GSMA

Global Spectrum Pricing

Executive Summary

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GSMA

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Executive summary

The cost of spectrum affects connectivity. Today, they are 7% of operators' revenues. Lower spectrum costs lead to better mobile network coverage and higher speeds, impacting political and social goals such as digital inclusion.



Building on data from more than 250 operators in almost 100 countries, this Global Spectrum Pricing study examines trends in spectrum pricing since 2014 and their impact on consumer and enterprise connectivity.

In the last ten years:

Cost has reduced to enhance digital inclusion

Monthly bills have fallen by

38%

Cost of usage has reduced by

40%

Cost per GB has reduced by

96%

Spectrum costs have not reduced in line with pricing

Operators increased their spectrum holdings by

80%
(4G and 5G)

Revenue per MHz declined by

67%

Spectrum cost to revenue ratio increased by

63%

Lower spectrum costs lead to:

- More coverage
- Higher speeds
- Better affordability
- Higher adoption

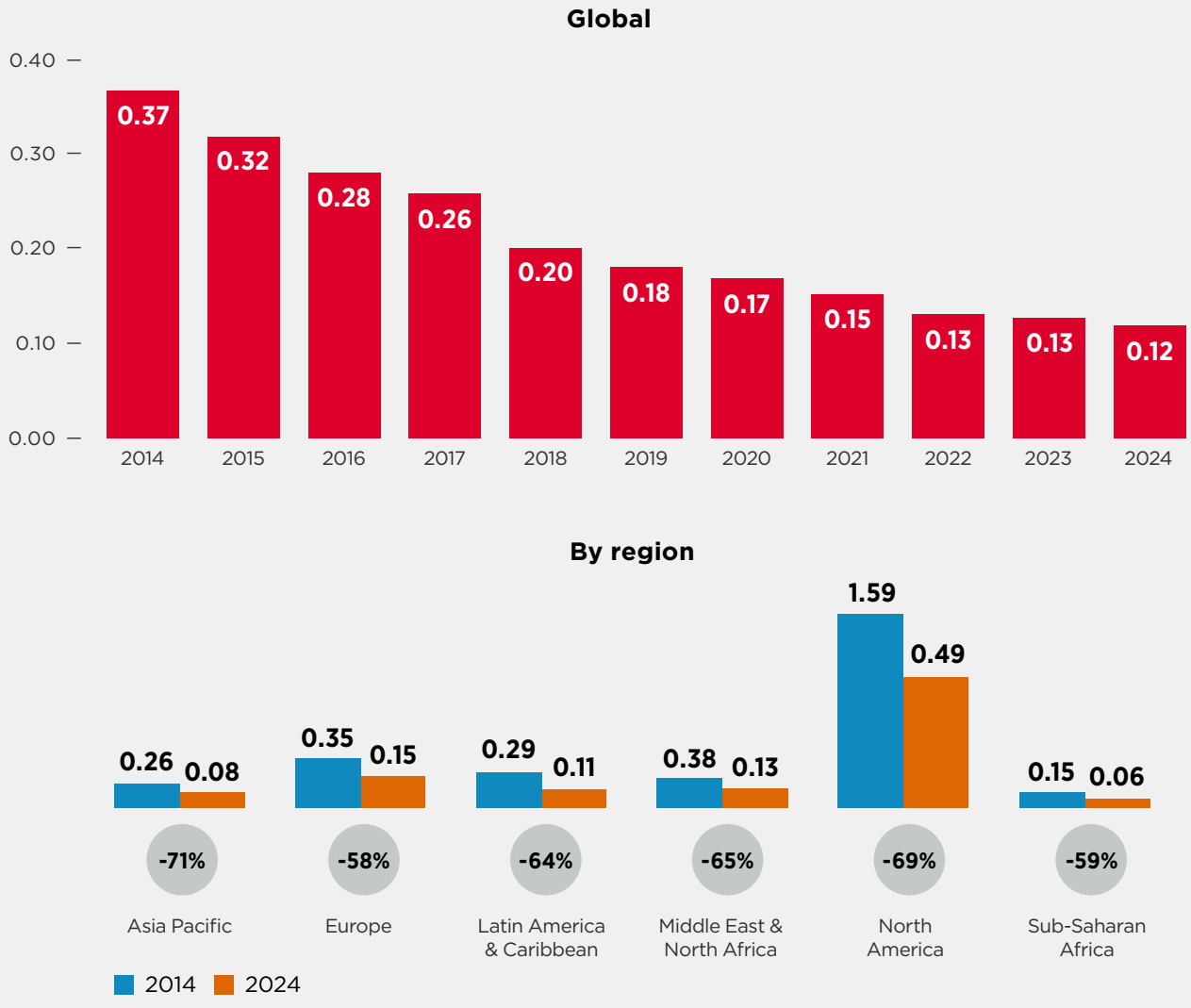
Regulators should avoid:

