UBS

Latin America
beyond peak trade

UBS Chief Investment Office
Wealth Management Research White Paper

26 April 2017

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On the cover
Santiago Calatrava's Puente de la Mujer (Spanish for "Women's Bridge") is a rotating footbridge in the Puerto Madero commercial district of Buenos Aires, Argentina.

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Please see important disclaimer at the end of the document.

In 2016 we saw some promising performance from emerging market assets globally, following a weak five-year period. Despite economic and political risks, we have confidence that emerging markets, including Latin America, will offer a variety of investment opportunities for our clients in the years ahead.

Following the largest economic contraction in Latin America since the financial crisis, a cautiously optimistic view of the region seems justified. Key economies such as Brazil and Argentina are expected to move from recession to modest growth, and Mexico's fundamentals are proving resilient to the prospect of a less welcoming neighbor.

The region will also underpin future growth by continuing to address underlying structural challenges. Under current global conditions, in particular a fall-off in trade, it is unlikely to be able to export its way to prosperity as it did in the past. The region needs to develop sustainable domestic sources of growth.

Over the medium term, productivity in Latin America should be supported by strengthening institutions and friendlier business conditions. A heightened attention to education, infrastructure, entrepreneurship and the potential of Latin America's youth could yet fuel another wave of economic development.

The path to reform will be hard. In some areas macroeconomic headwinds are likely to persist. However, the time we spend with clients in the region gives us great confidence in its ability to face these challenges successfully and make major contributions to the global economy over the coming decades.

We hope you enjoy this paper, which explores all of these issues and more, and that you find it both stimulating and informative.

Paul Raphael
Head of WM Europe and Emerging Markets

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Guanajuato City, Mexico, was named a World Heritage Site in 1988 by UNESCO primarily for its Neoclassical and Baroque buildings erected during the colonial period.

Latin America
beyond peak trade

By Jorge Mariscal, Chief Investment Officer Emerging Markets

The economic, political, and financial outlook for Latin America is rapidly changing in a world where international trade faces challenges. These are coming not just from the threat of protectionism in the US and elsewhere, but also from the structural forces of the global rebalancing under way, which involves greater savings and improved trade balances in the developed world, and the opposite trends in the emerging world.

Under current global conditions, it is unlikely that Latin America will be able to export its way to sustainable growth as it did for the better part of the 2000s.

This process, combined with a tepid recovery in developed economies, has led to a marked slowdown in trade flows. From the start of the millennium until just before the global financial crisis, Latin American exports grew by an average of almost 15% a year; this has slowed to less than 6% since 2010. And while commodity prices and trade volumes have been recovering in recent quarters, we do not expect a return to the heydays of trade experienced in the 2000s.

The various chapters of this paper delve into the opportunities and challenges the region faces in this post-peak trade world. We'll be the first to acknowledge the difficulty of speaking about Latin America as if it were a single entity. Owing to its complex heritage, the region is one of great contrast and diversity. Comprising 33 countries, it is home to 625 million people (see map next page), a population expected to grow by 10% in the next decade, and whose age structure endows it with a demographic "dividend" for years to come.

Given its size and stage of development, Latin America has a considerable economic footprint, with an aggregate gross domestic product of USD 9.4 trillion as of 2016, measured on the basis of purchasing power parity (PPP). This annual output is about half that of the United States and China. With an average per capita income of about USD 15,000, also in PPP terms, the region has one of the largest and most vibrant middle classes in the emerging world. Yet, beneath these impressive figures lies a tale of divergence and inequality, both among and within its countries. Per capita income ranges from a low of USD 1,700 in Haiti to a high of USD 24,000 in Chile, and the most recent Gini coefficients, a measure of inequality, reveal that Latin America remains one of the regions with the worst income distributions on the planet.

