

ATLANTICS

Latin America
Digital Transformation
Report 2020

October 1, 2020

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Readme.txt

The genie is out of the bottle. Technology is transforming every sector, region, and habit. It is no longer a question of if but only of when. Latin America's experience is no different; the waves of digital transformation have been pounding our shores. The 2020 Covid-19 pandemic has served to turn the waves into a veritable tech tsunami.

Latin America presents a unique set of circumstances that is unlike any other region in the world, and because of that, we should realize that attempting to shoehorn its story into pre-existing frameworks may not always produce adequate results.

In fact, it is this uniqueness that has enabled some Latin American tech companies to become global leaders in their sectors (Nubank in digital banking and iFood for food delivery, to name a few). Further, this same situation has made Latin America a key market for global tech giants ranging from Uber (which has its two largest cities in the region) to Facebook (where it represents one of the largest user bases for both WhatsApp and Instagram, which, coincidentally, was founded by a Brazilian). For those that still believe Silicon Valley has a monopoly on innovation, it is worth noting that venture capital funds from Latin America have strongly outperformed global benchmarks.

In this report we seek to discuss the underlying factors and drivers of change that can help us brace for what is to come.

We compiled this report for a global audience, and thus construct our story from the ground up, covering many foundational elements that a local reader may take for granted (especially in the first two chapters).

Latin America is a vast heterogeneous region and treating it as a single unit risks glossing over some of this diversity. Thus, whenever appropriate

we highlight differences between countries (or include it in the data-rich Appendix that accompanies this report).

Latin America can be divided into two groups (that have much further diversity within them) – that of Portuguese-speaking Brazil and that of the Spanish-speaking majority. Although Brazil is only one country, it is the largest player (in size, wealth, and income) in the region, and for this reason we prioritized it when illustrating a theme. Often, we added Mexico as a second example given its size and relevance among the Spanish-language nations.

Reviewing the recent history and trends of technology in the region is critical to understanding its present state and developing a view about the future. As you will see, for each major topic and section we begin with an eye to the past before we focus on the present. Generally, we shied away from forecasting as we prefer that readers come to their own conclusions, even if at times we provide a gentle nudge towards a particular direction.

The reader will notice that we often borrow the words and wisdom of others to make a point about strategy or mindset. These quotes are not meant to be feel-good motivation, but instead should help crystalize some of the takeaways and lessons we deem central to grasping the essence of the region today.

Finally, it is critical that we view the digital transformation the region is undergoing through the lens of the exponentiality that is frequent in technology. Today, we see a virtuous cycle from increasing attraction of top talent to the field, fueled by greater capital investment, and aided by a generally open regulatory environment. This triad creates an accelerating flywheel that makes the tech transformation happen, as Hemingway famously put it, “first gradually, then suddenly.”

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*Let us give credit
where credit is due*



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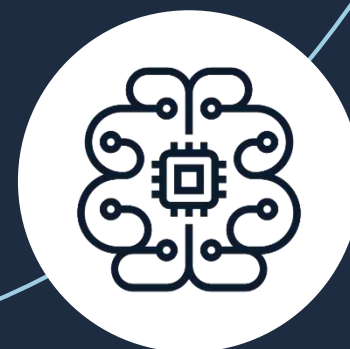
Socioeconomic Foundations



Technology Penetration in 2020



Drivers of Digital Acceleration



Conditions for Sectorial Transformation

***“The future is already here –
it’s just not very evenly
distributed.”***

- William Gibson

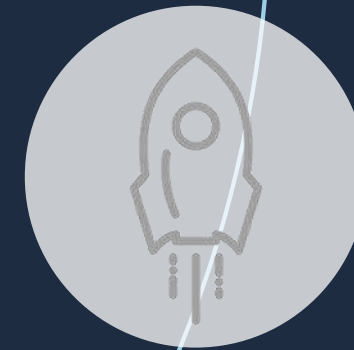
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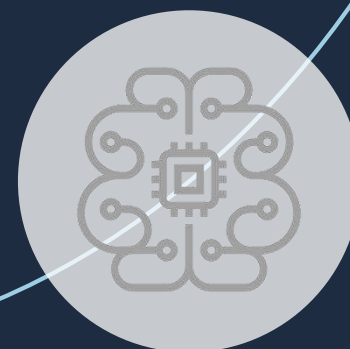
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Latin America Digital Transformation Report 2020



Socioeconomic Foundations

- Latin America is big: Population is twice that of the United States and its GDP is half of China's
- Income and wealth are unevenly distributed, with much of the region's population still living in poverty
- This unique mix of large opportunity with vast inequality and myriad problems creates a unique environment for novel tech-centric businesses

Latin America is home to 600M people and skews younger than other advanced economies

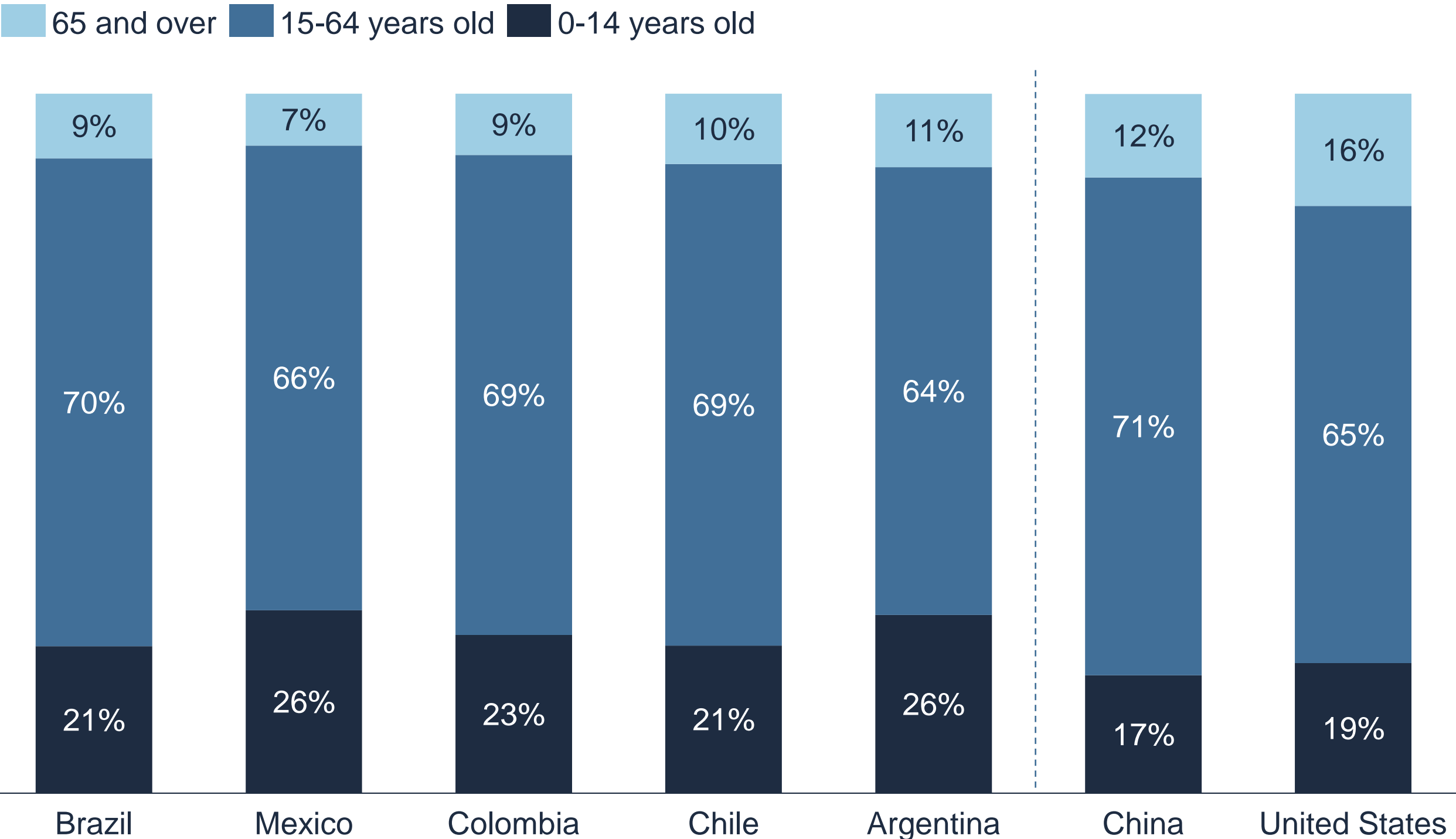
Population of Latin America*

Millions of people in 2019



Percentage of population by age

2019

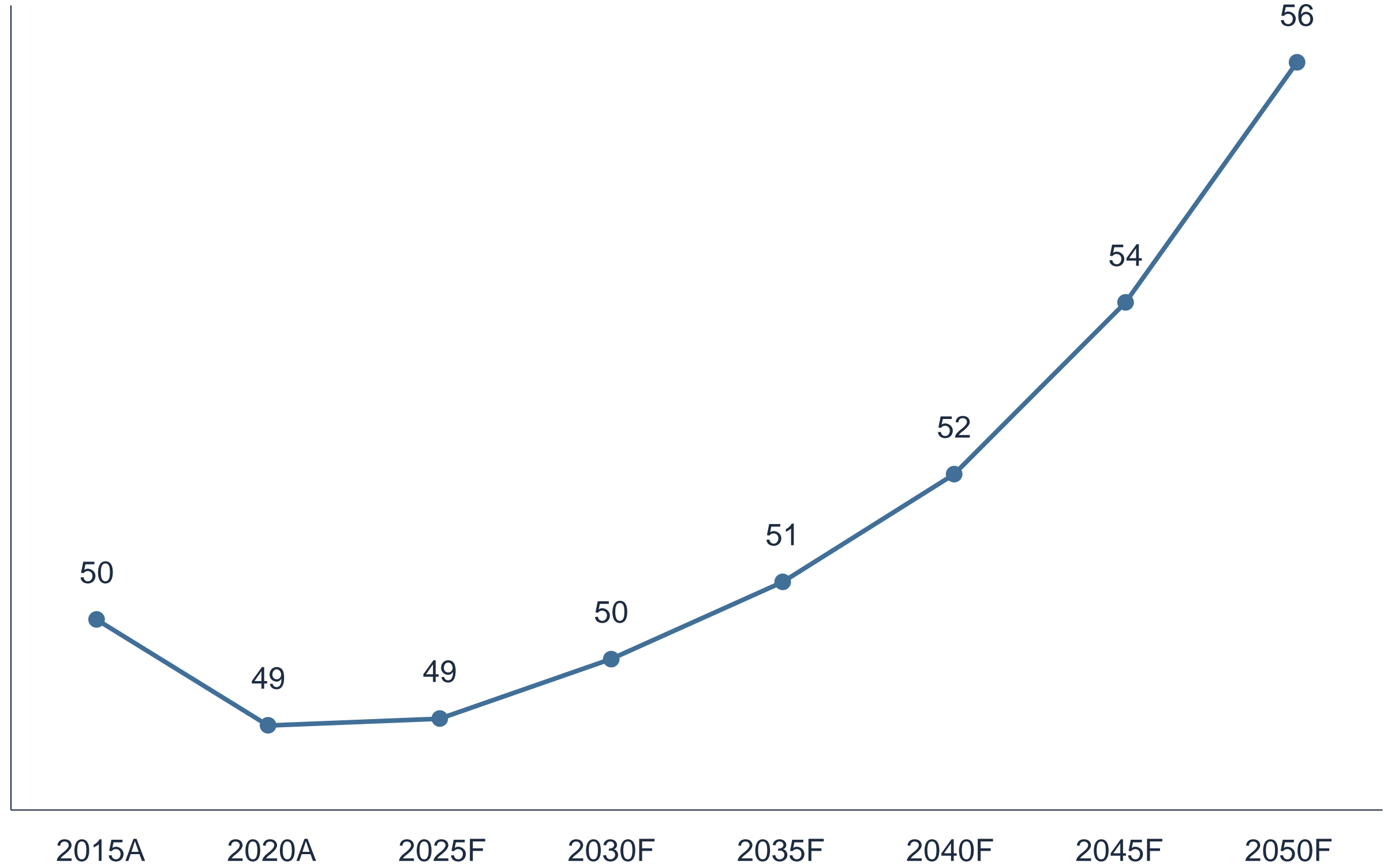


* Note: see appendix for Population and GDP for Latin America and other emerging and developed economies
 Source: The Economic Commission for Latin America and the Caribbean

The region's demographic bonus, the faster growth of the working population vs. non-working, will soon end

Growth of non-working vs. working age population

Number of non-working age people per 100 working age people*



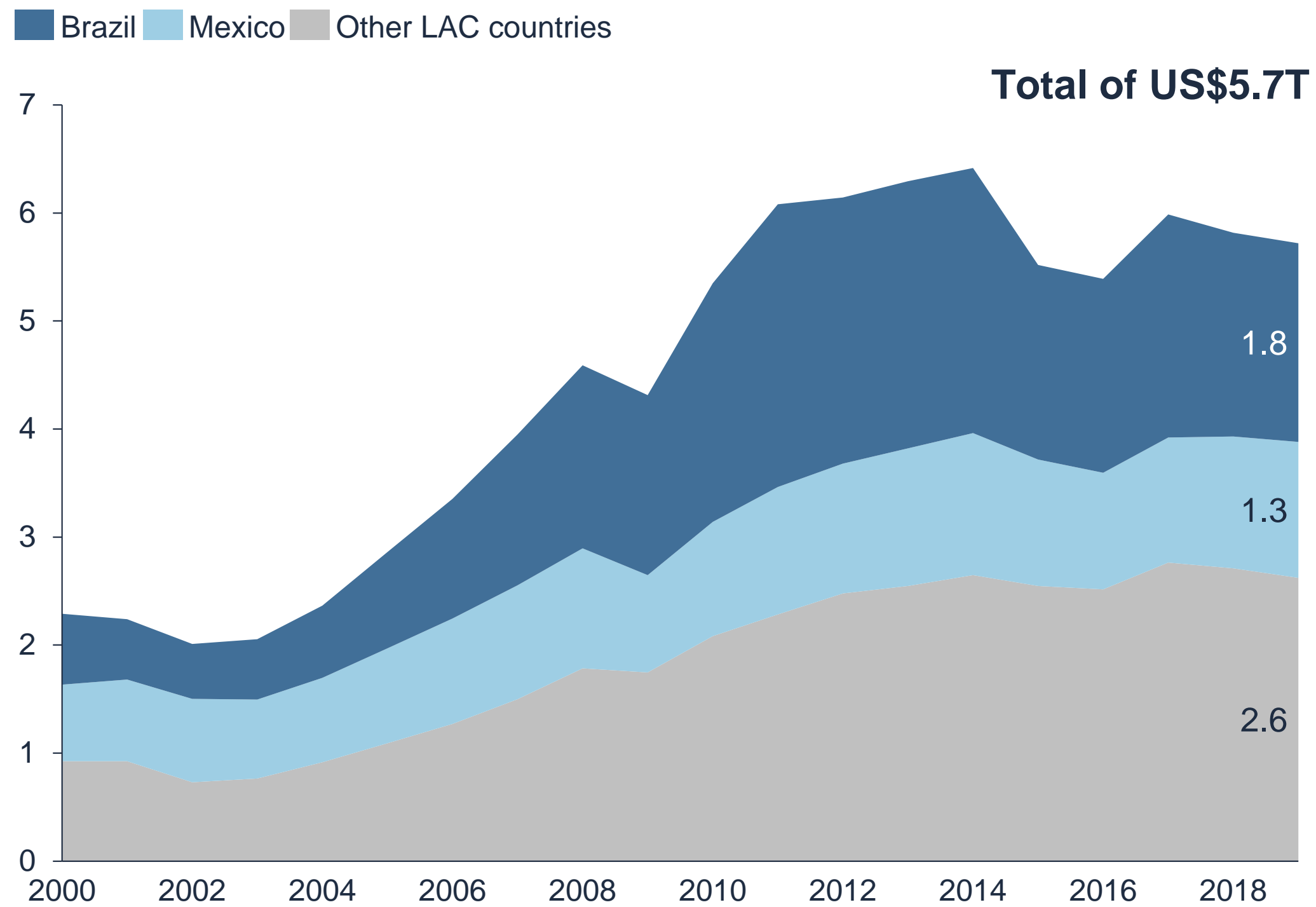
Latin America has a short window of opportunity to benefit from a demographic bonus, where low dependency ratios and younger populations fuel economic expansion

*Dependency ratio: measures the number of dependants aged 0-14 and over 65 (non-working population) compared with the total population aged 15-64 (working population). Source: The Economic Commission for Latin America and the Caribbean 2019

Latin America's GDP, 1/3 of which is comprised by Brazil, is nearly half of China's but the same on a per capita basis

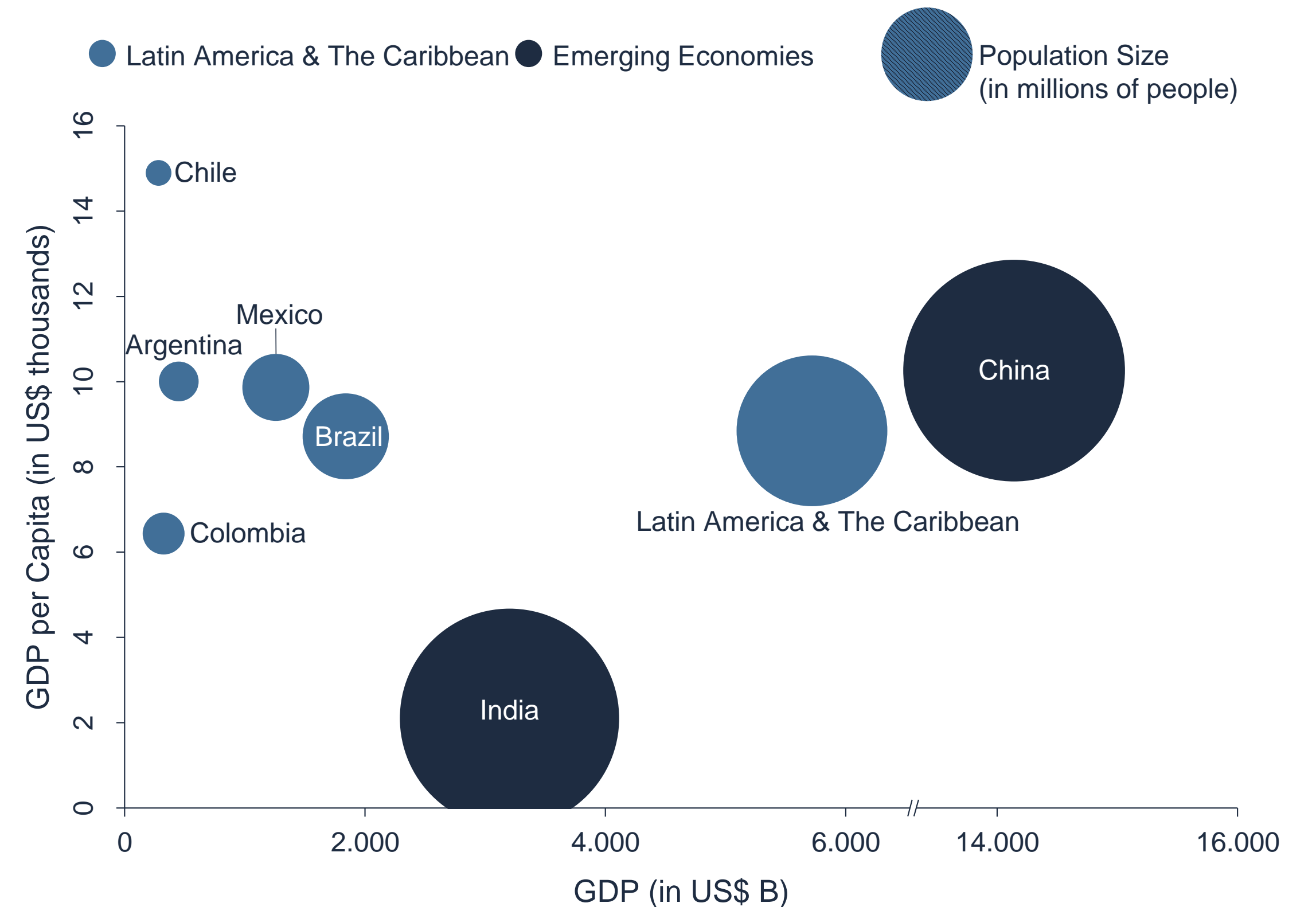
Growth of Economic Activity, 2000-2019

GDP in current US\$ T



Economic Activity*

GDP and GDP per Capita in 2019*

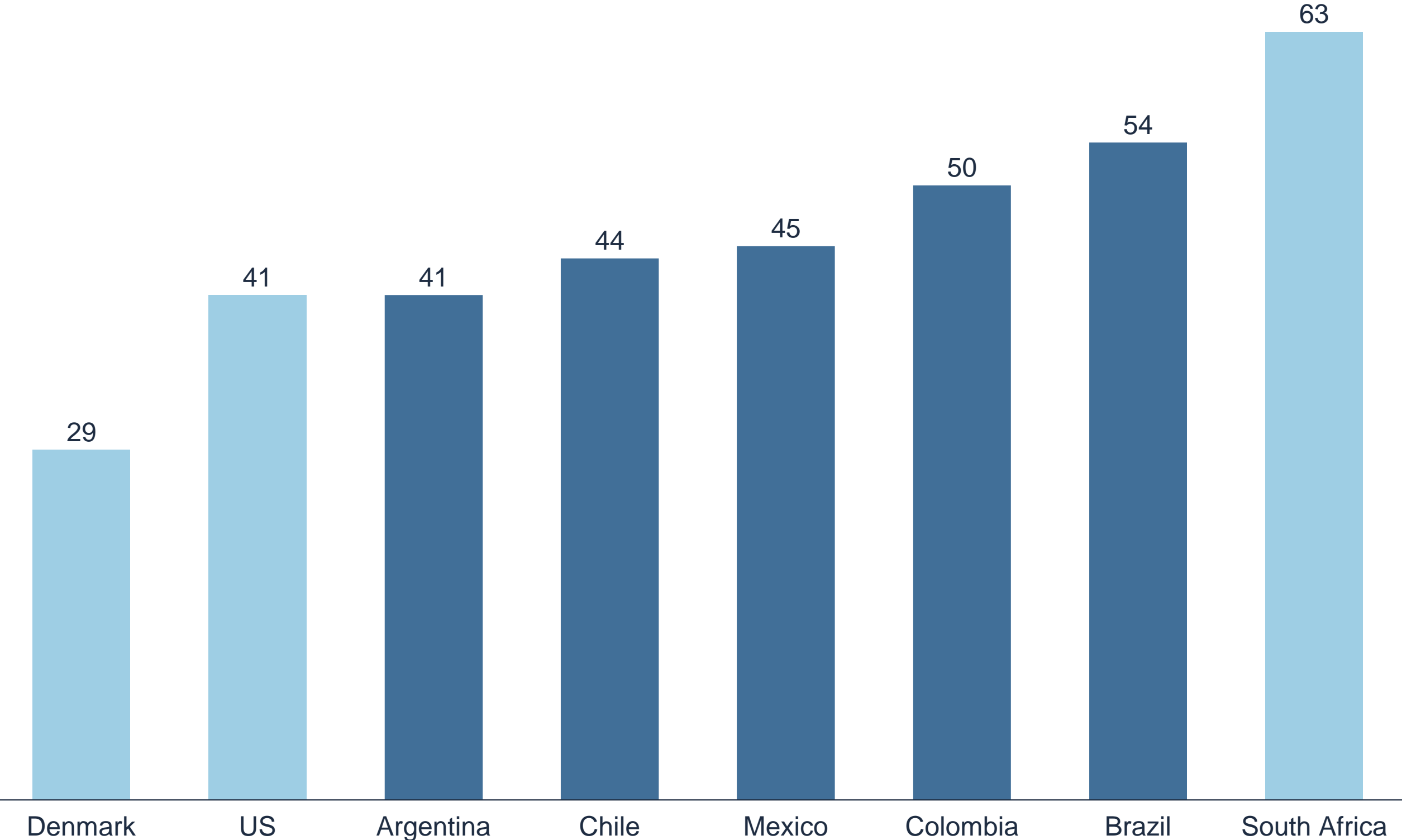


*For reference, the United States (population of 328 M people) has a GDP of US\$ 21.44T and a GDP per capita of US\$ 65,118

Source: The World Bank

Latin America is the most unequal region in the world; inequality could pose a major obstacle to sustainable growth

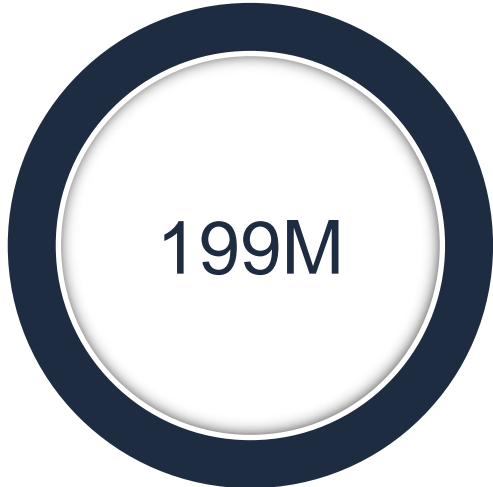
Inequality in Latin America¹
Gini Index (0 = full equality, 100 = no equality)



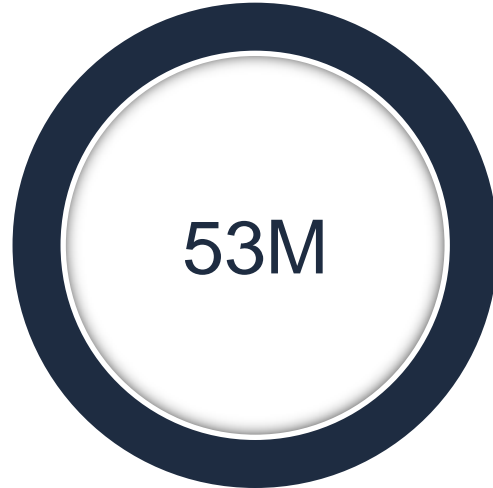
The Gini Index is expected to increase with COVID-19 between 1.1% and 7.8% for several countries in the region²



Eradication of poverty continues to be a central challenge for countries in Latin America

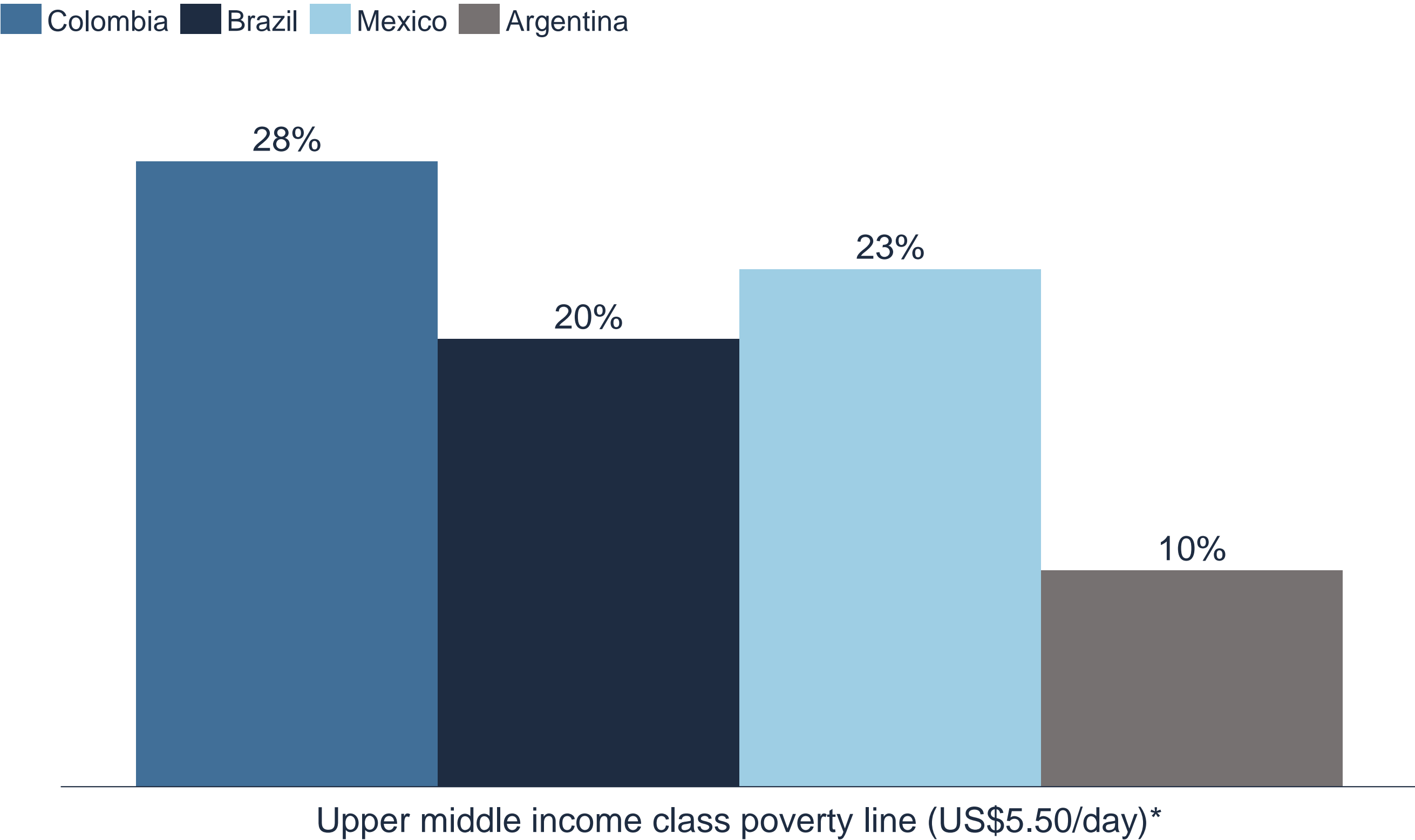


Latin Americans were estimated to live in poverty in 2019, representing nearly 31% of the population



Additional Latin Americans are predicted to have their income fall short of US\$5.50/day in 2020 as a result of COVID-19. This increases the percentage of the population living in poverty to 37%

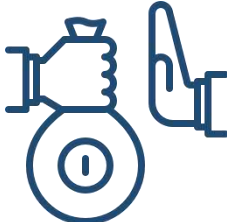
Percentage of the population living below poverty lines in 2018



*World Bank poverty threshold for upper-middle income countries (32/115 countries), which includes all countries in this comparison. The median poverty line for these countries is US\$ 5.48/day, equivalent to US\$ 2000/year

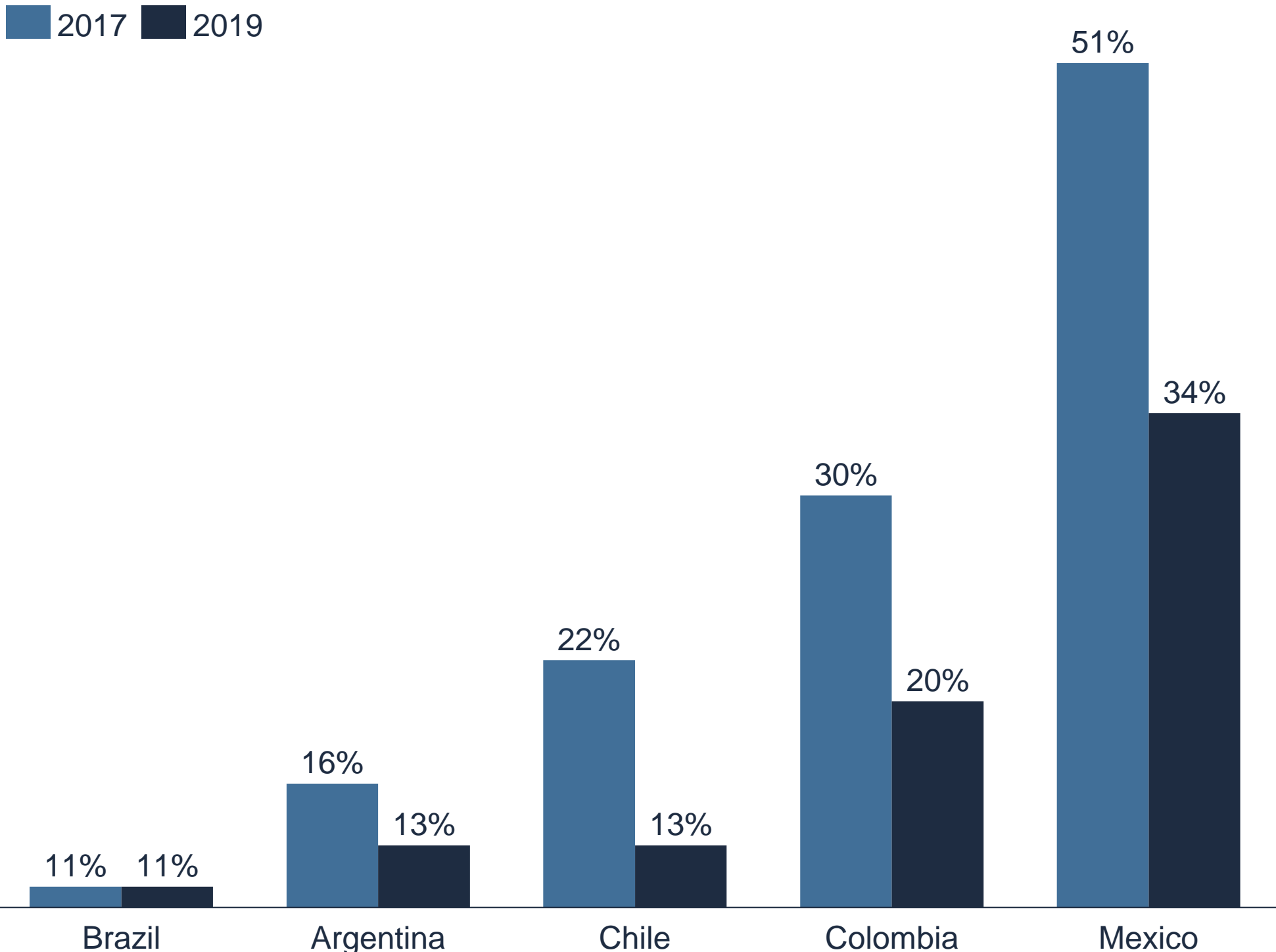
Sources: The World Bank 2018 Data, Economic Commission for Latin America and The Caribbean Social Panorama 2019, Atlantico analysis

Latin America has made progress in tackling corruption and in improving the ease of doing business



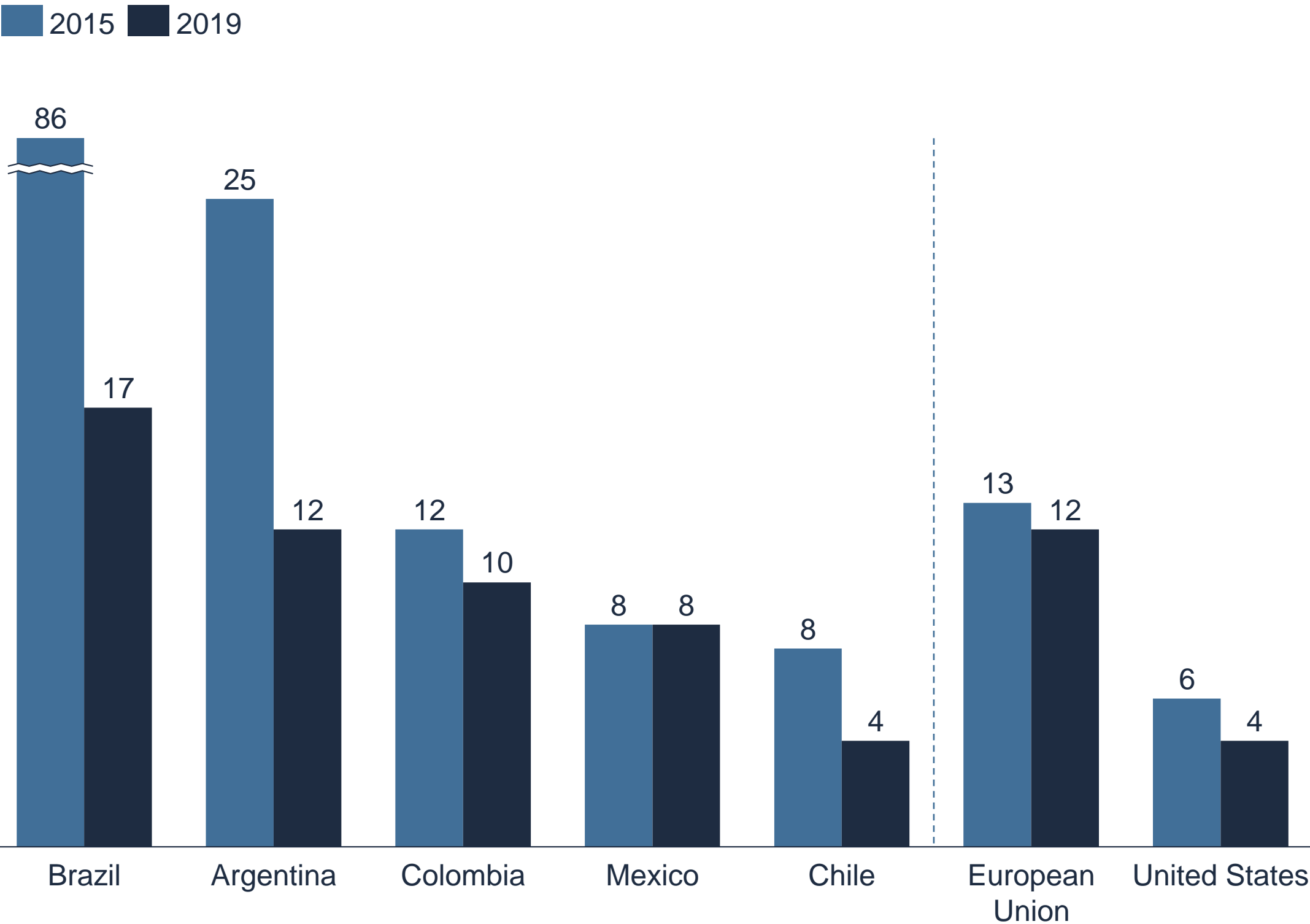
Bribery rates in Latin America are falling

Percentage of public service users that payed a bribe in the last twelve months¹



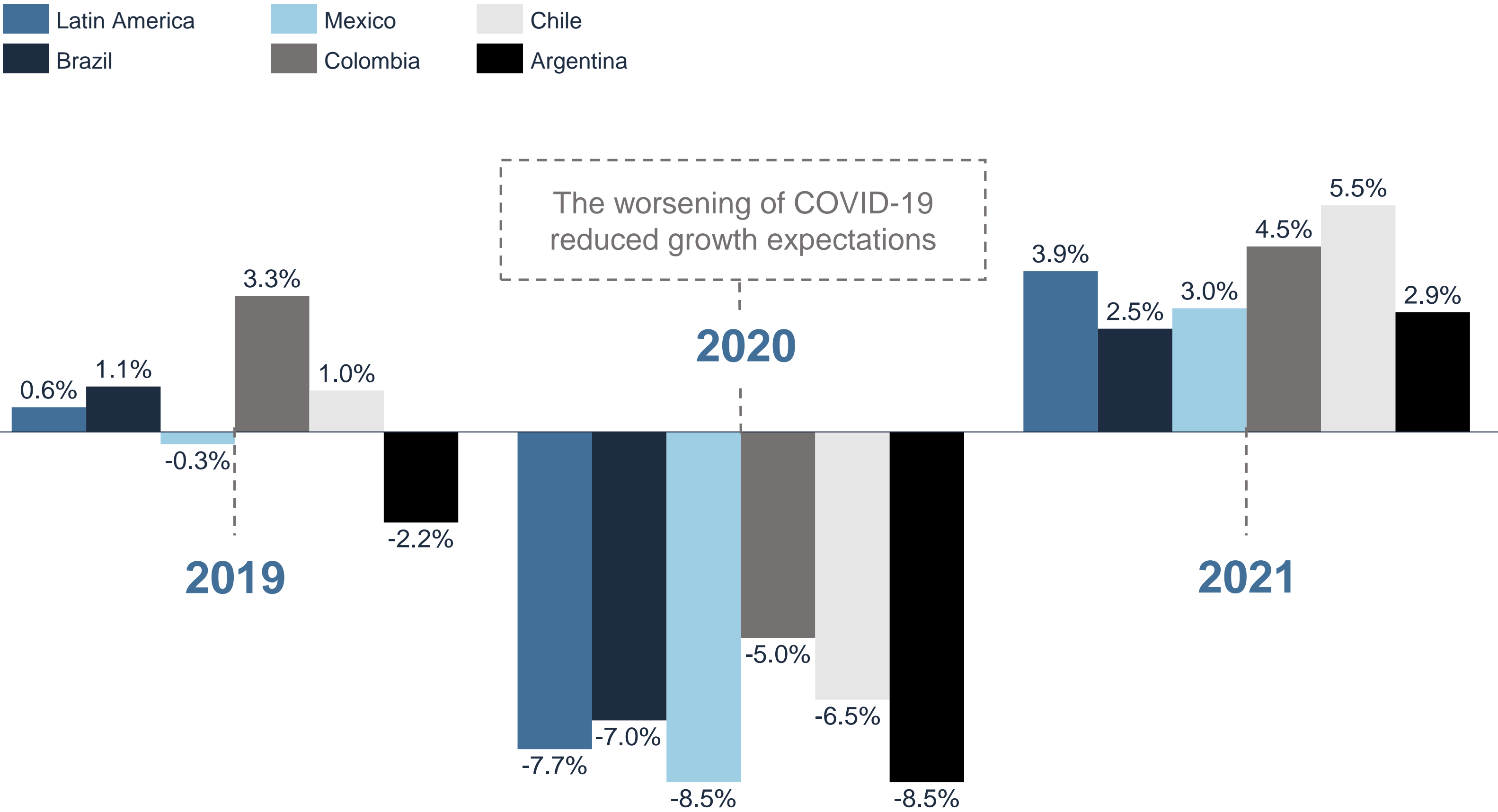
Time required to open a business is decreasing

Number of days required to start a business²



The region is on track for economic growth by 2021, following the economic slowdown caused by COVID-19

Projected GDP Growth – As of 2Q20



A Bright Future for Latin America

Huge economic potential

Latin America is a massive market, both in terms of population and economic potential. Young urban populations coupled with long-term economic growth paint an exciting picture for the next decade

Some unsolved problems

Poverty and inequality still pose an obstacle to sustainable growth and tackling these challenges through regional and global efforts will be key to safeguarding growth in the region

Fertile soil for innovation

A budding class of entrepreneurs is emerging and tackling some of the region's biggest problems. While the gig economy is creating jobs and new income sources, digitally-native banking, healthcare and education companies are delivering access to the masses at higher quality and lower prices.

Rising digital penetration

Internet usage and mobile adoption are growing at an incredibly fast rate, presenting big opportunities for tech penetration across Latin America. Despite very strong tech growth, the region has only begun to scratch the surface.



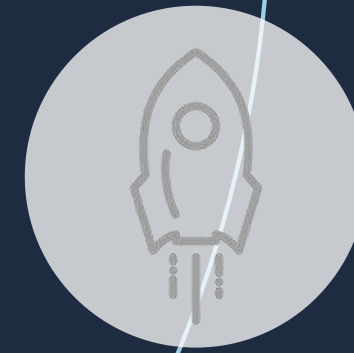
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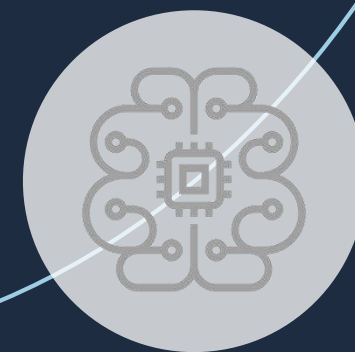
Socioeconomic Foundations



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Latin America Digital Transformation Report 2020



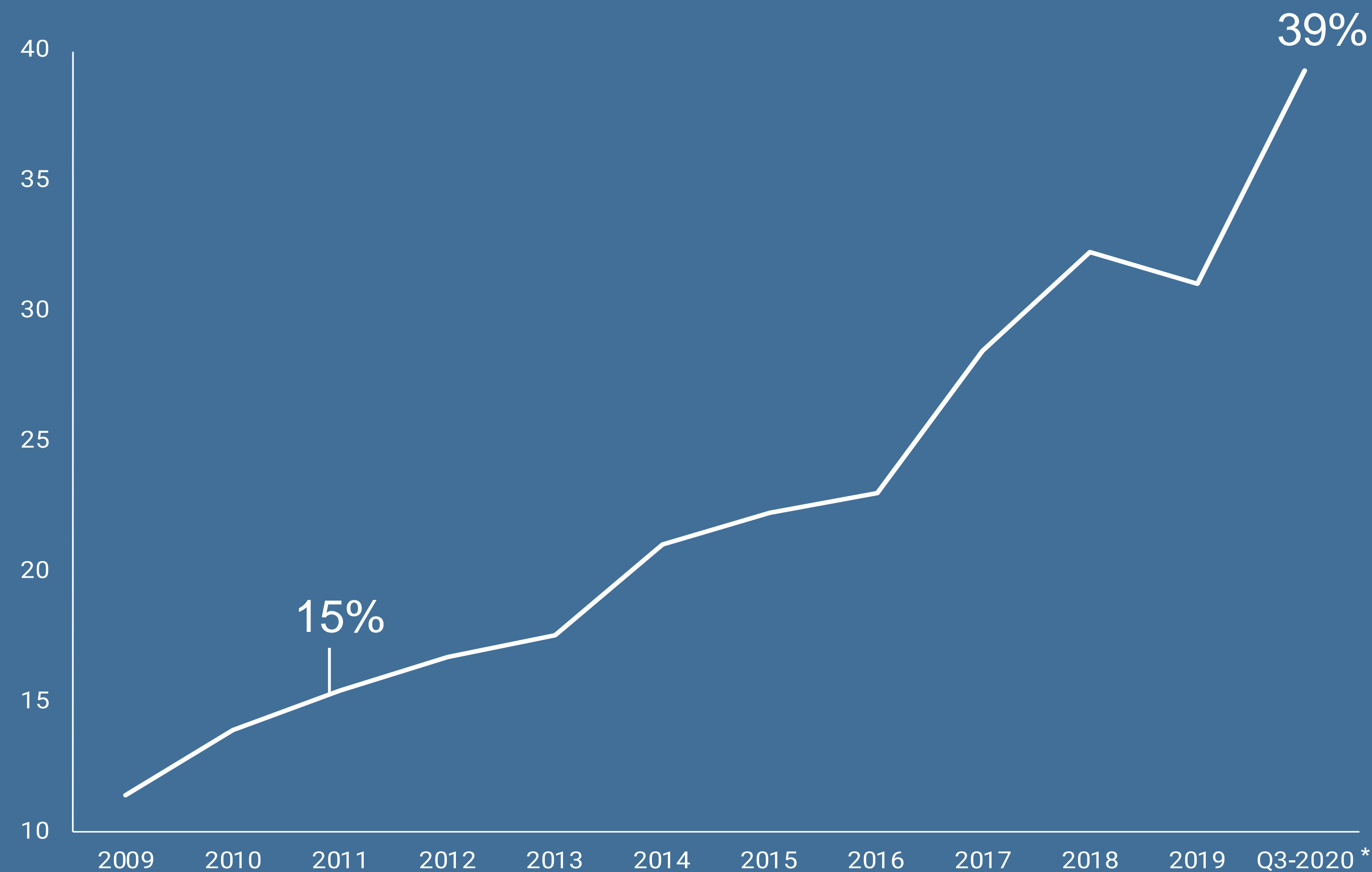
Technology Penetration in 2020

- Technology penetration (as a % of GDP) has been rapidly growing (65% yoy) in the region but still significantly lags other regions
- Internet access and usage is high (above China and India) and continues to grow, fueling one of the most digitally-active regions in the world
- E-commerce and digital advertising/media were already a growing part of daily lives, but have now been catapulted by the Covid-19 pandemic

In 2011 Marc Andreessen famously wrote *“software is eating the world.”*

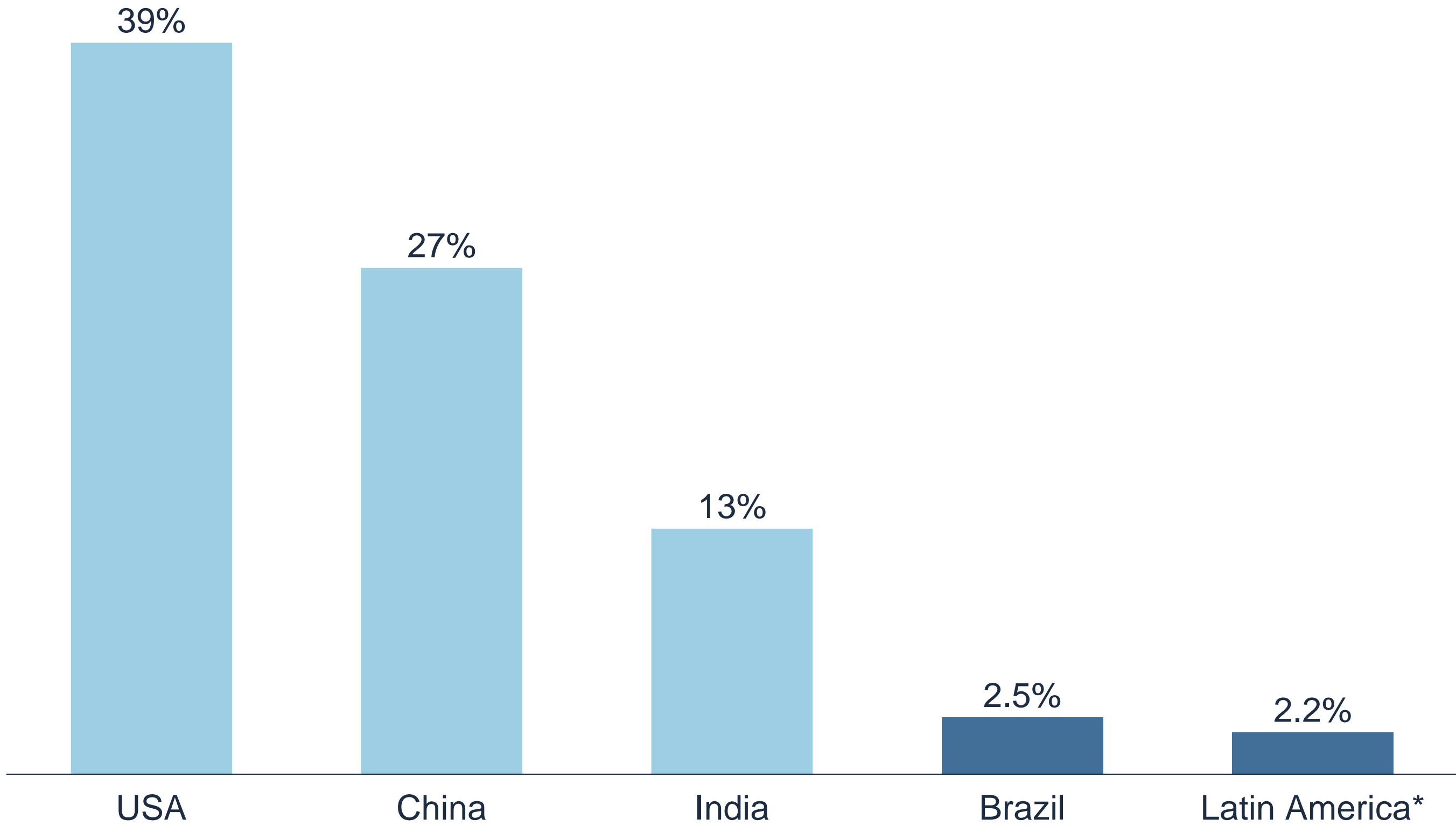
Back then, in the United States, the market cap of public tech companies as a % of GDP stood at 15%.

Less than a decade later, the market cap of public tech companies as a % of GDP **nearly tripled to 39%.**



Technology penetration in Latin America still lags other regions, presenting significant opportunity for growth

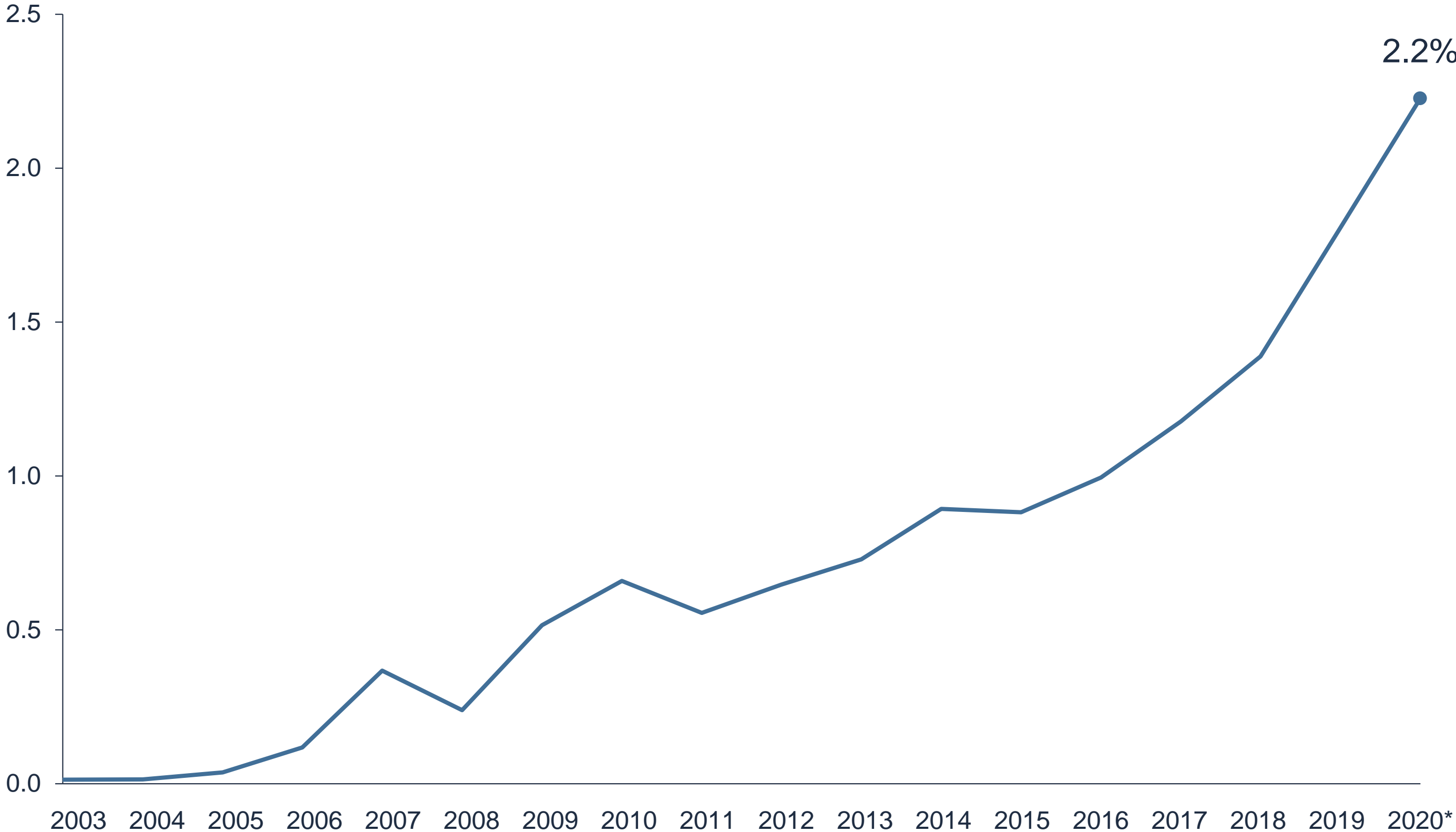
Technology company market cap as a % of GDP
Q3-2020



*For all countries we used average for Q3-2020. For Latin America, we used the average for the period between Q419 and Q320 as not yet available
Sources: Capital IQ for market cap data (“tech companies” definition used excludes telecom), World Bank Open Data 2019 for GDP, Atlantico analysis

While tech penetration in LatAm is lower than in other regions, it is growing at a faster rate and catching up fast

Latin America technology company market cap as a % of GDP*



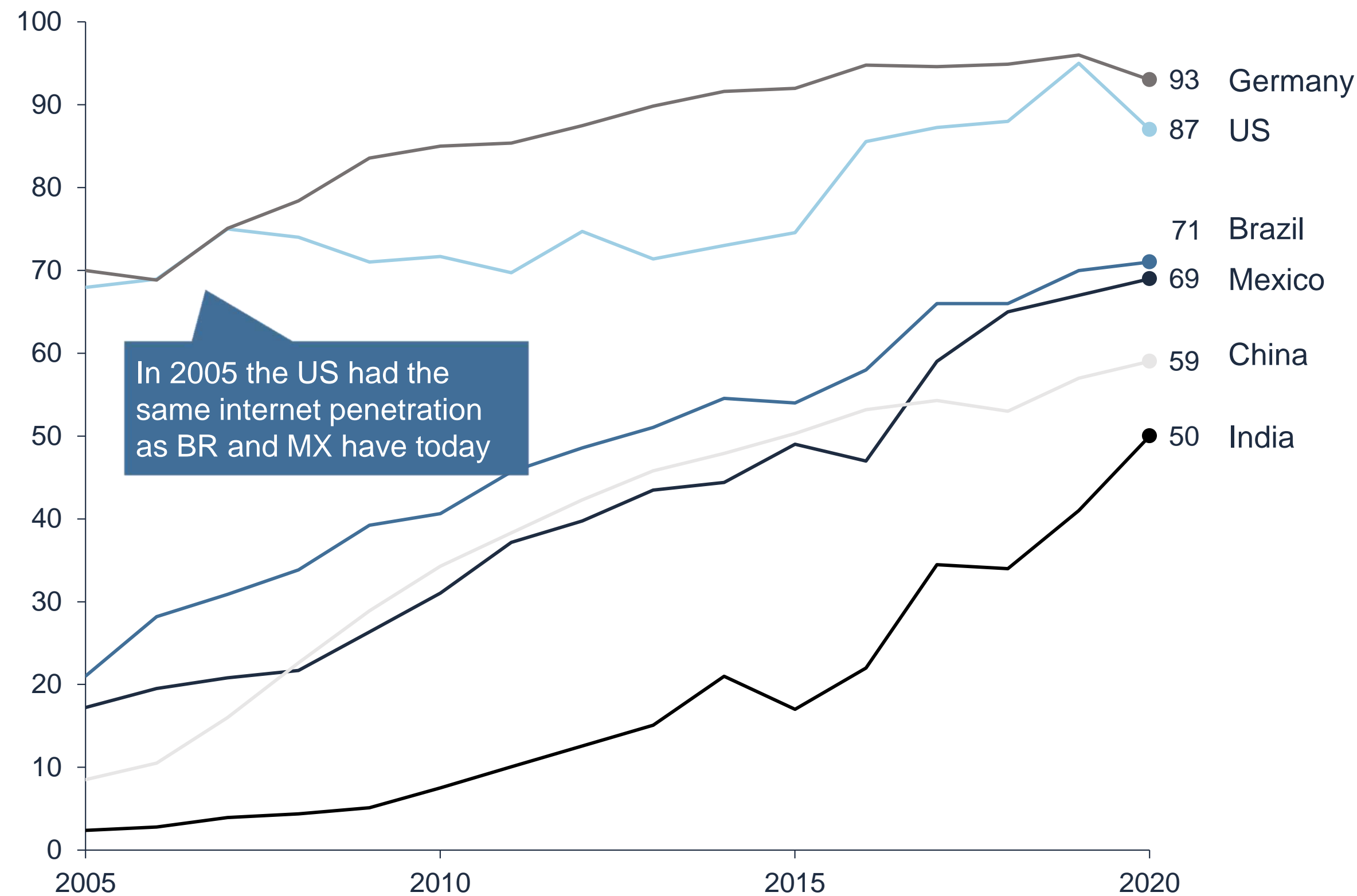
- Latin America’s tech market cap as % of GDP has been growing at an average YoY rate of **65%** since 2003
- In comparison, US’s tech market cap as % of GDP has been growing at a rate of **11%** and China’s at **40%**

*Average tech market cap as a % of GDP between 4Q19 and 3Q20
Sources: Capital IQ for market cap data (“tech companies” definition excludes telecom), World Bank Open Data 2019 for GDP, Atlantico analysis

Internet and Mobile Internet penetration in Brazil and Mexico is growing fast, and is higher than China and India

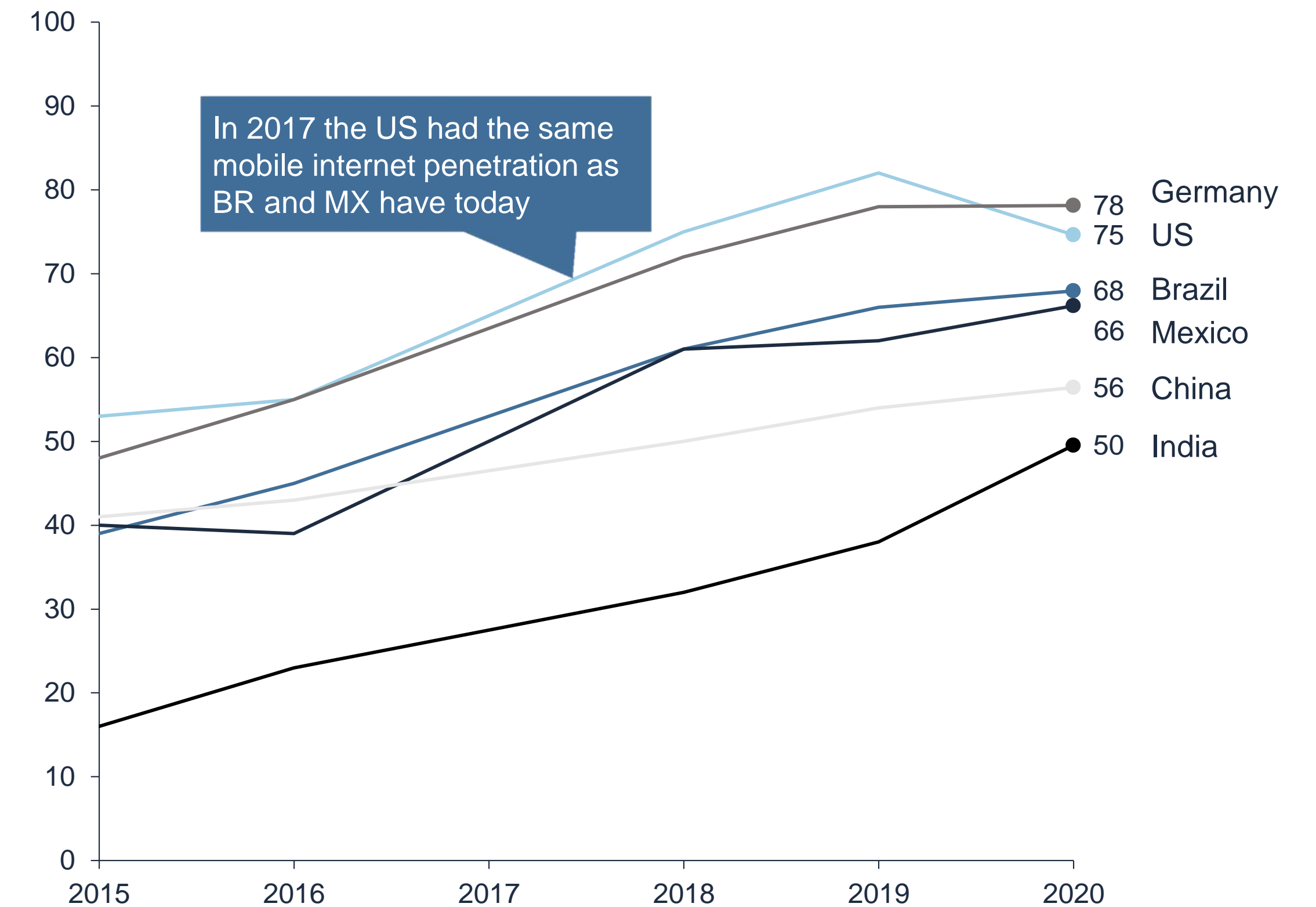
Internet Penetration

Number of internet users divided by total population¹



Mobile Internet Penetration

Number of mobile internet users divided by total population²



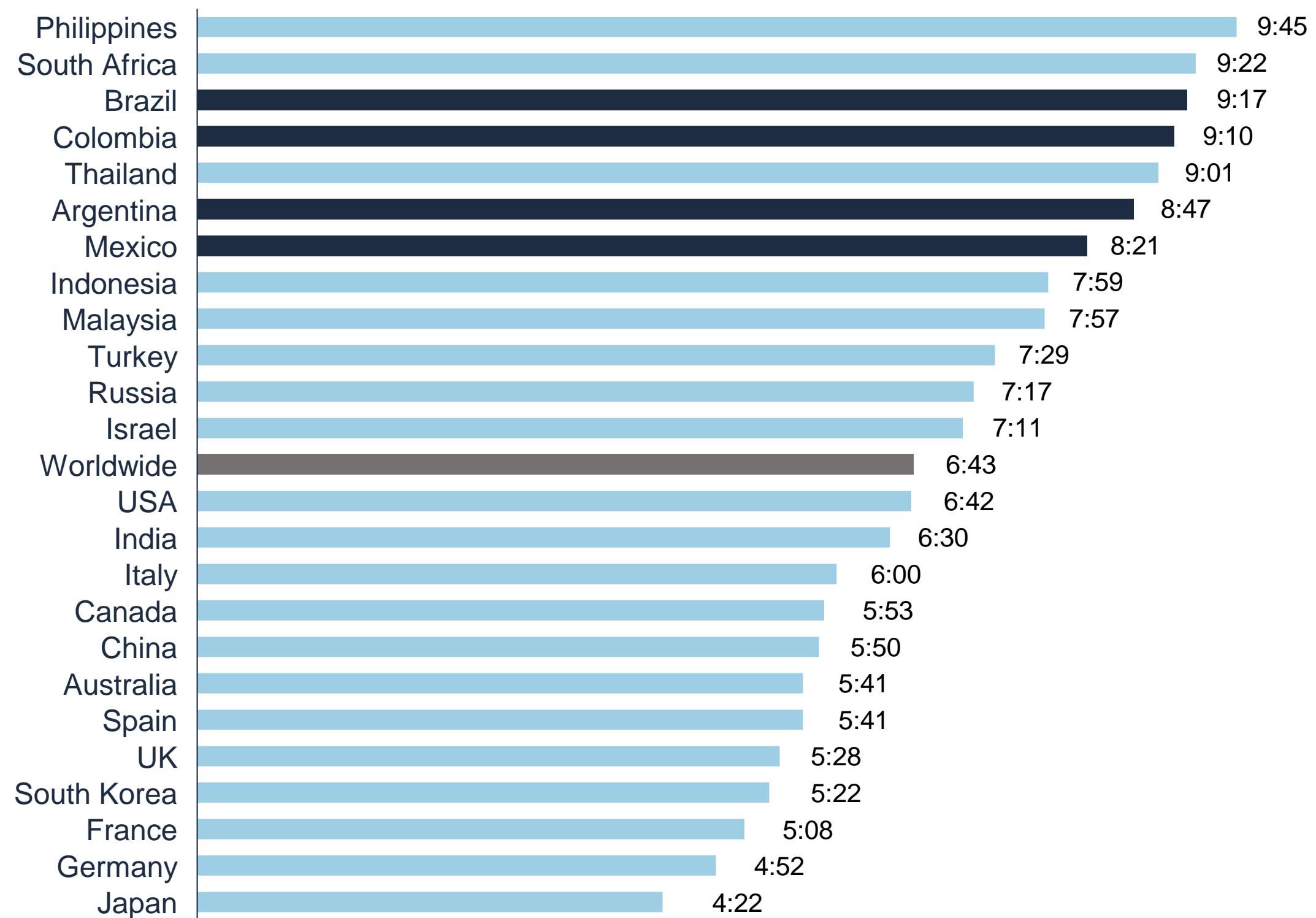
Note: Internet penetration and Mobile Internet Penetration for other Latin America countries can be found in the Appendix

Source: (1) We Are Social and World Bank, (2) We Are Social

Latin American countries have some of the highest internet usage in the world, especially of messaging and social media

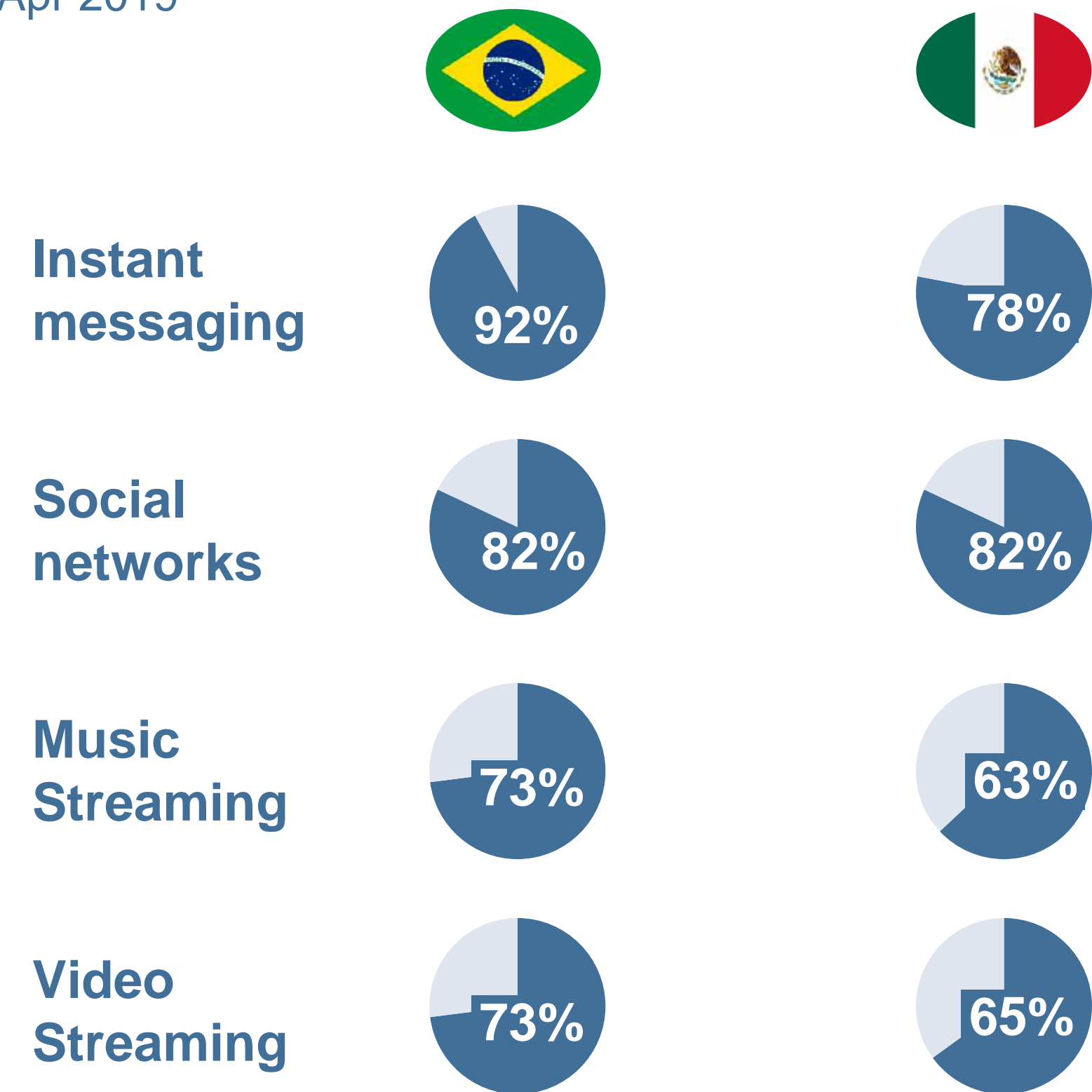
Time per day using the Internet in hours

Any device, internet users aged 16-64, Jan 2020¹



Percentage of Internet users that use each service

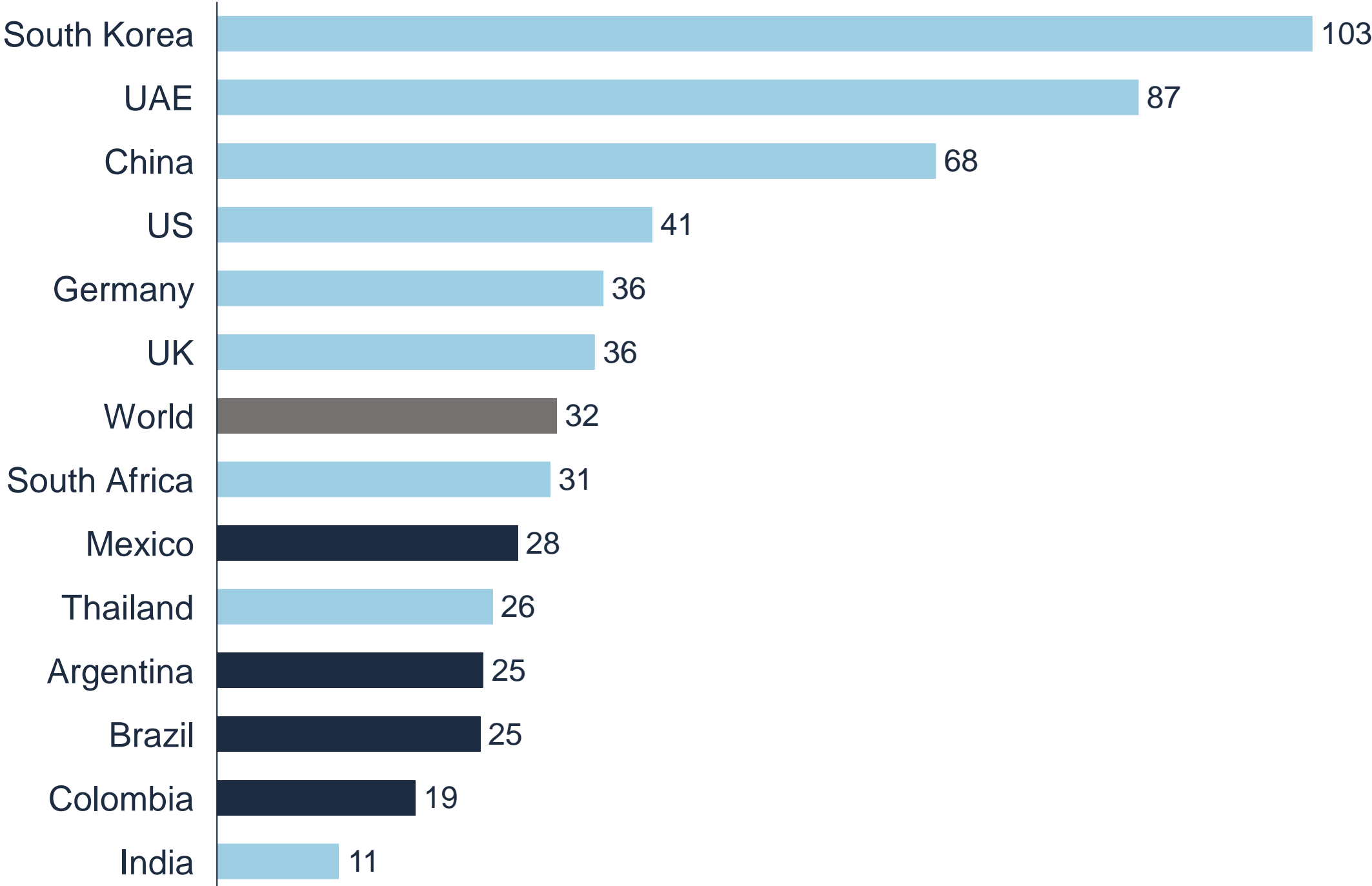
Apr 2019²



Latin America's high internet usage and adoption has come despite slow internet speeds and expensive mobile data

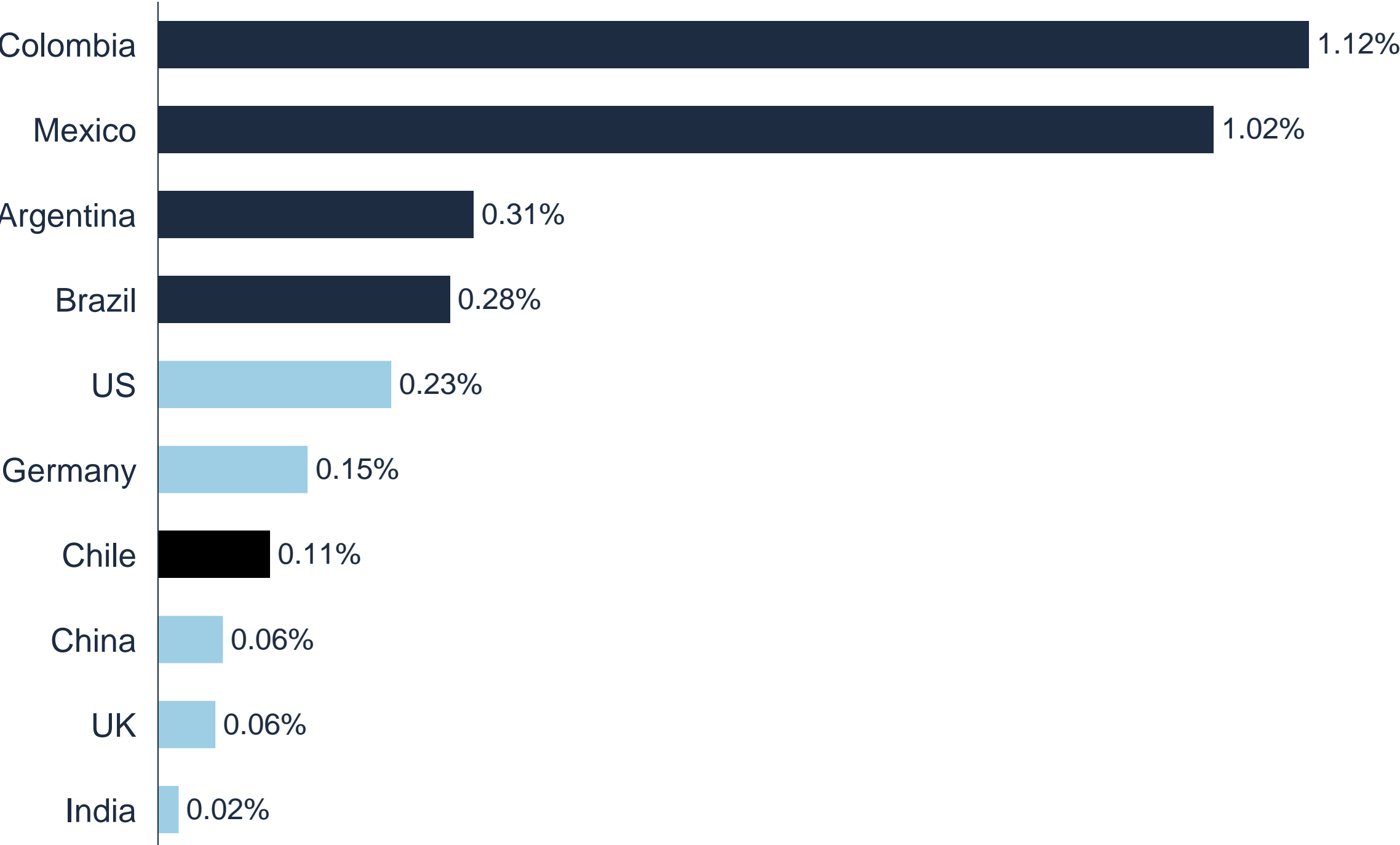
Mobile Internet connection speed*

Average download speed of mobile internet connections, in mbps, 2020¹



Cost of mobile data as a percentage of monthly salary

Average cost of 1GB of mobile data divided by average monthly salary after taxes, 2019²



*See appendix: Mobile internet connection speed is slow despite having grown nearly 6X over the last 3 years; Cost of broadband internet dropped 80% in past decade
 Source: (1) We Are Social 2020 (2) Cable.co.uk and World Bank 2019, Atlantico analysis

Spotlight: The Ubiquity of WhatsApp in Brazil



WhatsApp is the most popular app in Brazil¹

WhatsApp statistics in Brazil²

Ranking of Mobile Apps

Ranking of top mobile apps by average monthly active users in 2019 in Brazil

1. WhatsApp Messenger
2. Facebook
3. Facebook Messenger
4. Instagram
5. Uber
6. Netflix
7. Mercado Livre
8. Spotify
9. Caixa Econômica Federal
10. Waze

99%

- Percentage of smartphones with WhatsApp

79%

- Percentage of people for whom WhatsApp is their primary source of information

76%

- Percentage of WhatsApp users who communicate with businesses using the app

72%

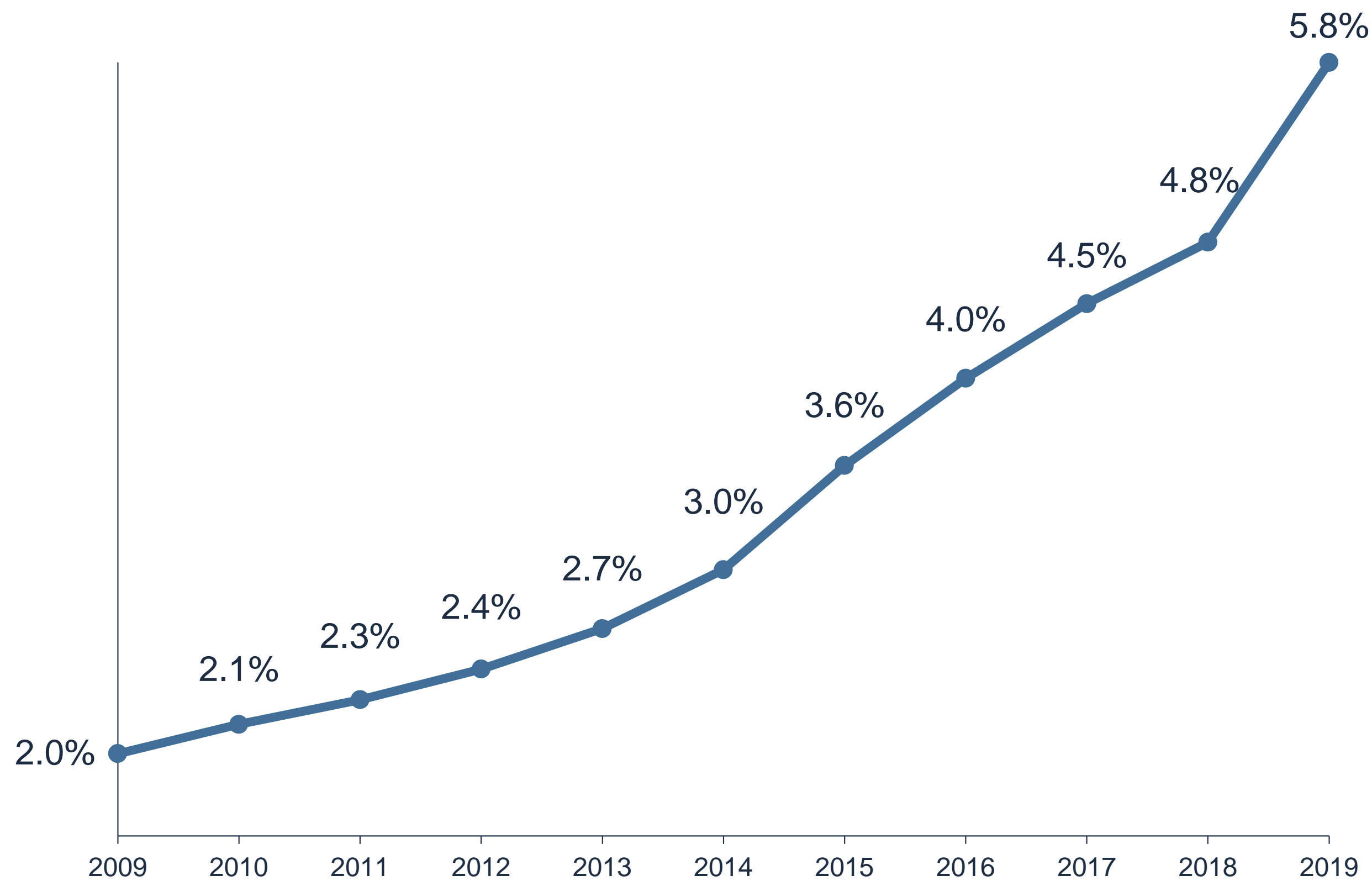
- Percentage of small businesses that use WhatsApp to communicate with clients

60%

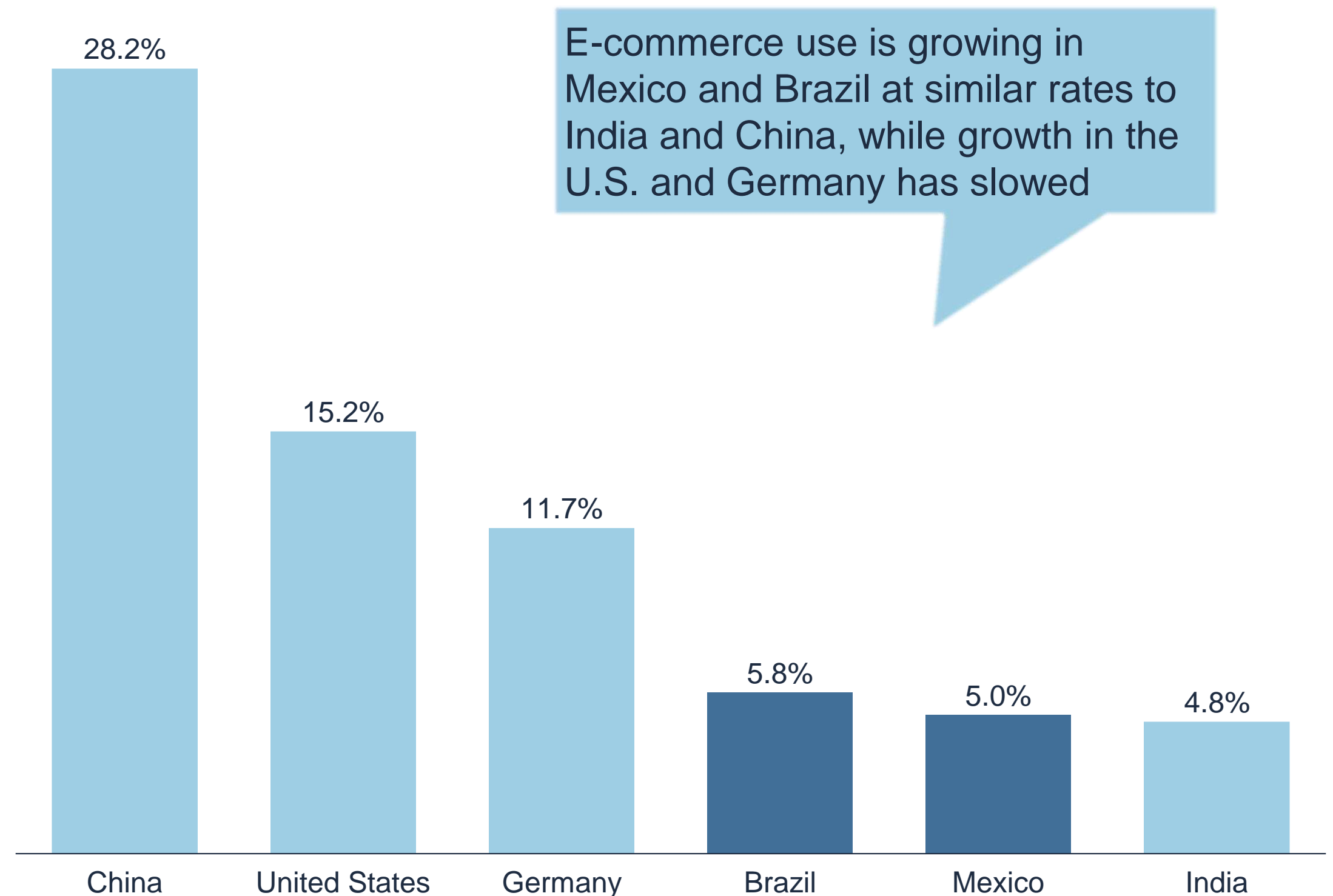
- Percentage of people who use WhatsApp to work; only 20% use email

E-commerce's increasing role in Latin Americans' daily lives is another byproduct of accelerating tech penetration

E-commerce penetration in Brazil¹
E-commerce as a percentage of overall retail sales



E-commerce penetration by country*²
2019



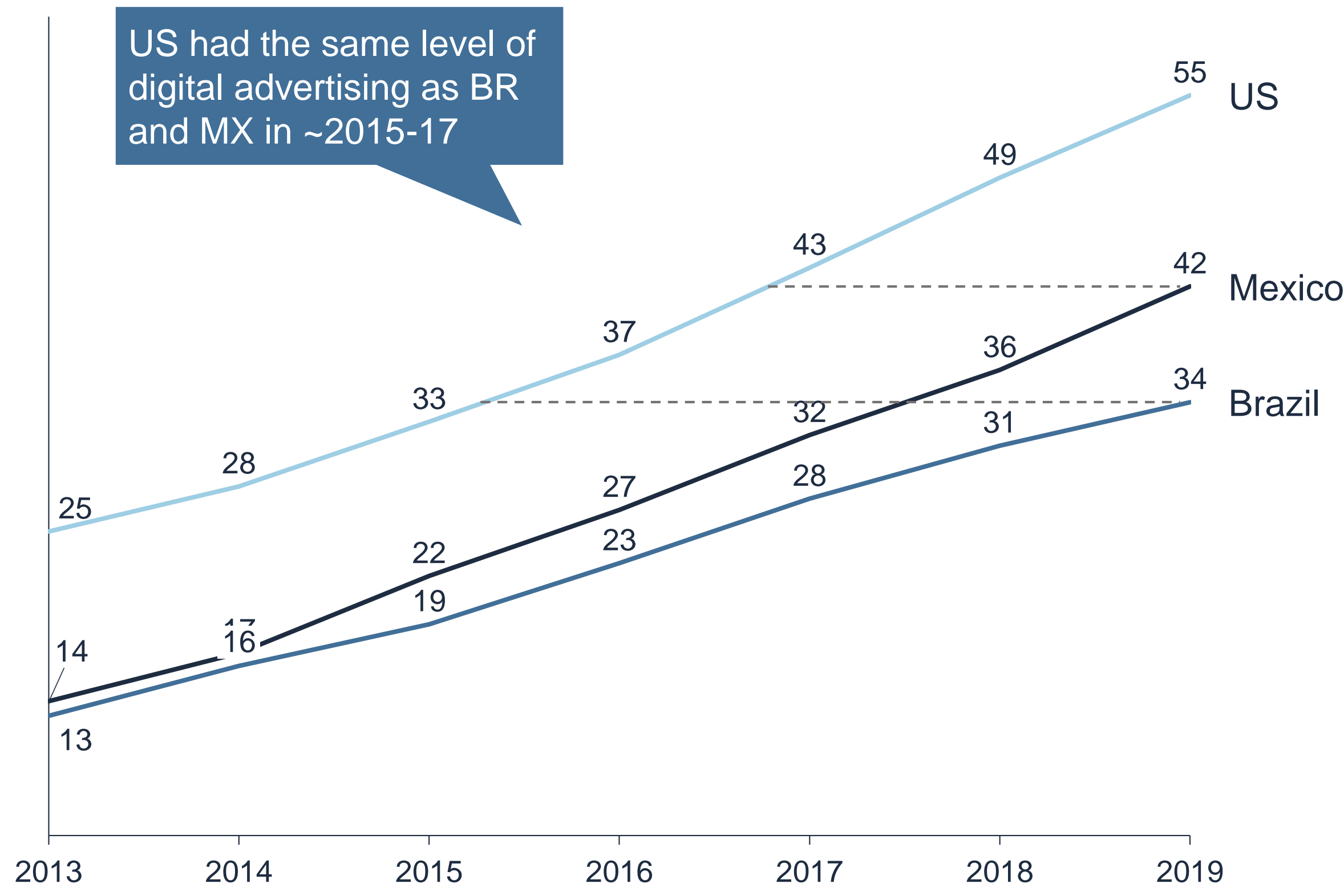
E-commerce use is growing in Mexico and Brazil at similar rates to India and China, while growth in the U.S. and Germany has slowed

*E-commerce penetration by Latin American country in 2019 can be found in the appendix

Sources: (1) E-commerce penetration figures for 2018-2020 are from MCC-ENET. Figures for 2009-2017 were estimated applying Euromonitor's historical penetration growth to MCC-ENET data; (2) Euromonitor Retailing Data, unless for Brazil which data comes from (1)

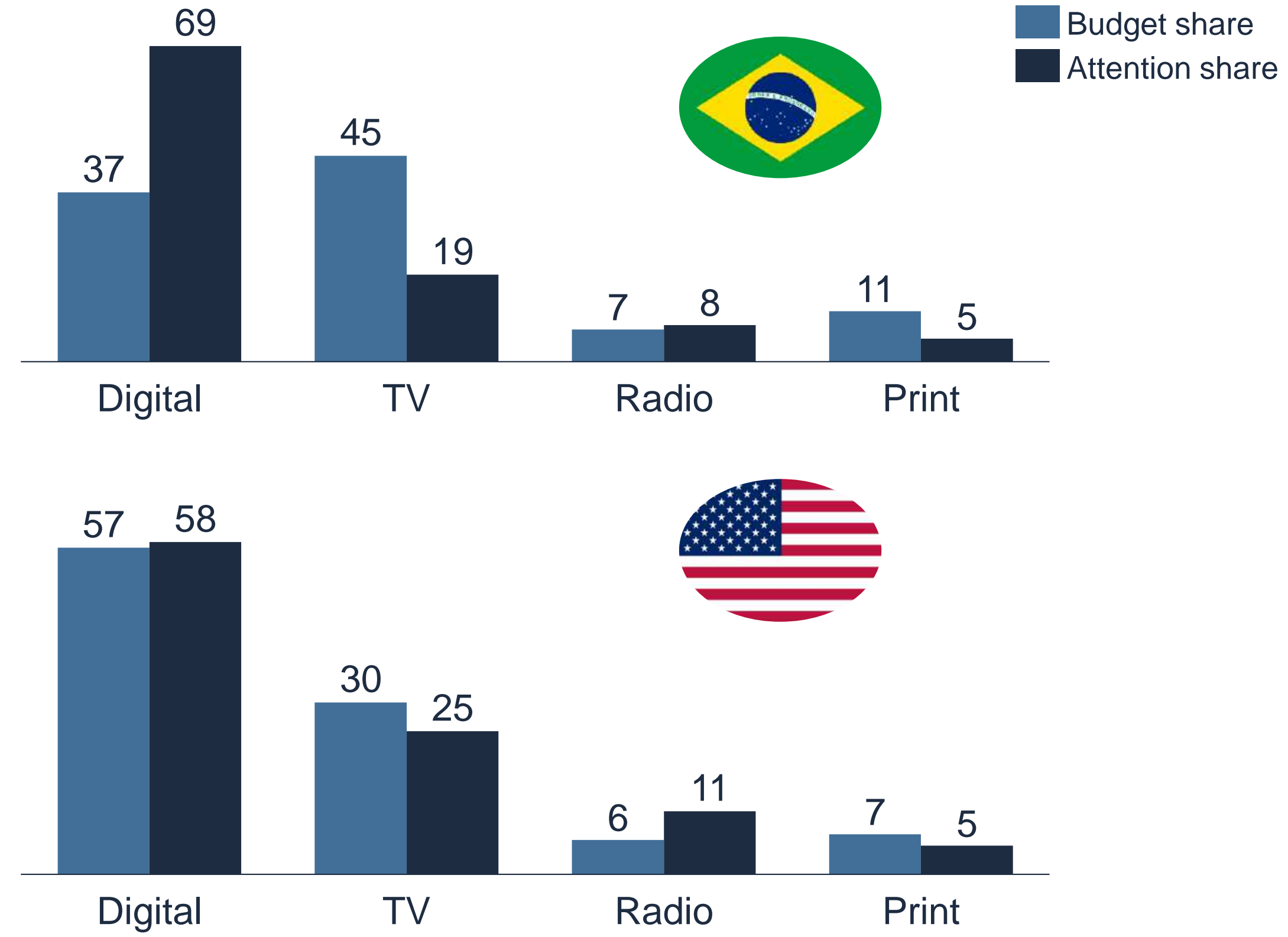
Digital advertising may be the next big opportunity to materialize, with continued tech growth in Latin America

Digital marketing as a % of total marketing spending



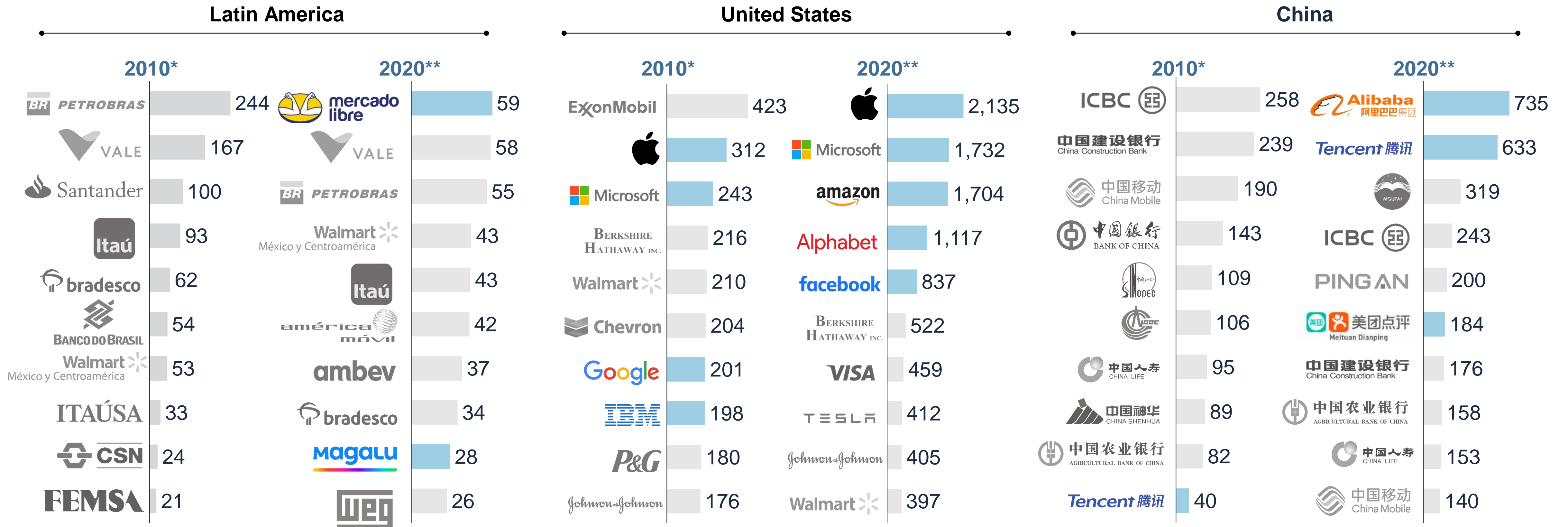
Advertising spend per media vs. Time spent per media

Comparison between % of media advertising spending per media type (light blue) and % of time users spend in each media type (dark blue)



A peek at the future: Tech companies are becoming the most valuable in the region, just as they did globally in the last decade

Largest companies by market capitalization in US\$B



*December 31st, 2010 (Historical US\$) **August 30th, 2020 (Latest US\$); Magalu or Magazine Luiza is a hybrid company which was a traditional retailer that made a shift into one of Brazil's largest e-commerce players and is widely seen as a "tech company" by the markets
Source: Capital IQ

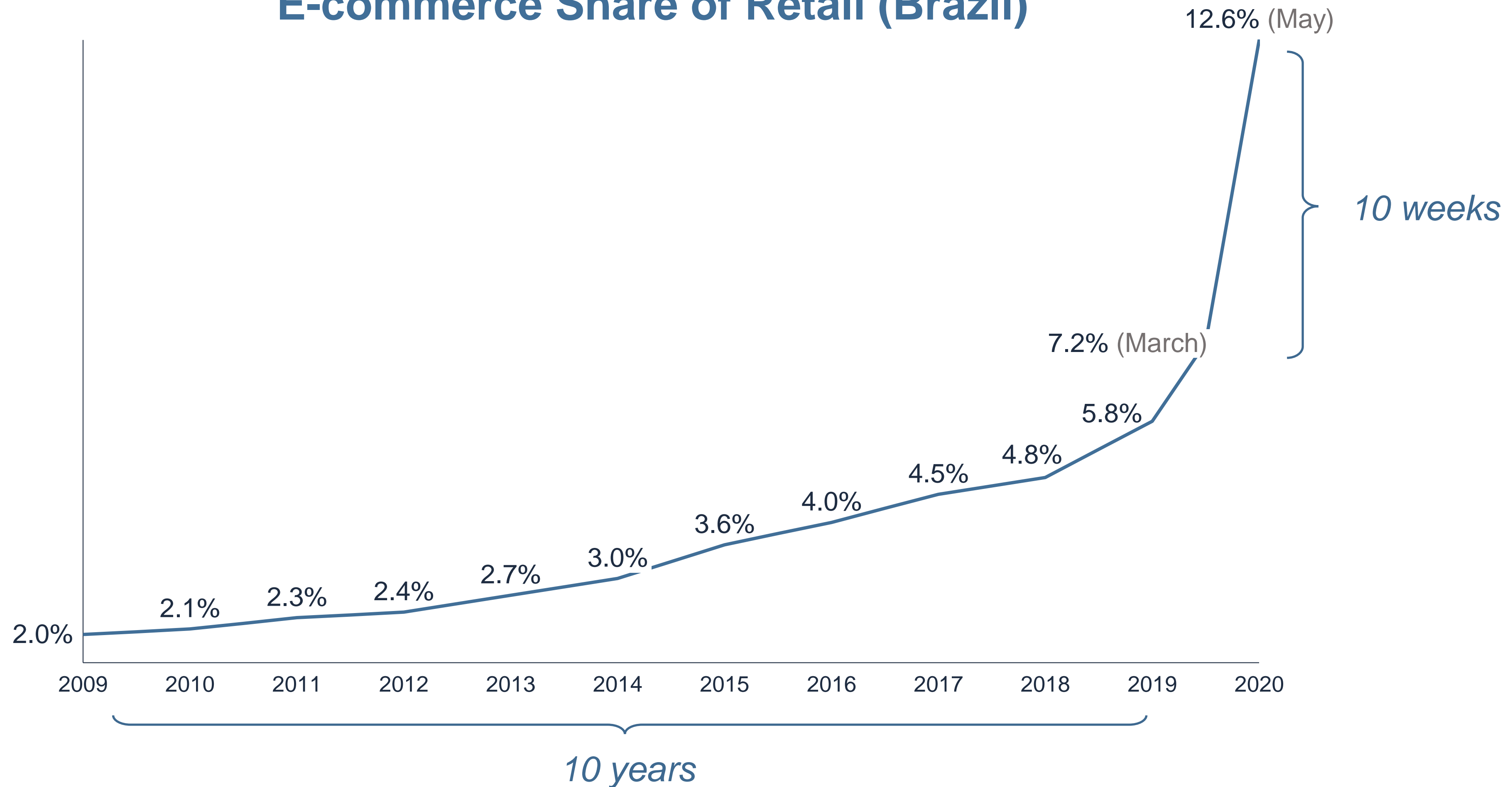
The Tech Tsunami: The Impact of Covid-19

“There are decades where nothing happens; and there are weeks where decades happen.”

