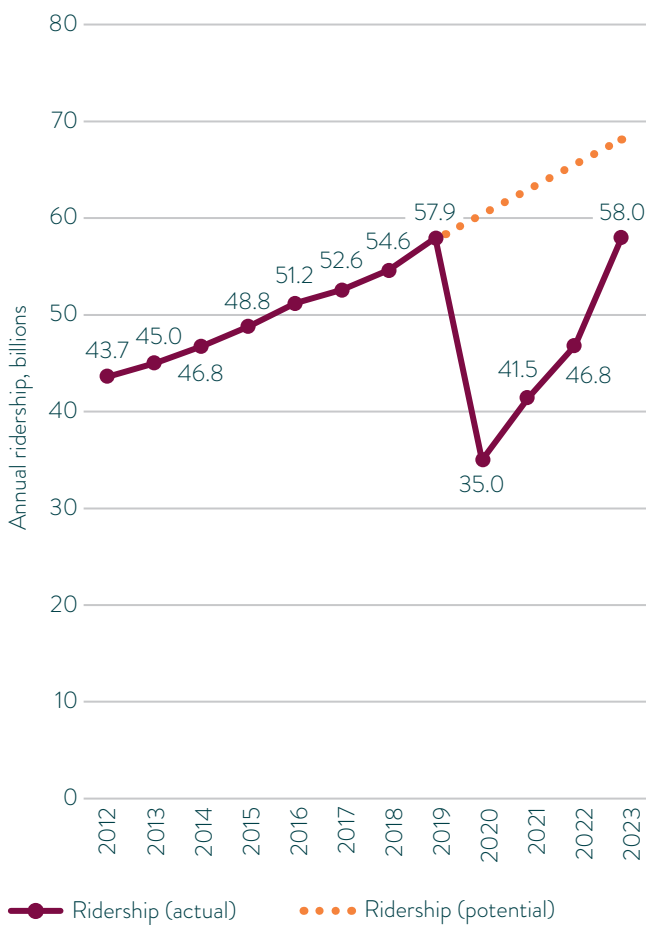
RIDERSHIP²

Between 2012 and 2019, global metro ridership grew annually by 4.1%, on average. In 2020, pandemic restrictions on personal movements led to a drastic 40% drop compared to 2019. Despite some ongoing restrictions in 2021 and 2022, together with the natural adaptation to a 'new normal' and modified travel patterns (increase in working from home and shifted peaks), the ridership recovery rate was slow but steady. The whole public trans-

port sector suffered the consequences of the COVID-19 outbreak for three years, but in 2023, numbers were, for the first time, the same as the 2019 ones. It is therefore very likely that ridership in 2024 will exceed 2019 levels. Projections for the 2019-23 period show a 'loss' of ridership due to COVID-19 estimated at 75 billion. In 2023, Asia-Pacific accounted for 58% of global metro ridership, with China alone accounting for 29 percent of global ridership. Japan (11%), Russia (5%), India (5%), and Republic of Korea (4%) complete the top five.

² Data on passenger volume has mainly been collected through desk research, from reliable official sources such as operators', authorities', and national/international associations' annual reports or websites. The ridership figures reflect the way these bodies calculate the ridership volumes, which might not be uniform worldwide, being calculated as the boardings or trips or sometimes estimated.

Figure 6: Global ridership evolution, 2012-2023



Ridership and recovery rates in 2019-23 differ a lot across regions (Figures 7 and 8). Asia-Pacific and MENA are the only two regions that registered an increase in ridership in 2023 compared to 2019. This was made possible by the opening of new lines and completion of extension projects during this period. The Asia-Pacific metro network expanded by 45% (in terms of number of km) in 2019-23; in MENA, the increase was 24%, whereas in Europe and North America, it was only three percent. Between 2020 and 2021, there was an initial recovery in Asia-Pacific, followed by stable numbers in 2022 and an increase in 2023. The recovery trend in Latin America was very similar to the European one, but the ridership drop in 2020 was much higher (-51%), thus causing a slower recovery (-16% compared to pre-COVID levels). In North America, full ridership recovery seems to be more complicated and started later than in the other regions (2023 ridership was -32% compared to 2019, with a 61% drop in 2020). The pace is extremely different for the U.S and Canada; in the U.S., 2023 ridership was -37% compared to 2019, whereas in Canada, it was -17%. In terms of recovery speed, among the countries with the highest ridership volumes, China and India had the highest recovery rates (+19% and +15%, respectively).