Latin America and the Caribbean

Latin America population

Country	Total population
Brazil	206,090,000
Mexico	122,273,000
Colombia	48,750,000
Argentina	43,600,000
Peru	31,481,000
Venezuela	31,029,000
Chile	18,196,000
Guatemala	16,673,000
Ecuador	16,529,000
Cuba	11,180,000
Bolivia	10,896,000
Haiti	10,848,000
Dominican Republic	10,088,000
Honduras	8,203,000
Paraguay	6,855,000
Nicaragua	6,342,000
El Salvador	6,146,000
Costa Rica	4,910,000
Panama	4,086,000
Uruguay	3,427,000
Jamaica	2,829,000
Trinidad and Tobago	1,364,000
Guyana	769,000
Suriname	563,000
Belize	377,000
The Bahamas	368,000
Barbados	280,000
St. Lucia	174,000
St. Vincent and the Grenadines	110,000
Grenada	107,000
Antigua and Barbuda	90,000
Dominica	71,000
St. Kitts and Nevis	56,000
Total	**624,760,000**

Dependencies and other territories *in the region which are not considered to be in Latin America for the purposes of this report:* Puerto Rico, Guadaloupe, Martinique, French Guiana, Curaçao, US Virgin Islands, Aruba, Cayman Islands, Sint Maarten, Turks and Caicos Islands, British Virgin Islands, Caribbean Netherlands, Anguilla, Montserrat

Source: International Monetary Fund, World Economic Outlook Database, October 2016

Latin America needs to look for and nurture domestic sources of future growth.

It is this economic and social diversity that in part shapes – and of course has been shaped by – the way policy makers respond to external and internal forces. From an investment perspective, opportunities will be determined by how decision-makers address two key challenges: Peak trade and the more prevalent de-globalization rhetoric on the external front, and populism on the internal front. Argentina, Brazil, and Peru are pushing forward with economic agendas that clearly reject populism. But Mexico and Chile, among others, are confronted with nationalistic and populist forces that could end up dominating.

The anti-immigration and trade rhetoric coming from developed markets is reinforcing these local trends. In this regard, the next 18 months will be pivotal for the region's politics, with mid-term elections in Argentina in October, presidential elections in Chile in November, and presidential contests in Colombia, Mexico and Brazil in May, July and October of 2018, respectively.

We are hopeful that Latin America will be able to fend off the populist temptation, owing to a large and growing politically centrist middle class and its proximity in time and geography to the damage that populism has inflicted in the region. Time will tell, but in the meantime we find it useful to focus our attention on the fundamental drivers of the region's economic story in the medium and long term.

Under current global conditions, it is unlikely that Latin America will be able to export its way to sustainable growth as it did for the better part of the 2000s. On top of the protectionist leanings in the US and Europe, it remains unclear to us whether the growing trade relations between China and Latin America can be mutually beneficial. For these reasons, Latin America needs to look for and nurture domestic sources of future growth.

Lima is the capital city of Peru, home to close to 10 million people, or 32% of the total population of the country. Economic activity in the Lima metropolitan area makes up almost 45% of the country's GDP.

Focus on fundamental growth drivers

According to a simple model of structural growth, a country's output is a function of its stock of two key production factors: Human capital and physical capital, with productivity playing a pivotal role at combining these two. The structure of this white paper is informed by this model.

We first take a detailed look at **Latin America's trade and investment partnerships** in the next three pages. Our analysis reinforces the thesis that the region needs to find sustainable fundamental growth drivers domestically.

The 'Human capital and demographics' section explores the availability and quality of human capital in the region. We start by looking at demographic dynamics, and upon acknowledging that no "demographic bonus" can support growth without adequate investments in education and healthcare, we dig deeper into both dimensions.

In the 'Productivity' section, we discuss how Latin American countries fare in areas that affect total factor productivity, such as the strength of institutions, investment and development activity, and sustainable development practices.

In the 'Physical capital' section, we turn our attention to the region's stock of capital, investment activity, and infrastructure.

We conclude that Latin America has ample potential to generate a sustainable domestic-led growth, but at the same time we recognize it has much work to do and success is far from guaranteed. Its demographic dynamics are highly favorable and the region is already spending more than emerging market peers in healthcare and education – but all this has yet to translate into better outcomes. Productivity should be supported by an outlook for stronger institutions, friendlier business conditions, and an environment that fosters entrepreneurship and innovation. The region is more environmentally conscious than its emerging market peers. But, at the same time, it will take time for the region to tackle the endemic problems of low public safety and a large informal economy.

Finally, Latin America has poor levels of savings and investment that account for its shallow domestic capital markets. As a result, it has insufficient, inefficient, and poor-quality infrastructure that has become an Achilles heel to its own growth outlook. The quality of policy making in the region, which we think is improving on the whole, will determine the next chapter of this growth story by either exacerbating or overcoming the challenges described above.