- Vladimir Lenin

10 years in 10 weeks: E-commerce in 2020, Part 1

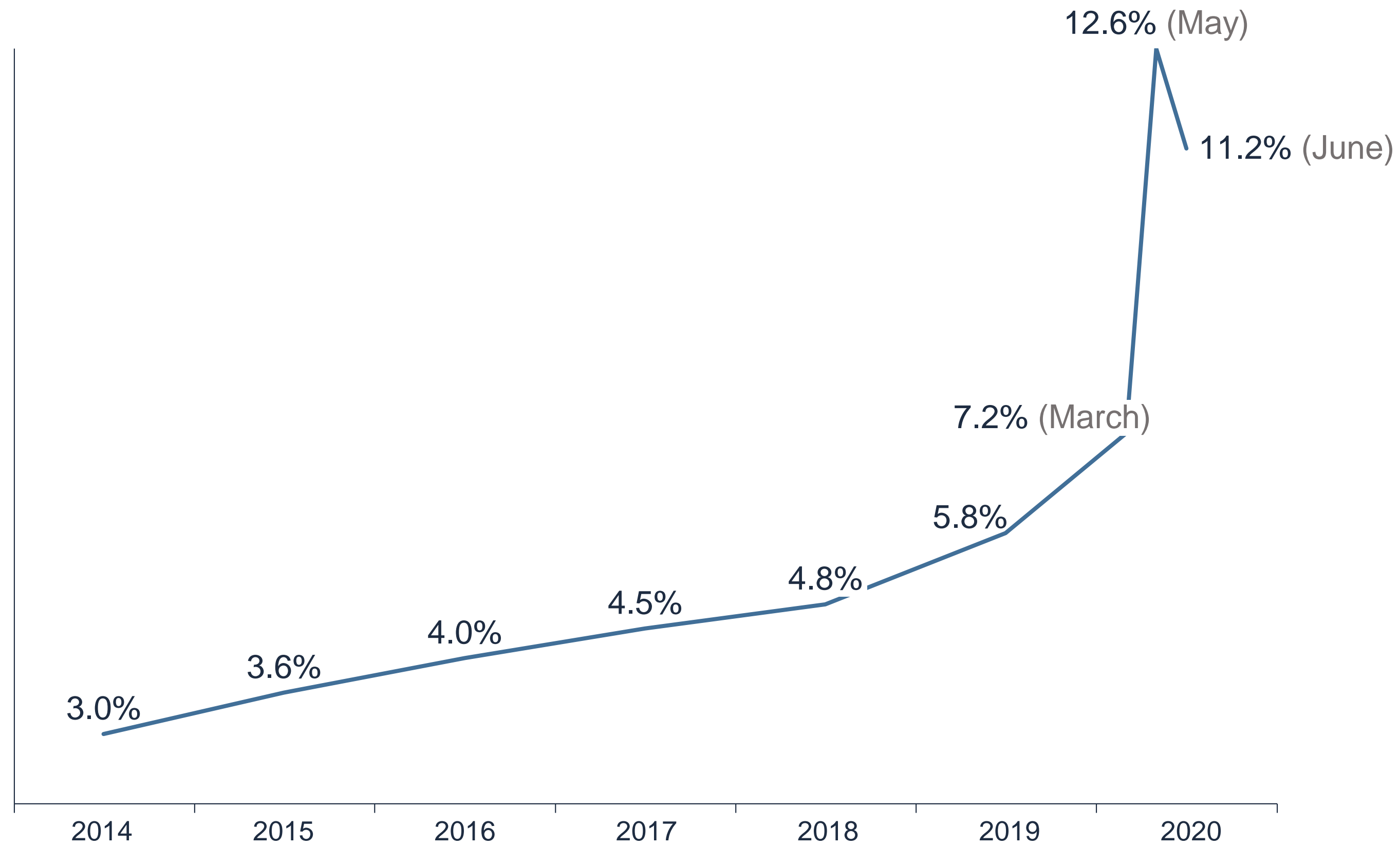
E-commerce Share of Retail (Brazil)



Source: E-commerce penetration figures for 2018-2020 are from MCC-ENET. Figures for 2009-2017 were modeled applying Euromonitor's historical penetration growth to MCC-ENET data

Settling at a new normal: E-commerce in 2020, Part 2

E-commerce Share of Retail (Brazil)

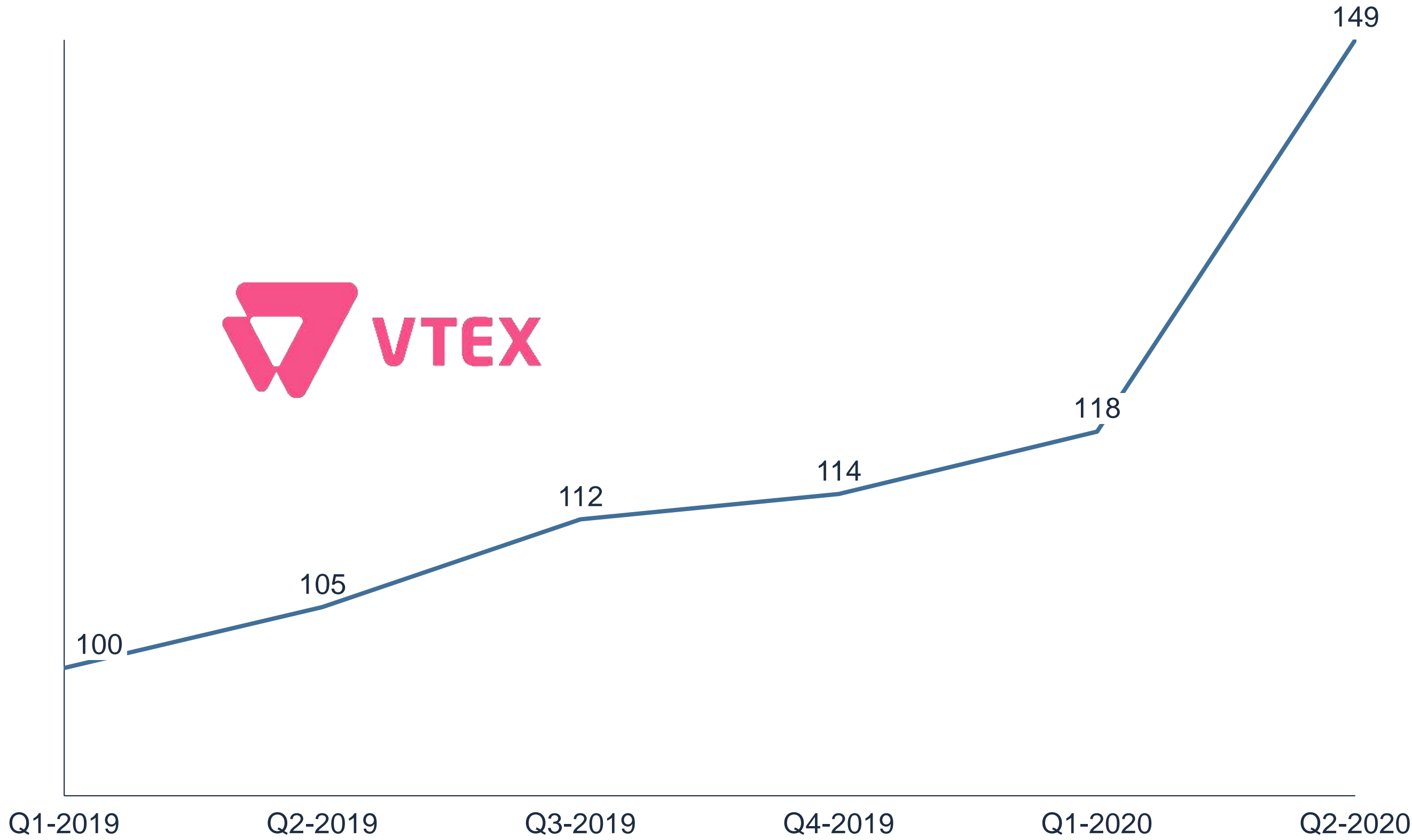


Despite providing a superior experience in many ways, as offline retail reopens and grows to pre-pandemic levels, e-commerce share of total retail decreases as a result of this "denominator growth"

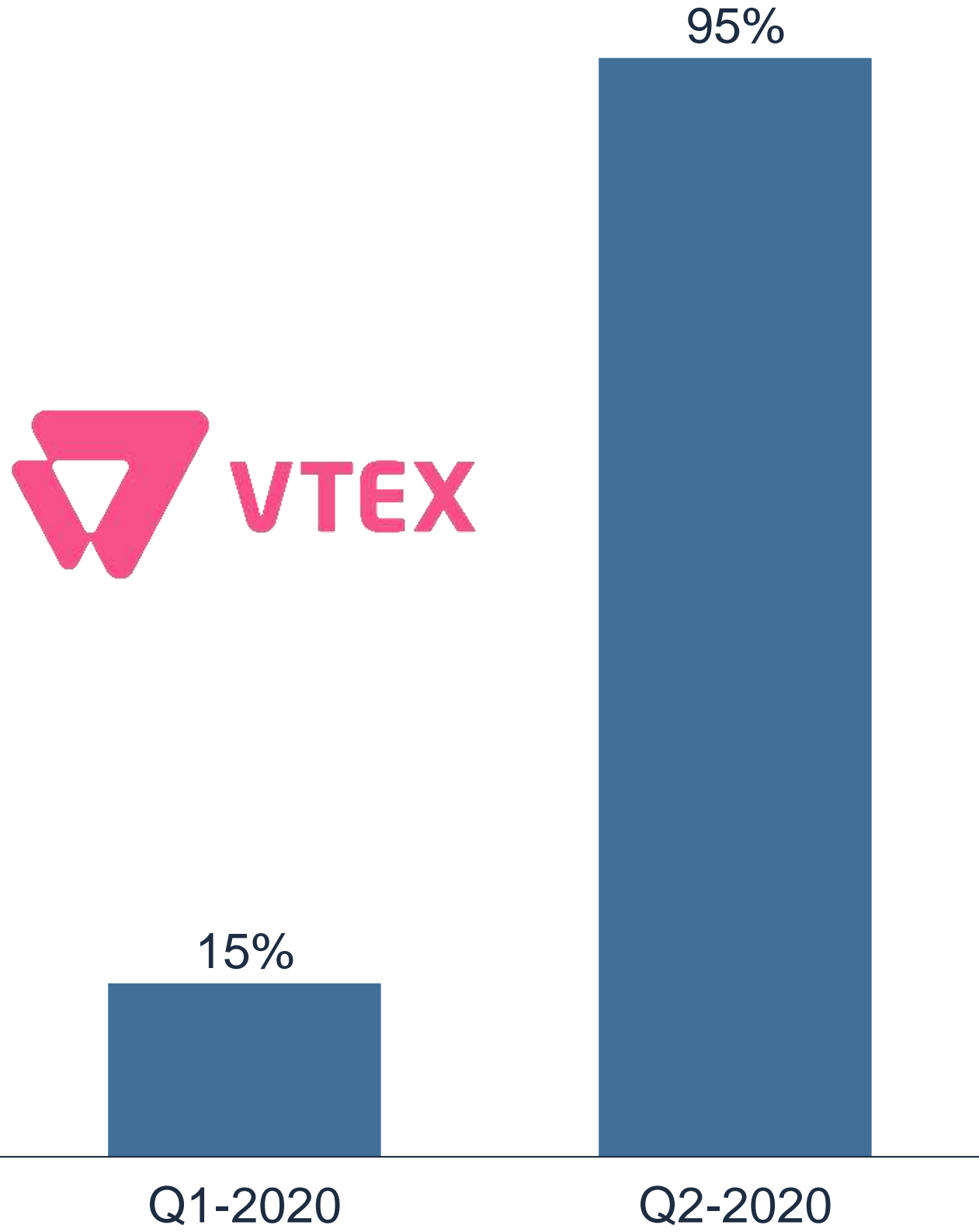
LatAm's leading e-commerce platform shows accelerating growth from both new merchants going online and same-store sales

Acceleration of new SMB* e-commerce stores

Indexed to 100



Annual growth (year-over-year) in same store sales for large-enterprise clients

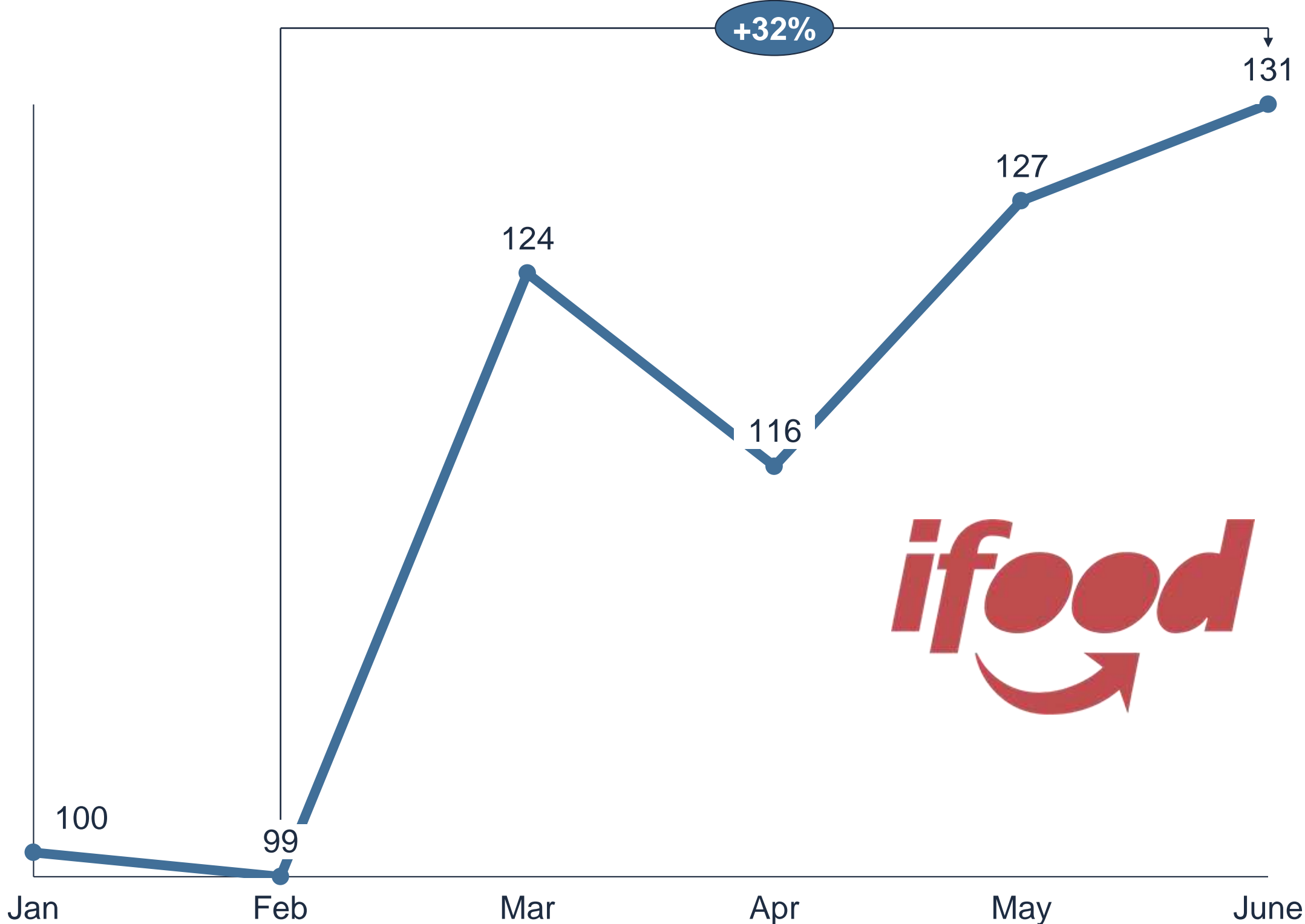


*SMB = Small and Medium Business clients, here defined as those selling US\$ 1M or less per year
Source: VTEX internal data, Brazil-only

Growth in food delivery in Brazil greatly expanded during the pandemic, both in total orders and spend per user

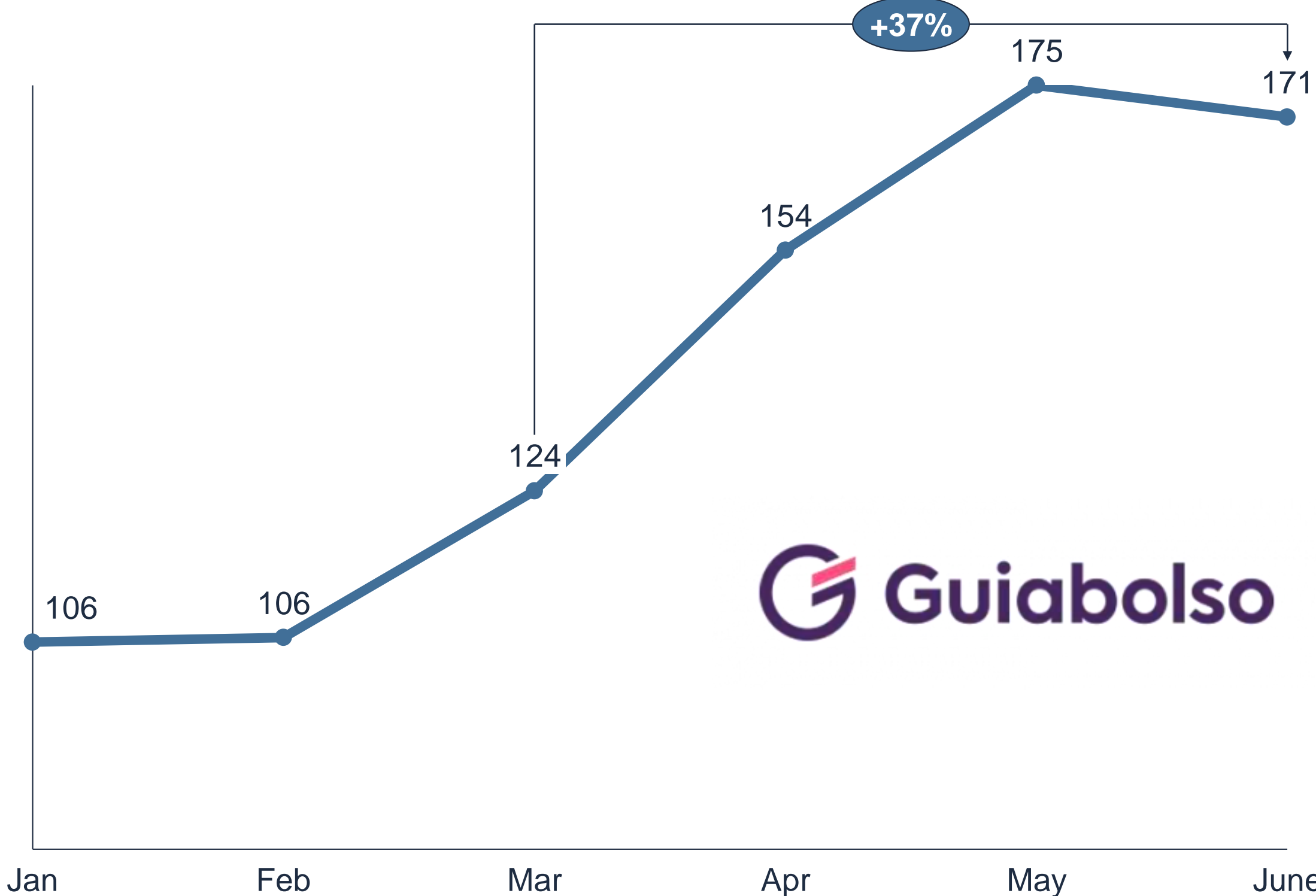
Number of orders in iFood (Brazil)

2020, indexed to 100¹



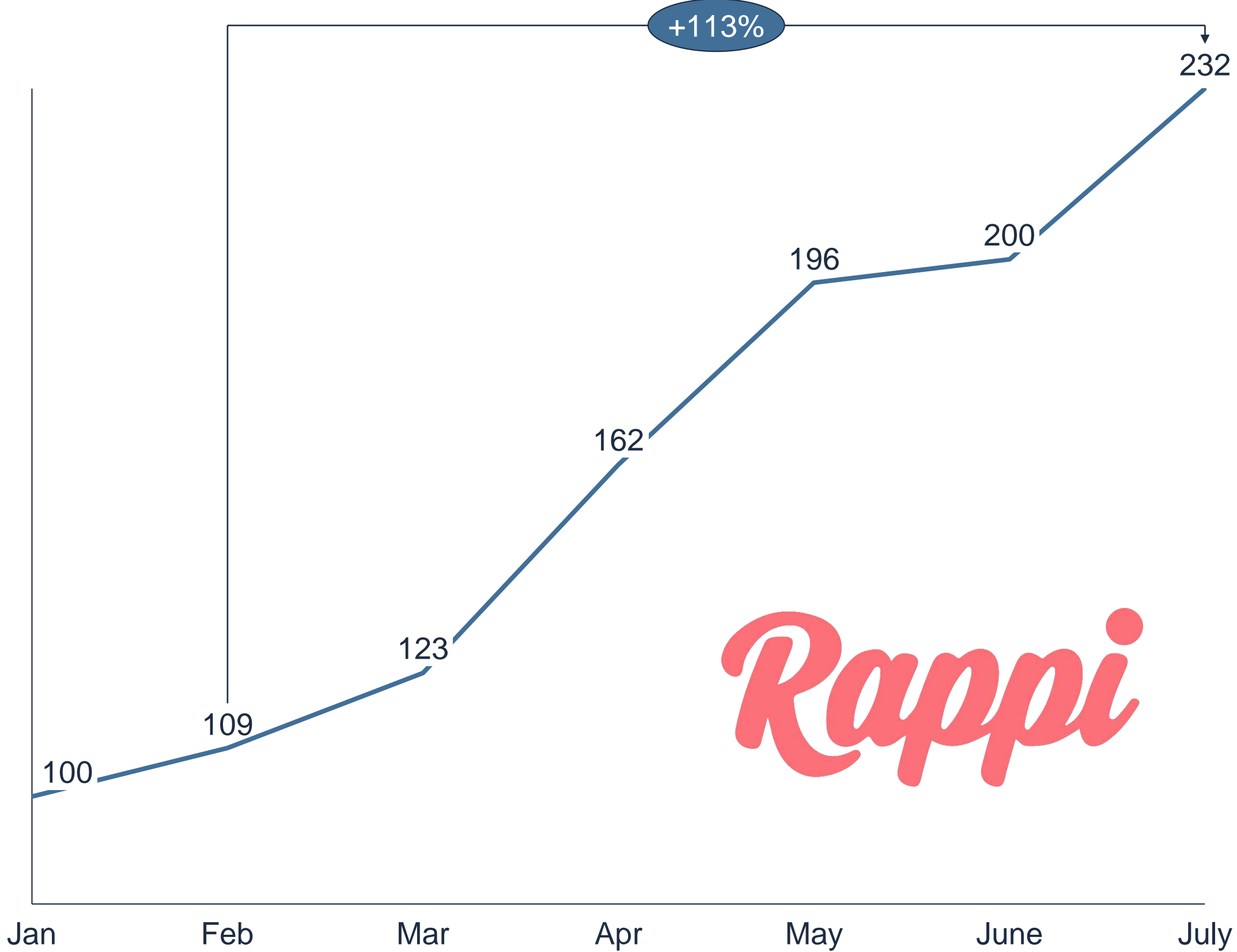
Average monthly spend in food delivery apps by Guiabolso users in Brazil

2020, R\$²



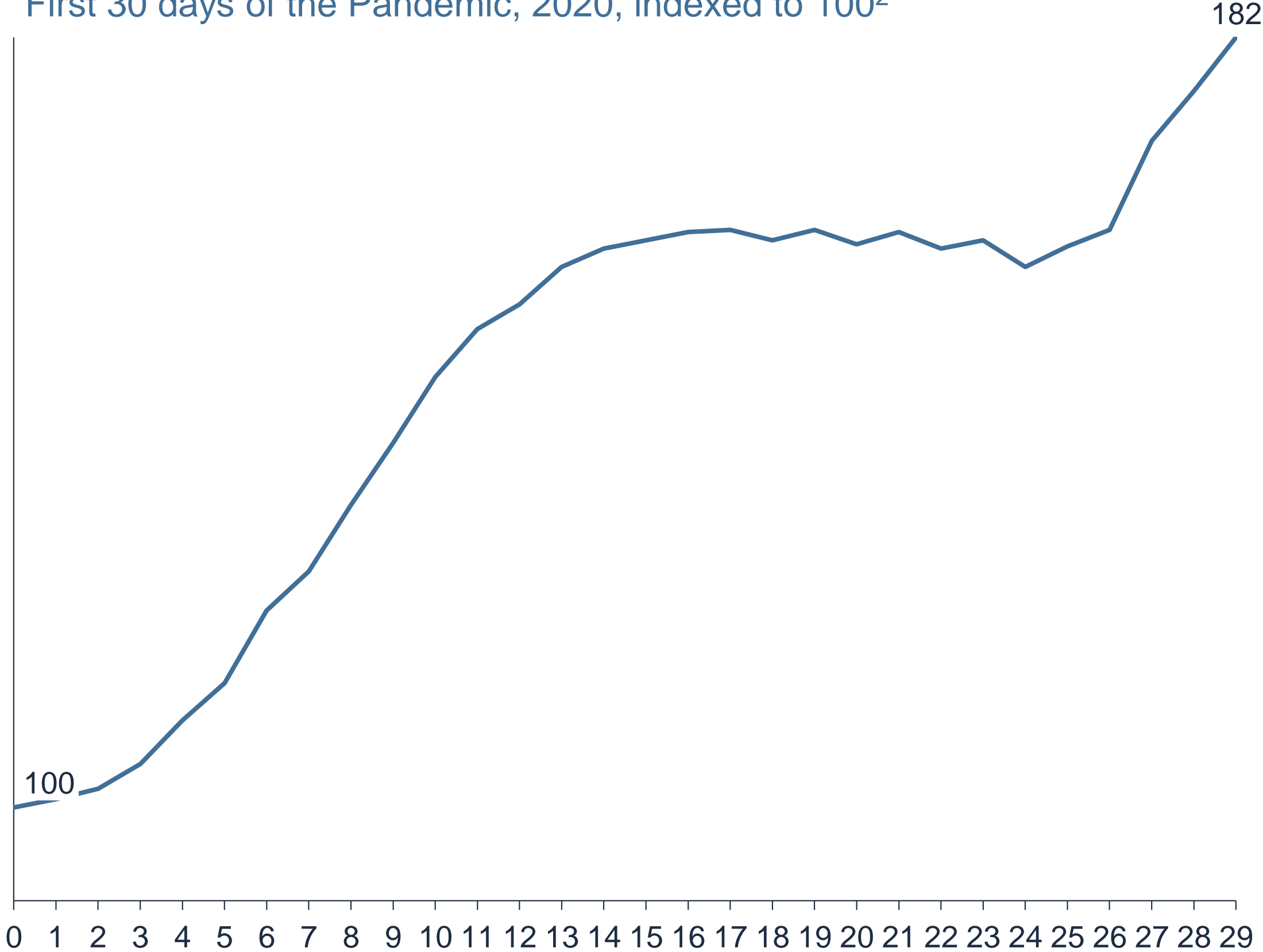
Across LatAm we saw a similar explosion in food delivery growth, including from new users searching for services

Rappi Total Sales (GMV) in Latin America (ex Brazil) Indexed to 100¹



Average Weekly Search Volume for Top Food Delivery Apps in Mexico

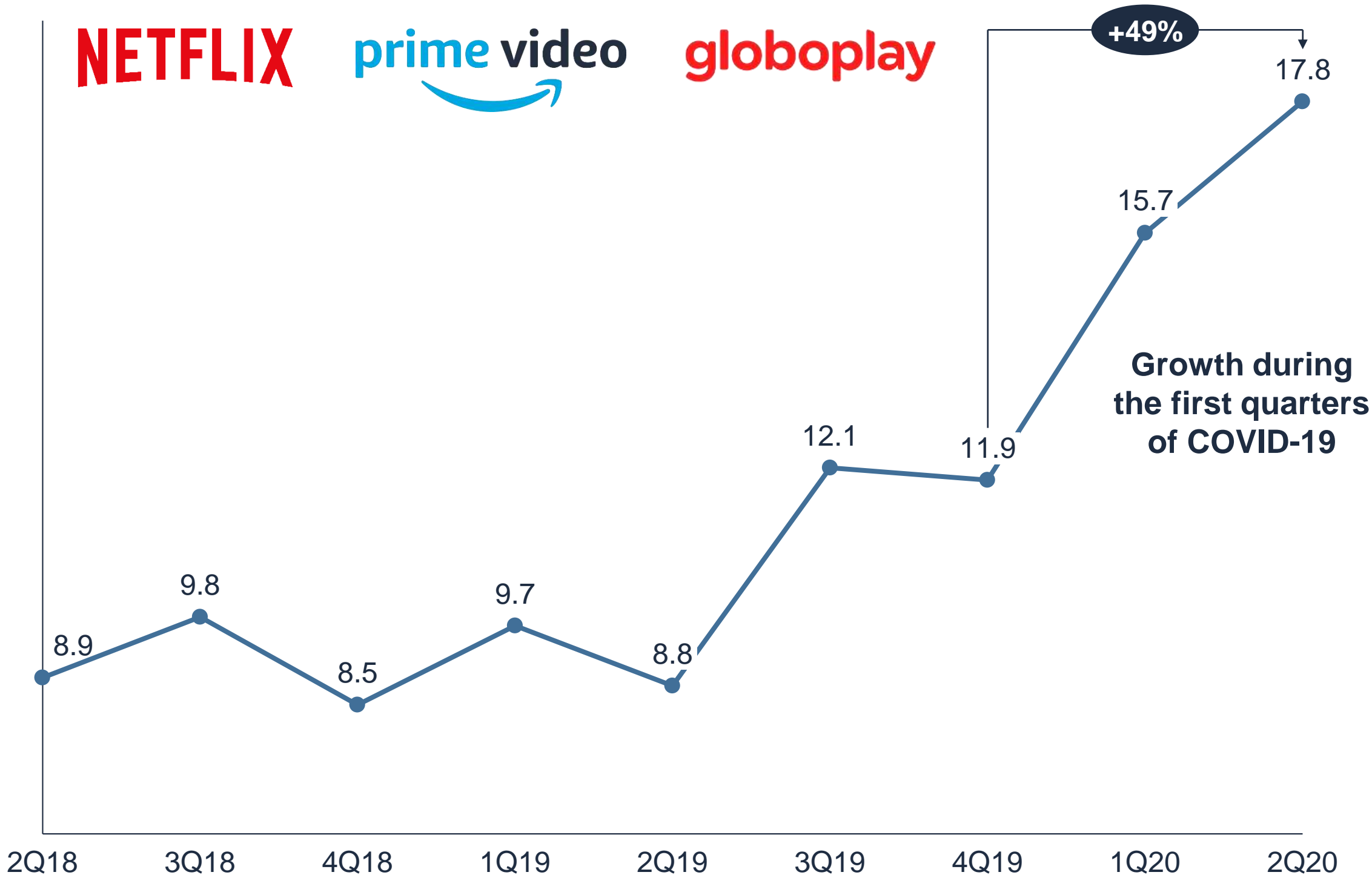
First 30 days of the Pandemic, 2020, indexed to 100²



The pandemic has accelerated growth in digital media penetration, further eroding traditional channels' position

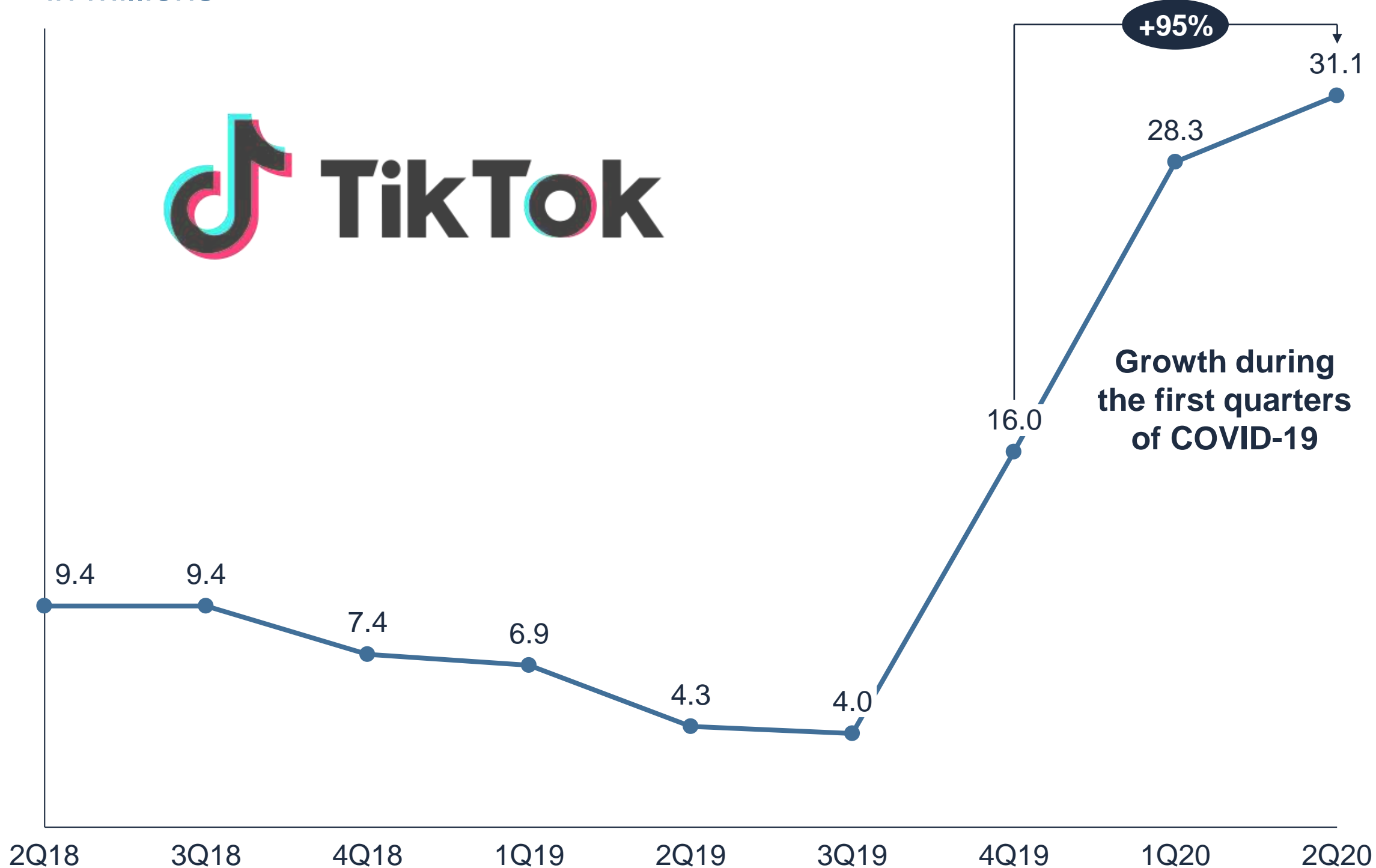
Streaming services are becoming increasingly popular in the region

Quarterly downloads of video streaming apps in Brazil, in millions



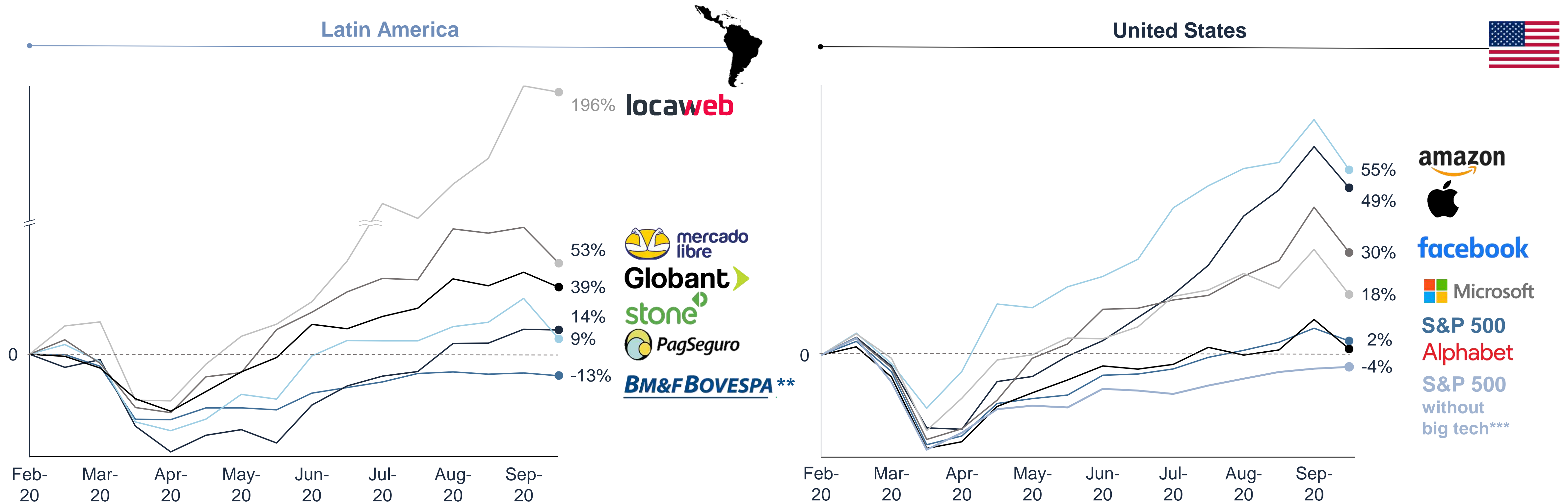
Social video apps are entering the Latin America market in full force

Quarterly downloads of TikTok in Brazil, Colombia, Mexico, and Argentina, in millions



“Flight to Tech”: Stock market performance suggests the pandemic is accelerating digital transformation

Stock market performance change since Feb. 1st, 2020*



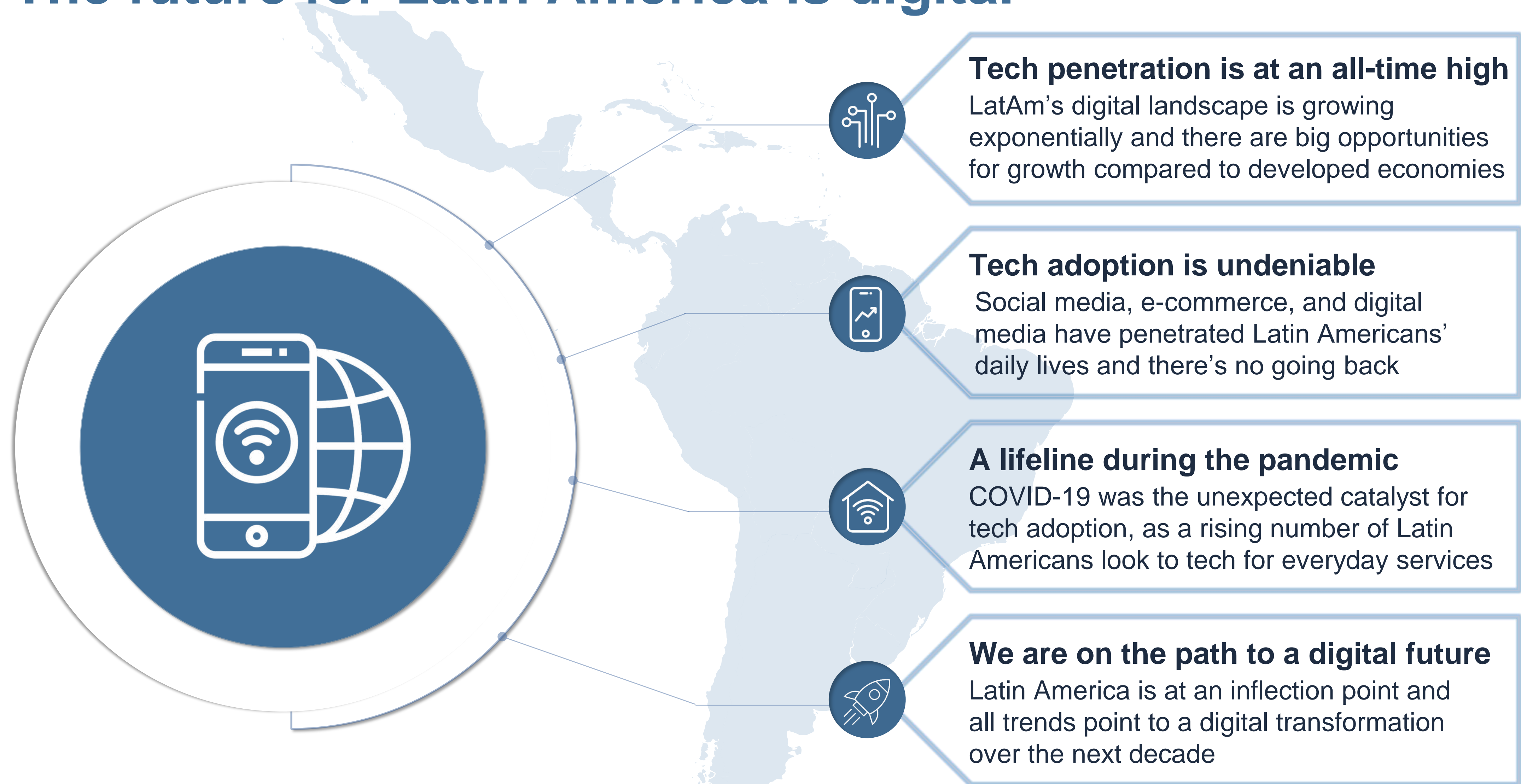
*Data points displayed for the beginning and middle of each month

**Data from BM&FBOVESPA Brazilian Stock Exchange Index listed in the NASDAQ, which includes the 50 largest public companies by market cap in Brazil

***S&P 500 index re-weighted without Amazon, Apple, Facebook, Microsoft, and Google. Data as of Sept. 14th, 2020

Sources: Capital IQ, Russel Investments

The future for Latin America is digital



Tech penetration is at an all-time high

LatAm's digital landscape is growing exponentially and there are big opportunities for growth compared to developed economies

Tech adoption is undeniable

Social media, e-commerce, and digital media have penetrated Latin Americans' daily lives and there's no going back

A lifeline during the pandemic

COVID-19 was the unexpected catalyst for tech adoption, as a rising number of Latin Americans look to tech for everyday services

We are on the path to a digital future

Latin America is at an inflection point and all trends point to a digital transformation over the next decade

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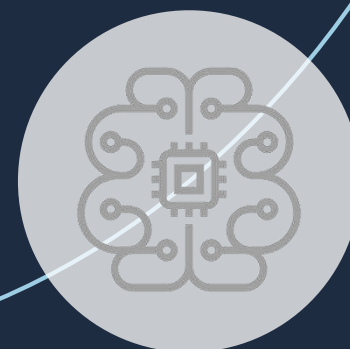
Socioeconomic Foundations



Technology Penetration in 2020



Drivers of Digital Acceleration



Conditions for Sectorial Transformation

Latin America Digital Transformation Report 2020



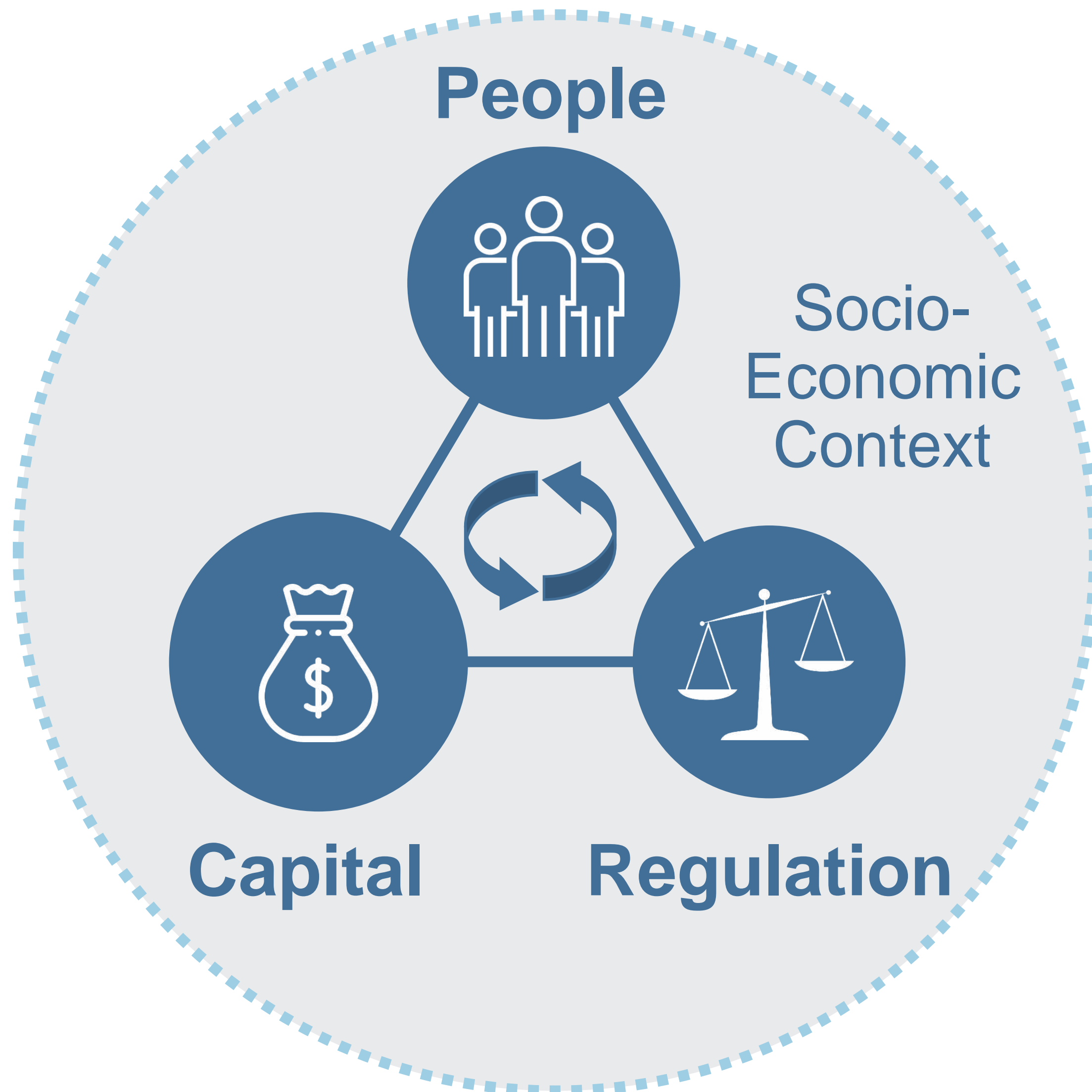
Drivers of Digital Acceleration

- The region's top graduates are choosing tech and entrepreneurship above all other fields, however, unmet demand for tech talent persists
- The gig economy has become one of the largest employers in the region
- Capital flow to fund innovation has greatly increased from various local and global sources
- The region has a history of pro-innovation regulation, but not without faults and risks

**We tend to overestimate
the effect of a technology
in the short run and
underestimate the effect in
the long run.**

- Amara's Law

Drivers of Digital Acceleration: A Framework



- We found three broad factors that drive the **timing** and **magnitude** of tech penetration
- The **socio-economic context** in which these factors occur define their behavior and likely impact, often leading to **unique outcomes** for different regions and times
- Key to understanding these factors is that they are inter-dependent and can **reinforce each other's impact**
- The **acceleration** we live is explained by the **flywheel** created as these factors continually reinforce each other



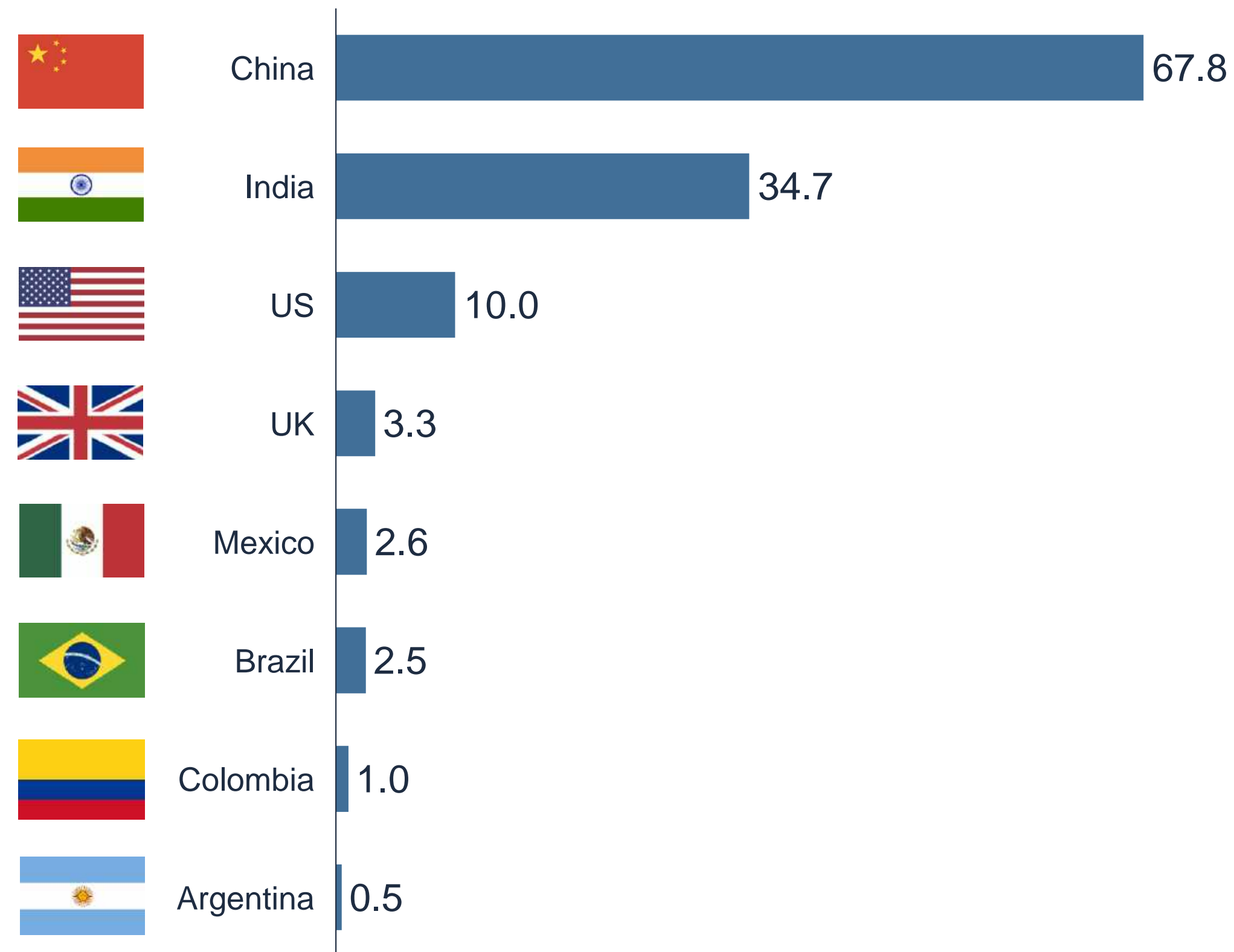
People

While new graduates are eager to fill tech jobs and launch startups, gig workers increasingly turn to startups for flexible sources of income

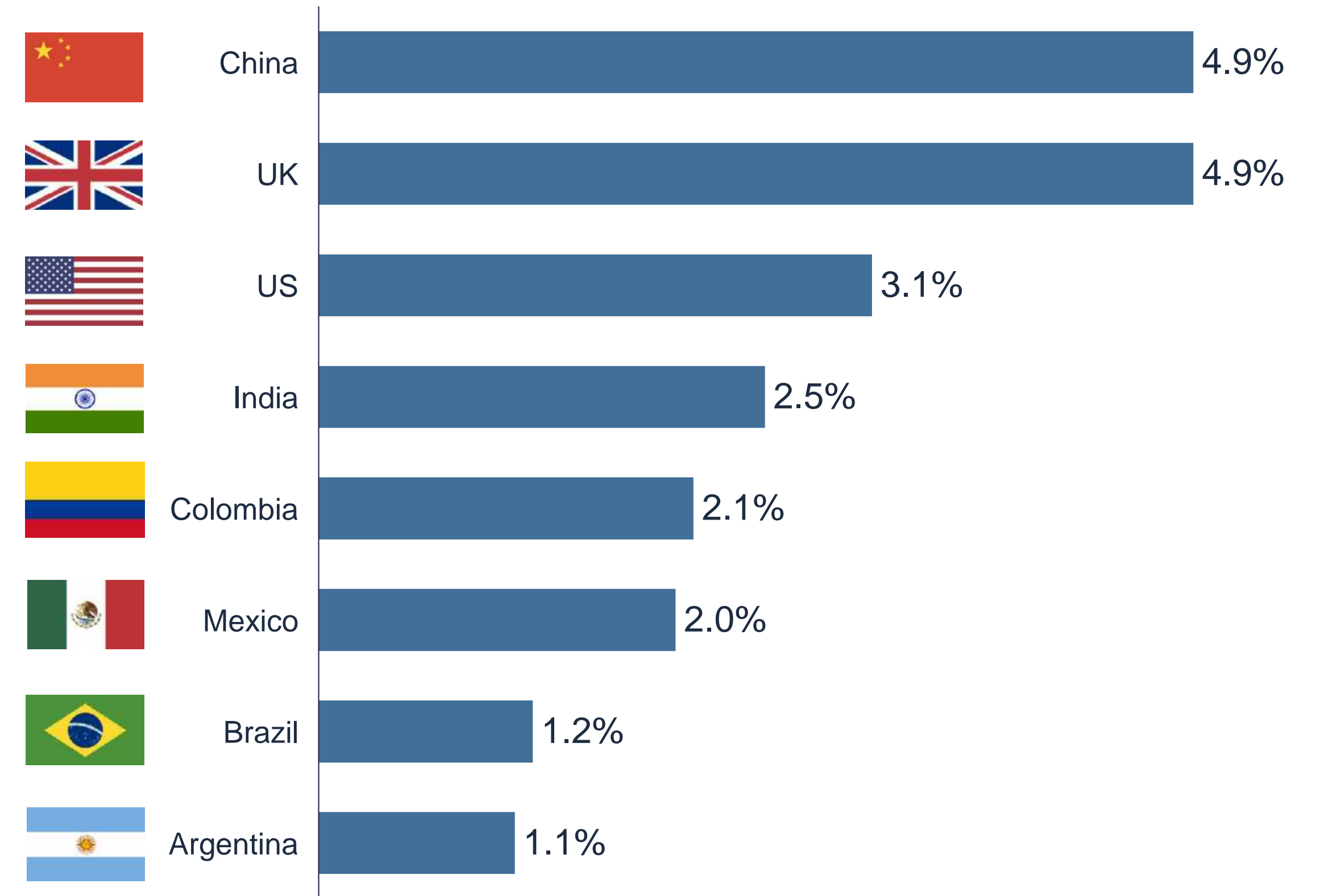
Historically, there has been a shortage of technical talent in Latin America

When we look at STEM* graduates relative to the population, Brazil and Mexico lag even other emerging economies

Total number of STEM* graduates in the last 20 years, in millions



Total STEM* graduates by 2019 population

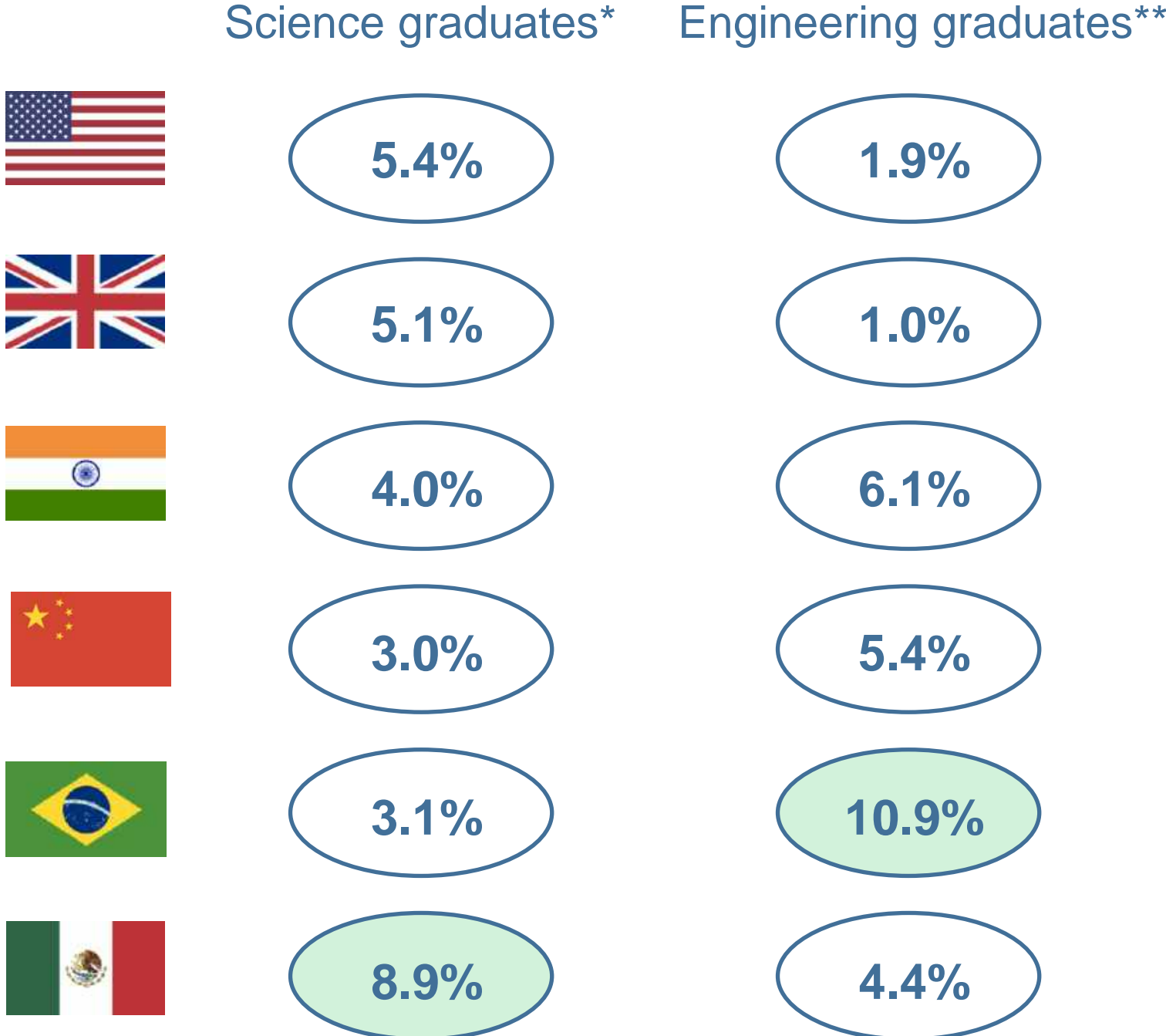


*STEM: Sciences, Technology, Engineering and Mathematics

Source: Atlantico Analysis with data from Euromonitor International – Economies and Consumers Annual Data and World Bank

The talent pool is growing, but not fast enough, leading large startups to “acqui-hire” to scale beyond current constraints

Compound Annual Growth Rate 2010-2019



Companies pursuing acqui-hires to fill the gap for technical talent

News headlines from 2019 and 2020; translated from Portuguese

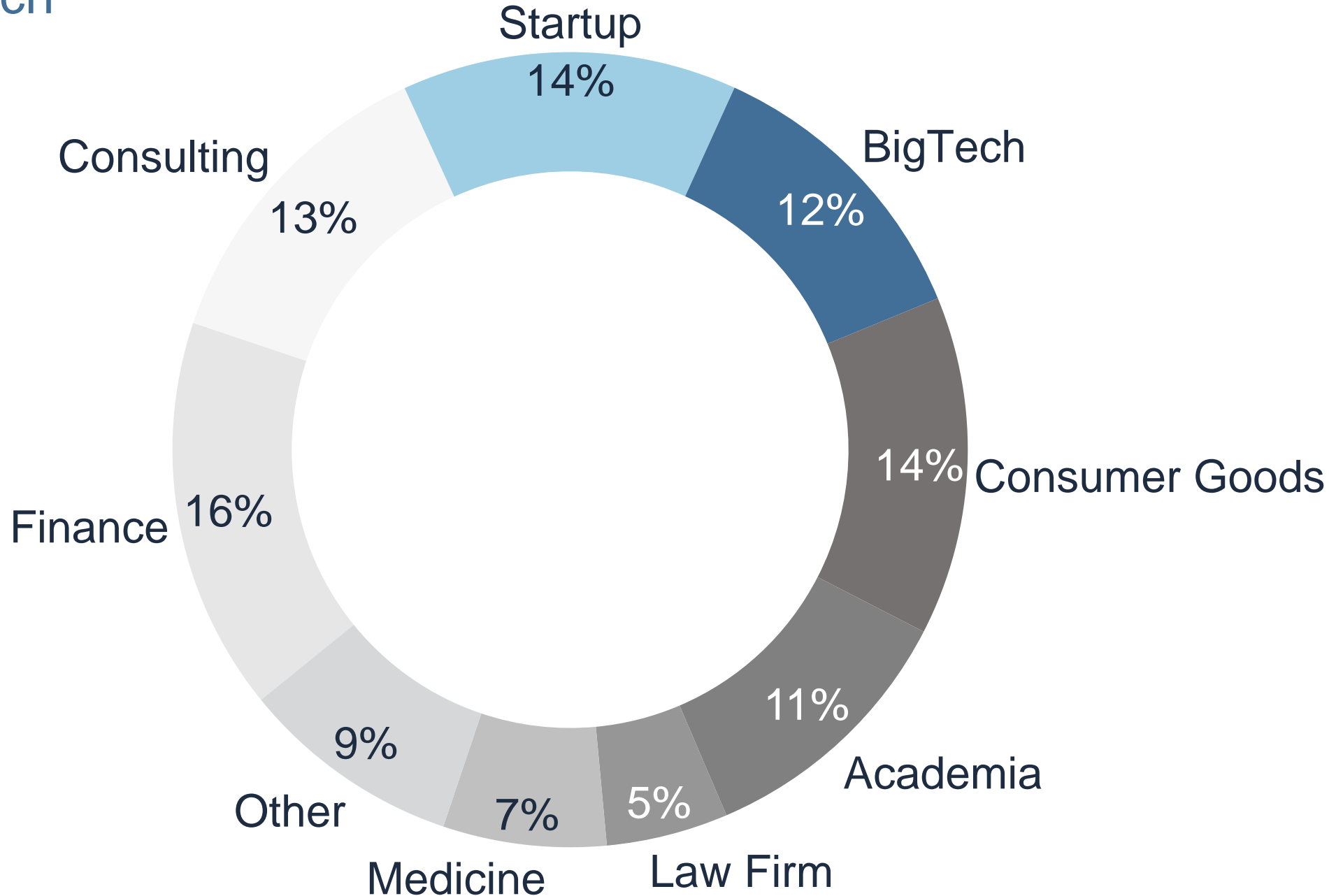
-  “iFood acqui-hires Brazilian startup for AI talent”
-  “Loggi acqui-hires WorldSense”
-  “Gympass buys Portuguese artificial intelligence startup”
-  “Fintech Nubank acqui-hires Plataformatec and its team of engineers”
-  “Nubank acquires US technology company Cognitect”

* ISCE definition, includes Life sciences, Physical Sciences, Mathematics, Computing, ** ISCE definition, includes Engineering and Manufacturing
 Source: Atlantico Analysis with data from Euromonitor International – Economies and Consumers Annual Data and UNESCO.

Students are looking to startups and technology companies to start their careers and are eager to start their own

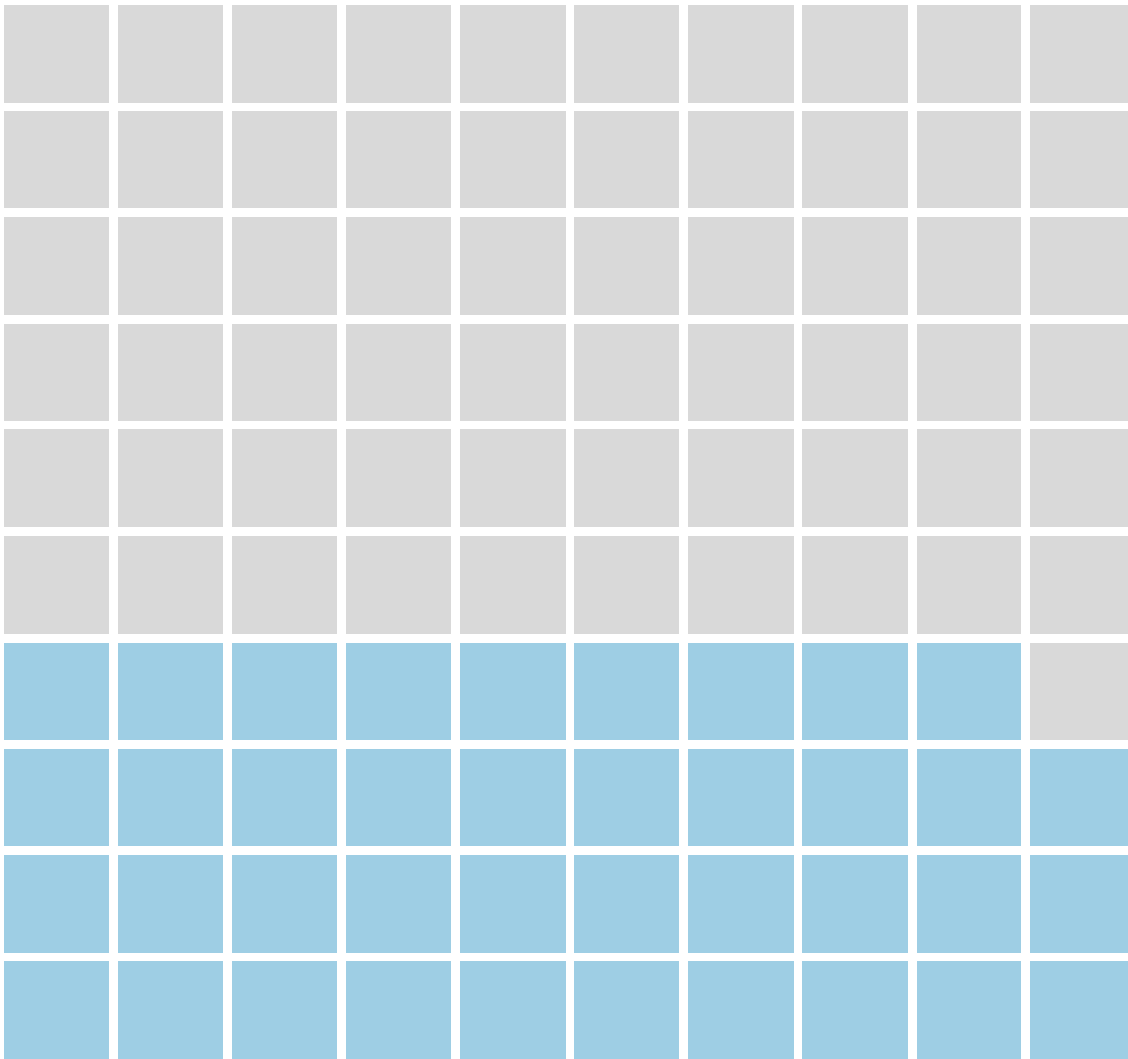
We conducted primary research with nearly 1700 Brazilian students from 301 universities to understand their career aspirations

26% of students want to work for startups or big tech*



27% are already interning at startups or big tech

39% of students plan on founding a startup in the future



This number increases to 60% among Computer Science Students and is similar, at 32%, for students of universities in the Top10**

Note: more information about the survey in the Appendix

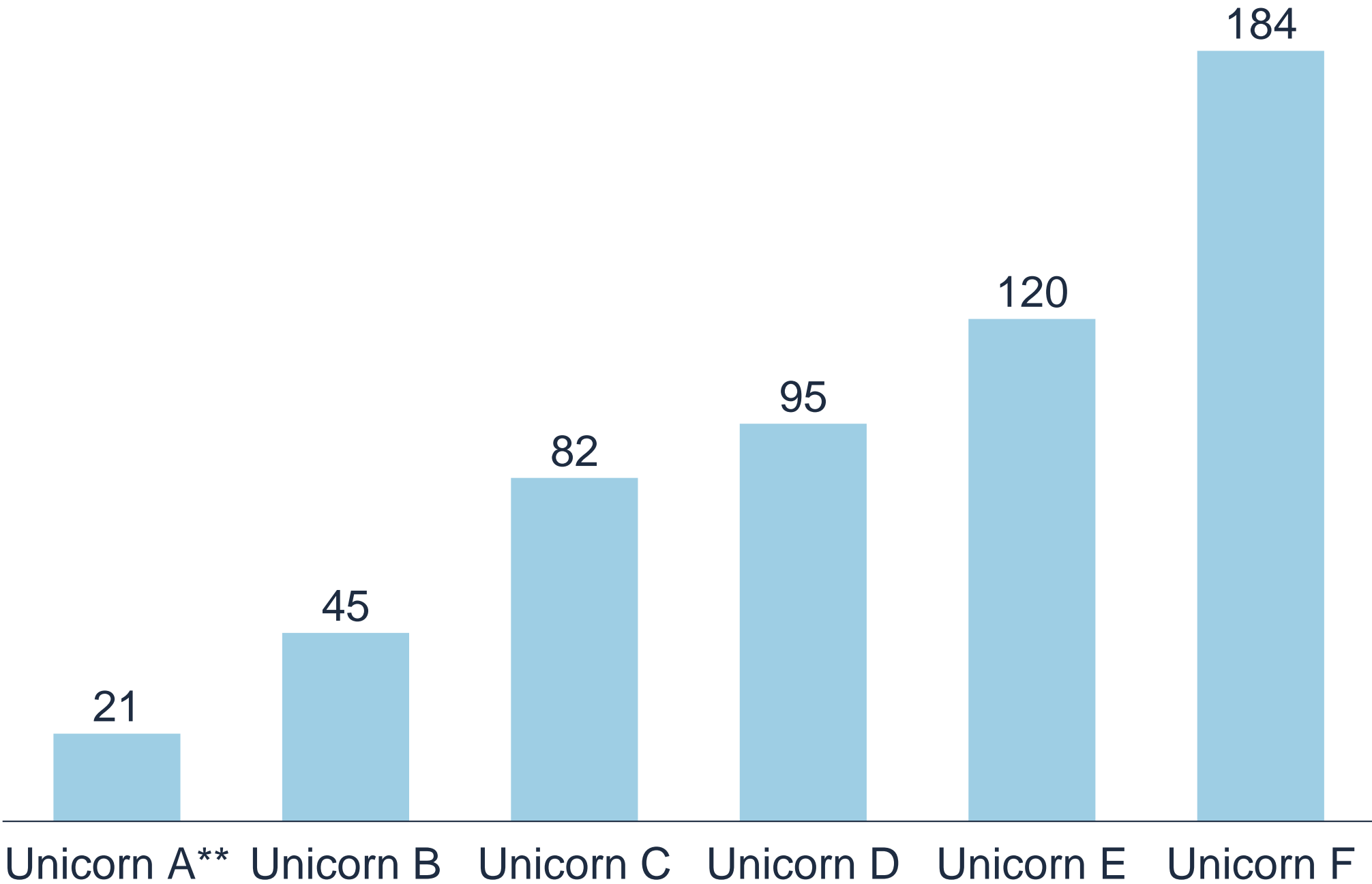
* This number jumps to 77% when considering only Computer Science students (n=103) ** Based on Times Higher Education ranking, best universities in Brazil, n = 454

Source: Atlantico Study June 2020: n = 1682, 1516 students in 236 universities in Brazil, 166 Brazilian students in 65 universities abroad

The pipeline for “Stock Option Millionaires” is strong among regional unicorns and should accelerate attraction of talent

“Unicorn Millionaires”

Number of employees with equity valued* at over R\$1M



- Historically, only founders got rich from successful startups
- With the widespread adoption of stock option programs, employees now share in the upside they contributed to build
- Employee stock options typically represent 6-10% of total equity in LatAm unicorns

* Equity value considers vested and unvested stock options and grants and does not consider strike price of options
** Each company here represents a real Latin American unicorn and numbers are real, company identities have been preserved for confidentiality
Source: Atlantico interviews with Latin American companies that have publicly been labelled “unicorns” by the media or by company releases

There is a growing demand and supply of gig workers to help scale tech companies, pushed further by the 2020 pandemic

Demand

In 2019, Uber, 99, iFood and Rappi became, together, the **largest private employer** in Brazil

3.8 M self-employed workers using delivery apps as a source of income in Brazil in 2019

Prior to Covid, Brazil was Uber's largest market by rides, with **22 M** monthly active users; and São Paulo and Rio de Janeiro are the #1 and #3 largest cities globally by rides

1.8x iFood almost doubled its number of couriers in 4 months (from 95K in Nov/19 to 170K in Mar/20)



Supply

Unemployment in Brazil reached a record rate of **14.3%** during the 2020 pandemic

40% of workers have the app as their only source of income

92% of workers plan on continuing to work with delivery after quarantine is over

70% of workers prefer this flexible work arrangement

*Research conducted with 1241 delivery workers between the 23rd and 26th of April
 Source: IBGE, Instituto Locomotiva, iFood internal materials, interviews, press clippings

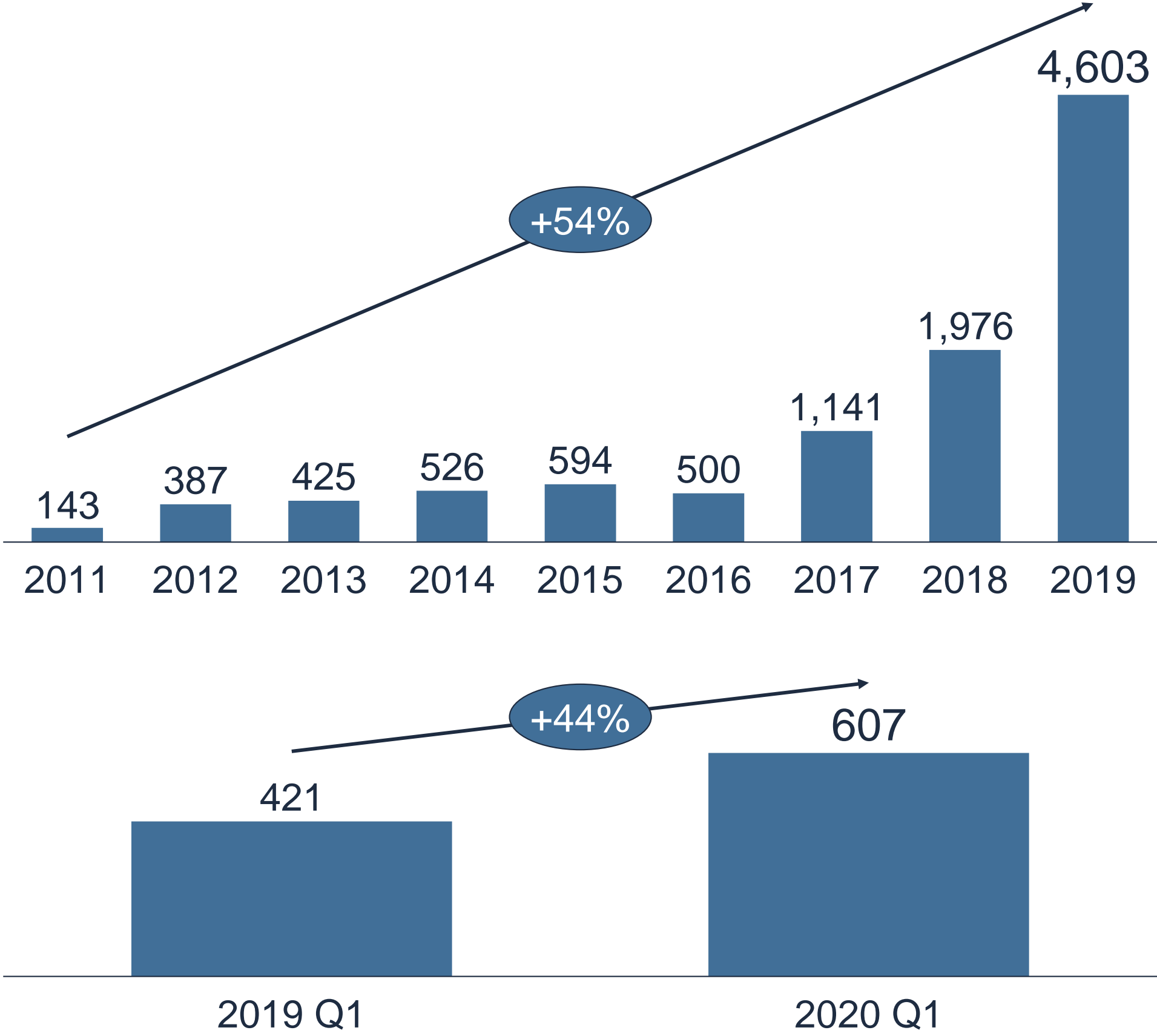


Capital

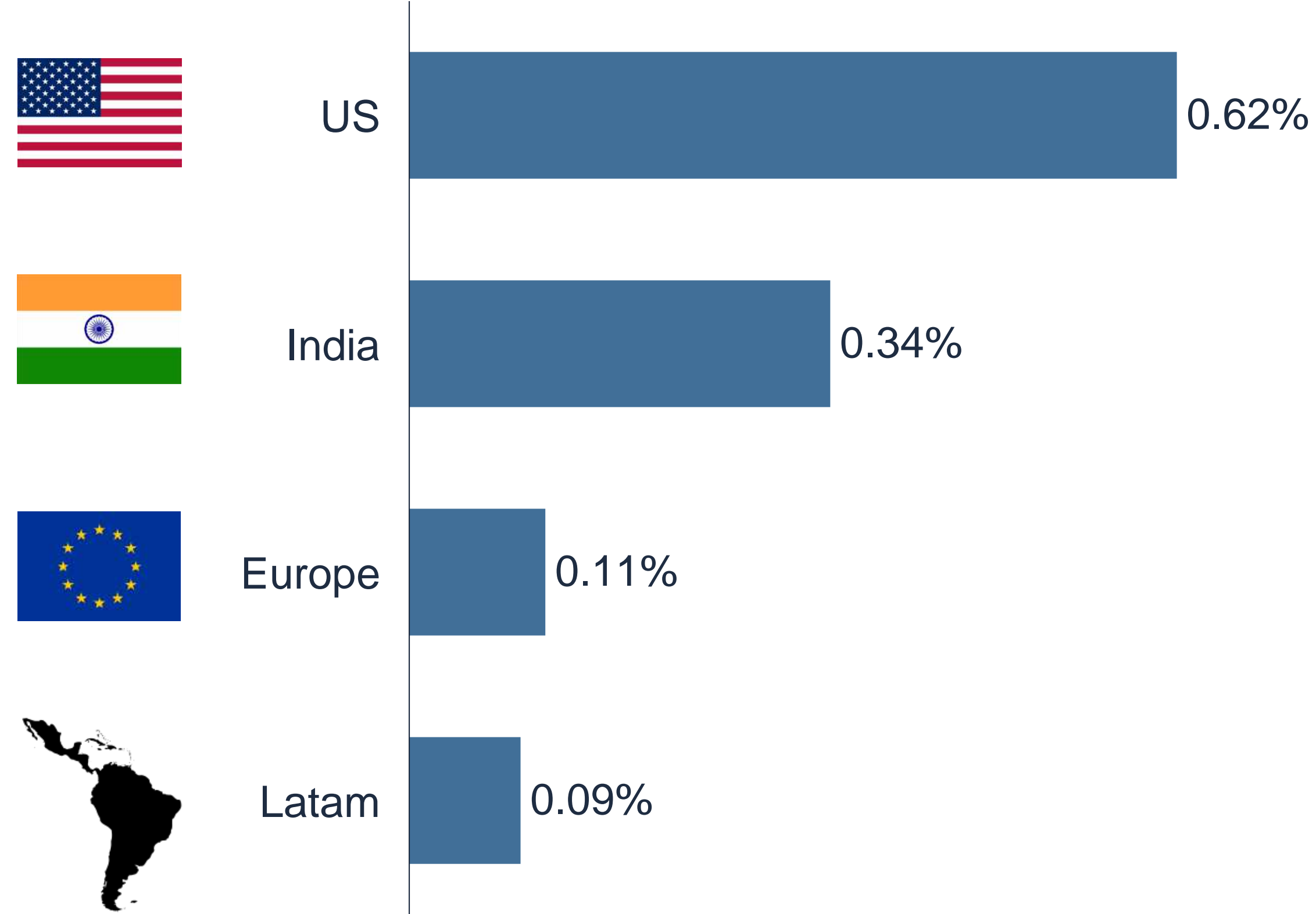
Although capital inflows to fund innovation have been rapidly increasing, the region is still far from its full potential

Venture Capital investment in LatAm is at an all-time high, however, it still lags other regions when adjusted by GDP

Venture Capital Investment in LatAm, in US\$ M¹

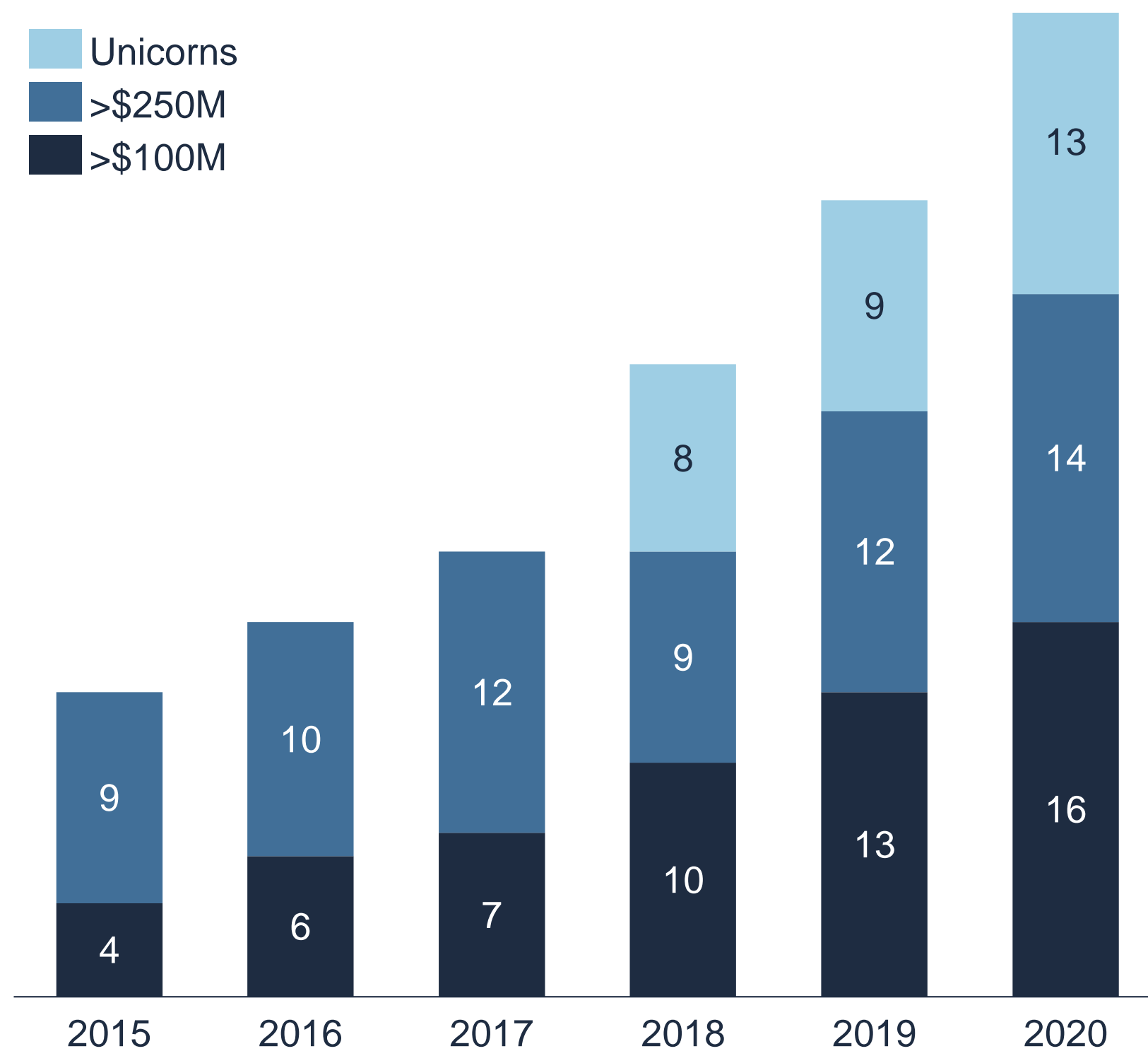


Venture Capital Investment as a % of GDP, 2019²



Local tech company growth has reached record levels in the private and public markets, with multiple liquidity events

Count of Private Tech Companies in Brazil by Valuation



2018-2019 Liquidity events showed that larger tech companies can go public in US exchanges or pursue acquisitions by international tech players

\$1Bn	\$16Bn	\$12Bn	\$2.2Bn
Acq: Didi	IPO (NASDAQ)	IPO (NYSE)	IPO (NASDAQ)

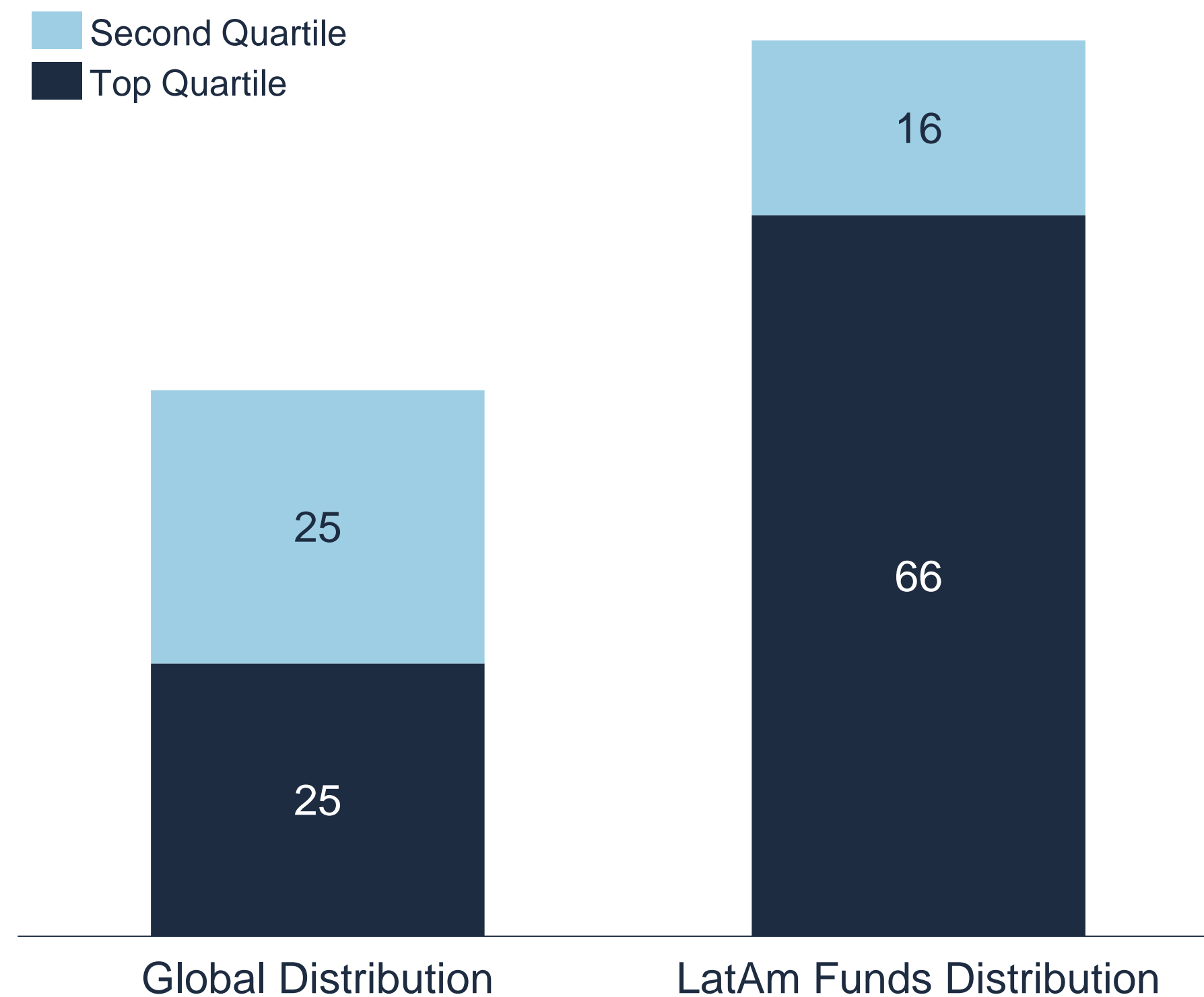
2020 Local Tech IPO Pipeline on Brazil's B3 has shown liquidity is available for Brazilian players

Completed	Expected Q4	Expected Q4	Expected Q4
\$1.3Bn			

Growth in tech has helped local venture funds out-perform global benchmarks and is attracting global investors to the region

Distribution of Regional Venture Funds*

% of funds performing in global benchmark top quartiles

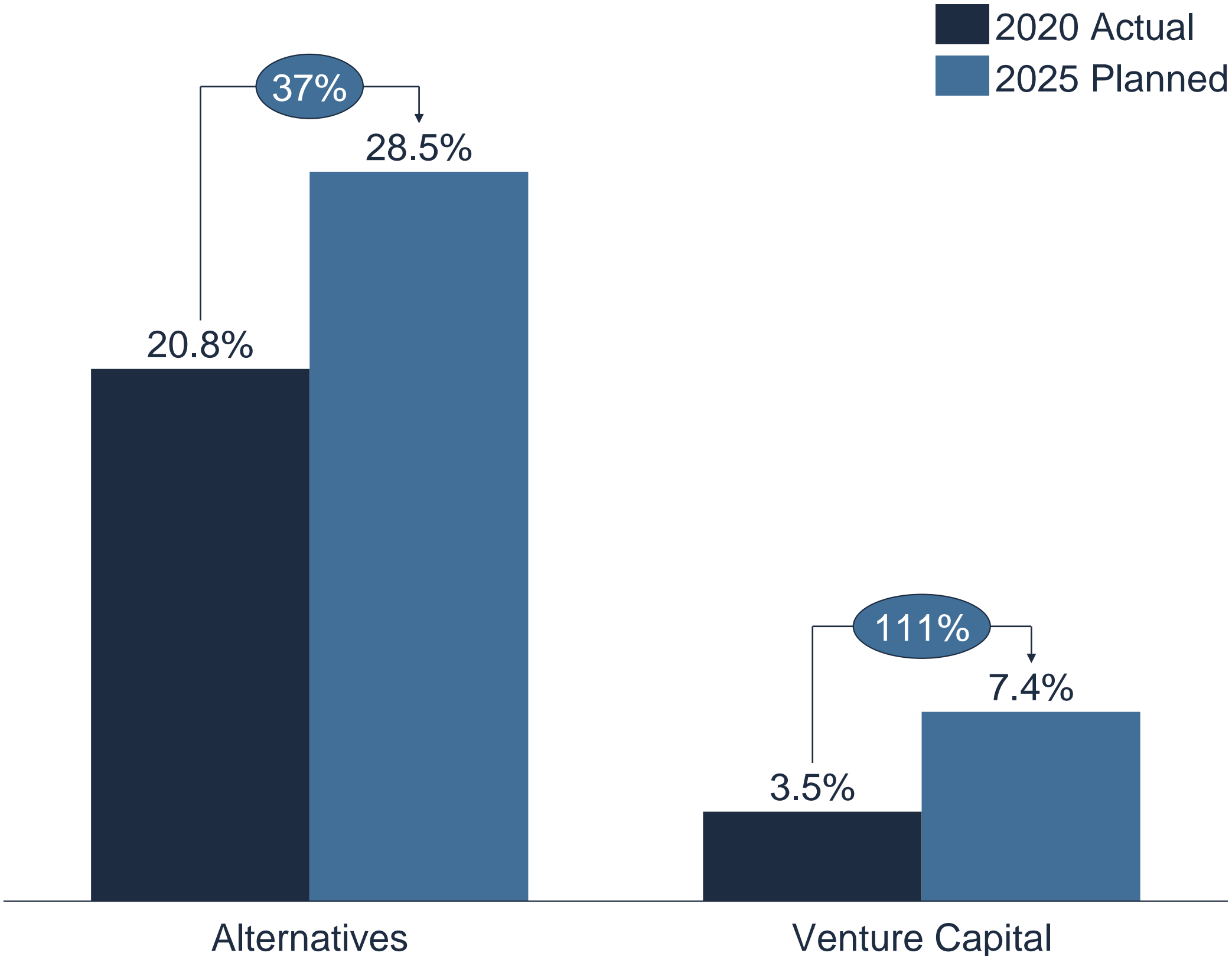


2020 Global Investors (examples)



Traditional capital from Brazilian family offices also anticipates a near doubling in its allocation to venture capital

Changes in Brazilian Family Office Capital Allocation by Asset Class



In a survey of 30 of the largest family offices in Brazil, families shared their plans to more than double their allocations to venture capital, driven primarily by a desire to seek greater returns in a scenario of low interest rates



Regulation

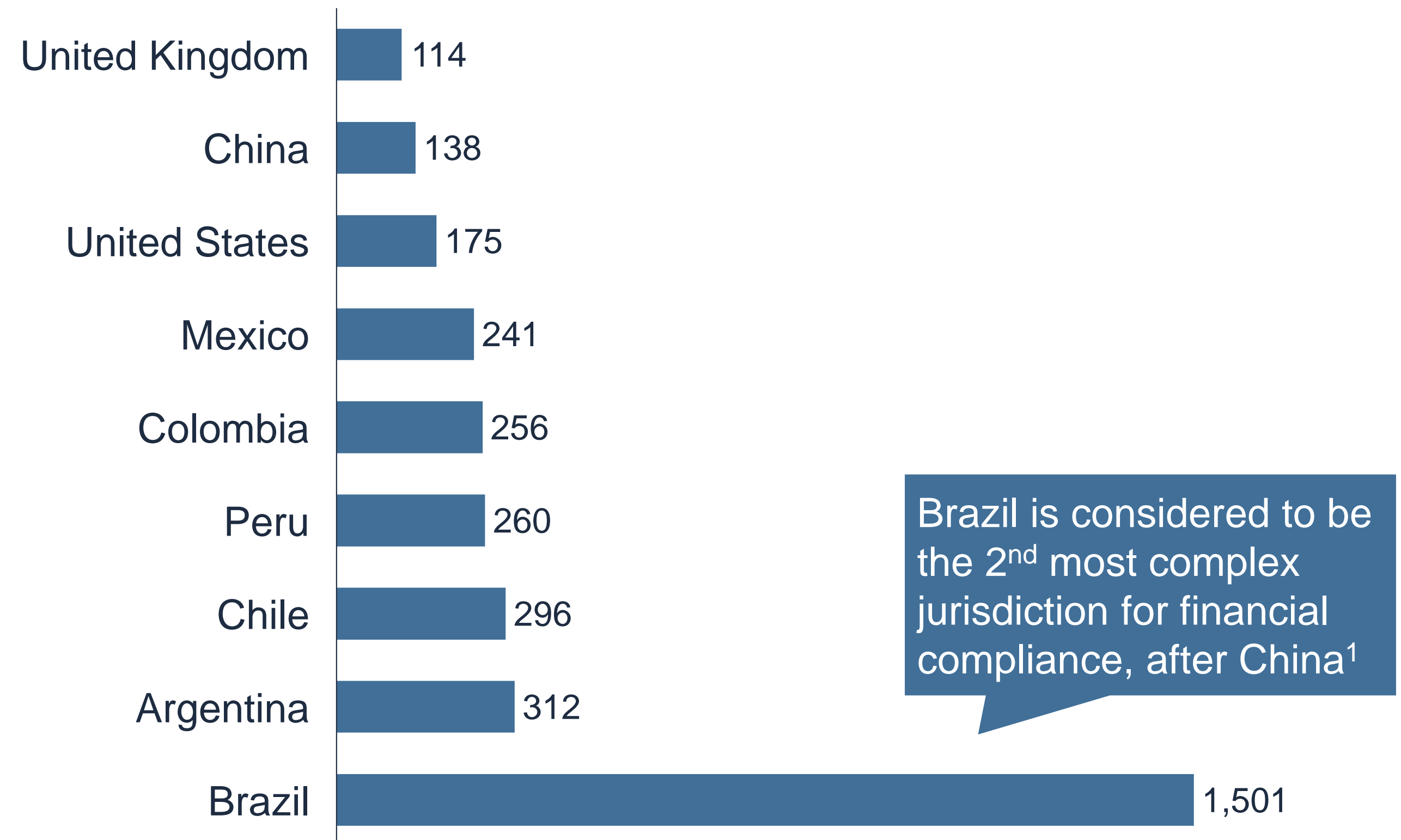
Although the region has a history of pro-innovation regulation, there are several critical ongoing debates often fueled by special interest groups that put progress at risk

Red tape and a complex tax system make it harder to do business in Latin America

Ease of Doing Business 2020 Ranking

	US	6th
	UK	8th
	China	31st
	Chile	59th
	Mexico	60th
	Colombia	67th
	Peru	76th
	Brazil	124th
	Argentina	126th

Time required to prepare and pay taxes
Hours per year, 2019



However, Latin America has a history of pro-innovation legislation

Chile: The Law of Businesses in One Day

Chile passed a law that allows entrepreneurs to start a business in just one day with no cost, with all paperwork available online¹



Argentina: The Entrepreneur's Law

Argentina passed several measures to improve the ease of doing business, create new channels of financing, provide attractive tax breaks and incentives for investors, and support accelerators/crowdfunding platforms¹

Brazil: New Regulations for the Innovation Law

Brazil passed a decree which allows public entities to support projects by science, technology and innovation companies and concedes tax exemptions on goods imported for R&D and innovation projects²



Mexico: The FinTech Law

Taking effect in 2020, the law offers a framework for fintech groups, such as crowdfunding and electronic payment funds, and provides a process for new fintech models. The legislation encouraged the rise of 100 new fintechs in 2018 alone³

Latin America: Open Government Data

The LAC region has the largest number of countries adopting the International Open Data Charter. 81% of countries have an appropriate medium-term OGD strategy^{4*}



*Compared to the 84% OECD average

Sources: (1) Techcrunch, (2) The American Bar Association, (3) SP Global, (4) OECD Government at a Glance Latin America 2020

The COVID-19 crisis pushed regulatory change even further

Education & Healthcare

ámbito

AR

They enact the law that enables distance education

GOV BR

BR

MEC authorizes distance learning in classroom courses

senadonoticias

BR

Senate approves use of telemedicine during covid-19 pandemic

Communications & Teleworking



AR

Argentina approves teleworking law



BR

Anatel decides that offer of channels on the Internet is not pay TV service

CHILE reports

CL

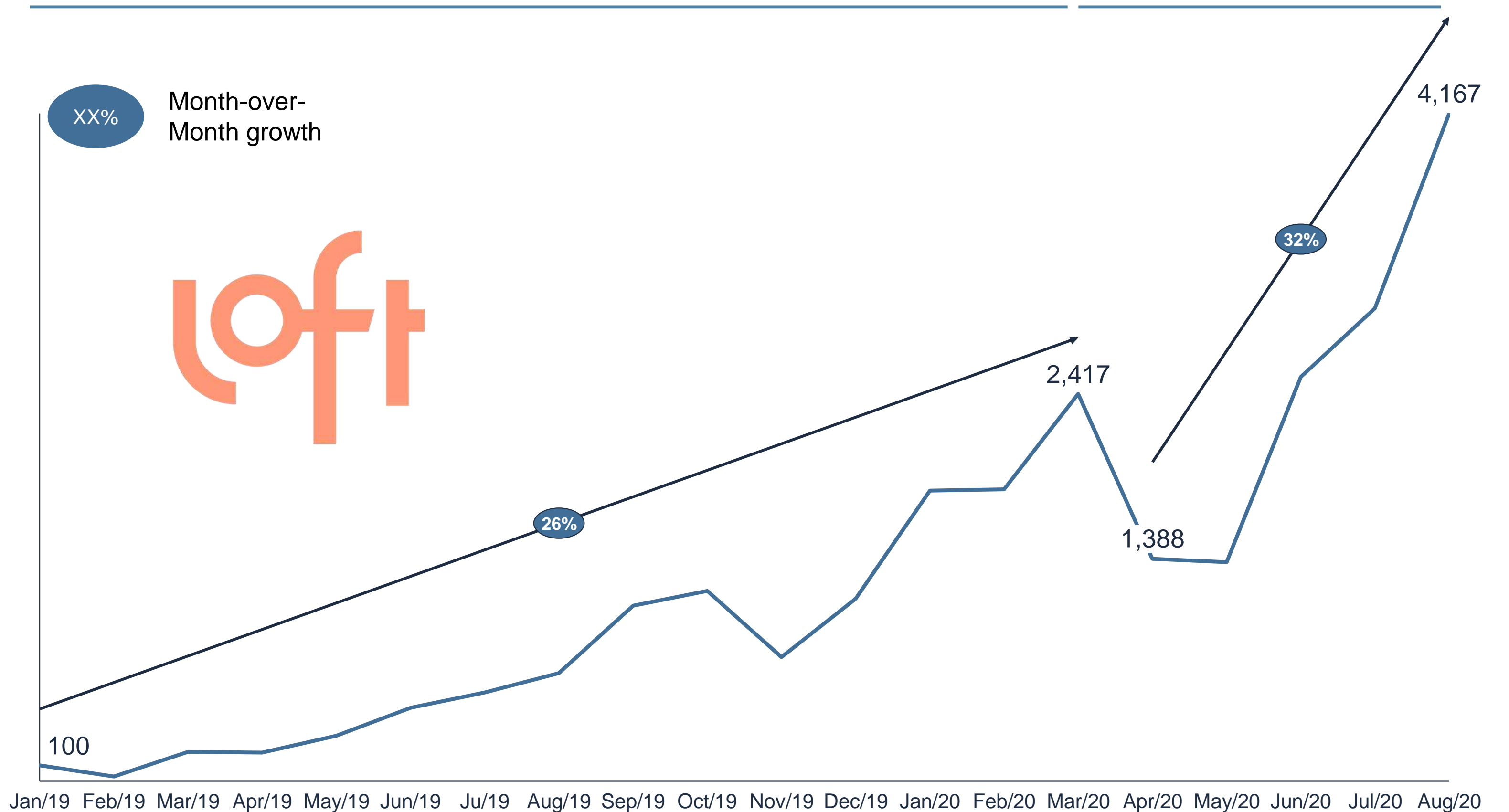
President Piñera enacts the law to regulate remote working, giving workers more opportunities and greater freedom

Loft: Brazilian Real estate platform paved the way for regulatory flexibility to eliminate red tape and accelerated GMV growth

- Loft completed Brazil's first online deed signing, accepted by regulators due to pandemic
- Restrictions on face-to-face interactions are triggering behavioral shifts toward tech solutions such as the Loft Broker App, which combines workflow tools with virtual home visits
- Number of qualified leads generated via the Loft broker app grew 5X during the pandemic reaching a peak of 40k in the month of August

GMV indexed to 100
Pre-Covid-19 Pandemic

Post-Covid-19



Important decisions for innovation in the region remain in limbo

NOKIA

5G could deliver up to \$3.3 trillion of economic and social value in Latin America by 2035

28 August 2020

- 5G implementation will allow for a 10x faster connection, essential to promote Internet of Things (IoT), telemedicine, remote work, among other innovations
- If not implemented fast enough, LatAm will become a buyer of 5G applications instead of developer - a big missed opportunity for innovation in the region
- In Brazil, concerns about national security by the Federal Government and competition from new entrants is delaying decision-making

BBC Menu

NEWS | BRASIL

Neither CLT nor autonomous: the bill that wants to 'regulate' the relationship of applications with workers

🕒 14 July 2020

- A bill to regulate the relationship between gig workers and service platforms is under debate
- It proposes that companies contribute to social security, pay a minimum amount per hour, pay for waiting time (although not in full), provide personal protective equipment and do not terminate a worker without a legal reason

AgênciaBrasil

Government approves structure of the National Data Protection Authority

Body is subordinate to the Presidency of the Republic

Published on 27/08/2020 - 12:03

- The LGPD (Brazilian data protection law) will come into force in September 2020 and its regulatory body's structure has just been defined
- It's still under discussion who will compose the body: military, businesspeople, or a mix of both. This definition will say whether the body will act pro-innovation or not

Digital drivers are fueling lasting societal change

People

While Latin America still has a large technical talent gap to fill, the future is promising. New graduates are eager to start their careers in technology and become entrepreneurs themselves, while unemployed and underemployed workers are turning to start-ups to boost their income

Capital

As capital flows towards entrepreneurship and innovation, start-ups are seeing the results, with multiple liquidity events and foreign investors entering the region. There is still plenty room for growth compared to developed economies.