Figure 7: Ridership evolution by region, 2012-2023

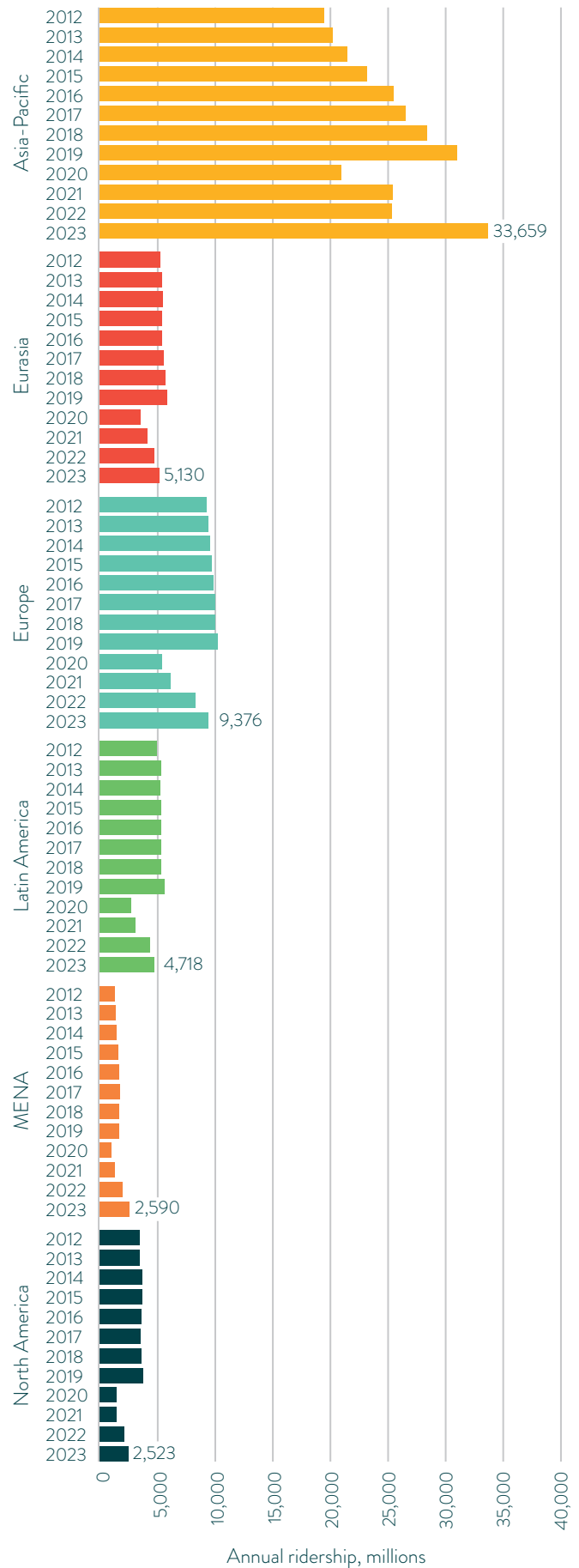


Figure 8: Ridership variation compared to 2019, 2019-2023

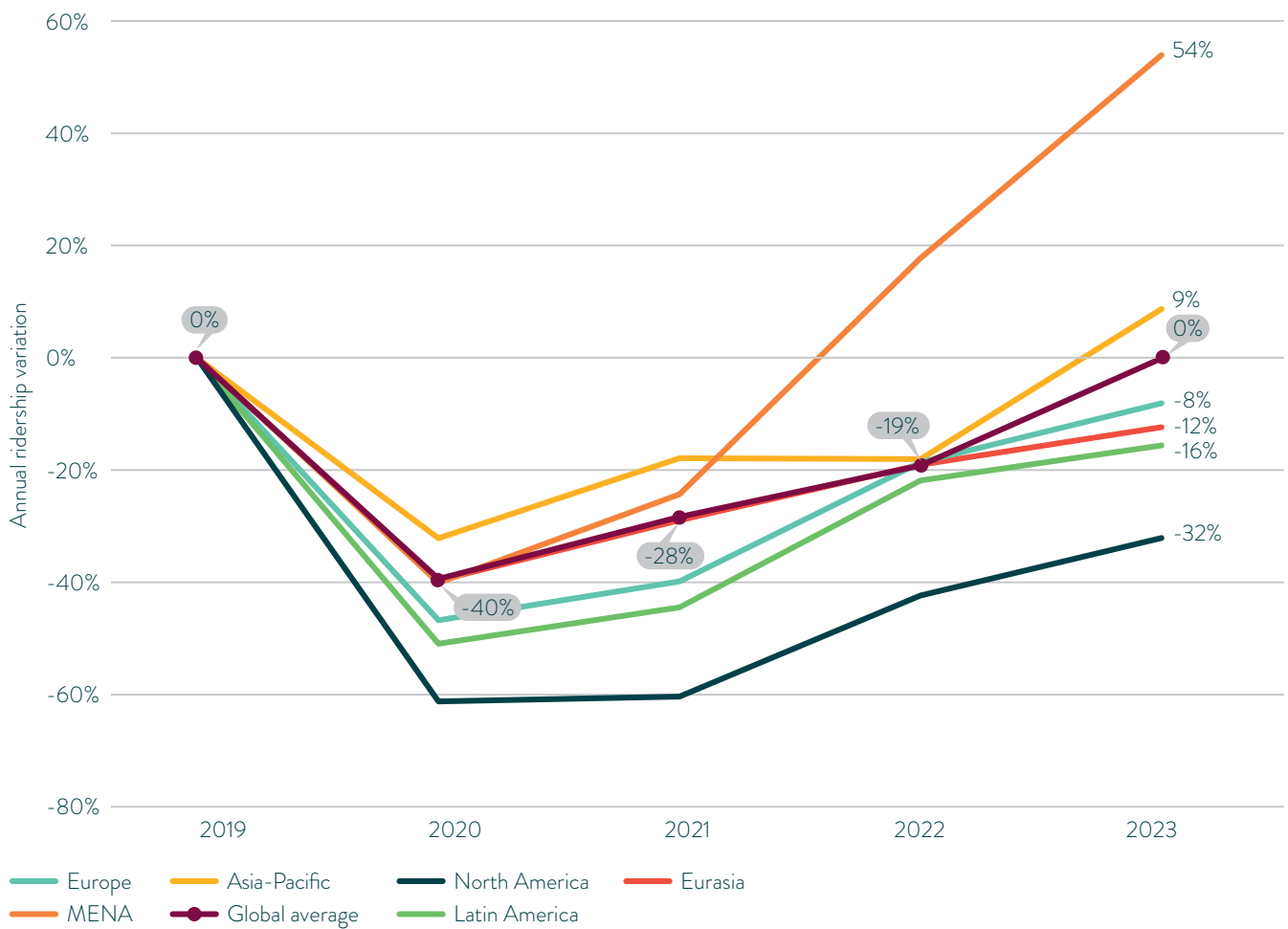
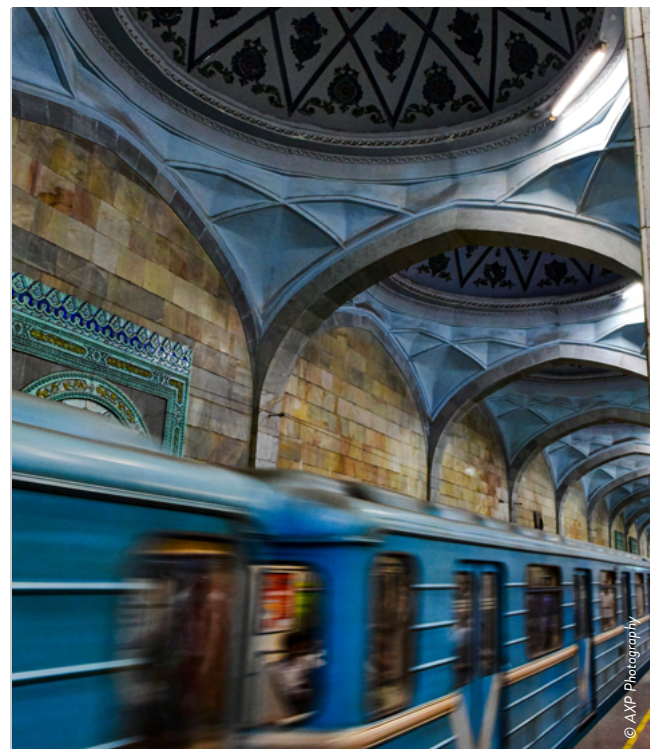


Figure 9 shows the global metro network usage evolution in 2012-23, measured as annual ridership divided by network length. For the considered period, a global decrease in metro usage can be observed, starting even before the COVID-19 pandemic. The rapid increase in network length was not accompanied by a proportional increase in global ridership. In 2019, the metro network worldwide was 51% bigger than in 2012, but with only a 33% increase in ridership. This can be partially explained by the fact that, particularly in China, new lines or extensions are opened at the end of the year, thus impacting the ratio. Furthermore, line extensions typically do not generate the same volumes of ridership as central sections, as they may serve less dense areas with relatively lower potential demand.

Europe is the only region where metro network usage increased in 2012-19, from 3.6 to 3.7 million. In North America, numbers remained unchanged (2.3 million in both 2012 and 2019). Decreases were registered in Asia-Pacific (from 4.3 to 3.4 million), Eurasia (from 5.7 to 5.1 million), MENA (from 4.4 to 3.0 million), and Latin America (from 6.1 to 5.5 million).