We wrap up this White Paper with a section discussing **investment implications and policy recommendations**.

Reassessing trade and investment partnerships

Can China fill the void the US seems to be leaving behind?

By Alejo Czerwonko, Ph.D., Strategist
and Lucy Qiu, CFA, Strategist

With a rapidly changing external backdrop, it becomes important to reassess Latin America's key trade and investment relationships. While China has been increasing its influence on the region, the economic and commercial relationship between Latin America and the Middle Kingdom has room to improve. For these reasons, Latin America needs to look for and nurture domestic sources of future growth.

From globalization and commodity boom to trade stagnation and resource curse

The early 2000s were golden years for Latin America. As global trade grew and commodity prices soared, foreign capital flowed in, local currencies appreciated, and the region exported its way to average GDP growth rates of over 4% from 2000 to 2012, a phenomenon only briefly interrupted by the global financial crisis.

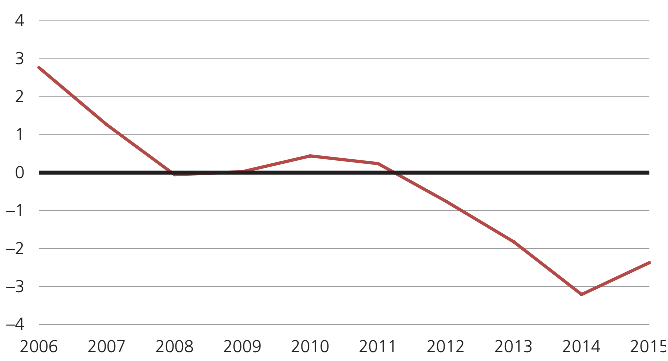
Since then, however, the picture has changed meaningfully as world trade began to stagnate. Although this trend does not affect Latin America exclusively, the region has suffered a double whammy due to its heavy reliance on commodity exports. China's transition from an investment-led growth model into one driven by consumption and services sparked the end of the commodity super-cycle. As a result, Latin America's trade balance swung from surplus to deficit (see Fig. 1). At the same time, foreign direct investment (FDI) into the region stagnated; it hasn't grown since 2011, and the region's share of world FDI flows fell from over 12% in 2011 to 9% in 2015 (see Fig.2). These developments helped drag the region into a two-year-long recession, from which we expect it to escape only this year.

With US influence seemingly receding, can China save the day?

The US remains Latin America's biggest trade partner and investor. Of the region's USD 850bn worth of

Fig. 1: Export-led growth a thing of the past

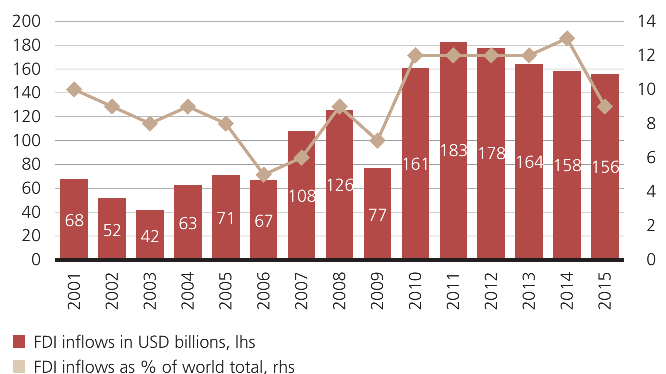
Latin America net trade balance, as a percentage of GDP



Source: World Bank, World Integrated Trade Solution, UBS, as of 2015

Fig. 2: Latin America getting smaller share of foreign direct investment flows

FDI flows to Latin America, as a percentage of global total, and in USD billions



Source: United Nations Conference on Trade and Development (UNCTAD), UBS, as of 2015

exports in 2015, about one-third was shipped to the US compared with less than one-fourth to China. The US has accumulated a USD 403bn stock of FDI in the region, several times larger than China's current stock of USD 50bn.

It remains unclear to us whether the trade and investment relations between China and the region have been mutually beneficial.