Regulation

Despite bureaucracy and implementation challenges, Latin America is showing an increase willingness to pass pro-innovation legislation. Legislators are fuelling tech penetration and adoption across the region even during the COVID-19 crisis



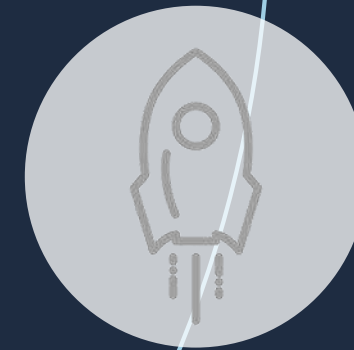
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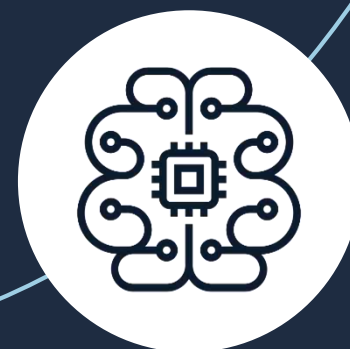
Socioeconomic Foundations



Technology Penetration in 2020

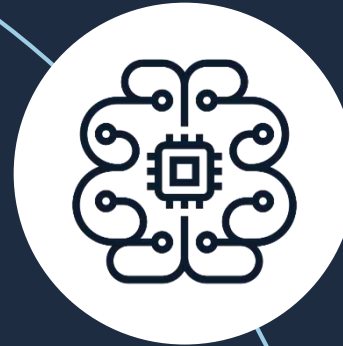


Drivers of Digital Acceleration



Conditions for Sectorial Transformation

Latin America Digital Transformation Report 2020



Conditions for Sectorial Transformation

- The mix of dissatisfied customers, a large financial incentive, and regulatory changes have ushered in transformation by *fintechs* entering the financial services sector
- Healthcare and education share similar traits to that of financial services, and are showing early signs of being fertile grounds for digitalization
- The Covid-19 pandemic accelerated transformation by driving the removal of outdated regulatory barriers kept in place by special interest groups

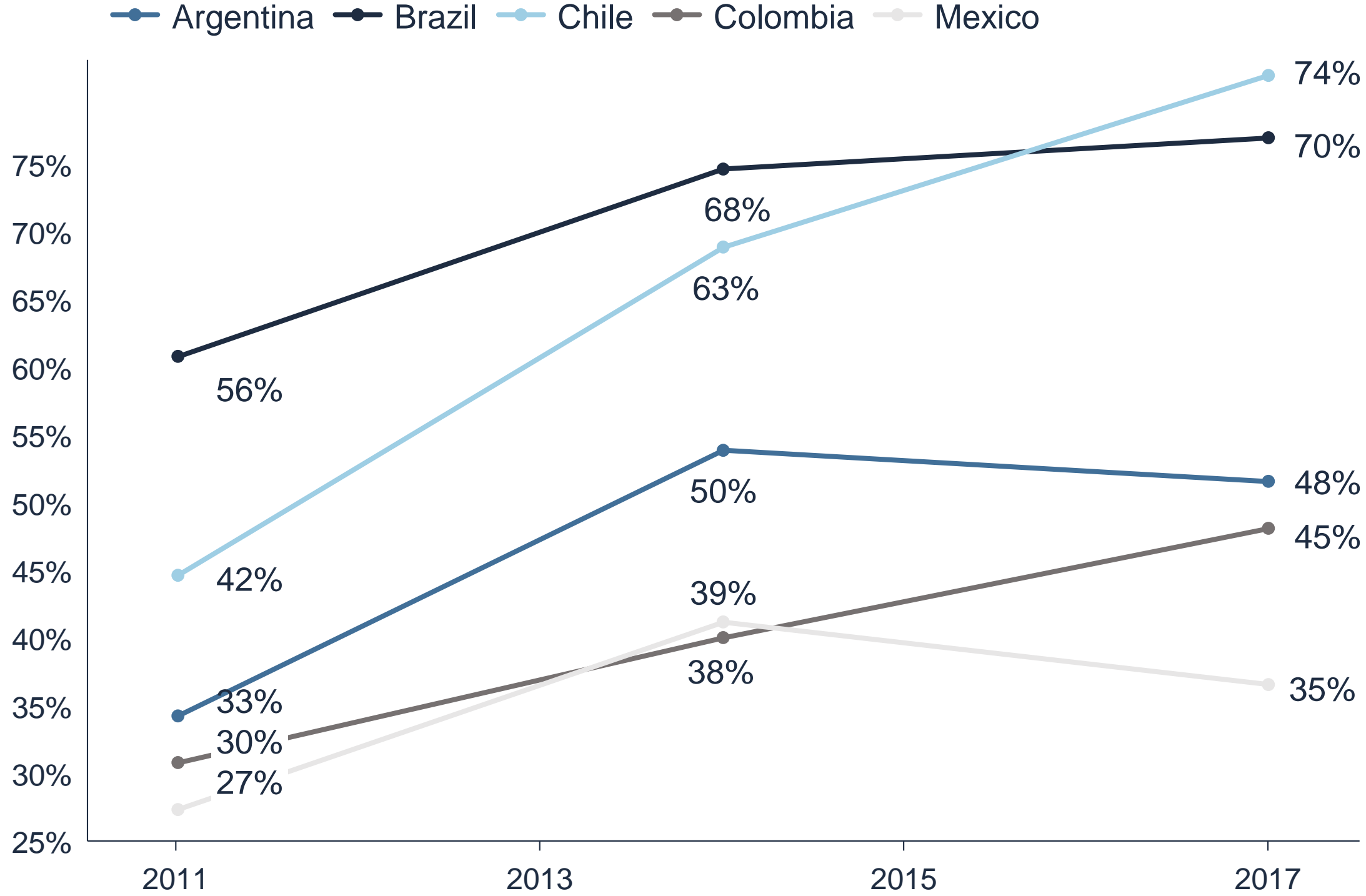
Financial Services is perhaps the most notable sector to be impacted by tech. So far.

This is only the beginning. Ironically, the accelerating pace of disruption can quickly turn today's disruptors into tomorrow's disrupted.

Financial Services: Why the future arrived here first

Around 49% of people in Latin America remain excluded from formal financial institutions

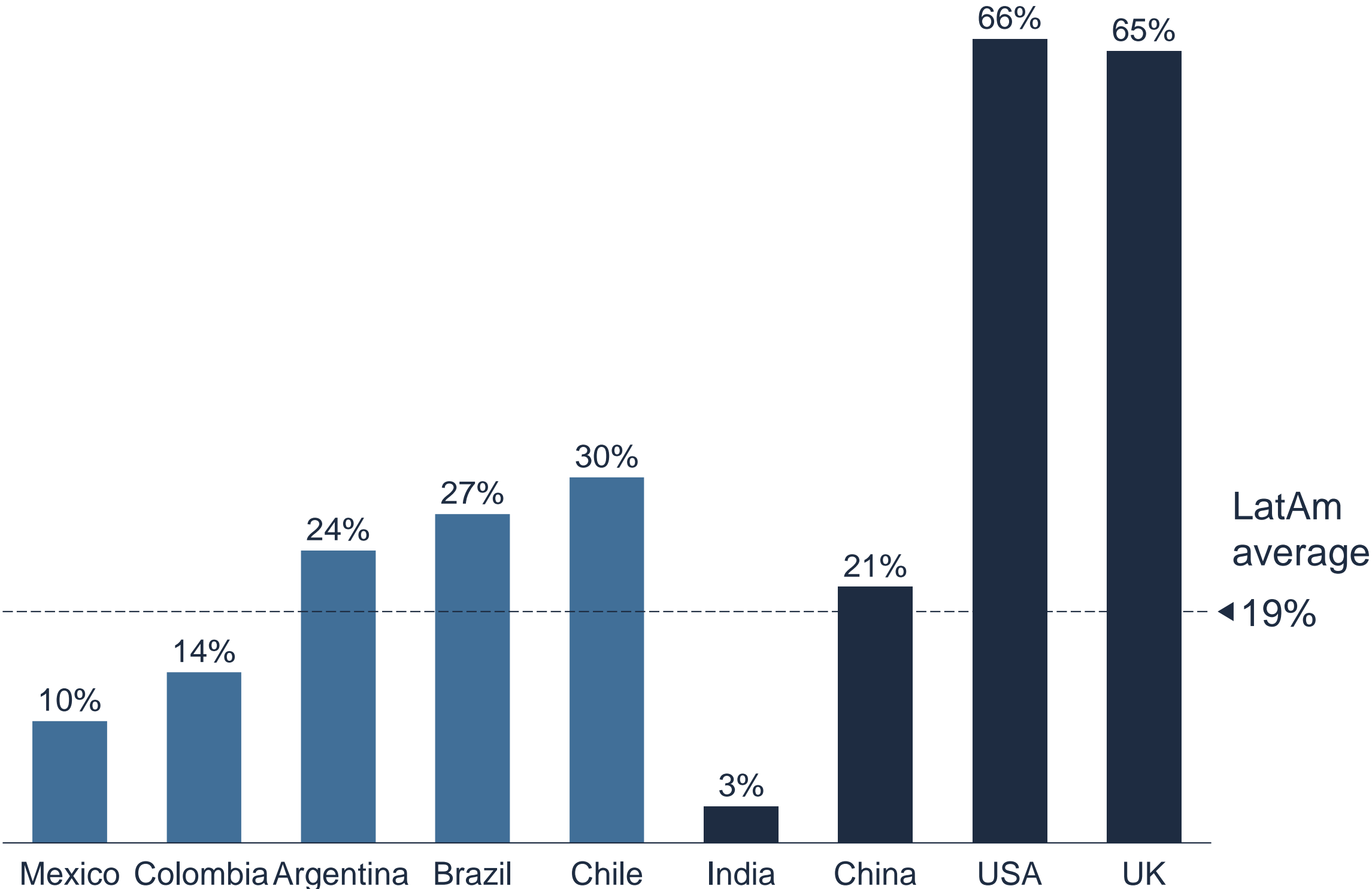
Population with an account at a formal financial institution
% age 15+



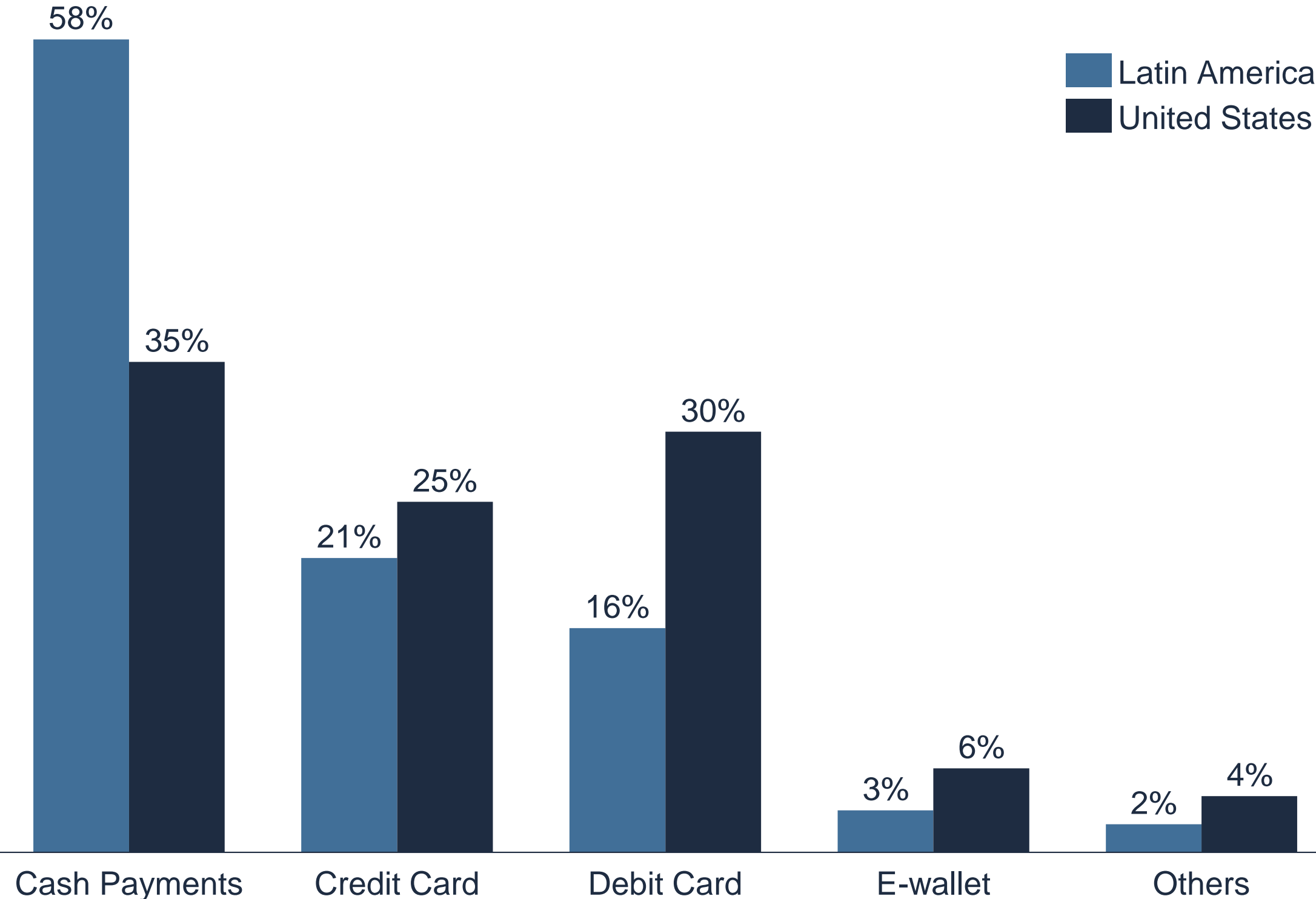
- It is expected that this number for Brazil in 2020 reaches 85%, since stimulus payments during the Covid-19 crisis in Brazil were distributed through Caixa Tem, an app that created a deposit account for the unbanked population
- In high-income economies, the average account ownership is 80%, reaching levels above 95% in countries like the UK and the US

Latin Americans lack access to credit, and cash payments dominate commercial transactions

Credit card ownership among population aged 15+ in 2017¹

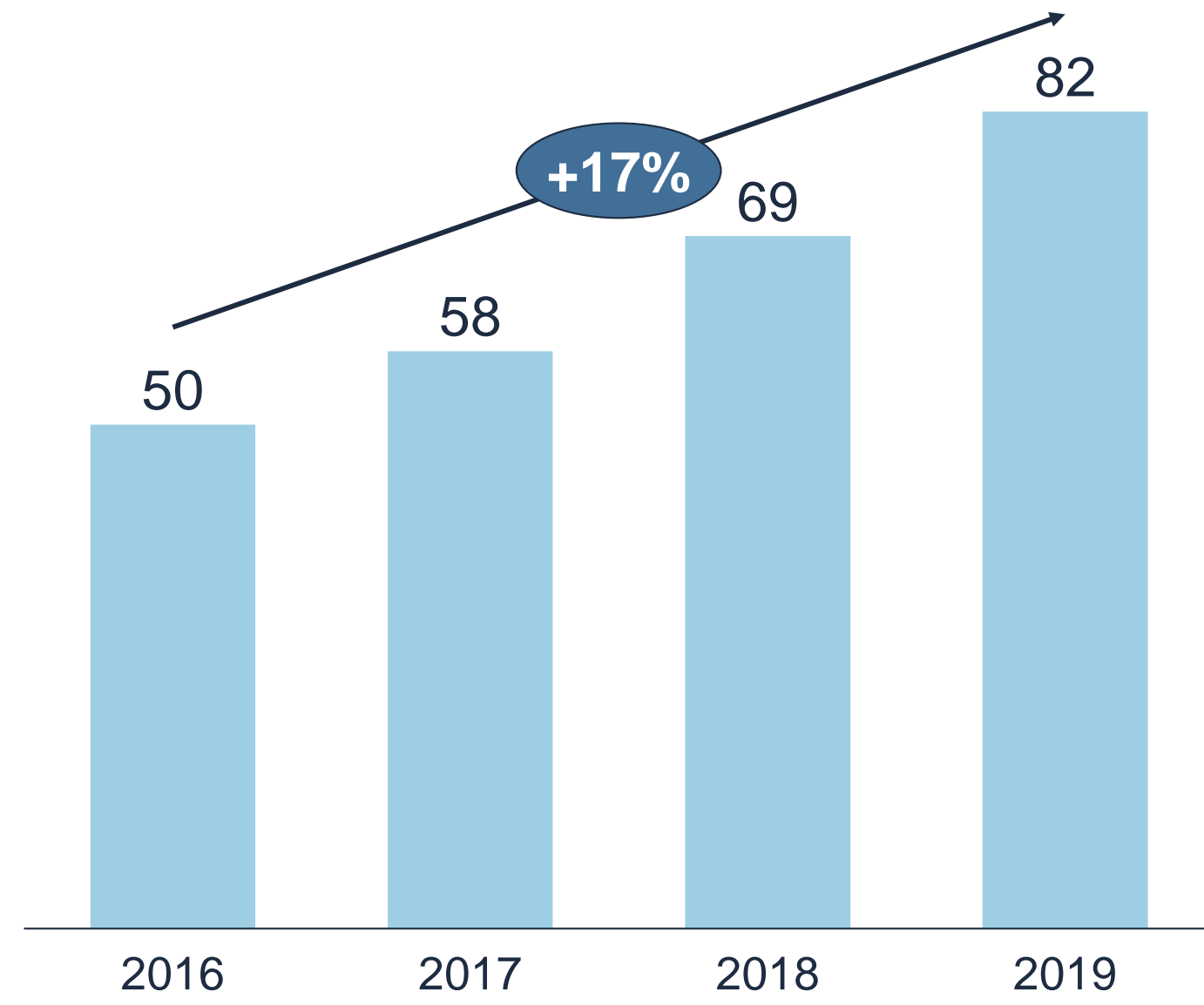


In-person payment method used for commercial transactions in 2018²



Large banks in Brazil enjoy growing profit pools and the largest returns on equity (ROE) in the world

Annual profits of four largest banks (R\$ B)¹

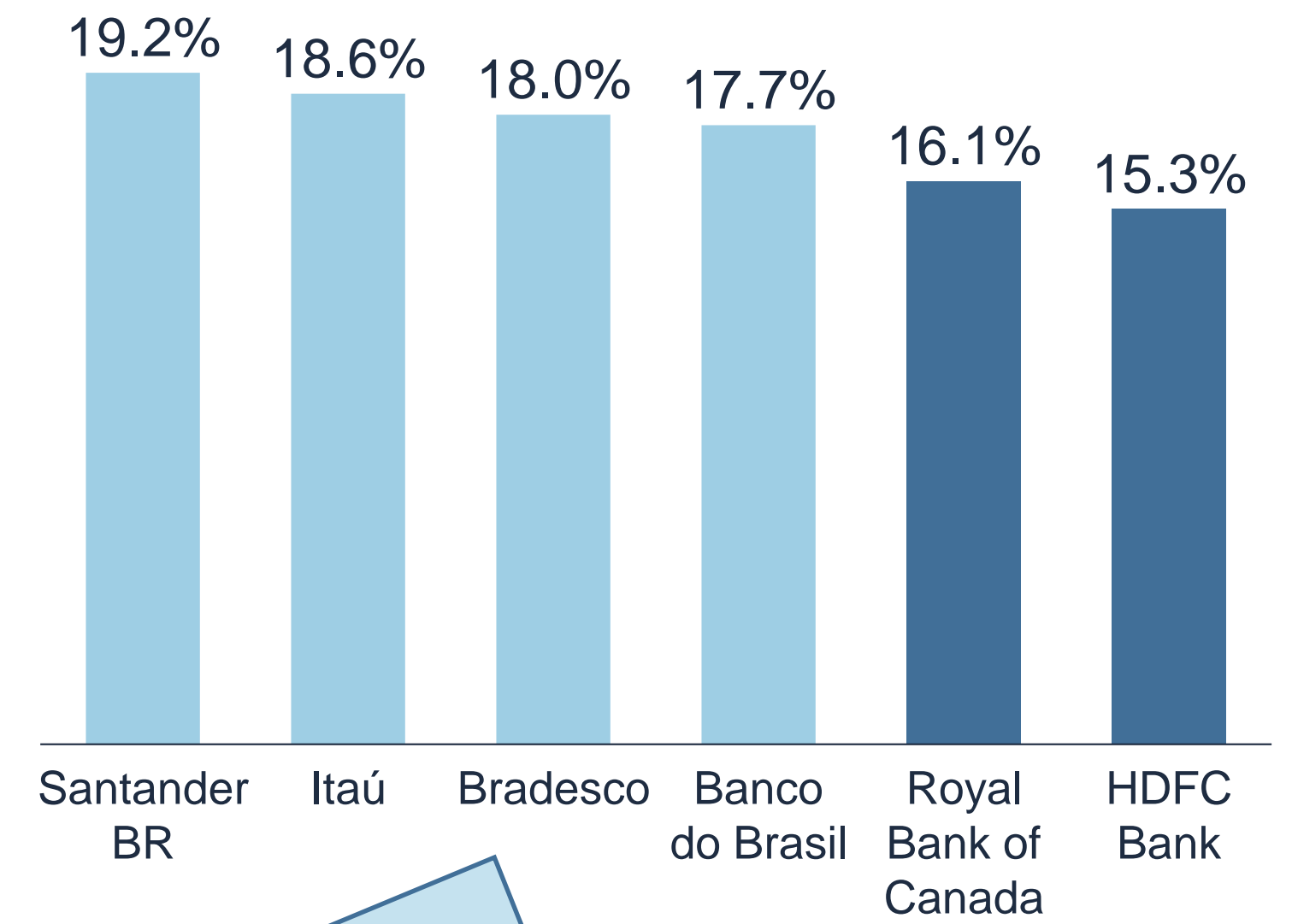


83% of Brazilian assets are concentrated in five banks*



The largest private banks in Brazil have the highest ROEs in the world

Return on Equity on 3Q19**2



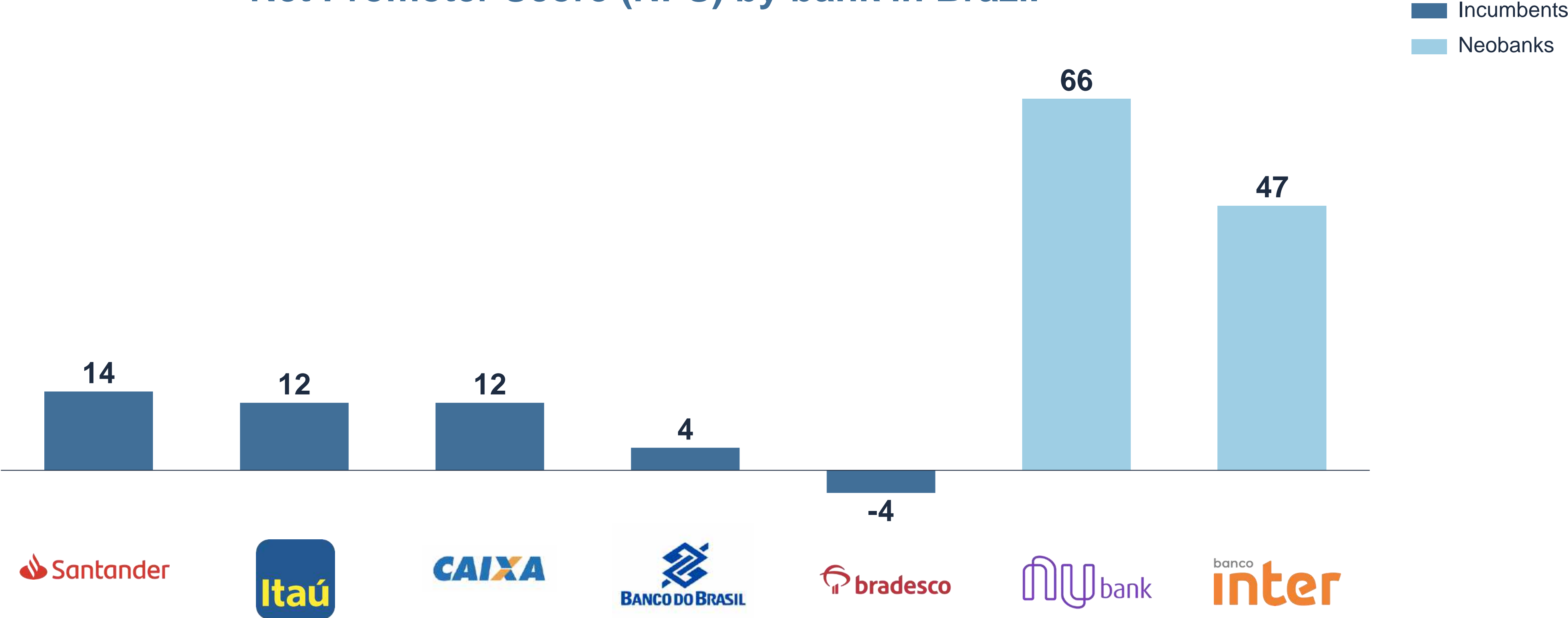
The median ROE in Brazil was 18.3%, while in the US it was 10.7% for the same period.

* Asset concentration for other countries in LatAm can be found in the Appendix, ** Only banks with over 100 B US\$ in assets and ADRs listed on NYSE

Source: (1) S&P Global, Banco Central do Brasil, (2) Economica

While customer satisfaction with Brazilian traditional banks is low, satisfaction with neobanks is very high

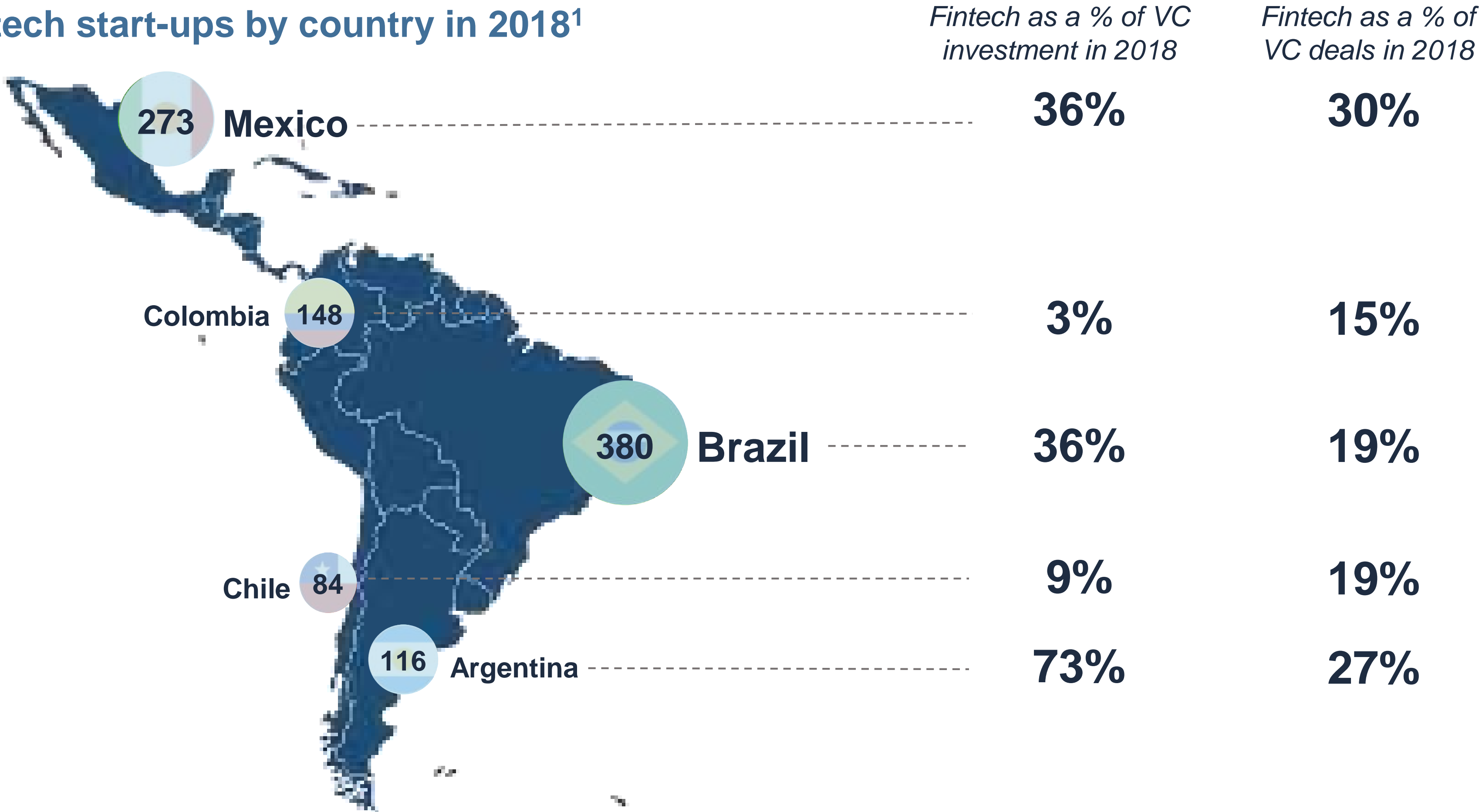
Net Promoter Score (NPS) by bank in Brazil



The combination of customer dissatisfaction and a large financial prize created the perfect storm for fintech disruption

Fintech is booming in Latin America, receiving the most Venture Capital investment in the region

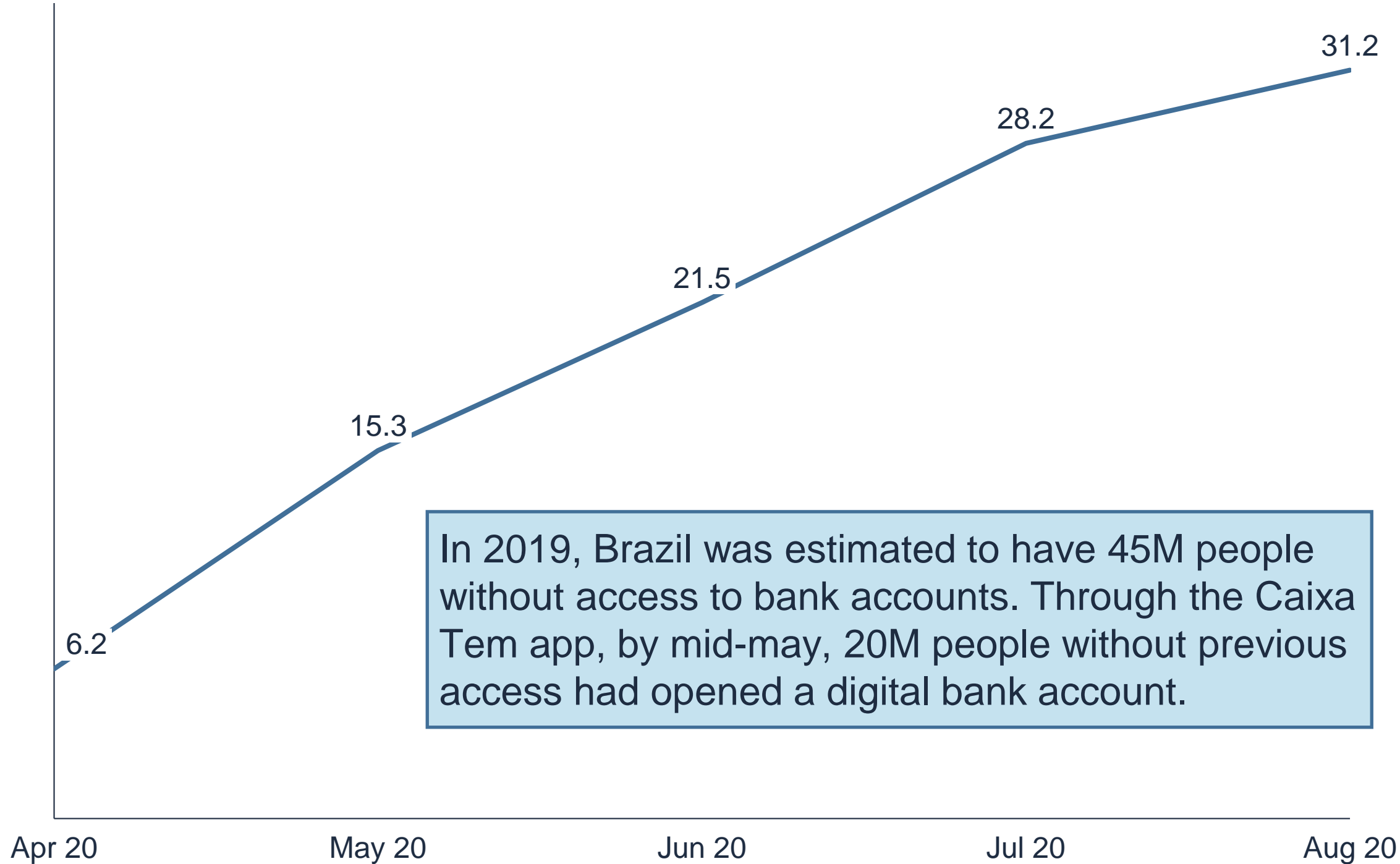
Fintech start-ups by country in 2018¹



COVID-19 is accelerating disruption, as an increasing share of the population gains access to financial services

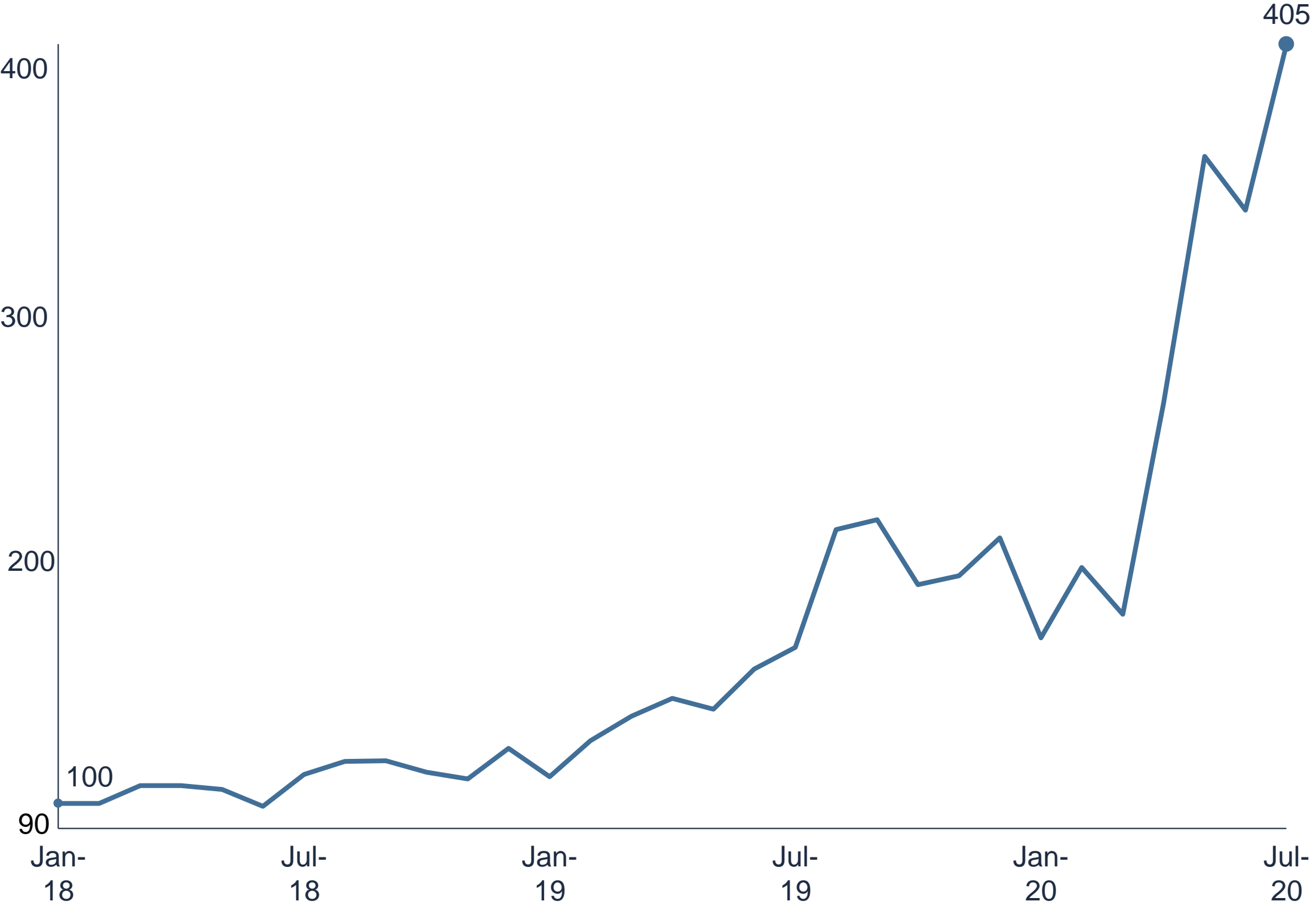
Caixa Tem monthly downloads, in millions*

CaixaTem, an app by Brazil’s federal bank, was created in April 2020 to distribute emergency funding during COVID-19



Finance app downloads in Brazil

Volume of downloads, indexed to 100**



*Data from April 1st to Aug. 19th 2020

**The index combines the number of downloads of the top 25 apps in Brazil’s Finance category on Google Play/Apple Store, and compares it to the total on Jan. 1st, 2018

Sources: Appfigures for app downloads, Instituto Locomotiva 2019, Estado de Minas 2020

Beginnings – Disruption in Payments

A Case of “Innovators Dilemma”

“The reason [why great companies failed] is that good management itself was the root cause. Managers played the game the way it’s supposed to be played. The very decision-making and resource allocation processes that are key to the success of established companies are the very processes that reject disruptive technologies: listening to customers; tracking competitors’ actions carefully; and investing resources to design and build higher-performance, higher-quality products that will yield greater profit. These are the reasons why great firms stumbled or failed when confronted with disruptive technology change.

Successful companies want their resources to be focused on activities that address customers’ needs, that promise higher profits, that are technologically feasible, and that help them play in substantial markets. Yet, to expect the processes that accomplish those things also to do something like nurturing disruptive technologies – to focus resources on proposals that customers reject, that offer lower profit, that underperform existing technologies and can only be sold in insignificant markets– is akin to flapping one’s arms with wings strapped to them in an attempt to fly.”

- Clayton Christensen, “The Innovator’s Dilemma”

Brazil was the first country to end acquirer exclusivity and allow price differentiation, leading to MDR* decline

Relevant Central Bank regulation for payments

2010 End of Visanet and Redecard duopoly

Brazil's Central Bank determined that all acquirers should accept all credit cards, ending the exclusivity contracts between Redecard and Mastercard, and Visanet and Visa.

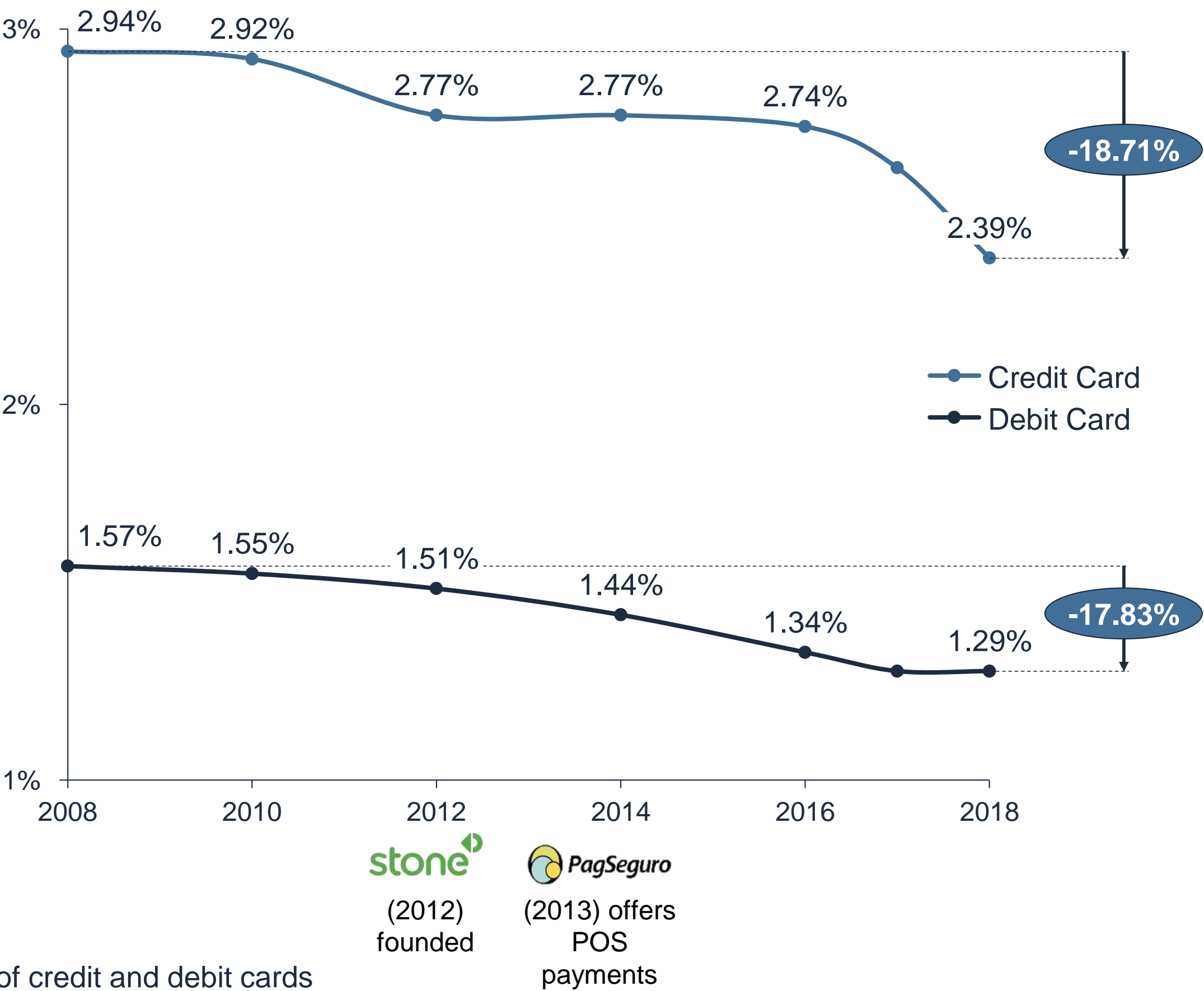
2013 Creation of SPB

The Brazilian Payments System was created (SPB), allowing the Central Bank to regulate electronically all aspects related to interbank fund transfers and settlement of transactions.

2017 Price differentiation among payments

Encouraged use of debit cards instead of credit cards by allowing merchants to differentiate prices by method and payment period

Merchant Discount Rate (MDR) over time

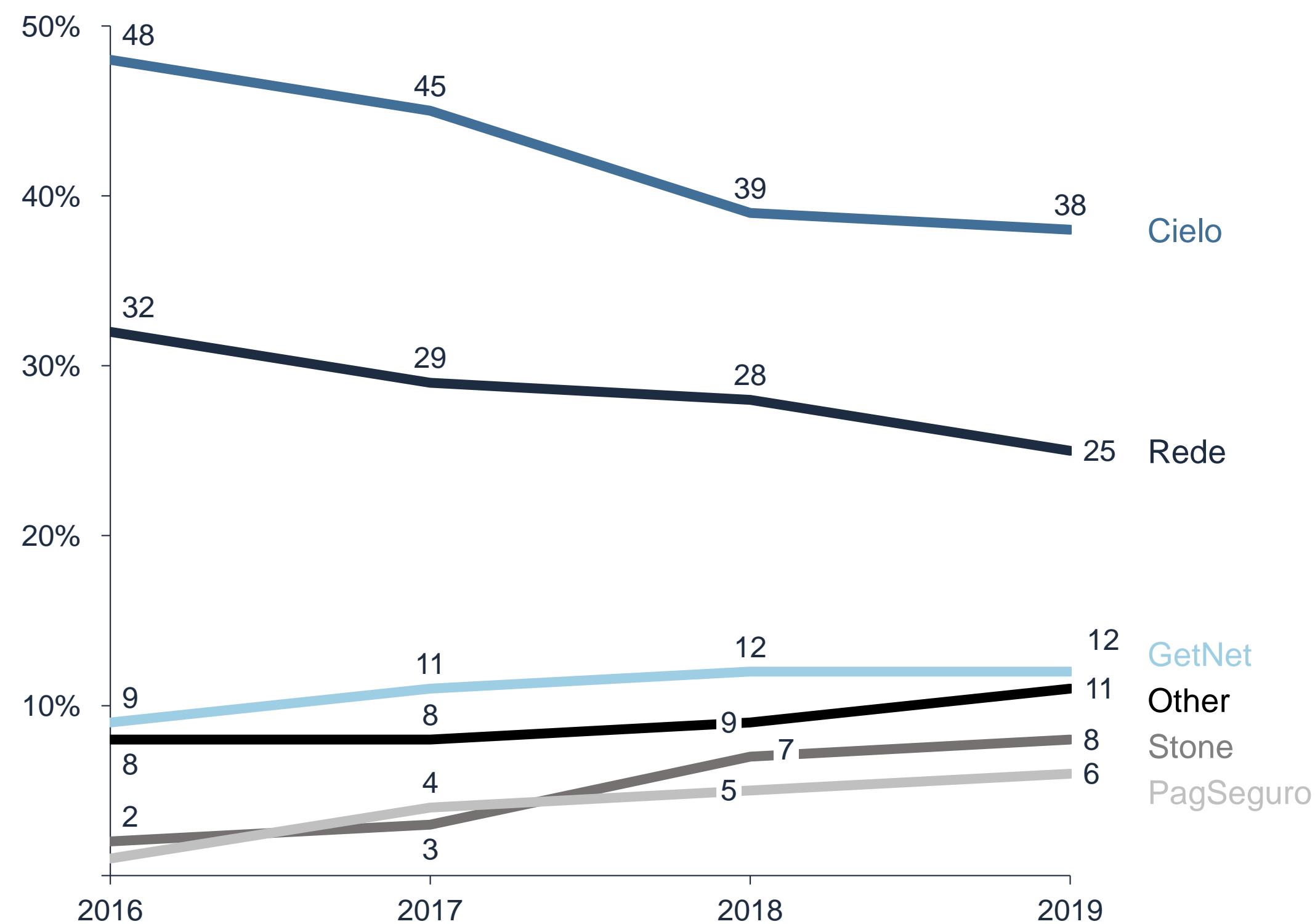


*MDR: Merchant Discount Rate – rate charged to a merchant for payment processing services of credit and debit cards

Source: Banco Central do Brasil, ABECS

New players grew by targeting ignored SMBs, and incumbents, stuck in the Innovator's Dilemma, were slow to respond

Market Share of Acquires in Brazil over time (%)



The Strategy: PagSeguro decided to **enter the market by selling POS terminals**, while incumbents rented. Soon they were acquiring the best customers, who were focused on long-term profits

Innovators Dilemma: traditional merchant acquirers **refused to forgo revenue from POS terminal rent**. When they realized the industry shift, it was too late to react



The Strategy: Stone offered **cheaper rates, no rent fee** for POS terminals and developed a strong network focused on **client relationship with the merchant**, as well as proprietary technology

Innovators Dilemma: again, traditional players **refused to adopt Stone's new standards**, that would later become best-in-class in the industry

“Success breeds complacency. Complacency breeds failure. Only the paranoid survive.”

- Andy Grove

Digitalization, financial inclusion and instant payments are the main trends in payments in Latin America

Digitalization

Digital payments are expected to increase significantly due to Covid-19

- **59%** of online consumers in Brazil increased e-commerce purchases amid the pandemic
- **20%** of consumers in Mexico and Colombia made **their first e-commerce transaction** during the quarantine
- **4th largest mobile POS payments market** is Brazil, only behind UK, US and China

Inclusion

New players are finding ways to capture value by providing better rates and products to clients traditionally excluded from financial services

- **Credit and debit card** services offered at low rates



- **Digital wallets** represented 15% of online transactions in 2018



Instant payments

Latin American Central Banks are developing instant payments platforms to lower transaction fees and lower cash usage

- **Mexico's Codi** launched in 2019



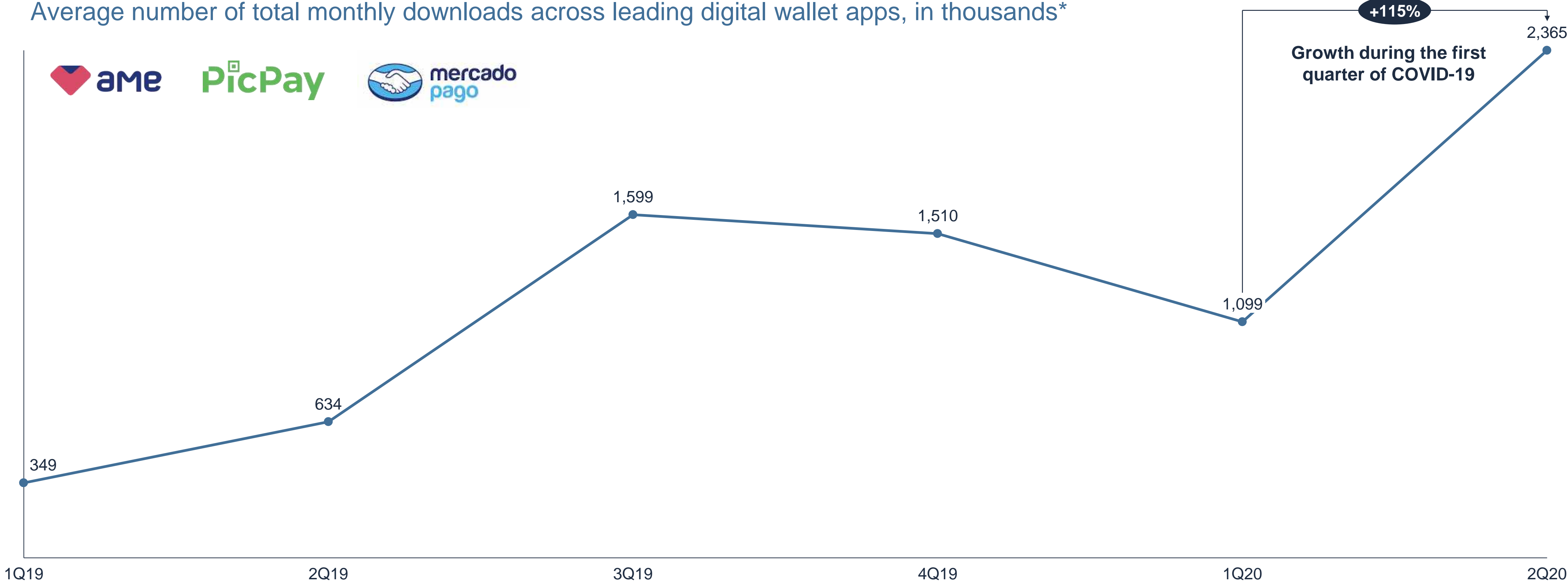
- **Brazil's PIX** planned launch in November 2020



As digital wallets gain traction, even the challengers are being challenged on their POS-centric solutions

Monthly downloads for digital wallet apps in Brazil

Average number of total monthly downloads across leading digital wallet apps, in thousands*



Asset Management

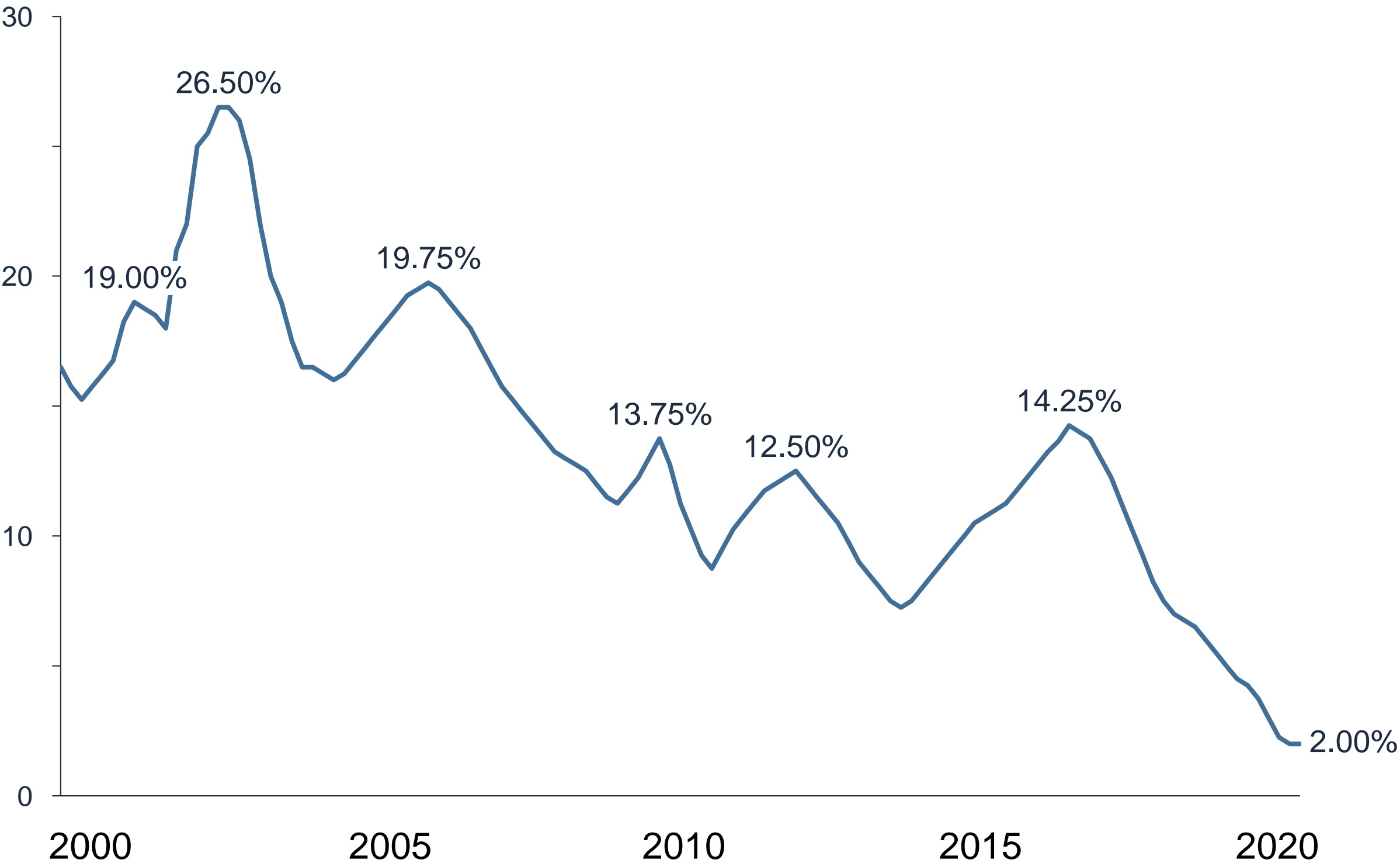
Unbundling the bank, episode 1

“The battle between every startup and incumbent comes down to whether the startup gets distribution before the incumbent gets innovation.”

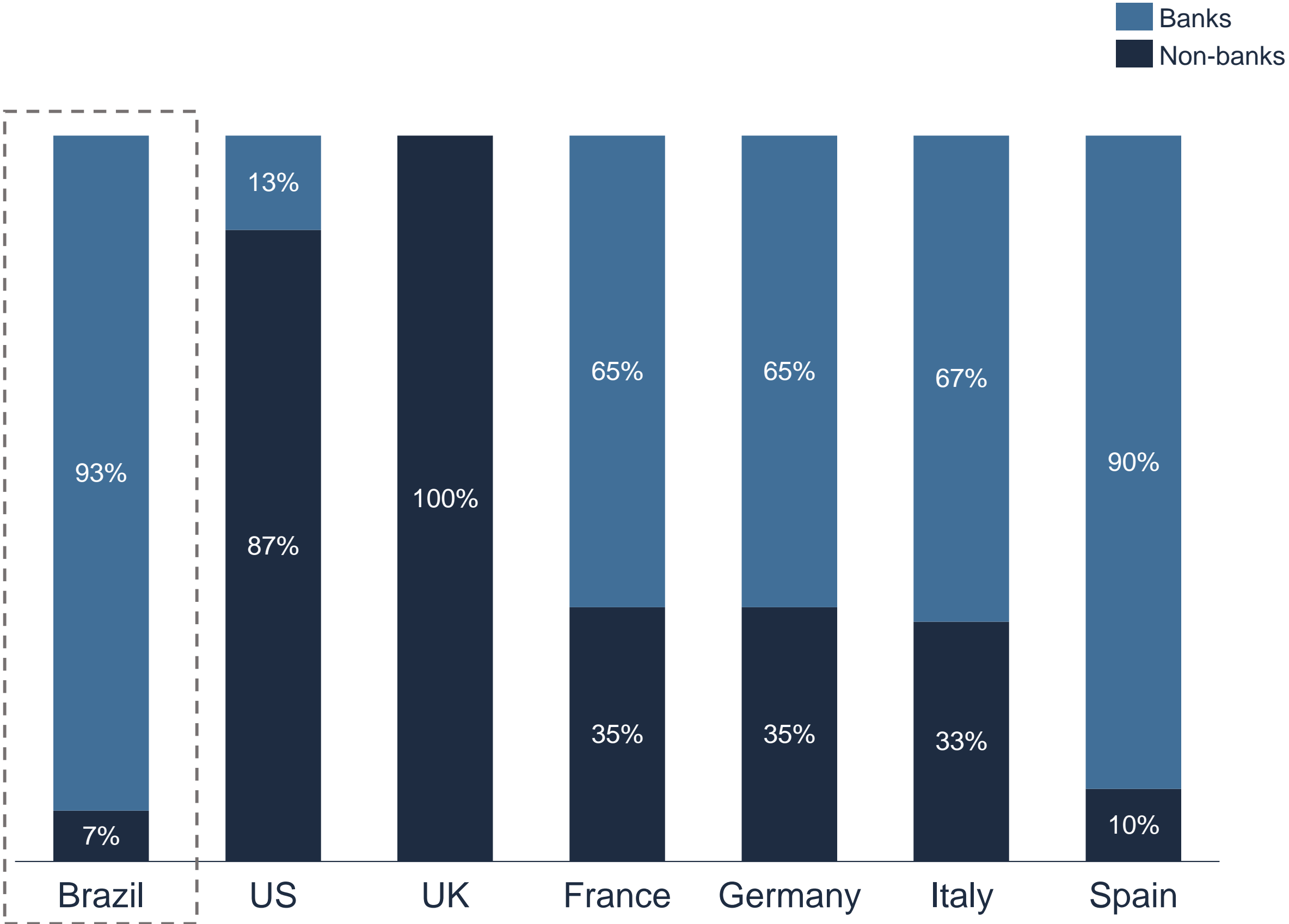
- Alex Rampell

Double-digit interest rates conditioned Brazilians to develop a culture of fixed income and investment through large banks

Interest rate (Taxa SELIC) in Brazil by date

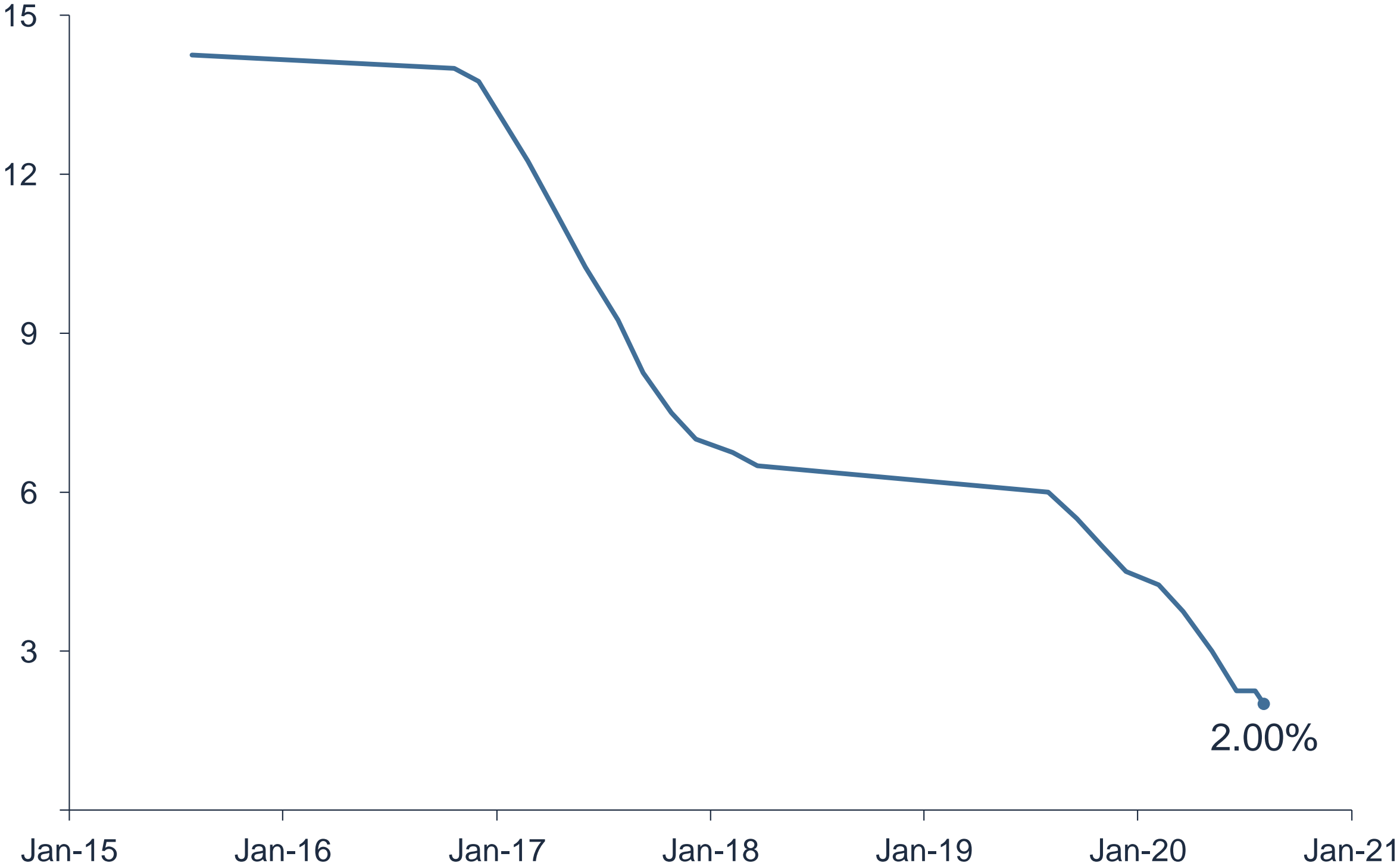


Investment Assets - Market Share in 2017

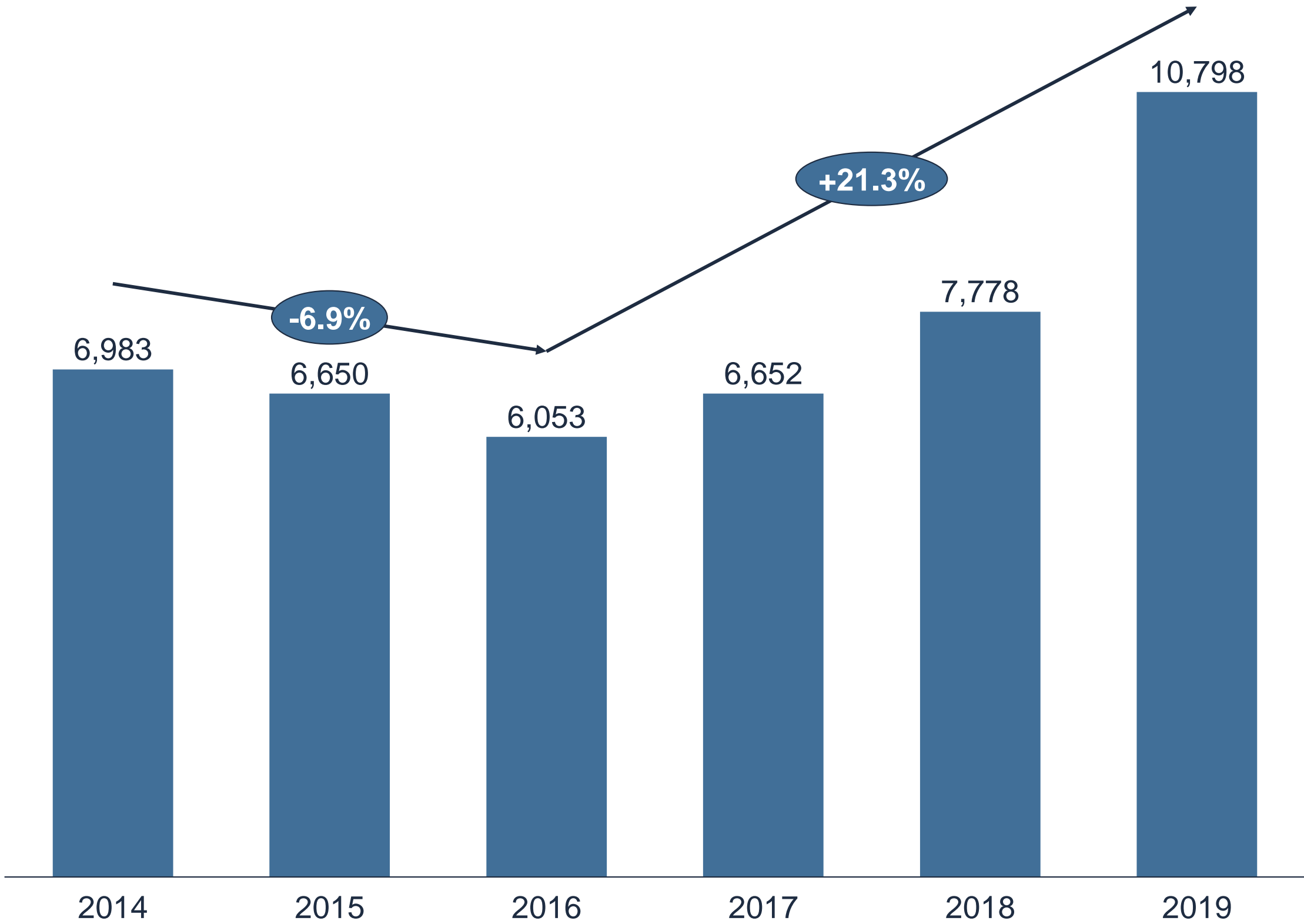


Now, with all-time low interest rates, investors have turned to independent financial advisors to diversify their portfolio

Interest rate (Taxa SELIC) in Brazil by date



Number of independent financial advisors registered in Brazil across the years



The perfect scenario for XP Inc: a brokerage firm focused on independent advisors and financial education

XP changed the market by combining financial education services, with financial advisory and an investment platform. As Brazilian investors flocked to the stock market, XP was positioned to beat incumbents in the investment management game.

Independent Financial Advisors

XP partnered with independent financial advisors, who work as independent channel partners, to provide **best-in-class personalized service** and expand to different regions in Brazil

Financial Education

Through investment classes, they taught Brazilians how to invest in the stock market, **educating the market** and building a customer base for their advisory services



In 2019, XP achieved growth of:

- **72%** in gross revenue
- **103%** in assets under custody
- **100%** in active client base

XP's IPO in December 2019 was the 9th largest IPO in the world, raising US\$2.25 B on the Nasdaq

XP was valued at **over US\$ 25 B** as of early September 2020

Unbundling

XP chose one banking segment/service, traditionally done by incumbents, and excelled at it. They digitalized faster and provided **the best investment management experience** in the market, as seen in their always high NPS score

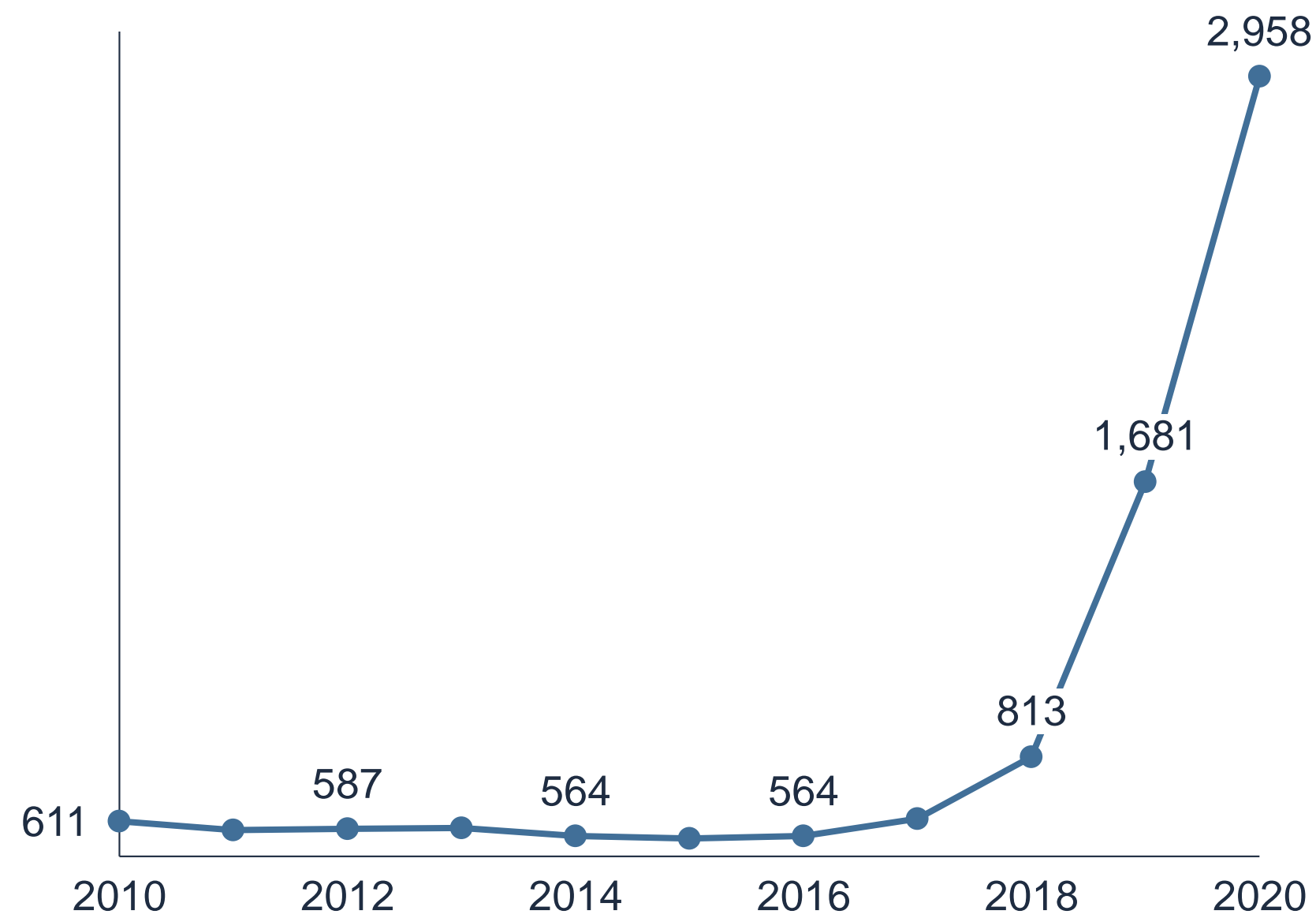
Expansion

XP is expanding by acquiring several **fintechs**, offering **investment banking** services, **zeroing commission** in one of its brokerage platforms and launching their own **credit card** to retail customers.

As the number of people in the stock market continue to rise, digitally-native advisors are challenging XP's model

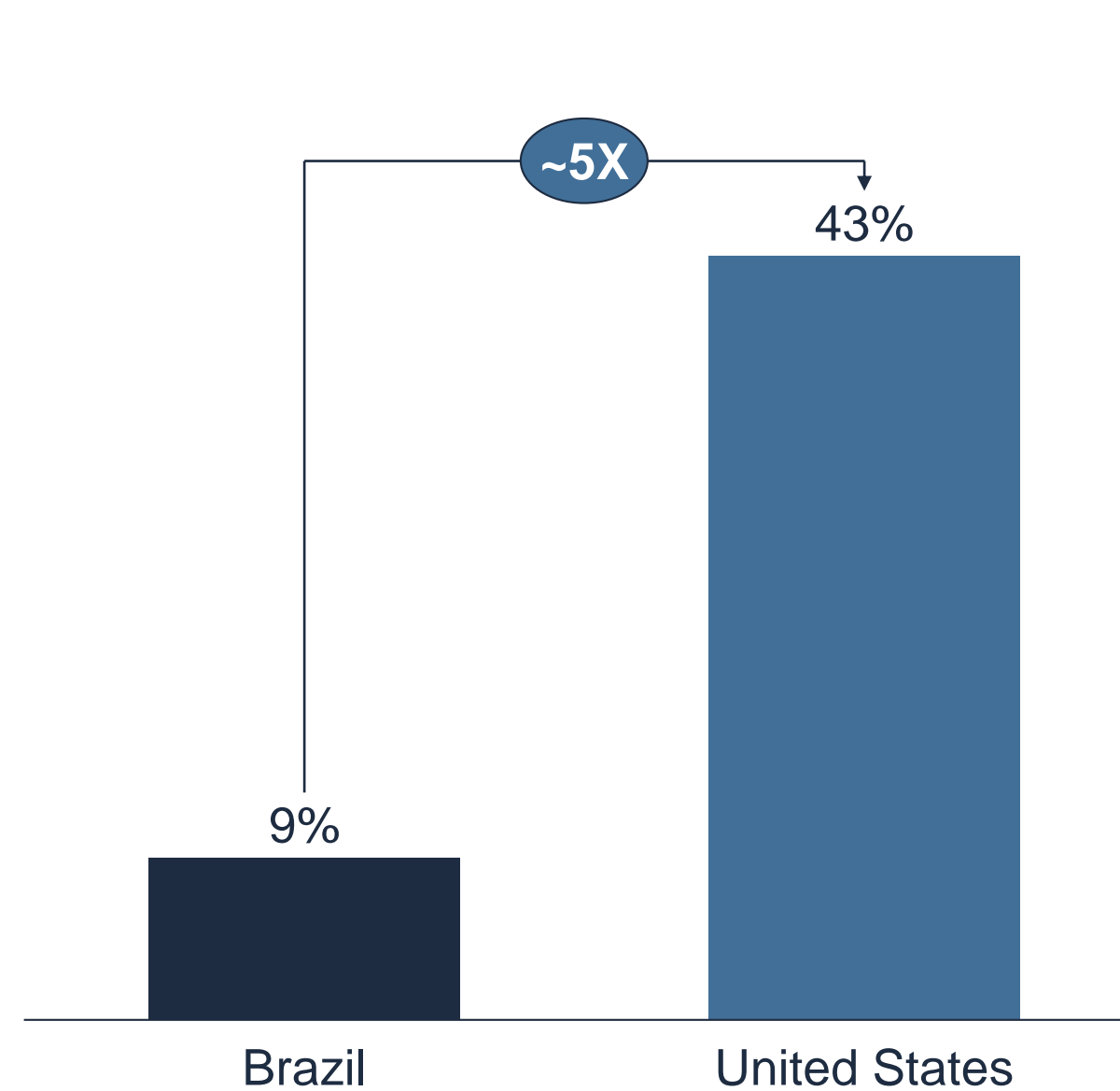
Brazilians are flocking to the stock market

Number of individual investors in the Brazilian stock exchange, in thousands¹



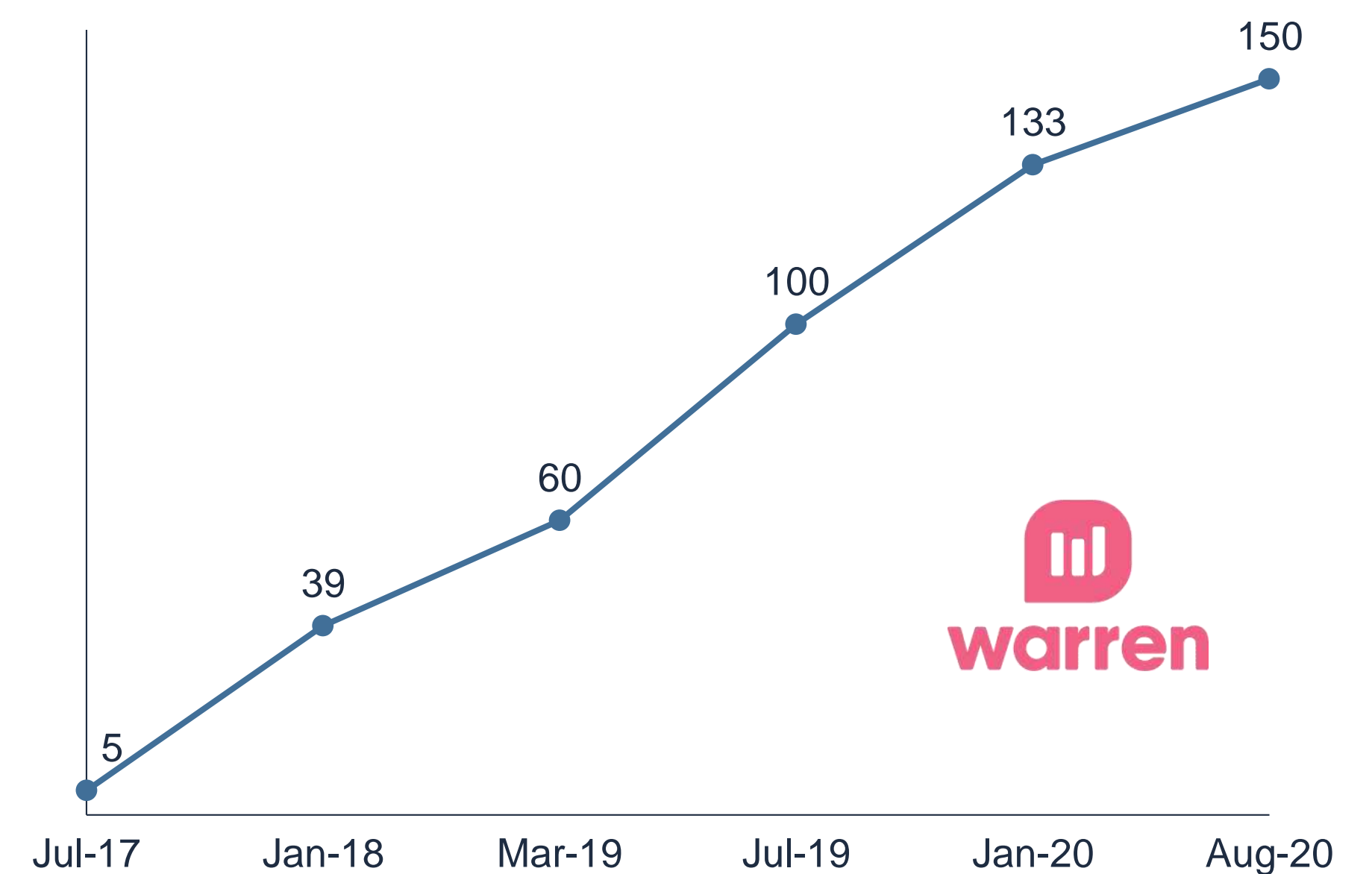
There is still room for growth

Equity investments as a share of investment fund assets²



Digitally-native advisors take on the challenge

Thousands of clients at Warren: leading Brazilian digitally-native advisor co-founded by one of XP's founders³



Brazilian digitally-native investment advisors



monetus

magnetis

TORO

v'treo

warren

Hashdex: Brazilian company launched world's first crypto ETF with Nasdaq as investors seek new stores of value in uncertainty

Latin America has the largest number of cryptocurrency users in the world¹

As of June 2020*

12%

of people in Brazil own cryptocurrency, compared to 7% in the United States

18%

of people in Brazil planned to purchase cryptocurrency in the next year

11%

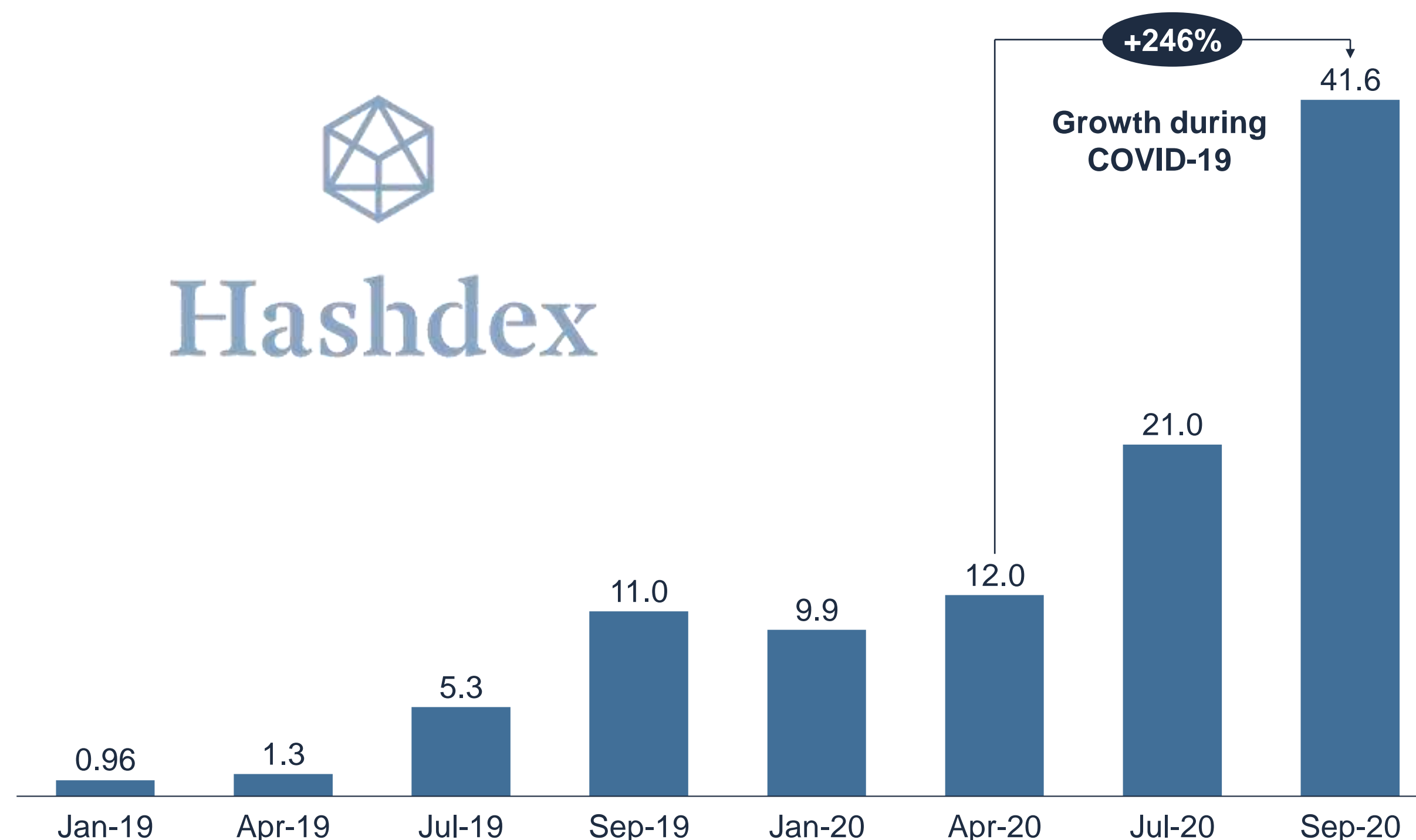
of people in Mexico own cryptocurrency, just below the 13% that own equity investments

16%

of people in Mexico planned to purchase cryptocurrency in the next year

Cryptocurrency investment is growing in Brazil

Assets Under Management at Hashdex², the largest regulated crypto asset manager in Brazil (in millions of US\$)**



*Survey conducted between May-June 2020 with 12,600 respondents per country

**Exchange rate between USD and BRL at the end of the first day of each month. Includes onshore and offshore investments

Sources: (1) Statista Global Consumer Survey 2020, (2) Hashdex internal data

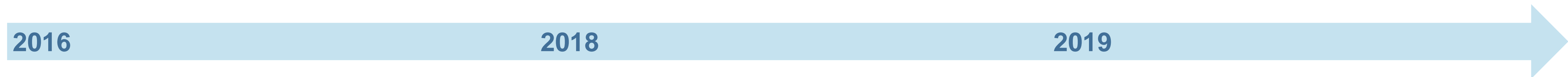
Neobanks

Unbundling, then rebundling

“There are only two ways to make money in business: One is to bundle; the other is unbundle.”