Tashkent, Uzbekistan

Figure 9: Global network usage evolution, 2012-2023

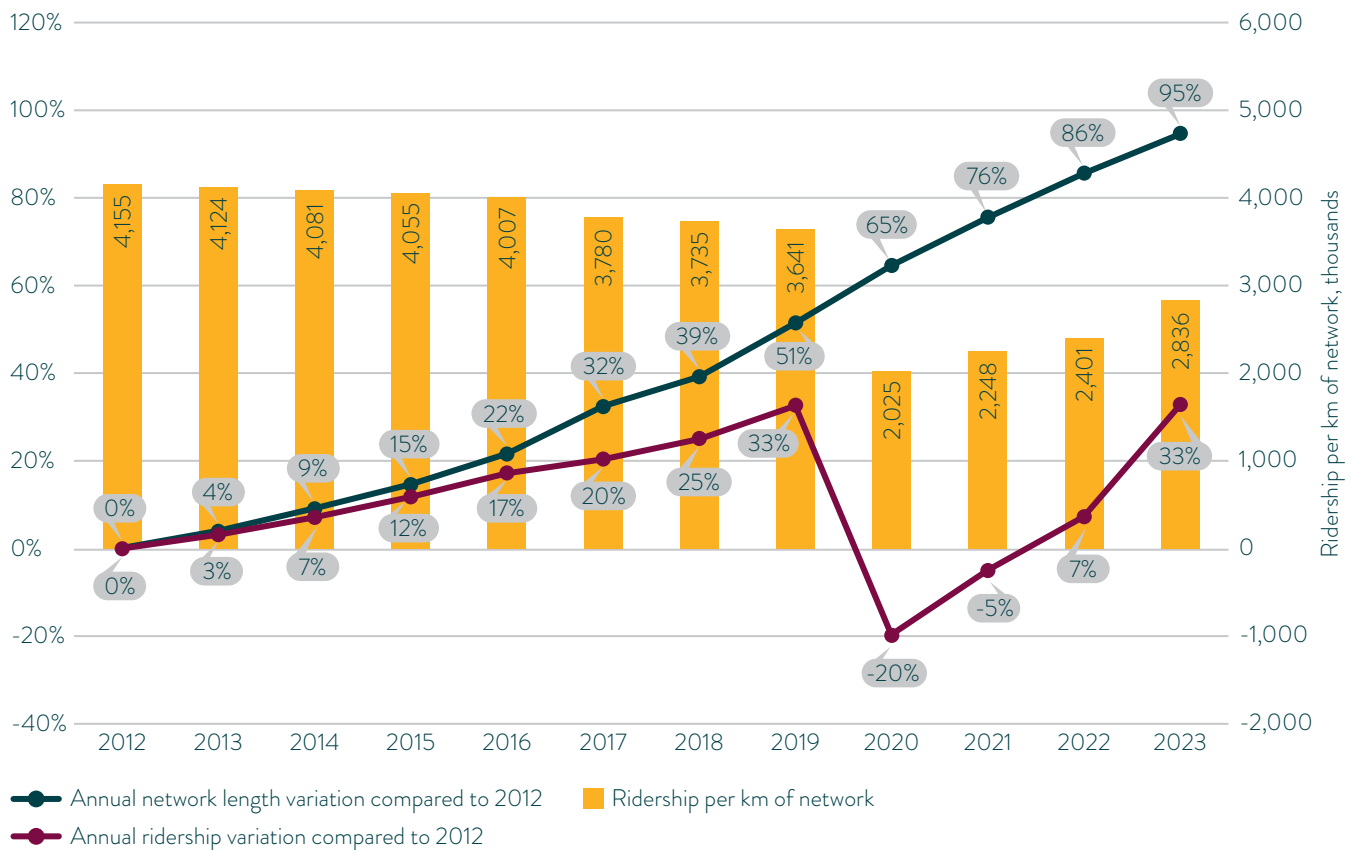
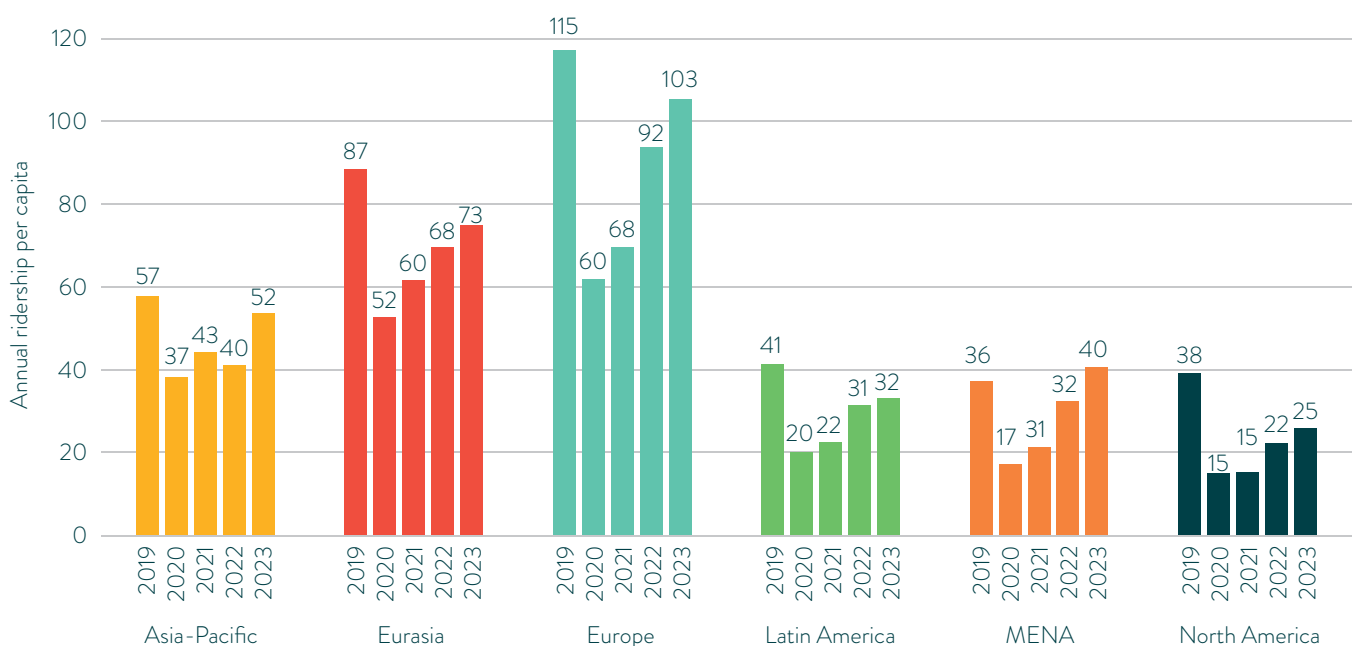


Figure 10 depicts the evolution of ridership per capita, calculated by dividing ridership by the population of the urban agglomeration with a metro system. This analysis has been done at the regional level for every year from 2019 to 2023. Europe had the highest annual ridership per capita, at over 100. However, 2023 figures were lower than 2019

ones in this region. Even in Asia-Pacific and MENA, the per capita recovery was not comparable (in terms of pace) to overall ridership recovery. This is due to the fact that many new networks opened in the latest years, increasing the number of inhabitants served. MENA is the only region with an increase in 2023 compared to 2019 (+9%).

Figure 10: Ridership per capita evolution, 2019-2023



ROLLING STOCK

As for the previous two editions of the metro statistics brief, UITP collected rolling stock data on all metros worldwide. The number of metro cars increased by 61% from 2013 to 2023. The largest increase was in Asia-Pacific (+123%), as a direct consequence of the +171% growth in network length in the same period. The low growth in number of metro cars in Europe and North America is in line with the evolution of the new km of metros in these regions. Figures 11 and 12 show the 2023 status of two indicators: rolling stock density (calculated as metro cars per km of infrastructure) and metro availability (calculated as cars per million inhabitants). In 2023, the average global rolling stock density was 7.8 metro cars per km

of infrastructure, representing a decrease from 2013, when it was 9 cars/km of network. Africa has very low figures because the only metro network in the region (in Lagos) opened in 2023 and is yet to increase its fleet and headway.

When it comes to availability, the rolling stock indicator is useful to assess the public transport offer. However, some considerations need to be taken into account on a case-by-case basis, as rolling stock replacement and/or fluctuations in the number of inhabitants in urban agglomerations can have an impact on the totals. The average number of metro cars per million inhabitants worldwide was 141 in 2023, up by 7% from the 2013 figure (131). Europe had the highest availability of metro cars in 2023, with 279 cars per million inhabitants.