While the forces shaping the integration of global production chains and trade specialization are likely to remain, the rhetoric of the Trump administration raises concerns about the future of the partnership between the US and Latin America. Mexico is worried about the possible renegotiation of the North American Free Trade Agreement and the proposed construction of a wall along the US-Mexico border. Andean economies already find themselves having to digest Washington's change of plans regarding the Trans-Pacific Partnership trade deal, and their bilateral free-trade agreements with their neighbor up North are not as secure as they used to be.

On the other hand, the trade and investment relationships between China and Latin America have grown rapidly in the last 15 years. China is stepping up its so-called "going out" strategy, spearheading the multilateral BRICS Development Bank, Asian Infrastructure Investment Bank, and Silk Road Fund. In a charm offensive, just weeks after Trump's victory, Beijing published a policy paper calling Latin America "a land full of vitality and hope." Among others, it envisions the 2015 Community of Latin American and Caribbean States (CELAC)–China Cooperation Plan boosting trade between China and CELAC to USD 500bn a year and China's FDI stock in the region to USD 250bn over the next decade.

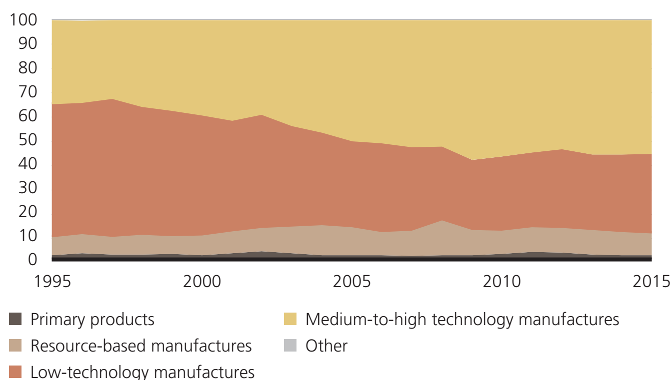
Can China fill in the void the US seems to be leaving behind? Even if the answer is a partial yes, some of the unique characteristics of and motivations behind China's involvement in the region lead us to believe it may not be in Latin America's best interest to go down that route.

First, it remains unclear to us whether the trade relations between China and the region have been mutually beneficial. Chinese exports to Latin America have been moving steadily up the value chain, with the share of medium- to high-technology manufacturing growing at the expense of low-technology products (see Fig. 3). Latin American exports to China, on the other hand, have been stubbornly stuck in the low-value-added segment. Fig. 4 shows that, even as commodity prices declined, Latin American exports of primary products and resource-based manufactures to China continued to gain in proportion at the expense of more value-added products – they made up a staggering 91% of total exports to China in 2015, an increase of eight percentage points from the turn of the millennium.

The trends just described should come as no surprise, as the majority of China's investments in Latin America have come primarily from state-owned firms and, in our view, ultimately serve to protect China's national interests. In order to secure

Fig. 3: Chinese exports to Latin America going up the value chain

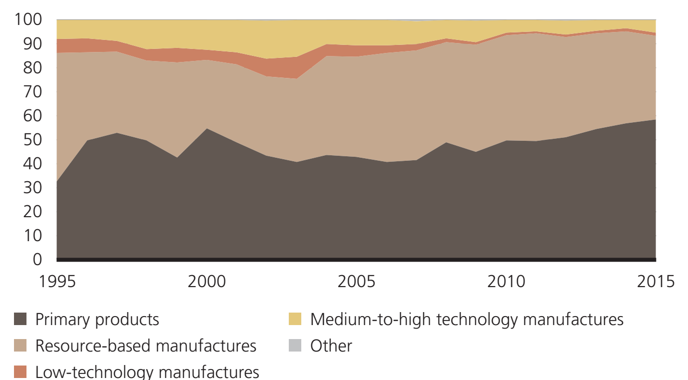
Percentage of total exports by segment



Source: UNCTAD, UBS, as of 2015

Latin American exports to China going down the value chain

Percentage of total exports by segment



Source: UNCTAD, UBS, as of 2015

Guangzhou, China hosts the largest port in South China. It is connected to over 300 ports in 80 countries worldwide. China's total exports to Latin America have increased by an average of 19% per year in the decade leading to 2015.

resources and provide opportunities for Chinese companies, these investments have been heavily concentrated in the resource sector – 57% of China's total FDI into the region between 2000 and 2012 has been focused on the acquisition of raw materials[1], while 74% of lending in the last decade has been related to energy.