- Jim Barksdale

Regulation allowed the creation of fully digital banks, reducing the cost of entry for new players



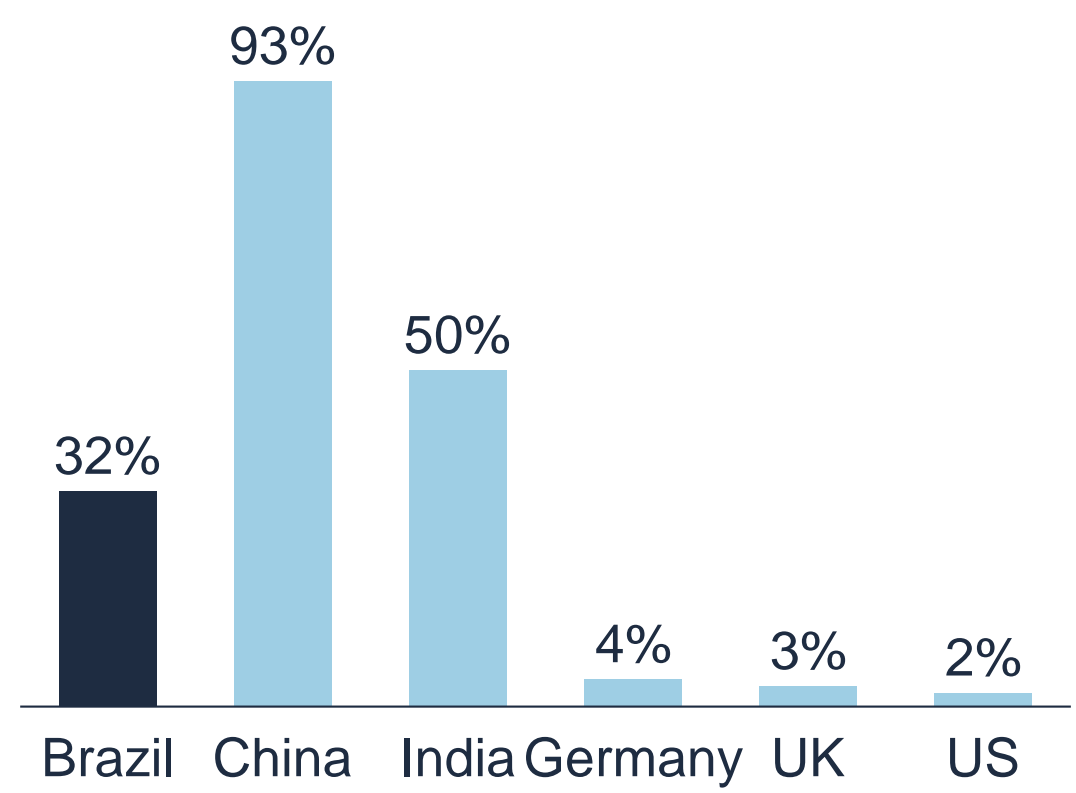
2016
Brazil's Central Bank allowed **retail customers** to open bank accounts digitally, without the need of going to a physical branch

2018
Companies of any size were allowed to open bank accounts digitally

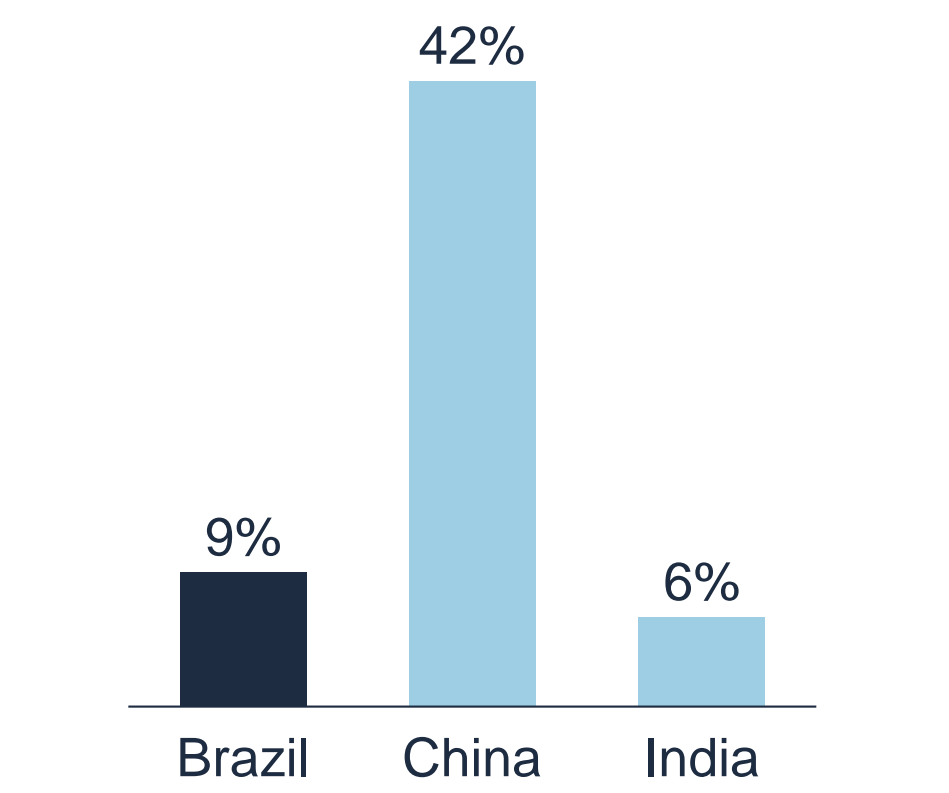
2019
Big banks started **closing physical branches** to reduce costs. Itaú closed over 400 branches

Neobanks entered with fully digital services and gained significant traction in Brazil

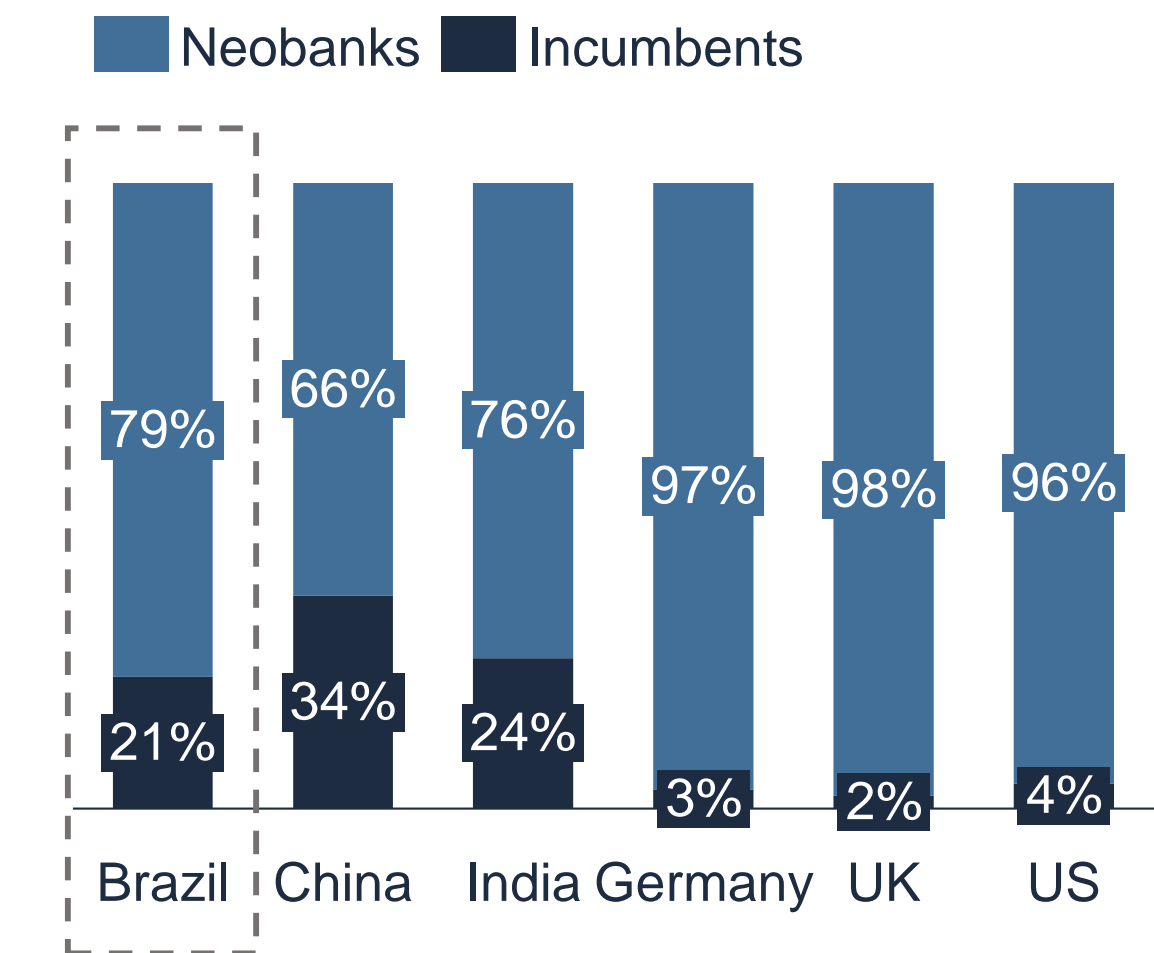
Banked population with account at a neobank (%)¹



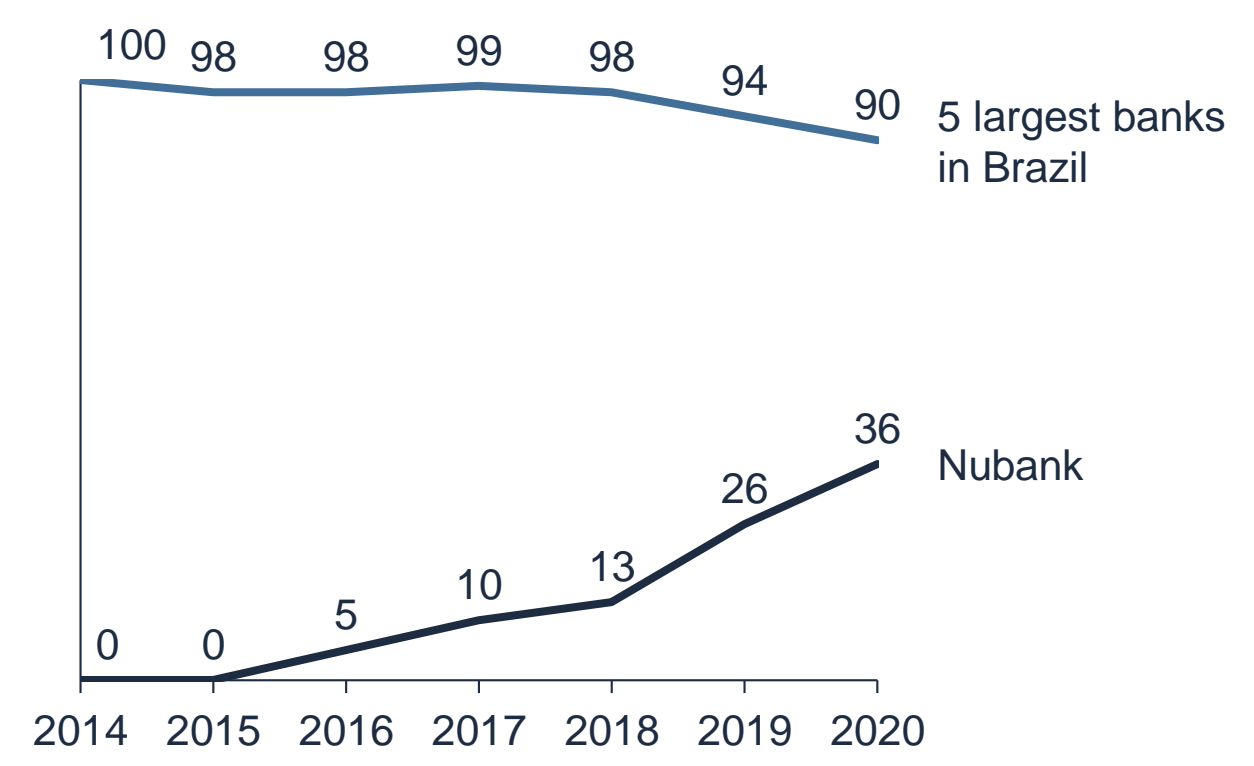
Neobank as main account (%)¹



Incumbent and Neobank application usage (%)^{* 1}



Guiabolso's users by type of bank account connected to the app²



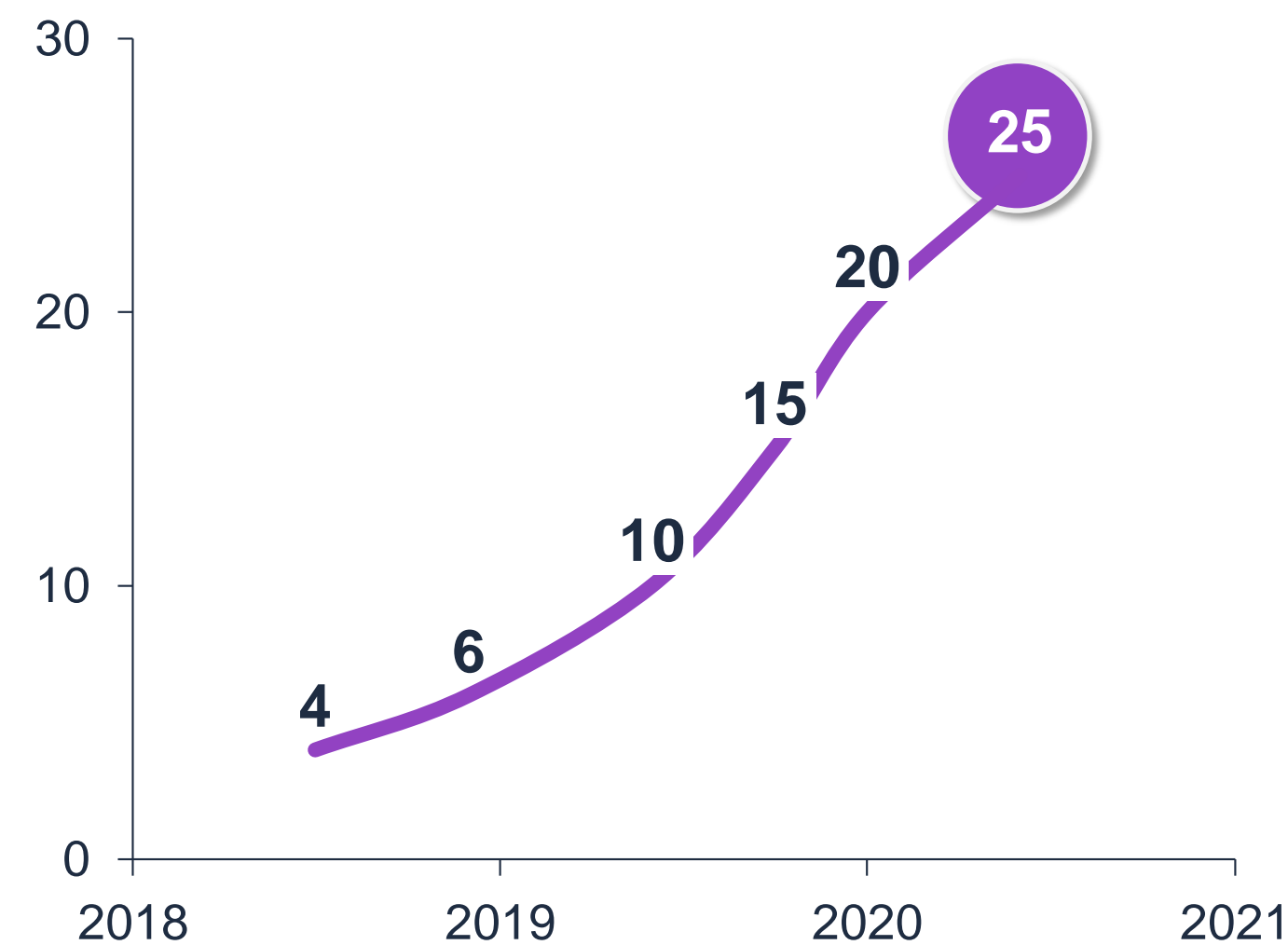
*Number of app sessions out of the last 10 times

Sources: (1) Banco Central do Brasil, (2) Kantar Future Finance Report 2019, Guiabolso internal data

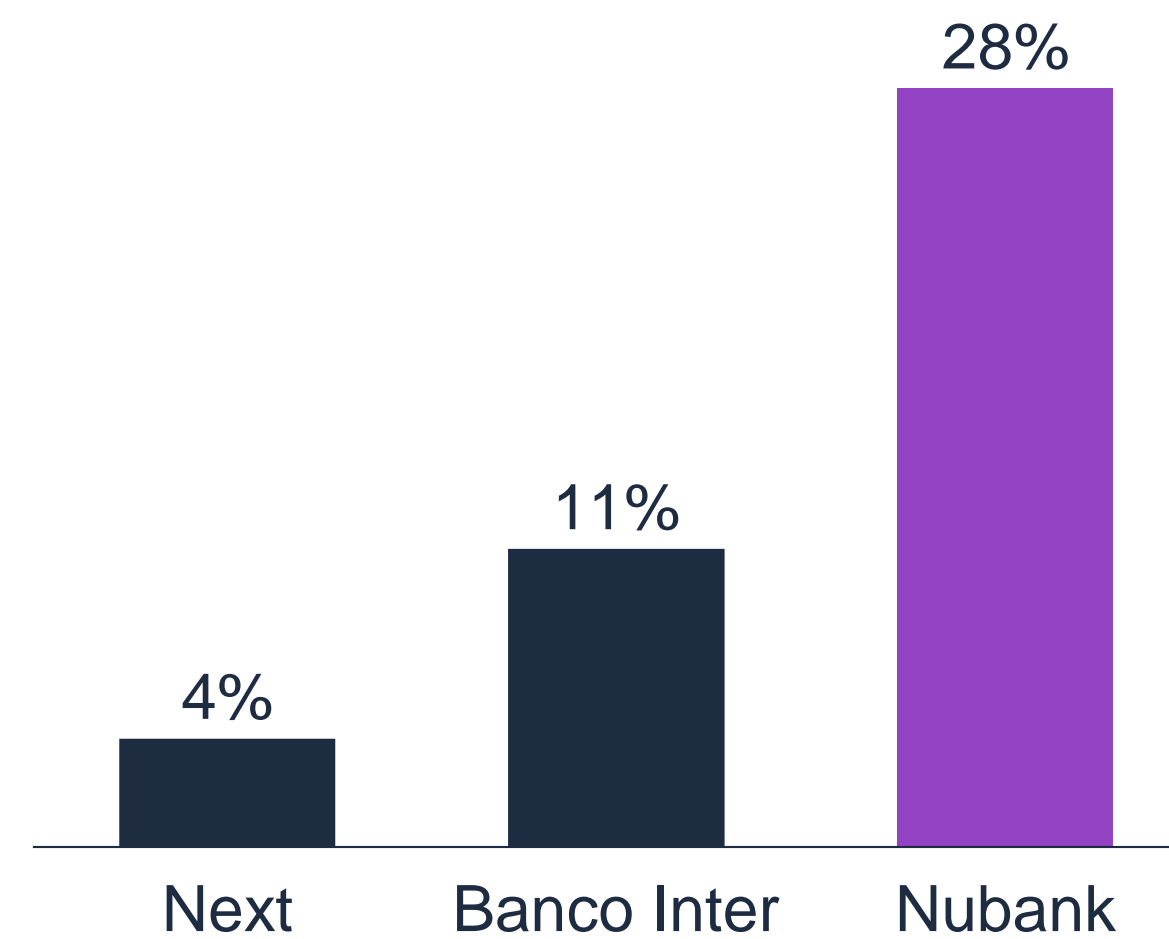
Neobanks are now extending their portfolios, rebundling products while excelling at CRM and user experience

Today, in addition to a credit card, Brazil's largest neobank, Nubank, offers a fully digital bank account, a financial management app, a rewards program, lending services and bank account for businesses

Number of Nubank clients across the years in millions



Proportion of all bank consumers using a neobank in 2019¹





In Sept. 2020, Nubank announced the purchase of online brokerage firm Easyinvest, indicating it will also be moving to investment products.



Instant, Open, and Ubiquitous

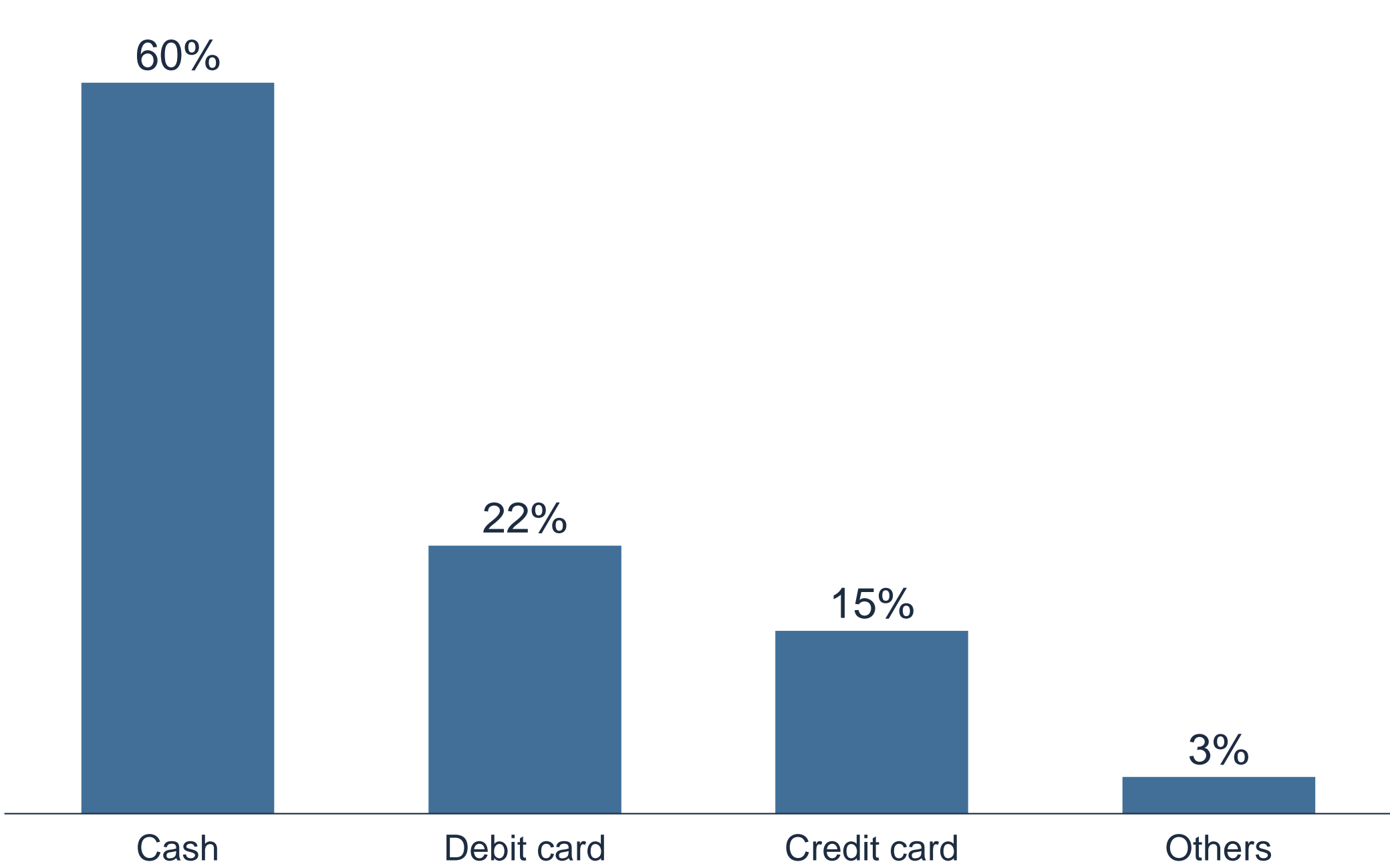
Regulators' ambitious goals and initiatives

Brazil's Central Bank is launching two important pillars for innovation this year: Instant Payments (PIX) and Open Banking

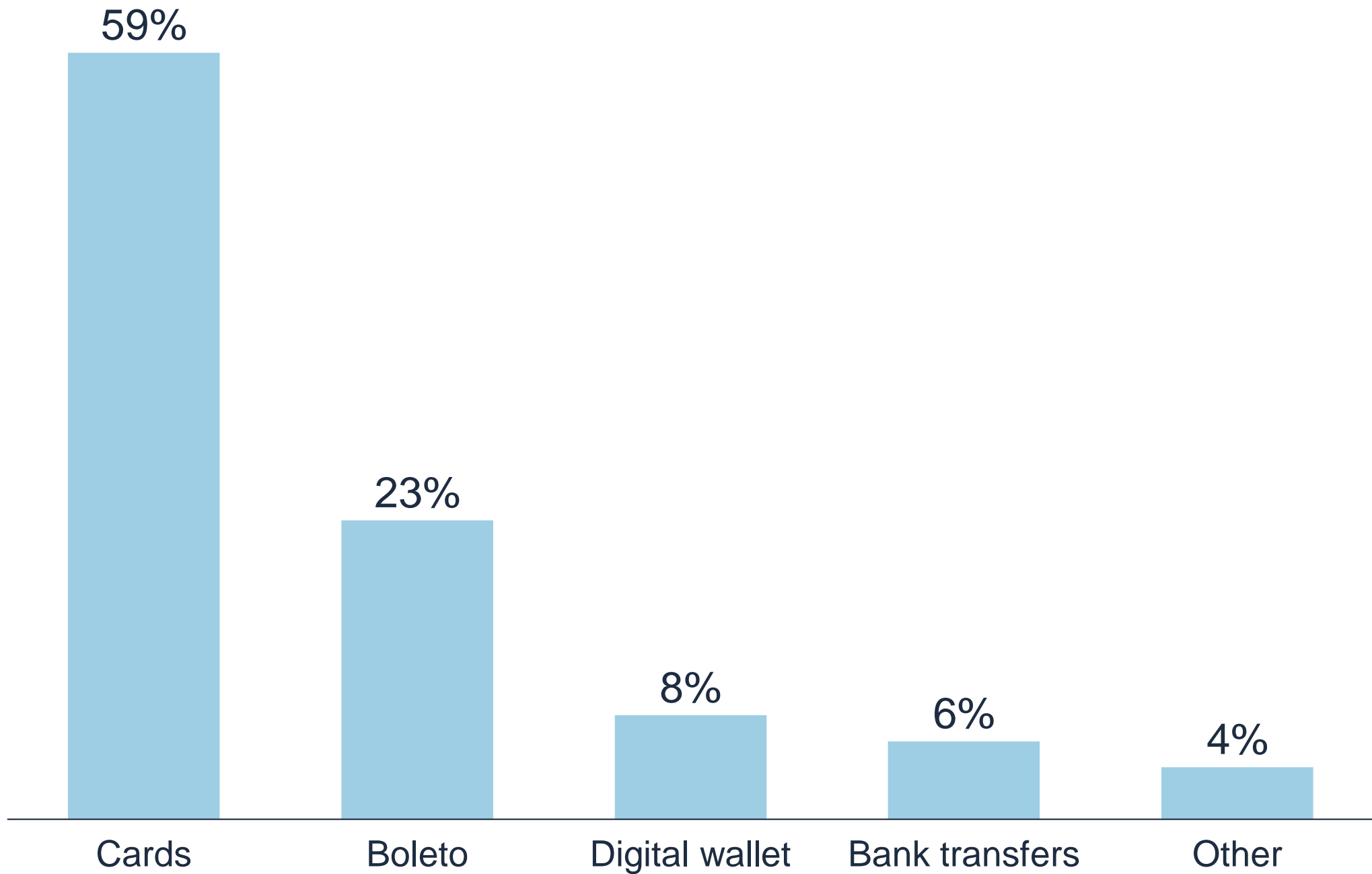
PIX	Instant payments at virtually no cost
	PIX will be a platform for instant payments operated by the Central Bank. Any authorized financial or payment institution will be able to integrate PIX into its system, providing customers with instant payments directly or through QR Codes at virtually no cost. PIX also supports planned, recurring payments. It is scheduled to be launched on November of 2020
Open Banking	Shift ownership and control of data from banks to consumers
	Open Banking is a regulatory framework divided in four phases: the first one starts in August 2020, and the last is scheduled for October 2021. It will allow customers to give access to their financial information stored with financial institutions through standard APIs (Application Programming Interface).

Currently, payments in Brazil are dominated by cash, credit and debit cards, and *boletos**

Payment method most used for in-person transactions in Brazil in 2018¹



Ecommerce payment value split by method in Brazil in 2019²




* “Boleto Bancário” is a popular cash-based post-pay method in Brazil. It comes as a payment slip that can be paid in various physical locations.

Source: Atlantico Study, (1) Banco Central do Brasil 2018 Study – Brasileiro e sua Relação com o Dinheiro, (2) J.P. Morgan 2019 Payment Trends Global Insights Report

The PIX instant payment system will directly compete or complement all existing payment methods

PIX beats most payment methods on cost, time to complete a transaction and accessibility, except for cash. However, it beats cash by far on convenience.

	PIX	Bank transfer (TED, DOC)	Cash	Boleto	Debit card	Credit card	Digital wallet
Cost	R\$ 0.001 to merchant (free for P2P)	R\$ 11.50* to sender	R\$ 0	Between R\$ 1 and 5 to merchant	Average 1.3% of transaction ¹ to merchant	Average 2.4% of transaction ¹ to merchant	% over transaction, varies by player
Time to complete transaction	Instant	Between a few minutes to next day	Instant	Up to 3 working days	From instant to up to 10 hours	From instant to up to 2 working days	Instant
Accessibility	Anyone with a smartphone or bank account	Anyone with a bank account	Anyone	Anyone	Must have a bank account	Only 30% of population	Anyone with a smartphone and bank account
Integrates with PIX?		Yes	No	Yes	No	No	Yes

* Average calculated by Brazilian Central Bank

Source: Banco Central do Brasil, (1) ABECS, Atlantico Analysis

Brazil's unique regulatory framework for Open Banking is one of the most ambitious worldwide



Brazil has the most comprehensive legislation and the shortest amount of time for implementation:

Open Banking implementation is divided into four stages. In each stage, a specific set of data has to be ready to be shared:

- | | |
|---|--|
| 1 August 2020
Product and service offerings | 2 May 2021
Personal client information |
| 3 August 2021
Payment initiation services | 4 October 2021
Investments and insurance |

Central Bank Goals:

- Fostering competition and efficiency
- Lowering information asymmetry
- Reducing entry barriers in the market

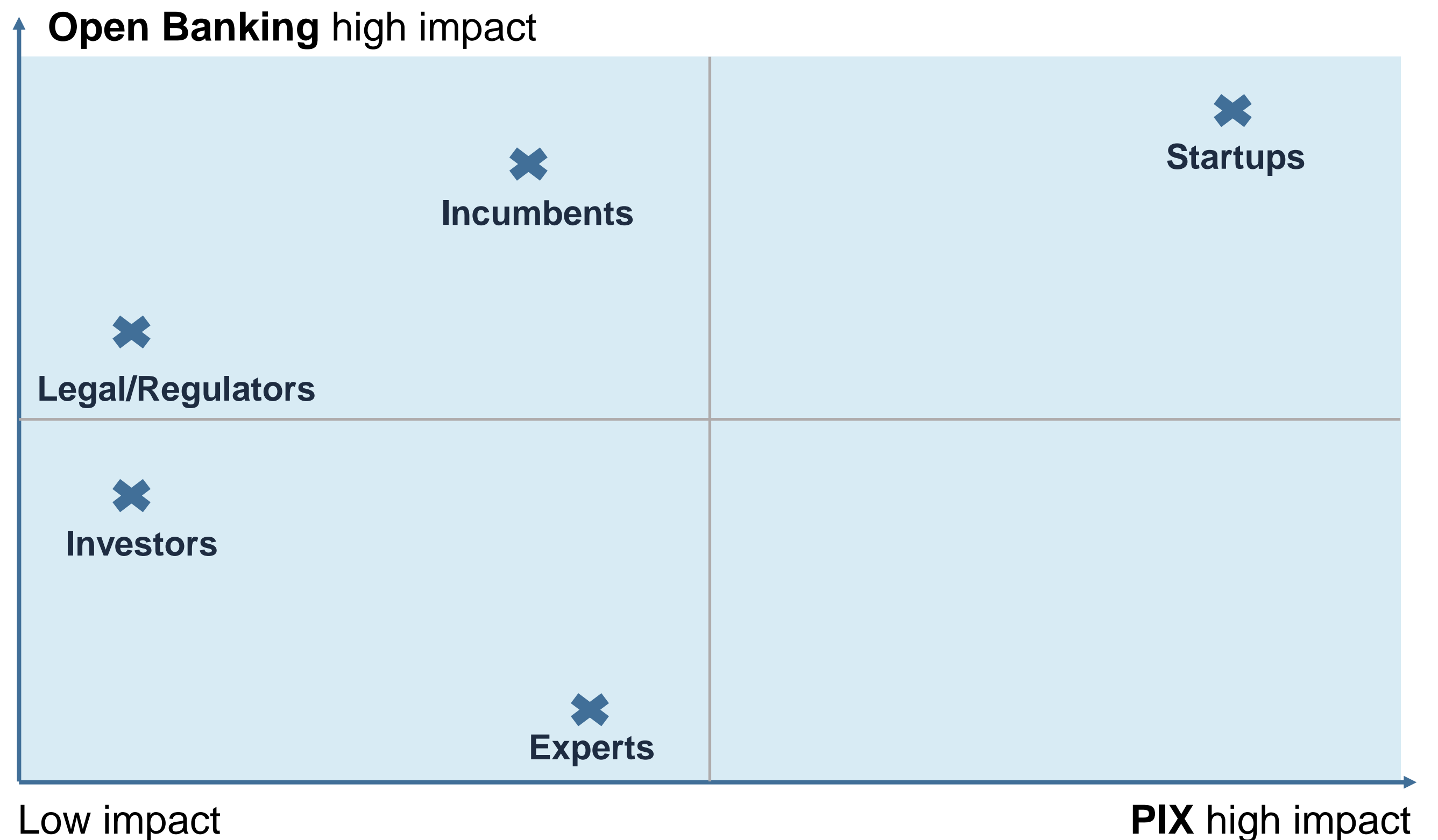
Open Banking in Brazil has large potential for impact, promoting competition between dominant players to offer better products and services to clients

Industry leaders are optimistic about PIX and Open Banking; their view on impact on the industry varies widely

We conducted 43 interviews with industry leaders across different sectors to understand their views on the new regulation

- The majority felt the Central Bank's objectives and plans are positive and ambitious
- Most highlighted Itaú as the incumbent most prepared to protect itself and Bradesco and Santander as very vulnerable and unprepared
- Many highlighted Nubank as very well-positioned for the opportunities ahead
- Many anchored their expectations to the experience in Europe and the UK, but appeared not fully-informed about differences with Brazil

How leaders from different groups categorize the degree of impact expected on the financial sector from Open Banking and PIX



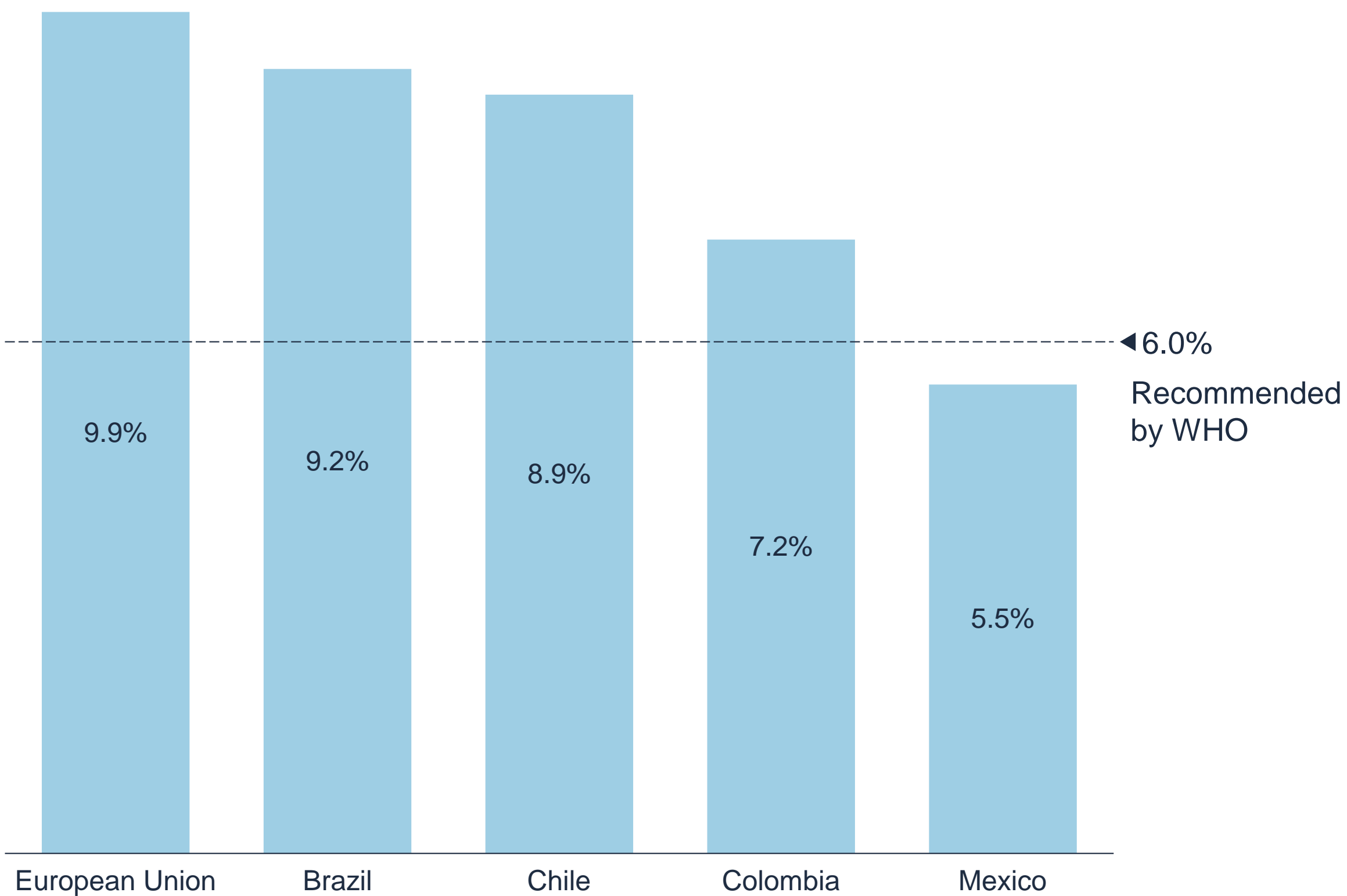
If financial services was the first frontier, what's next?

Can the same combination of customer dissatisfaction and regulatory change pave the way for transformation in Healthcare and Education?

Healthcare: Can innovation be the cure?

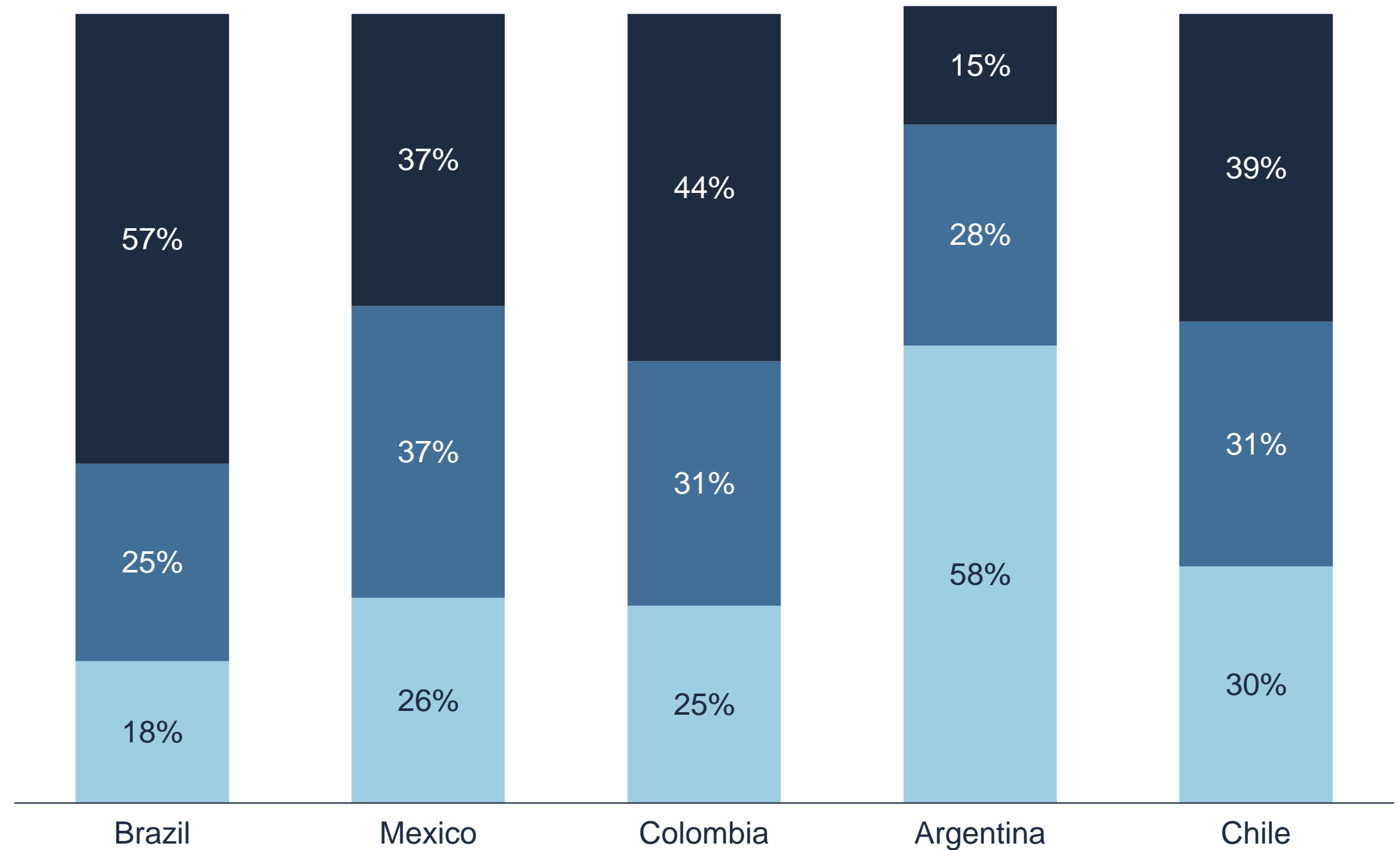
Despite adequate health expenditure, Latin Americans remain dissatisfied with current healthcare services

Health expenditure in Latin America as a % of GDP¹

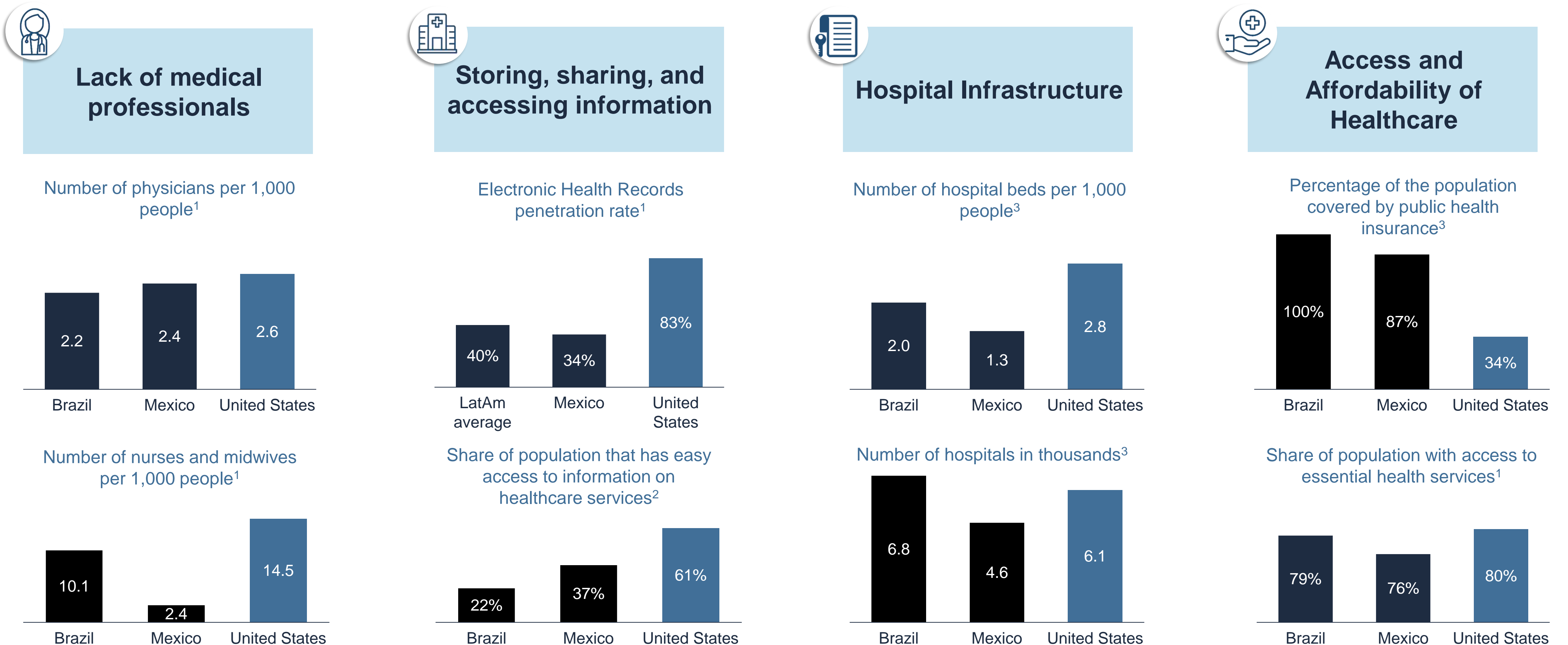


General opinion on the quality of healthcare
As a percentage of respondents²

■ Poor ■ Neither good nor poor ■ Good





Latin America lags developed economies in quality of healthcare indicators, but is not far behind



While overall healthcare quality is lacking, the small group of people that can afford it, has access to world-class quality

Brazil is the only country in Latin America to be listed in the top 100 global hospitals¹

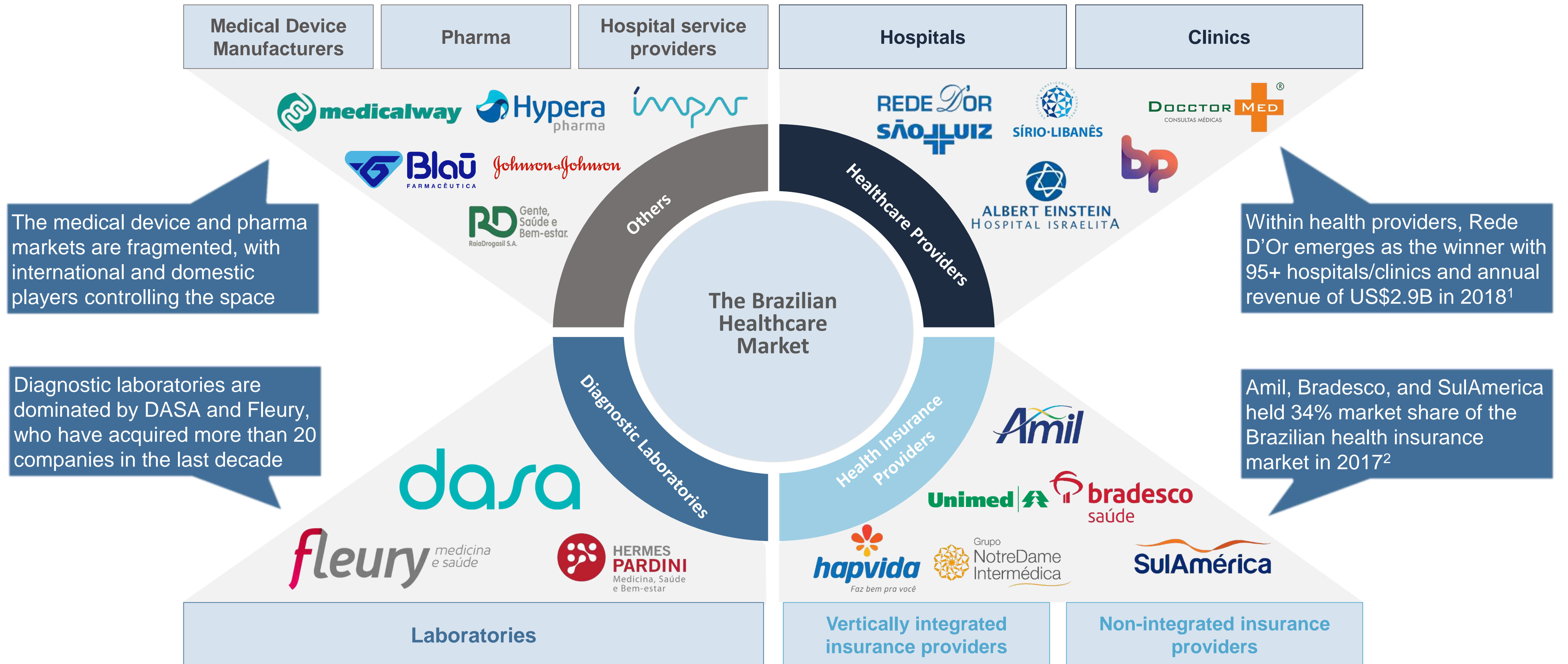
	 ALBERT EINSTEIN HOSPITAL ISRAELITA	 HOSPITAL SÍRIO-LIBANÊS
Location	São Paulo, SP	São Paulo, SP
Type	Private	Private
Quality Index Score*	98.8%	94.6%
World Ranking**	38	64

Average indicators for quality of health in São Paulo's ten wealthiest neighborhoods compared to the EU average**

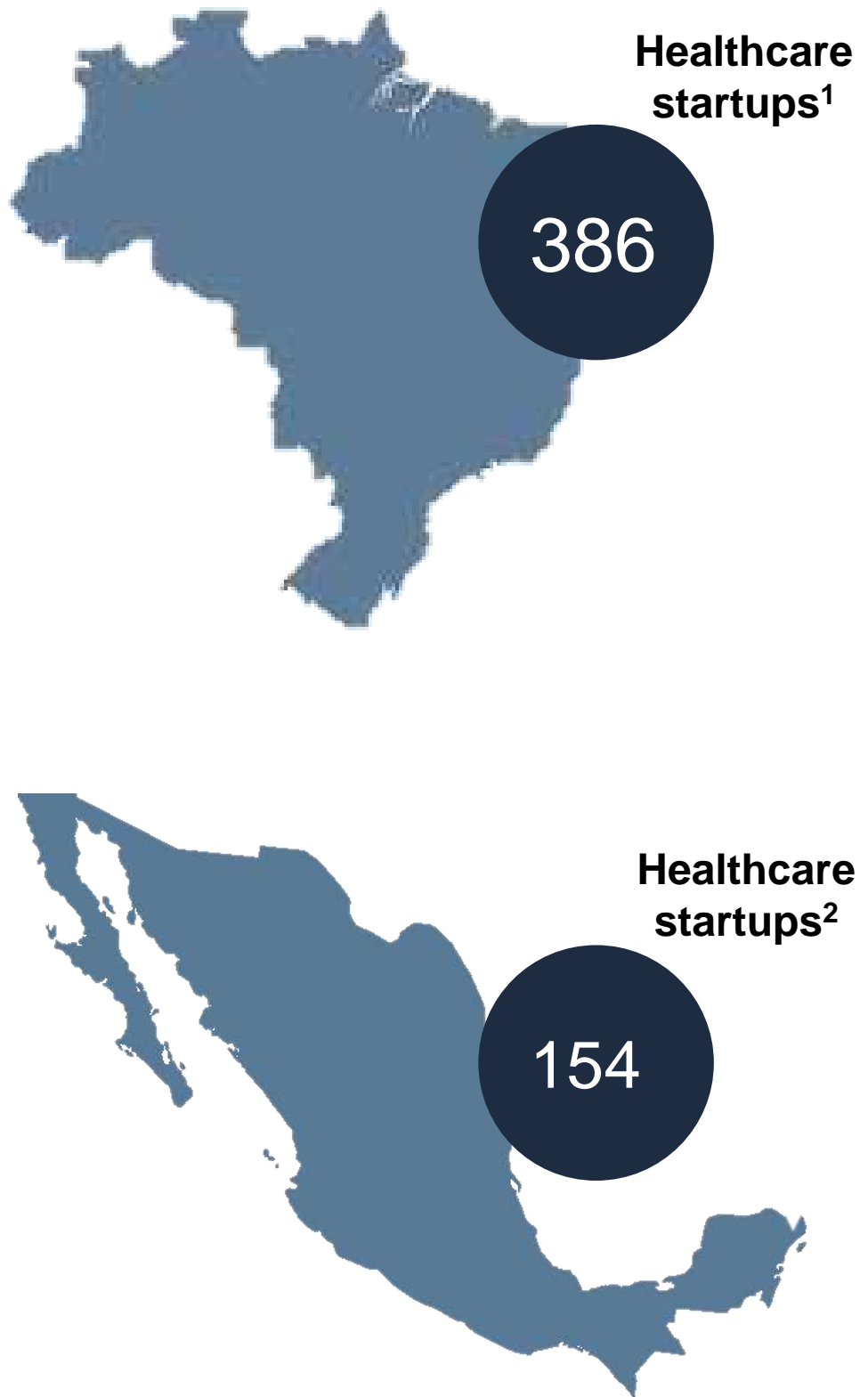
	São Paulo's 10 wealthiest neighborhoods ²	European Union Average ³
Hospital beds (per 1,000 people)	20	6.1
Infant mortality (for every 1,000 children)	3.2	3.3
Cancer mortality (for every 100,000 people)	69.5	208.9









*Scores are based on recommendations from medical experts, results from patient surveys, and medical KPI's on hospitals. Scores are comparable only between hospitals in the same country; **Latest available data by country ranging from 2013-2019
 Sources (1) Newsweek and Statista World's Best Hospitals 2020, (2) Rede Nossa São Paulo Inequality Map 2019, (3) WorldBank and OECD open data

Incumbents continue to dominate healthcare in Brazil with increased consolidation



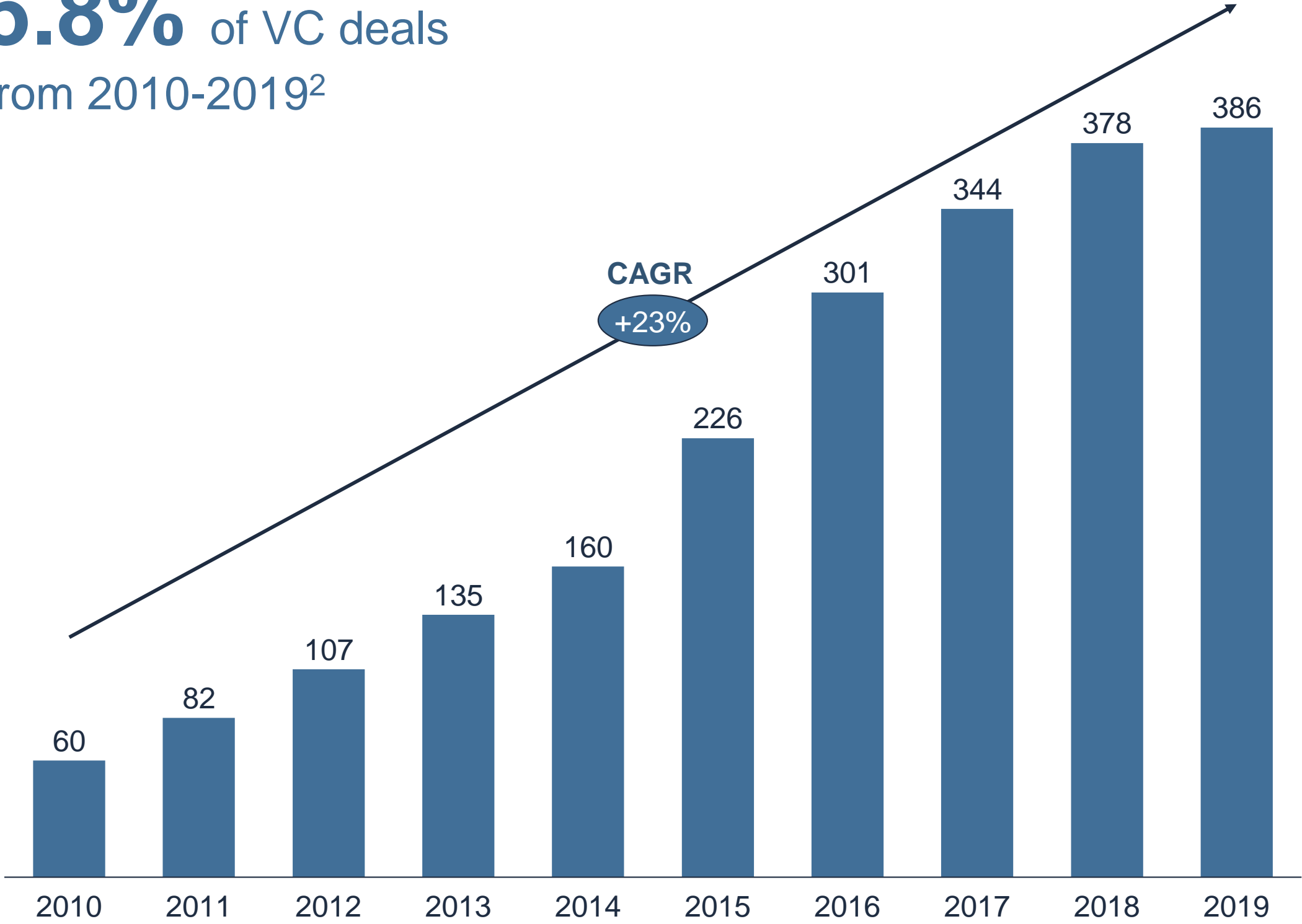
The boom of healthcare startups shows new players joining the effort to tackle the sector's biggest issues



-  **24%** Management and EHR
-  **15.5%** Marketplace
-  **16.3%** Access to information
-  **10.9%** Pharma and diagnostics
-  **8.9%** Relationship with patients
-  **7.7%** Medical Devices
-  **7.9%** Telemedicine
-  **5.5%** AI and Big Data
-  **3.4%** Wearables and IoT

Number of healthcare startups in Brazil¹

5.8% of VC deals from 2010-2019²



*Pitchbook: there were 1,864 VC deals across all industry, rounds, and stages in Brazil from 2010-2019. 109 of them were with health-related startups
Source: (1) Distrito Healthtech Report 2019, (2) Pitchbook

The Case of Telemedicine

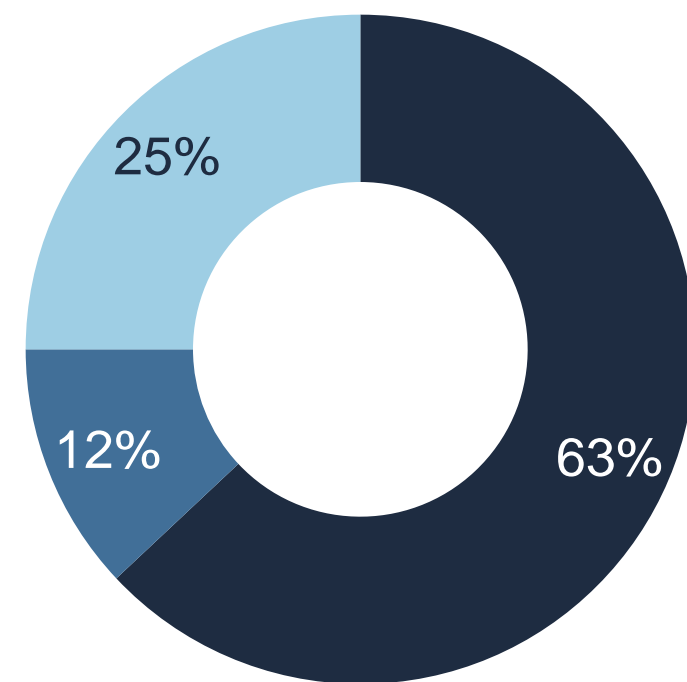
Necessity is the mother of deregulation

With easing concerns and need for healthcare during Covid-19, telemedicine is becoming essential for Latin Americans



Brazilian physicians are willing to adopt telemedicine use¹

“If it were regulated by the Medical Regulatory Council and had the necessary ethical and safety tools, would you use telemedicine at your clinic or hospital?”*



■ Yes ■ No ■ Maybe



COVID-19 catalysed favourable regulatory changes in Brazil²

2011

Telemedicine is officially authorized for health professionals in the public health care system

2018

The legislation is revoked per request of Brazil’s Federal Council of Medicine

2020

Brazil’s Health Ministry authorizes the use of telemedicine for the duration of the coronavirus pandemic.



Startups across the region are providing high-quality services

BR



COL



MX

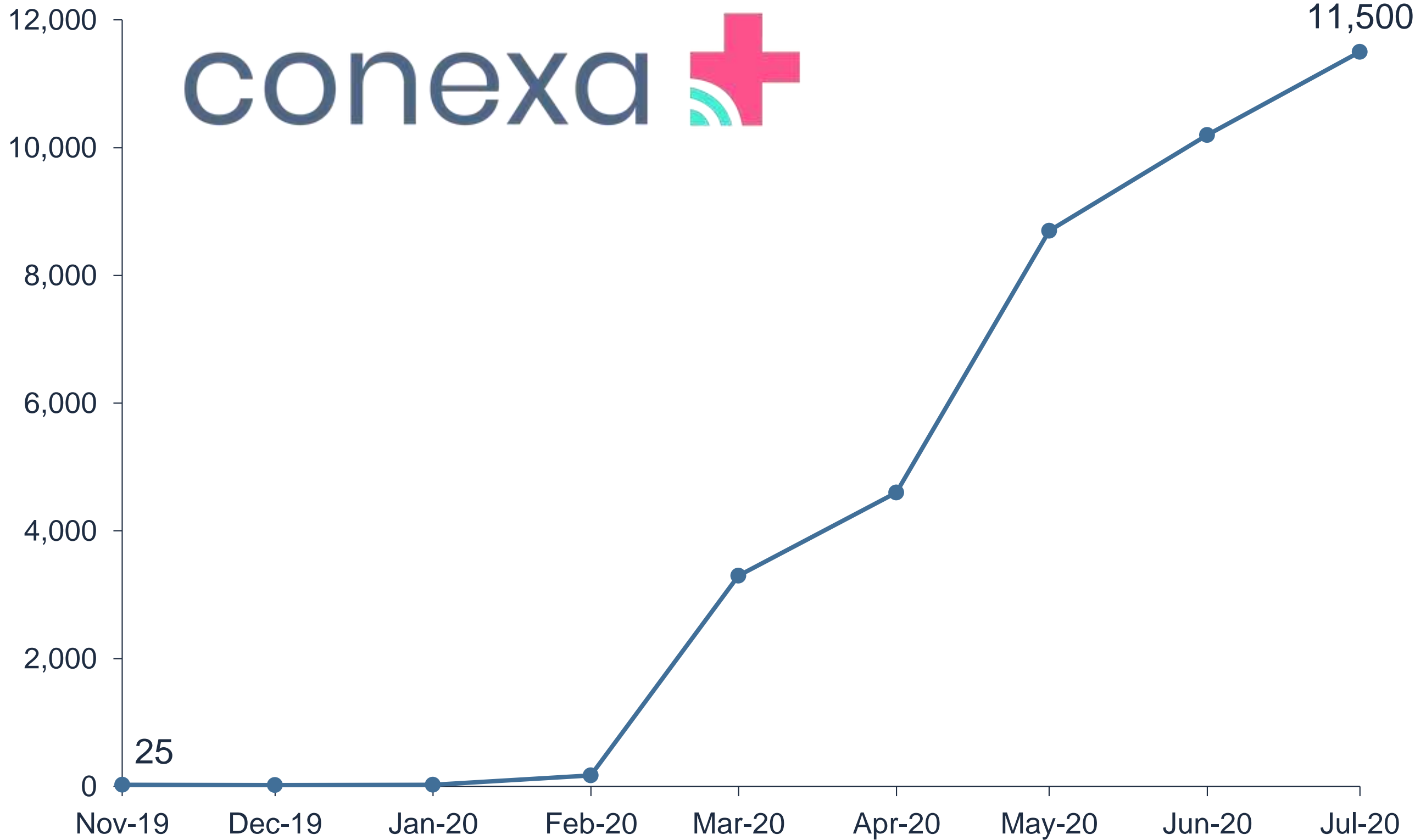


*Respondents were 2,258 Brazilian physicians

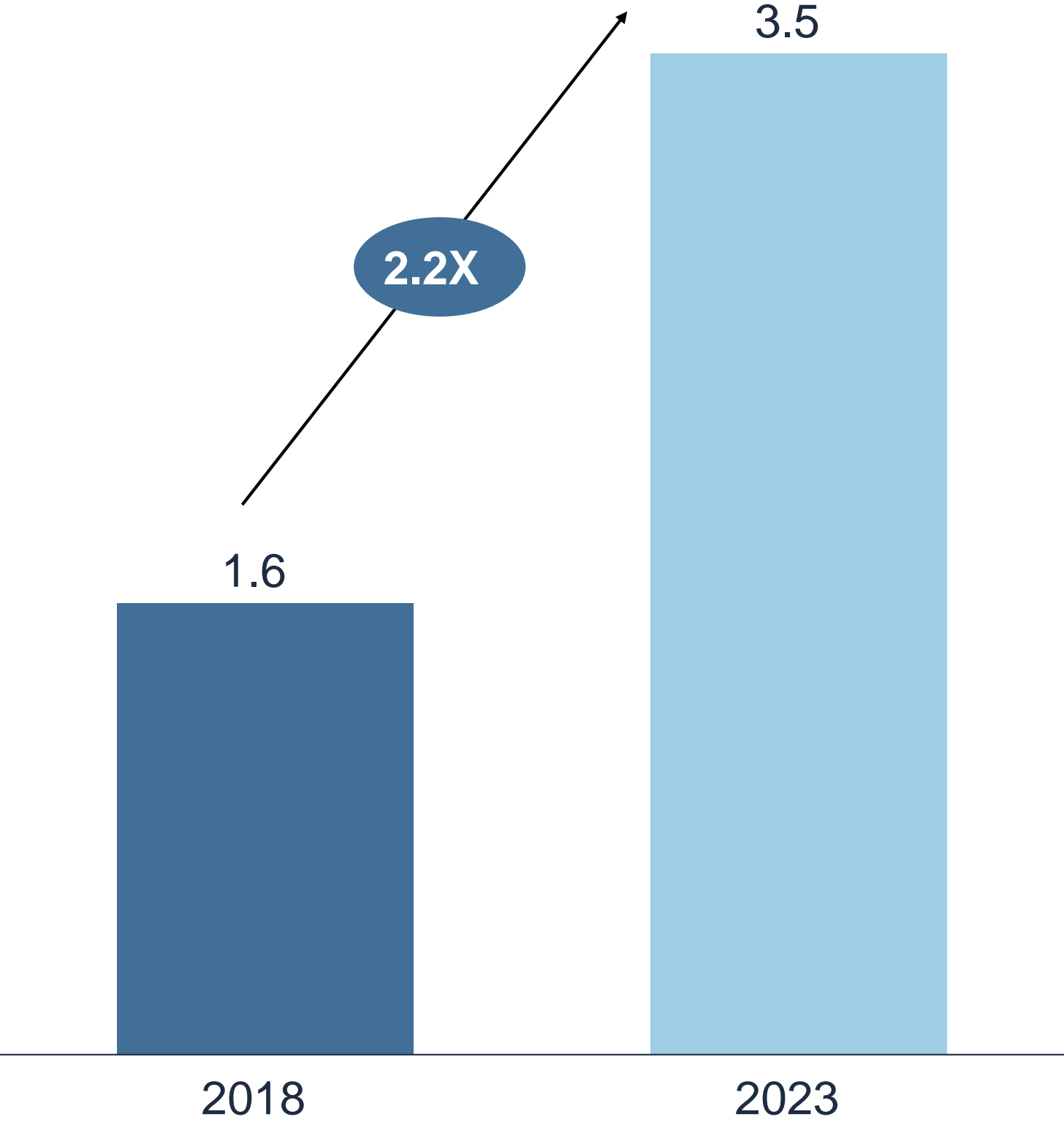
Sources: (1) São Paulo’s Association of Medicine 2020 as cited in Conexa’s internal materials, (2) Brazilian Health Ministry

Conexa: Brazilian telemedicine startup grew usage more than 500-fold in 9 months, fuelled by the pandemic

Average number of calls per day¹



Latin America telemedicine market size²
In US\$ B

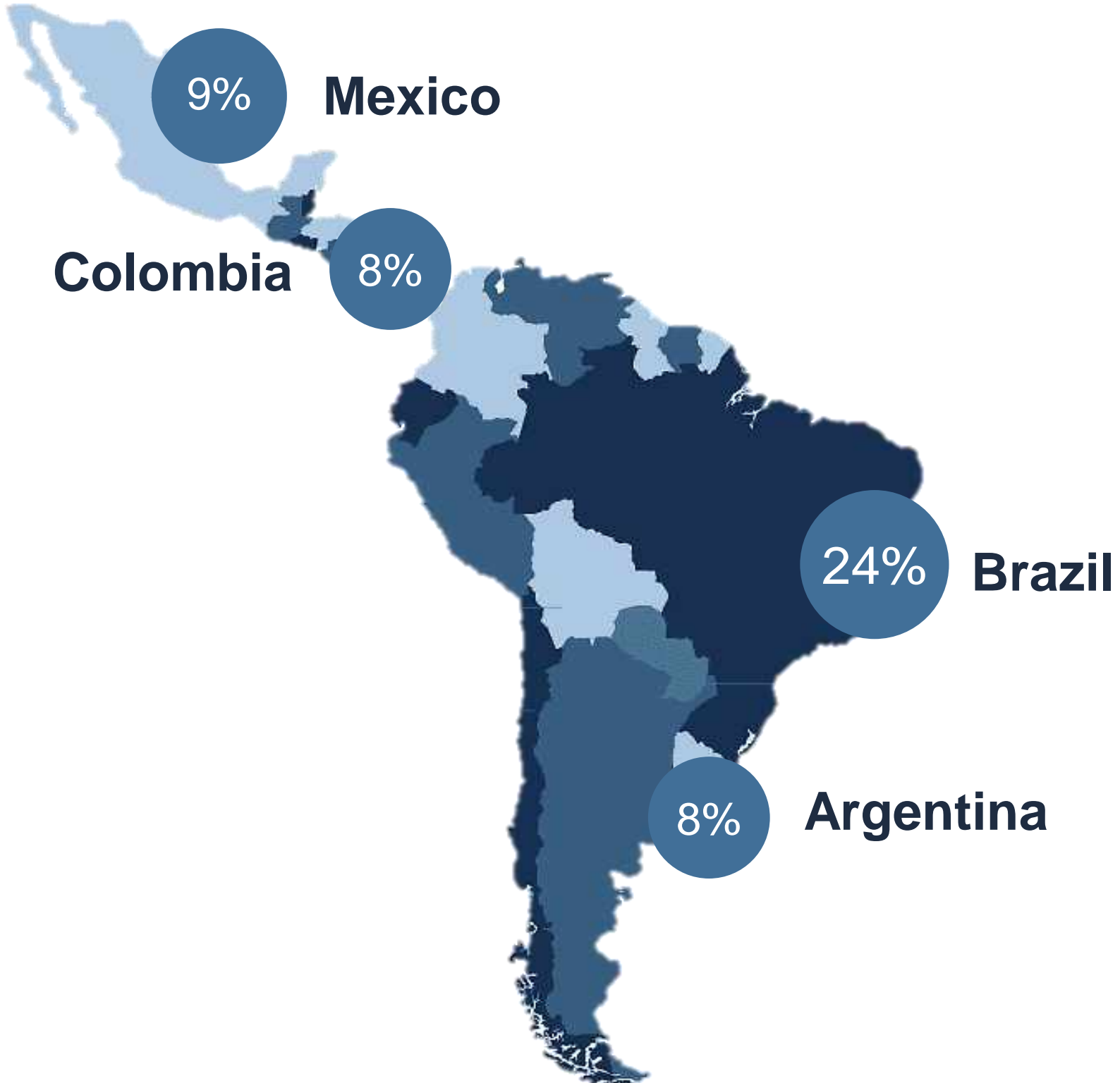


Filling the Health Insurance Gap

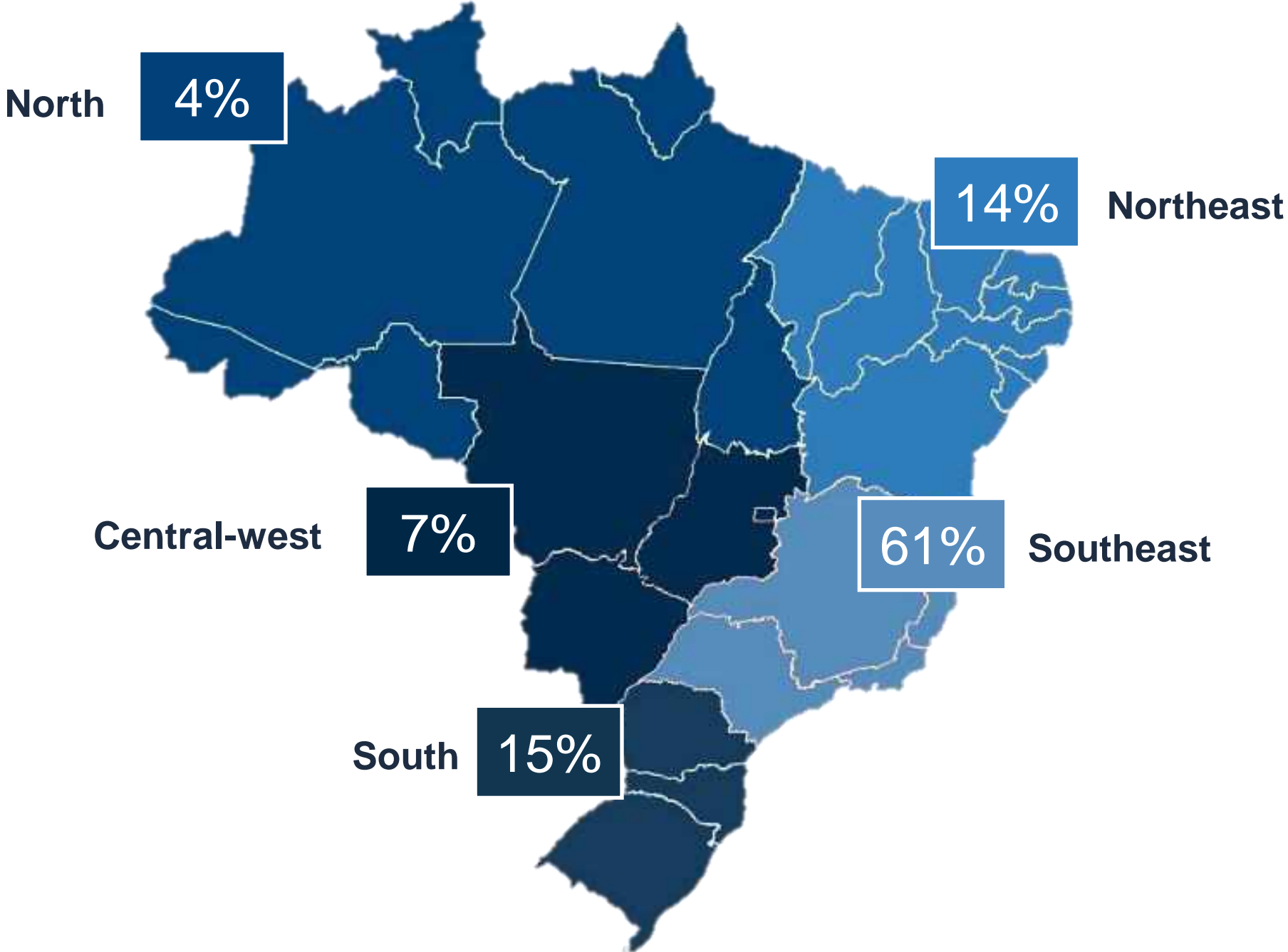
Just what the doctor ordered

While the public health system covers all of Brazil's population, private insurance is still popular in the country

Percentage of population covered by private health insurance¹



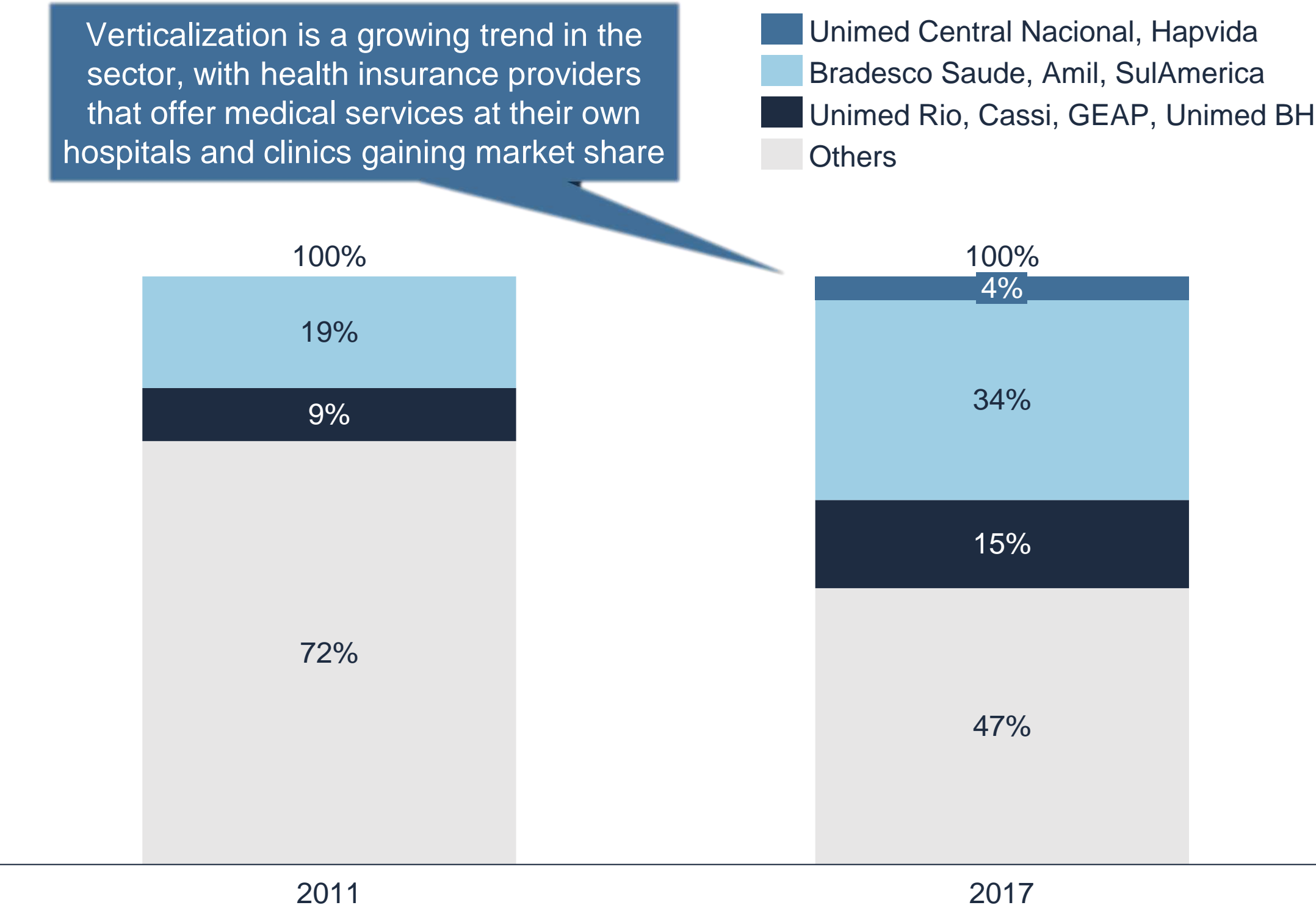
Percentage of population covered by private health insurance by region²



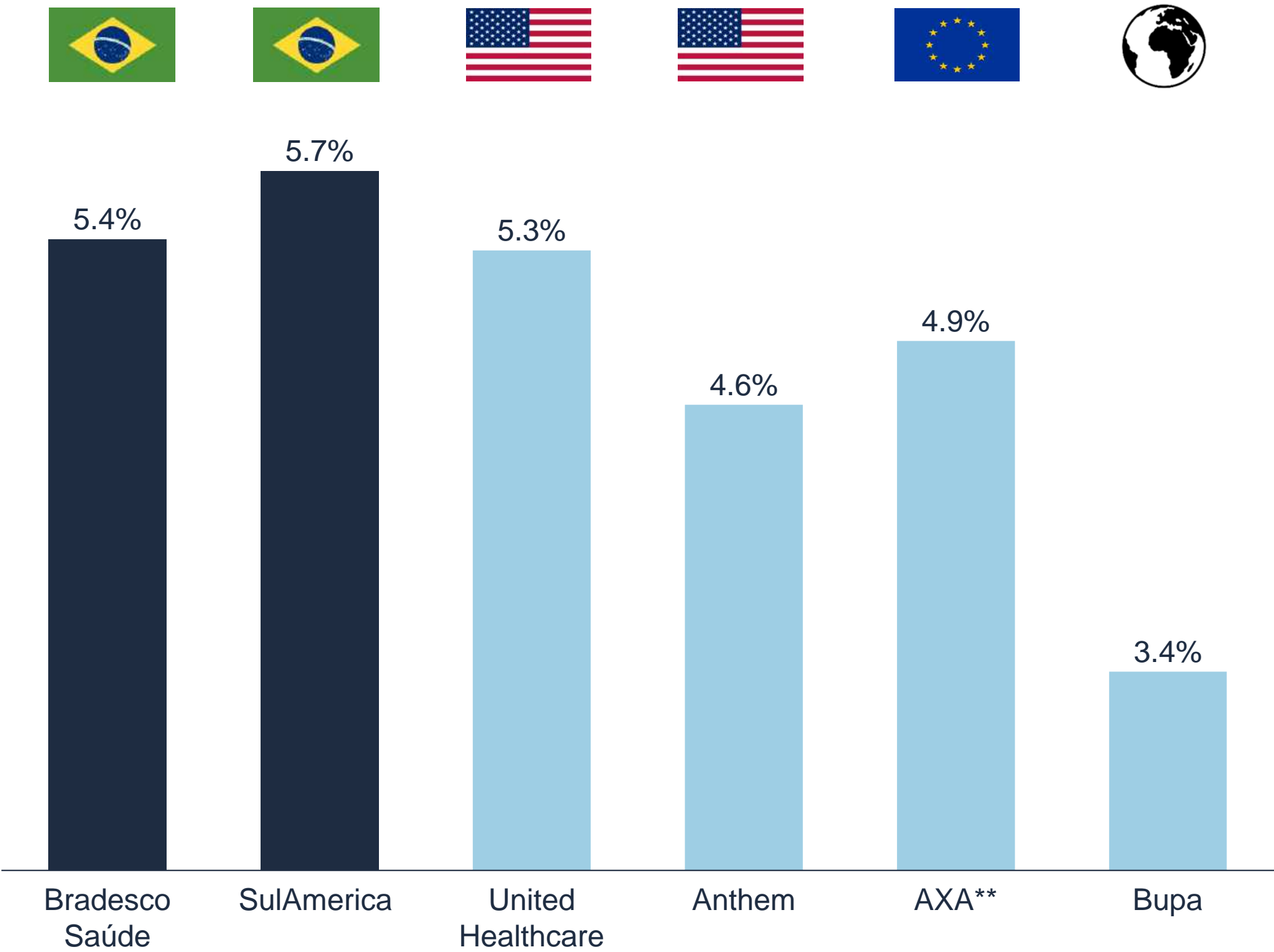
*Does not include those with private insurance plans that exclusively cover dental expenses
Sources: (1) OECD Health at a Glance 2019, (2) Brazilian National Health Confederation "Panorama of hospitals in Brazil" 2019, Atlantico analysis

The market for private health insurance has become more concentrated over time

% of market share held by top private health insurance companies¹



Net margin* of top private health insurance providers worldwide²



**Europe excluding France

*Net margin refers to the underlying earnings divided by underlying revenue in the health segment only (excluding life) from Jan 1st-Dec. 31st 2019

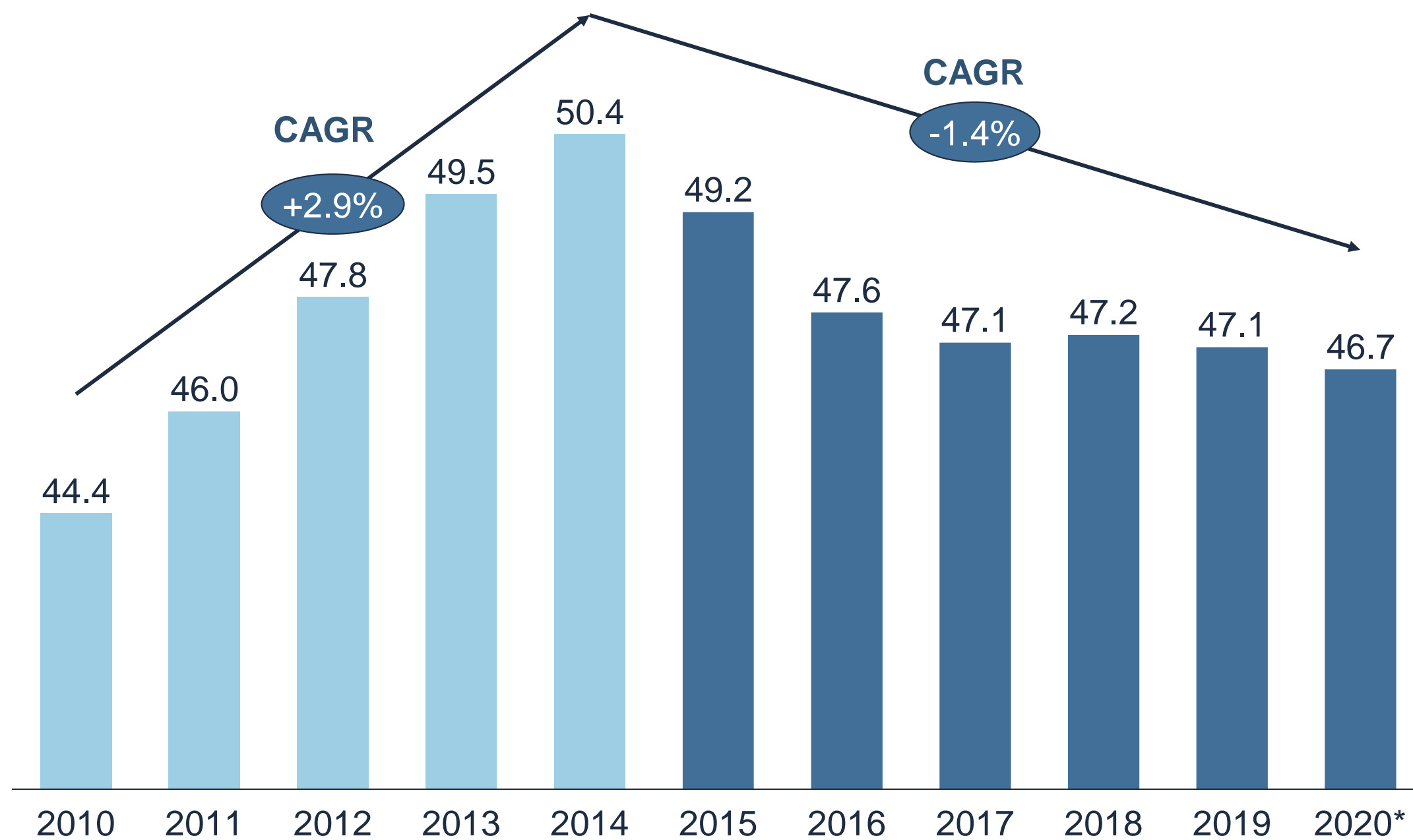
Sources: (1) McKinsey Digital Report 2019, (2) Individual company financial reports 2019, Atlantico analysis

Dr. Consulta: a leading tech-powered network of primary care clinics and virtual care for the uninsured

Dr. Consulta operates low-cost clinics that serve as a one-stop-shop for medical procedures. In eight years, they expanded to 60 clinics and 1.5M+ patients, launched a telemedicine service and released an app for bookings, prescriptions, and payments online

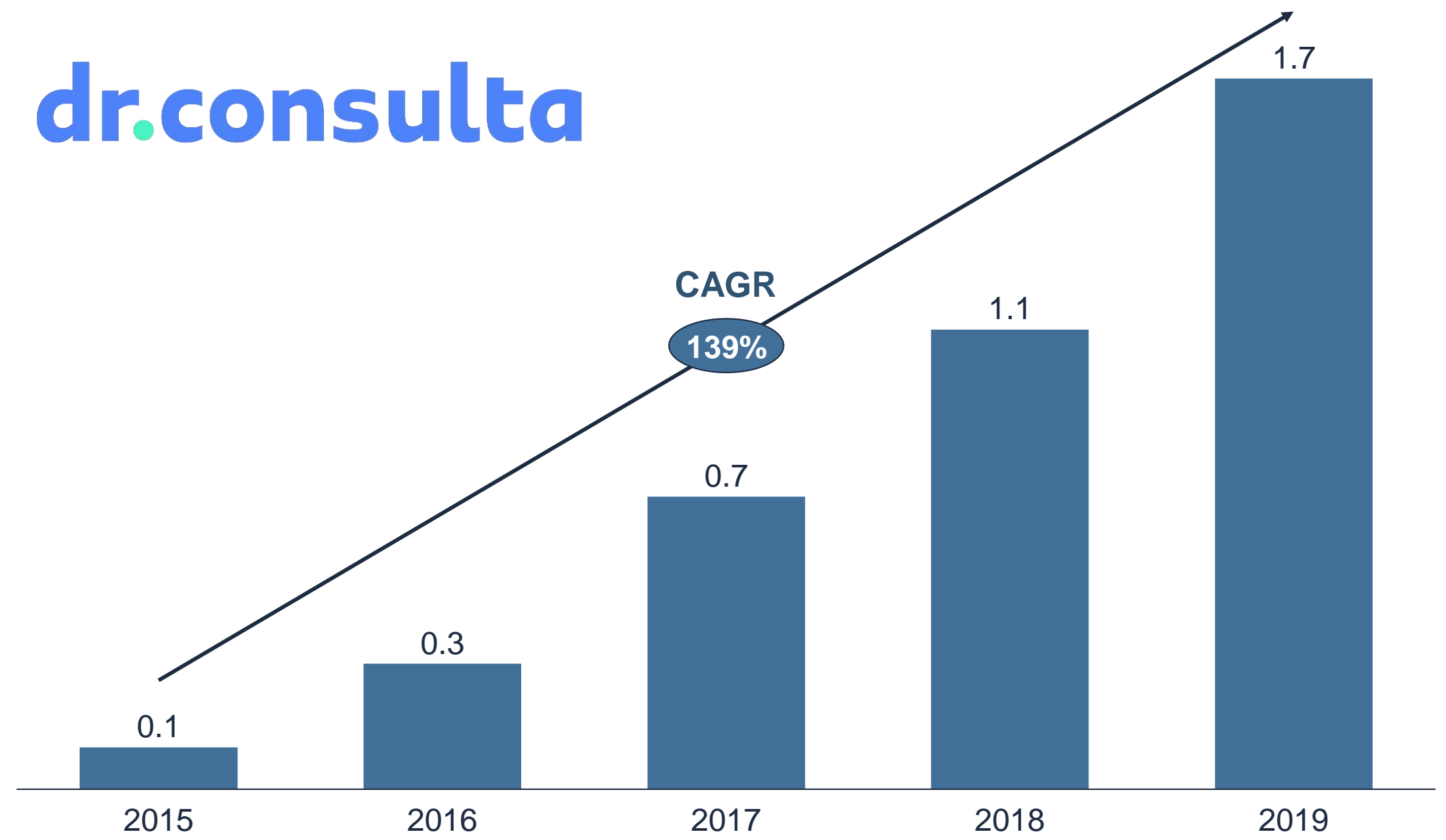
Number of Brazilians with private health insurance¹

In millions of people



Number of unique patients at Dr.Consulta^{2**}

In millions of people



*As of June 2020

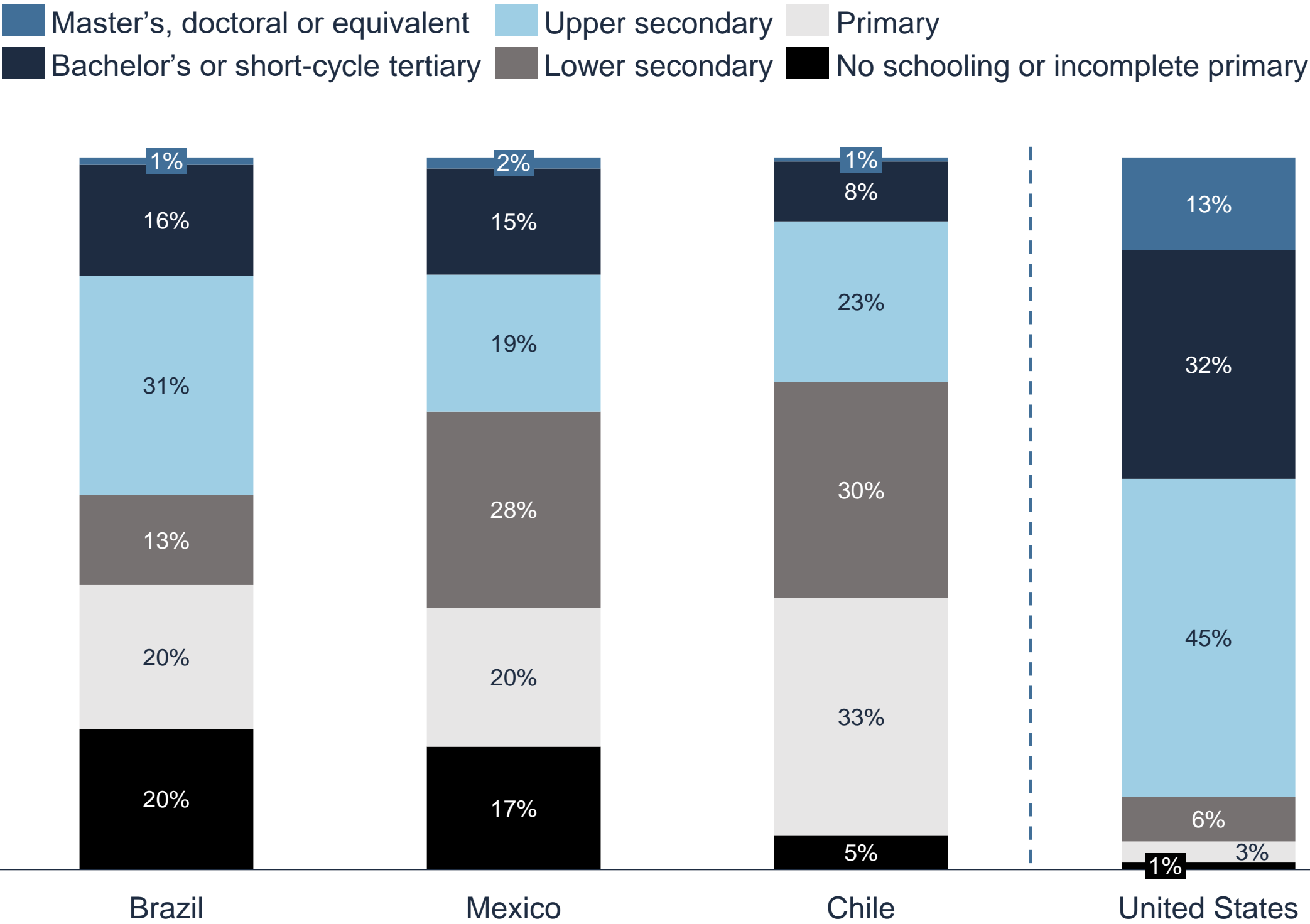
**If a patient has seen a medical professional more than once during the electronic health record reporting period, that patient is only counted once by the company

Source: (1) Brazilian Agency of Supplementary Health, (2) Dr. Consulta internal materials

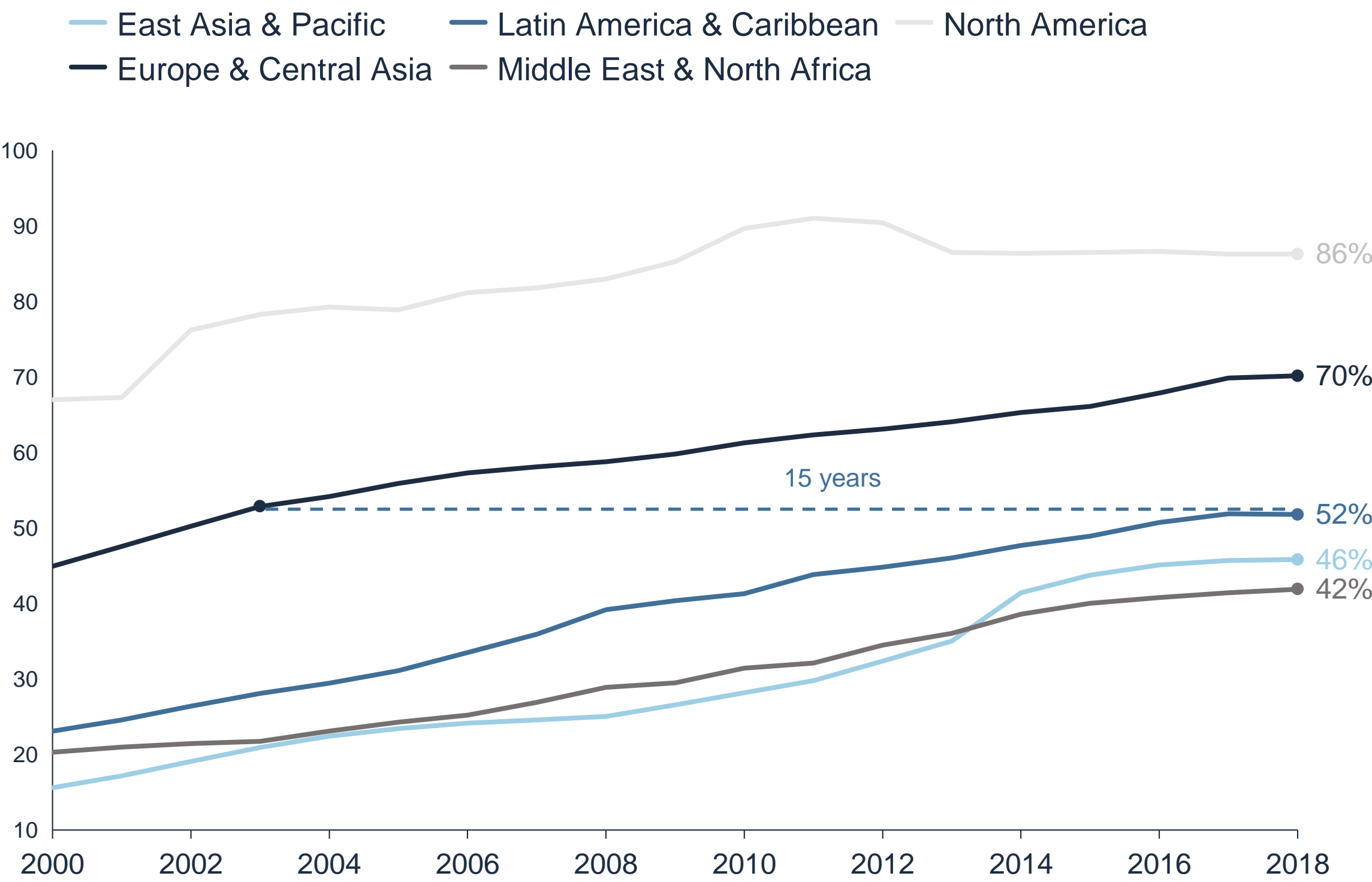
Education: Striving towards a passing grade

Latin America has lower education attainment than developed economies, but enrollment rates are on the rise

Share of population 25 years and older by educational attainment*1



Share of post-secondary school enrollment** by region1



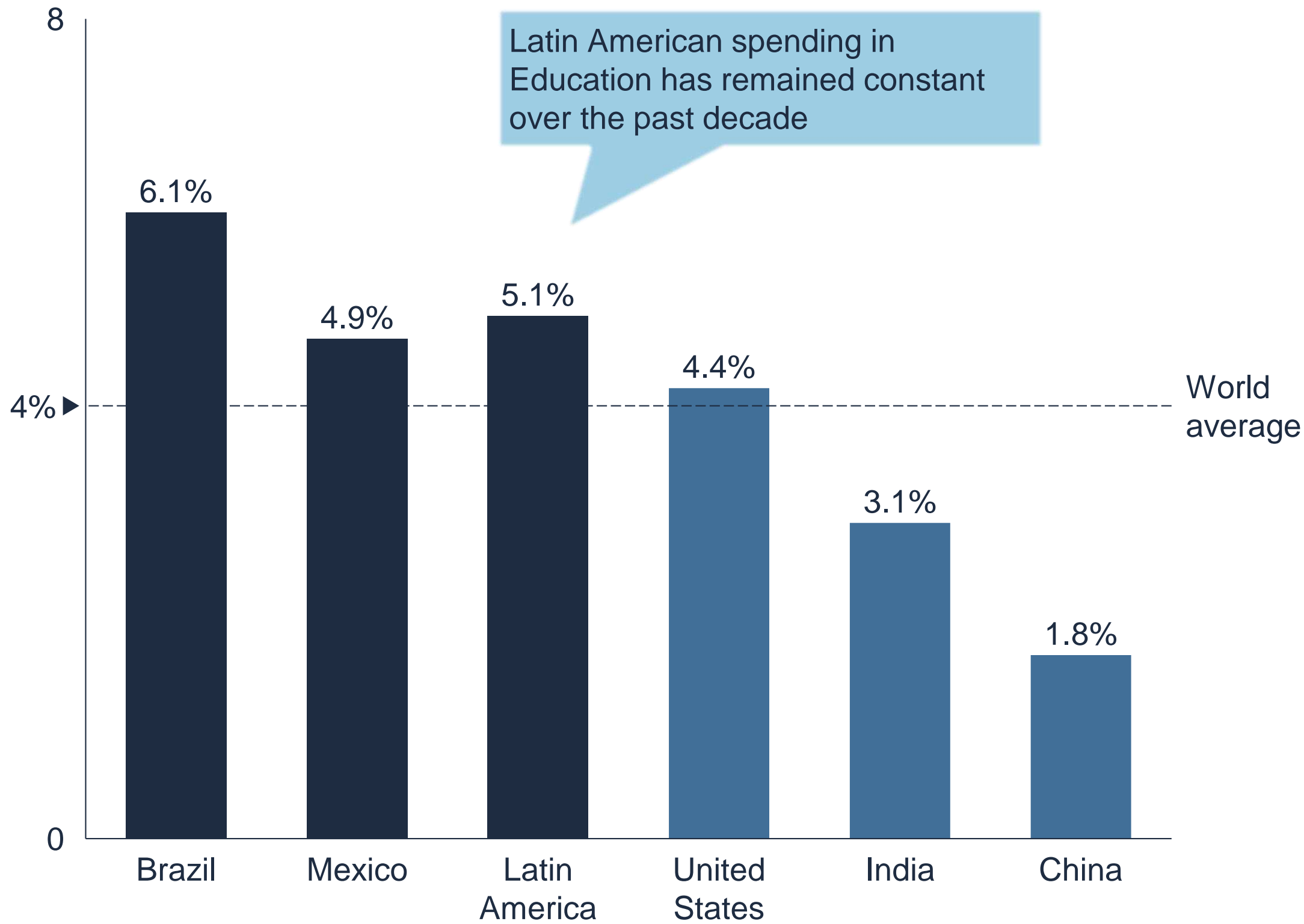
*Educational attainment for additional countries in LatAm, China and India are available in the appendix

**Population enrolled in post-secondary education as a percentage of total population in the age group that officially corresponds to that level

Source: (1) World Bank Open Data 2018

While the region spends an above-average share of its GNI in education, there is significant room for quality improvements

Share of Gross National Income spent in Education¹



Access to basic services and education quality indicators²

	LAC	North America and Western Europe
Share of schools with access to electricity*	91%	100%
Share of schools with access to internet*	58%	97%
Share of schools with access to computers*	70%	99%
Teacher to student ratio	21:1	14:1
Adult literacy rate	94%	99%
Student performance: PISA overall scores (0-700)**	411	499

*Average access to basic services across primary, lower secondary, and upper secondary schools

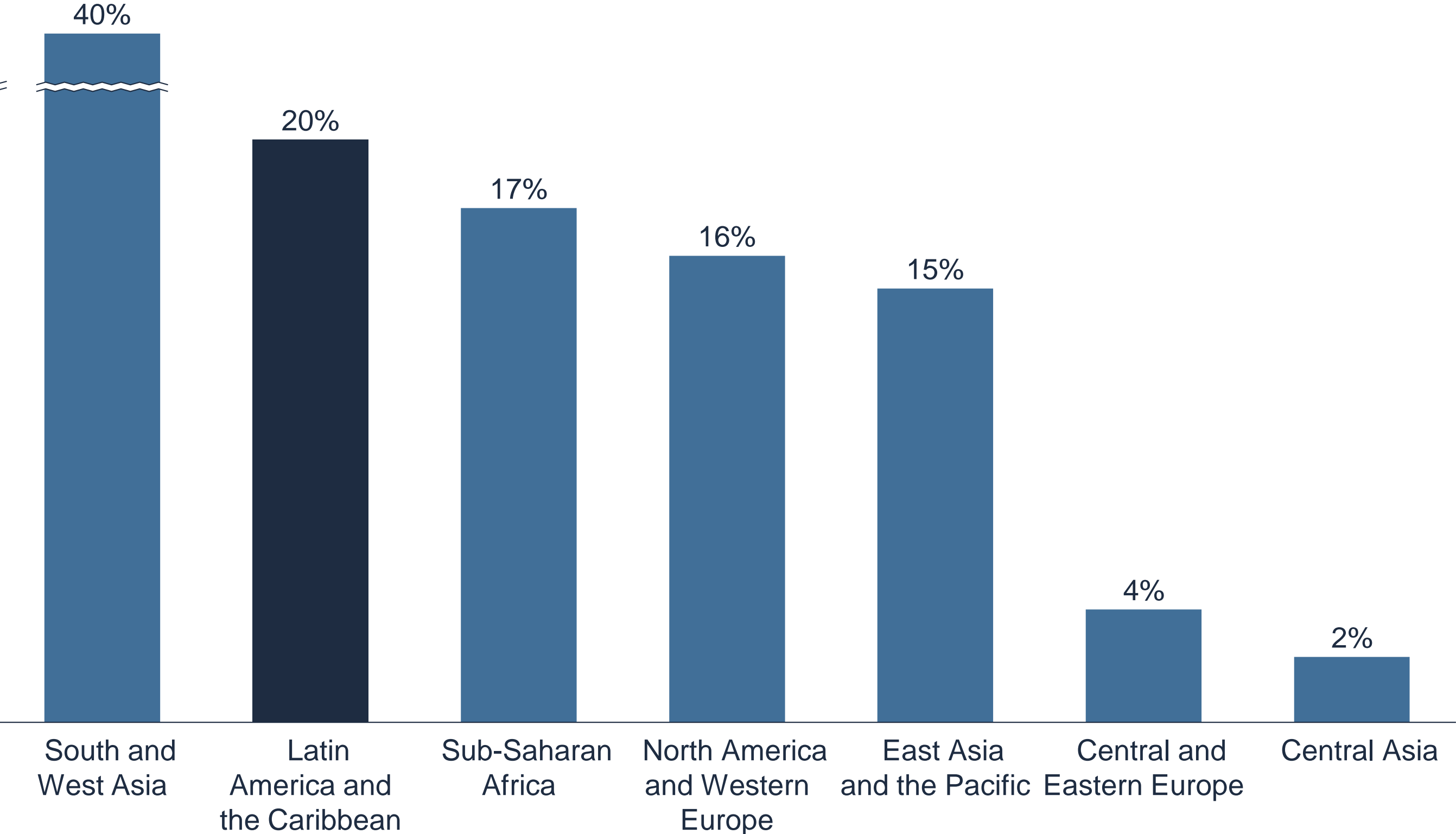
** The Programme for International Student Assessment (PISA) measures basic competences of students in math, science, and reading

Sources: (1) World Bank Open Data 2018, (2) World Bank Open Data 2018, OECD Education at a Glance 2019, OECD Pisa Results 2018, Atlantico analysis

While most of education funding is directed to public institutions, LatAm's education market is largely private

Education enrollment in private institutions by region¹

Share of primary and secondary education enrollment in private institutions as a percentage of total enrollment in 2018*



Over 95% of education funding in Brazil and Mexico is directed towards public institutions²