Figure 11: Rolling stock density, 2023

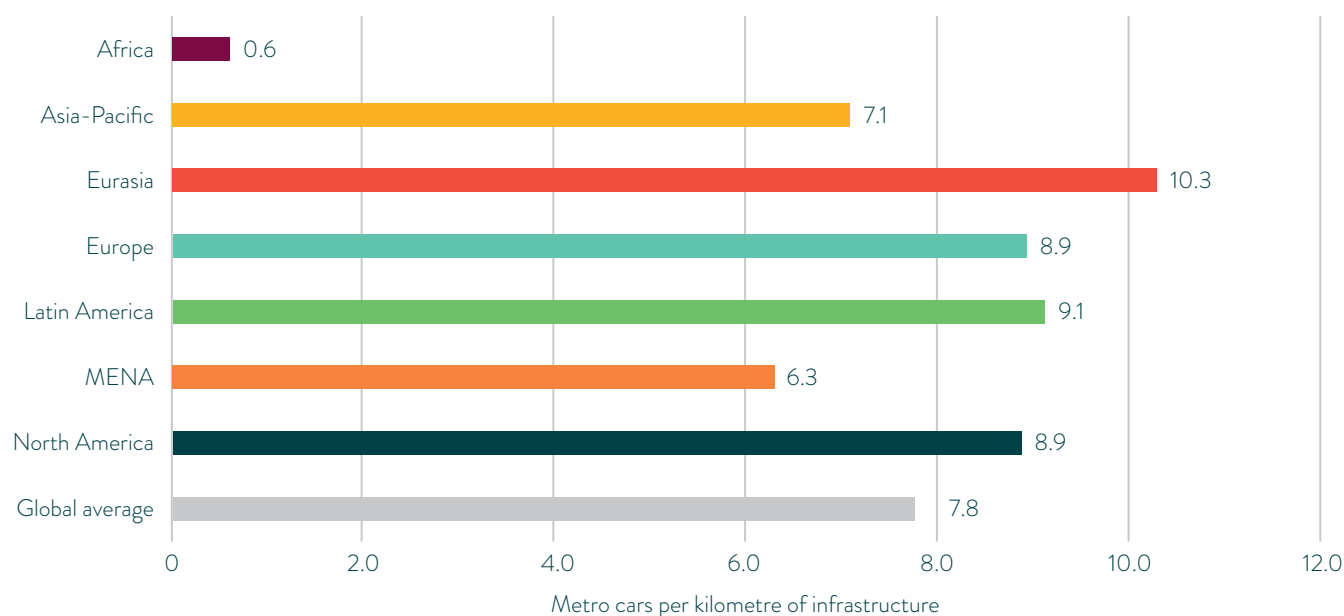
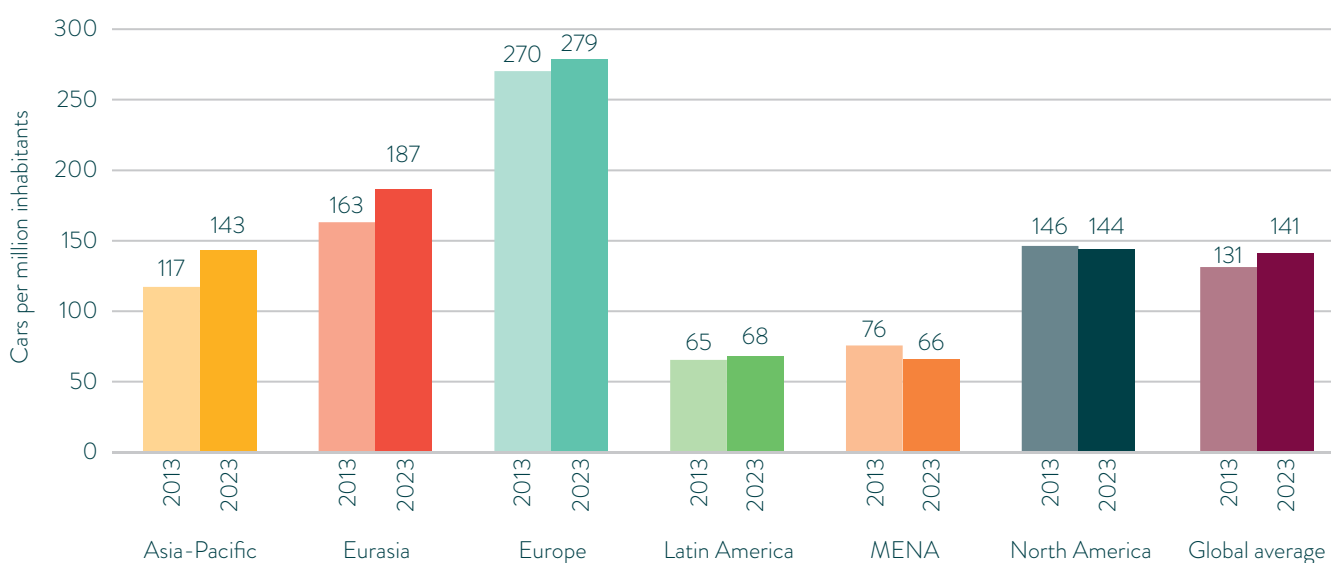


Figure 12: Metro car availability, 2013 and 2023



AUTOMATED METROS

In 2023, the number of urban agglomerations with at least one fully automated metro line (GoA4) continued to increase, reaching a total of sixty. For comparison, in 2000, only 13 urban agglomerations had at least one GoA4 line.

Figure 13 depicts the increase in the number of GoA4 lines per year and region.

The total length of automated lines worldwide in 2023 was 2,279km (11% of the global total metro length, as shown in Figure 14). Automation in metros started in 1981, but the most recent years have been record-breaking. Between 2020 and 2023, the number of km of automated metros increased by 75%, driven by the openings in Asia-Pacific, which

has the highest concentration of automated metro lines (57% of the global total) and network length (67% of global total km). Europe has 23% of global automated lines but only 15% of the total network in km, due to shorter line length. Similarly, Figure 16 shows that Europe ranks last in average automated line length. MENA and Asia-Pacific exceed the global average automated line length, which is 20km, mirroring the trend shown in Figure 5. The average line length is actually greater in MENA than Asia-Pacific, but Asia-Pacific has a much higher number of both lines and km of network.

At the city level, in 2023, China ranked first worldwide for automated metro network size (number of km of automated metros), as presented in Figure 15, followed by the Republic of Korea, France, Singapore, and Malaysia.