The historical lack of emphasis of these investments on social and environmental standards is also a source of concern. Some observers have even argued, judging from China's lending pattern, that Chinese investments have been skewed toward countries with relatively poor governance standards, such as in the areas of labor and environmental laws. Close to half of Chinese loans to the region over the last decade have gone to Venezuela, and another quarter to Argentina and Ecuador.

In this context, at least under current conditions, it is unclear to us whether the China–Latin America trade and investment relationship will facilitate sustainable growth and development in the region. Unless the trade and FDI agreements start to pivot away from raw-material exports and incorporate reciprocity arrangements to open Chinese sectors of interest to Latin American companies, the relationship may not be as beneficial for the region as it is for China.

For this reason, we believe Latin America will need to look for domestic sources of growth. In the next few pages, this paper will attempt to determine which domestic sources are most likely to come to the rescue of economic growth in the region, and which countries are best positioned to find them.

Human capital and demographics

A look at the availability and quality of manpower in the region

Demographic trends: A breath of fresh air

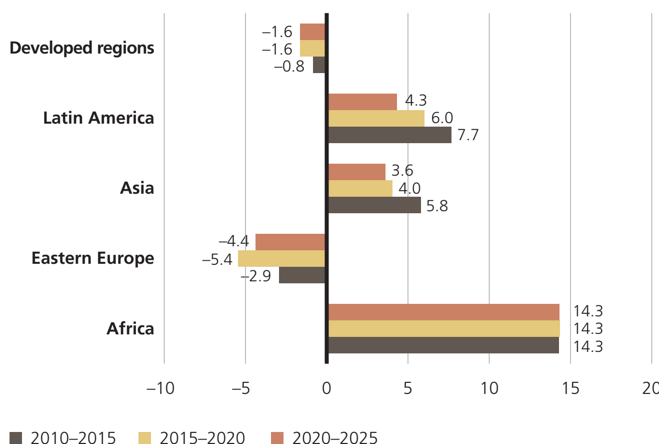
By Alejo Czerwonko, Ph.D., Strategist

Dire demographic trends are in the cards for much of the developed world and parts of the emerging markets in the years ahead. As a region, Latin America is fortunate enough to enjoy demographic tailwinds thanks to strong growth rates of the working-age population and declining dependency ratios. This "demographic bonus," if accompanied by adequate investments in education, healthcare, and infrastructure, should support economic growth. Mexico and Peru stand out as the most demographically attractive countries in the region. Chile, Brazil, and Argentina could face challenges servicing future pension obligations unless reforms are introduced.

According to the United Nations, the Japanese population will shrink by an eye-popping 20 million people by 2050. Over the same period, Germany's working-age population, which includes individuals between 15 and 65 years of age, is projected to decline by 23%. Dire demographic trends like these are in the cards for much of the developed world in the years ahead. But if you think these structural constraints to economic growth are exclusive to advanced economies, think again. China's working-age population is projected to fall by more than 20% by 2050. Most countries in Central and Eastern Europe, including Russia, Poland, and Hungary, will also experience overall population declines of between 10% and 15% over the same period.

Fig. 1: Latin America working-age population looking better than most of the world

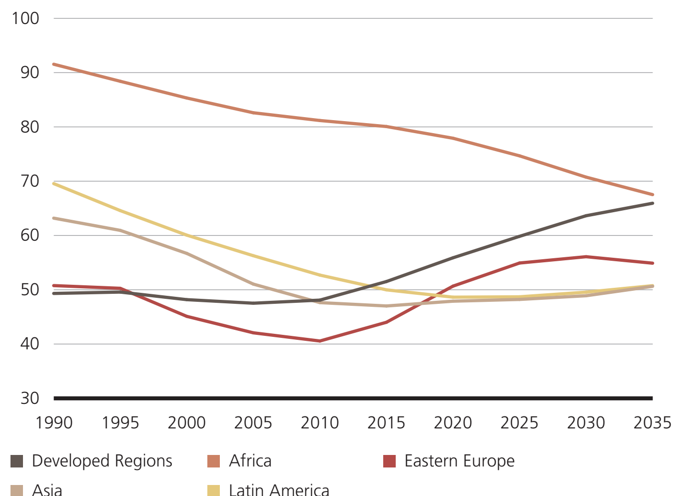
Working-age population growth rates during each specified period, in %



Source: UN World Population Prospects, 2015 Revision, UBS

Fig. 2: Latin America to enjoy low dependency ratios

Dependency ratios by region, in %



Source: UN World Population Prospects, 2015 Revision, UBS

The expected growth rate of the working-age population across countries in the region will remain among the highest in the world over the next decade

In this context, Latin America is fortunate enough to enjoy demographic tailwinds in the years ahead. The expected growth rate of the working-age population across countries in the region, although lower than what they experienced between 2010 and 2015, will remain among the highest in the world over the next decade (see Fig. 1).