In 2016, 97% of education spending in Mexico and Brazil went to public institutions, compared to 90% in the US

For-profit education in most of LatAm is fully allowed, unlike in other large markets such as China and India¹

Private enrollment has increased consistently over the past 14 years in Latin America, unlike most OECD countries where it has remained constant

75% of post-secondary education in Brazil is private, presenting a massive market opportunity

The Brazilian private post secondary education generated US\$16.2B in solely tuition revenues in 2019 while basic private education generated another US\$15.2B*

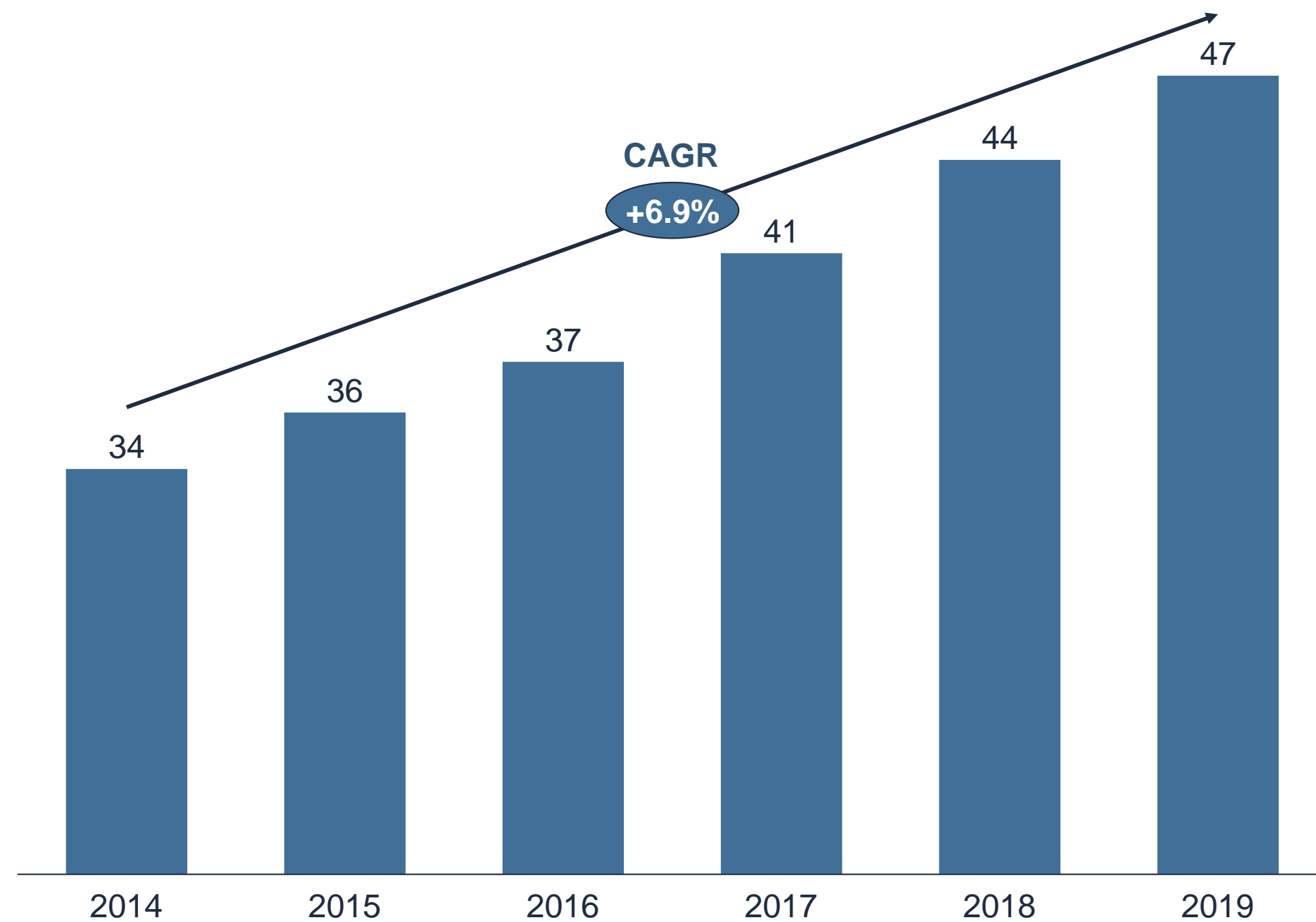
*Exchange rate from BRL to USD at 2019 yearly average: US\$ 1 = R\$ 3.95

**Average of primary and secondary school students enrolled in private institutions as a percentage of total primary and secondary school enrollment

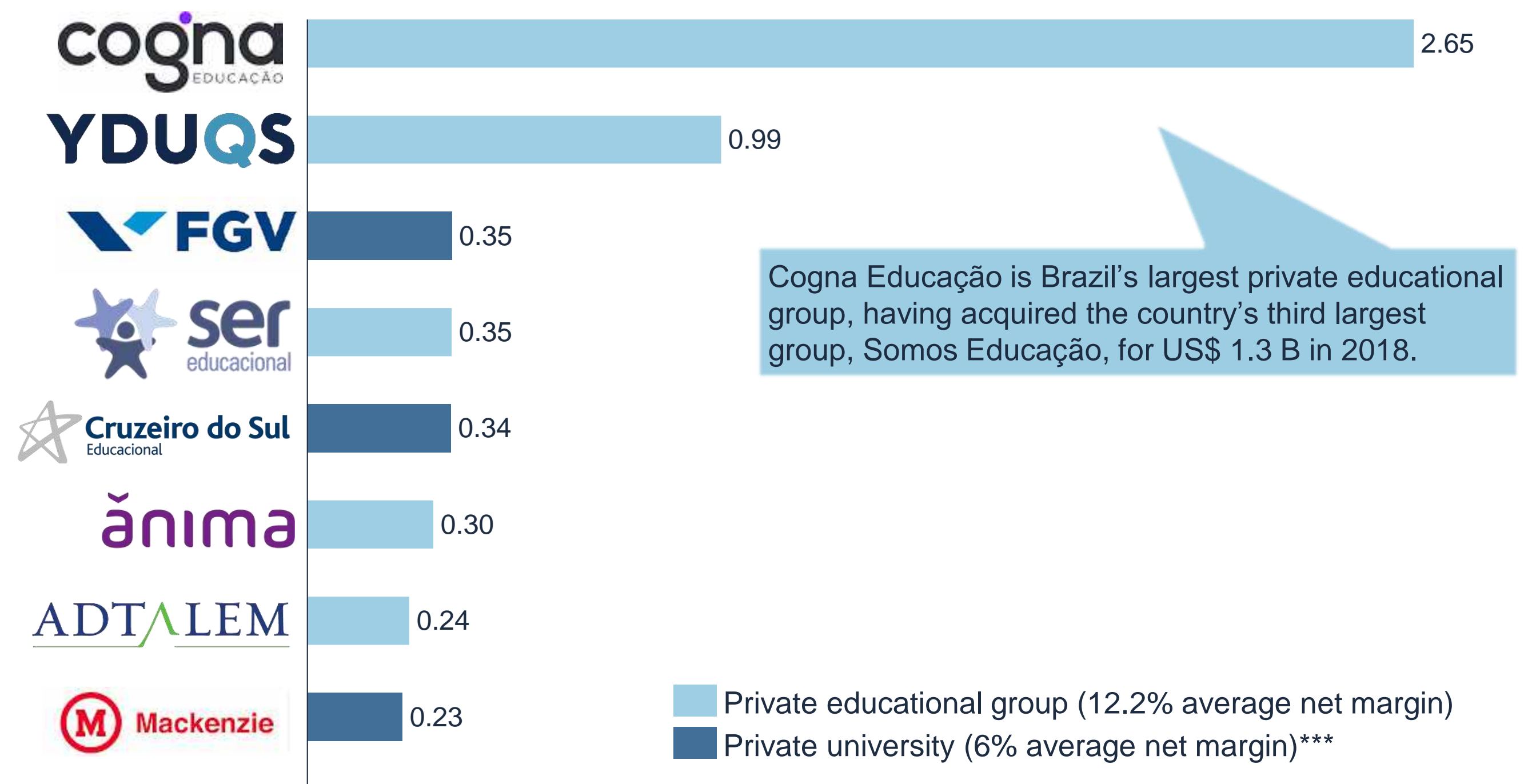
Sources: (1) OECD Data 2018, (2) World Bank Open Data 2018

Local players dominate the Brazilian private education market and continue to consolidate market share

Total household expenditure in education (in US\$ B*)¹



Brazil's largest companies in the education sector in 2018 by net revenue (in US\$ B**) ²



*Exchange rate from BRL to USD at 2019 yearly average: US\$ 1 = R\$ 3.95; **Exchange rate from BRL to USD at 2018 yearly average: US\$ 1 = R\$ 3.65;

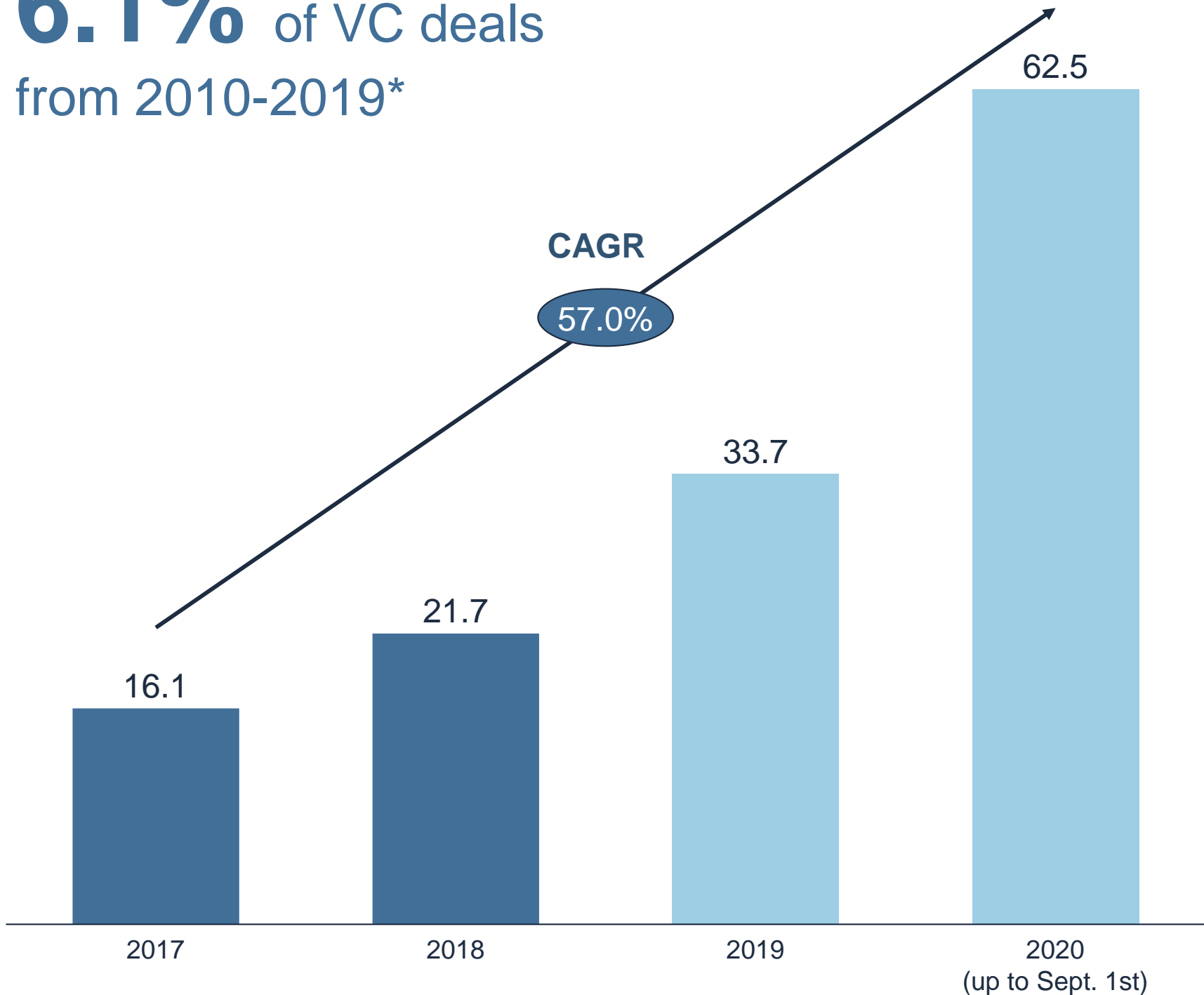
***"Net margin" here refers to the underlying earnings divided by underlying revenues from Jan 1st-Dec. 31st 2018

Sources: (1) Euromonitor International from national statistics/Eurostat/UN/OECD, (2) Valor Econômico "The Largest 1000" 2019, Atlantico analysis

Startups and venture investors are eager to address the shortcomings of education in the region

VC capital raised by education startups in Brazil (in US\$ M¹)

6.1% of VC deals from 2010-2019*



Percentage breakdown of Brazil's 434 education startups by type of education business²

21%

New ways of learning

- Gamification, VR, AR
- Accessibility and inclusion
- Corporate training
- Digital learning institutions

17%

Alternative credentials

- Technology
- Business and Finance
- Languages
- Health

4%

Educational content

- Books
- Videos

25%

Institutional tools

- Management for schools
- Tech for the classroom
- Communication for learning
- Data analytics for education

17%

Educational Platforms

- Online courses and distance learning
- Educational marketplaces
- Learning management systems (LMS)

13%

Focus on the student

- College preparation
- Studying and productivity
- Vocation and career

3%

Education financing

- Scholarships and student loans
- Crowdfunding

*There were 1,864 VC deals across all industries, rounds, and stages in Brazil from 2010-2019. 114 of them were with education startups

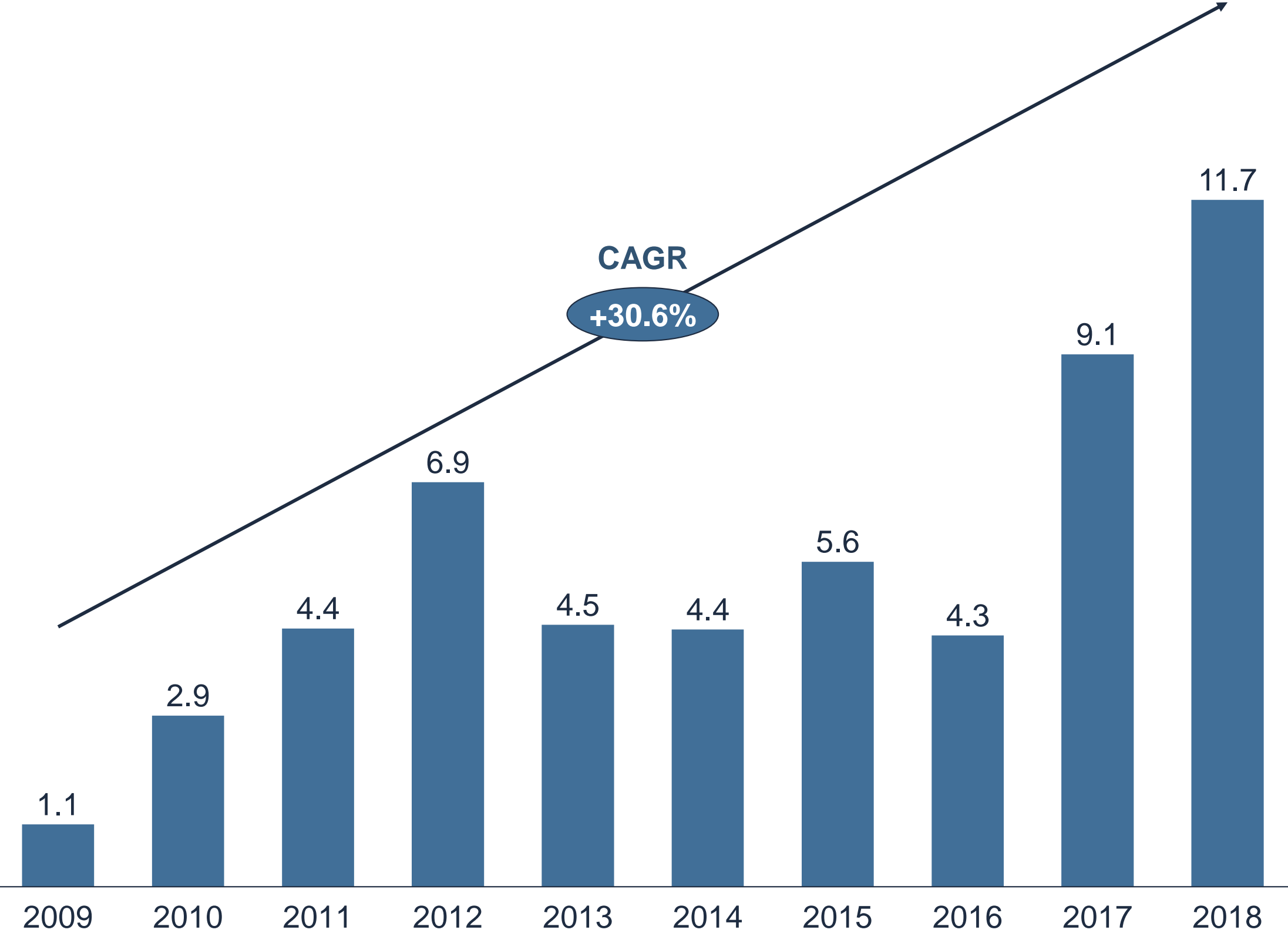
Sources: (1) Pitchbook, (2) Distrito EdTech Report 2019

Distance Learning

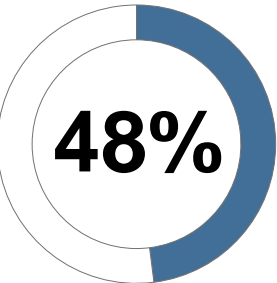
Education without (physical) frontiers

In LatAm, distance learning has grown by 10X in the last decade and is now a reality for millions of satisfied students

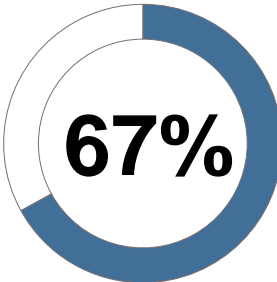
Enrollment in accredited and non-accredited distance learning courses in Brazil in millions of students¹



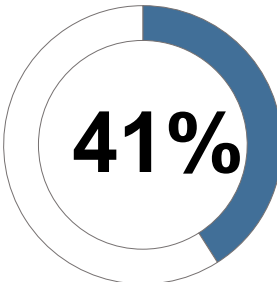
Distance learning snapshot in Brazil and Mexico in 2019



Of internet users in Brazil have taken an online course, 24% of which successfully completed an online undergraduate degree²



Of those who had completed an online course in Brazil would recommend their course to others²



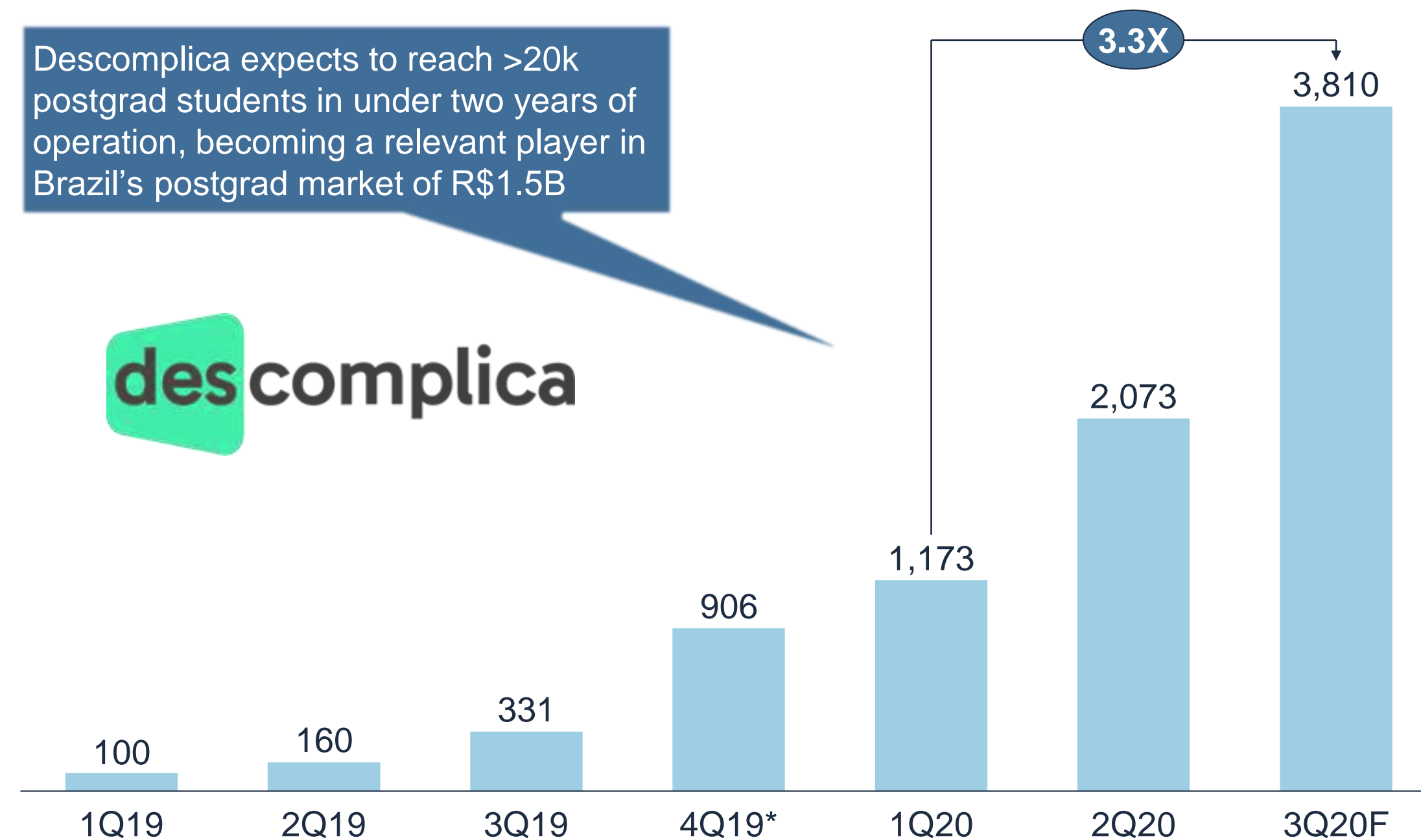
Of students in Mexico enrolled in an online program spent over 20,000 pesos (~1,050 US\$) in online learning³

Sources: (1) Brazilian Census for Distance Learning 2019, (2) Ibope Conecta Distance Learning Study 2019 (2,000 internet users across Brazil aged 16+), (3) Estudio de Educacion en Linea en Mexico 2019 (474 internet users across Mexico)

Descomplica: Brazilian education technology startup becomes the first 100% digital university in the country

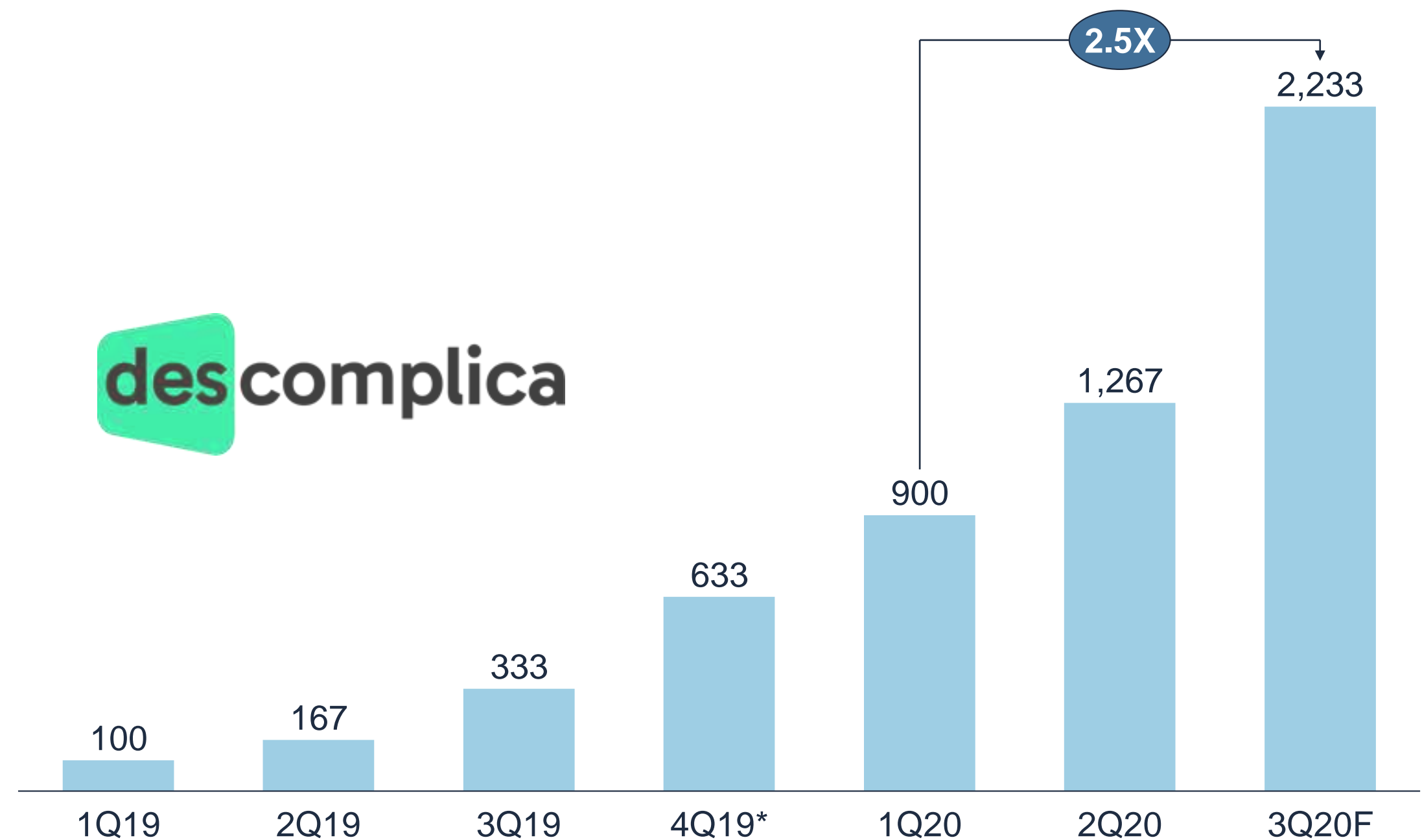
Growth in post-grad courses sold per quarter

Baseline for 1Q19 set to 100



Growth in postgrad sales booking per quarter

Baseline for 1Q19 set to 100



*November data overwritten as an average for the period to eliminate an outlier caused by special promotional pricing during the month of November
Source: Descomplica Internal Materials

Alternative Credentials

Not your parents' kind of degree

In Latin America, education startups are capitalizing on the strong demand for new ways of learning

Latin America-based alternative credential platforms Platzi and Crehana saw 40% growth in users in response to COVID-19

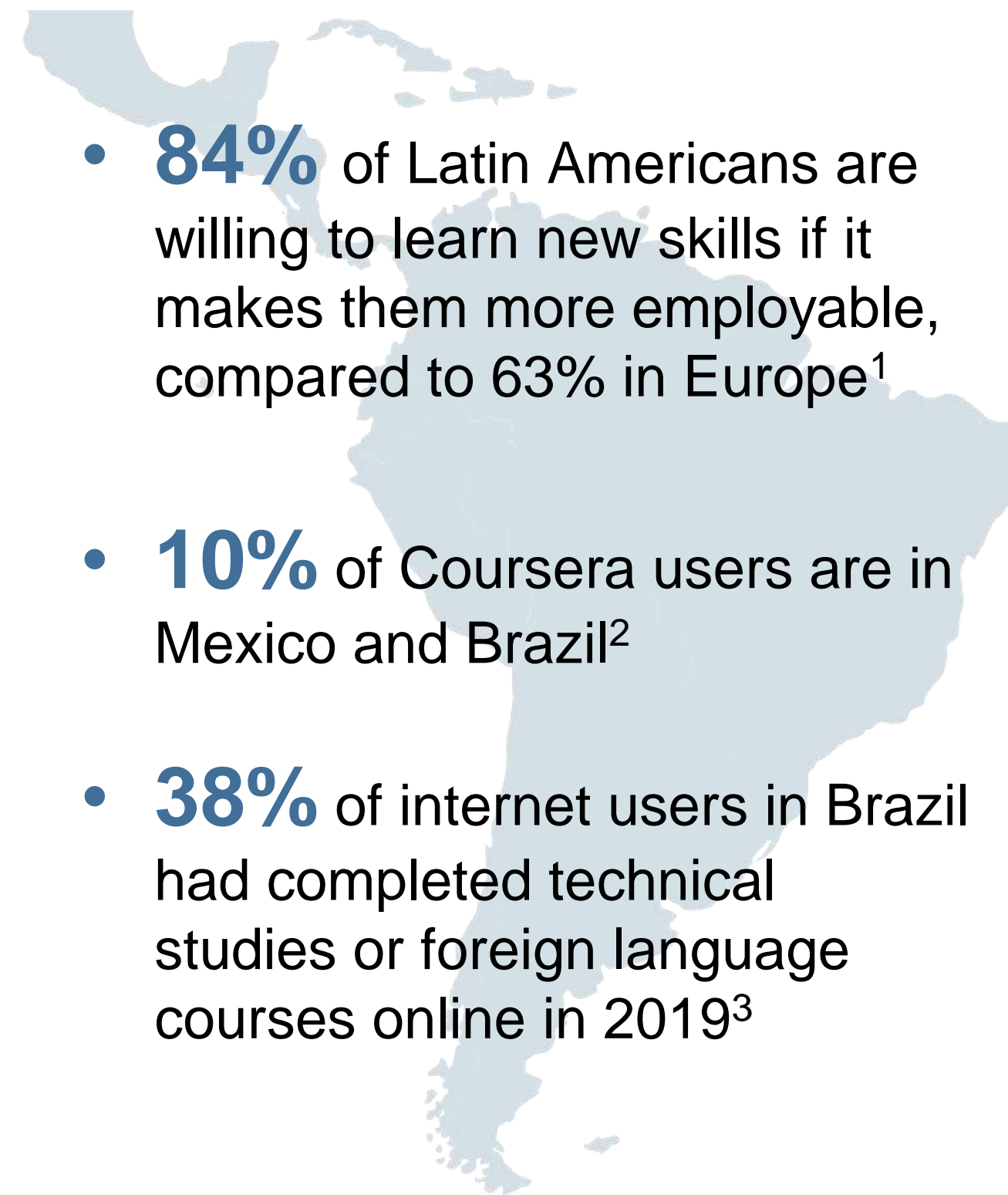
Technology and Business*

Platzi alura TRYBE

mine-class crehana

UBITS BEDU Digital House > Coding School

collective CA academy ACÁMICA



Credentials across subjects*

Griky descomplica

veduca Aprende INSTITUTE learncafe

KULTIVI PORTAL EDUCAÇÃO edu K viva da sua paixão

Thincrs teachlr®

*Non-exhaustive sample of players in the Latin American alternative credentials market based on Holon IQ's Top 100 Latin American EdTech Startups 2020

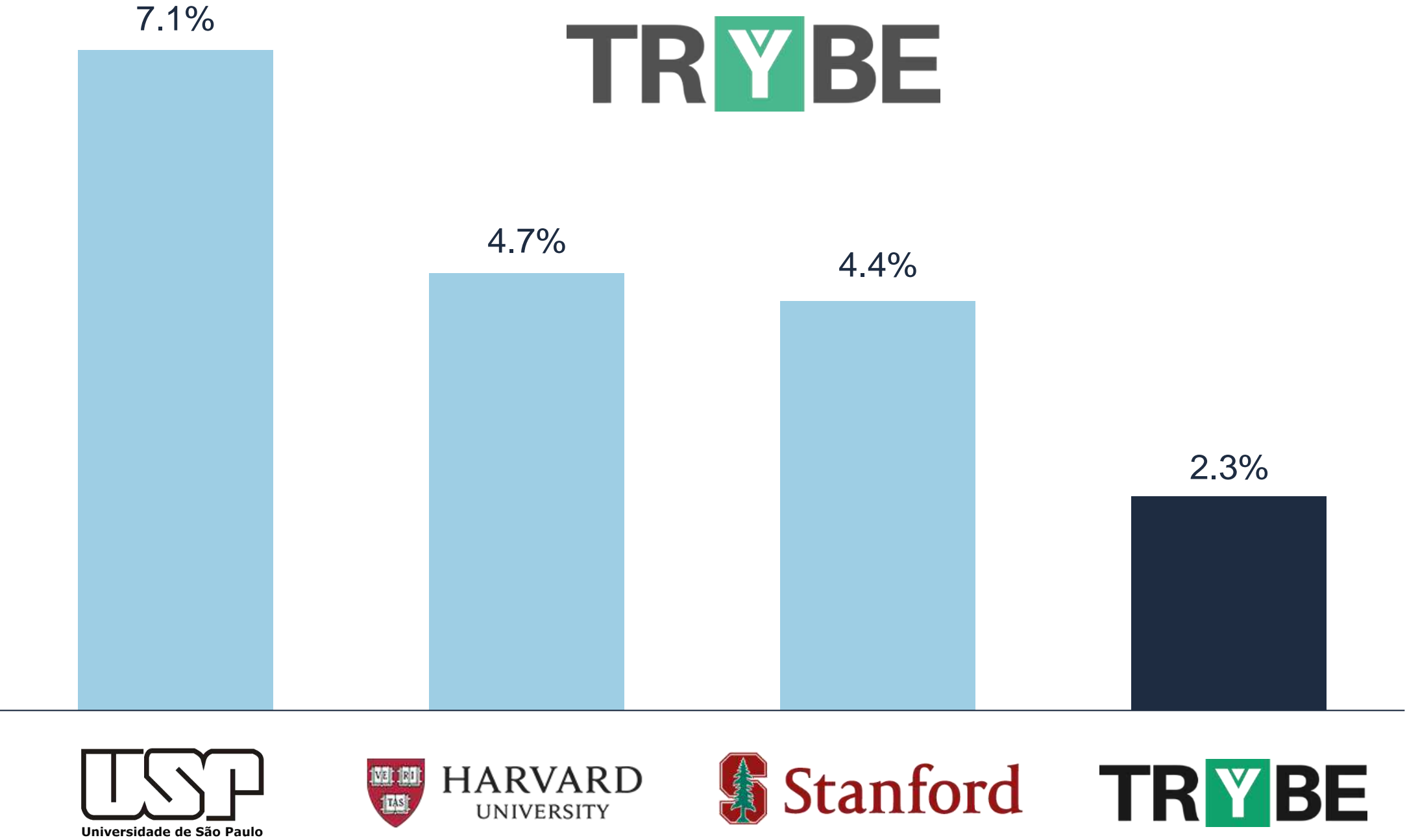
Sources: (1) BCG Decoding Global Trends in Upskilling and Reskilling 2019, (2) OECD The Emergence of Alternative Credentials 2020, (3) Brazilian Census for Distance Learning 2018

Trybe: Brazilian startup offers fully-financed yearlong training for high-paying tech jobs

In Brazil, the digital crunch is among the worst in the world: 14M people are unemployed but 70k tech jobs remain unfilled, even while paying 2.8X the national average salary. The crunch is expected to worsen as 420k new tech positions are added by 2024

- 75%** of companies in Latin America express difficulty in finding and hiring IT-educated workers¹
- 50%** of companies don't find candidates with the skills they need, compared to 36% in OECD countries¹
- 80%** of millennials would change to a job with the same salary but more skills training opportunities¹
- 93%** of millennials would spend their own free time and/or money on further skills training¹

Among the Most Desired and Selective in the World
Acceptance rate of educational institutions (latest cohorts)²



Sources used in this presentation

ABECS
Americas Market Intelligence's COVID
Consumer Snapshot Studies
Anatel
Anbima Daily Investment Funds
Report
Anexo Estatístico de Pobreza en
Mexico 2018
Appfigures
Atlantico "Family Office Radar 2020"
Banco Central do Brasil
Banco de México
BCG Decoding Global Trends in
Upskilling and Reskilling 2019
Brasil Bolsa Balcão Individual Investor
Data
Brazil Journal
Brazilian Agency of Supplementary
Health
Brazilian Census for Distance Learning
2019
Brazilian Health Ministry
Brazilian National Health
Confederation "Panorama of hospitals
in Brazil" 2019
Cable.co.uk
Capital IQ
CIA World Fact Book
CNBC
Cogna Educação Quarterly Results
Conexa internal data
Credit Suisse
Croma Insights
Data Favela
DataSenado
Deloitte
Descomplica internal data
Distrito
Economatica
E-Marketer
Estadão
Estado de Minas
Estudio de Educacion en Linea en
Mexico
Euromonitor
Federal Reserve Bank of San
Francisco and Worldpay Global
Payments Report
Fundação Lemann
Future Education "Impact in the
Brazilian Ecosystem of Innovation
in Education: COVID-19" 2020
Global Market Insights
Guiabolso internal data
Hashdex internal materials
IBGE
Ibope Conecta Distance Learning
Study
iFood internal data
Instituto Locomotiva
Inter-American Development Bank
International Labor
Organization
International Monetary Fund
Investment Company Institute
Report 2019
IPSOS Global Views on
Healthcare
J.P. Morgan 2019 Payment
Trends Global Insights Report
Kantar Future Finance Report
LAVCA
Loft internal data
London School of Economics
Mapfre The Latin American
Insurance Market
MCC-ENET
McKinsey Digital Report
Nubank
OECD
OECD Governement at a
Glance Latin America 2020
Opinion Box
Panorama Mobile Time
Pitchbook
Priori Data
Providers' 2020 half-year
results
Rappi internal data
Russel Investments
S&P Global
São Paulo's Association of
Medicine
Sebrae
SP Global
StatCounter
Statista
TechCrunch
Technavio Alternative
Credentials Market for Higher
Education
The American Bar Association
The Economic Comission for
Latin American and the
Caribbean
The Nilson Report
The United Nations
The World Bank
TMF Group
Transparency International Latin
America Global Corruption
Barometer
Trybe Internal Data
Uber Newsroom
UNESCO
US Bureau of Economic Analysis
Valor Econômico
VTEX internal data
We Are Social
World Economic Forum Gender
Index Report
World Health Organization
XP Inc Prospectus

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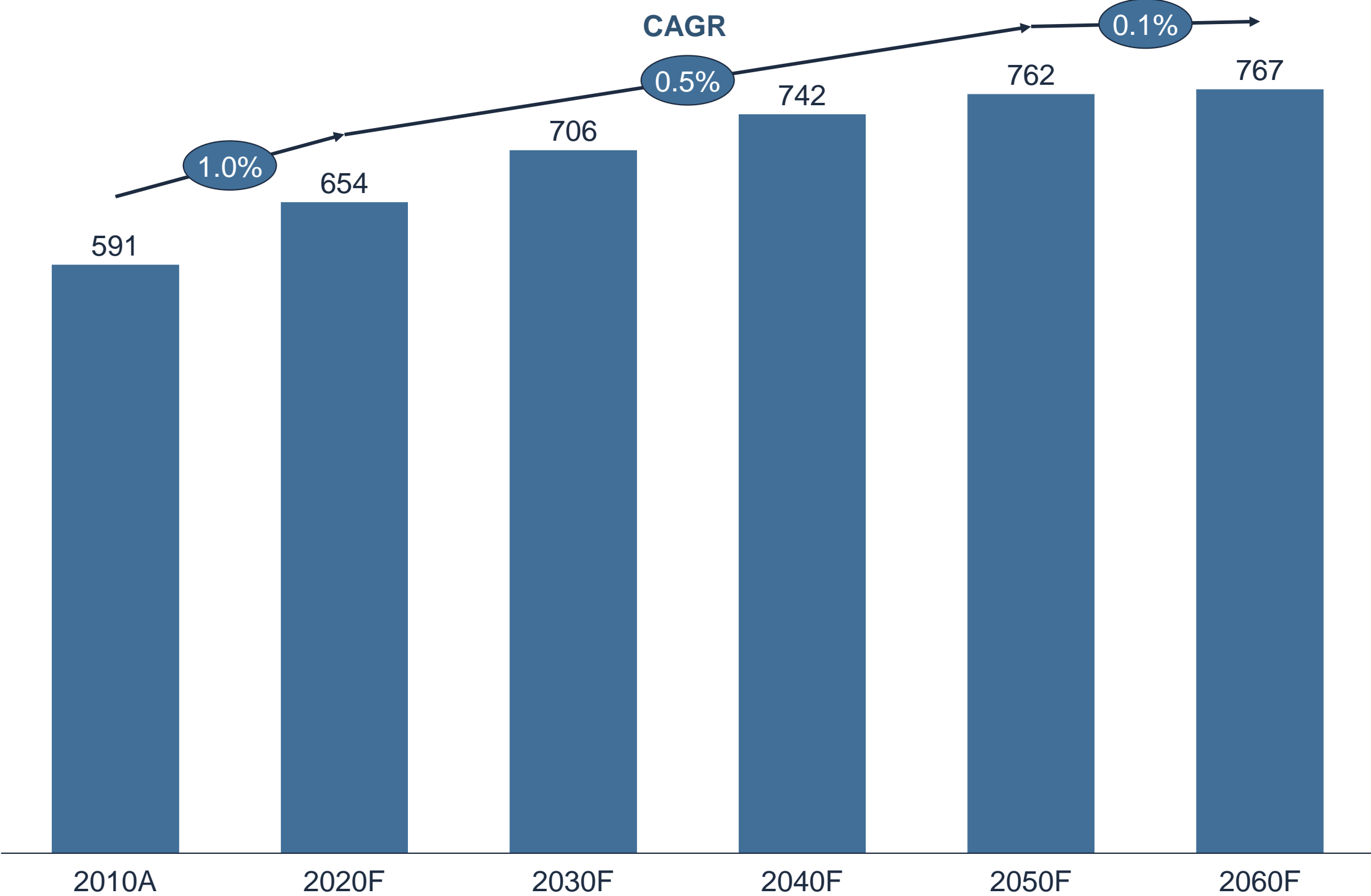
Appendix

Socioeconomic Foundations

Latin America is expected to reach maximum population by 2058 and continues to benefit from a young population

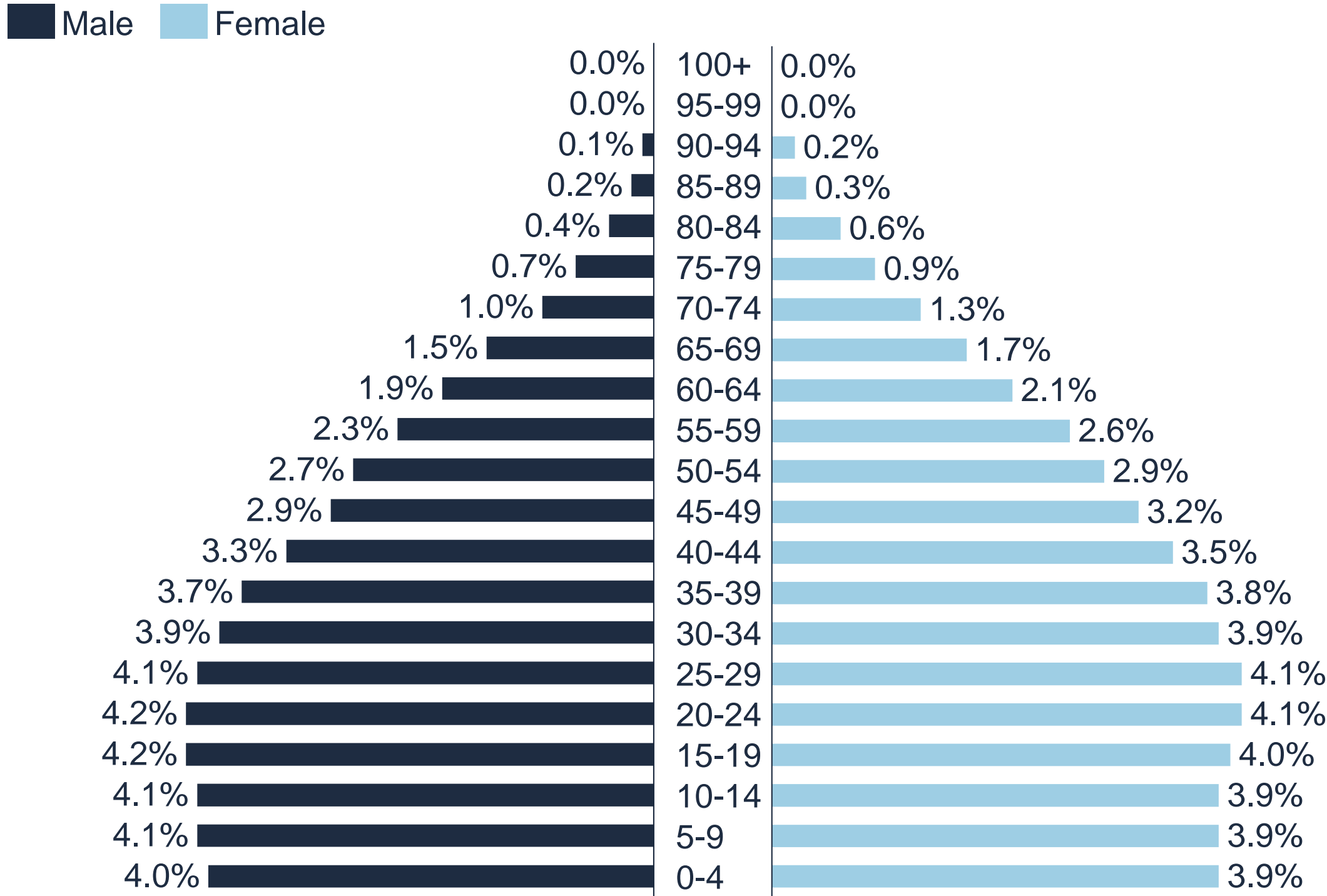
Population growth for Latin America and Caribbean

Millions of people



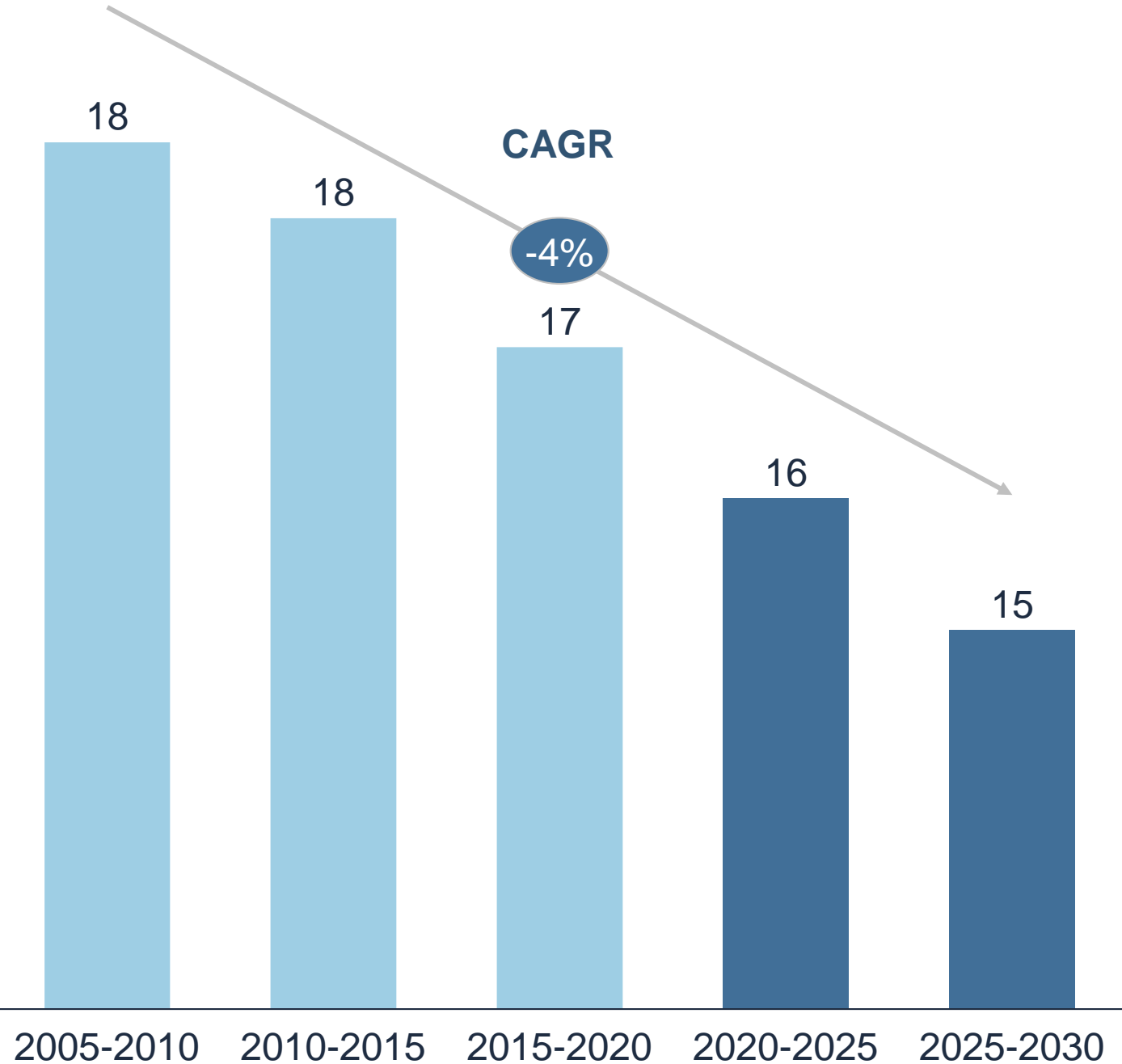
Population pyramid for the LAC* region

Percentage of population by age in 2020

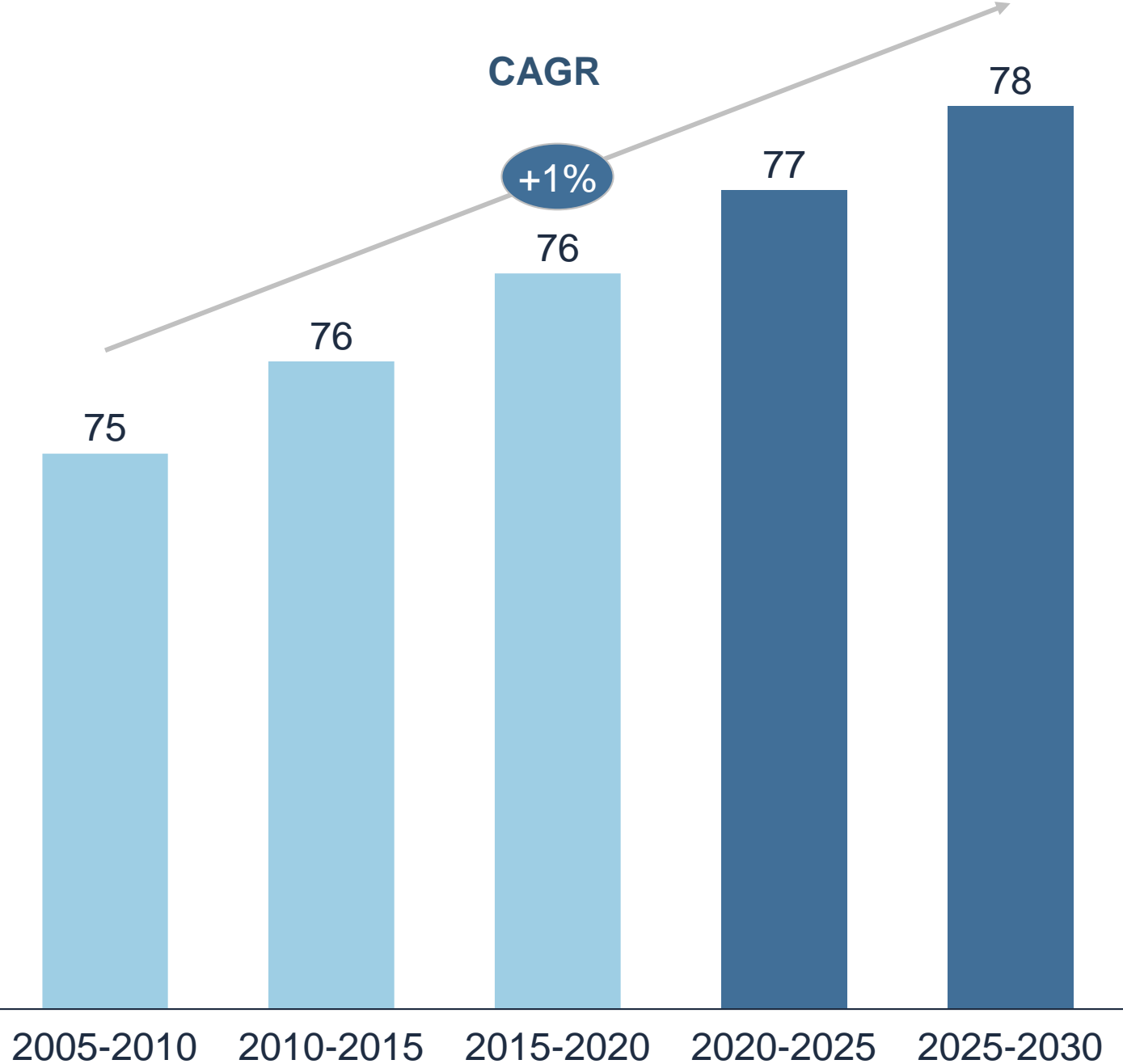


Lower fertility rates and longer life expectancies are leading to an ageing population in Latin America

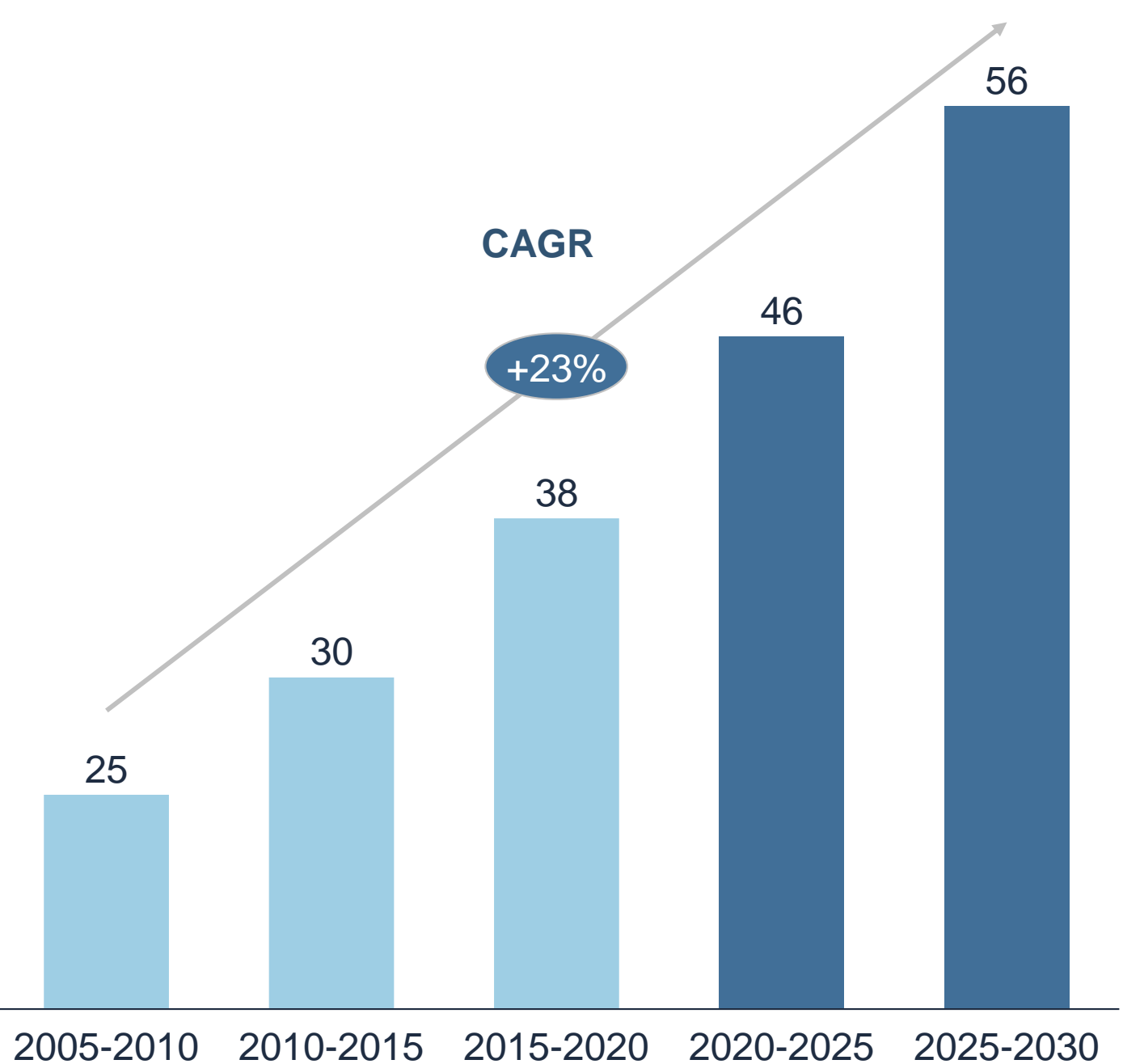
Crude birth rate
Per 1,000 people



Life expectancy at birth
In years



Old to Young Ratio
Per 100

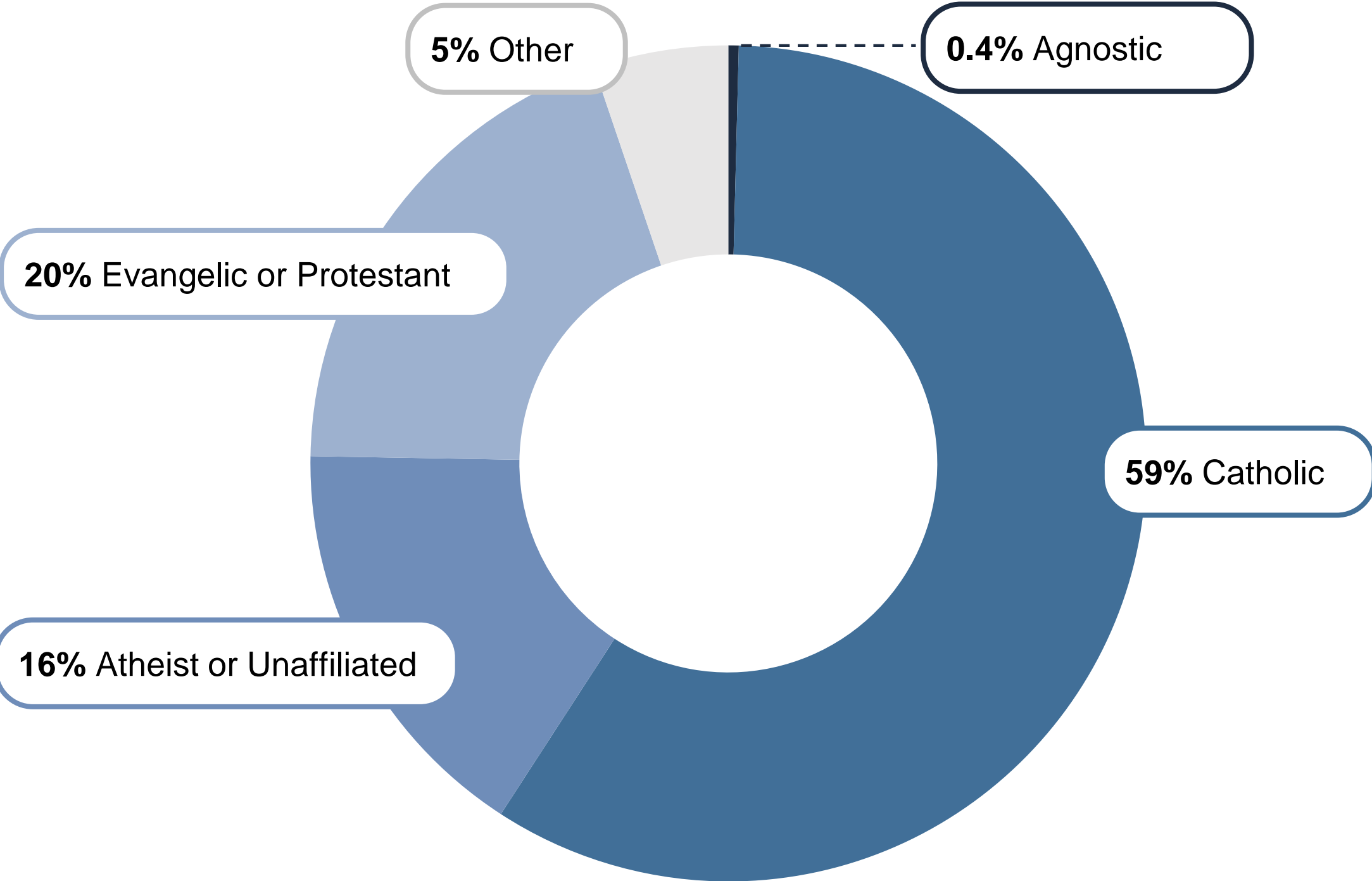


Source: The Economic Commission for Latin America and the Caribbean 2019

The vast majority of Latin Americans are Catholic and many claim that religion is very important in their lives

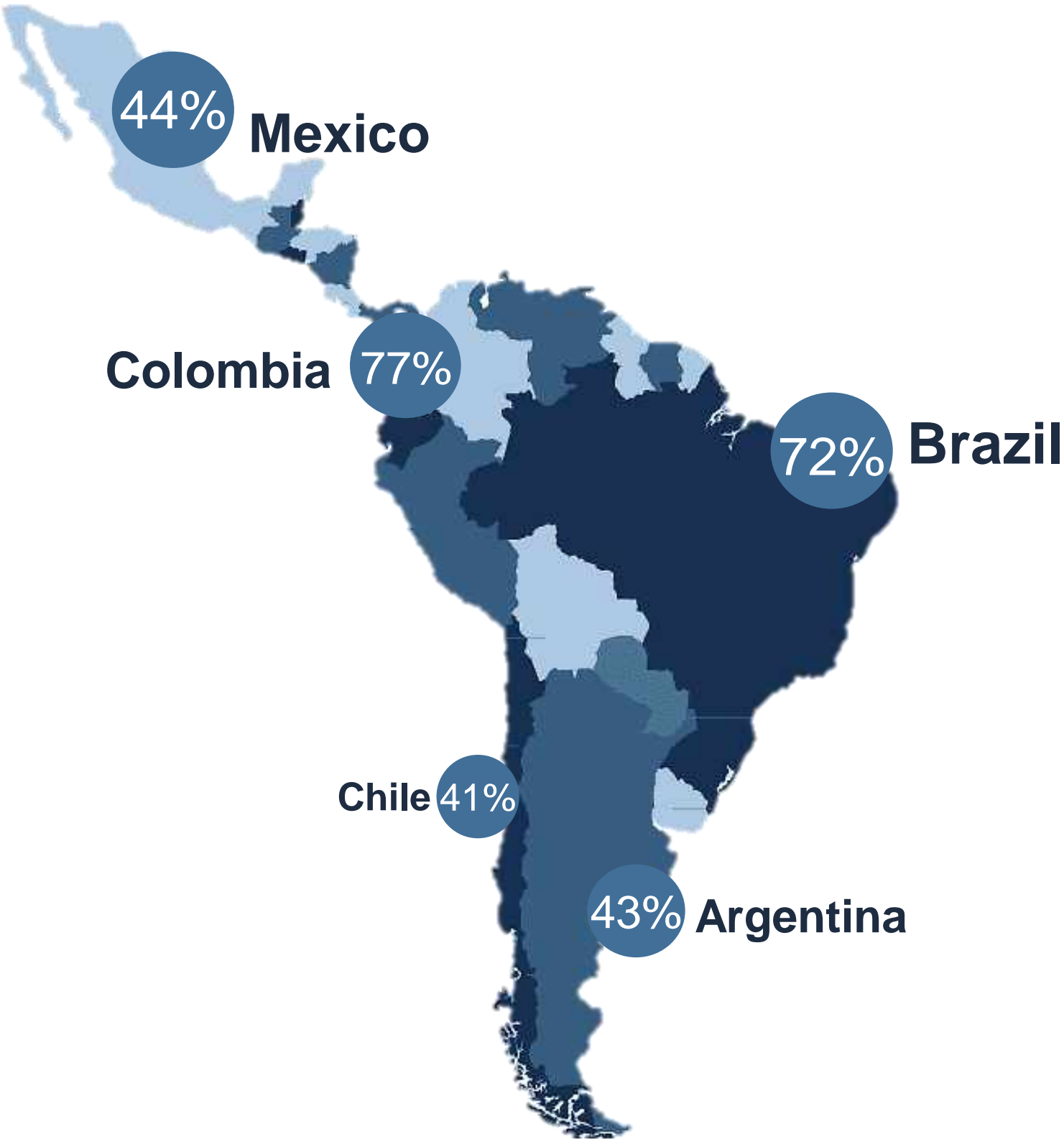
LatAm's population distribution by religion

Percentage of respondents by self-identified religion²



Importance of religion

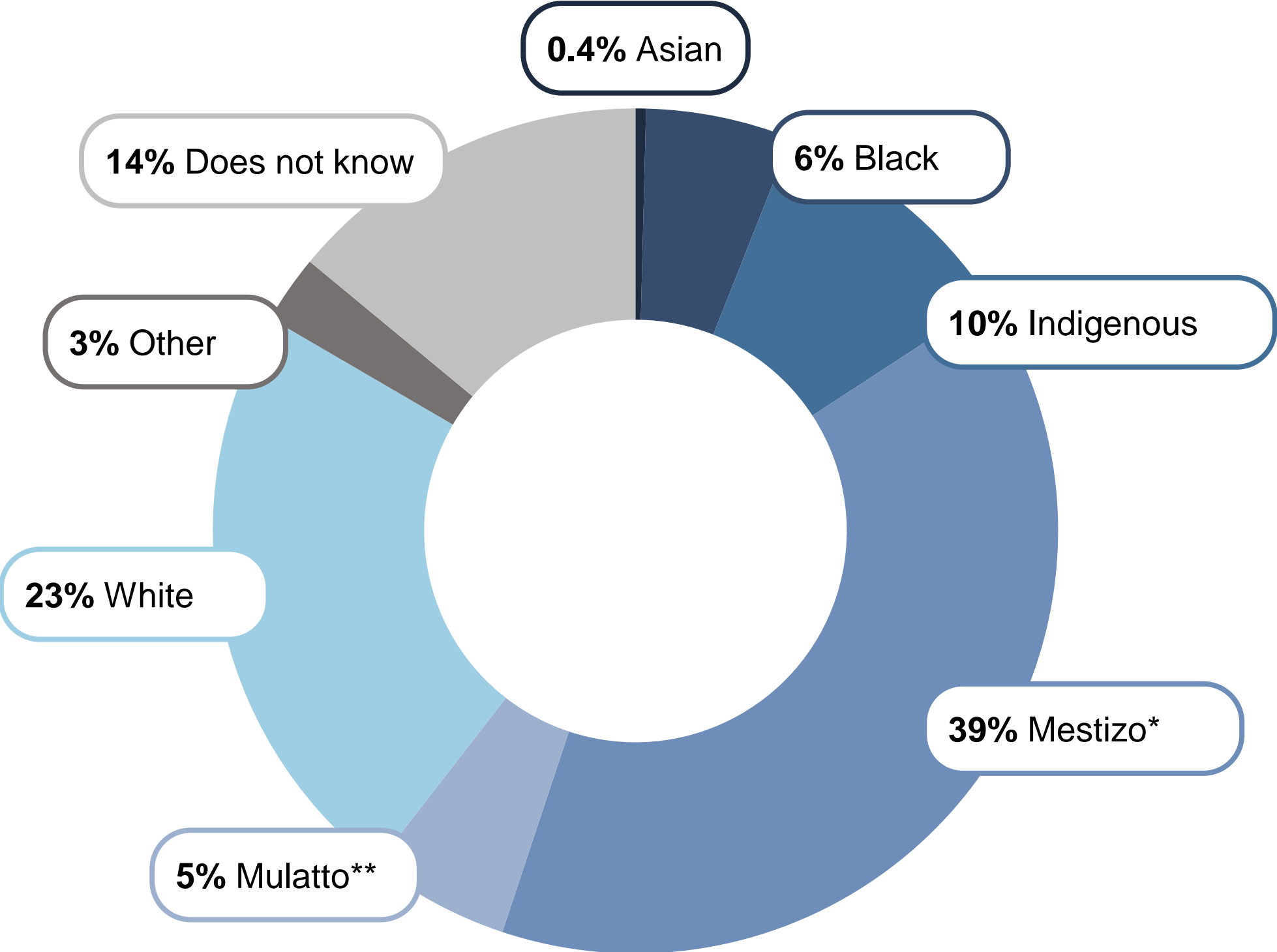
Percentage of people for whom religion is very important¹



Sources: (1) Pew Research Survey 2014 (1,500 respondents per country), Latinobarometro Census 2018 (1,000-1,200 respondents per country across 18 Latin American countries)

Latin America is home to a diversity of races and ethnicities, with 39% of people identifying as mixed-race

LatAm's population distribution by race
Percentage of respondents by self-identified race



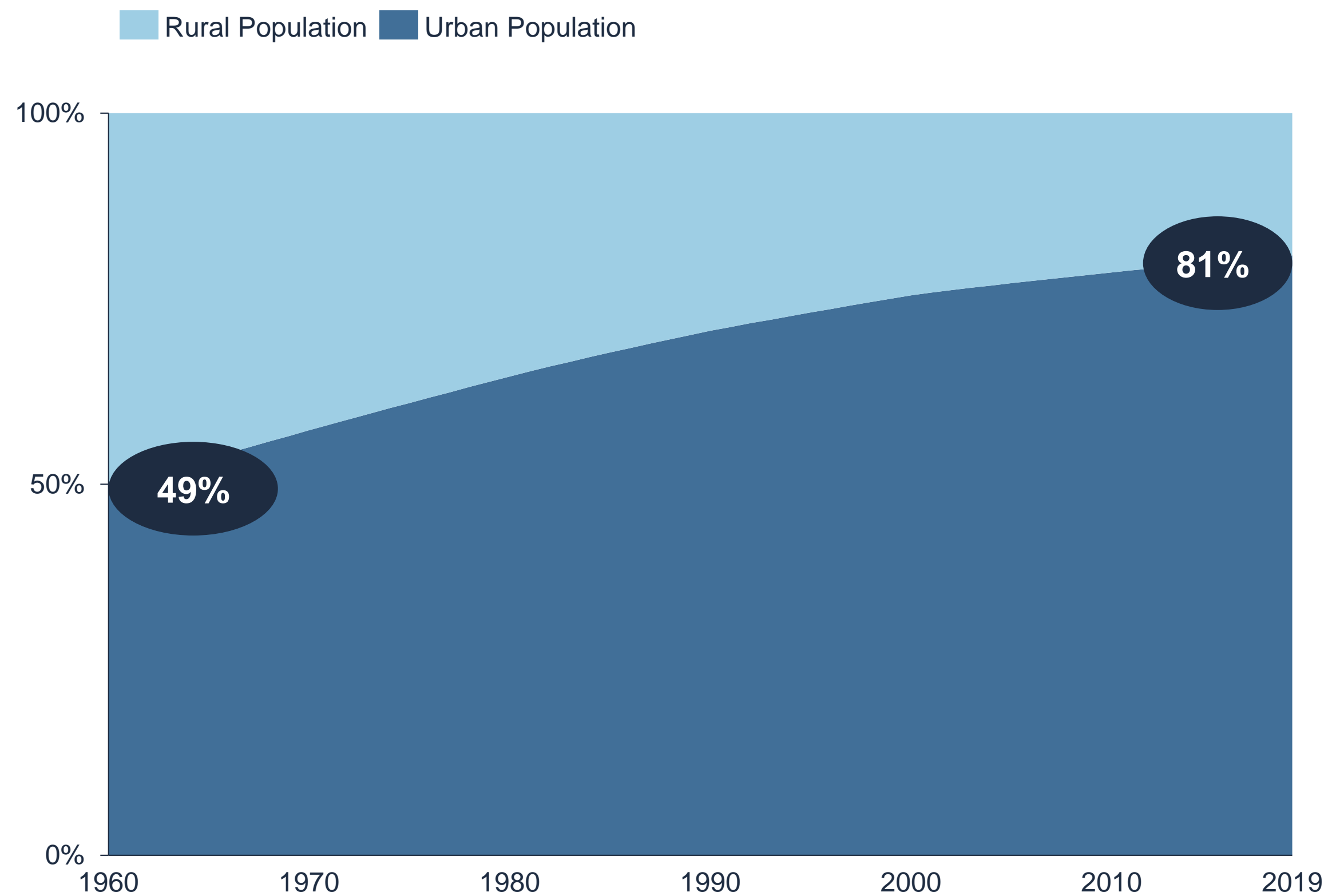
*A person from Latin America that is part European and part American Indian

**Mixed white and black ancestry

Sources: Latinobarometro Census 2018 (1,000-1,2000 respondents per country across 18 Latin American countries)

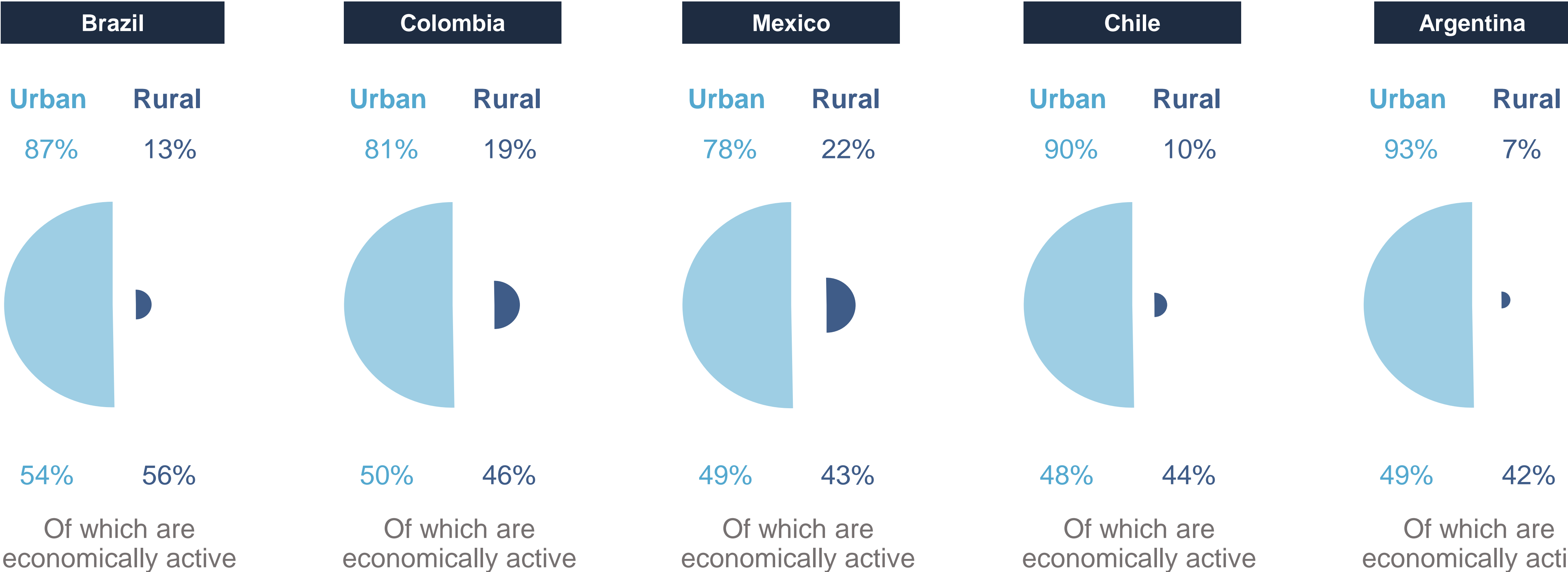
Latin America underwent rapid urbanization since the 1960s, becoming the world's second most urbanized region

Urban vs. Rural population in Latin America and the Caribbean¹



- **Latin America has 80% of its population living in cities**, compared to 82% in North America and 74% in Europe²
- **Developing nations like China and India are at 60% and 34%, respectively³**
- **Urbanization varies across the region's largest economies**, from 93% in Argentina to 78% in Mexico
- **Nearly half of Latin America's population is economically active**, split equally between rural and urban regions

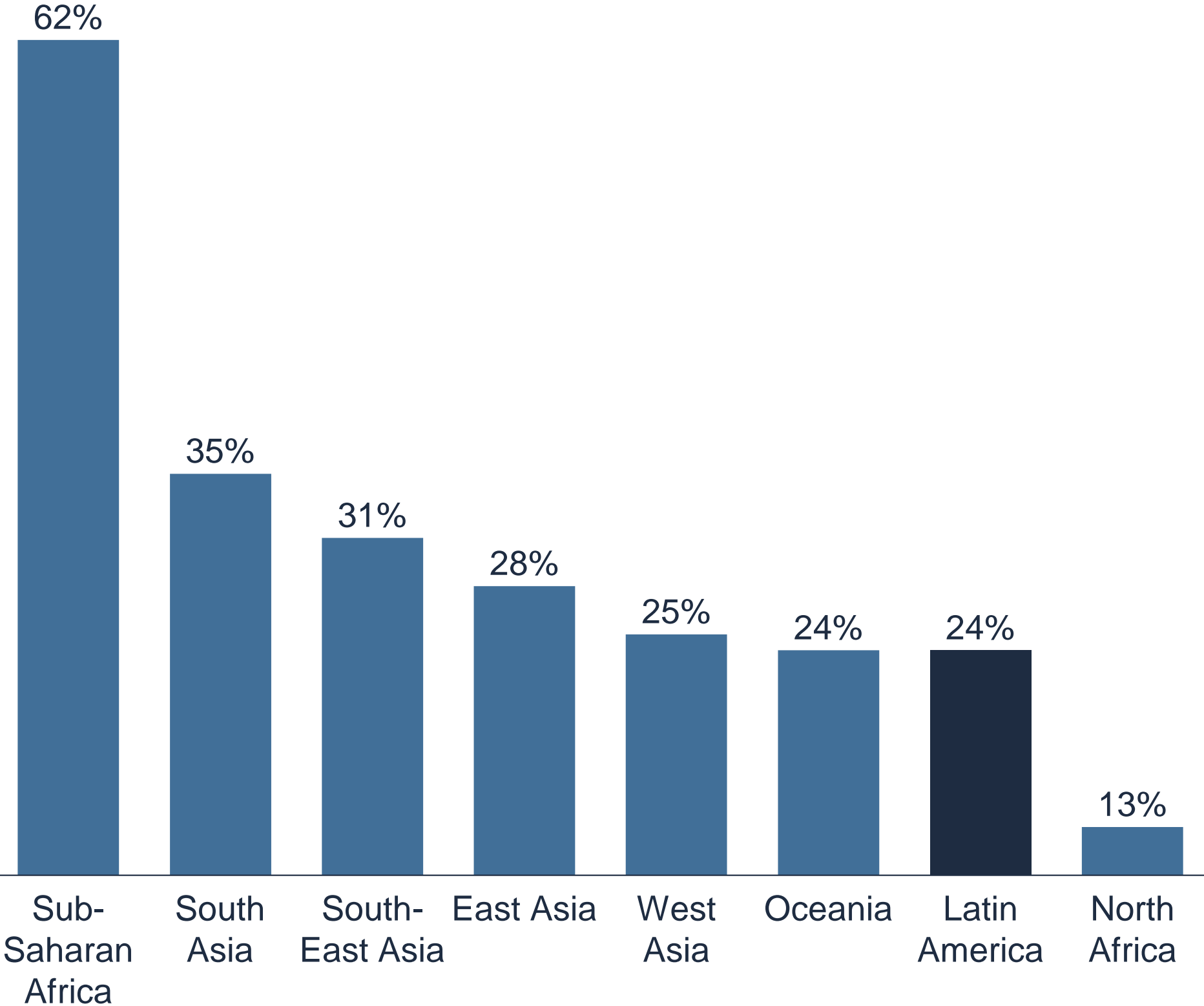
Urbanization differs across countries and the share of economically active people is similar for urban/rural areas



While a large portion of the population lives in slums, this is declining and is smaller than other developing regions

Urban population living in slums¹

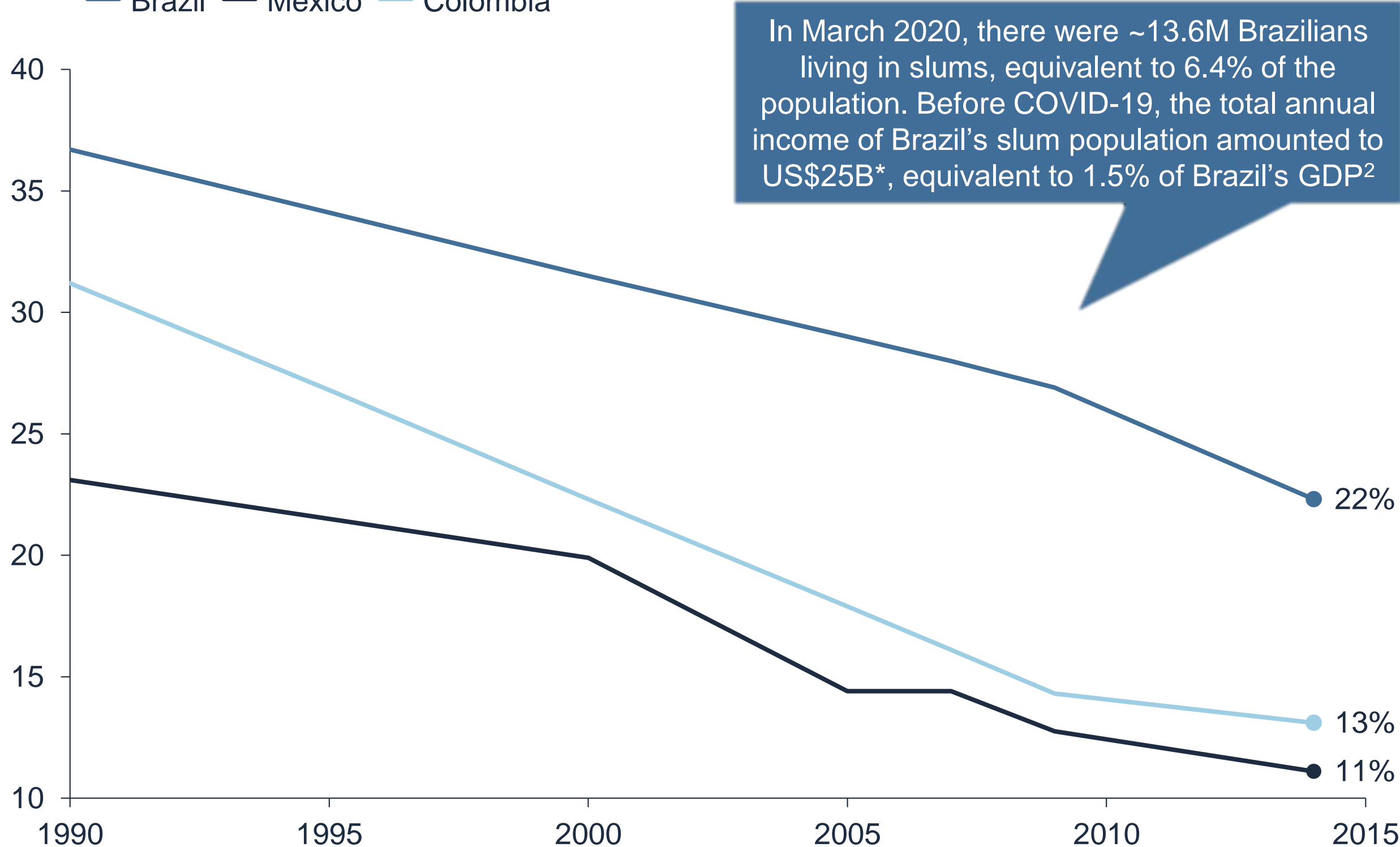
In percentage, 2015



Urban population living in slums over time¹

In percentage

— Brazil — Mexico — Colombia

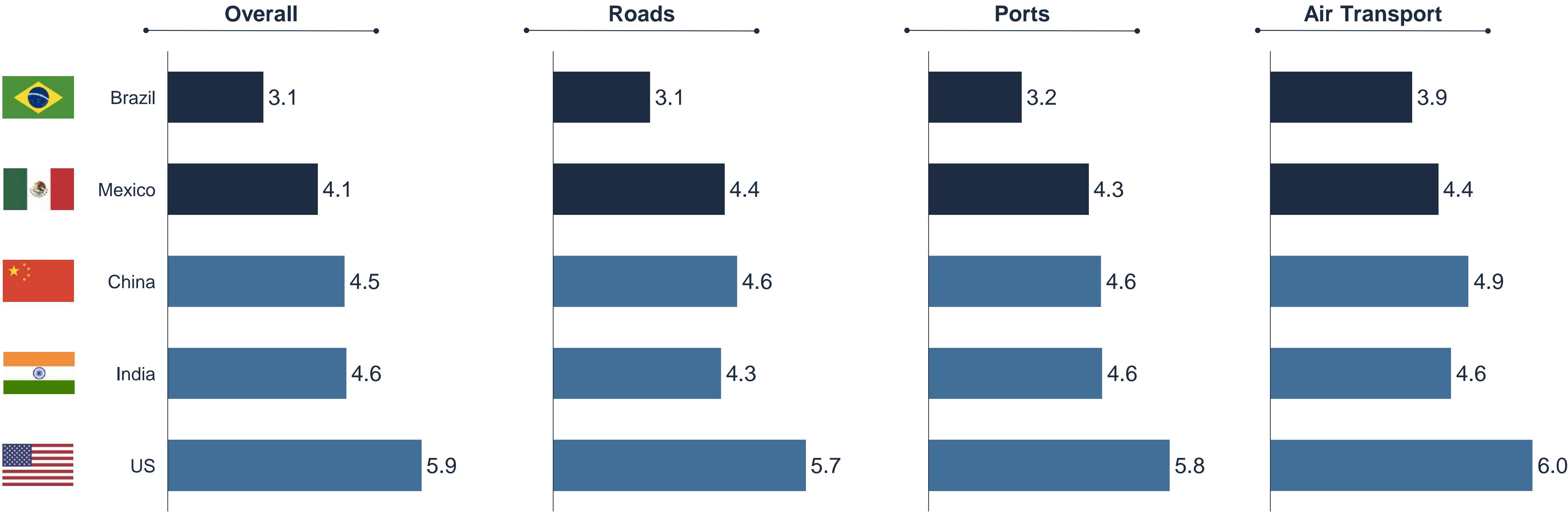


In March 2020, there were ~13.6M Brazilians living in slums, equivalent to 6.4% of the population. Before COVID-19, the total annual income of Brazil's slum population amounted to US\$25B*, equivalent to 1.5% of Brazil's GDP²

*Average exchange rate for March 2020 used: US\$ 1 = BRL 4.85
Sources: (1) World Bank Open Data, (2) Data Favela (in partnership with IBGE)

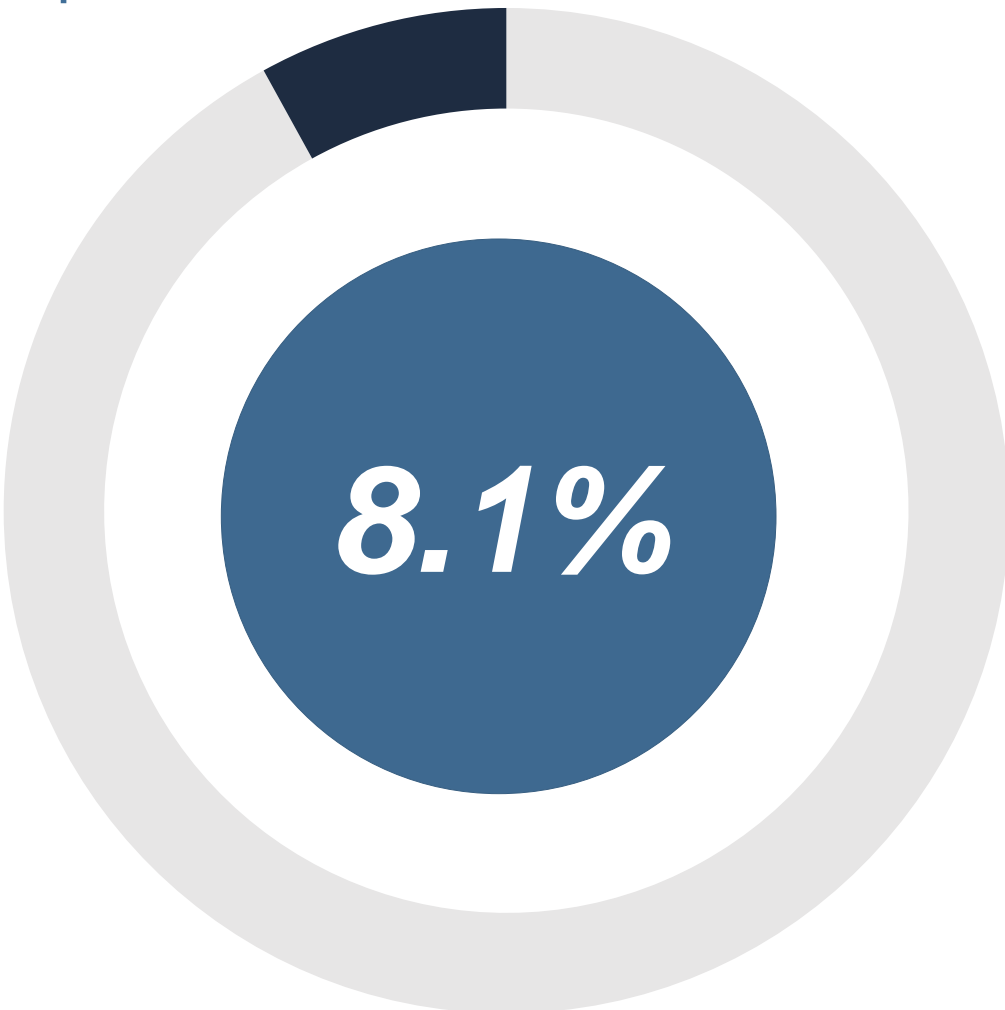
Brazil and Mexico still lag other developed and emerging economies in quality of infrastructure

Quality of Infrastructure in 2018, (1-7 Best)



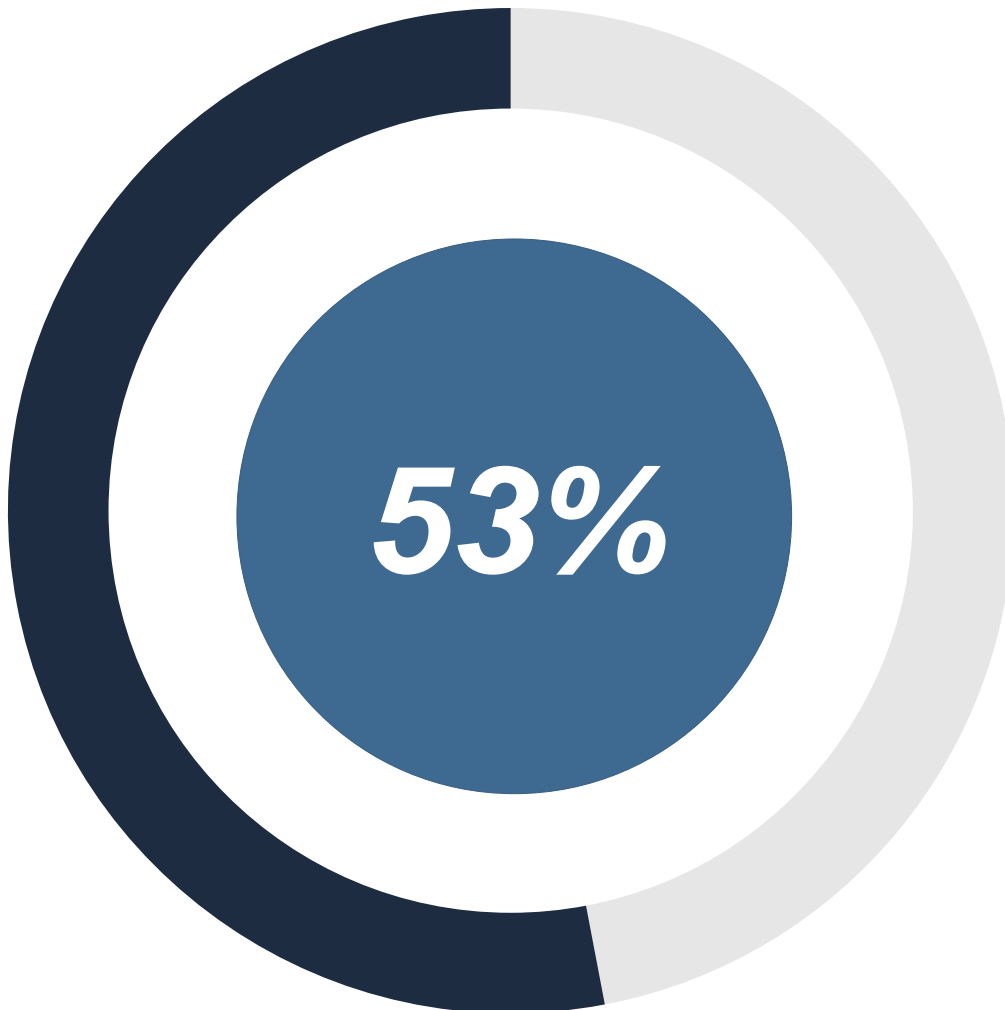
Rising unemployment and informality still threaten economic prosperity and productivity in the region

2019 Snapshot



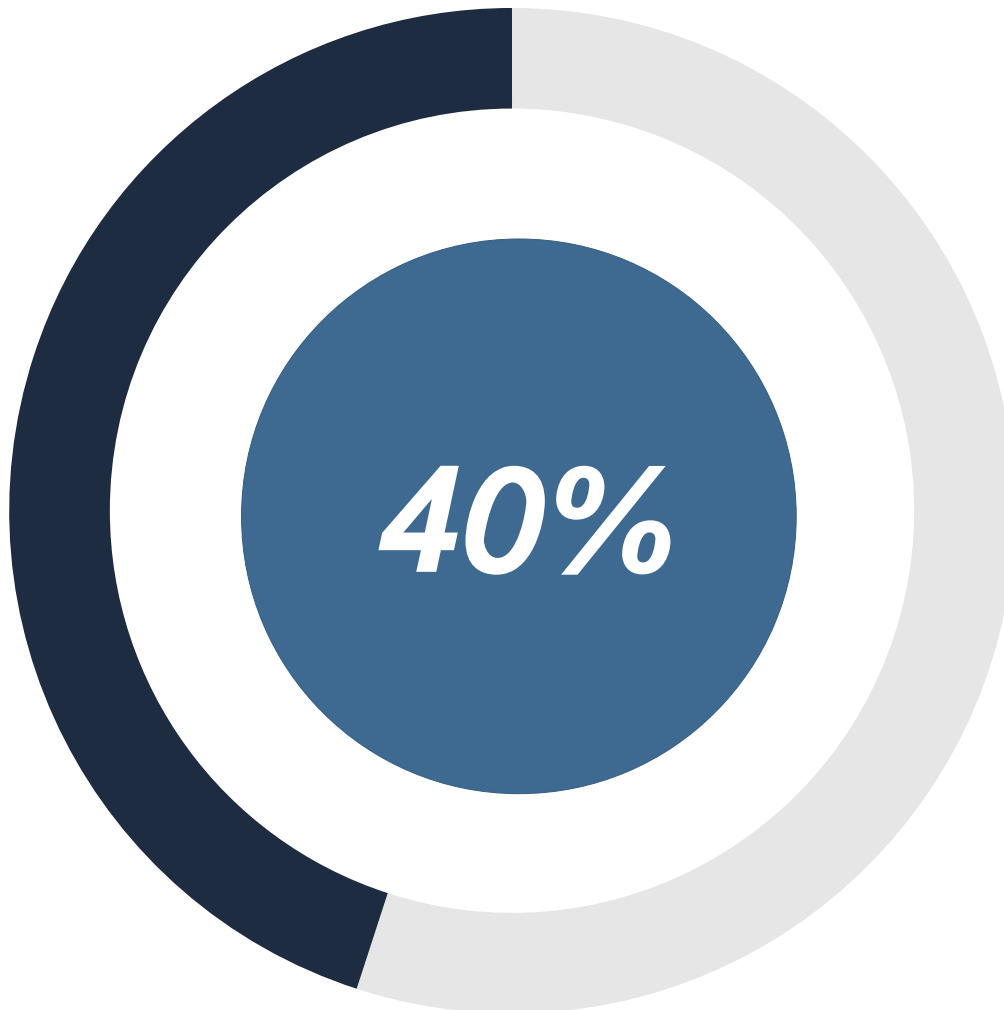
Of the total labor force is currently unemployed¹

This represents a 0.1% increase from 2018. Unemployment is forecast to reach roughly 11.5% in 2020 due to the coronavirus pandemic²



Of the working population toil in the informal economy

The sizeable informal sector in LAC, which comprises all paid work not registered or regulated by the government, means a significant share of workers experience precariousness and low-quality employment³



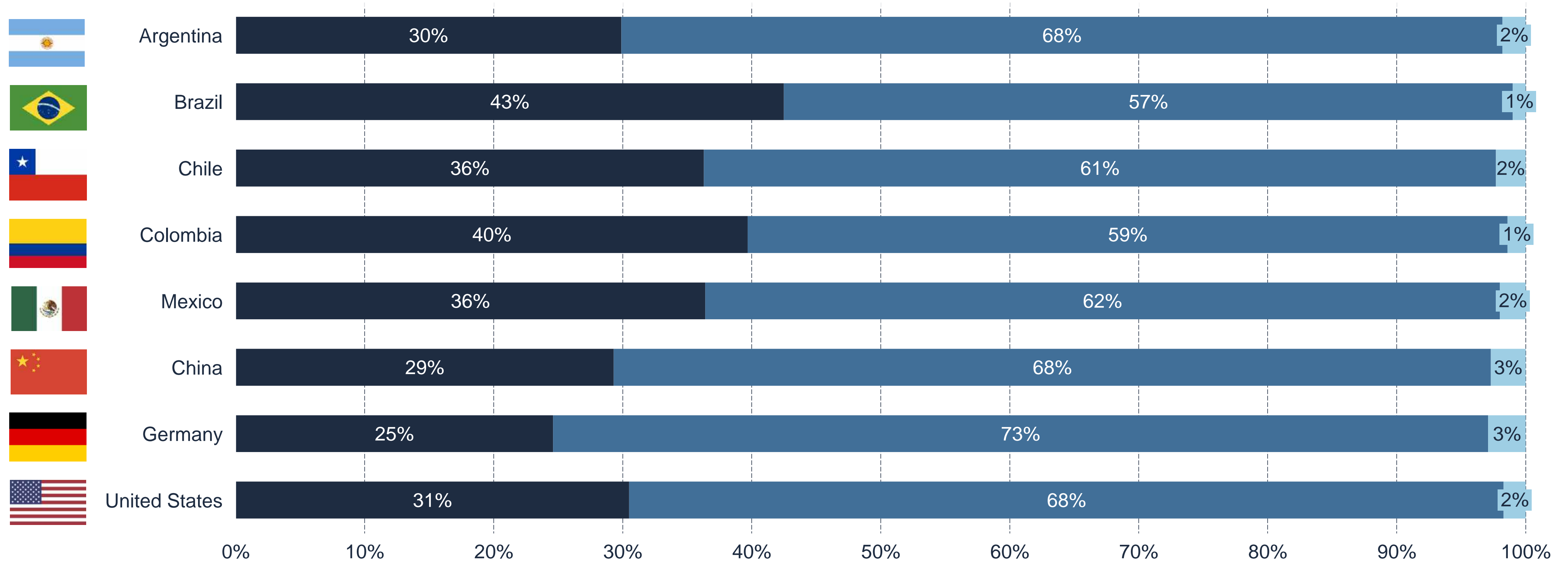
Of the employed population earns below minimum wage

This represents all employed Latin Americans earning wages below the minimum established in their country. This number is even higher among women and youth⁴

Latin America shows higher levels of inequality than other large economies, with the top 10% holding 40% of wealth

Percentage of wealth held by the population¹

■ Highest 10% ■ Middle 80% ■ Lowest 10%




Inequality in Latin America: a day in the life




Name: Maria Andrade
Profession: CEO of Brazilian real estate company
Income group: Top 1%*




Name: Jorge Silva
Profession: Construction worker
Income group: Bottom 50%**


 **Salary:** R\$ 40,000 per month
Maria lives in a wealthy neighbourhood in São Paulo. She drives her car to work everyday


 **Salary:** R\$ 962 per month
Jorge lives in an urban slum in São Luis, Maranhão (Northeast of Brazil). He takes the bus to work everyday


Health insurance: private
Maria leaves work early so she can go to the doctor. There is almost no wait time and her appointment is covered by insurance




Health insurance: public
Jorge has a fever so he goes to a public clinic during lunch. He is unable to see the doctor because the line is too long




 **Education: Bachelors in Engineering**
Maria graduated in Engineering from a private university. She meets her friends from college for a drink after work

 **Education: Upper Secondary**
Jorge leaves work and takes the bus home. He is trying to save money to get a vocational degree later on

Access to water: not a problem
Maria gets home, boils some water and cooks herself pasta. She goes to sleep early for the next day of work



Access to water: not today
Jorge gets home and wants to take a shower after a long day at work. There is no water, so he goes straight to sleep



Sources: The World Bank, OECD, WHO, Atlantico analysis

*The average monthly salary of a CEO is R\$40,000; 23% of Brazilians have supplementary health; 18% of Brazilians completed tertiary education, of which 75% attended private universities.