Figure 13: Automated metro evolution, 2000-2023

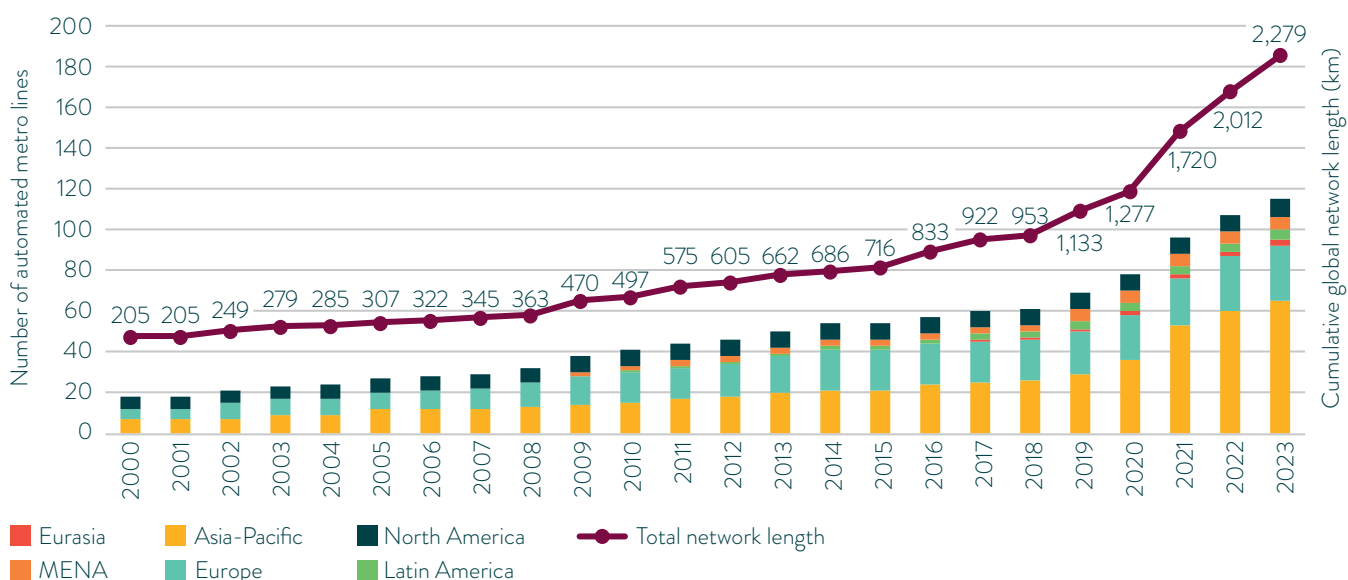


Figure 14: Global share of automated metro, 2013 vs. 2023

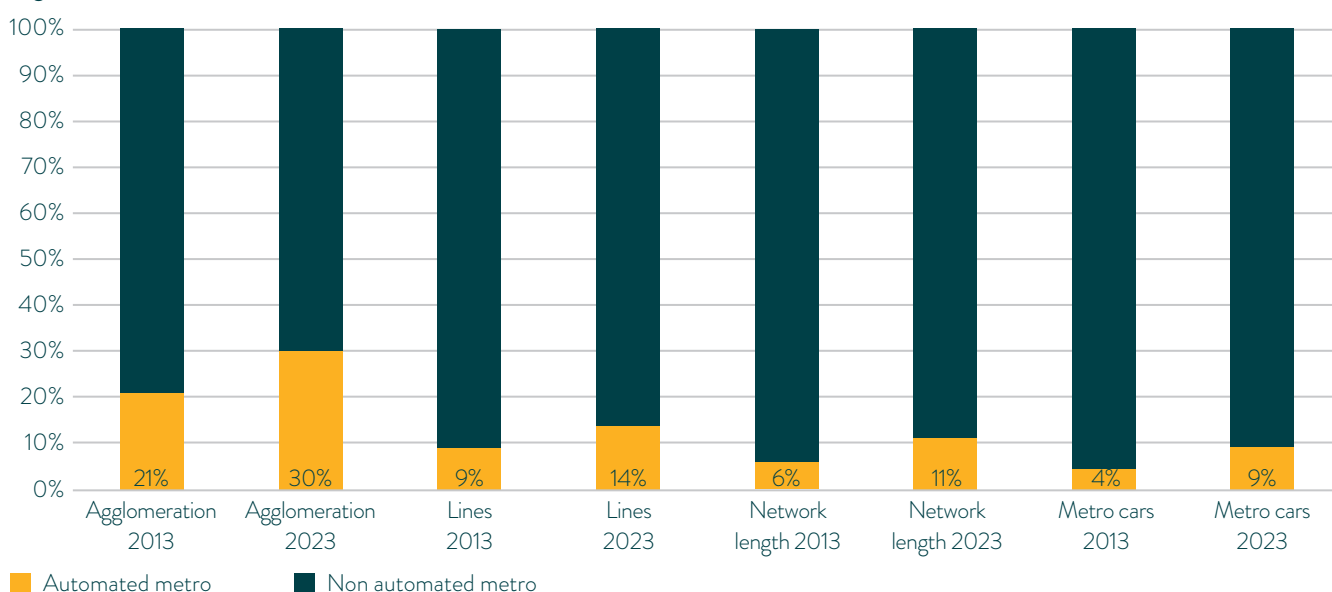


Figure 15: Automated metro network length by country/territory and region, 2023

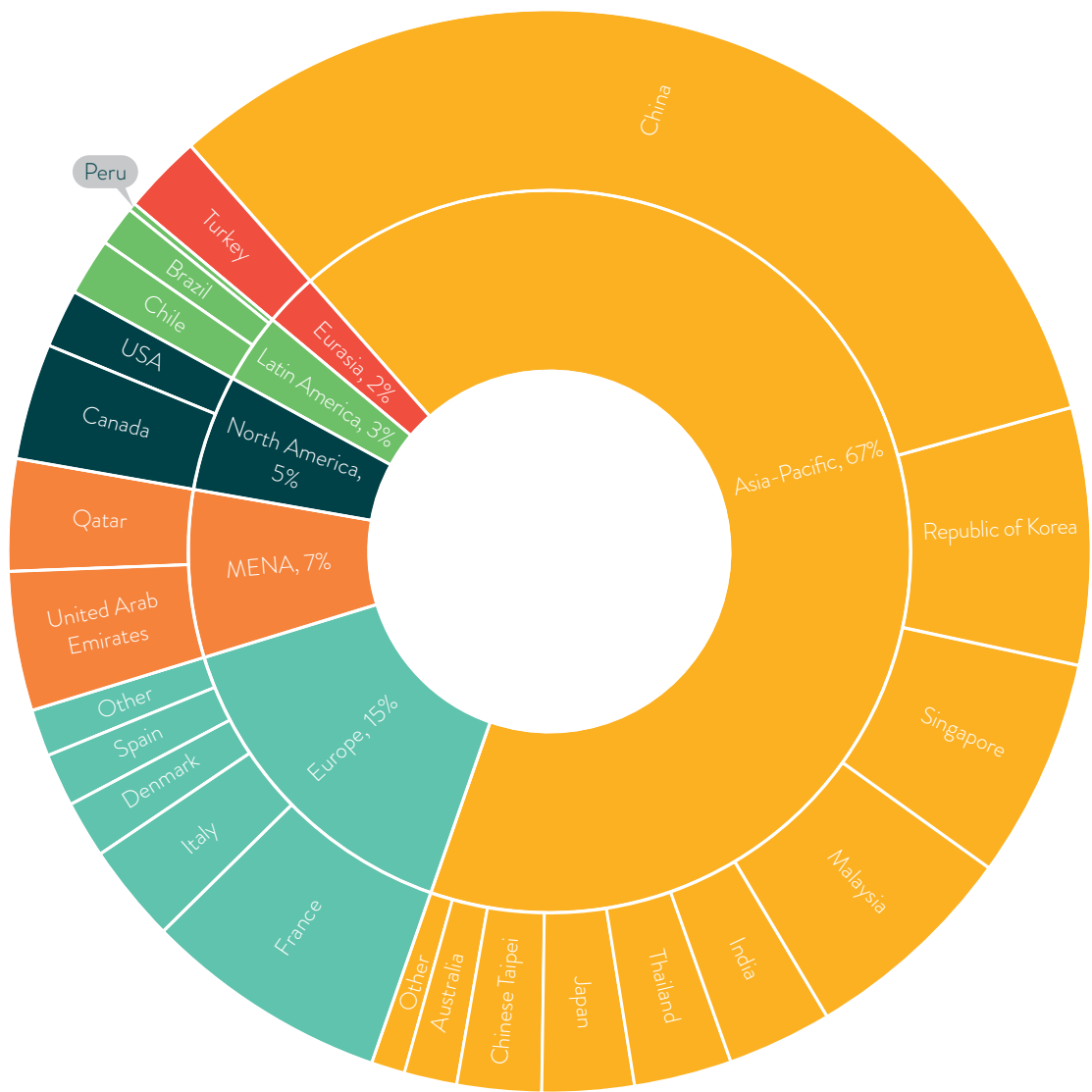
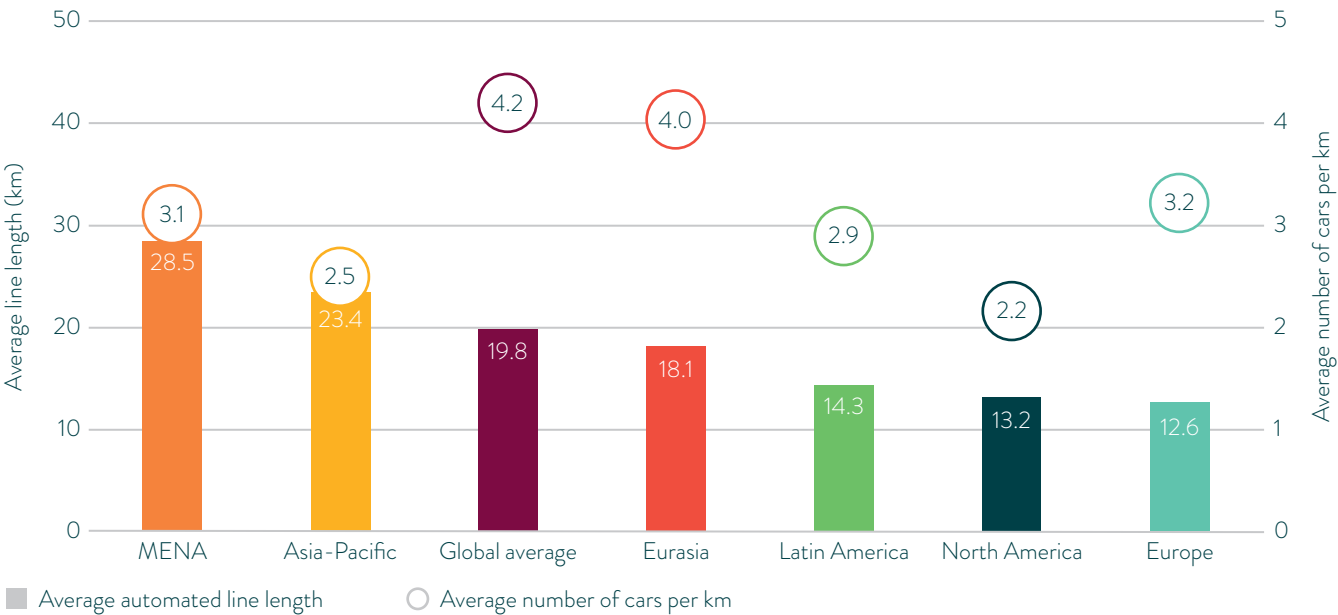


Figure 16: Average automated line length, 2023



CITY SELECTION

An analysis of indicators at the city level is presented in Figures 17, 18, and 19 below. Figure 17 ranks the top 10 longest metro networks worldwide as of the end of 2023. Mainland China occupied most of the top spots, with Shanghai first, Beijing second, Chengdu fourth, Shenzhen fifth, and Guangzhou sixth. The top seven longest networks were all in Asia-Pacific, with London (eight) as first in the 'rest of the world'. The top three have not changed since 2017. Shenzhen is one of the cities with the highest network growth, expanding from 286km in 2017 to 555km in 2023 — almost doubling its size in just six years. Shanghai and Beijing increased their network size by about 100km in 2021-23.

At the end of 2023, Shanghai also had the longest automated metro network, at 174km (Figure 18). Four Asia-Pacific agglomerations were in the top five, and six cities, in the top ten. Lille was the only European representative in the top ten but is expected to lose this position in the next edition, considering the ongoing developments of GoA4 projects, especially the six automated lines that came into operation in Riyadh in 2025.

The Greater Tokyo Area strengthened its position as the busiest metro network worldwide (based on annual ridership) in 2023, almost reaching the 2019 figures. Moscow and Shanghai held the second and third positions. Hong Kong, tenth in 2019, ranked seventh in 2023. New York City and Mexico City lost their 2019 positions, with Shenzhen and Paris entering the top ten.