Similarly benign dynamics can be seen in dependency ratios, a measure based on the number of individuals in economically dependent age groups (younger than 15 and older than 65 years of age) divided by the working-age population. In recent decades, Latin America has shown high dependency ratios relative to other emerging and developed markets (see Fig. 2). However, these indicators have been declining rapidly, and the region now enjoys some of the lowest ratios of economically dependent populations globally. The numbers are expected to remain favorable over the coming years – a consequence of the region's lower fertility rates and only gradual increases in older age groups.

This "demographic bonus," if accompanied by adequate investments in education, healthcare, and infrastructure, should support economic growth through an increase in skilled-labor inputs. It should be acknowledged that a growing pool of individuals lacking proper training and health, or unable to remain productive due to a lack of infrastructure, could become a burden to society and put pressure on the social contract. In the following pages of this report, we explore whether Latin America is investing sufficiently in complementary areas to take advantage of this demographic bonus.

Looking under the hood, Fig. 3 reveals significant differences within Latin American countries. Mexico and Peru stand out as the most demographically attractive, while Chile, Brazil, and Argentina could face challenges servicing future pension obligations.

Fig. 3: Differences emerge under the hood

Expected changes in working-age population and dependency ratios

	Working-age population growth rate 2015–2025	Change in dependency ratio 2015–2025
Developed Regions	–3.3%	8.3%
Eastern Europe	–9.6%	10.9%
Asia	7.8%	1.2%
Africa	30.7%	-5.4%
Latin America	10.6%	-1.3%
Mexico	14.1%	-3.1%
Argentina	10.1%	-1.0%
Brazil	7.4%	-0.2%
Chile	6.7%	3.7%
Colombia	7.9%	-0.4%
Peru	13.5%	-1.9%
Venezuela	13.7%	-1.7%

Source: UN World Population Prospects, 2015 Revision, UBS

Mexico and Peru: Will they seize the opportunity?

Mexico and Peru have enjoyed sharp declines of between 11 and 13 percentage points in their dependency ratios in the decade ending in 2015, and the positive momentum will likely remain in place in the years ahead. These countries also enjoy having proportions of their populations in the "sweet spot" of the 15–24 age range well above regional and global averages. As highlighted above, the economic upside associated with these favorable demographic numbers will not materialize automatically; for it to happen, Mexico and Peru will need to make major investments in education – and they face challenging starting points. Mexico, for example, remains one of the OECD countries with the highest rates of youth who are neither employed nor in education nor training. In Peru, government expenditure in education as a percentage of GDP is one of the lowest in the region.

Pension systems: Progress made, but much more work needed

Since the early 1980s, a number of Latin American countries including Chile, Mexico, Peru, Colombia, and only temporarily Argentina introduced individual-account defined-contribution pension systems, sometimes working in parallel with pay-as-you-go pillars for subsets of the population. These models allowed the region to better prepare itself for demographic changes, including higher life expectancies; led to a deepening of its capital markets; and improved fiscal sustainability. That said, significant progress needs to be made as replacement rates and the overall pension-system coverage for the population remain low. While there is no one-size-fits-all solution, it is becoming increasingly clear that pension reform should come to the forefront of the region's policy agenda.

The first mover in terms of pension-system transformation in Latin America is Chile. The foundations of its current system were laid in 1981, when the country switched to a defined-contribution system administered by the private sector. This was complemented in 2008 by a publicly funded solidarity pillar which provides minimum pensions. On the back of low mandatory contribution rates and short contribution periods, Chile's replacement rates are very low, particularly for women at 24% in 2014. The challenges to Chile's pension system will remain large as the country's over-65 population reaches 20% by 2035. The government has recently announced changes to the system to address these concerns, including an increase in minimum contribution rates. Deeper changes will likely be needed, however, to put the system back on a socially sustainable track.