**The median salary in the Northeast is R\$ 1,441 per month, for informal workers it falls to R\$962; One in five Brazilians live in the slums; 73% of Brazilians agree the public healthcare system is overstretched; 47.5% of Brazilians completed upper secondary and only 8% of adults between 30-39 are enrolled in formal education; 15% of Brazilians don't have access to water supply

Latin America compares favorably to both emerging and developed economies in gender equality

Economic Participation & Opportunity

Colombia

64%

Of women in Colombia participate in the labor force, compared to **86%** of men.

India

25%

Of women in India participate in the labor force, compared to **82%** of men.

Educational attainment

Brazil

10.7%

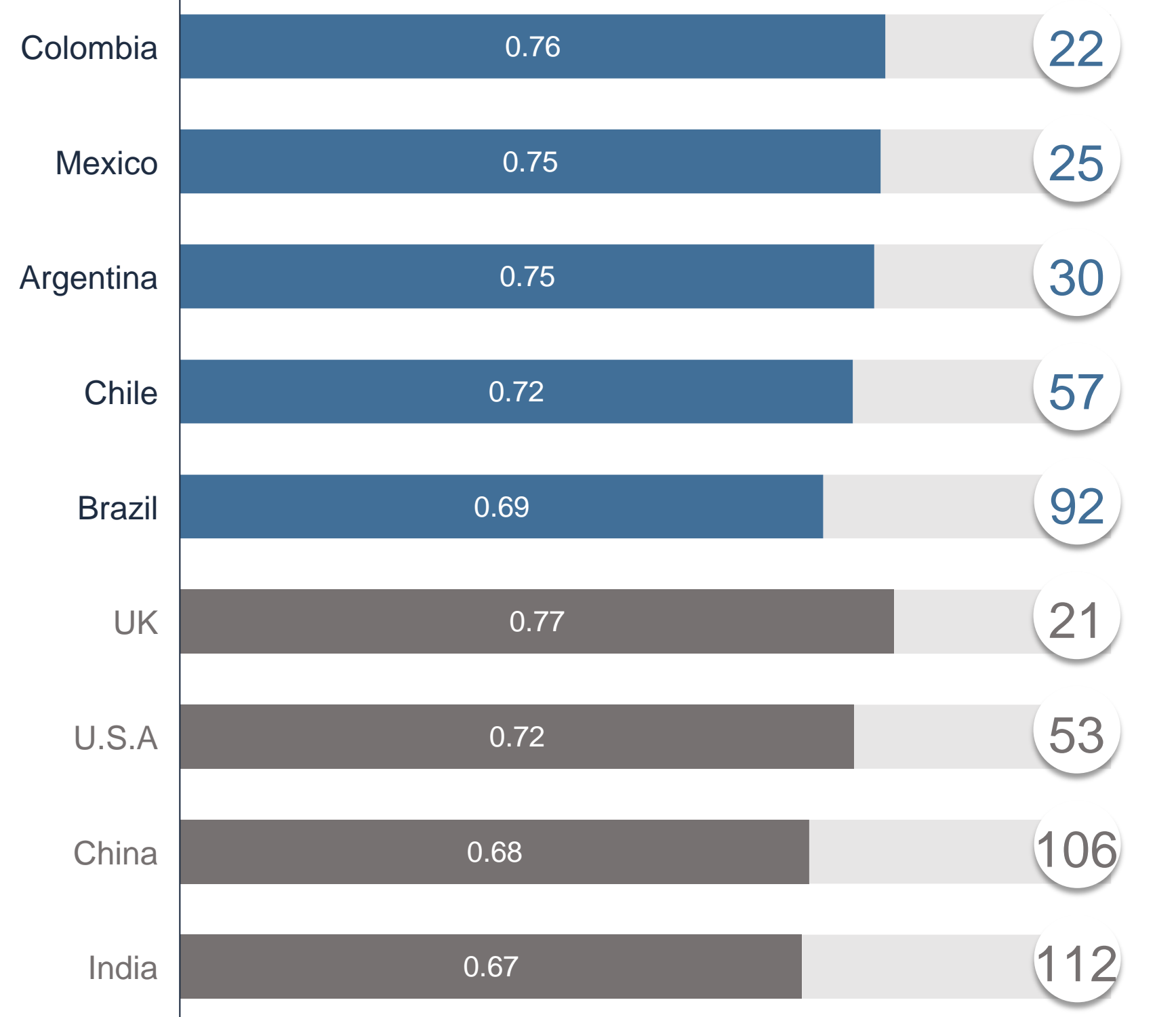
Of women in Brazil attain a degree in STEM, compared to 28.6% of men**

United States

10.4%

Of women in the United States attain a degree in STEM, compared to 28.4% of men**

Global Gender Index Score (0-1)* Ranking (1-153)



Health and Survival

Brazil

91%

Of women receive antenatal care (at least four visits) before giving birth

China

69%

Of women receive antenatal care (at least four visits) before giving birth

Political empowerment

Mexico

49%

Of seats held in Mexico's upper house are filled by female politicians

United Kingdom

26%

Of seats held in the United Kingdom's upper house are filled by female politicians

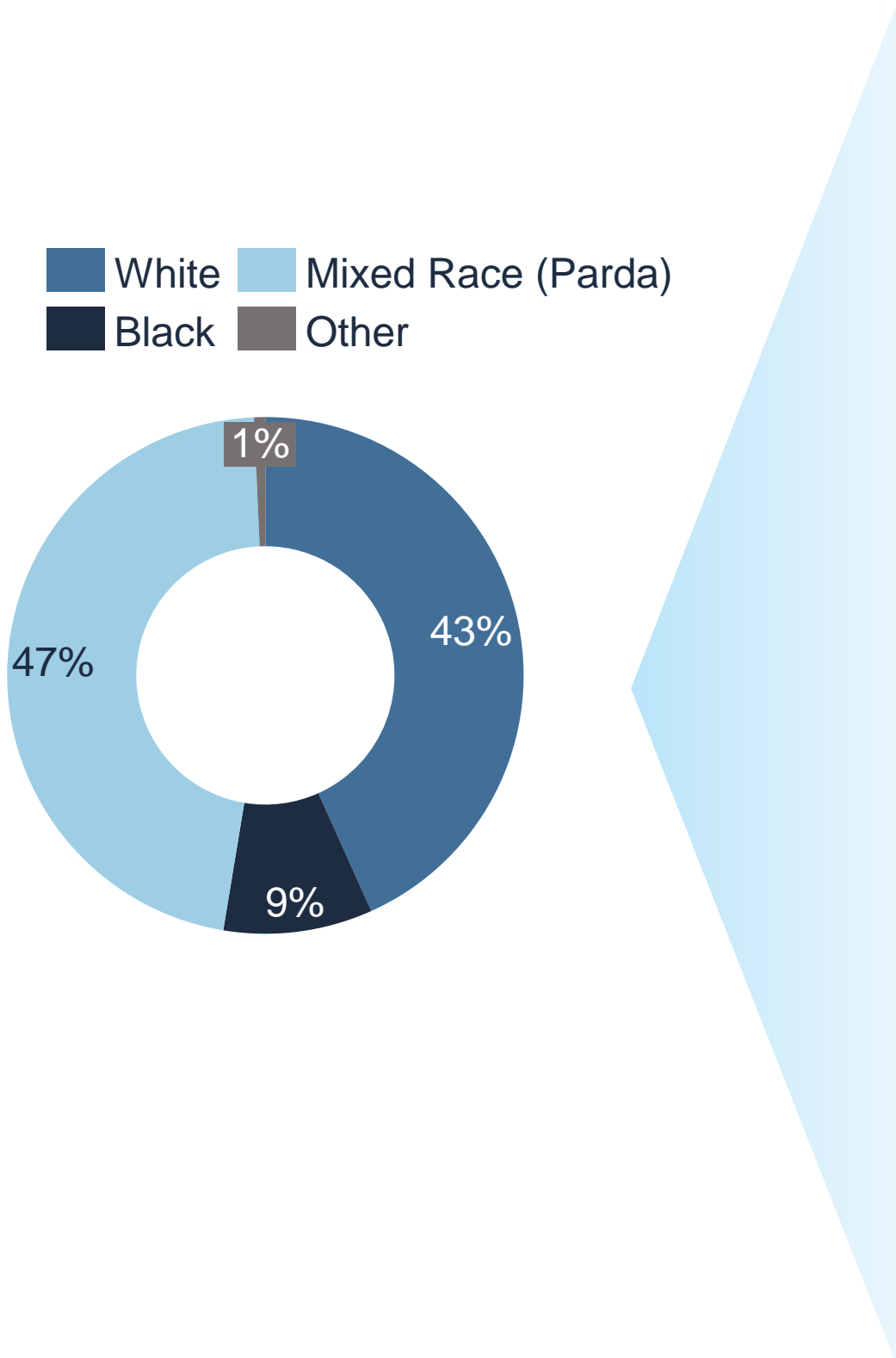
*153 countries measured based on gender gaps in economic participation, educational attainment, health and survival, and political empowerment

**Science, Technology, Engineering, and Mathematics (STEM)

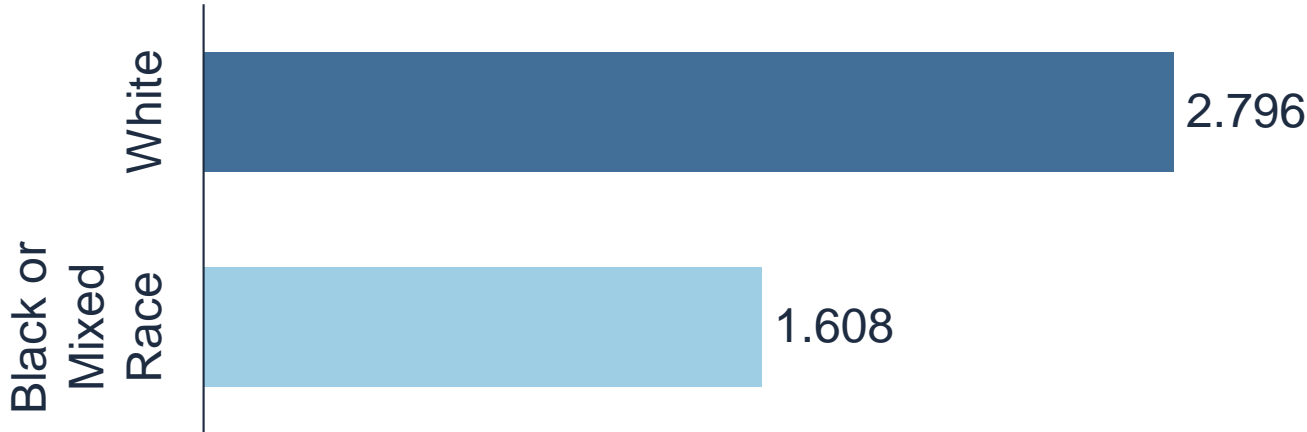
Source: World Economic Forum Gender Index Report 2020

The region still has a long way to go in reducing racial and ethnical disparities

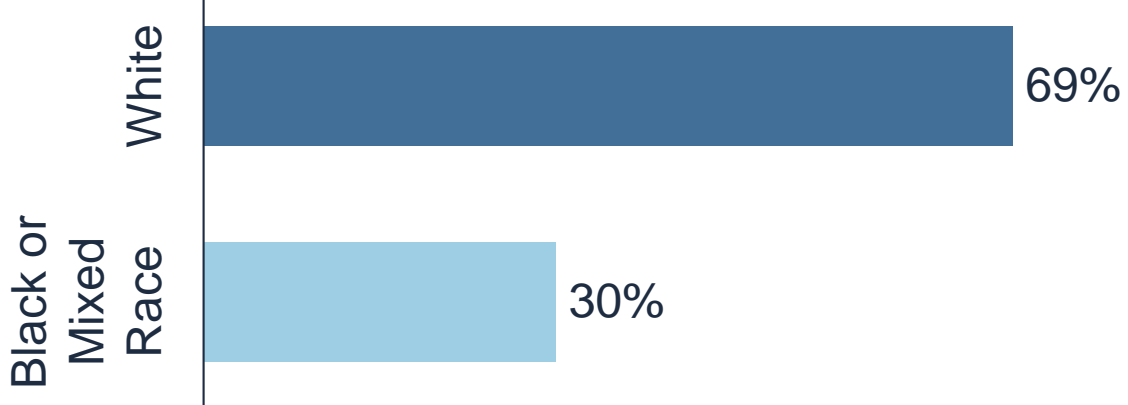
Brazil's population by race¹



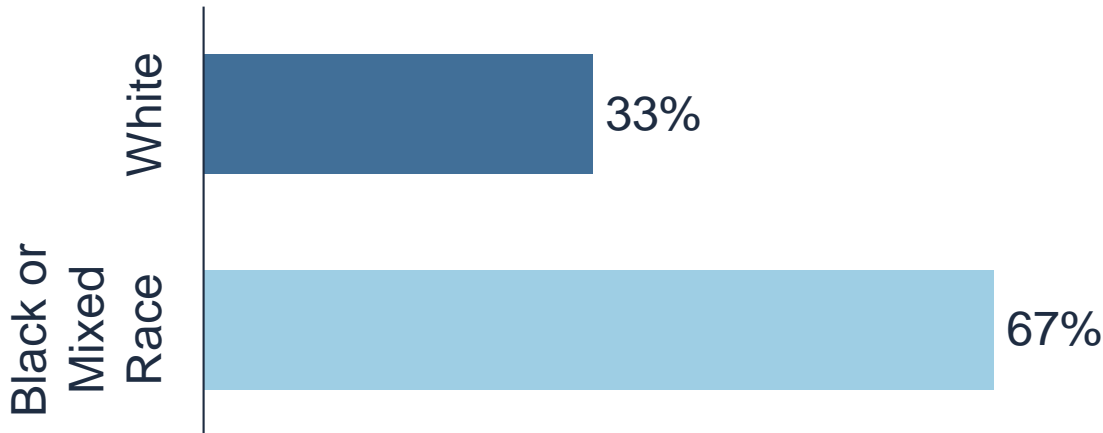
Average monthly salary (in R\$)¹



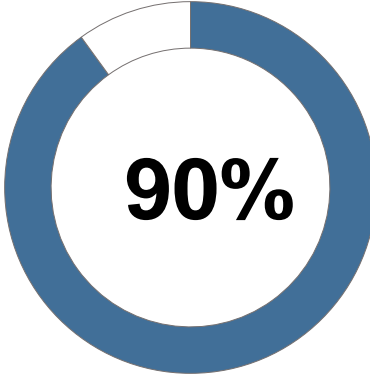
People in management positions (%)



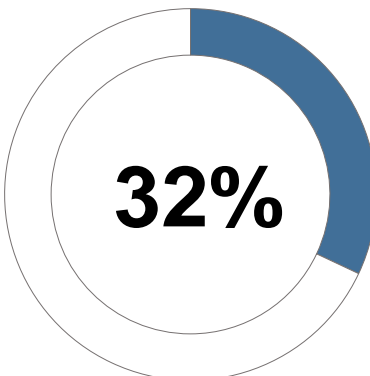
Slum population (%)²



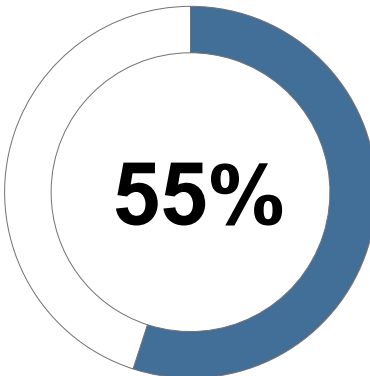
Snapshot of indigenous population in Mexico³



Of Mexico's population is either Amerindian-Spanish (*Mestizo*), Mostly Amerindian, or Amerindian



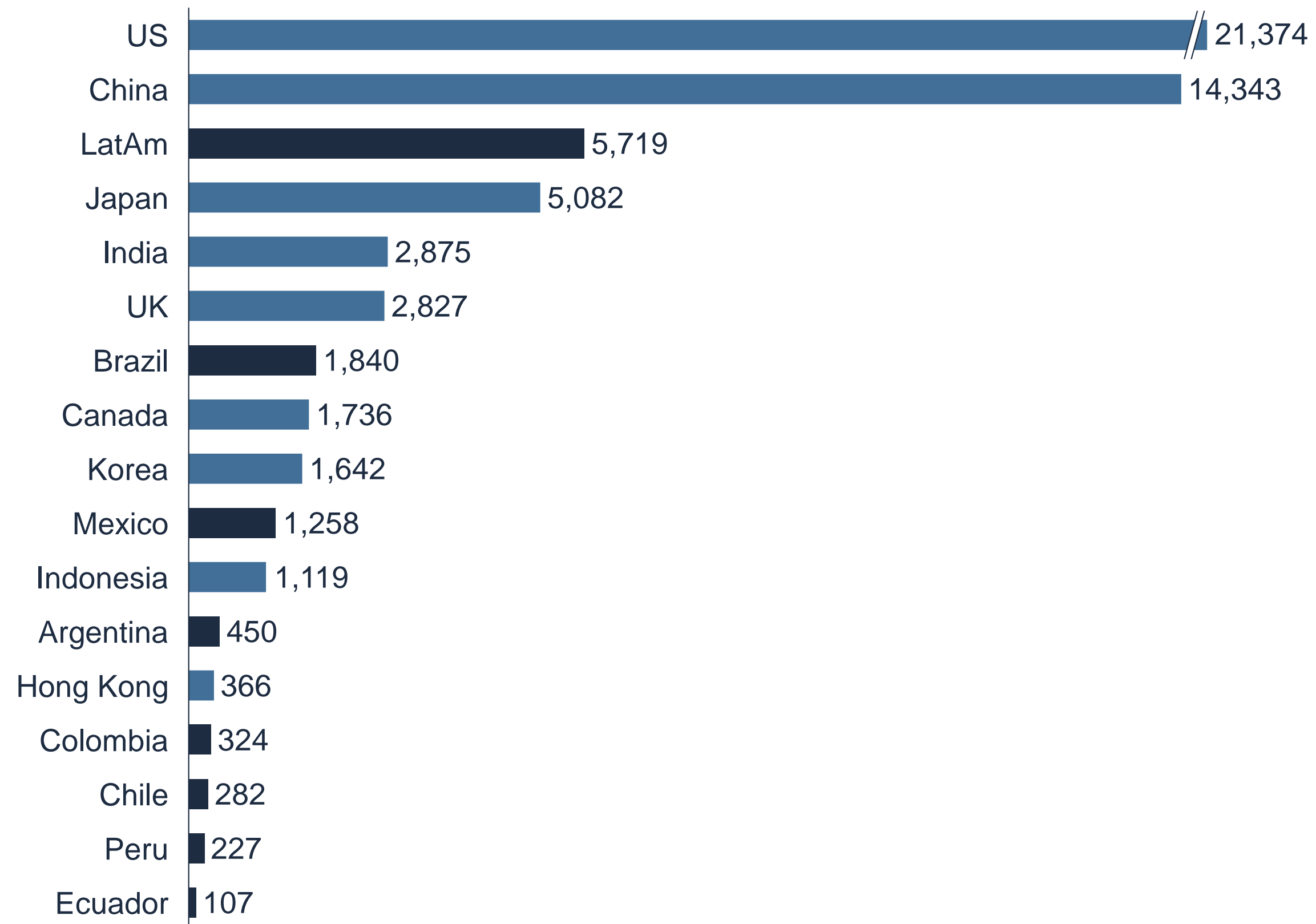
Of Mexico's indigenous population lives in extreme poverty, compared to only 7% of non-indigenous



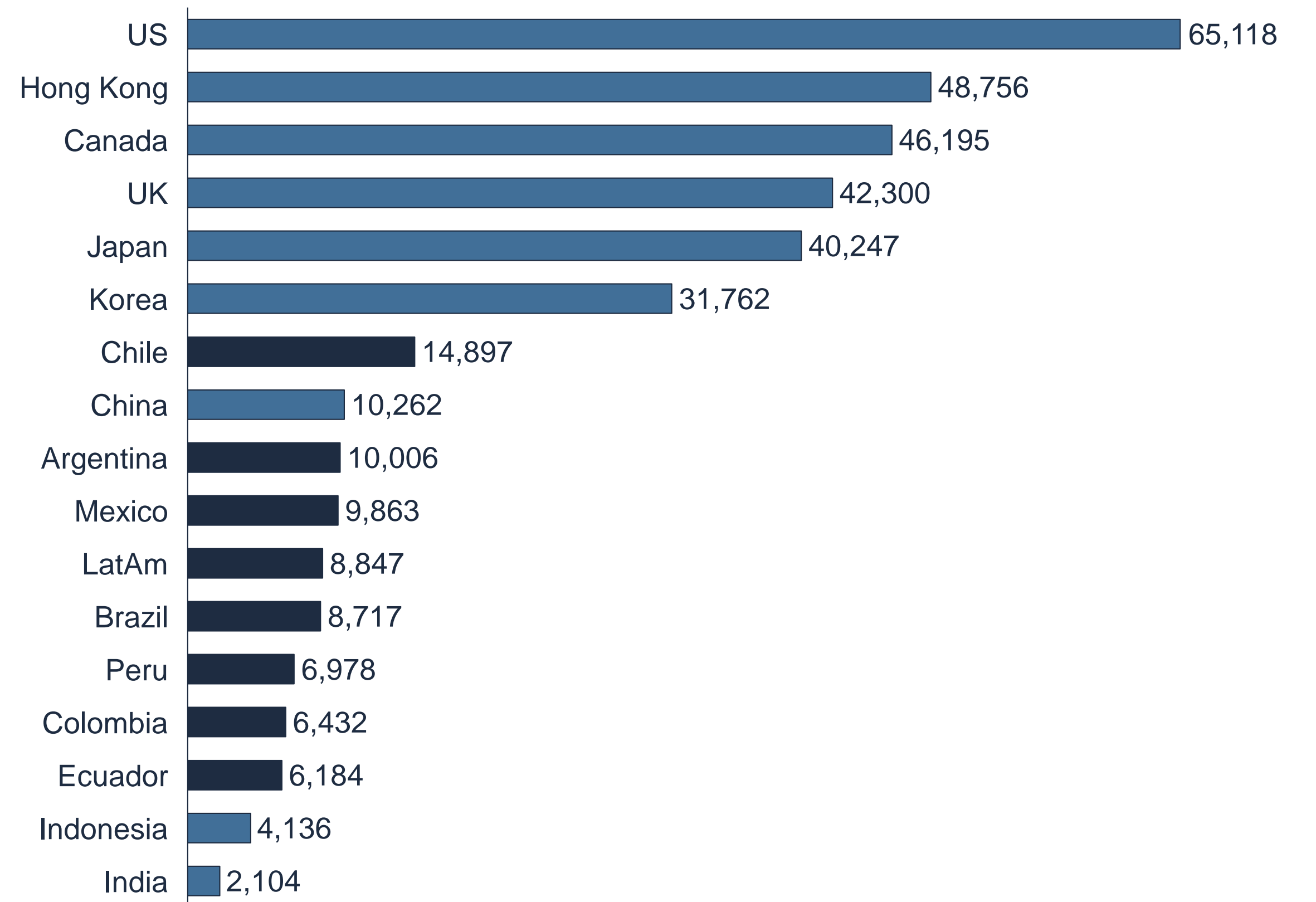
Of the indigenous population don't have access to at least 3 basic services, compared to 19% of non-indigenous

Latin America compares favorably to other large emerging markets such as India and Indonesia in economic activity

GDP by country (current US\$ T)



GDP per capita by country (current US\$ thousands)

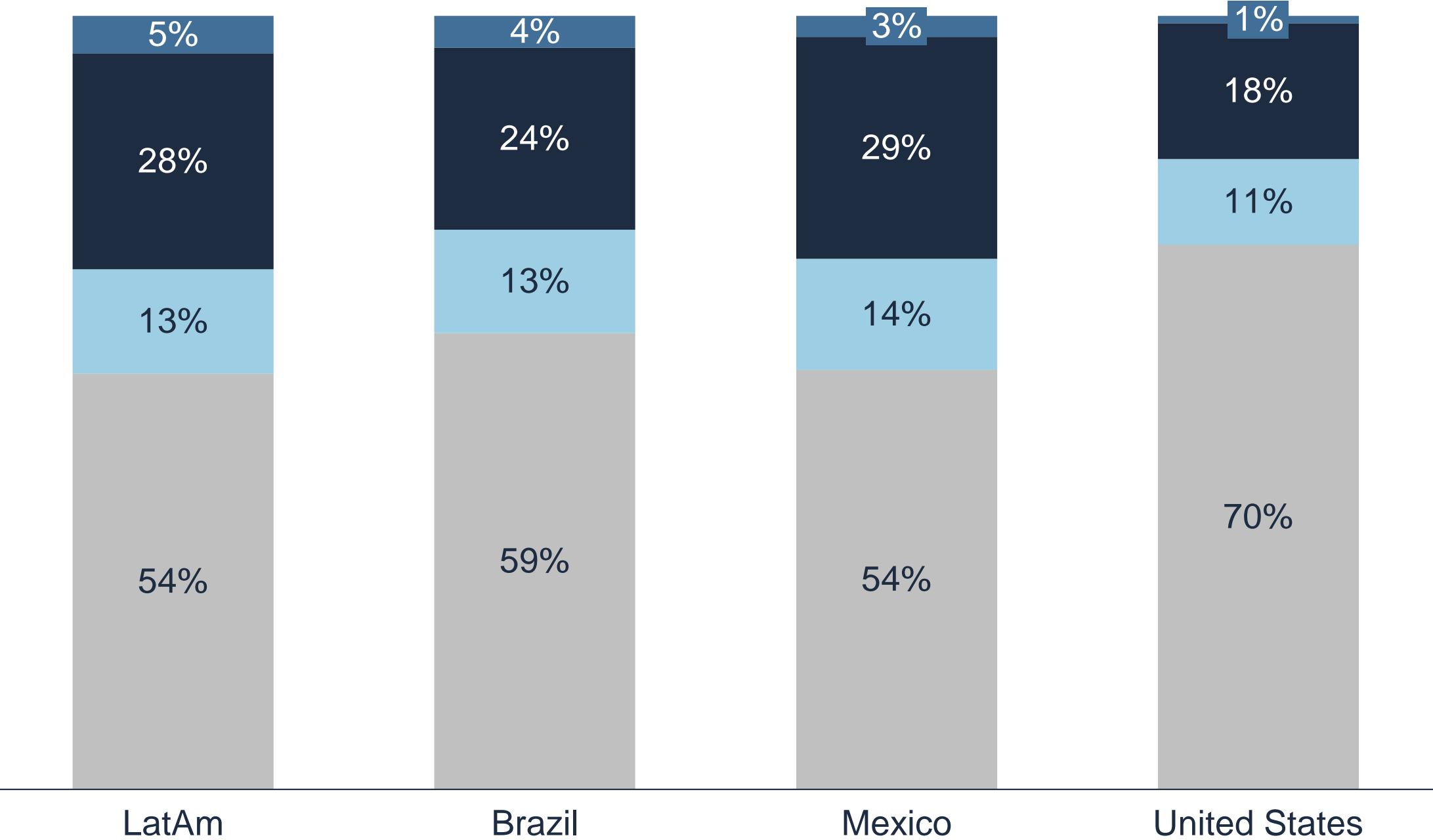


The service sector comprises more than half of Latin America's GDP and is increasing rapidly in proportion

GDP Breakdown by Sector in 2010

Sector contribution as a % of GDP*

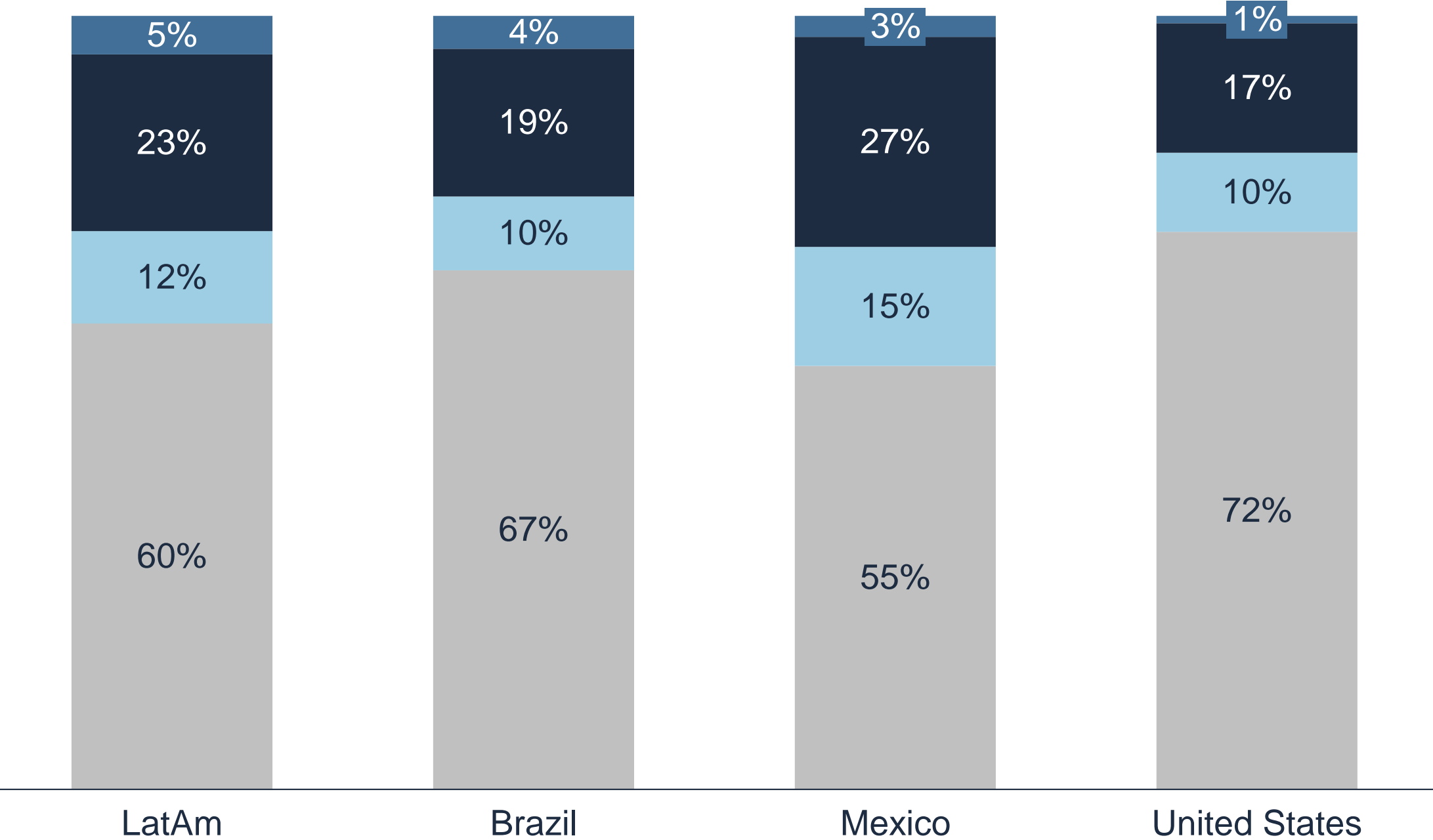
■ Agriculture ■ Industry ■ Manufacturing ■ Services



GDP Breakdown by Sector in 2019

Sector contribution as a % of GDP

■ Agriculture ■ Industry ■ Manufacturing ■ Services



Source: The World Bank Open Data, Atlantico analysis

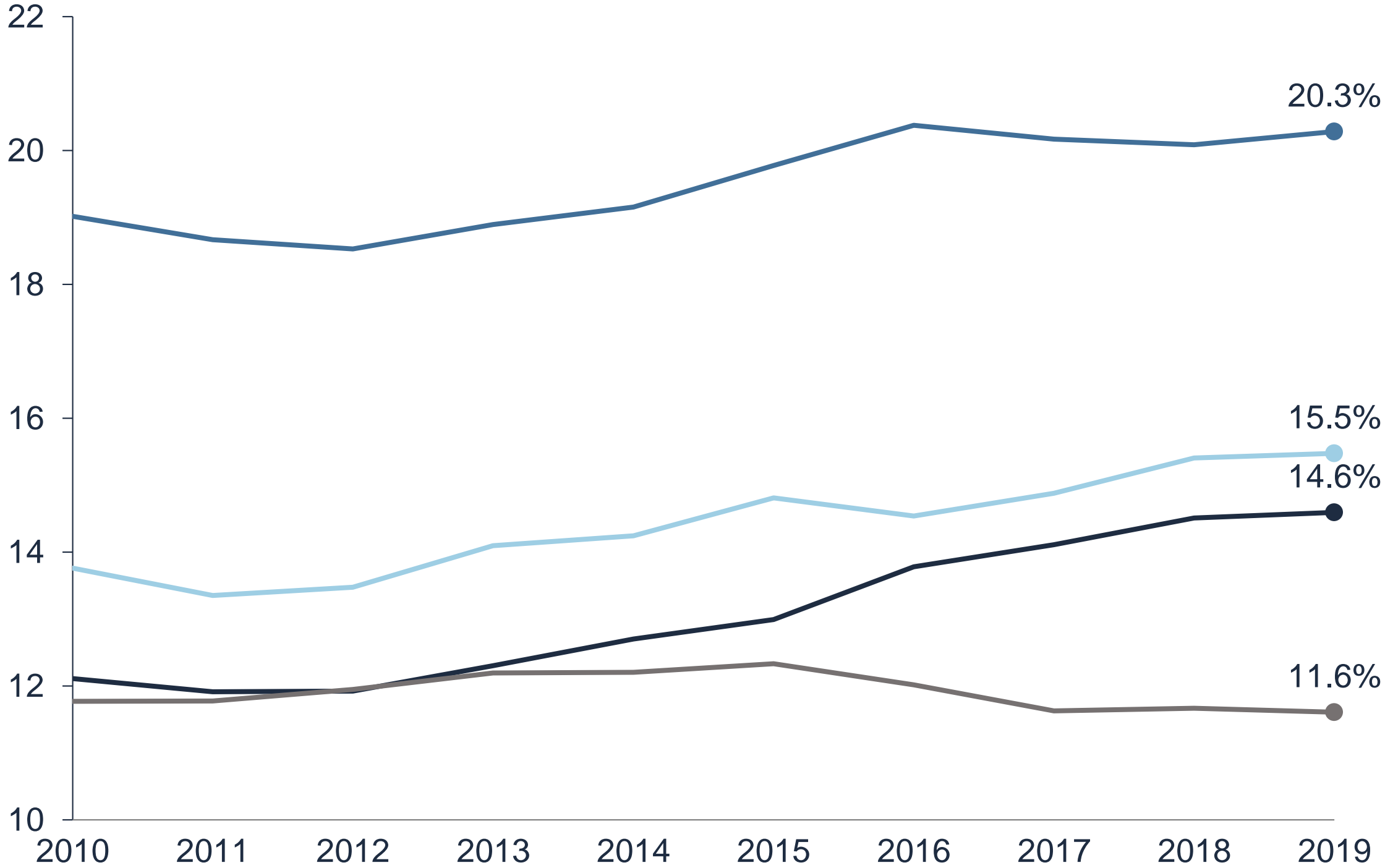
*Normalized contributions to be out of 100% of GDP, as exchange rates and the fact that there are no deductions for depreciation of fabricated assets or for depletion and degradation of natural resources cause minor inconsistencies across countries

Government spending has increased across Latin America and Brazil's deficit is still the highest in the region*

Government Spending

Government final consumption expenditure as a percentage of GDP

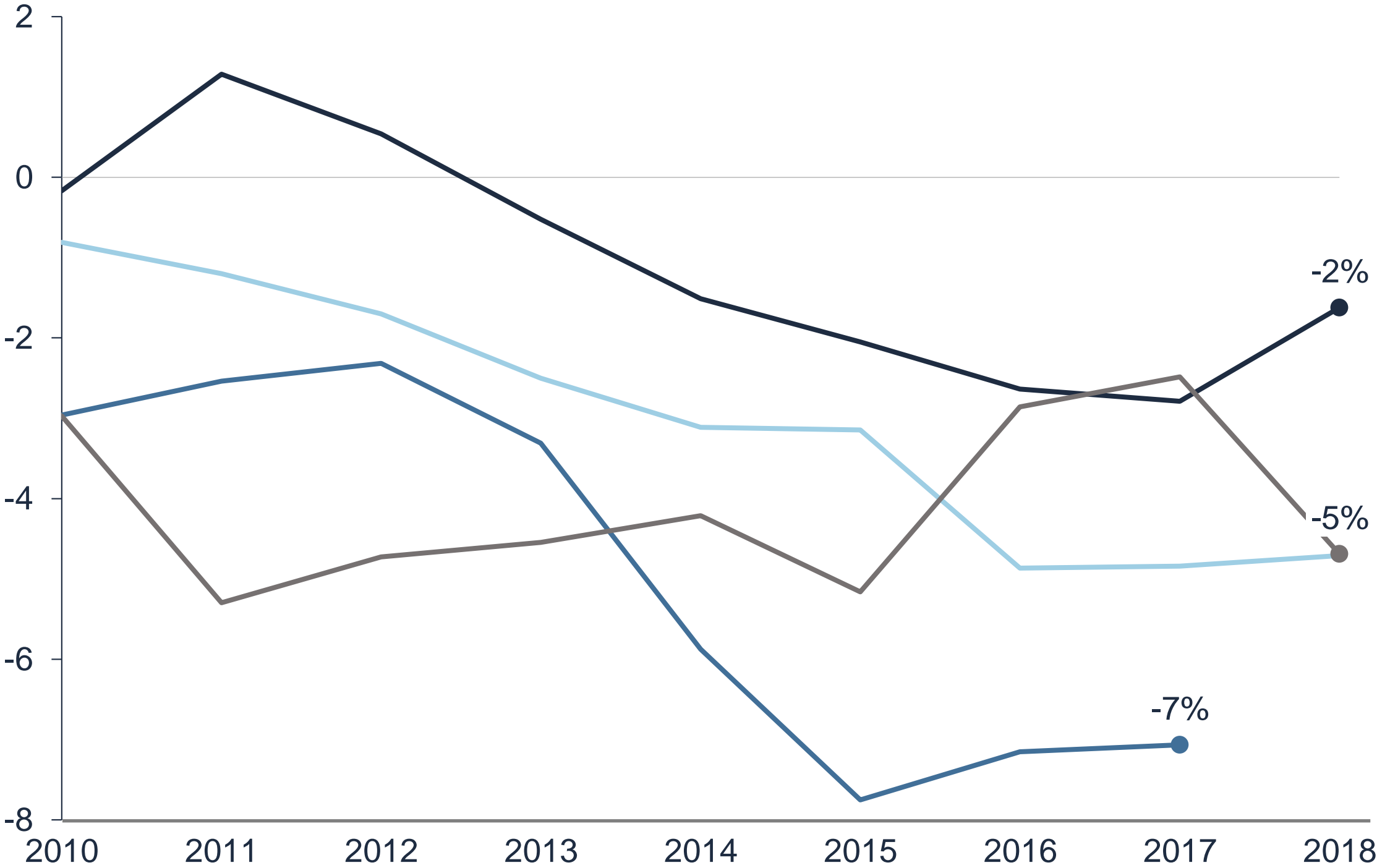
— Brazil — Chile — Colombia — Mexico



Government Deficit

As a percentage of GDP

— Brazil — Chile — Colombia — Mexico



Source: OECD

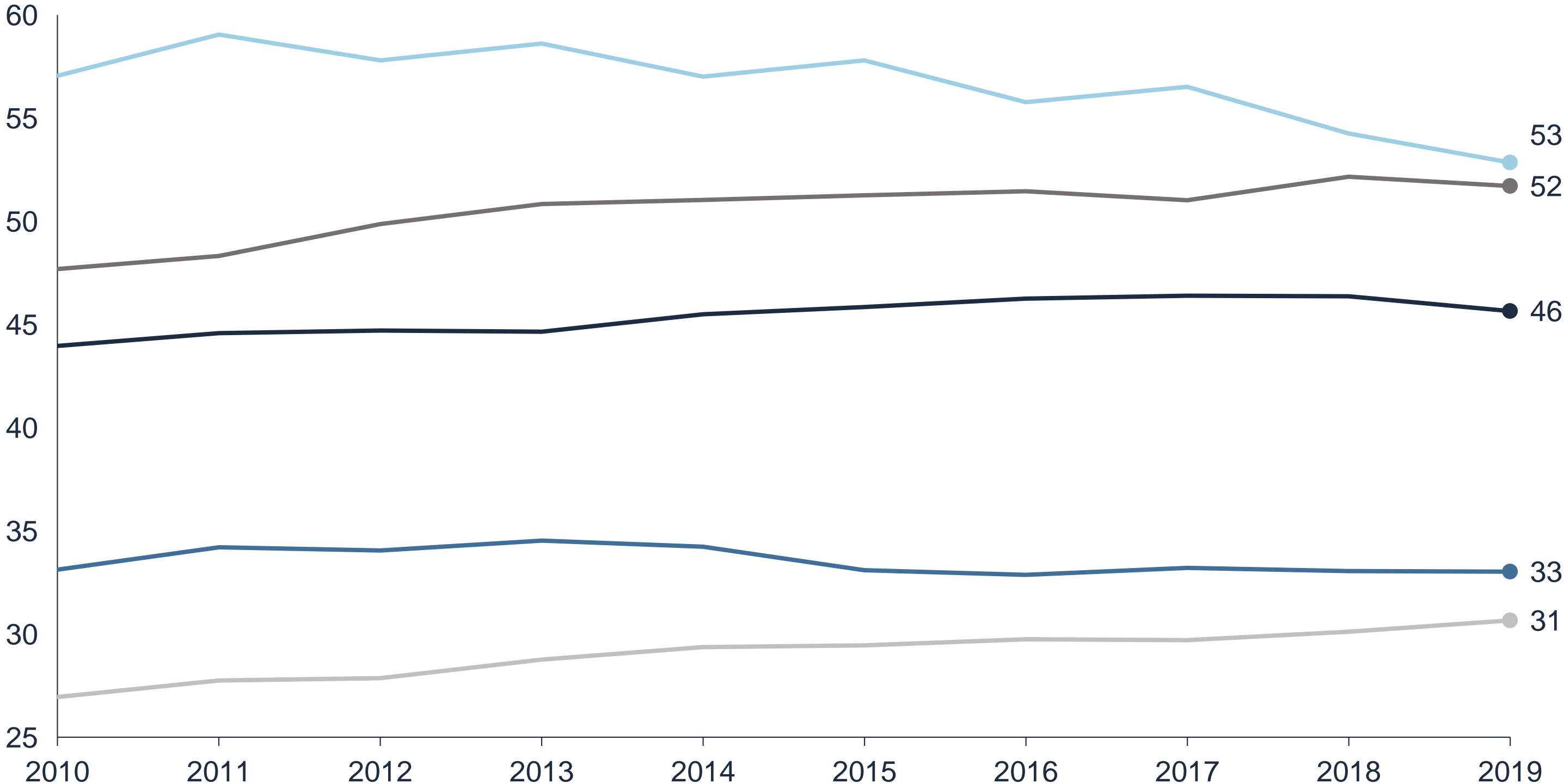
*Among countries compared here

Labor productivity has been increasing slowly in Latin America, though it still lags far behind the United States

Labor Productivity by Country

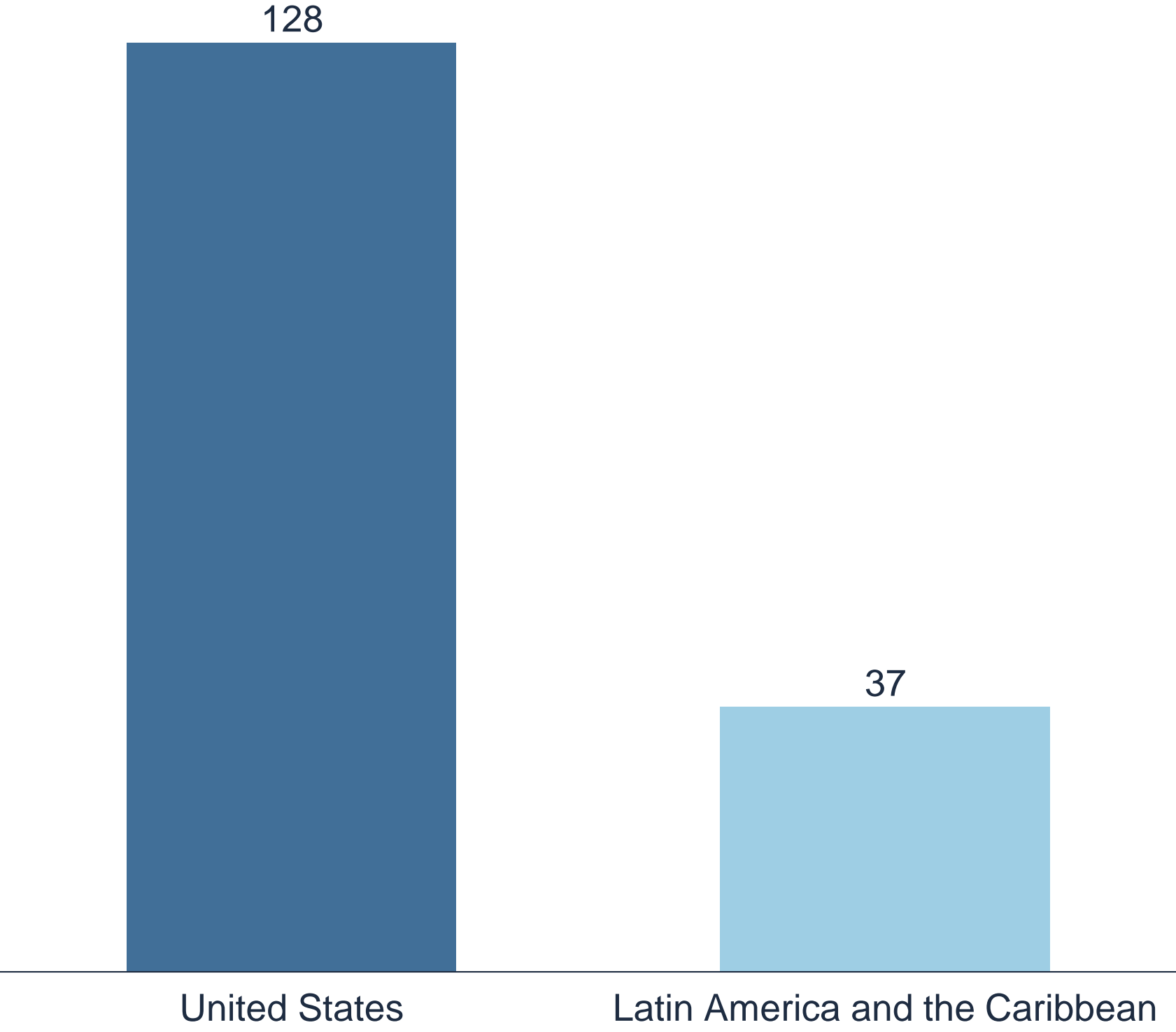
GDP per person employed, in US\$ thousands (2017 PPP)

— Brazil — Mexico — Argentina — Chile — Colombia



Labor Productivity in 2019

GDP per person employed, in US\$ thousands (2017 PPP)

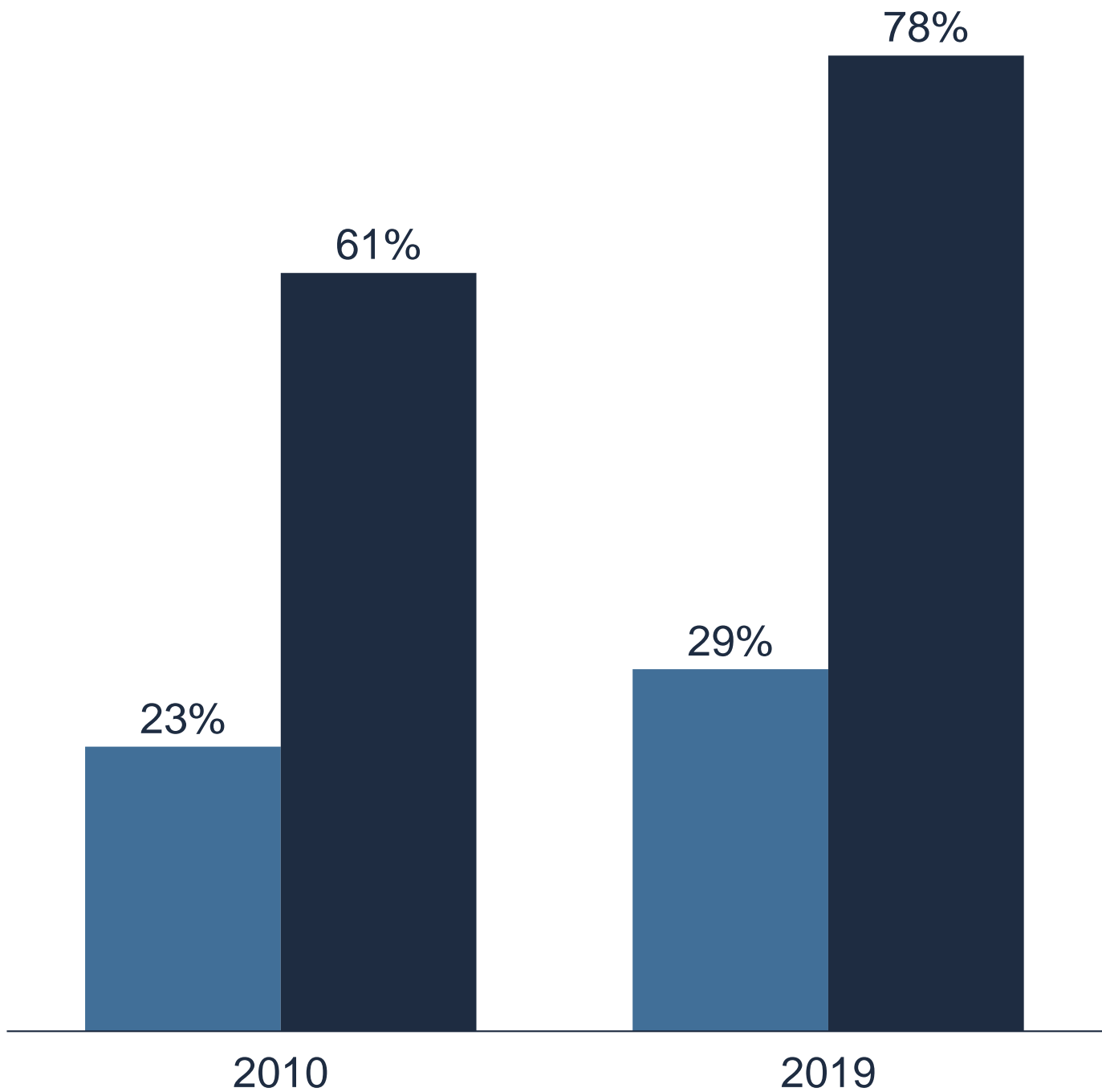


Mexico's trade flow represents almost 80% of its GDP, more than double that of Brazil's

Trade volume

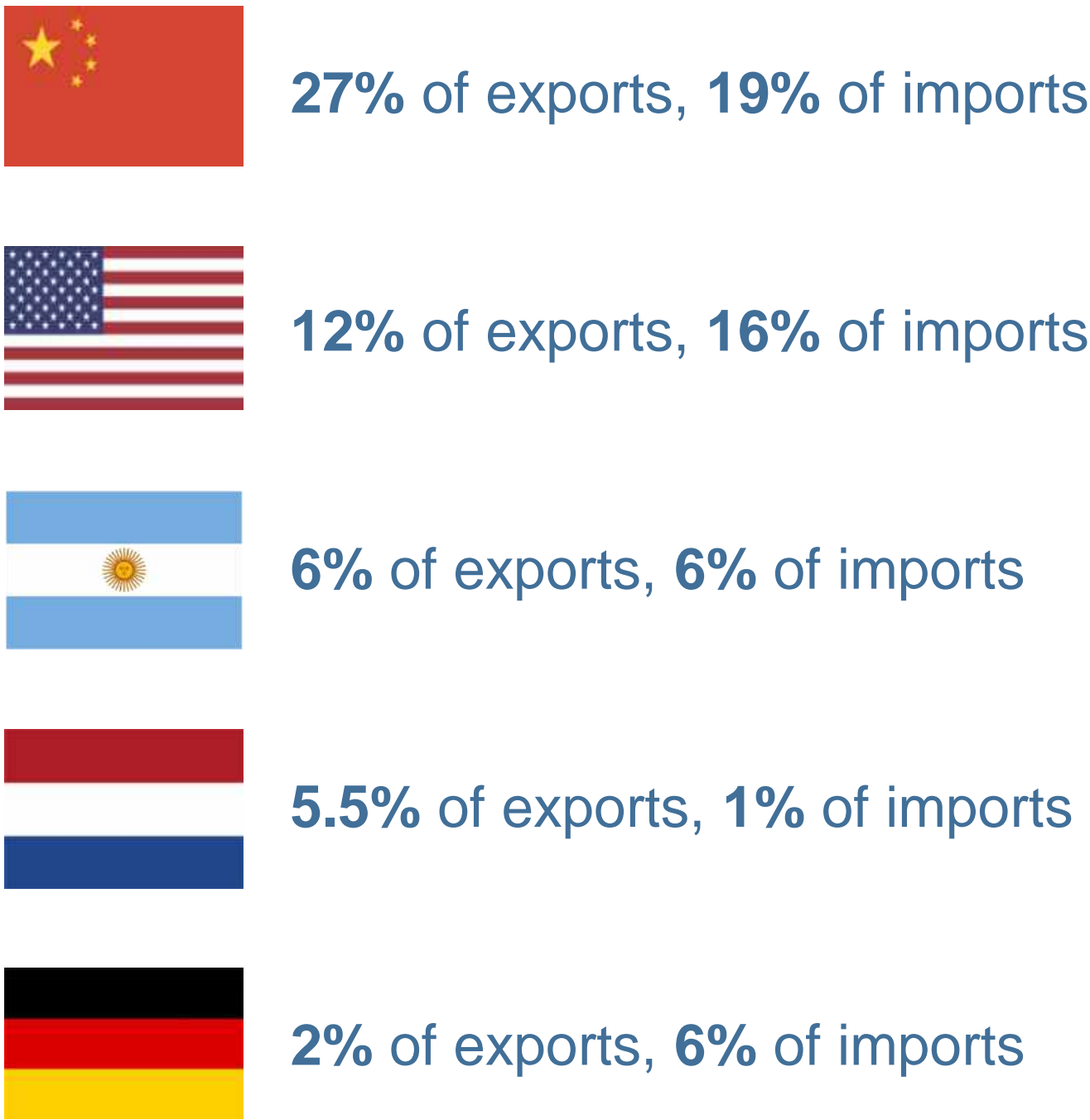
As a percentage of GDP

■ Brazil ■ Mexico



Main trading partners in 2018

Brazil*



Mexico**



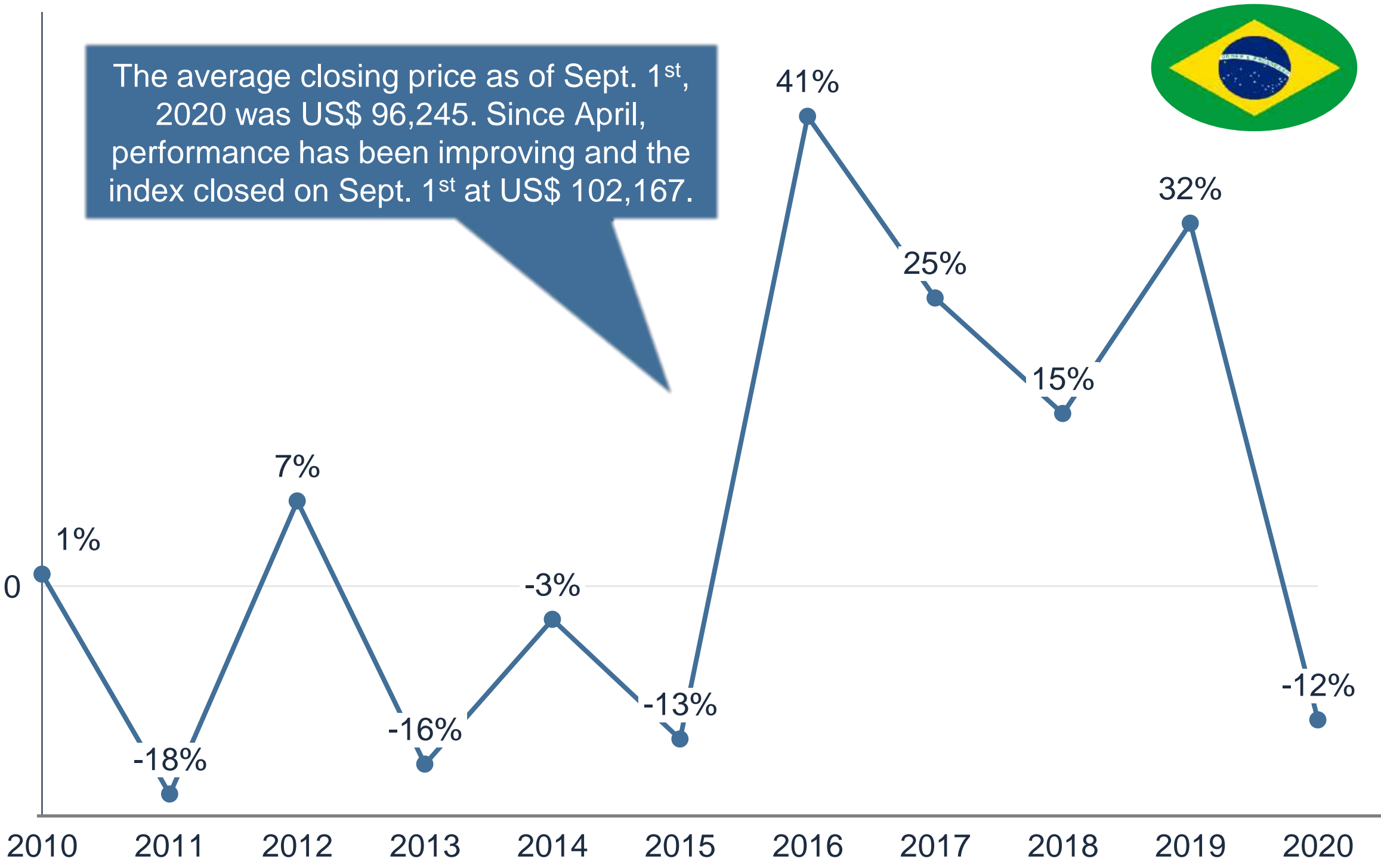
Source: World Bank World Integrated Trade Solution

*China, United States, Argentina, Netherlands, Germany; **United States, China, Japan, Germany, Canada

While Mexico's stock market performance has declined, Brazil's showed tremendous growth except for in 2020

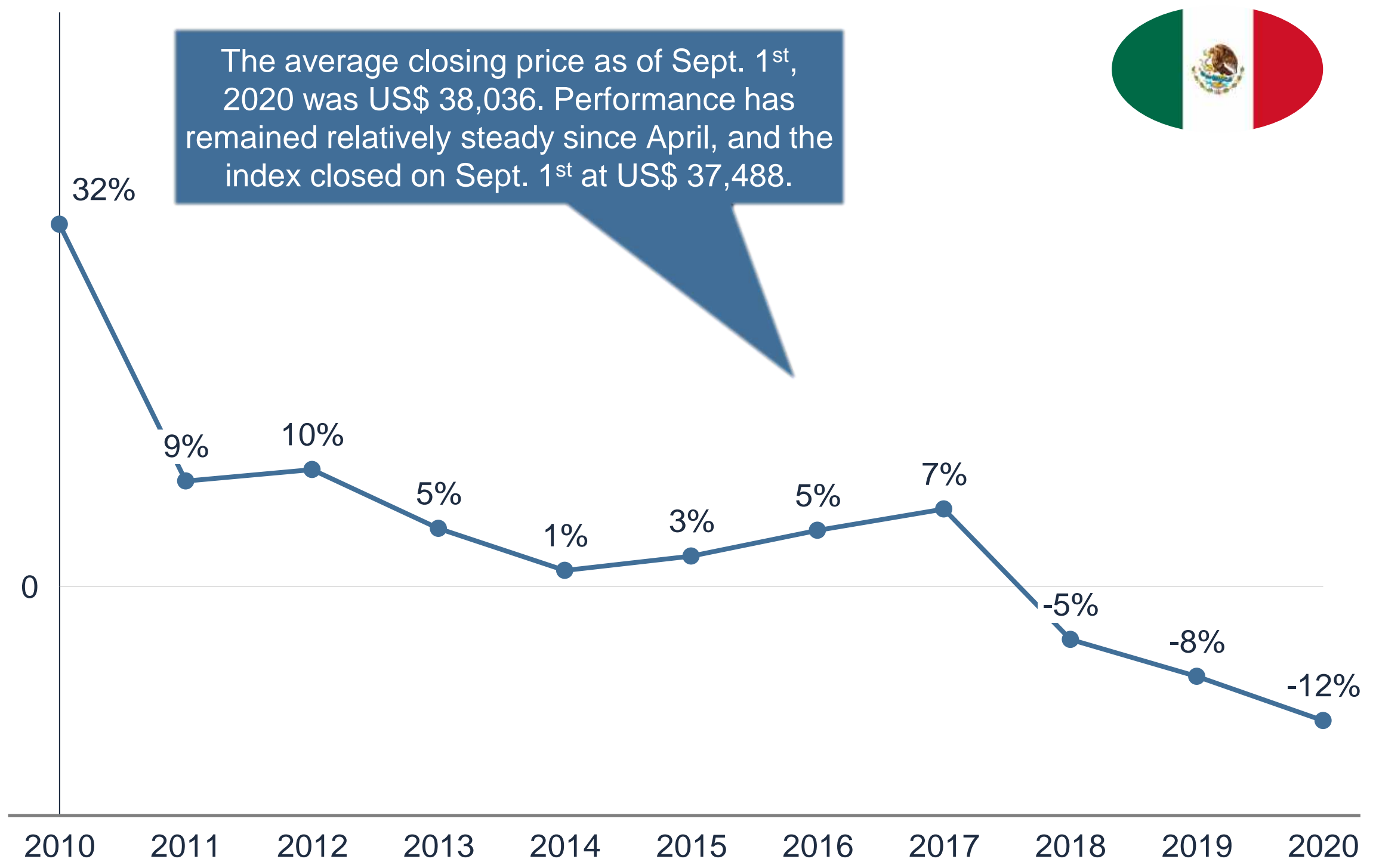
Ibovespa annual percentage change

The Bovespa Index is the benchmark index of 75 stocks accounting for most of the trading and market capitalization of the Brazilian stock exchange (B3)



S&P/BMV IPC annual percentage change

The Mexbol Index is the benchmark index measures the performance of the largest and most liquid stocks listed on the Mexican stock exchange (BMV)

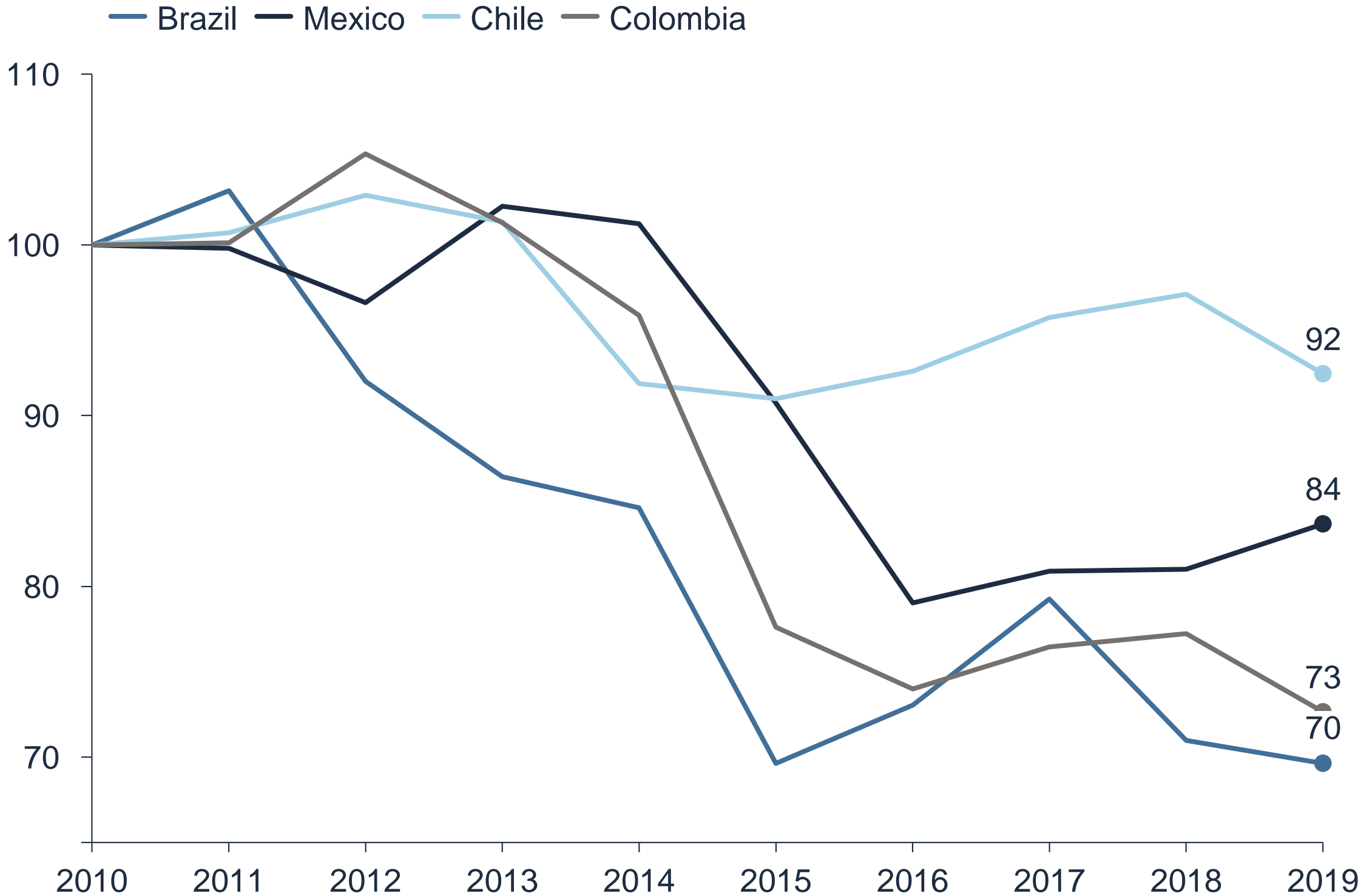


Source: Bloomberg

Latin American currencies were trending towards historical stability, but have taken a blow from the COVID-19 crisis

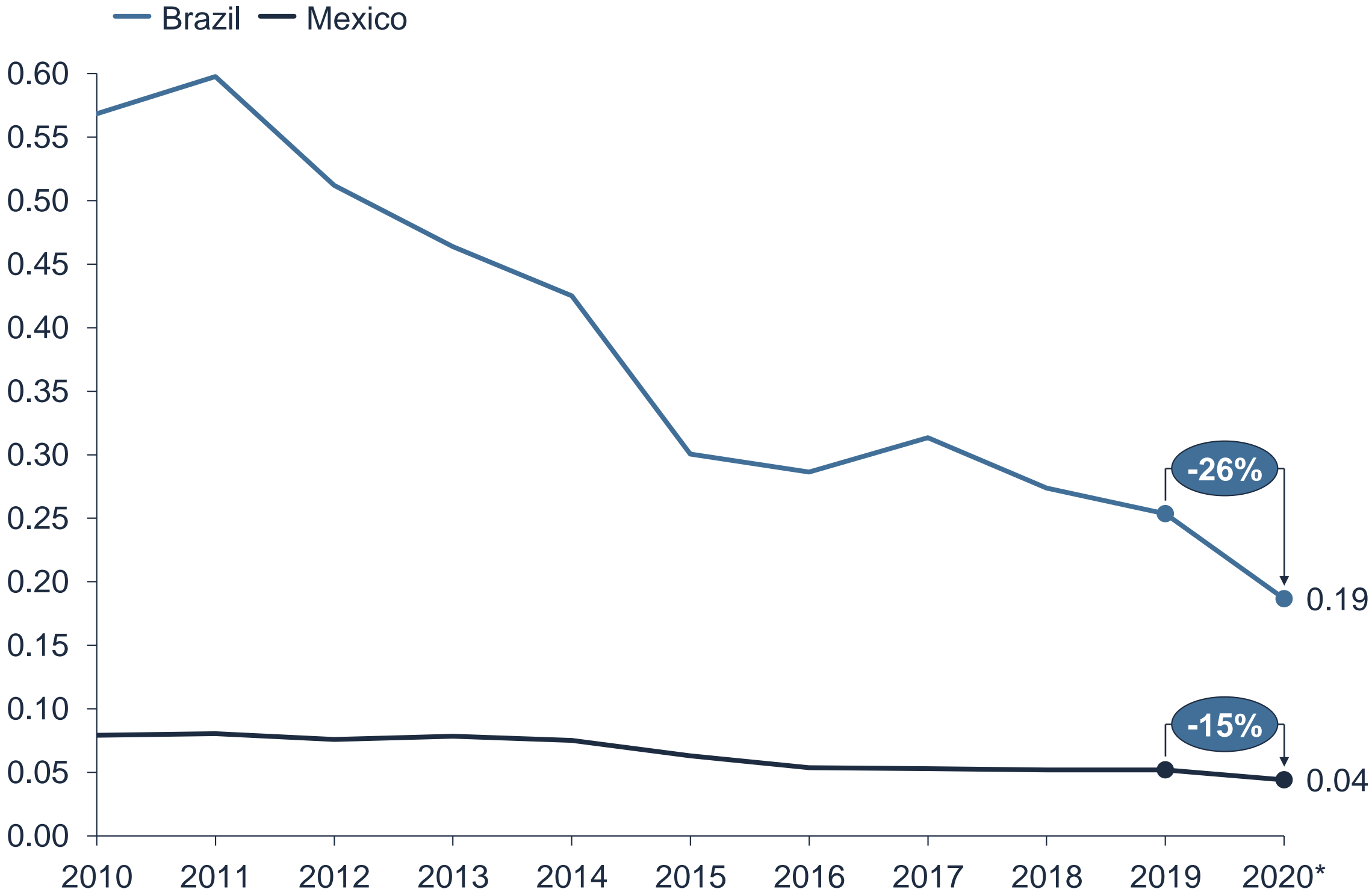
Real effective exchange rate index*

(2010 = 100)



Nominal exchange rate

US\$ per local currency, period average



*Nominal effective exchange rate (a measure of the value of a currency against a weighted average of several foreign currencies) divided by a price deflator

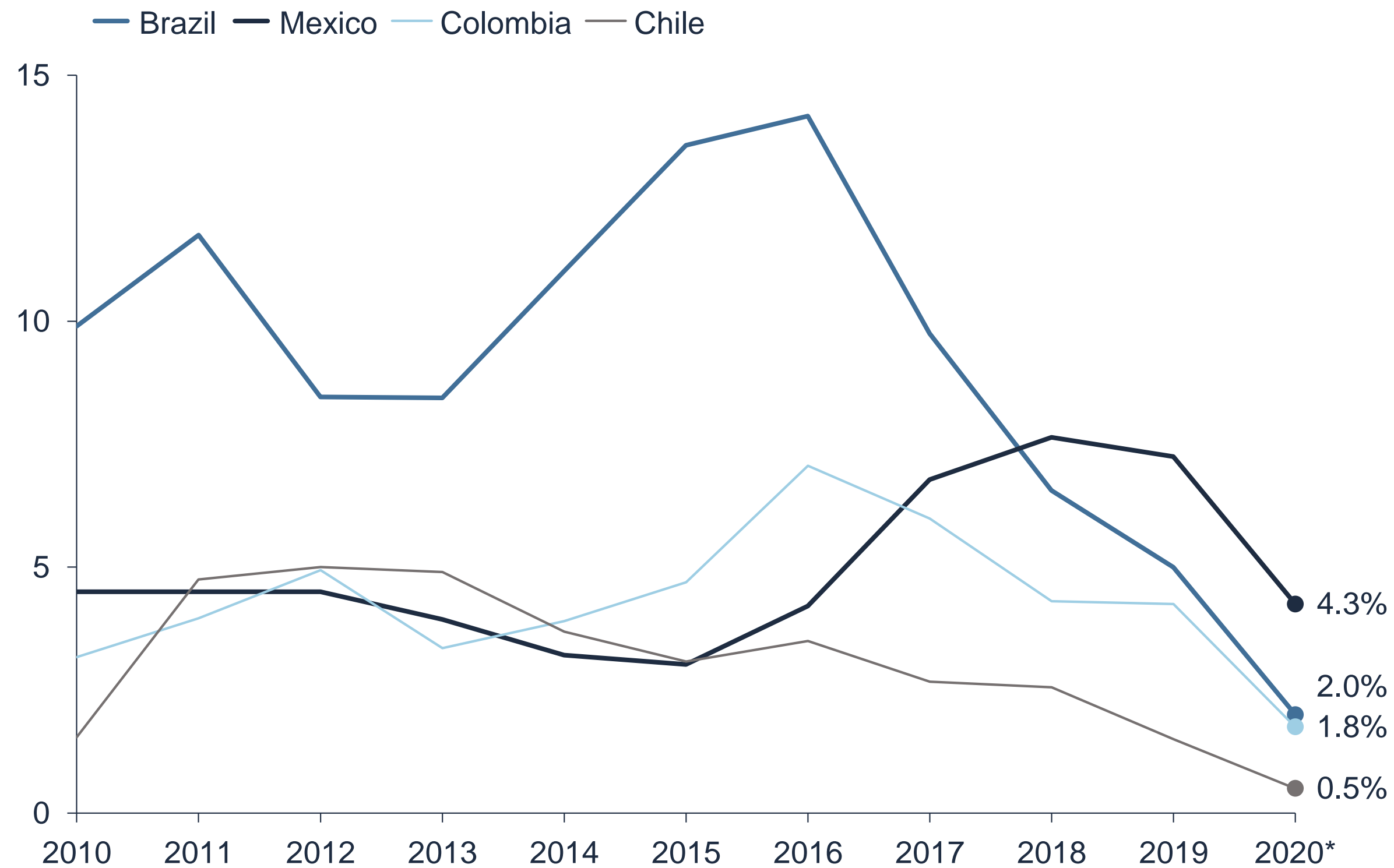
**Period average as of September 20th, 2020

Source: World Bank Open Data, Exchange Rates UK

Interest rates have been declining in the last decade, but interest rate spreads remain high, especially in Brazil

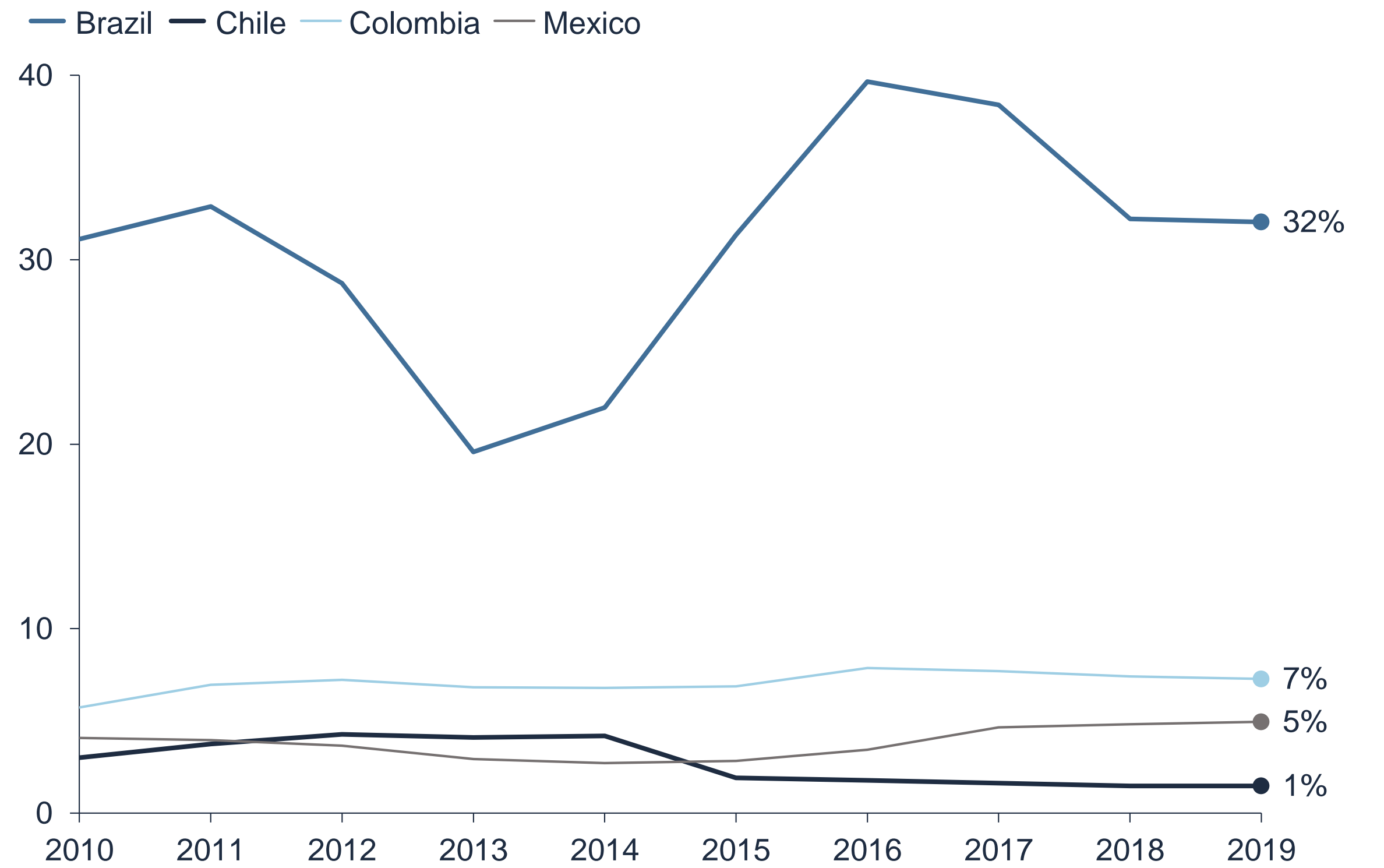
Base interest rates¹

In percentage



Interest rate spread²

Lending rate minus deposit rate, in percentage



*Interest rates as of August 2020

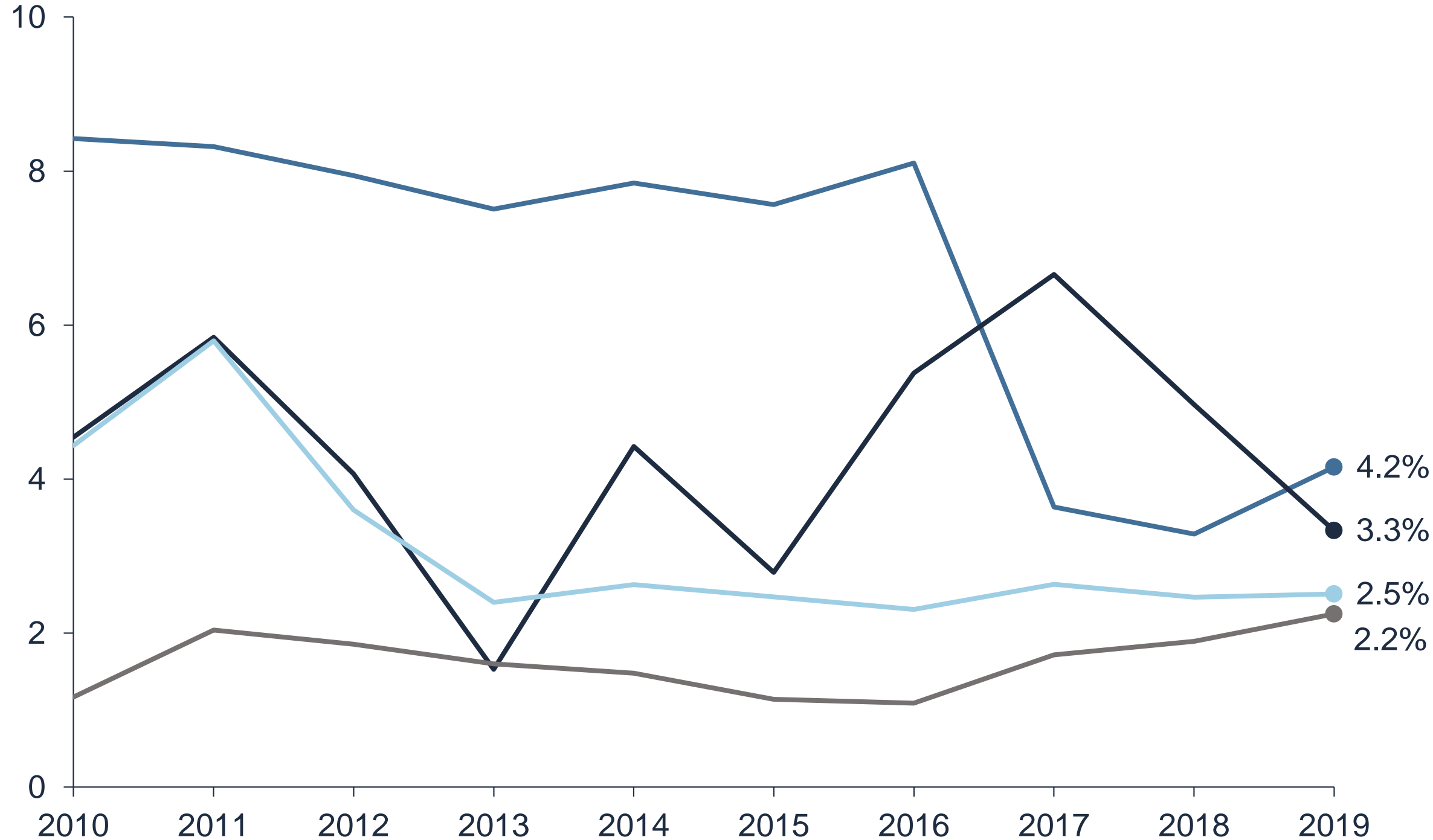
Sources: (1) Economic Commission for Latin America and the Caribbean 2019, Brazil Central Bank 2020, Mexico Central Bank 2020, (2) World Bank Open Data 2019

Inflation rates have been declining across the region, reaching similar levels to those of developed economies

Inflation – GDP Deflator*

Annual percentage growth

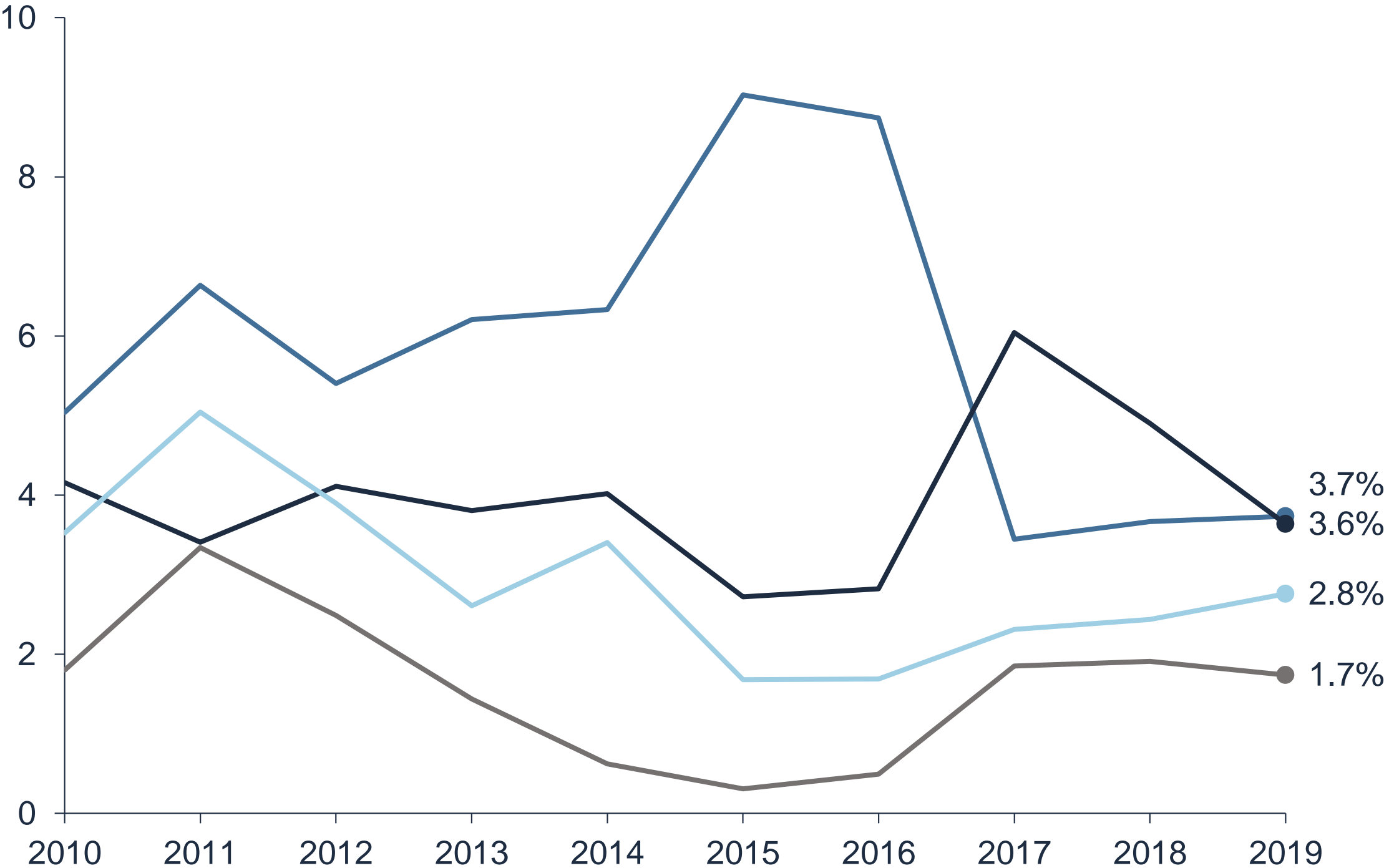
— Brazil — Mexico — LAC — OECD members



Inflation – Consumer price index**

Annual percentage growth

— Brazil — Mexico — LAC — OECD members



*Inflation as measured by the annual growth rate of the GDP implicit deflator shows the rate of price change in the economy as a whole. The GDP implicit deflator is the ratio of GDP in current local currency to GDP in constant local currency (i.e. Nominal GDP/Real GDP)

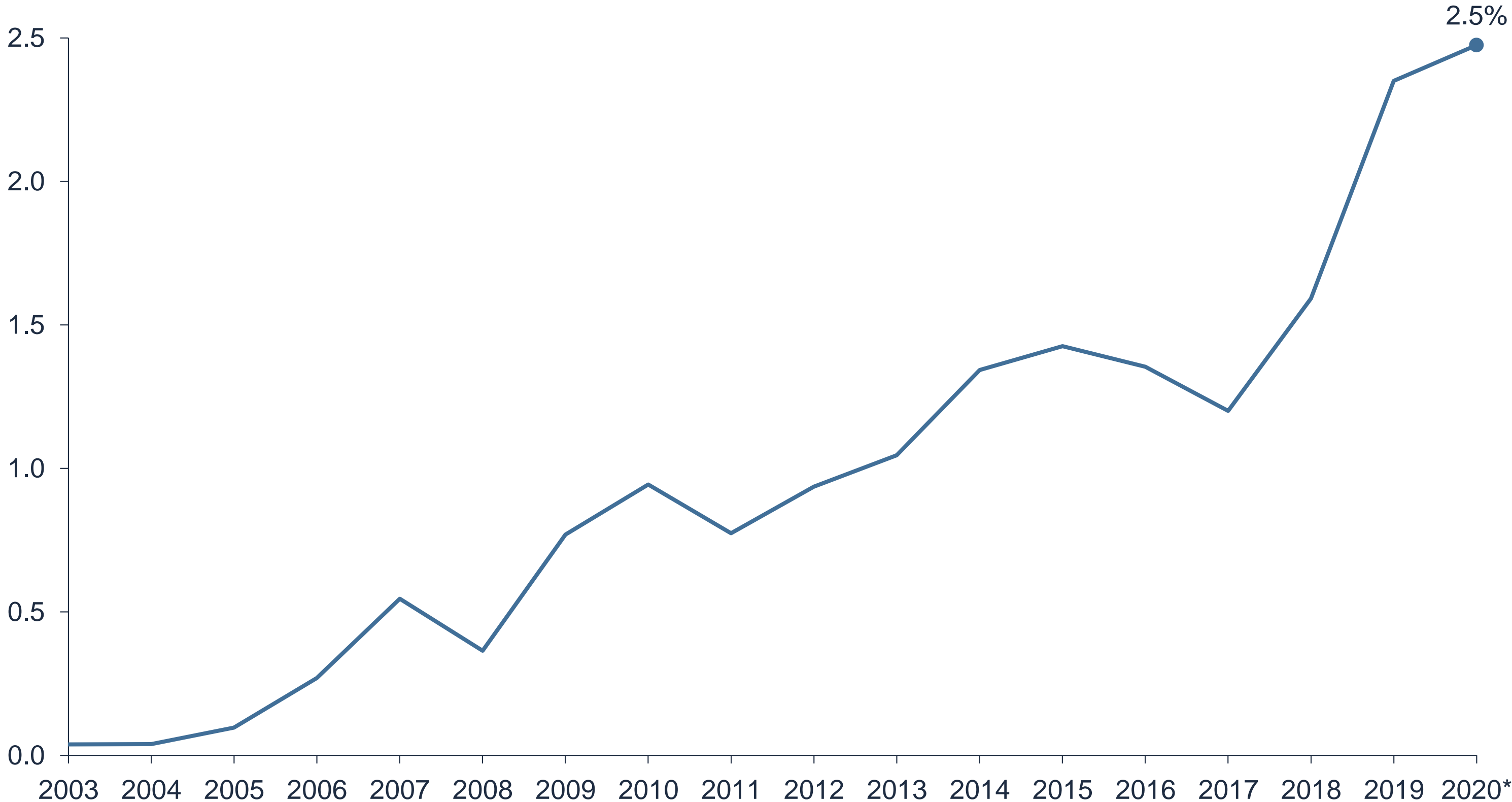
**Inflation as measured by the consumer price index reflects the annual percentage change in the cost to the average consumer of acquiring a basket of goods and services

Source: World Bank Open Data

Technology Penetration

Tech penetration in Brazil has been growing at a yearly average rate of 40% over the past two decades

Brazil technology company market cap as a % of GDP



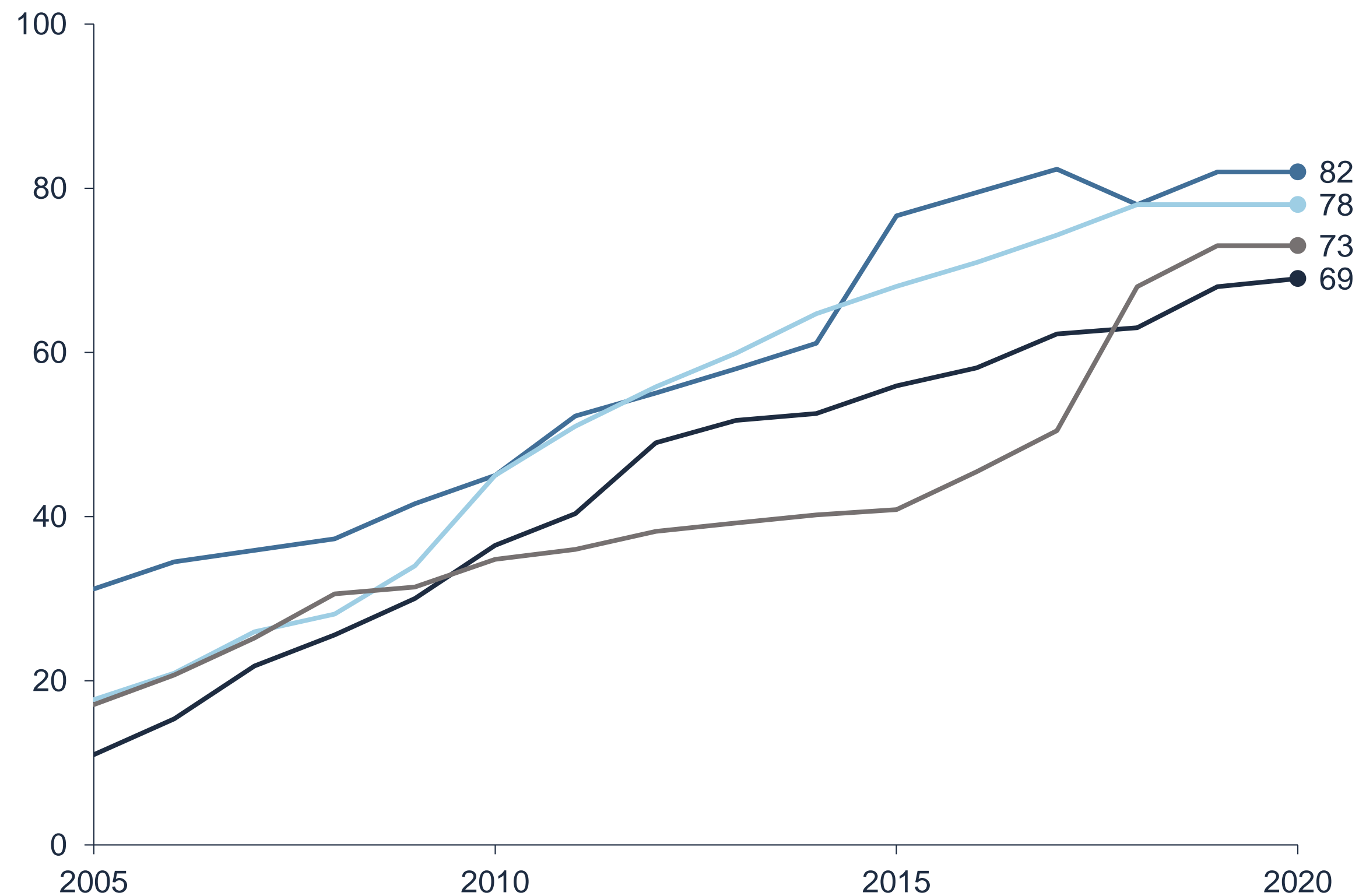
*Average tech market cap as a % of GDP between 4Q19 and 3Q20
Sources: Capital IQ for market cap data (excludes telecom), World Bank Open Data 2019 for GDP, Atlantico analysis

Internet and mobile internet penetration in Chile, Argentina, Peru and Colombia have grown rapidly in the past years

Internet Penetration

Number of internet users divided by total population¹

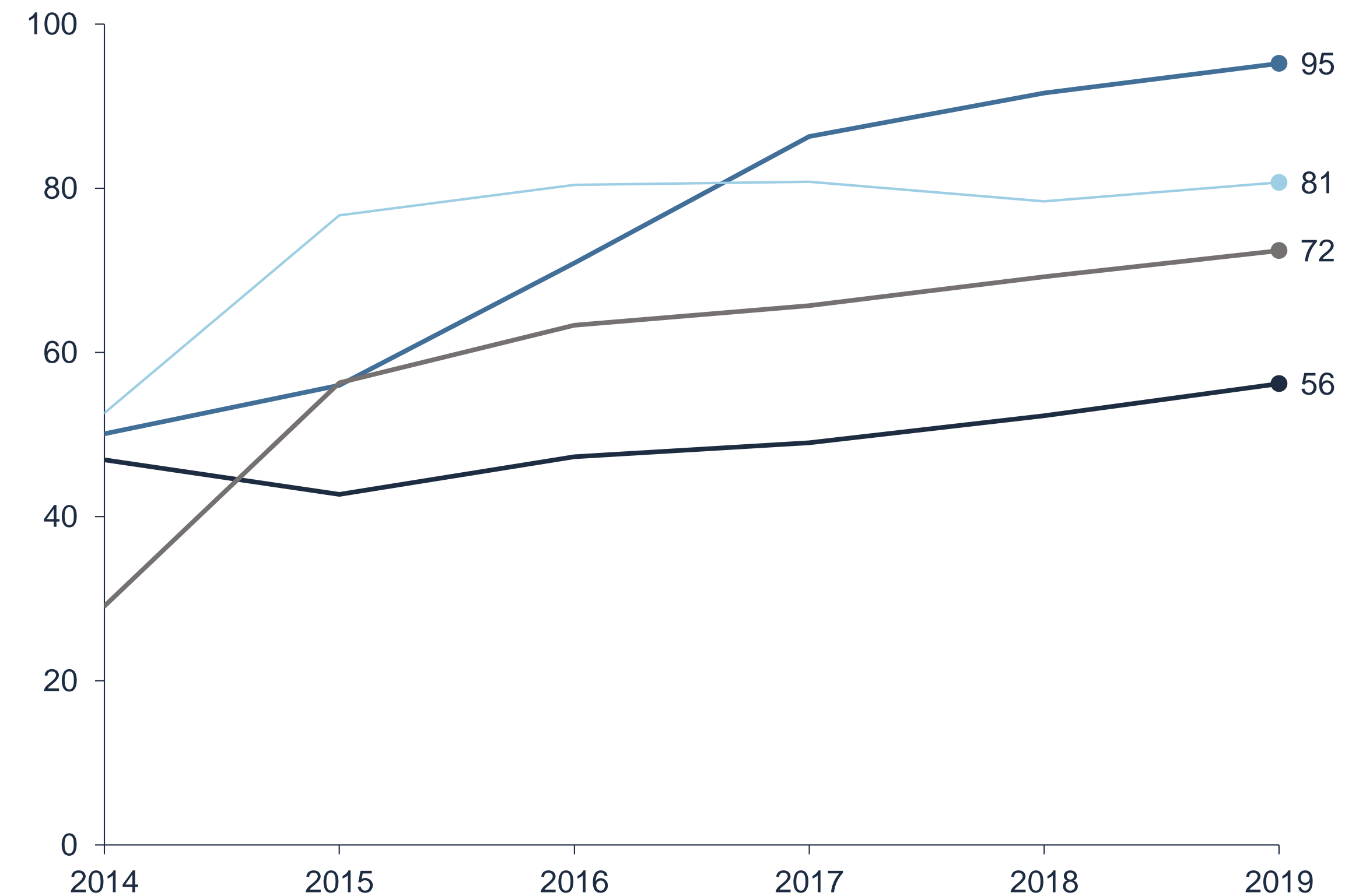
— Chile — Colombia — Argentina — Peru



Mobile Internet Penetration

Number of mobile internet users divided by total population²

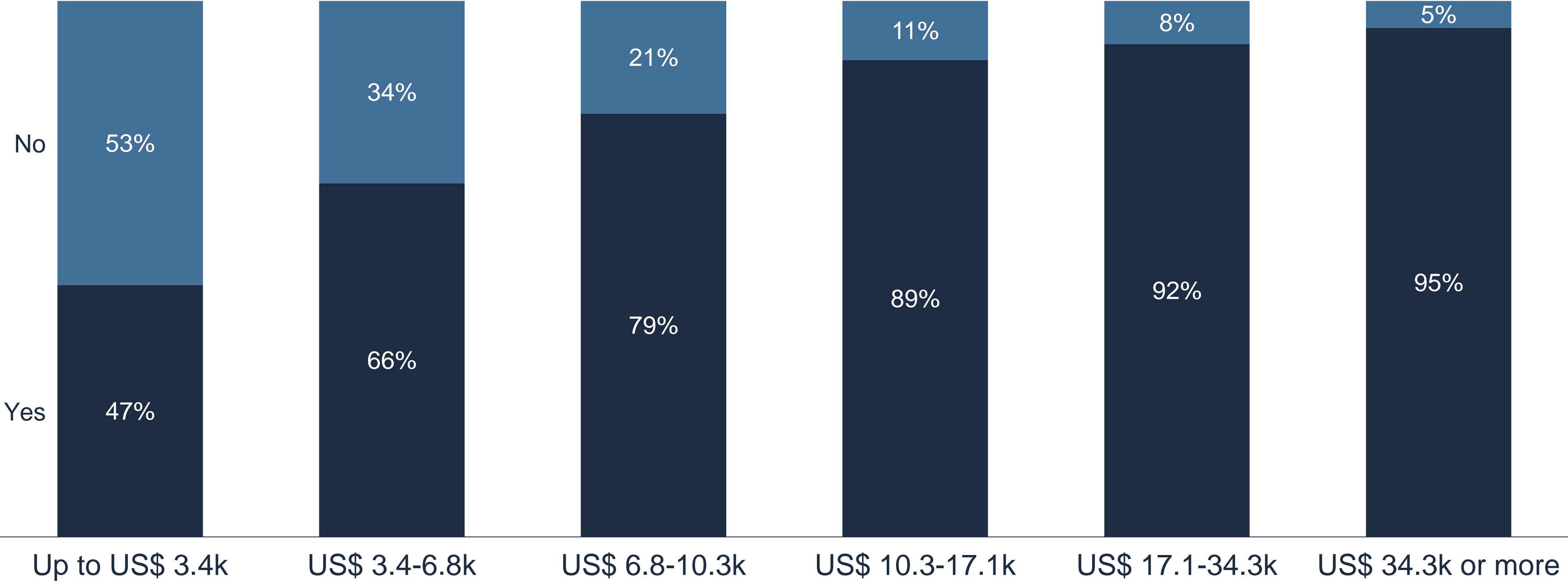
— Chile — Colombia — Argentina — Peru



Internet penetration in Brazil varies a lot based on household income

Households with Internet access in Brazil by income¹

% of households with Internet access by annual household income in US\$ thousands, 2018

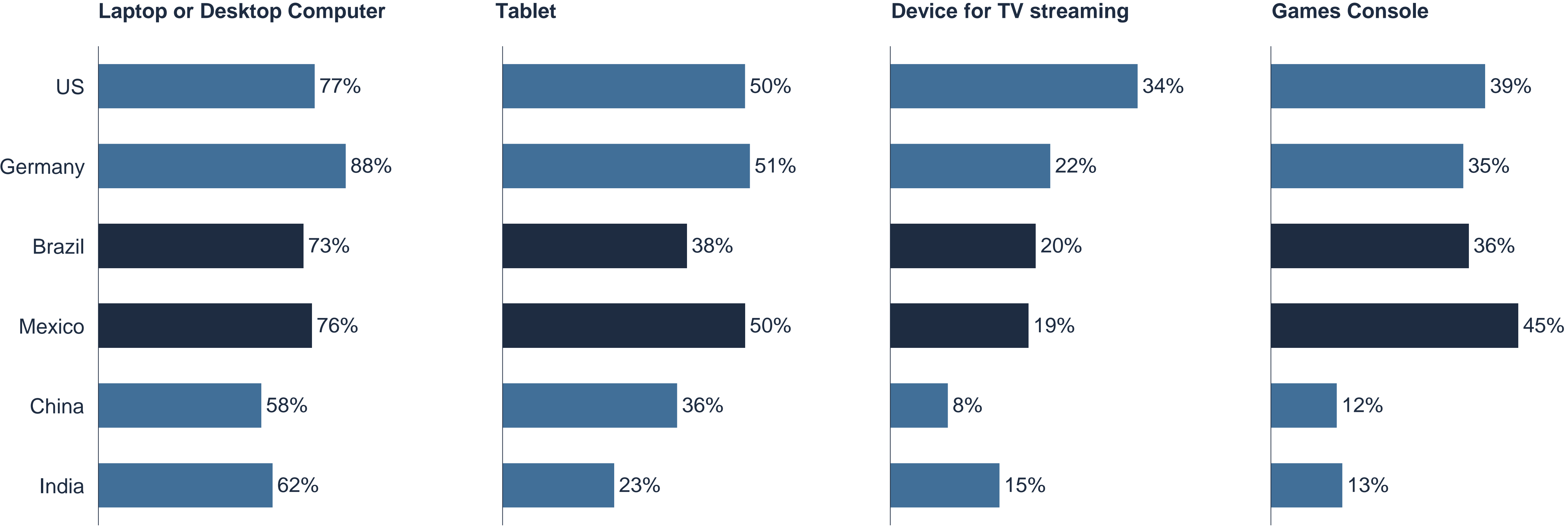


¹ CETIC reports data in number of monthly minimum wages earned by the family. Data was converted to US\$ using 2018's minimum wage in reais and average real-dollar exchange rate. To convert to annual earnings, it was multiplied by 13.3, accounting for 13th salary and vacations.