Figure 17: Longest metro networks, 2023

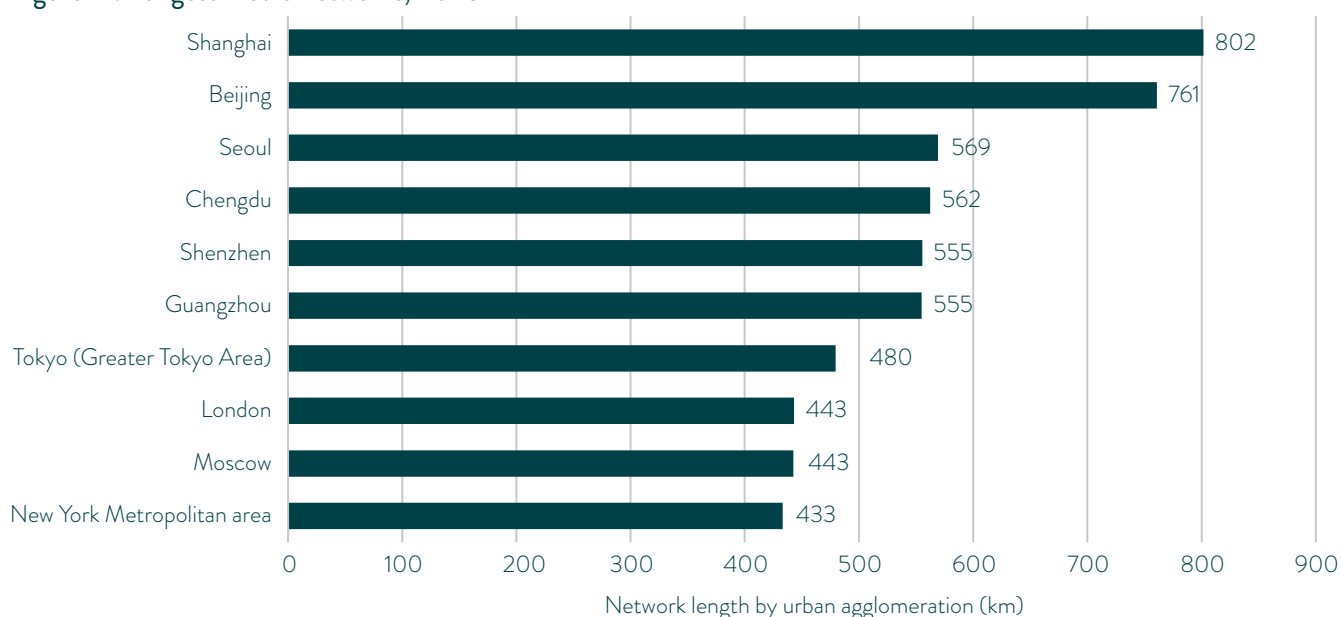


Figure 18: Longest automated metro networks, 2023

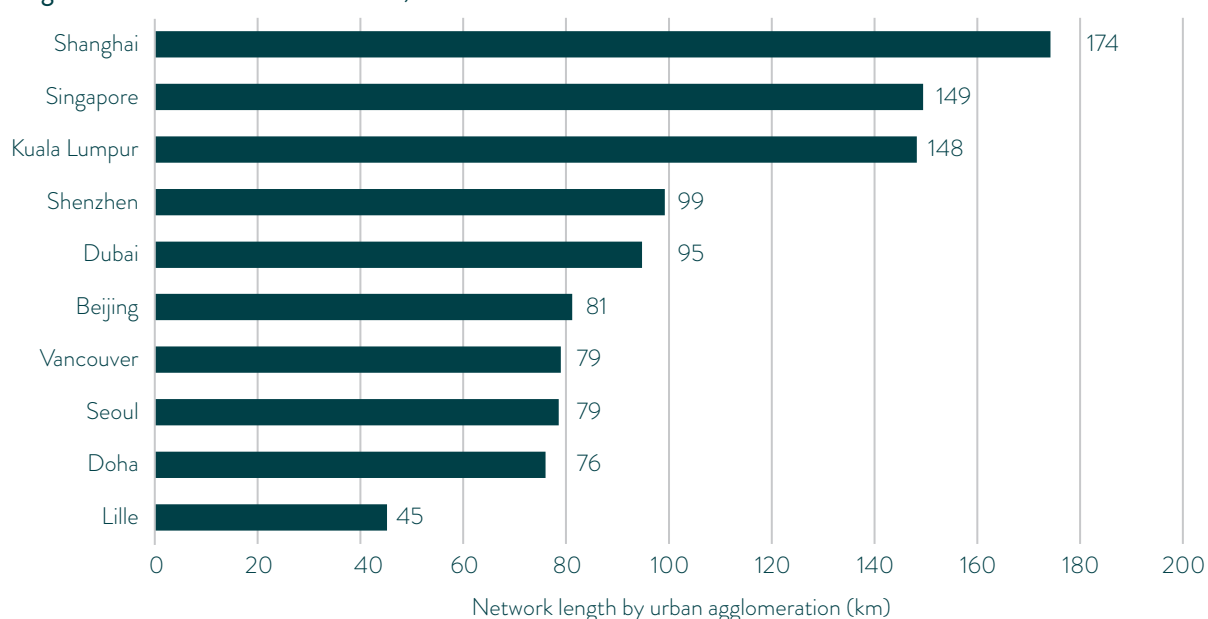
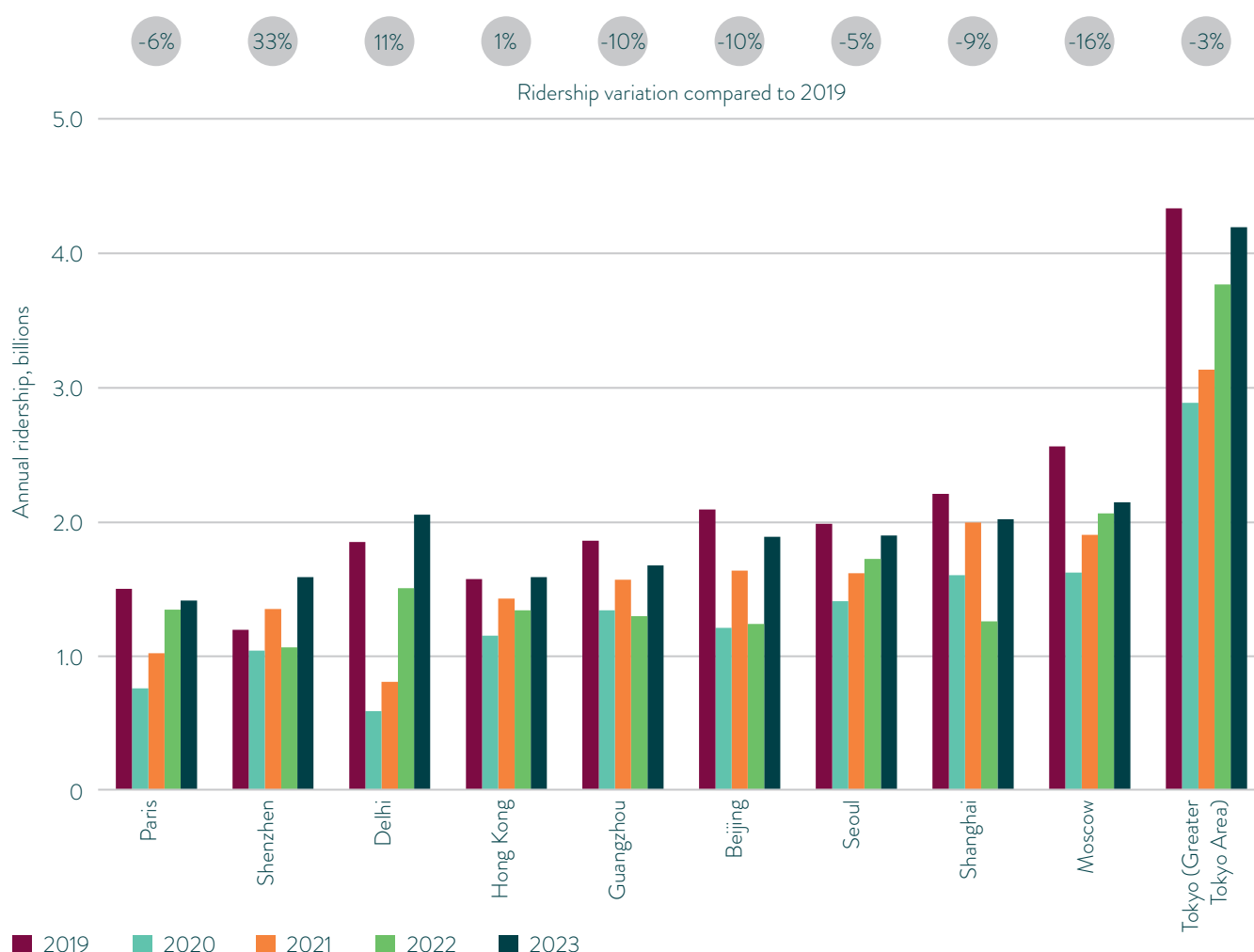


Figure 19: Busiest metro networks, 2019-2023



A FOCUS ON CHINA

In this document, it was mentioned several times that Asia-Pacific occupied a leading position in several of the analysed indicators. Figures 20 and 21, that provide a deeper focus on China, allow a better understanding of these results.