- Excessive obligations on speed or coverage
- High reserve prices
- Artificial scarcity, including set-asides

In the last 10 years, on average, the amount of spectrum dedicated to mobile networks has nearly doubled, while operators have offered higher value services with lower prices to consumers.

Average revenue per GB of data declined by 96% and the revenue that operators generate per MHz has also gone down significatly.

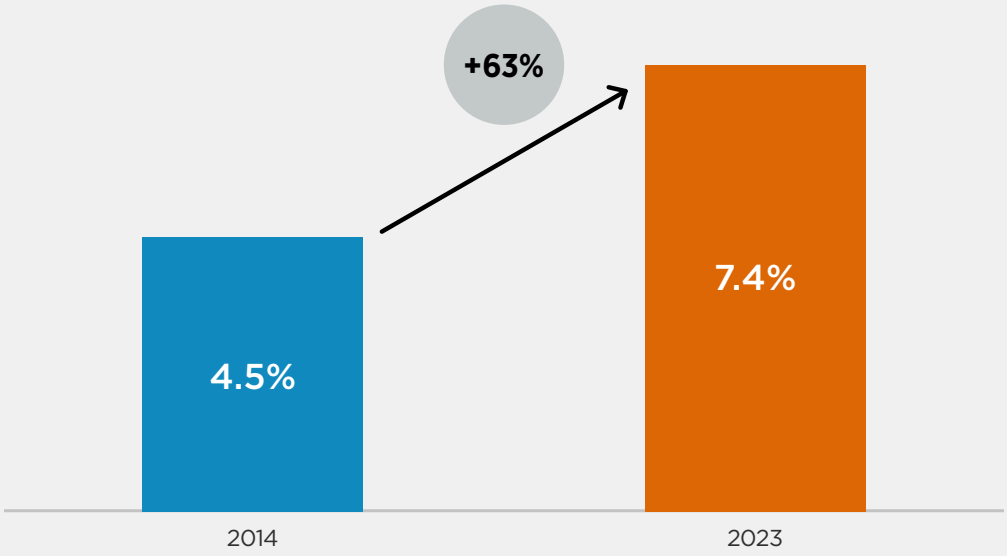
Average monthly recurring revenue per MHz per connection ($, inflation adjusted)



Note: Data shows weighted average revenue per MHz, per connection of countries in the region where data could be collected. 2023 US dollar prices.
Source: GSMA Intelligence

Spectrum price per MHz has declined in recent years, but it was not sufficient to offset the build-up in the total cost of spectrum (as a percentage of revenue), largely driven by the additional capacity needed for the launches of 4G and 5G networks.

Global spectrum cost to recurring revenue ratio (%)