Penetration of other tech devices in LatAm is at the level of other developed economies and higher than China and India

Penetration of devices

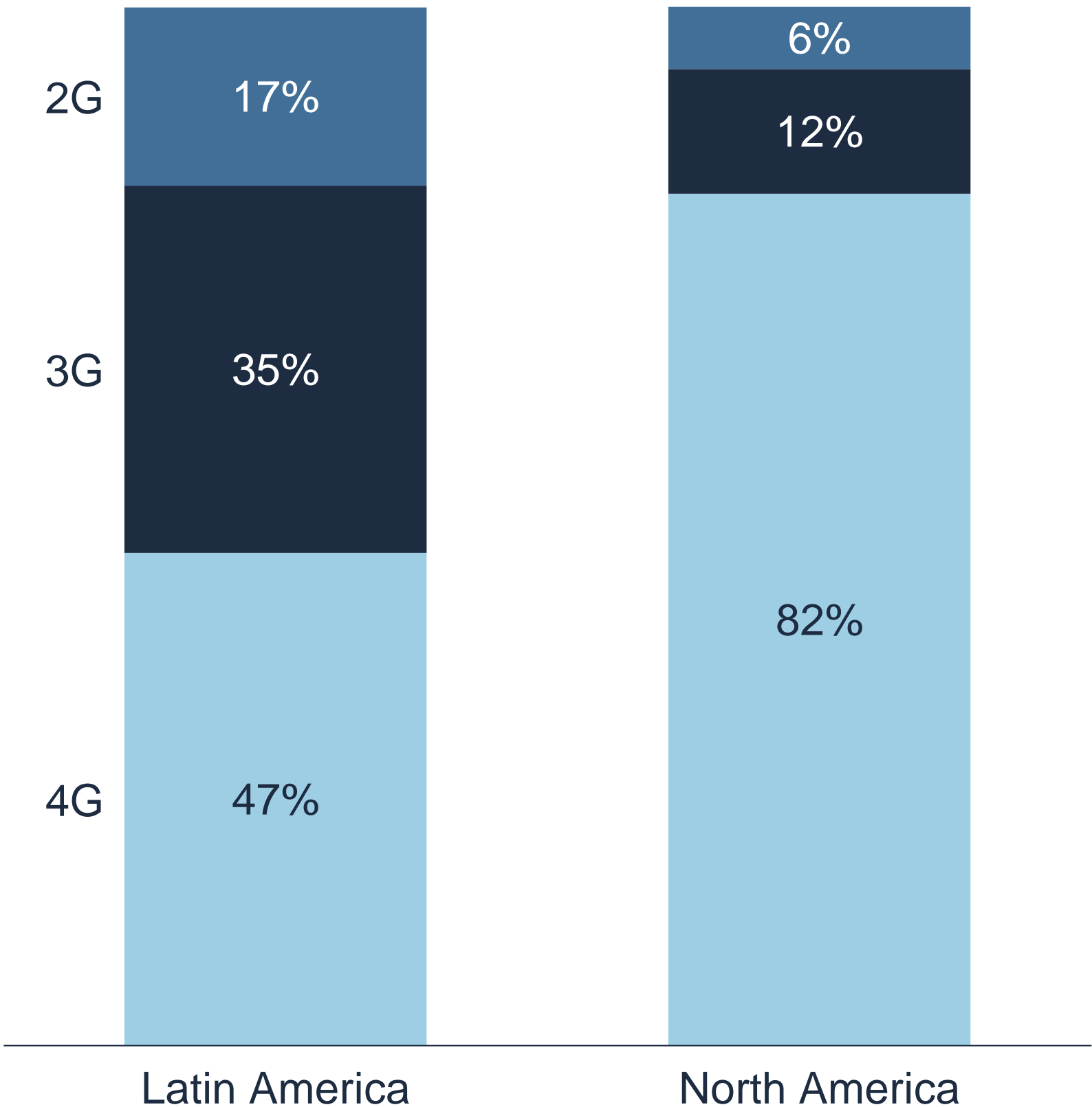
As a % of Internet Users aged 16-64 with these devices, 2020



Connectivity in Latin America lags behind developed countries

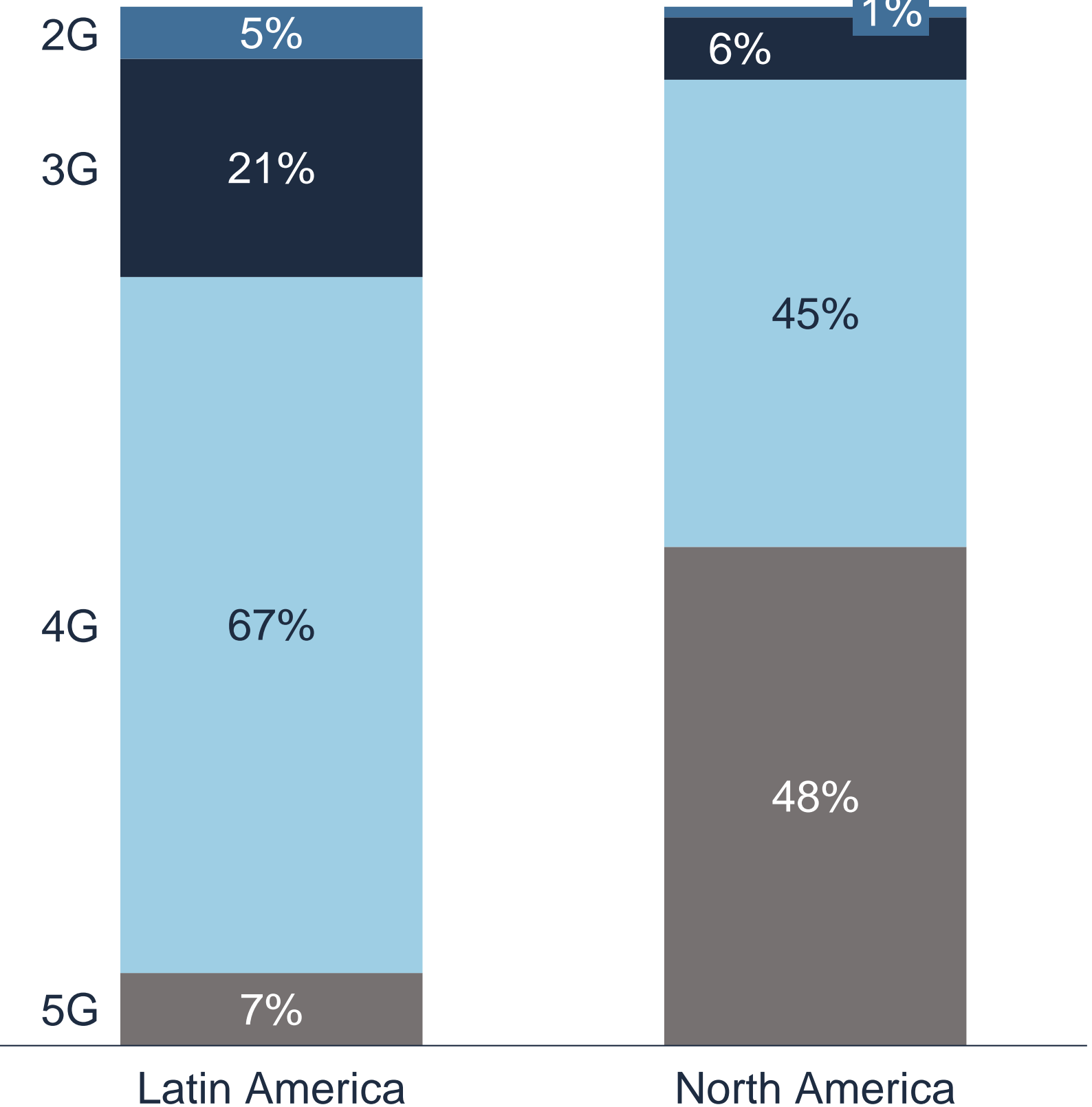
Mobile connections by technology

2019 - Actual



Mobile connections by technology

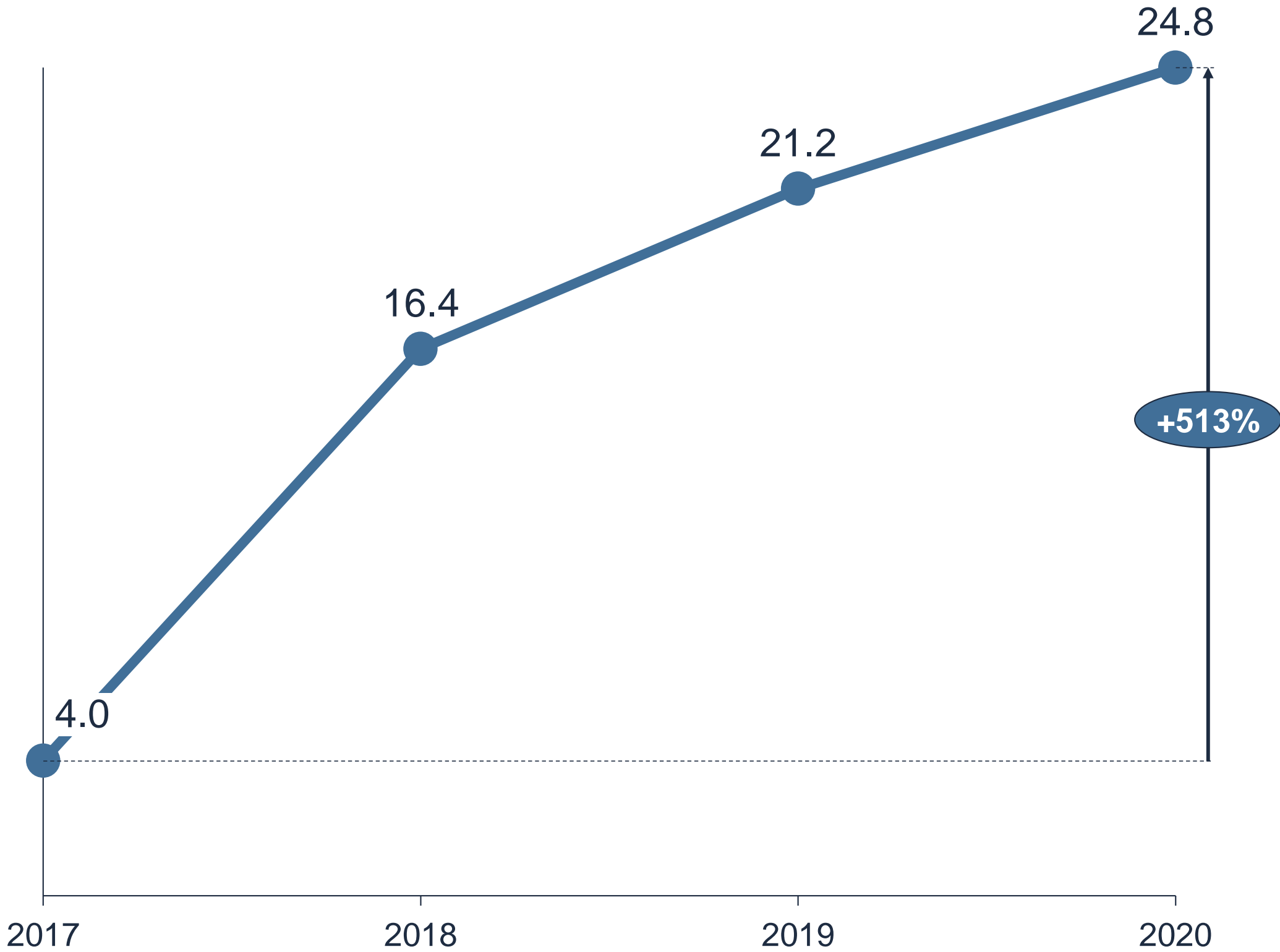
2025 - Forecast



As today's barriers of slow internet and costly access get chipped away, usage should increase even further

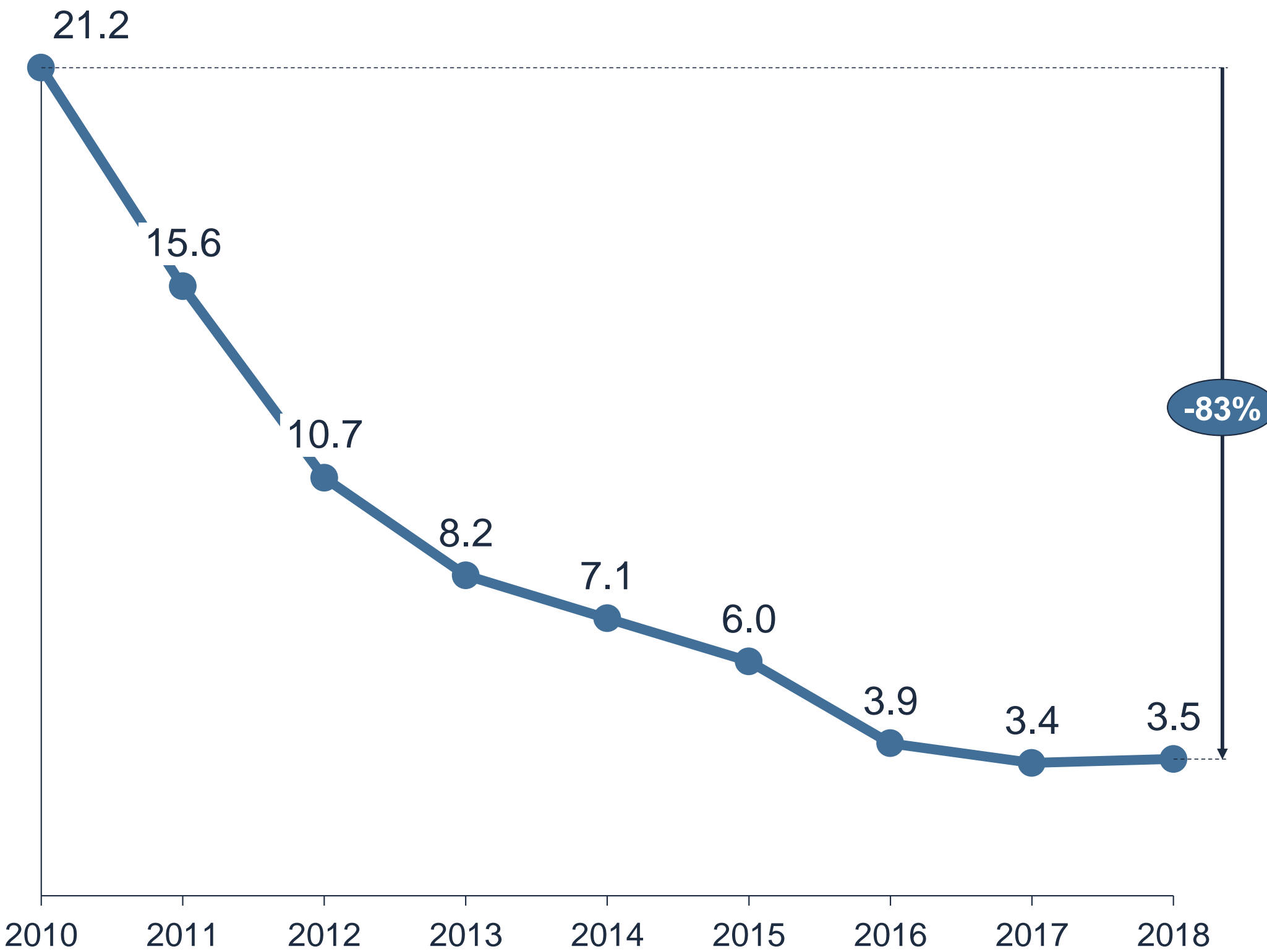
Mobile Internet connection speed

Average download speed of mobile internet connections in Brazil, in mbps¹



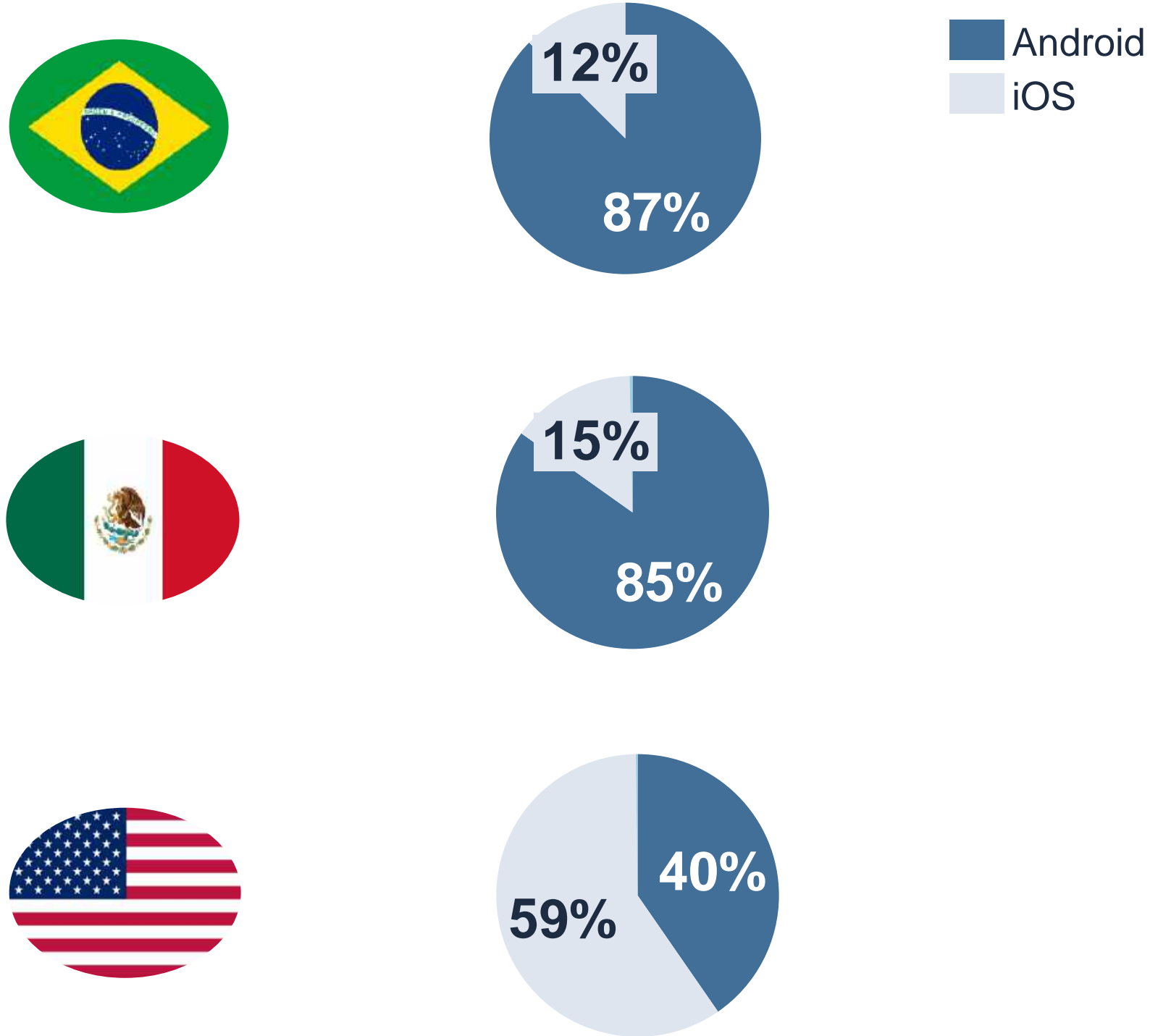
Fixed broadband cost

Average cost (in R\$) of 1Mbps of fixed broadband internet connection per month in Brazil²

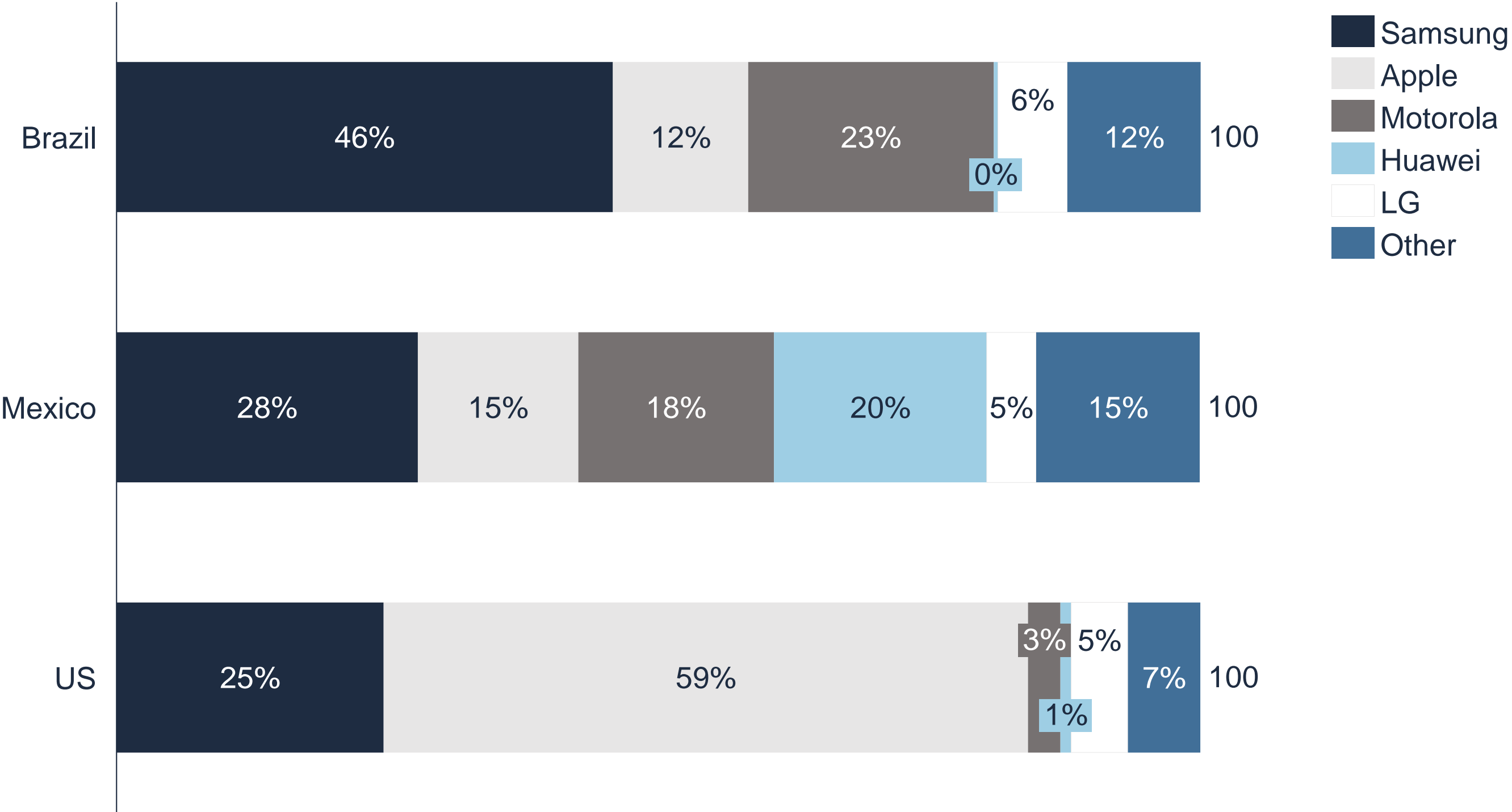


The success of messaging and social media has come even in the face of a large representation of simple phones

Mobile Operation System Breakdown¹



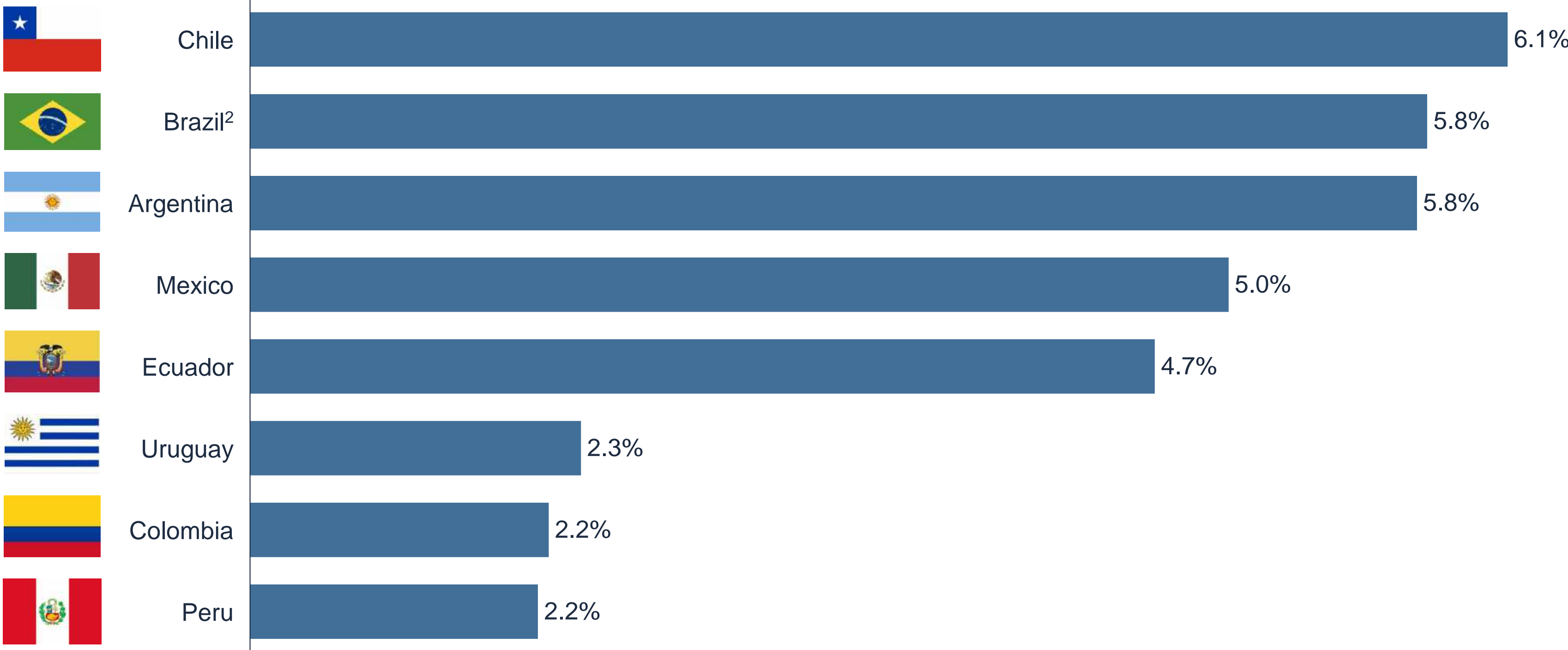
Mobile Manufacturer Market Share²



Tech companies such as Facebook, Uber and Spotify are launching “lite” apps in developing countries. They take up less space on devices, have fewer features and use less mobile data, while still trying to provide a similar user experience.²

E-commerce penetration varies across Latin American countries, with Chile leading the way at 6.1%

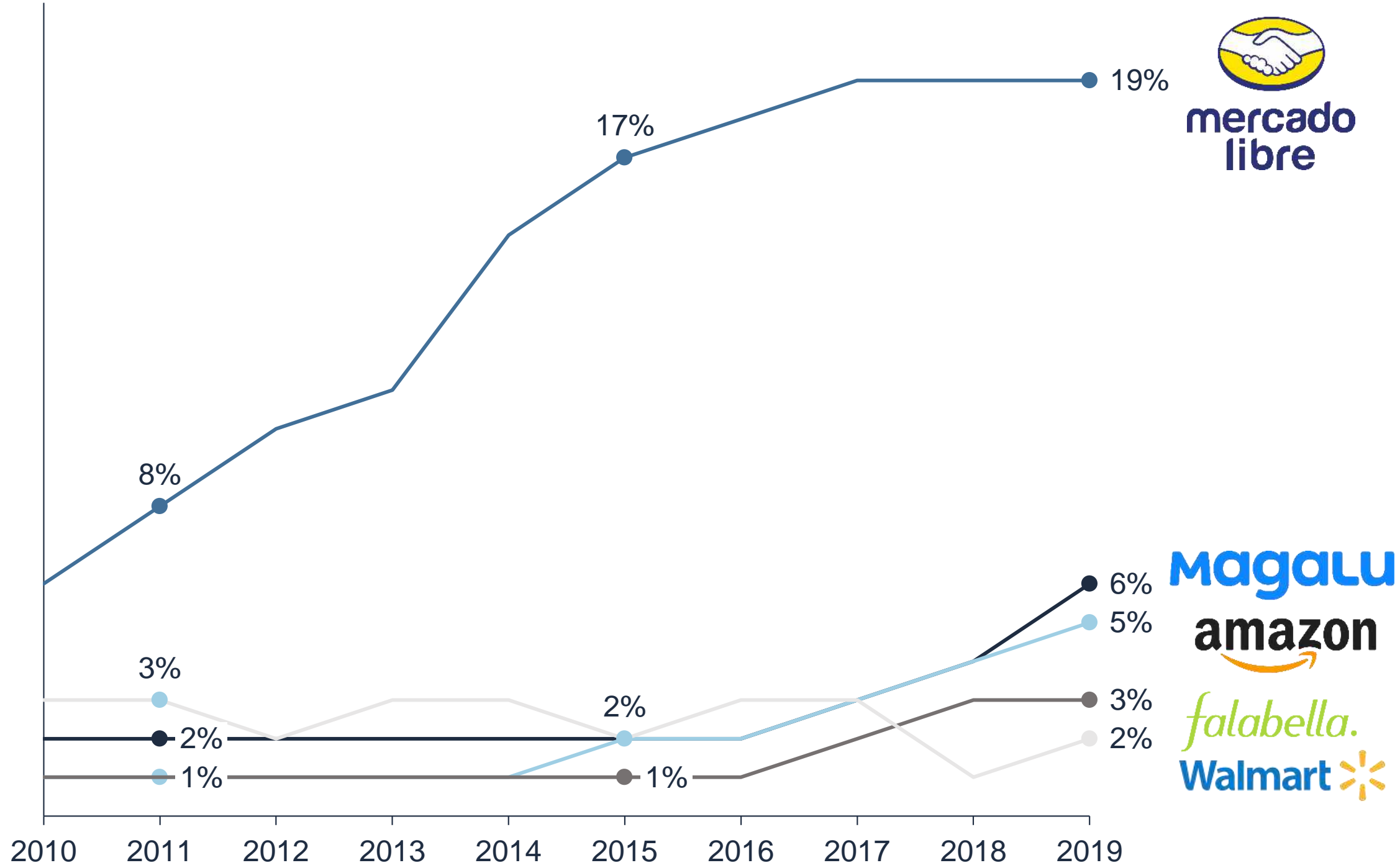
E-commerce penetration by country, 2019¹



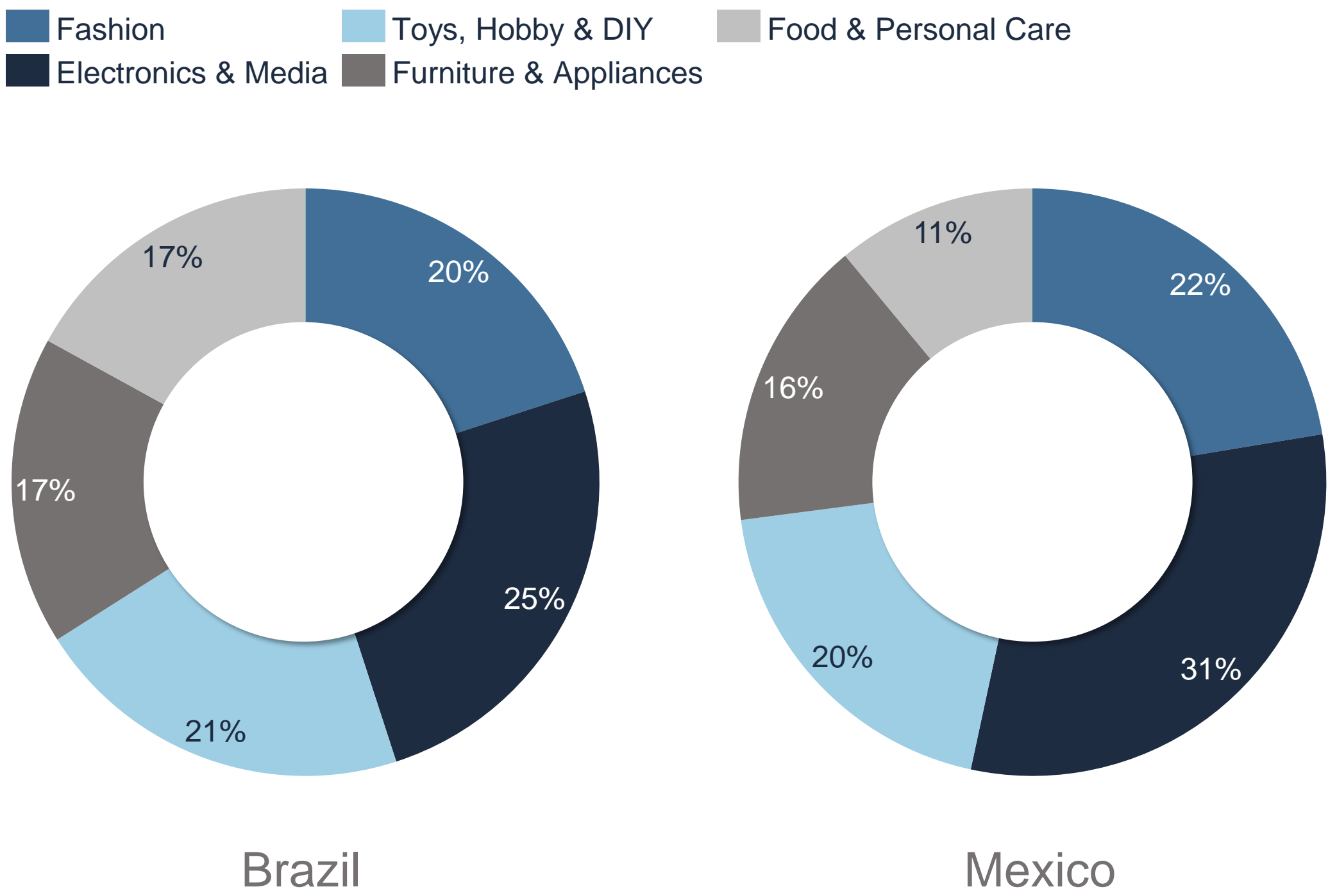
Sources: (1) Euromonitor Retailing Data (2) E-commerce penetration figures for 2018-2020 are from MCC-ENET. Figures for 2009-2017 were estimated applying Euromonitor's historical penetration growth to MCC-ENET data

Retail brands continue to gain market share in the e-commerce sector, with electronics as the most popular buy

Latin American top retail brands by e-commerce market share



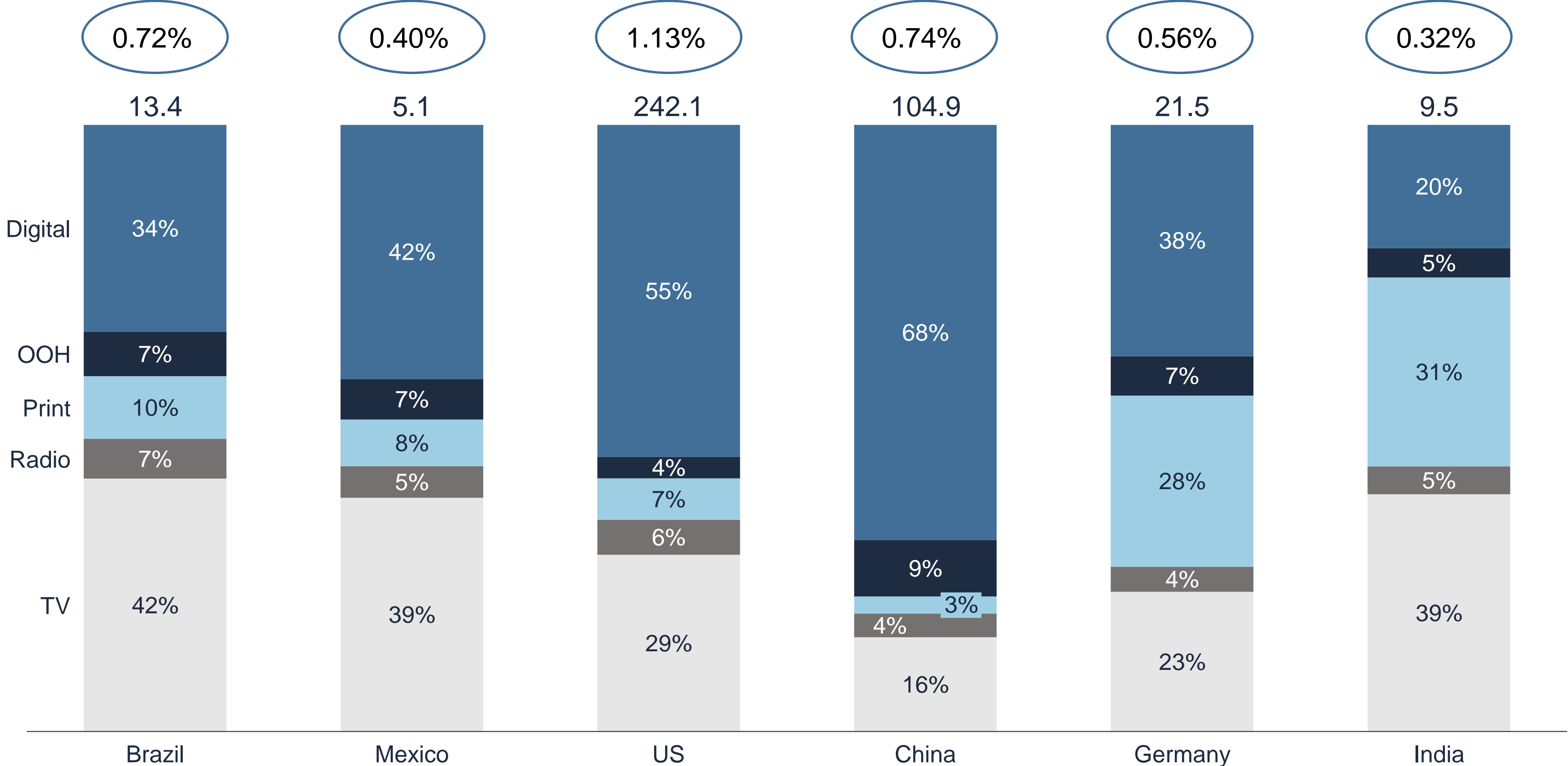
Sectors as a share of total e-commerce revenue 2020



Brazil and Mexico invest in advertising considerably less than the US and are less focused on digital media

Total media ad spending, by media
US\$ B, 2019

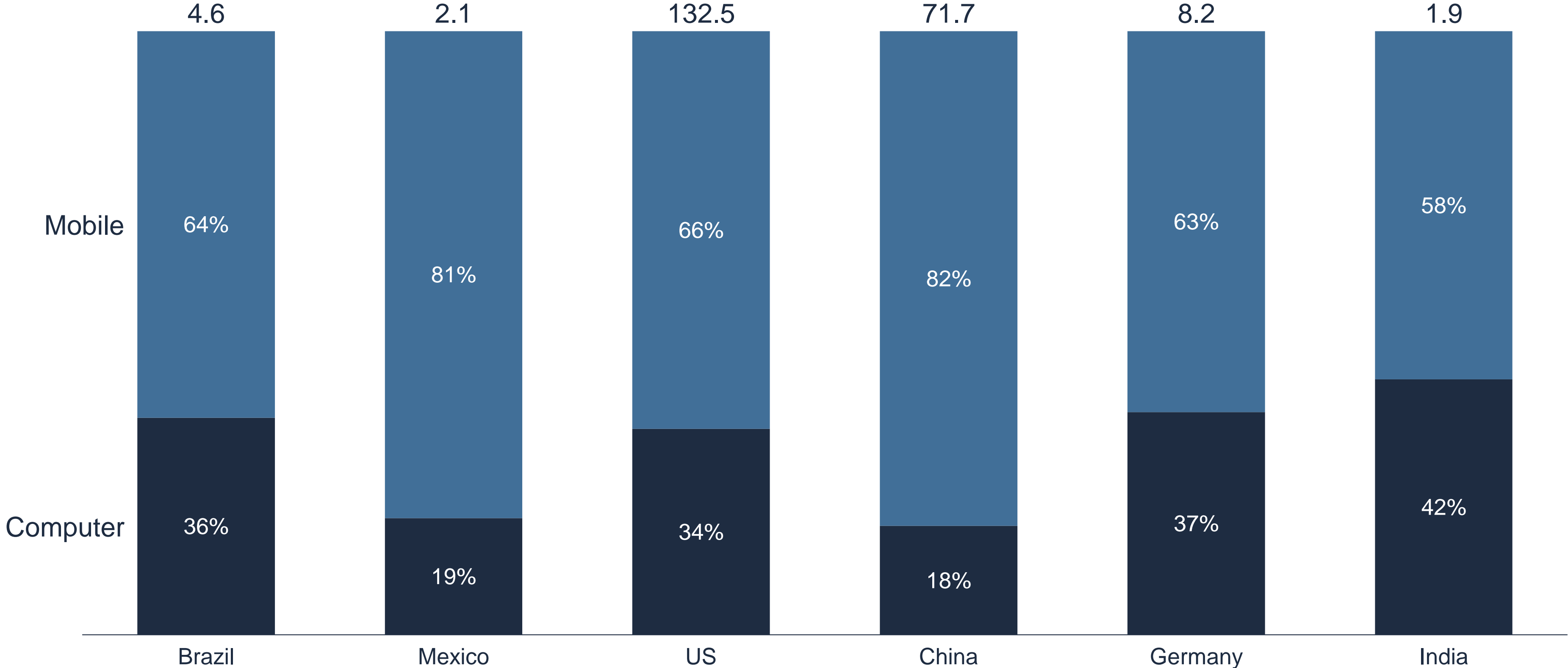
XX %
Advertising investment as a % of GDP



Mobile Ads as a percentage of digital ads in Mexico is higher than the US and in line with China

Breakdown of digital ad spending by mobile* and computer**

US\$ B, 2019



* Includes tablet, ** Includes laptop and desktop

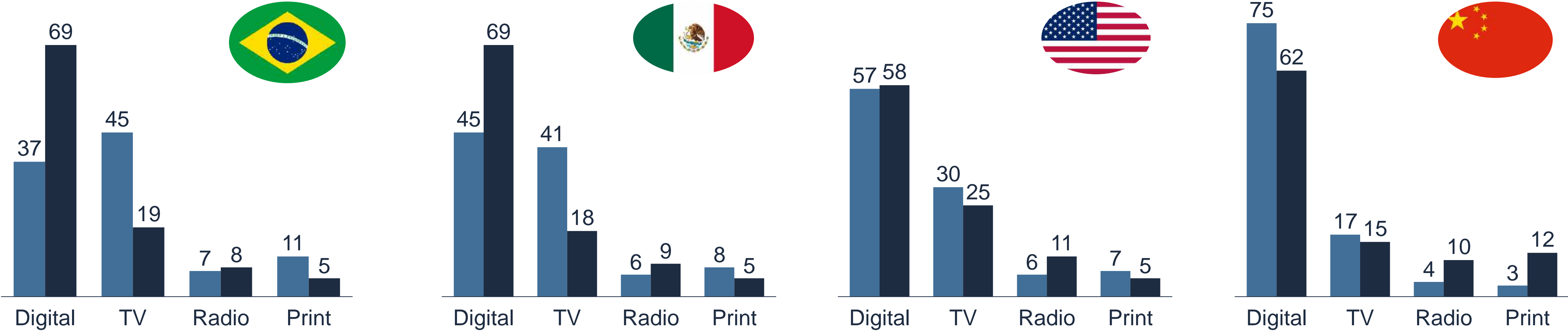
Source: eMarketer Database

Digital advertising should continue to advance propelled by accelerating tech growth in Latin America

Media advertising spending vs. media time spending

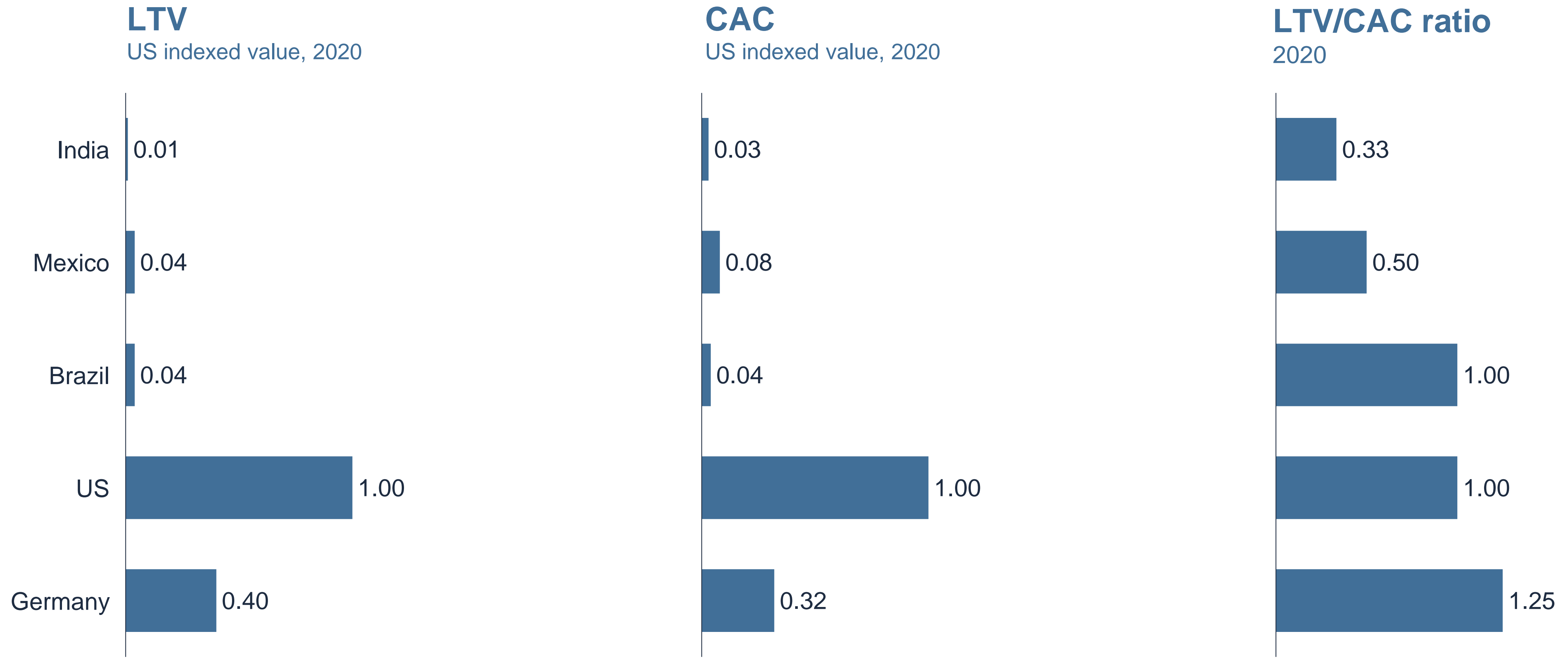
Comparison between % of media advertising spending per media type (light blue) and % of time users spend in each media type (dark blue)

■ Share of Budget (%)
 ■ Share of Attention (%)



- There is a misalignment between budget and attention split in Brazil and Mexico:
 - o Although 70% of time is spent in digital devices, only 37-45% of the advertising budget is allocated to digital
 - o Most of the budget is spent on traditional media (TV, Print and Radio), which accounts for only 30% of the time spent
- In the US and China, attention and budget are much more aligned

Brazil's LTV/CAC ratio is in line with the US, while in Mexico acquiring customers is more expensive



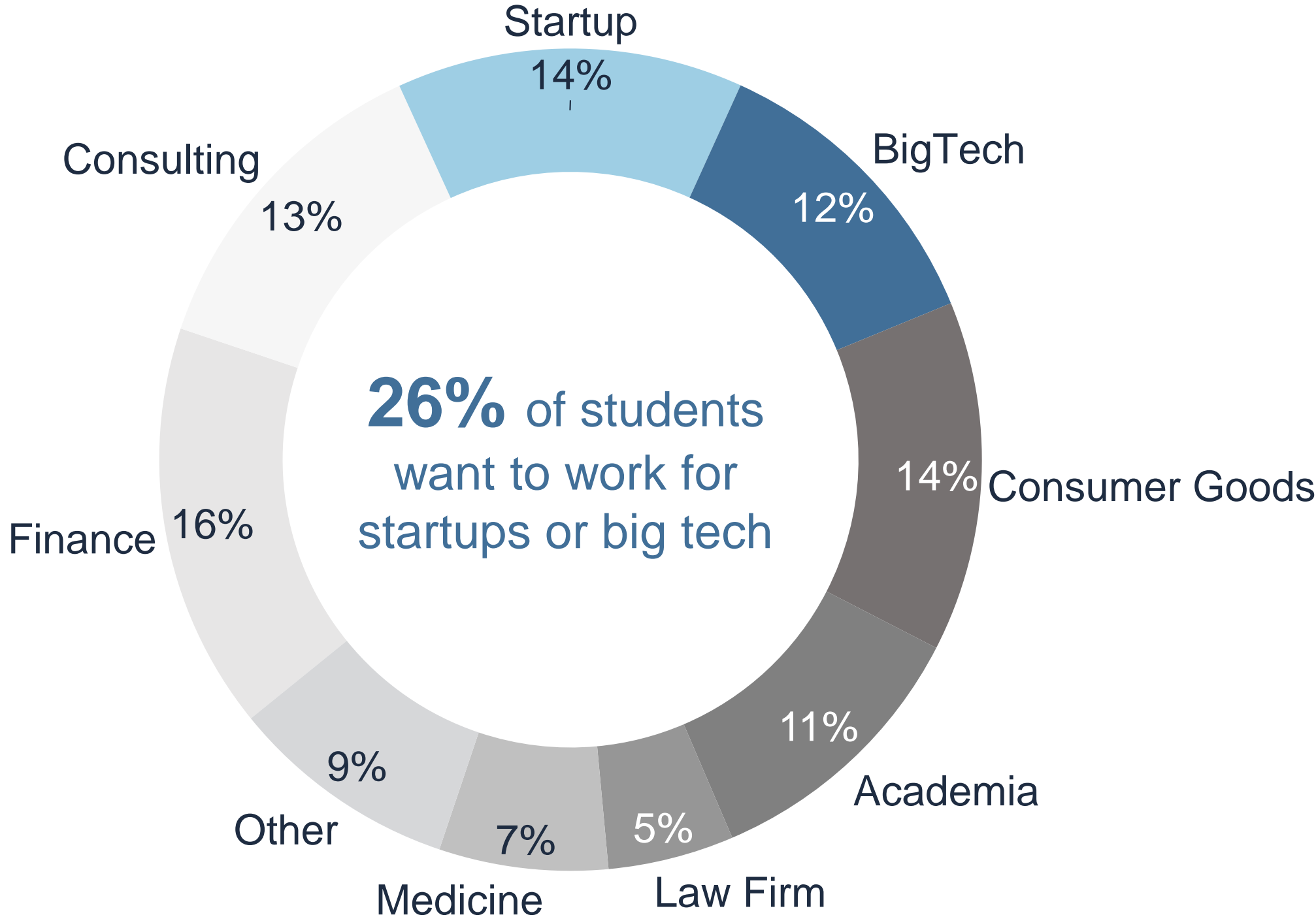
Note: LTV and CAC reflect not only country differences, but also other factors such as different targeting strategies and channel mix
Source: Historical data aggregated for top-ranking apps (>10M downloads) in iOS and Android platforms

Drivers of Change

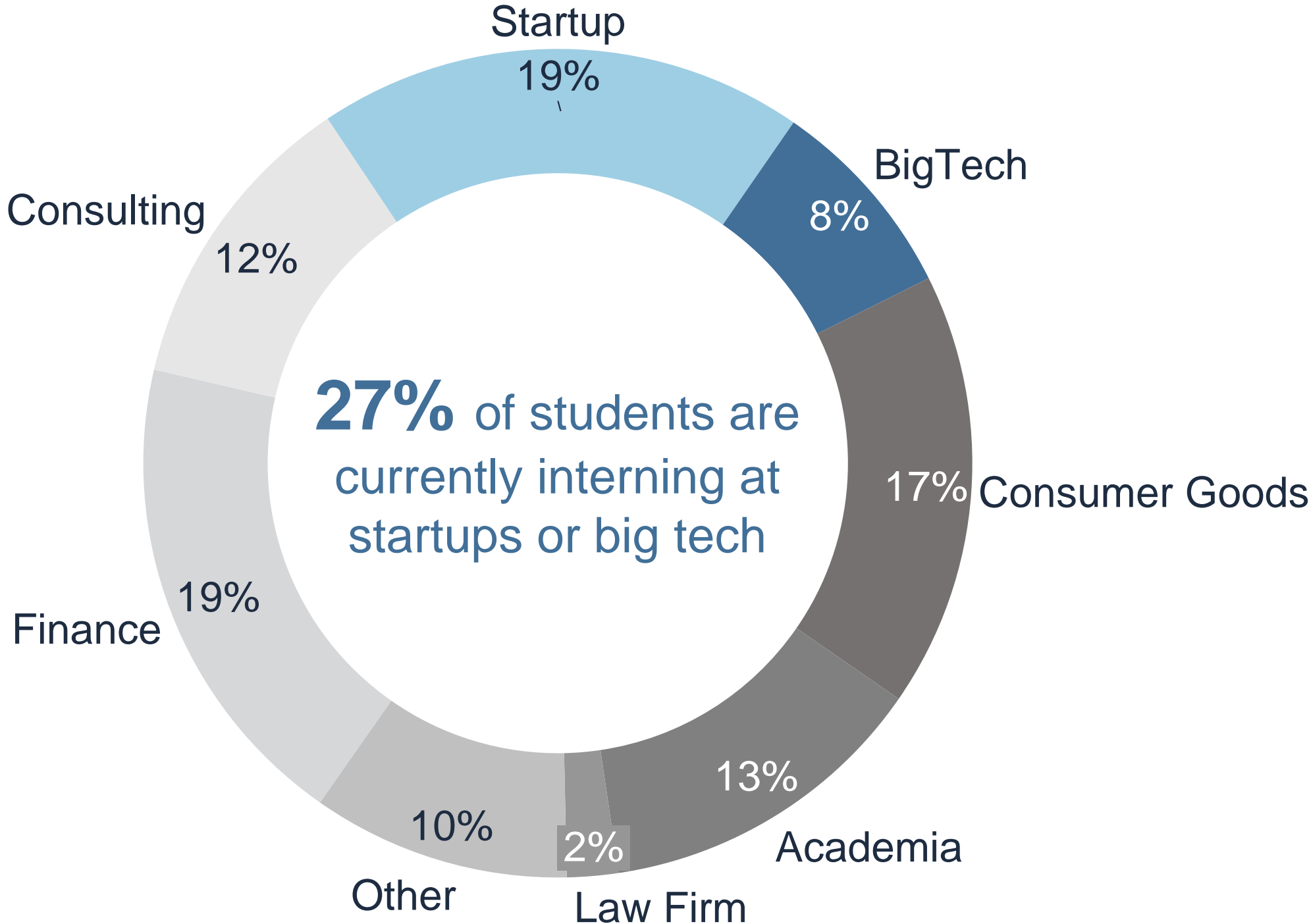
Students are looking to startups and technology companies to start their careers

We conducted research with nearly 1700 students from 301 universities to understand their career aspirations

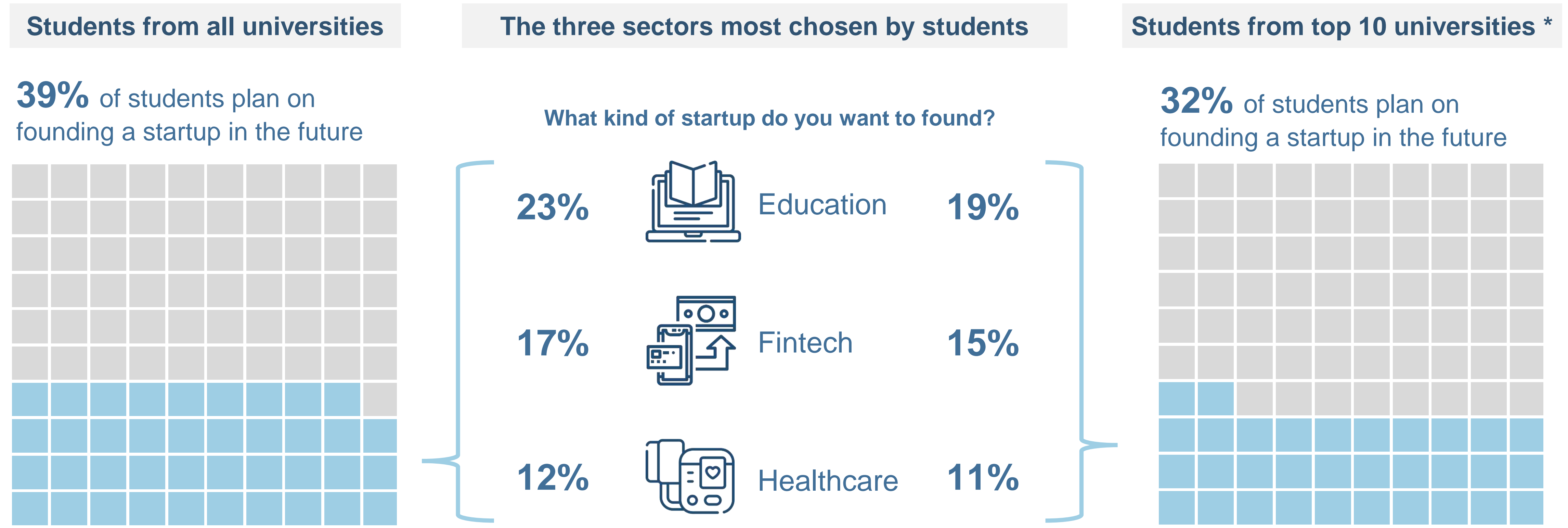
In which sector do you want do work?



Where are you currently interning?



University students aspire to found their own startups

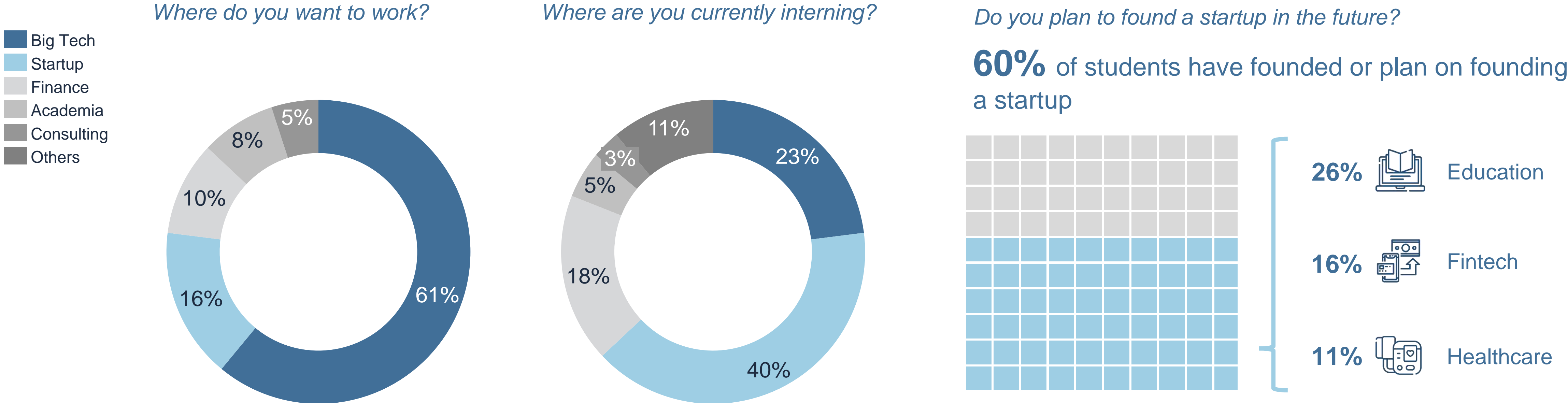


* Based on Times Higher Education ranking, best universities in Brazil, n = 454

Source: Atlantico Study June 2020: n = 1682, 1516 students in 236 universities in Brazil, 166 students in 65 universities abroad

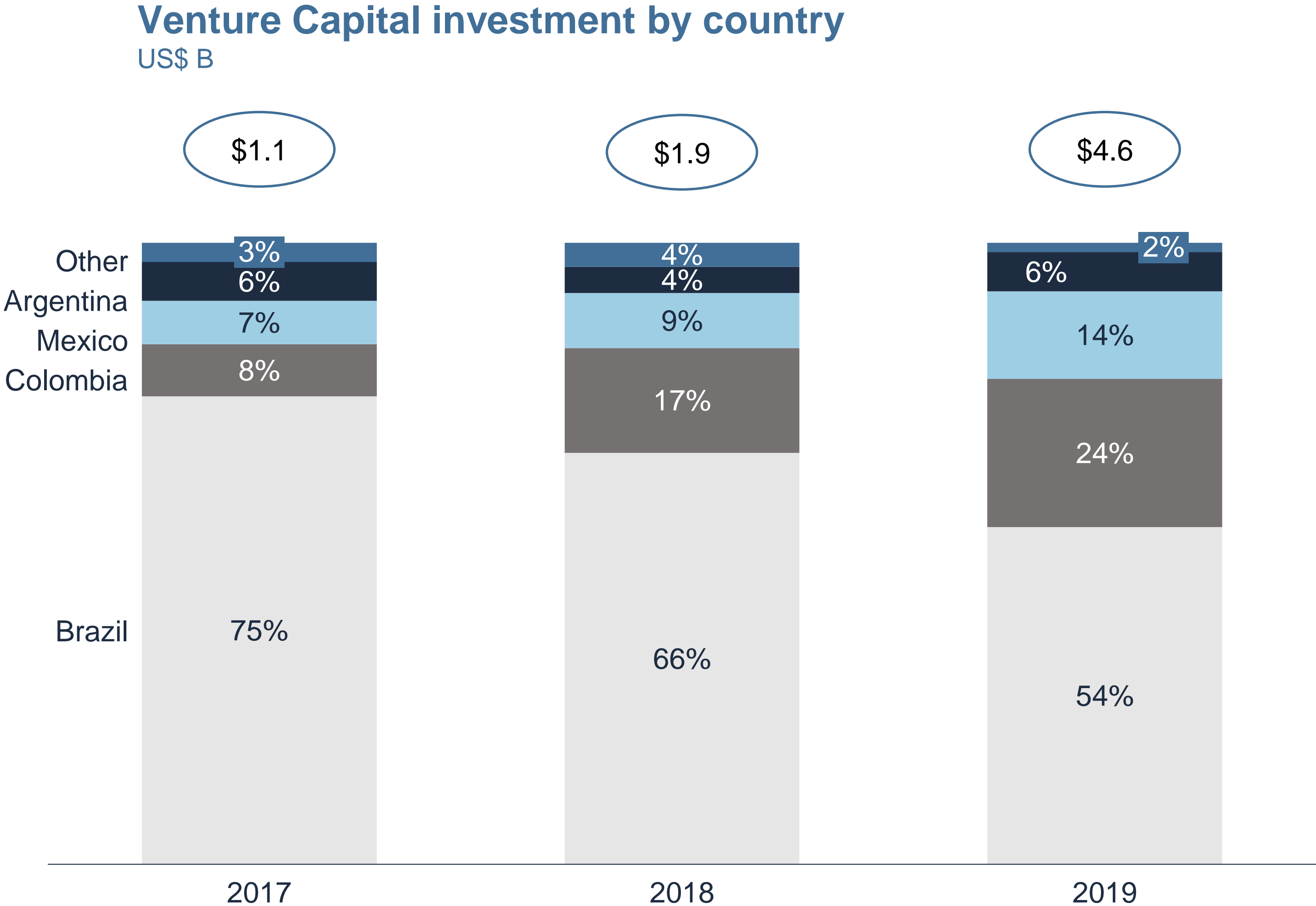
The trend towards entrepreneurship is even stronger among computer science students

We surveyed 103 computer science students to learn about their career plans



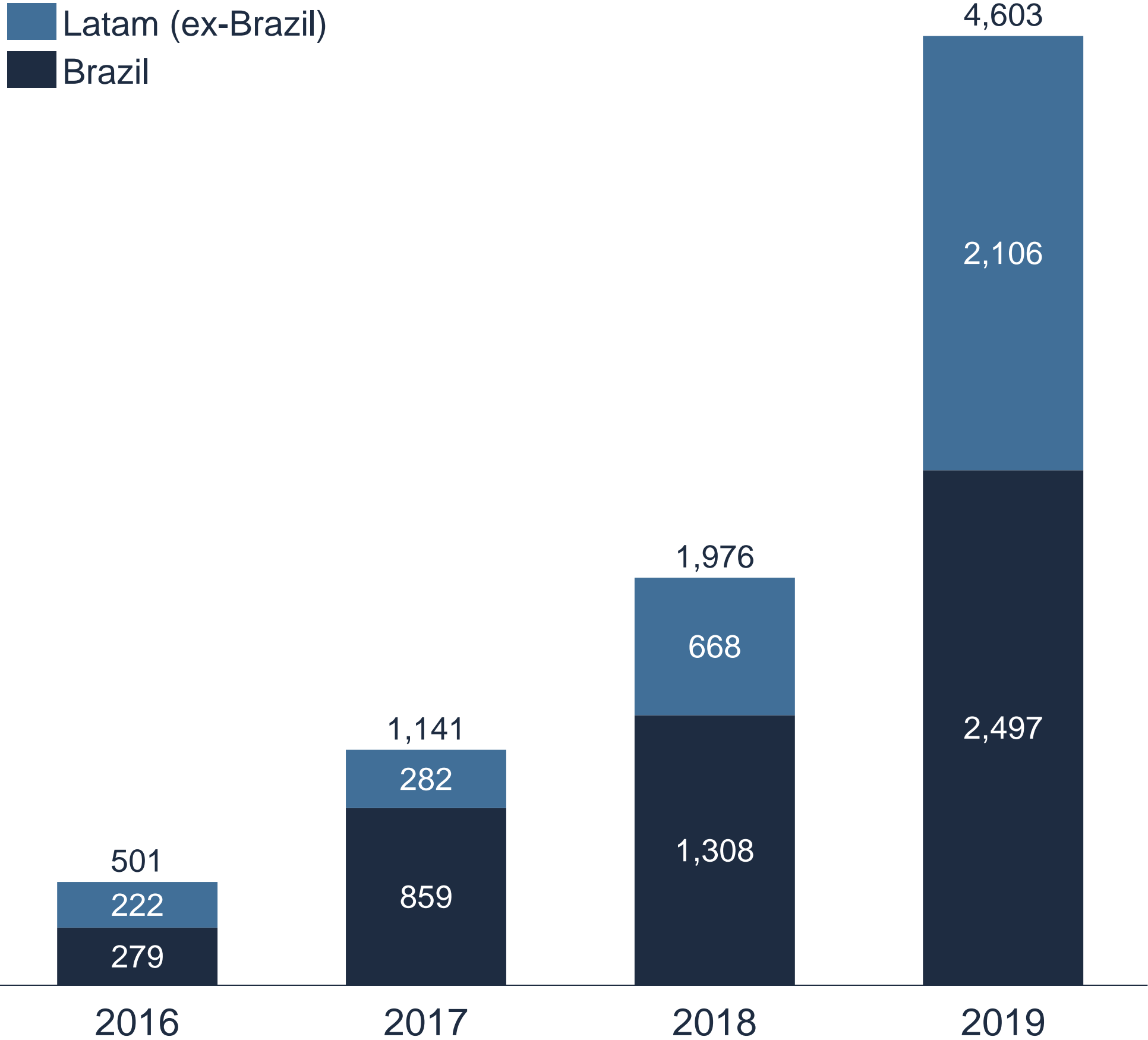
103 computer science students were surveyed, 85 in Brazilian universities, and 18 in universities abroad
 Source: Atlantico Study June 2020: n = 1682, 1516 students in 236 universities in Brazil, 166 students in 65 universities abroad

Venture Capital investments in the region grew rapidly, with investments becoming more evenly distributed over time

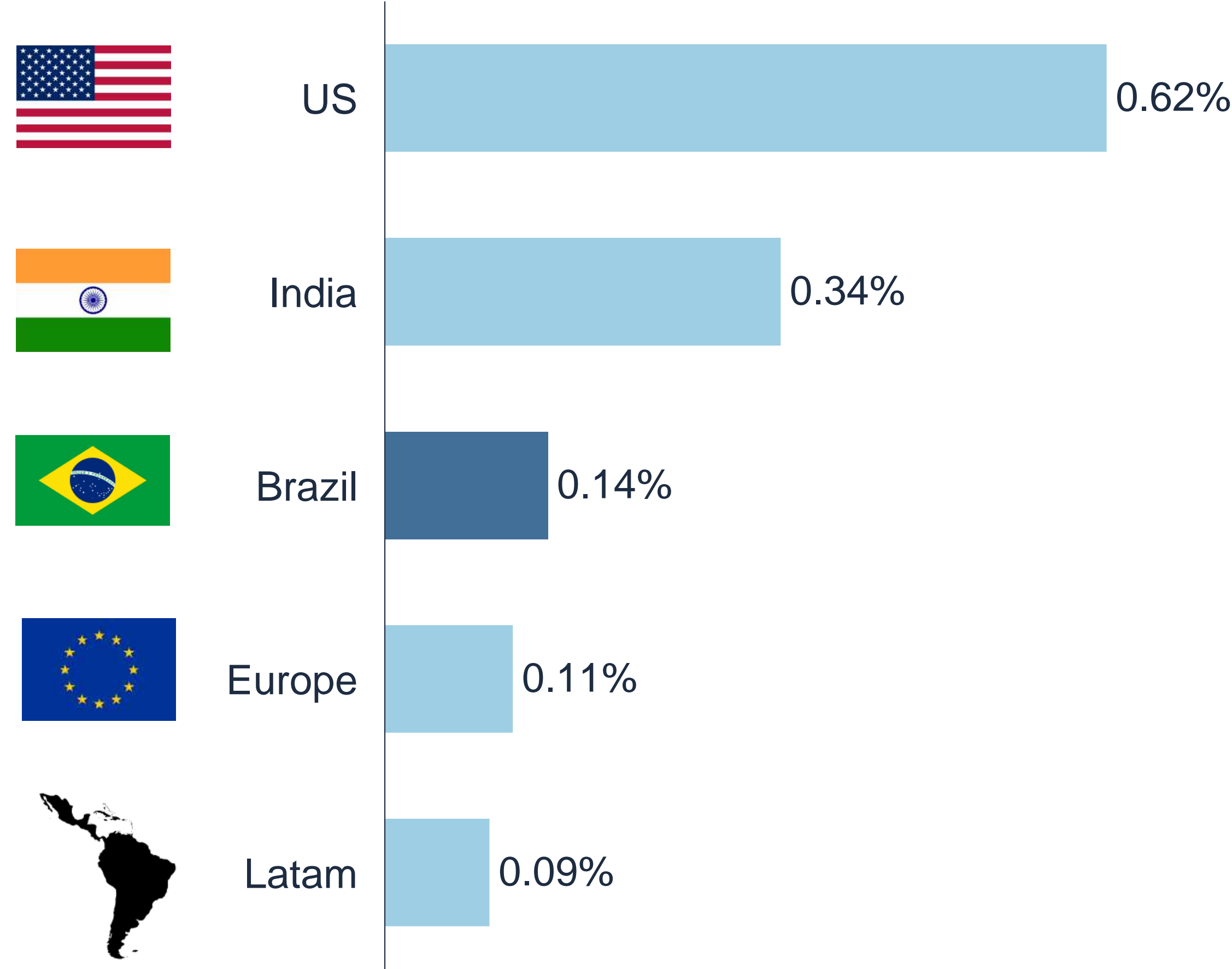


Venture Capital investment in Brazil as a percentage of its GDP is higher than Latin America and Europe

Investment in US\$ M¹



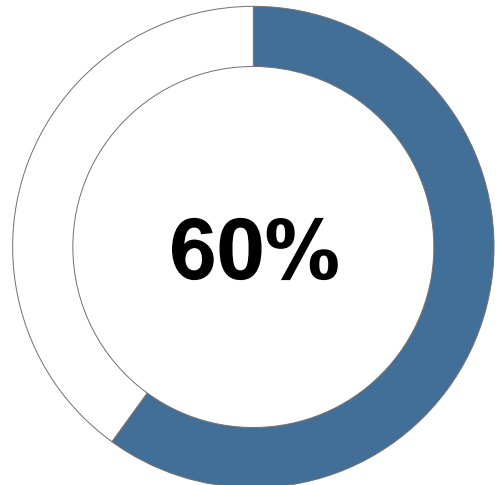
Venture Capital Investment as a % of GDP, 2019²



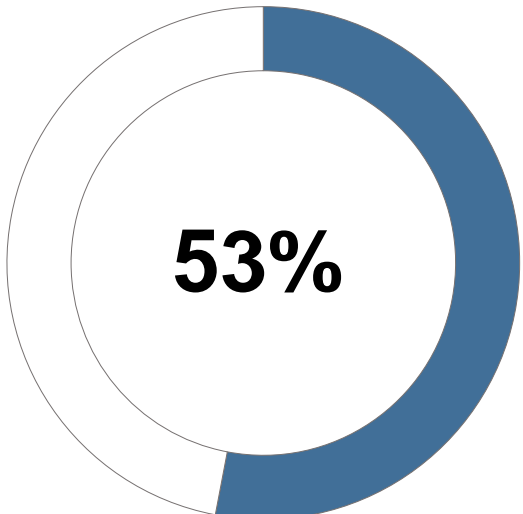
Financial Services

Reasons cited as barriers for not having an account at a formal financial institution

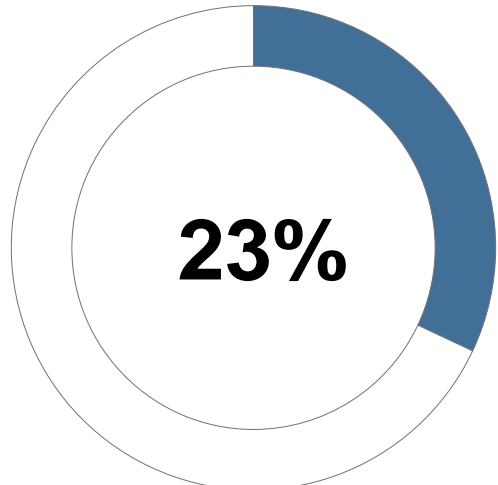
Average percentage across LatAm



Insufficient funds to open a bank account



Financial services are too expensive







Lack of documentation required

Note: Respondents could choose more than one answer

Source: World Bank Global Findex database

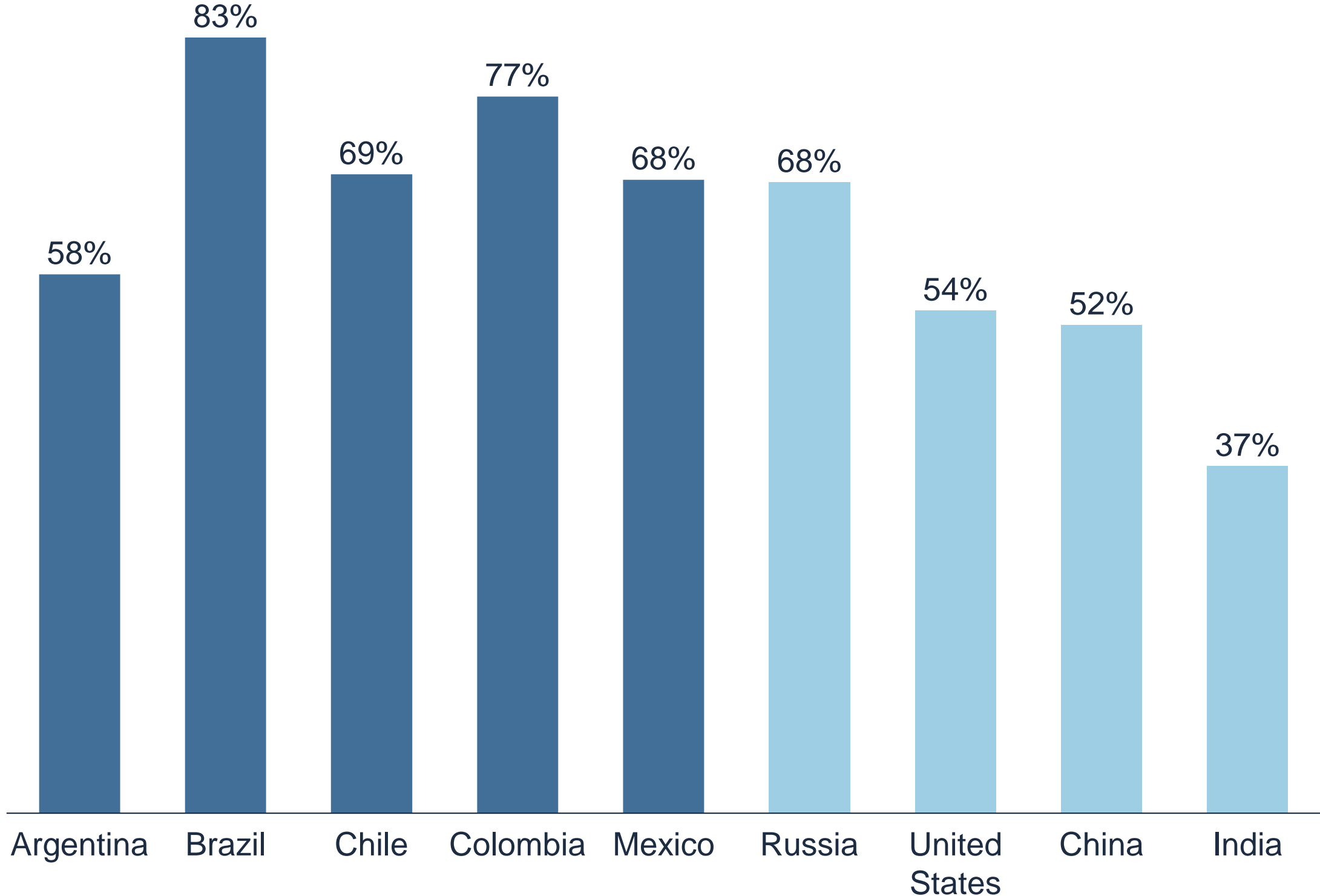
Ending acquirer exclusivity was the first step to open payment markets in Latin America

Country	Market Overview	Acquirers	Operators
Mexico 	<p>Mexico's Central Bank has pushed for innovation through regulatory action. Financial cards and payments are highly fragmented, offering alternatives to the unbanked population, such as pre-paid debit cards.</p>	<ul style="list-style-type: none"> • No exclusivity • BBVA Bancomer, Banamex-EVO, Banorte, Elavon, HSBC 	<ul style="list-style-type: none"> • International: Visa, Mastercard, Amex • Local: Carnet
Brazil 	<p>Brazil's Central Bank is regulating to open the market to competition. Digital payments have been growing significantly in the country, with increasing mobile wallet adoption and credit card penetration.</p>	<ul style="list-style-type: none"> • No exclusivity • Cielo, Rede, getnet, PagSeguro and Stone share the market 	<ul style="list-style-type: none"> • International: Mastercard, Visa, Amex • Local: Elo, HiperCard
Argentina 	<p>Until 2018, Prisma was the only merchant acquirer for Visa, controlling 75% of card transactions, and FirstData held MasterCard exclusivity. Exclusivity contracts ended in late 2018, but transactions remain mostly with these two acquirers.</p>	<ul style="list-style-type: none"> • Exclusivity until 2018 • Prisma and First Data 	<ul style="list-style-type: none"> • International: Mastercard, Visa, Amex • Local: Tarjeta Naranja
Chile 	<p>Chile's regulators have now focused on opening the market to new acquirers – all transactions were processed through Transbank. Evo and Bci are the first players to announce entry in the Chilean market.</p>	<ul style="list-style-type: none"> • Exclusivity until 2019 • Transbank 	<ul style="list-style-type: none"> • International: Visa, Mastercard • Local: Transbank

Asset Concentration in Latin America

Brazil and Colombia lead in asset concentration, with 75% of assets in only five banks

Asset concentration in five largest banks by country (%)



Banks in Brazil, Mexico and Colombia hold the most assets in Latin America

Total assets of 10 largest banks in Latin America in US\$ B



Payments industry evolution in Brazil until 2018

Payments Market Snapshot

Addressable Sector	Total Retail Sales	Card Penetration	Card TPV (Credit + Debit)	Growth (5 Year CAGR)
Large	\$1.1T	70%	\$2.3B	7%
Middle	\$0.6T	60%	\$1.8B	11%
Small	\$0.5T	50%	\$2.5B	15%
Micro	\$0.5T	35%	\$3.5B	31%
Total	\$2.7T	57%	\$10B	16%

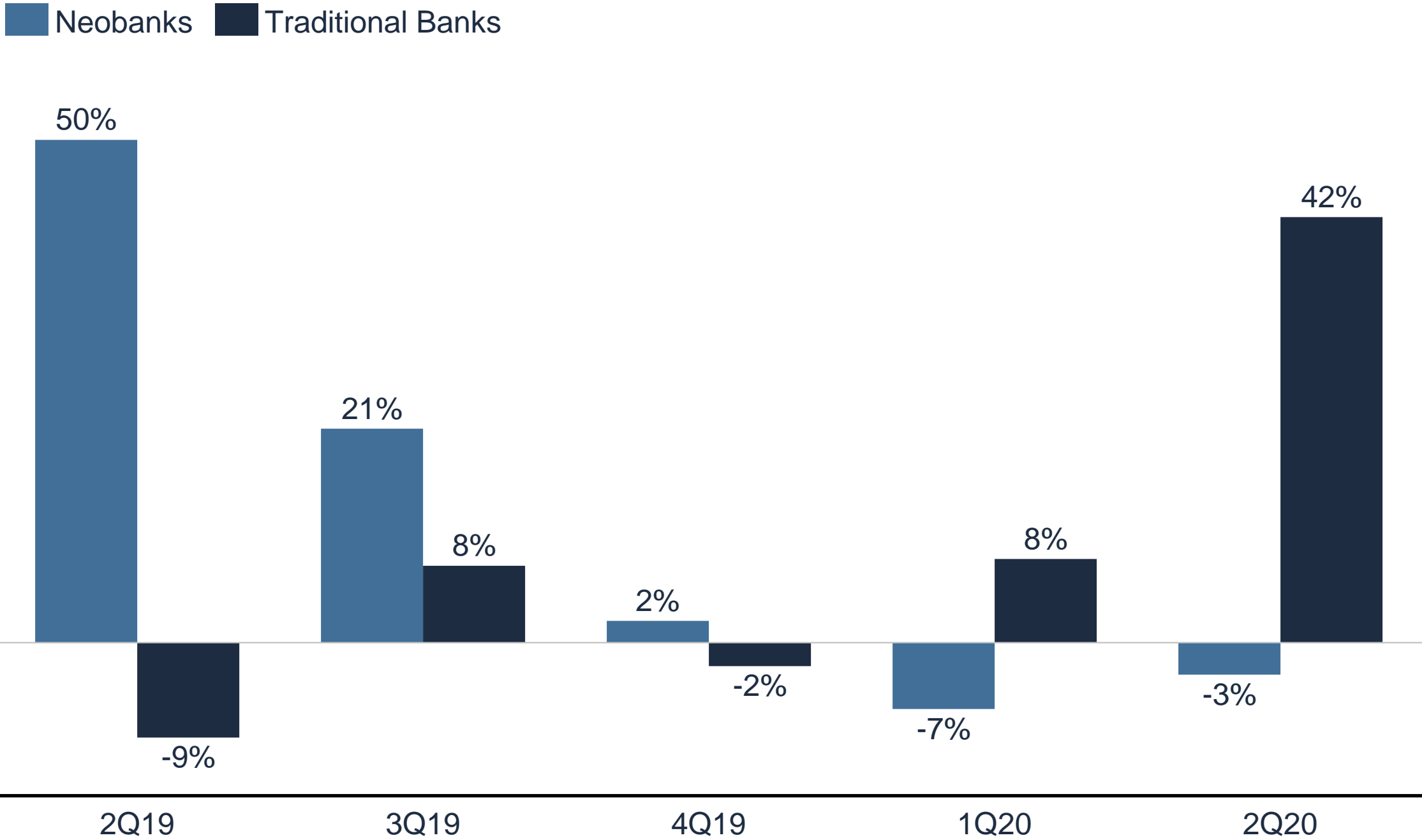
Market Players

Player	Founded	(% of TPV)
	1995	39%
	1998	28%
	2002	12%
	2006	7%
	2013	5%

The battle between neobanks and traditional institutions is far from over

The drop in neobank app downloads globally during COVID-19 shows challengers must still prove customers they can provide the same level of security in uncertain times as traditional banks, who are being pushed to up their digital offerings

Quarterly growth of banking app downloads in Brazil*
From 1Q19¹



Neobanks' struggle globally at the start of COVID-19
News headlines from April to June 2020²

BUSINESS INSIDER Leading European neobanks' new app downloads have dropped since the coronavirus pandemic broke out

Forbes Pandemic Progress – Banks Playing Catch-Up During COVID-19

CNBC The coronavirus pandemic has made it harder for digital banks in Asia to thrive

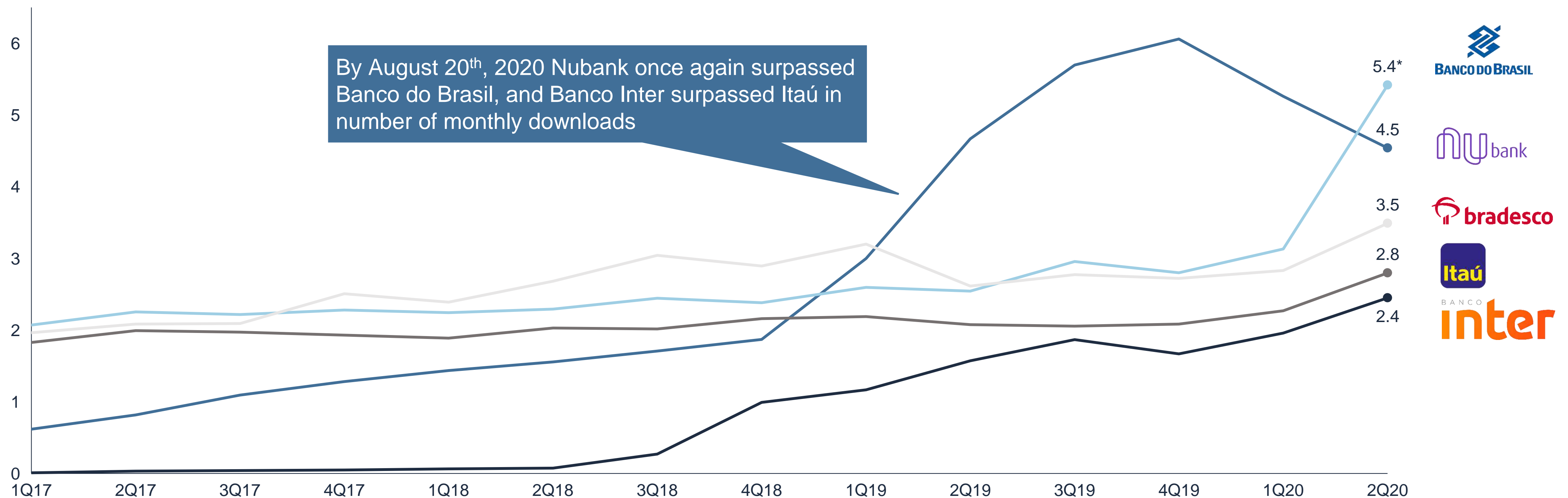
Although growing fast, only 20-25% of Nubank's users are exclusive³

*Sum of quarterly downloads of Nubank and Banco Inter for "Neobanks" and Bradesco, Itaú, and Banco do Brasil for "Traditional banks"
Sources: (1) Appfigures, (2) Individual Newspapers, (3) Estimated based on Guiabolso internal data

Long-term trends indicate a promising future for neobanks in Latin America

In 2017, Nubank and Banco Inter were far below traditional banks in number of app downloads. By mid-2019, Nubank had surpassed all traditional banks while Banco Inter had started to compete closely with Itaú and Bradesco

Quarterly downloads of banking apps in Brazil, in millions



* Banco do Brasil, despite being traded on the Brazilian stock exchange, is owned by the federal government. Alongside Caixa, Banco do Brasil was used to distribute emergency funding to the Brazilian population during COVID-19, partially explaining the sudden rise in downloads in 1Q20.

Source: App figures

The Central Banks of Brazil and Mexico created regulatory frameworks and platforms to foster financial innovation



Brazil

2013

Sistema Brasileiro de Pagamentos (SPB)

When the Brazilian Payments System was set in place, a new service category was created: Payments Institutions (IPs). This change **authorized payment fintechs to participate in regulated financial transactions.**

2018

SCDs e SEPs

Sociedade de Crédito Direto (SCD) includes a direct credit businesses. Sociedade de Empréstimo entre Pessoas (SEP) includes P2P lending businesses. This regulation **facilitated the operation of lending fintechs** by creating new categories in the financial system specially for them.



Mexico

2018

Ley Fintech

One of the **most comprehensive fintech laws in the world.** Regulates digital payments institutions, crowdfunding, virtual currencies and financial advisory services, creating a specific committee to oversee new regulation and potential penalties.

2019

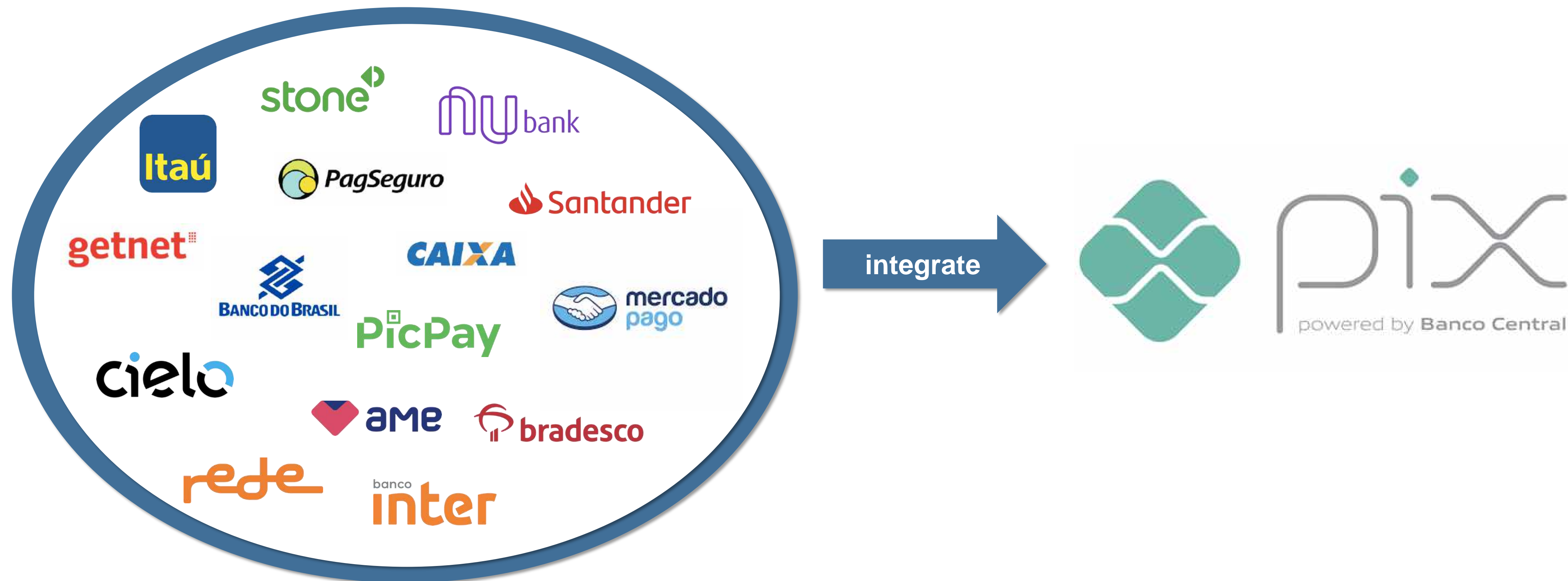
CoDi

CoDi (Cobro Digital) is a digital collection and payment platform administered by Mexico's Central Bank. CoDi allows anyone holding a savings account in the participating banks to **make wire transfers at no cost through a QR Code system.**

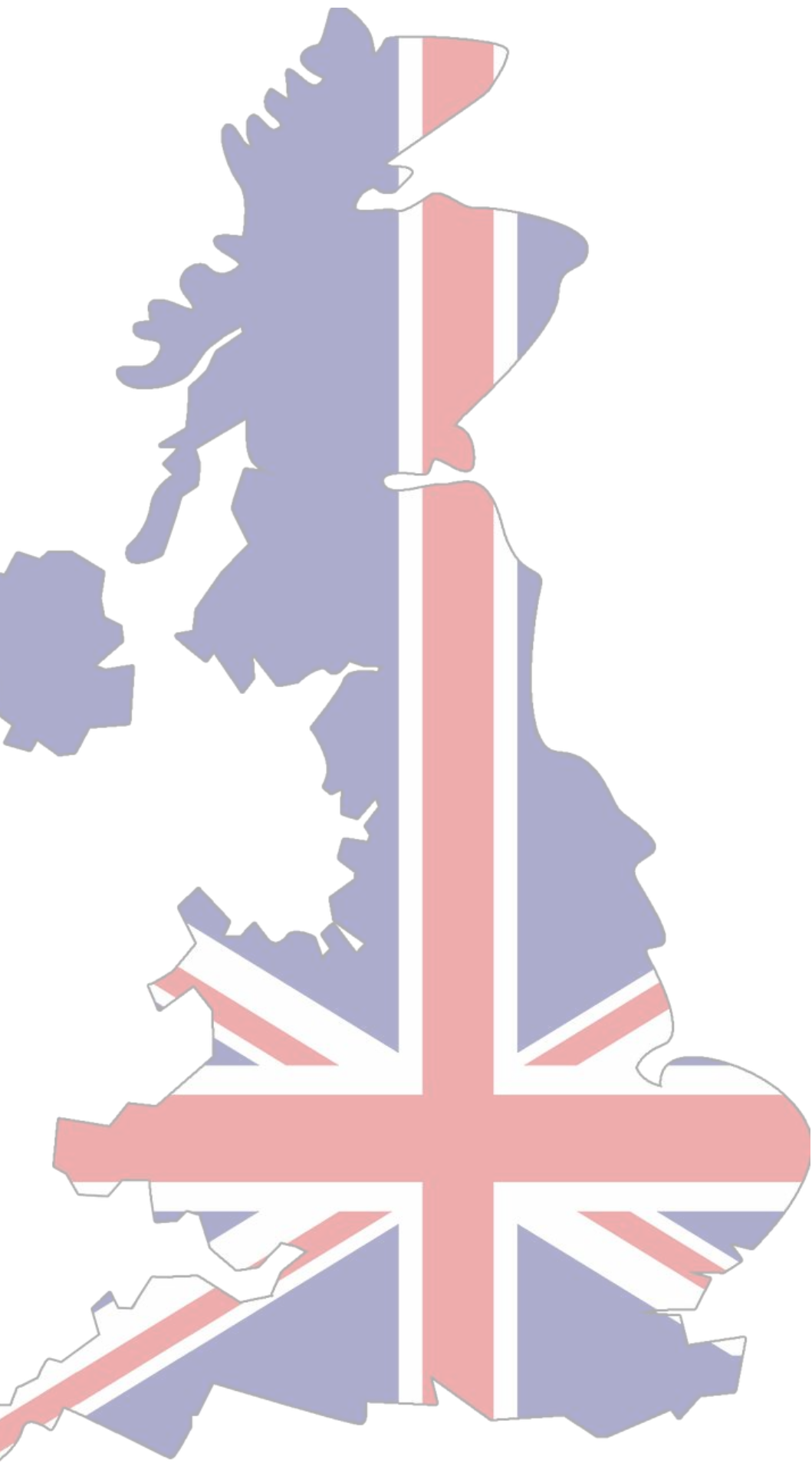
PIX will directly impact profits from payment transactions

With PIX offering payment transactions at virtually no cost, credit and debit cards become comparatively even more costly options to merchants.