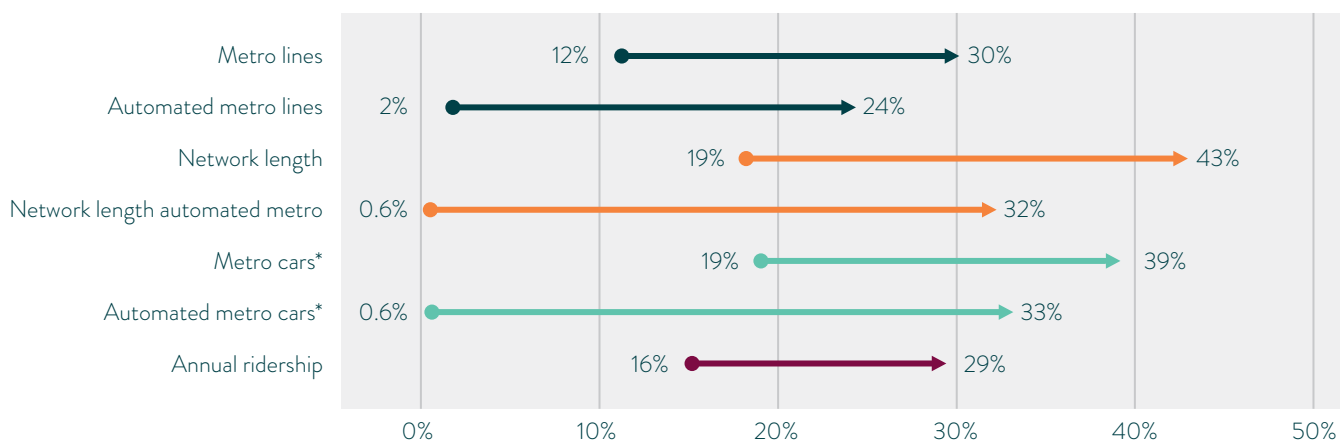
Figure 20 monitors the evolution of Chinese market share in 2012 and 2023 in relation to a certain amount of indicators, thus providing a clear picture of China's weight in the sector. To mention some: in 2012, 19% of global metro network length was in China, while in 2023 this percentage increased to 43%. China had only 2% of cities with at least a GOA4 line in 2012; in 2023 this number increased to 24%.

Figure 21 analyses the number of metro lines in operation from 2000 to 2023. China, alone, stands out as the country/territory with the most significant growth, while Asia-Pacific, even if considered without China, ranks second.



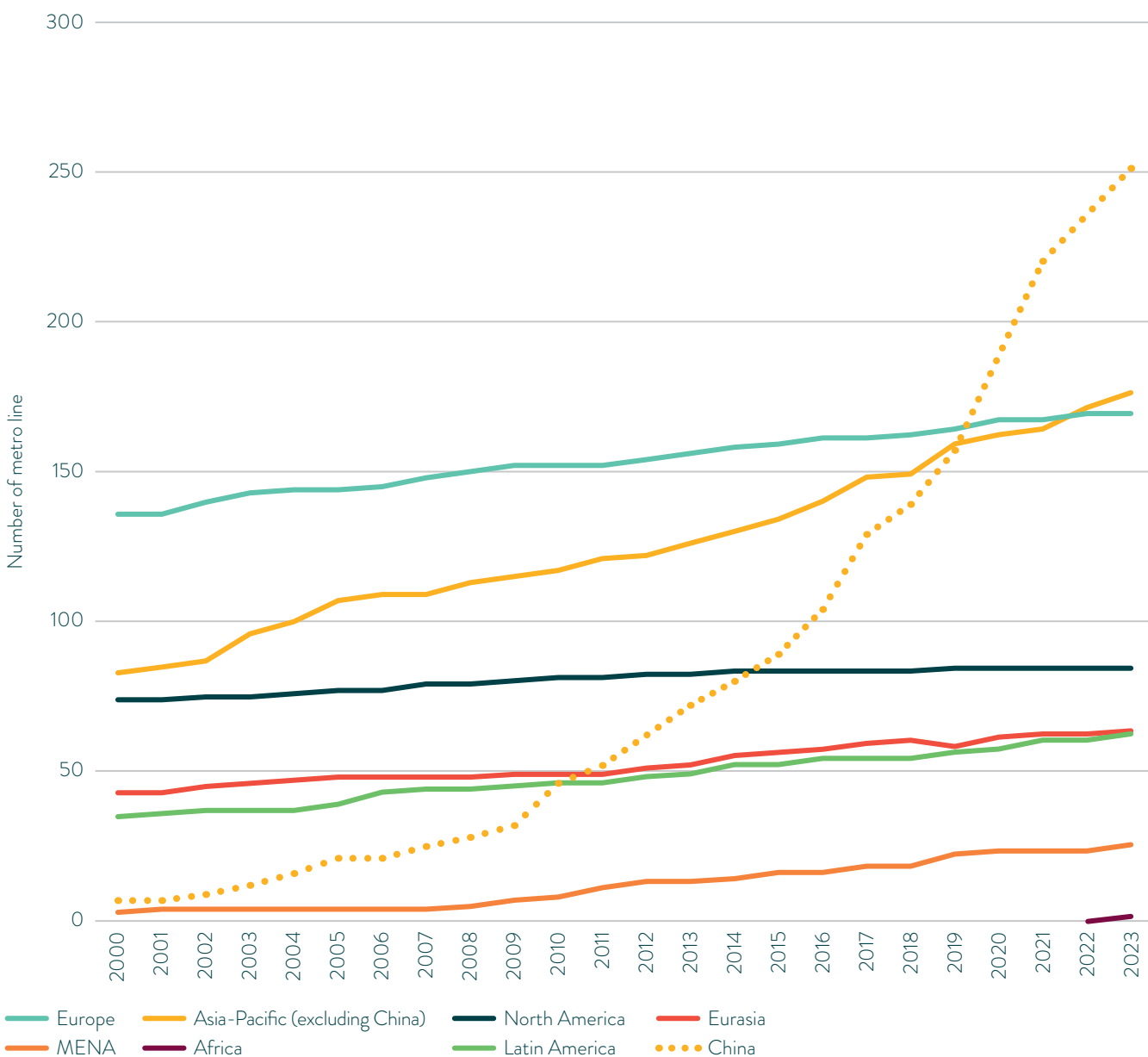
► Shanghai, China

Figure 20: Evolution of China's market share, 2012-2023



* Data refers to 2013 as starting year

Figure 21: Metro lines evolution, 2000-2023





► Paris, France

CONCLUSIONS

After several difficult years following the COVID-19 pandemic, ridership volumes in 2023 were back to the 2019 levels, with a growing trend that indicates 2024 will be one of the best years in the history of metros when it comes to number of people carried. This is important, as it shows the trust of users in the sector and the importance of metros in people's lives. Metros are an essential element of cities and territories' ecosystems, and the constant growth in their length, number of lines, and new cities opening a network, as detailed above, proves it. The confirmed construction and extension projects will respond to all ongoing megatrends: increasing urbanisation, environmental challenges, and people's natural aspiration for a better quality of life. Although most of the growth is currently concentrated in Asia-Pacific and MENA, metro projects are being and will be developed worldwide. Digital solutions are enabling operators to increase their service quality. Research is enhancing energy efficiency and resilience against extreme weather conditions. New solutions to enhance sustainability are being implemented. All this will ensure that metros continue to be the backbone of present and future mobility systems worldwide, adding new chapters to the visionary journey started in 1863.

ACKNOWLEDGEMENTS

The global metro figures are mainly based on desk research, with figures collected from public sources such as annual reports and official statistical websites. Comprehensive public reports from the following national and regional associations were invaluable in the data collection: Federal Transit Administration (U.S.), Chinese Association of Metros (CAMET), Ministry of Land, Infrastructure, Transport and Tourism (Japan), Service Technique des Remontées Mécaniques et des Transports Guidés (France), and Railroad Industry Information Center (Republic of Korea). UITP would also like to thank all the operators, transport authorities, and associations that facilitated data collection and analysis.

The data set, including the city-level data for all the main indicators mentioned in this report, is available for free for premium members in MyLibrary, for a discounted fee for other UITP members, and for a full fee for non-UITP members. If you are interested in the data set, please contact data.uitp@uitp.org.



► Kuala Lumpur, Malaysia

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