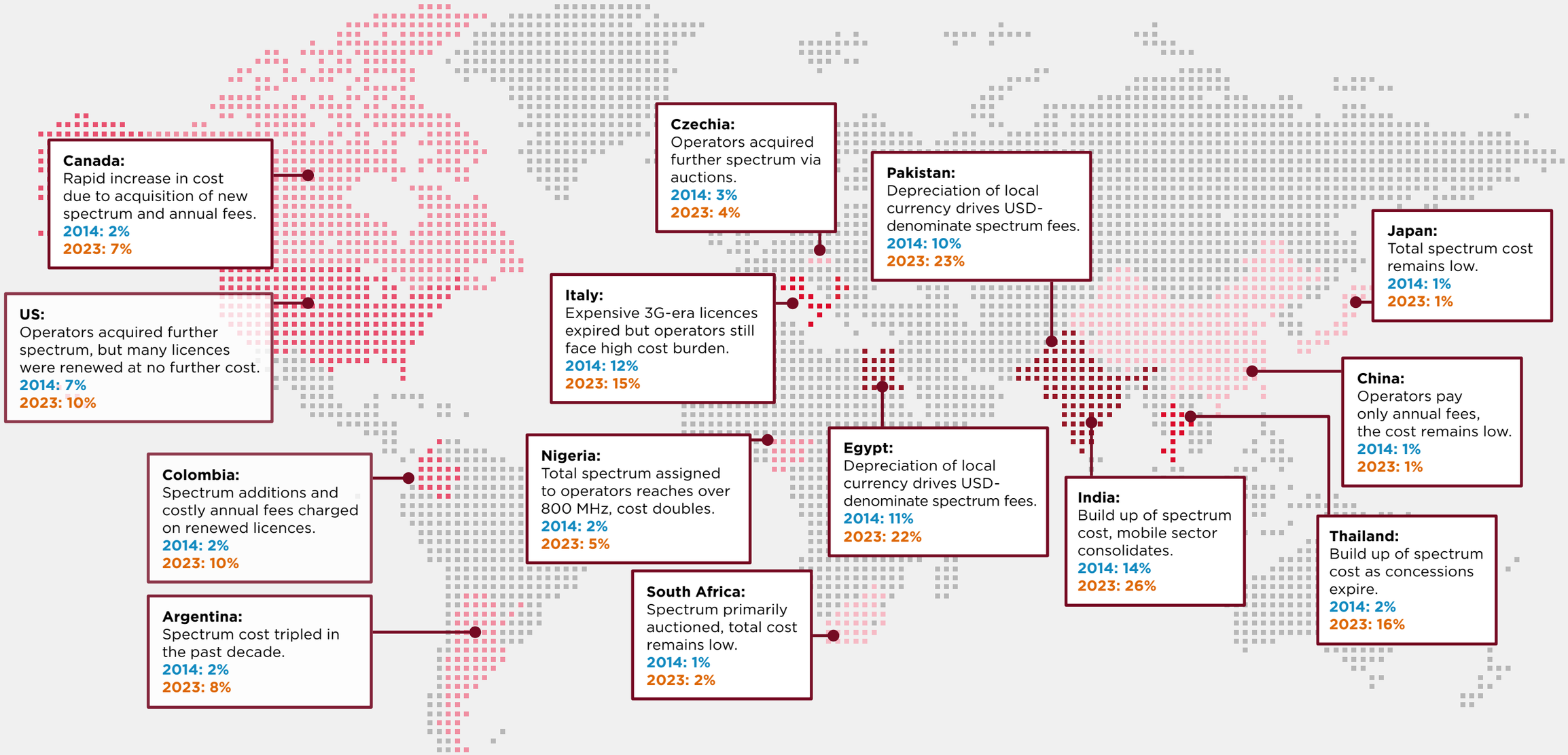


Note: Calculated as an arithmetic average of countries where reliable data could be collected.
Source: GSMA Intelligence



Spectrum cost varies significantly by country. In some markets, the cost of spectrum can amount to a quarter of operator revenues.

Cost to recurring revenue ratio by country



Source: GSMA Intelligence

Lower spectrum costs help drive investment and, consequently, generate a positive impact on consumers, increase affordability, and accelerate adoption. Affordable spectrum also empowers digital inclusion.

The impact of a 10-percentage point decrease in spectrum cost



↑ **6-percentage point**

More coverage



↑ **8%**

Higher speeds

Source: GSMA Intelligence

Pricing recommendations

New spectrum

1. Regulators should not anchor administratively set prices to historical prices and outdated benchmarks.
2. Setting reserve prices at a low level allows room for price discovery and minimises the risk of unsold spectrum.
3. Making all spectrum allocated to mobile services available to operators ensures there is no artificial scarcity and supports better outcomes for consumers.
4. The cost of meeting obligations or investment commitments attached to spectrum licences should be reflected in their price.

Licence renewal

1. Fees should not be linked to historical spectrum prices, given the decrease in underlying value.
2. Lowering renewal fees will prevent higher spectrum costs. A spectrum trading framework can provide the same incentives without imposing additional costs.
3. Regulators can consider renewals in exchange for investment commitments for coverage or quality of service.
4. Alternatively, administrative review can be the most cost-effective way of ensuring that spectrum remains in efficient use.

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