- Acquirers, card operators and digital wallets will have to innovate, offering best-in-class or new services to justify high rates.
- Banks will immediately lose profits on bank transfers and Boletos.
- New players will be able to integrate with PIX and provide new services.



Open Banking was implemented first in the UK in 2018



United Kingdom

Financial industry context

- Well established with **nine big banks** and wide range of financial products and offerings
- 96% of population has a **bank account**

Open Banking launched in early 2018

Slow initial adoption

- 1M customers have used products that require Open Banking API calls, which equals 2% of UK's banked population

Starting to pick up

- API calls have seen a month-to-month growth between 30% and 40%

Open Banking is being implemented in Brazil, which has a very different context from developed countries that have adopted it



Brazil

Financial industry context

- 70% of the Brazilian population has a **bank account**
- Only **30% has access to credit cards**, a starter financial product for credit
- Market is highly inefficient, with **five big banks** holding 83% of all assets and having **exclusive access to financial information**

Open Banking planned launch for 2020

Central Bank Goals:

- Fostering competition and efficiency
- Lowering information asymmetry
- Reducing entry barriers in the market

Open Banking in Brazil has large potential for impact, promoting competition between dominant players to offer better products and services to clients

A lot of the technical details underpinning Open Banking have yet to be defined for implementation to begin







The Central Bank has created a **committee with representatives from six different financial players**: large banks, medium banks, acquirers, credit and debit card services, and two fintech representatives. Along with an independent consultant from the Central Bank, **this committee oversees the definition of API standards and specifications**. The first meeting was in July 2020.



These specifications and standardization must be very detailed to make sure banks will provide a **seamless sharing experience**. Brazil has the advantage of **learning from UK's mistakes** and creating an improved system, generating more widespread adoption.

New players unbundled big banks by focusing on a great starter product, built atop completely digital foundations

Startup	Country	Launch	First Product
	Brazil	2013	Free credit card with lower credit history requirements than incumbents
	Mexico	2016	Digital account with smart budgeting app and a prepaid MasterCard debit card
	Argentina	2017	Financial management app linked to a MasterCard card with no fees
	Mexico	2018	Digital account, no minimum balance or transfer fees, and MasterCard debit card

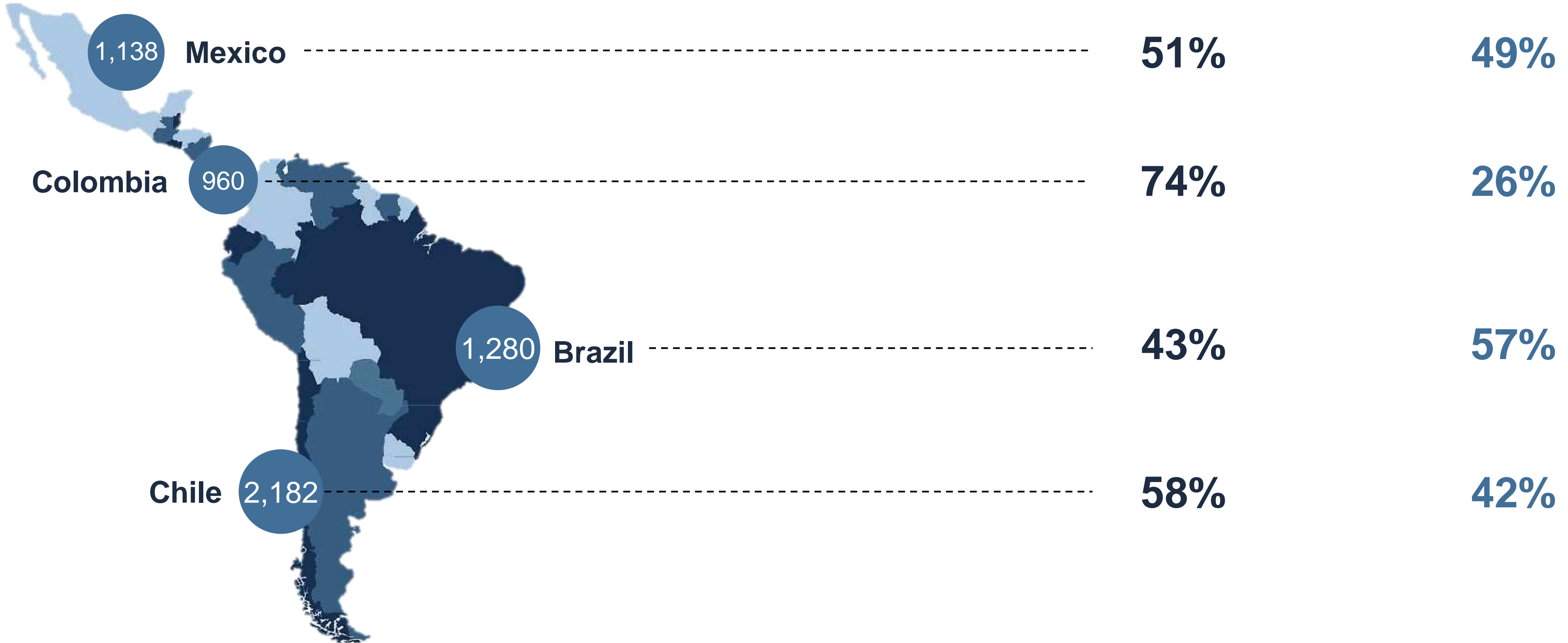
Healthcare

Latin America's out-of-pocket health expenditure is much higher than the 15-20% recommended by the WHO

Per capita health spending (US\$)¹

% Compulsory/Government spending²

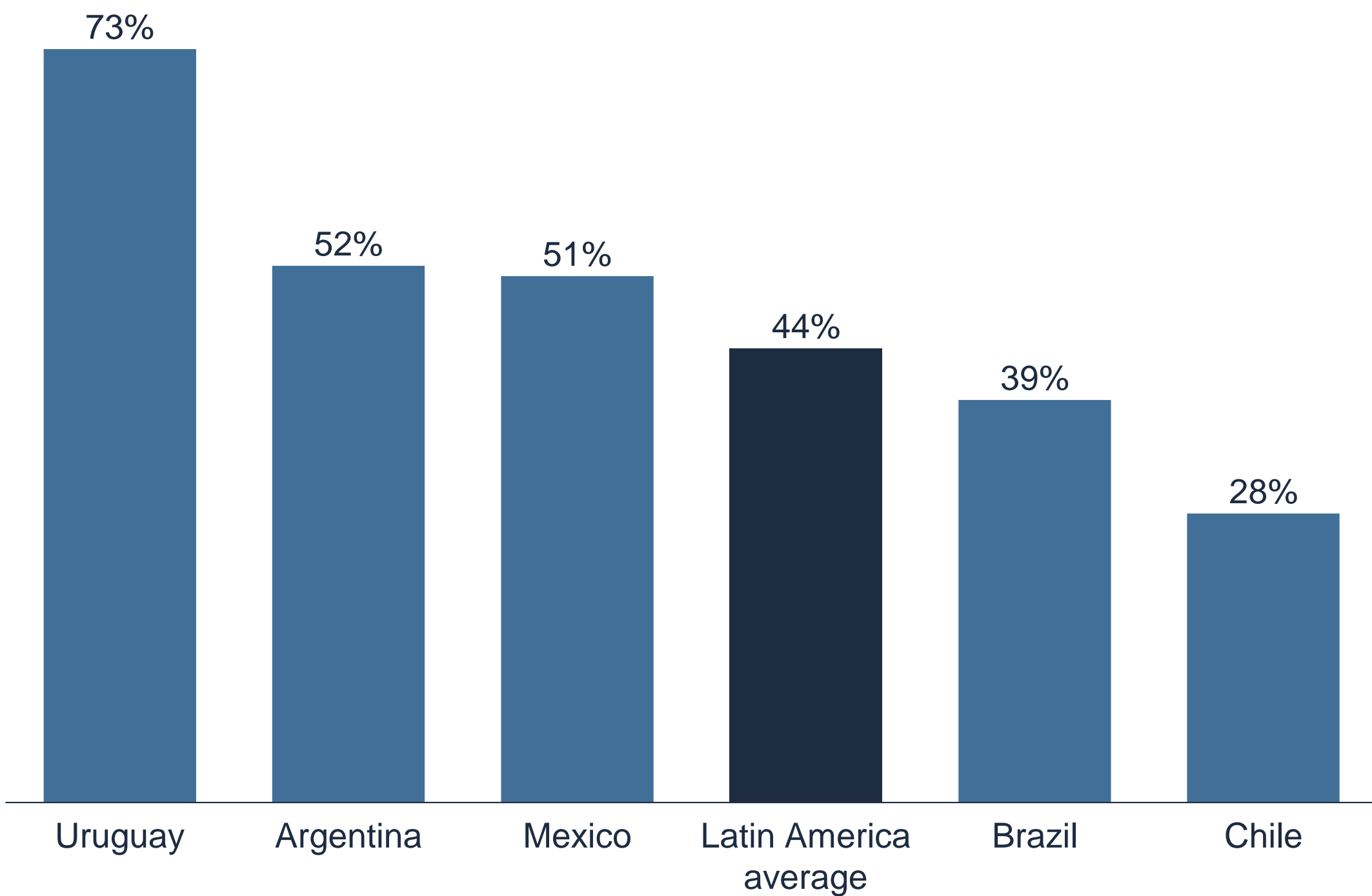
% Voluntary/Out-of-pocket spending²



Latin Americans show concern for the state of the healthcare system and the lack of access to information

State of Health¹

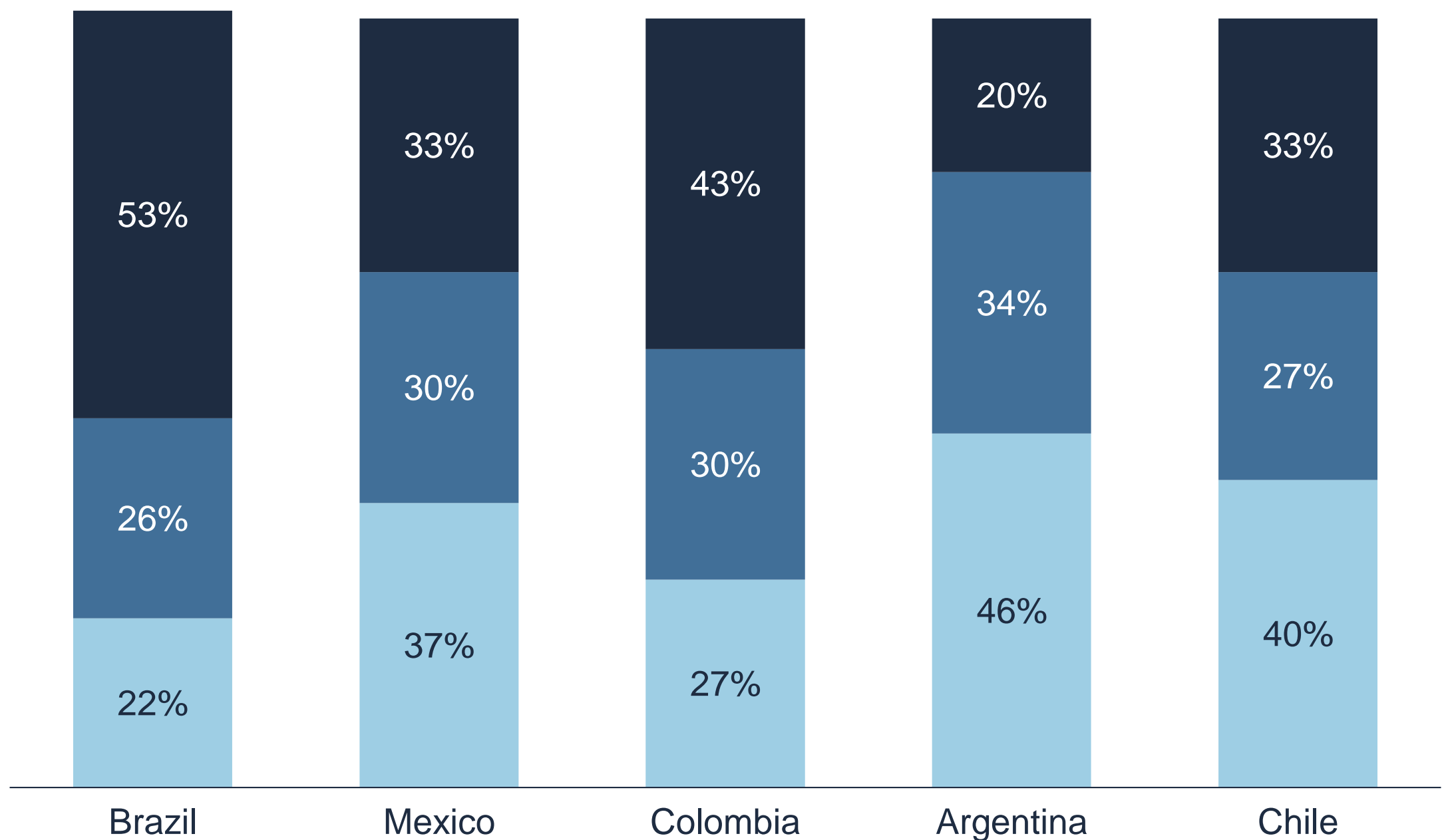
Percentage of respondents that is satisfied with the availability and quality of healthcare in their cities



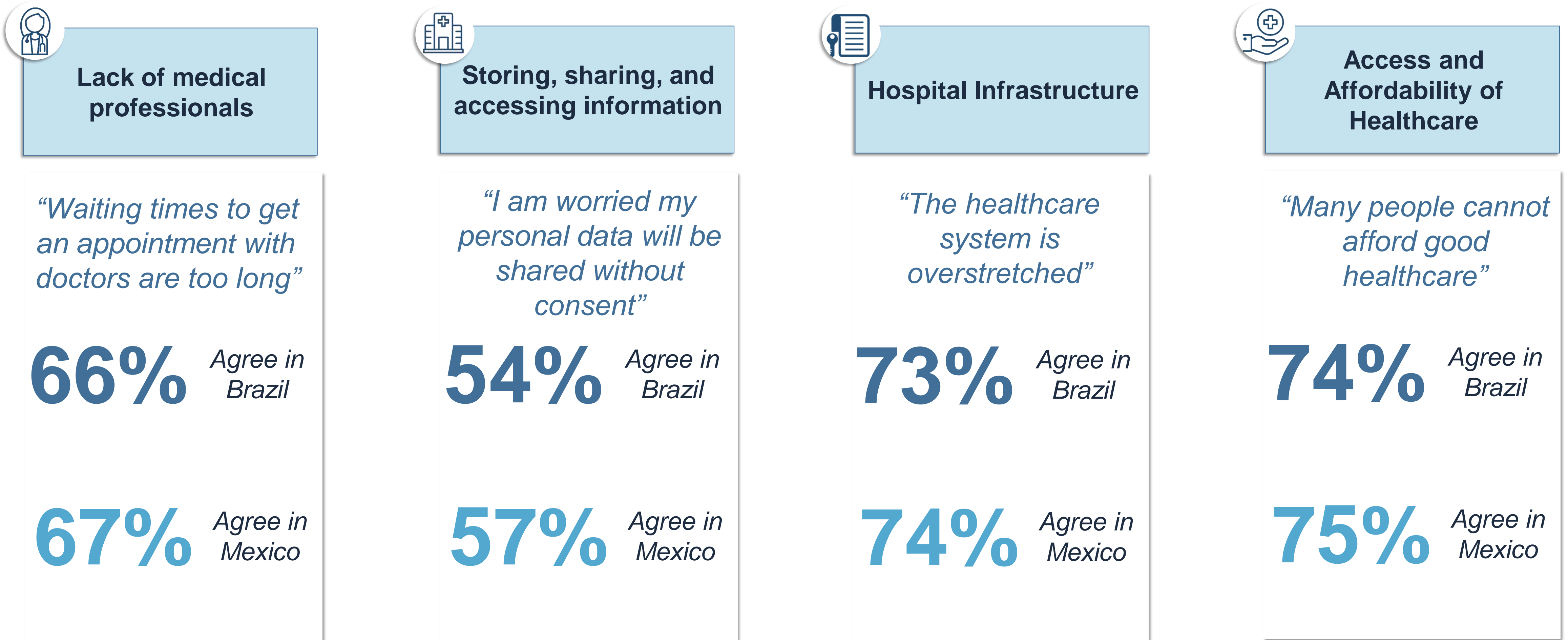
Information on Healthcare Services²

Percentage of respondents that agree with the statement: "In my country, information about healthcare services is readily available when I need it."

Disagree Neither agree nor disagree Agree



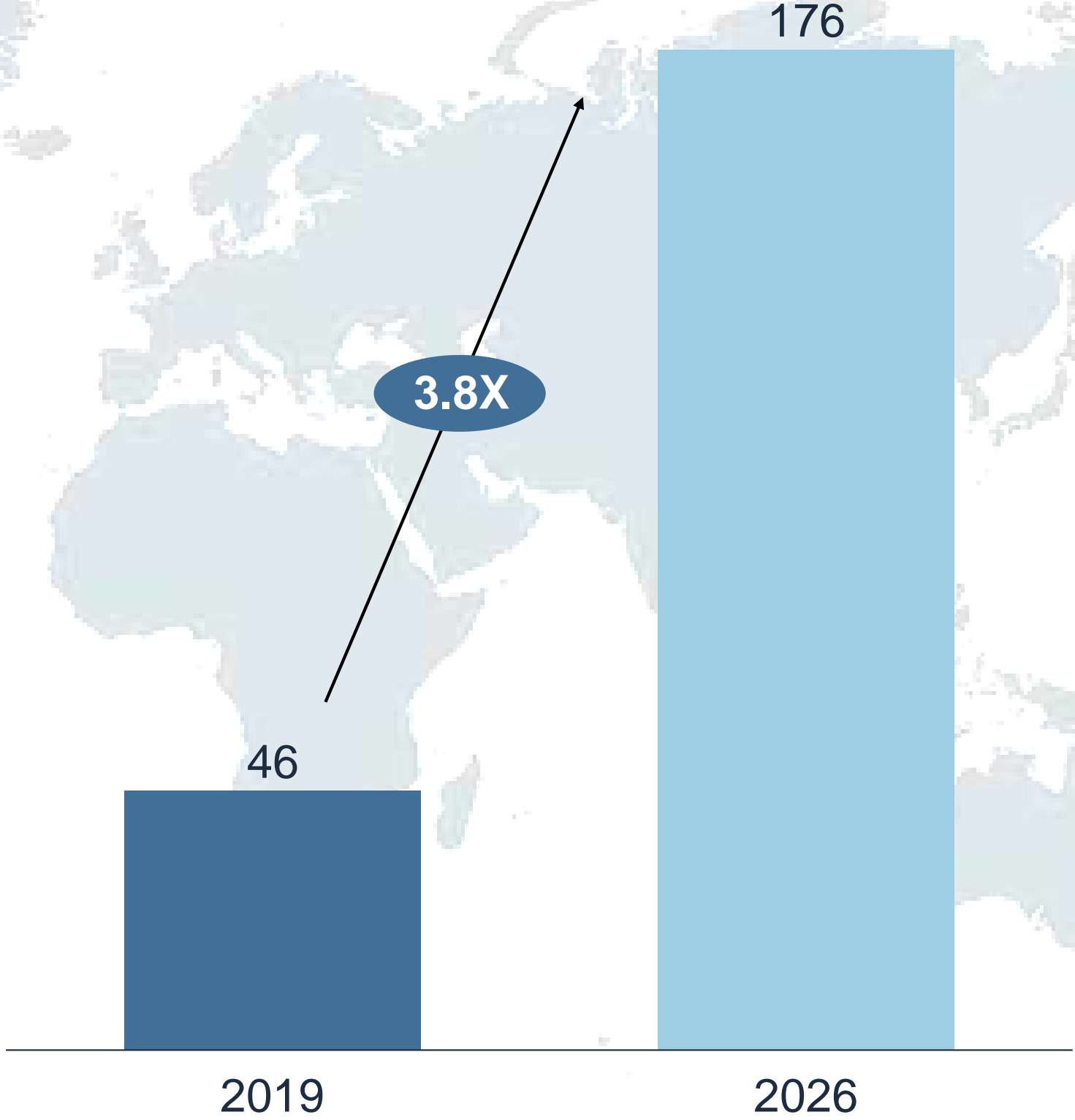
Public opinion in Brazil and Mexico confirm there is major room for improvement when it comes to healthcare



The global market size for telemedicine is growing at a dramatically fast rate, and Latin America is no exception

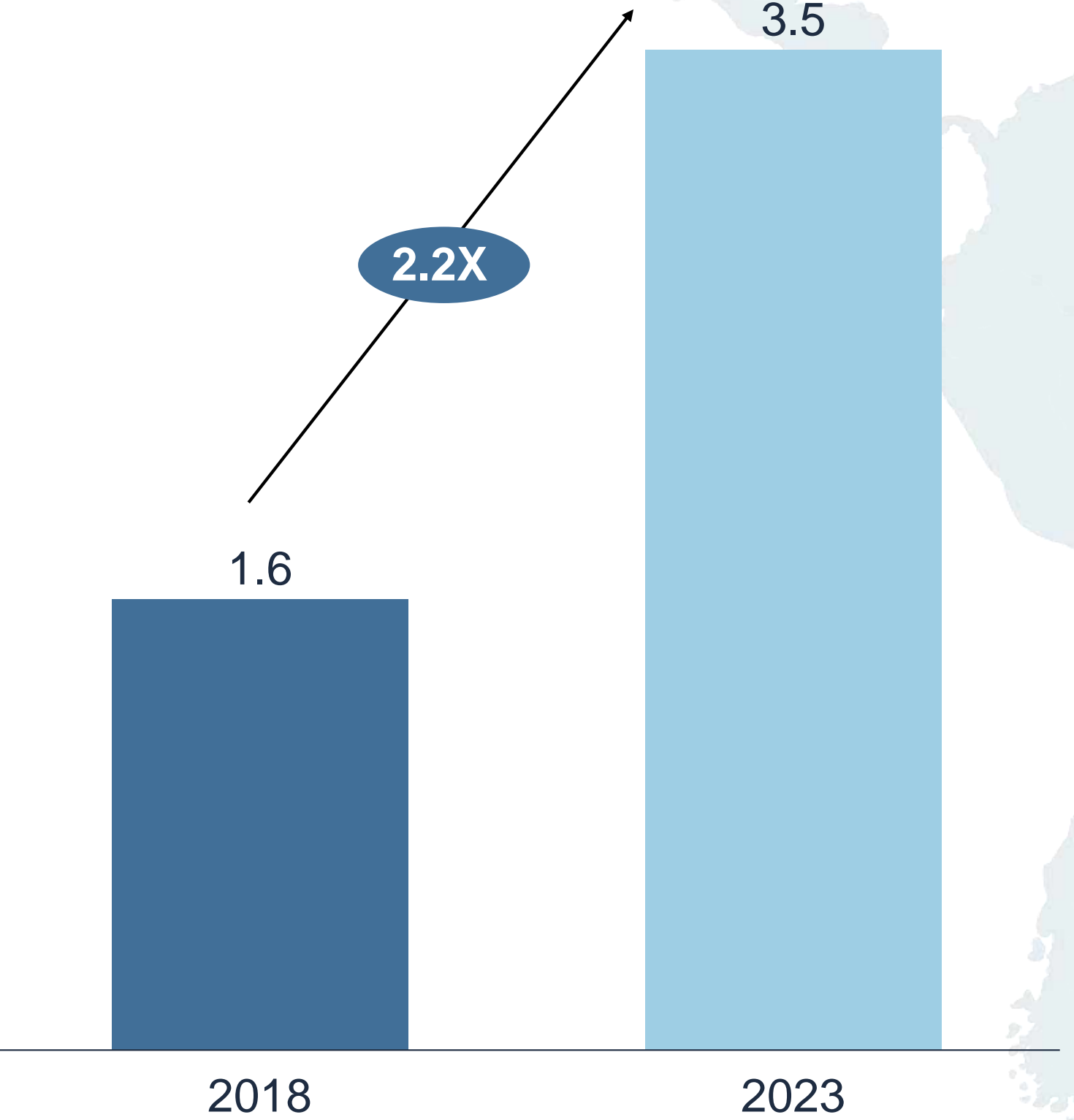
Global telemedicine market size

In US\$ B



Latin America telemedicine market size

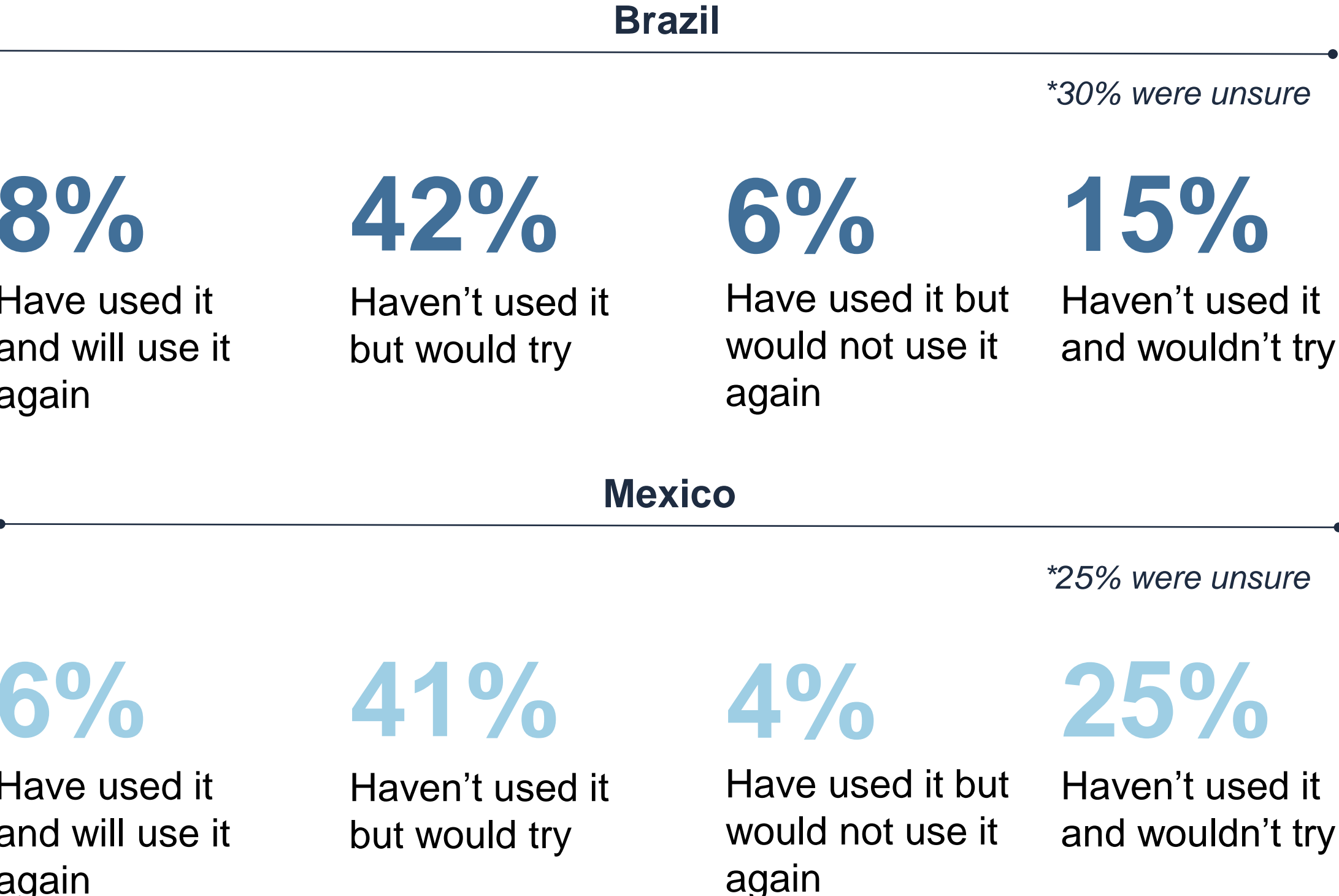
In US\$ B



Before COVID-19, Latin Americans were open to using telemedicine but still harbored important concerns

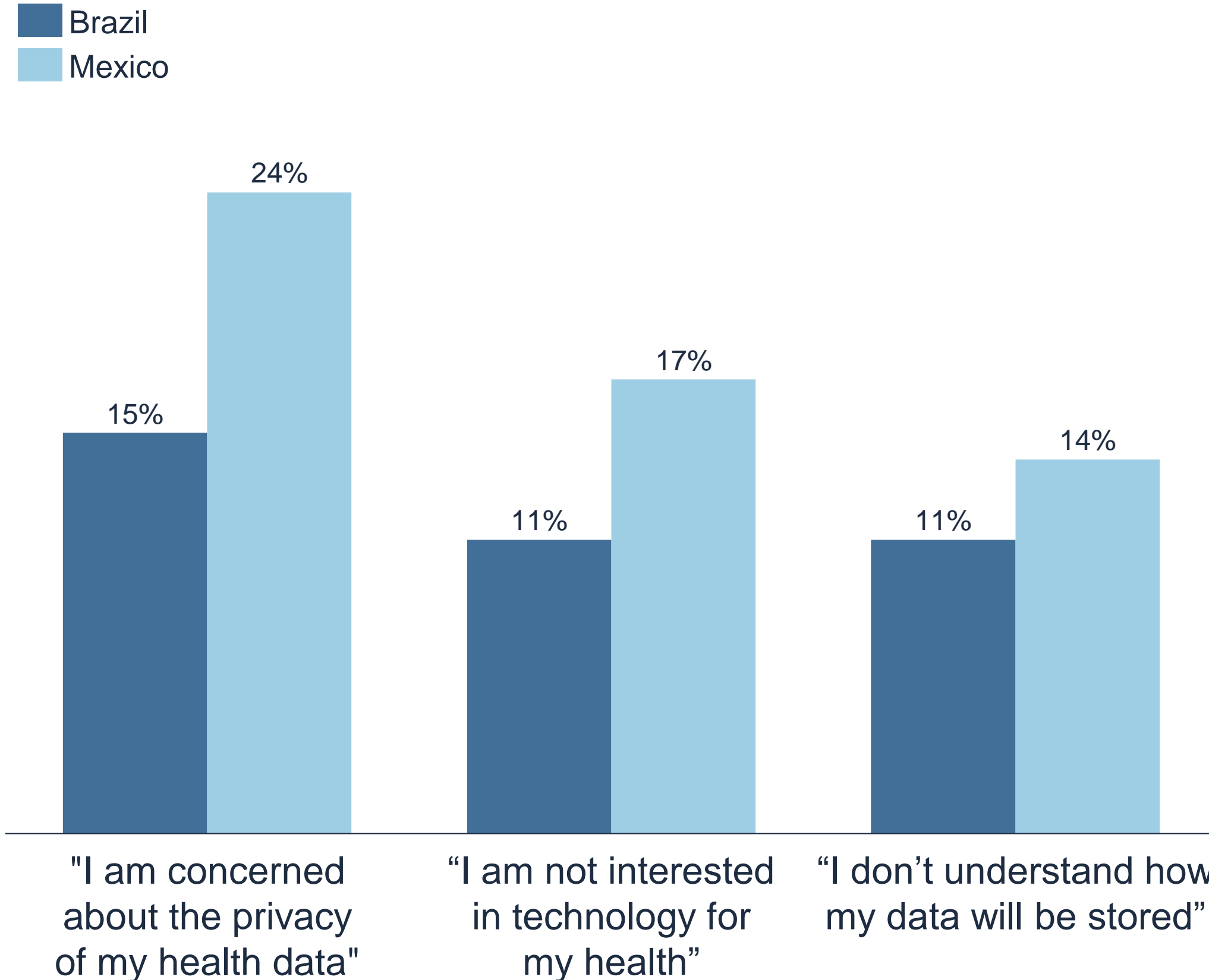
Attitude towards telemedicine use

Percentage of respondents in 2018



Attitude towards technology use in healthcare

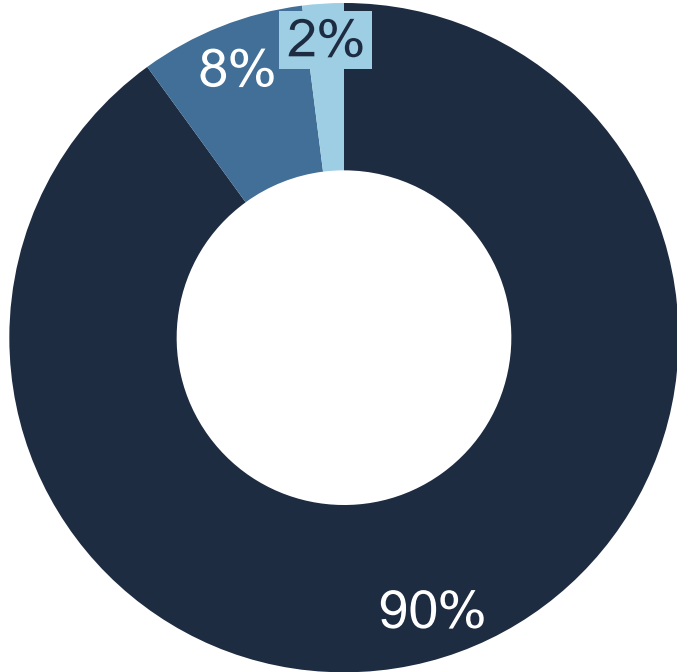
Percentage of respondents in 2018



Telemedicine has now become essential for Latin Americans and concerns have begun to ease

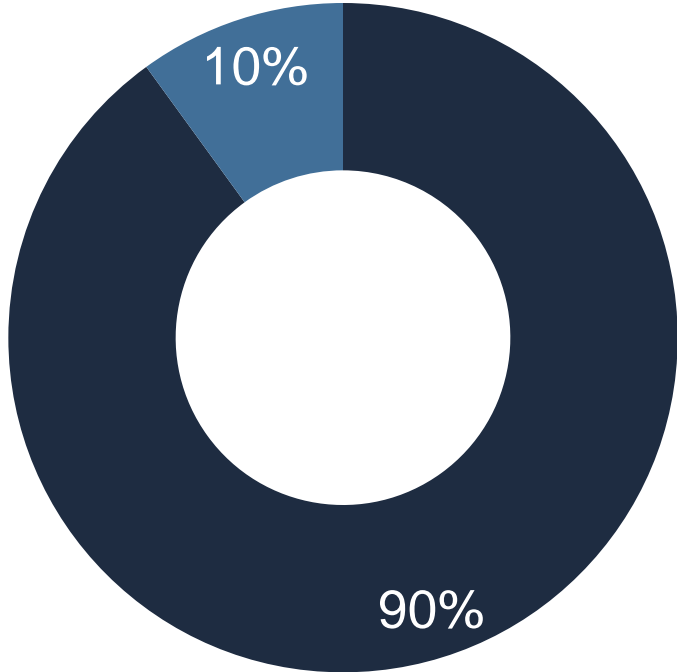
Brazilian physicians' attitude towards technology in healthcare and telemedicine in 2020*

“Would the public health system benefit from technological tools that reduce waiting times for specialist care?”



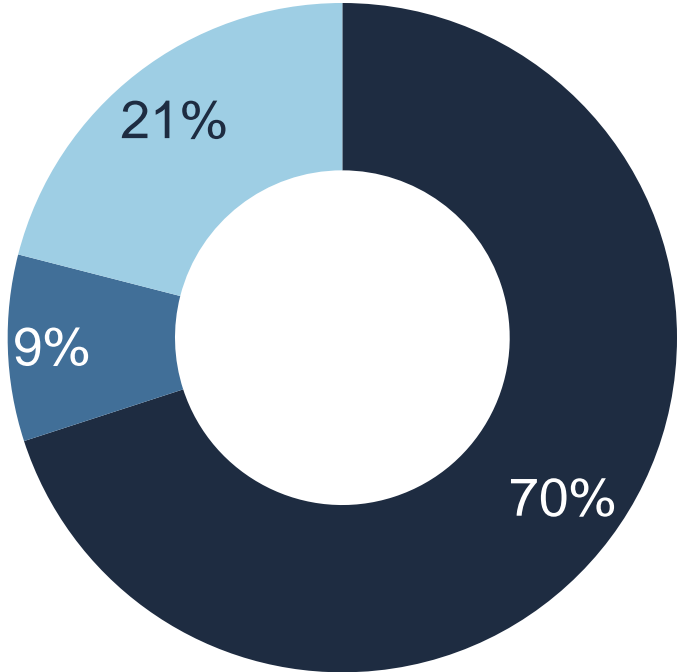
■ Yes ■ No ■ Maybe

“Can new digital technologies, with high standards of ethics and safety, help improve the lives of the population?”



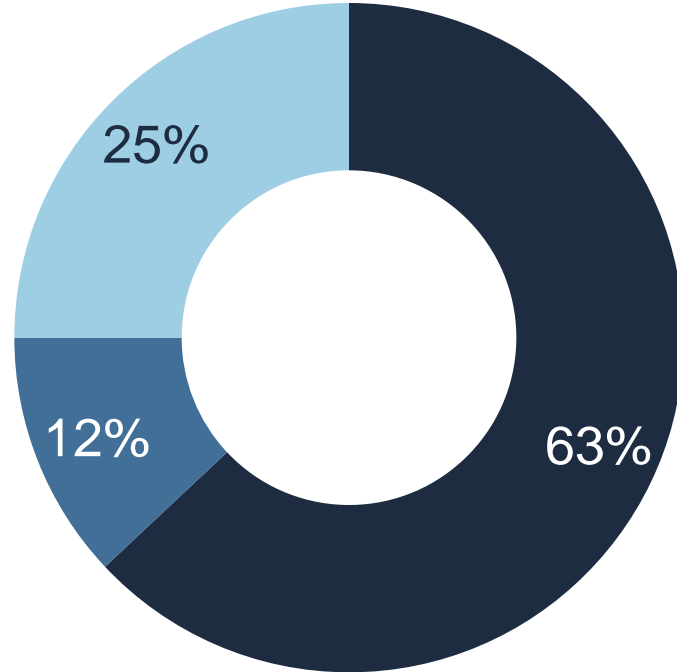
■ Yes ■ No

“Can we expand care beyond the clinic with telemedicine tools that allow for data security and privacy between physicians and patients?”



■ Yes ■ No ■ Maybe

“If it were regulated by the Medical Regulatory Council and had the necessary ethical and safety tools, would you use telemedicine at your clinic or hospital?”



■ Yes ■ No ■ Maybe

*Respondents were 2,258 Brazilian physicians
Source: São Paulo's Association of Medicine 2020 as cited in Conexa's internal materials

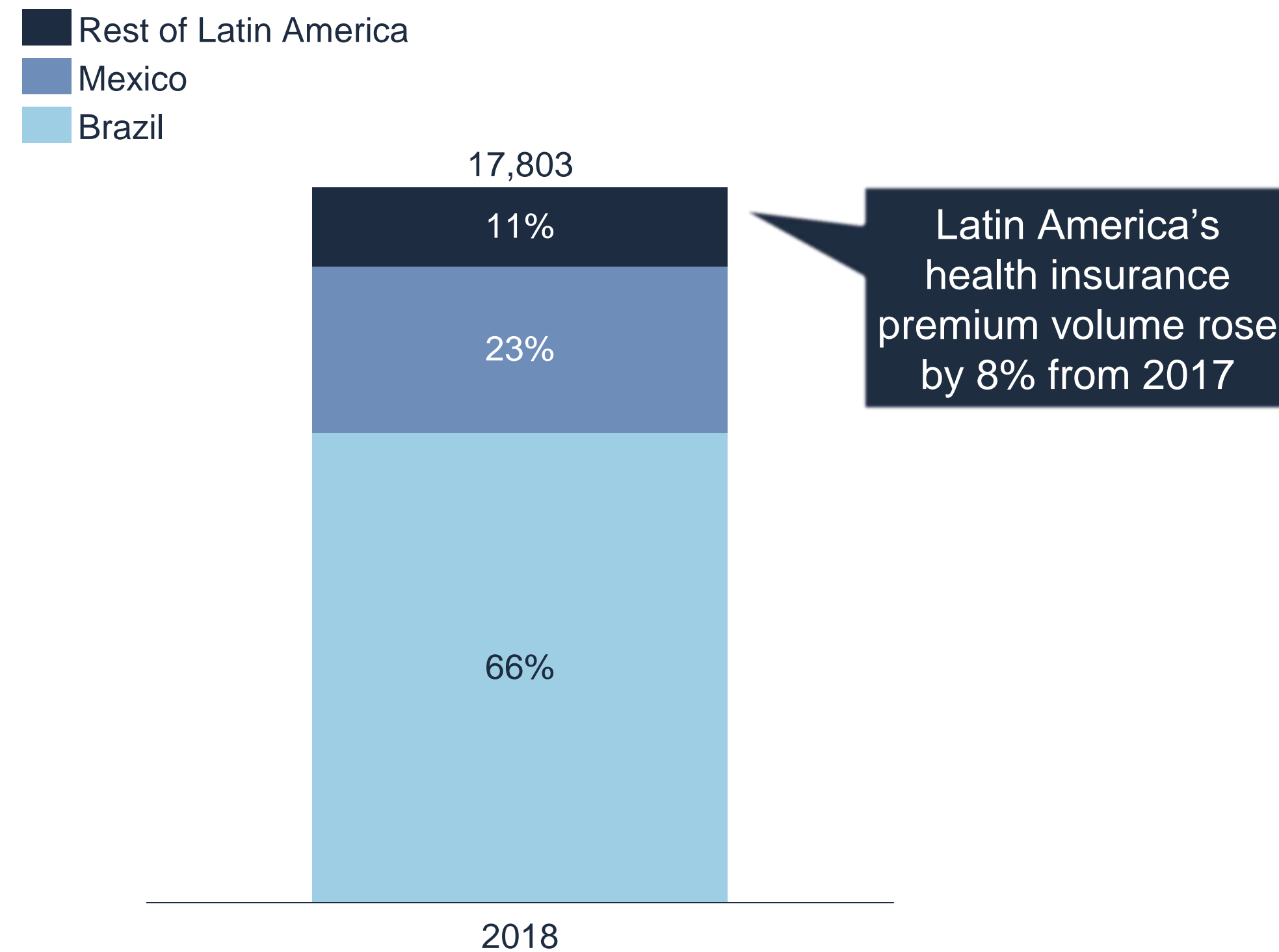
Although regulatory challenges still pose a barrier to telemedicine, the pandemic has catalyzed change in Brazil



Latin American insurance premiums are largely driven by Brazil, where business insurance is the most popular plan

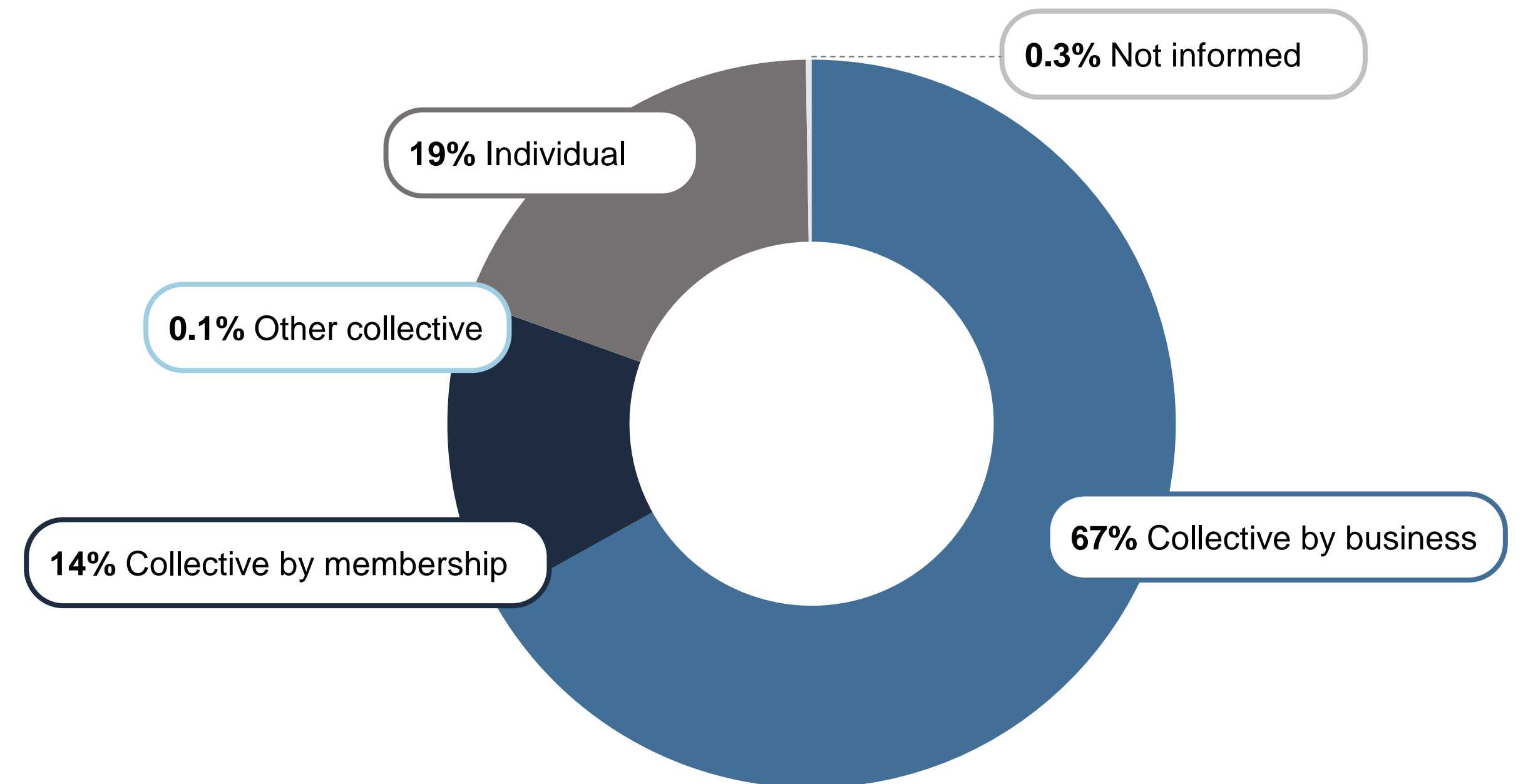
Health insurance premium volume, 2018¹

In US\$ B



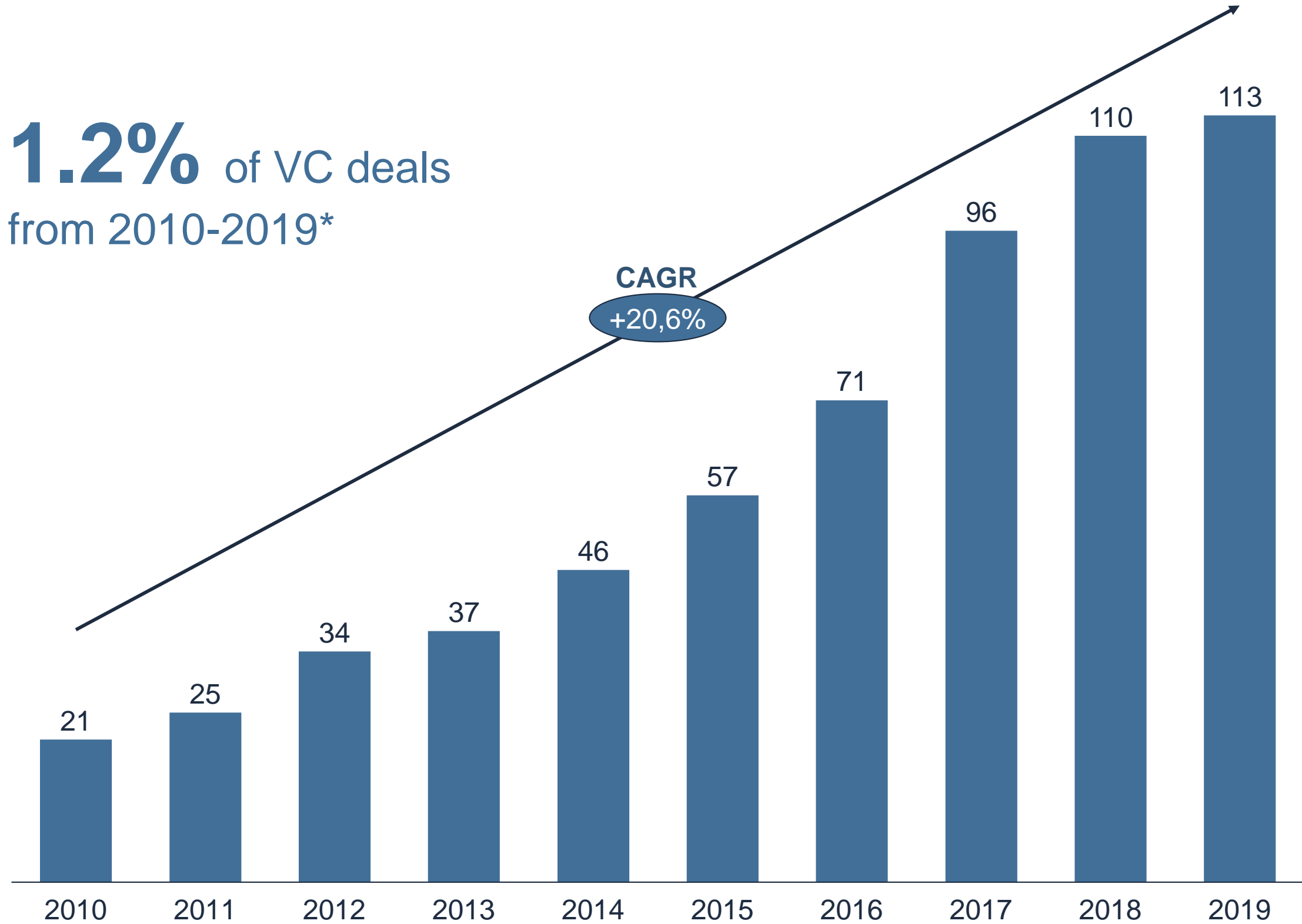
Private health insurance plans in Brazil, 2019²

Distribution of private health insurance users by type, in percentage



There's been a surge in start-ups entering the affordable care market, with many focusing on health insurance

Number of insurance (all types) startups in Brazil¹



1.2% of VC deals from 2010-2019*

Gaining efficiency through data



- Sami works as a smart layer for operators, giving crucial data to improve the patient journey
- It currently serves 200,000 lives through Unimed and Pátria, some of Brazil's largest providers²

A new way of providing health insurance



- Launched in July 2020, Alice is a startup in Brazil offering individual health insurance plans
- The plan focuses on preventative health, integrated data, and access to private doctors

More transparency in corporate health plans



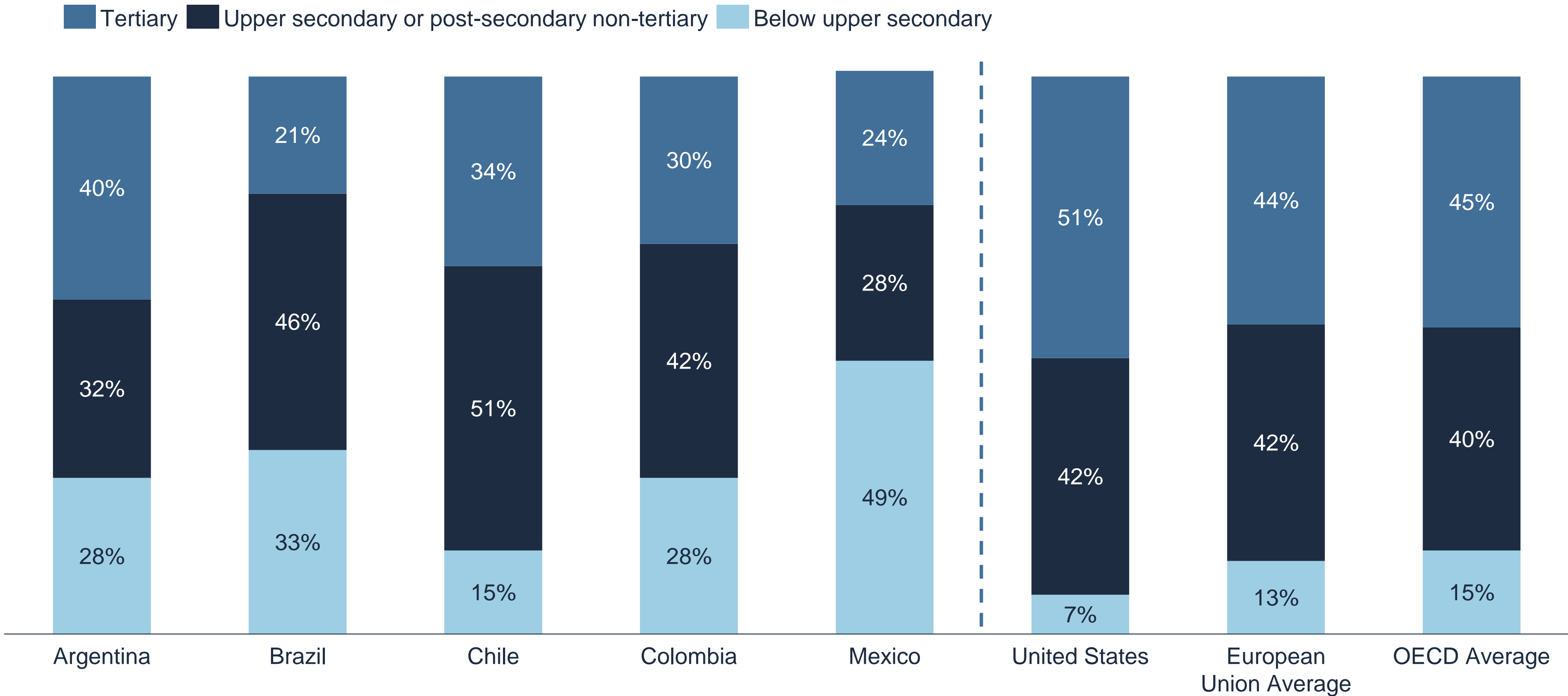
- Pipo aims to connect companies with the best corporate health plans for their employees
- It aims to bring down the medical loss ratio in companies and provides management tools

*Pitchbook: there were 1,864 VC deals across all industry, rounds, and stages in Brazil from 2010-2019. 22 of them were with insurtech startups
 Source: (1) Distrito Insurtech Report 2020, (2) Brazil Journal

Education

Chile and Argentina show higher educational attainment than other Latin American countries

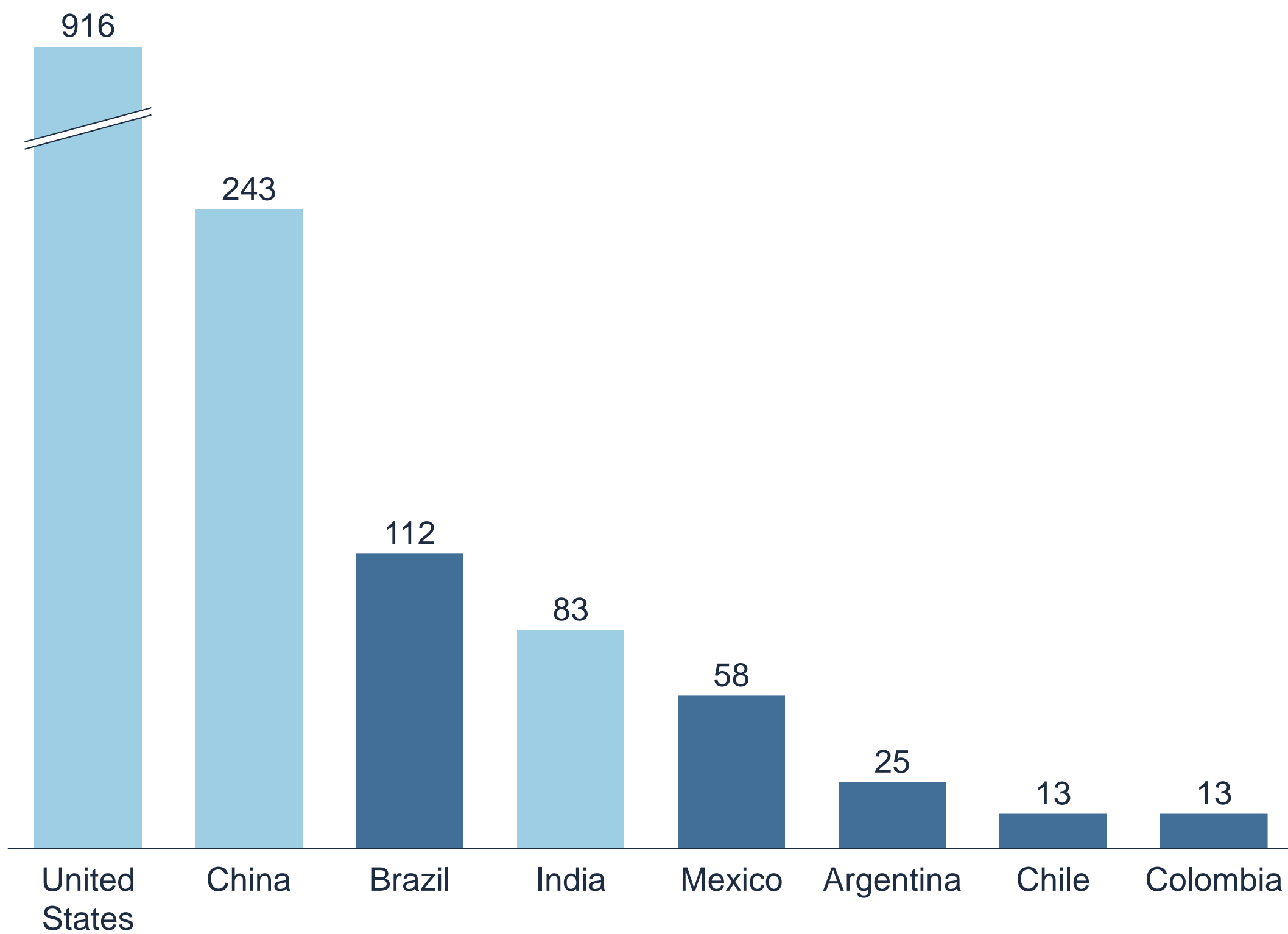
Share of population 25 years and older by educational attainment, 2020



Brazil leads the way in educational expenditure, investing more of its GNI in education than other large economies

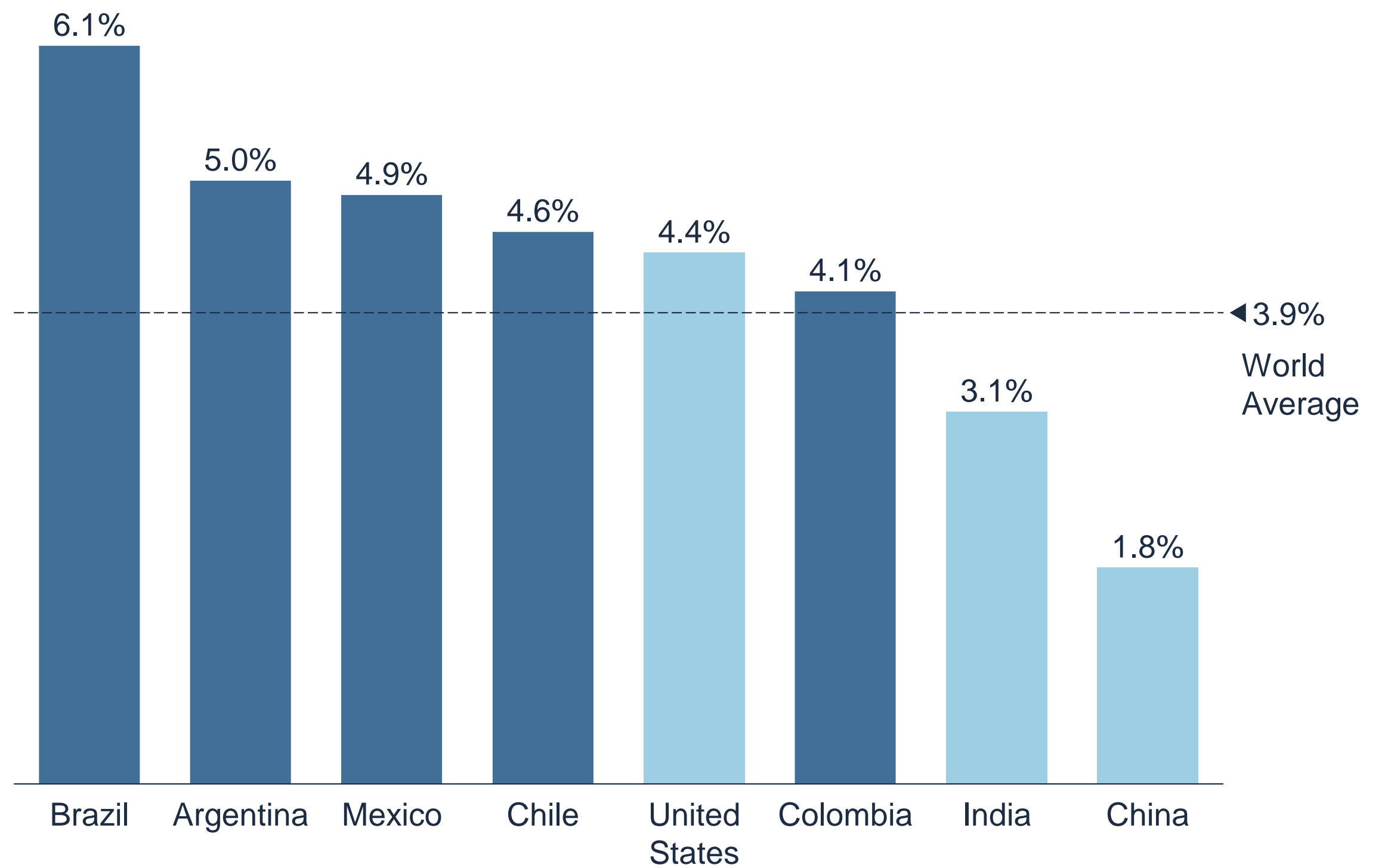
Education expenditure by country, 2018

In current US\$ B



Education expenditure as a share of GNI, 2018

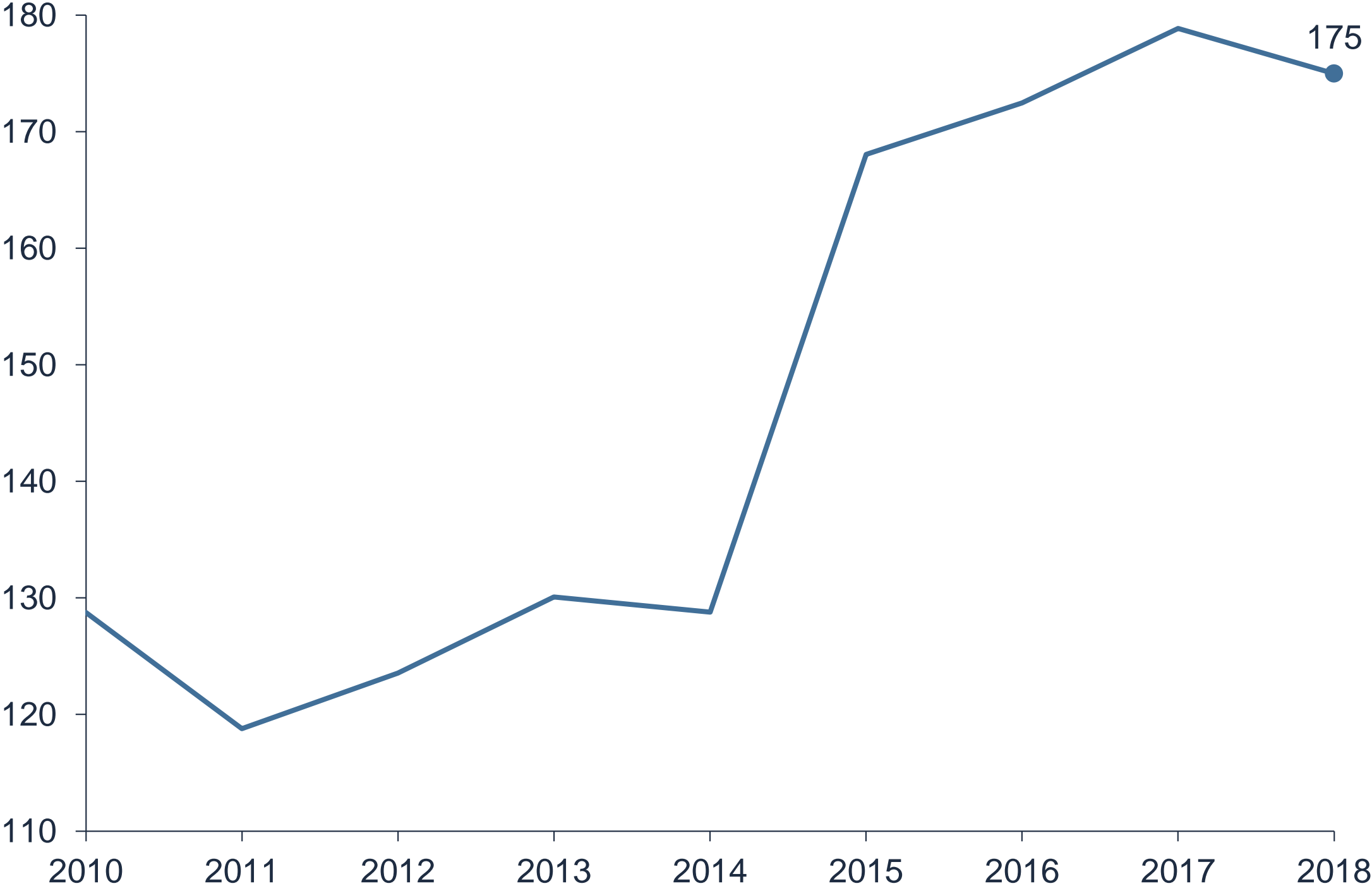
Education expenditure as a percentage of Gross National Income



The number of institutions and employees in Brazil's education sector has been increasing in the last decade

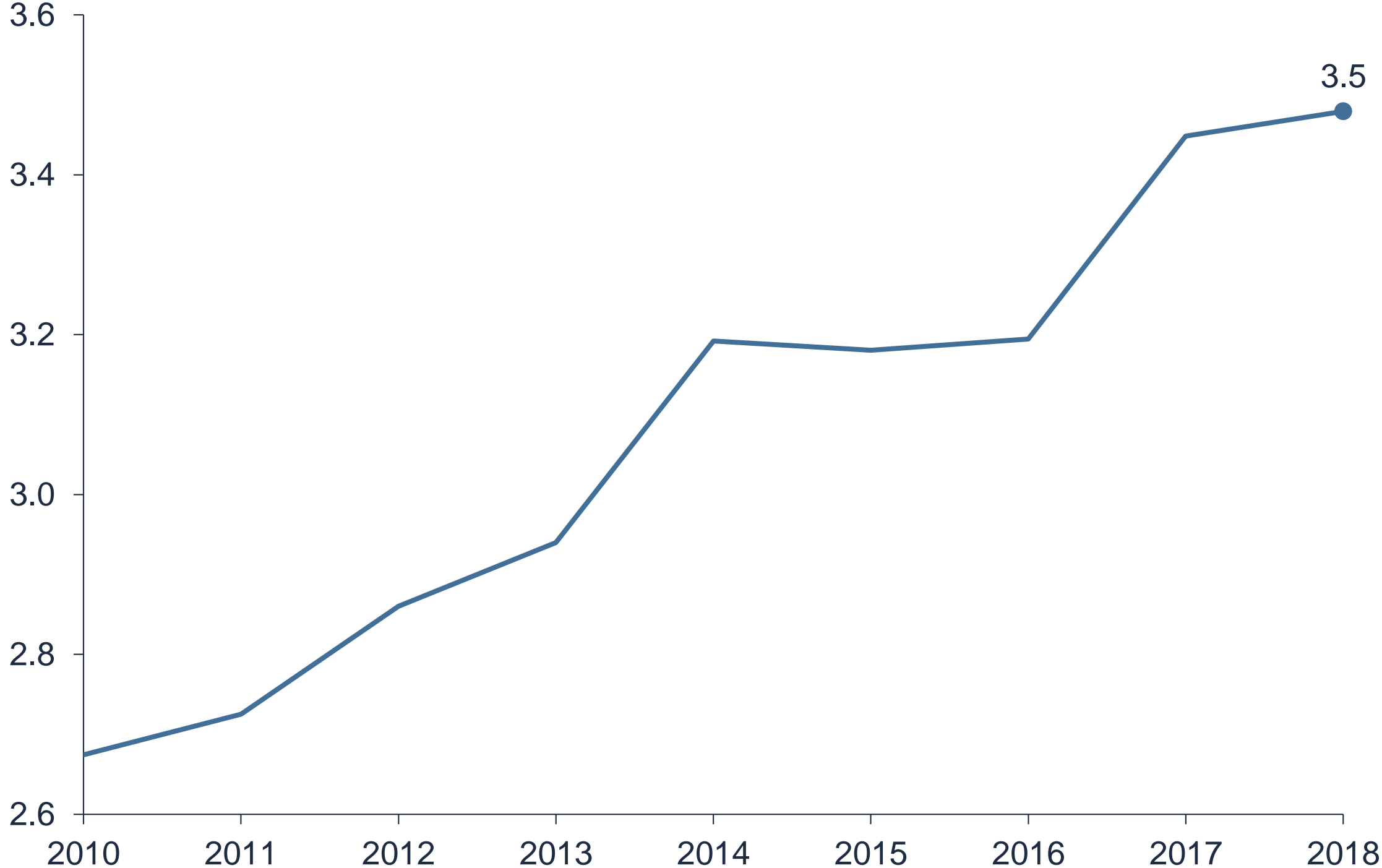
Number of companies in the educational sector*

In thousands



Number of employees in the educational sector

In millions

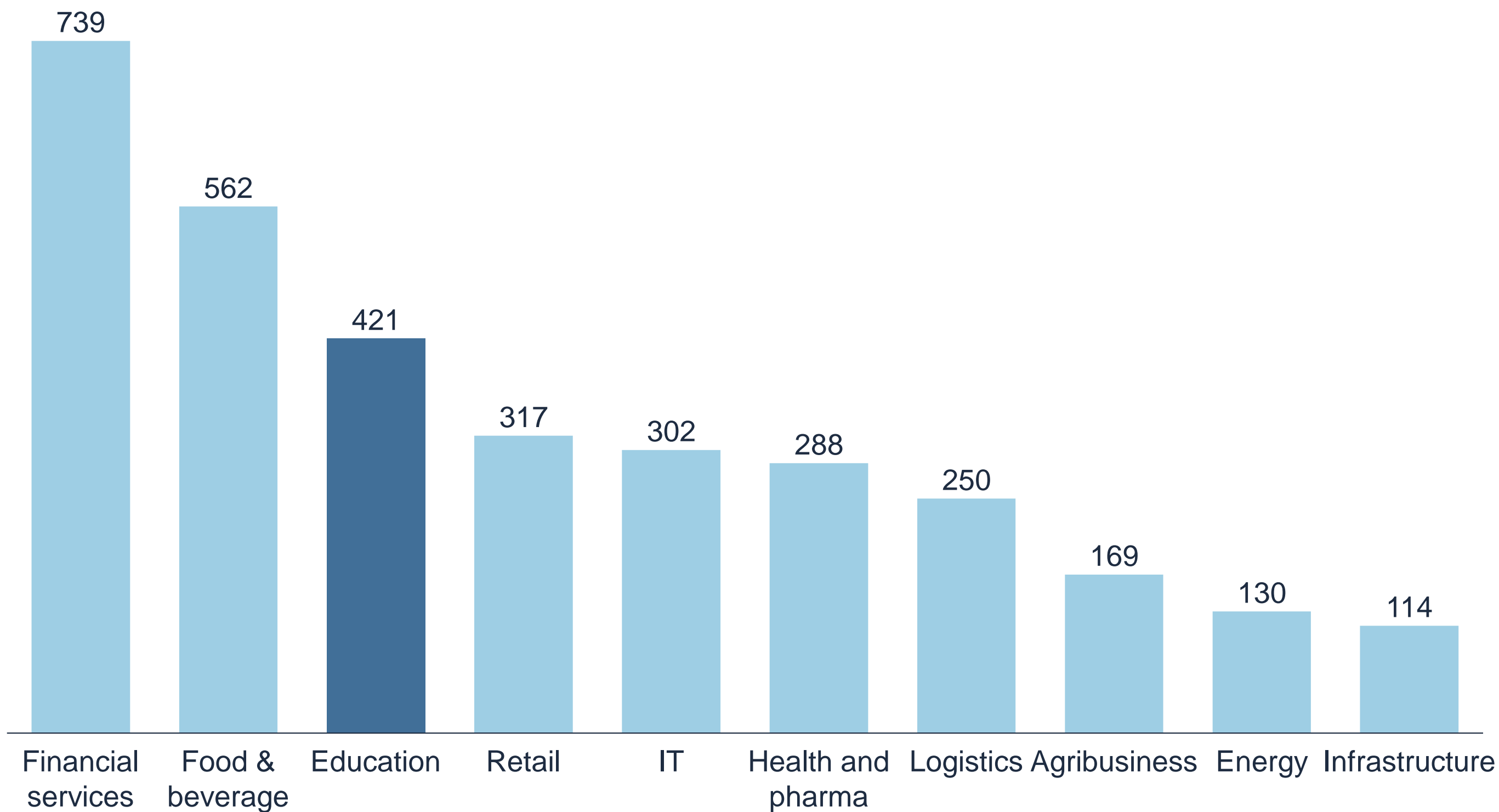


*Includes private and public companies and institutions in the educational sector
Source: IBGE

National and foreign investors are showing a growing interest for education businesses in Latin America

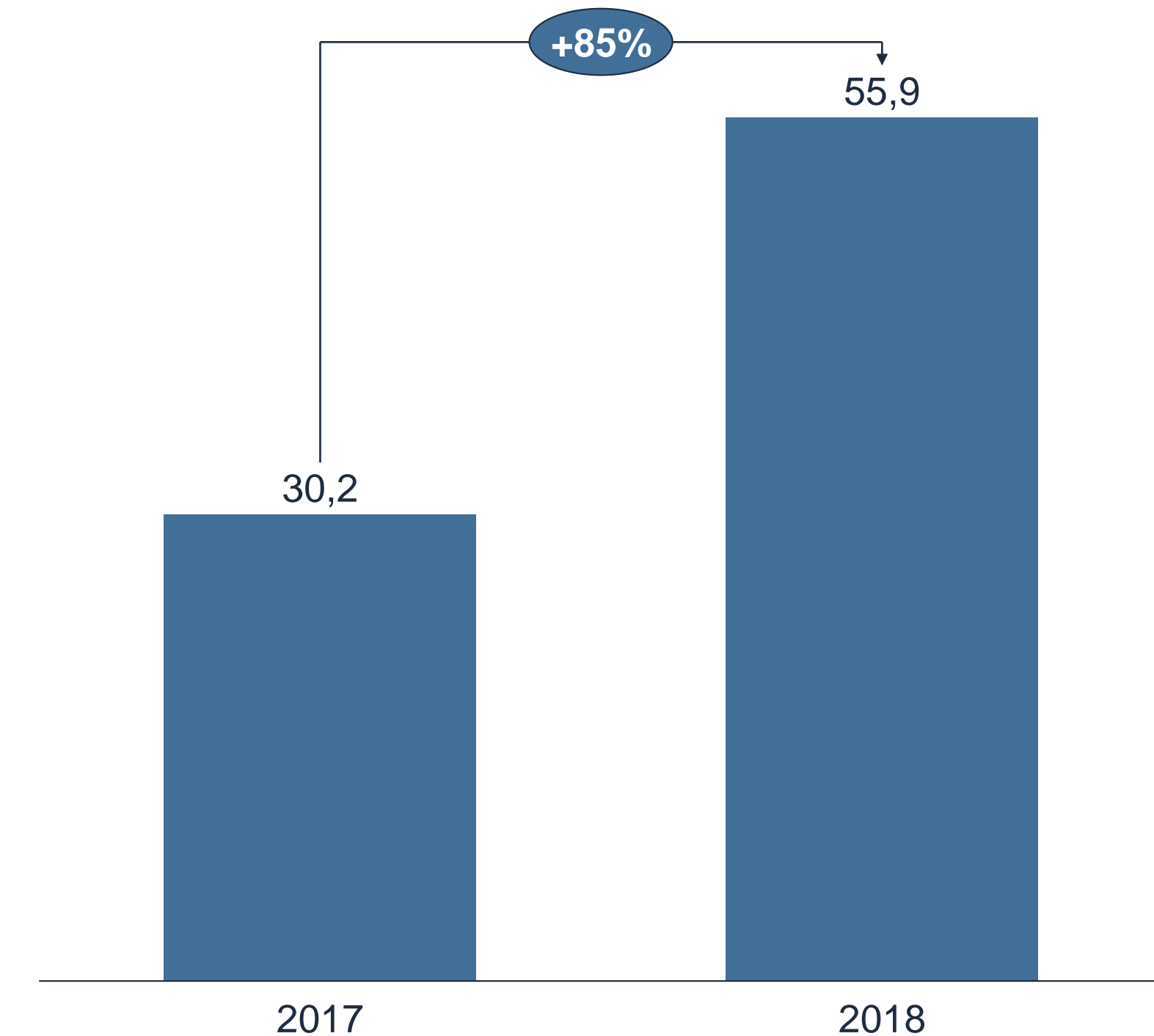
Education was the third largest sector for VC and PE investment in Brazil in 2018

Value of VC and PE investments in Brazil by sector, in US\$ M^{1*}



FDI in education services in Mexico increased by 85% in 2018

FDI in education, in US\$ M



*Average exchange rate for 2018 used: US\$ 1 = R\$ 3.65

Sources: (1) KPMG Data Consolidation 2019, (2) Mexico Ministry of Economy FDI in Mexico and in the World 2018

Innovative startups and capital inflow are helping fuel a digital revolution in education

COVID-19 is pushing for rapid digital transformation in Brazil's education system

- 74%** of public-school students in Brazil received distance teaching activities during COVID-19¹
- 69%** of these activities were digital, via internet, mobile phone, or computers¹
- 49%** of schools hired one or more solutions from education startups to support teaching and learning during the quarantine period²
- 60%** of Brazilian education leaders believe a digital revolution will occur in education in the next two years and 36% believe it will happen before 2030²

Trends indicate a long-term shift in education across Latin America³

Relevance beyond the crisis: Latin America's innovative education strategies

- ▶ **Latin America was unprepared for distance learning**
- ▶ **Governments have responded with innovative strategies**
- ▶ **The trend toward more technology in education will continue**



Technology takes classes to homes of students from all over Brazil during the pandemic

The coronavirus pandemic has affected the routine of millions of students and teachers across the country. States are investing in technology to ensure learning.



Technology integrates the "new normal" in Post-pandemic Education

Entrance exams and online assessments, parents meeting via app and students seeking knowledge alone must be the new reality

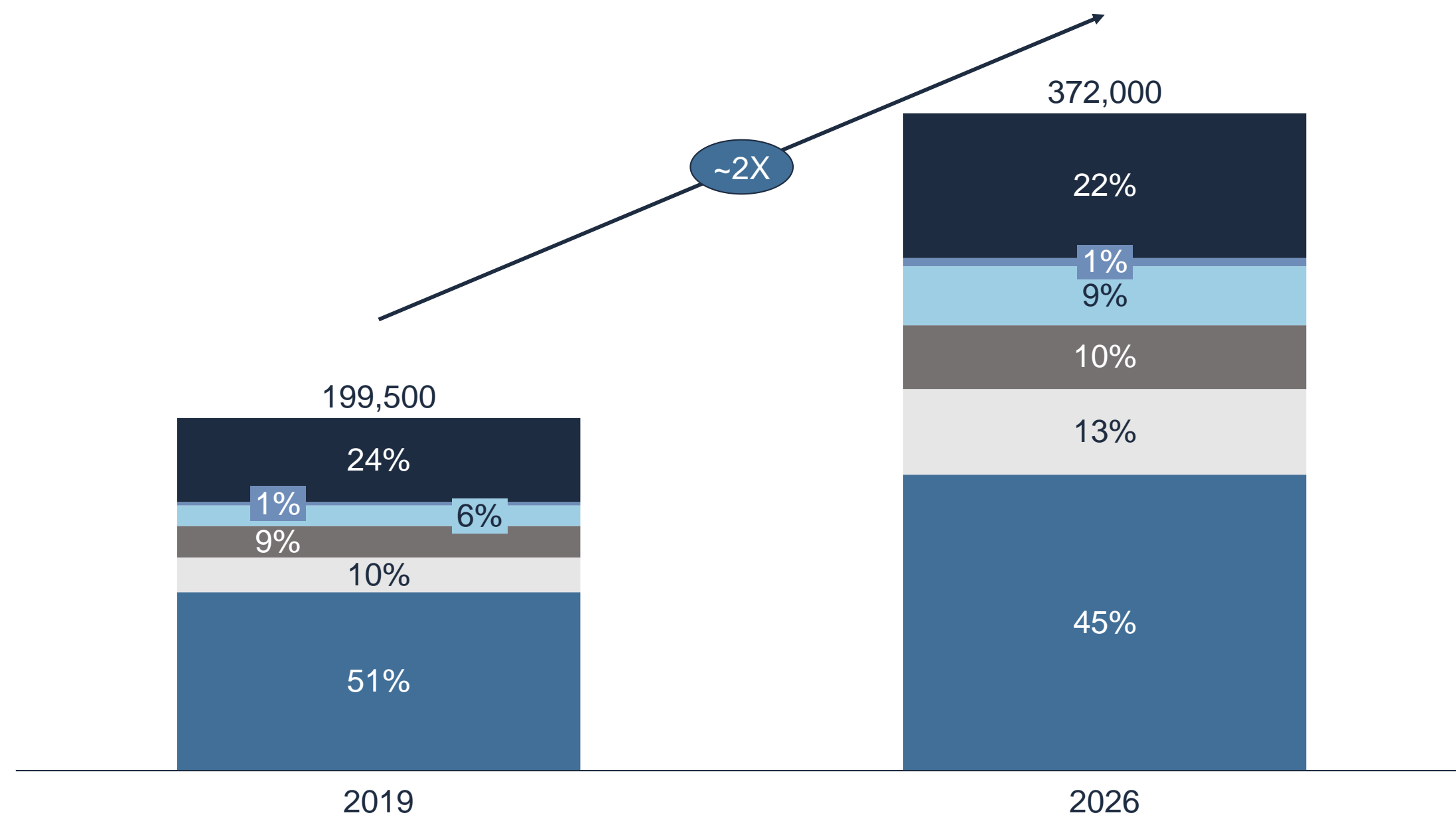


Even before the COVID-19 pandemic, distance and hybrid learning were gaining traction across the globe

Growth of global distance learning market

Size of the global e-learning market by segment (in US\$ M)*

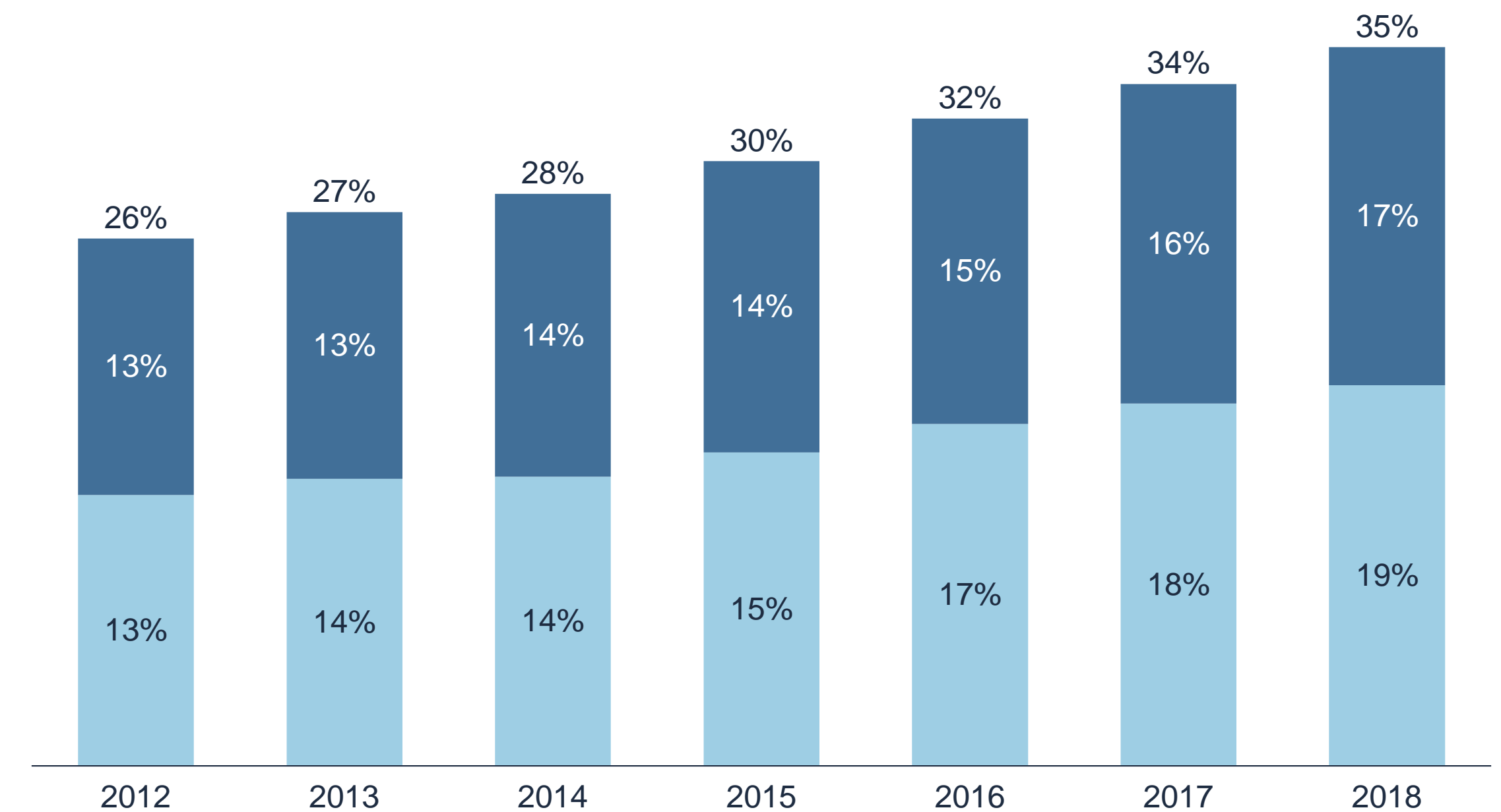
Others Virtual classroom Mobile e-learning
Rapid e-learning Learning Management System (LMS) Online e-learning



Growth of distance learning students in the US

Percentage of students in the United States taking distance learning courses

Exclusive distance Some distance

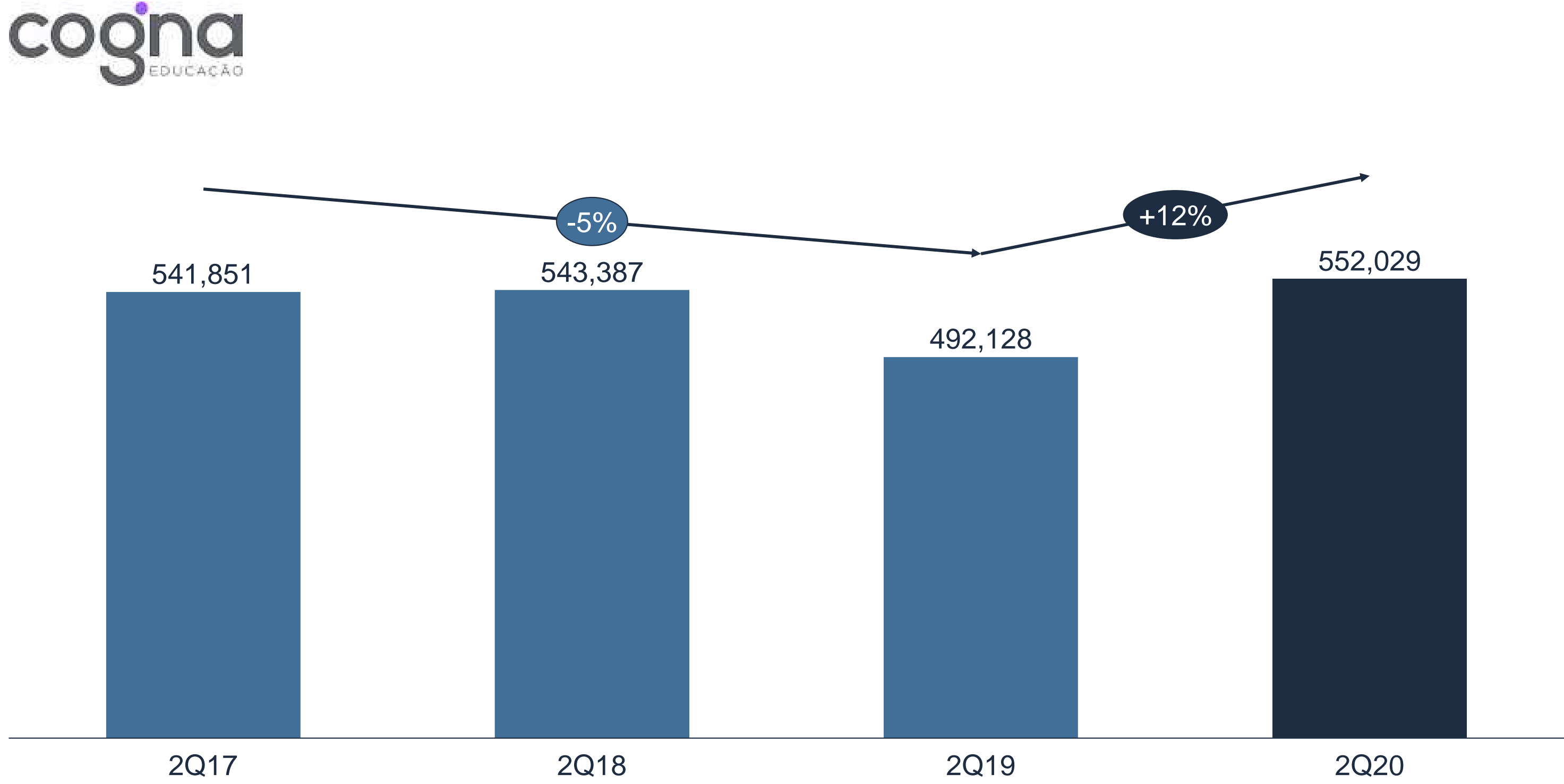


*Predictions were made based on 2019 surveys and market data, not taking the digital acceleration caused by COVID-19 into account

Source: Statista Global Market Insights 2019

Sparked by the pandemic, rapidly rising demand for distance learning is benefitting startups and incumbents alike

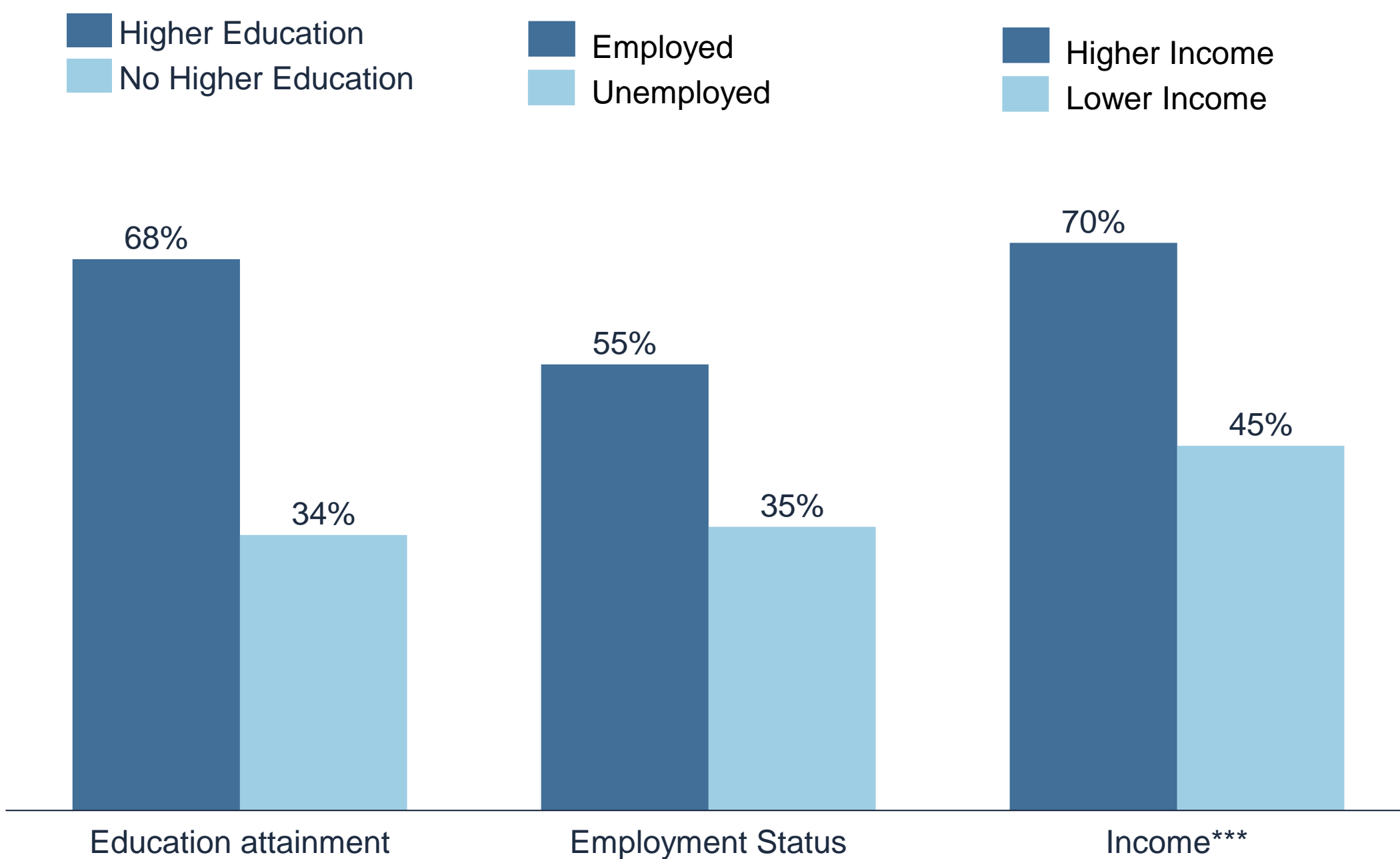
Number of students enrolled in Cogna Educação's distance learning programs



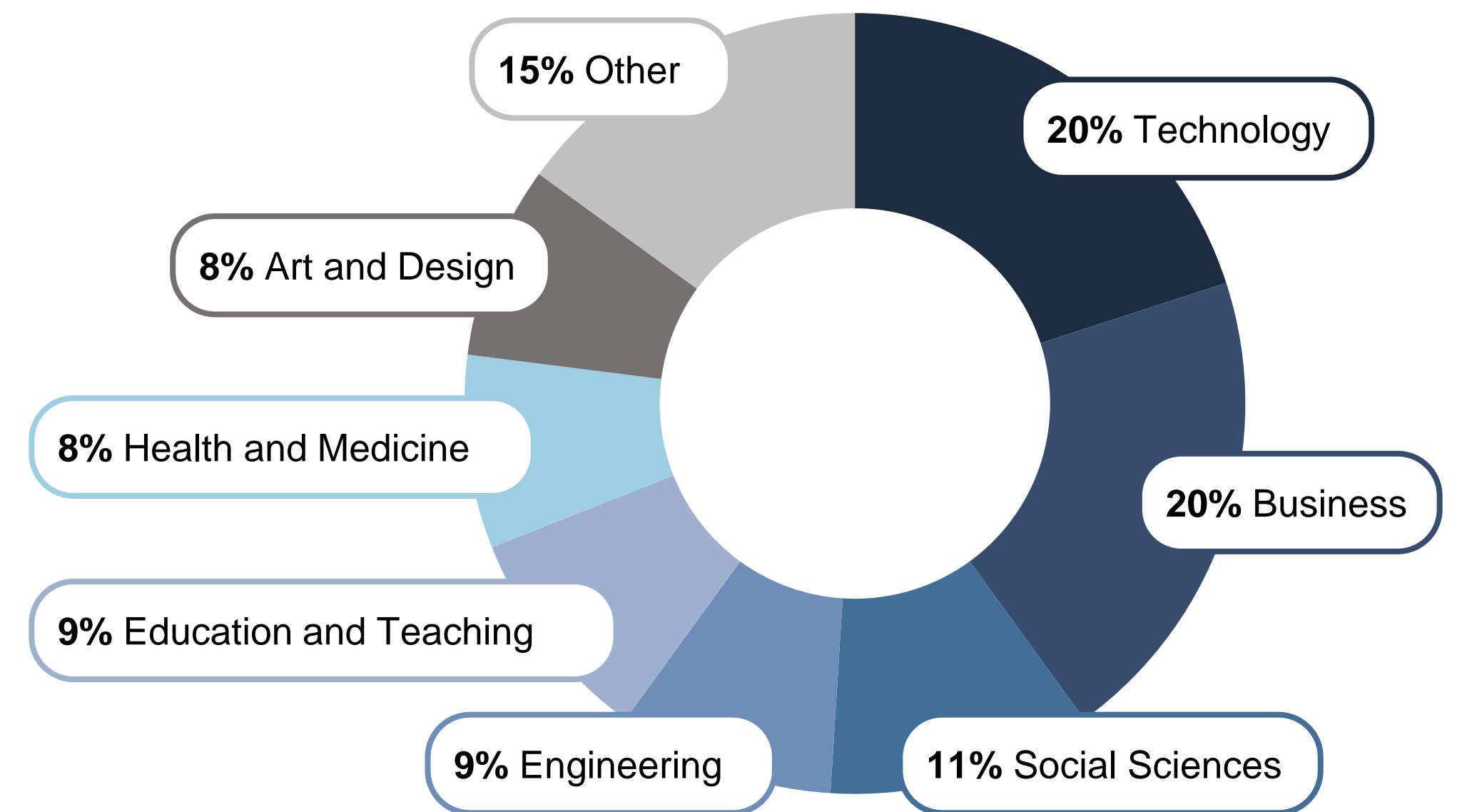
Digitalization and demand for reskilling and upskilling have made alternative credentials popular across the globe

Alternative credentials – such as micro-credentials, digital badges and industry-recognized certificates – offer learners a cheaper and more targeted way to acquire (and display) new skills compared to traditional degrees

Adults participating in micro-credential courses by characteristic*



Enrollment by MOOC subject**



*Data refers to OECD countries and economies that participated in at least two of the Survey for Adult Skills (PIAAC) conducted in 2012, 2015, and 2018.

**Across top global providers of Massive Online Open Courses (MOOC), which serve as the main form of delivery for alternative credentials

***Individuals who earn the median and higher wage (defined by each country) are labelled as ones with “higher” incomes

Source: OECD The Emergence of Alternative Credentials 2020

The COVID-19 pandemic dramatically accelerated growth in the alternative credentials market

Growth of the alternative credentials market

Predictions for the alternative credentials market for higher education following analysis of COVID-19's impact and recovery (2020-2024)¹

16% Is the estimated year-over-year growth rate for the alternative credentials market in 2020

17% Is the predicted CAGR during 2020-2024, which would bring growth of US\$ 1.18 B to the market

57% Of the growth between 2020-2024 will originate from North America

Growth of key providers during COVID-19*

Key figures on alternative credentials in 2020²



- 10.3M enrollments in 30 days, 644% up from 2019
- Over 5M user registrations post COVID-19



- Online course enrollment surged 425% in March
- In April, growth has largely remained above 300%



- 260% increase in revenue at the first half of 2020
- Average monthly usage was up more than 50%



- Testing volumes for alternative credentials grew to 580,000 compared to 66,000 in H1 2019