For Brazil and Argentina, the challenges are linked to the sustainability of their pay-as-you-go systems. The proportions of their populations above 65 years of age are expected to reach non-negligible levels of 16% and 14% by 2035, respectively. More importantly, their pension replacement rates – defined as the percentage of pre-retirement earnings pensioners enjoy as their benefit – stood at 76.4% and 87.5% in 2014, respectively, well above the OECD average of 63%. Spending on pensions as a percentage of GDP is projected to increase unsustainably in these two countries unless reforms are introduced. The good news is that, under their more pragmatic current administrations, both countries have promised to address some of the weaknesses of their pension systems.

In this regard, Brazil is clearly one step ahead of Argentina. We believe President Michel Temer's social security reform will be approved in 2017. The bill calls for Brazilians to work more years before being eligible for full retirement benefits. The plan would set a minimum age of retirement at 65 years, well above the current average of 54. The political leadership in Argentina has promised to push for pension reform only in 2018, once the 2017 midterm election hurdle is overcome, and details are so far largely missing. For these countries, any further delay is a risk they can ill afford.

The proportion of Latin Americans between the ages of 15 and 25 is expected to be 16% of the total population in the region by 2025, compared to just 11% in developed markets.

Healthcare and education: Quantity vs. quality

By Soledad Lopez, Analyst and Lucy Qiu, CFA, Strategist

Demographic dynamics are highly favorable for Latin America, but they require adequate investments in healthcare and education to meet growing social demands. The region is already spending more than its emerging market peers in both regards. However, the rising incidence of chronic illnesses and the growing needs of an aging population increase the costs of and demand for healthcare services. In education, higher spending has yet to translate into better quality. To improve education outcomes and fulfill the evolving healthcare demand, the region must implement structural reforms and increase private-sector participation.

Healthcare spending is above developing peers but still behind developed nations

Historically, healthcare spending in Latin America has been higher than in the rest of the emerging world but still significantly below that of developed markets. From 1995 to 2014, healthcare spending in the region grew from almost 6% to 7.5% of GDP, while in the emerging markets as a whole it rose from 4.2% to 6%. Brazil currently leads the pack, spending close to 8.3% as of 2014, while even the laggards of the region – Argentina and Venezuela – are spending close to the Asian average, at around 5%.

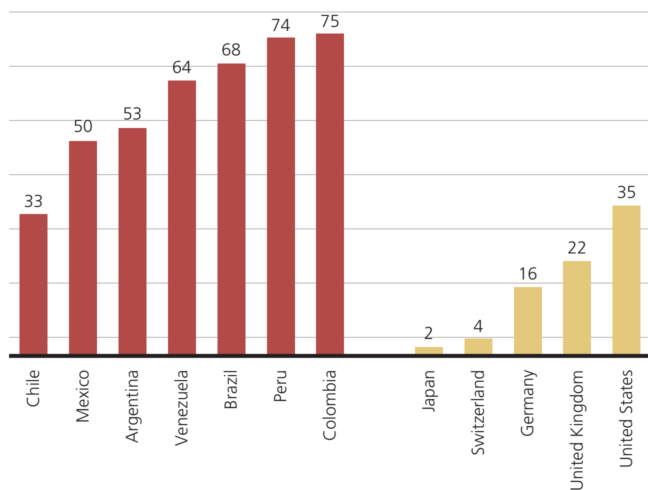
The Global Competitiveness Report of the World Economic Forum ranks the quality of healthcare in most Latin American countries as above average. The healthcare index comprises life expectancy and the prevalence of malaria, tuberculosis, and HIV, as well as infant mortality. Chile leads the region, ranking 30th (ahead of the US), followed by Mexico and Argentina. By contrast, Peru and Colombia have the lowest rankings relative to peers.

Aging, chronic illnesses, and high out-of-pocket spending call for better healthcare services

According to the UN, the percentage of the Latin American population above 65 years of age will rise to 12% in 2030 from 8% in 2015. As urbanization and incomes increase, healthcare is expected to evolve from treatment of infectious diseases to that of non-communicable diseases (NCDs) such as

Fig. 1: Latin America healthcare still behind developed nations

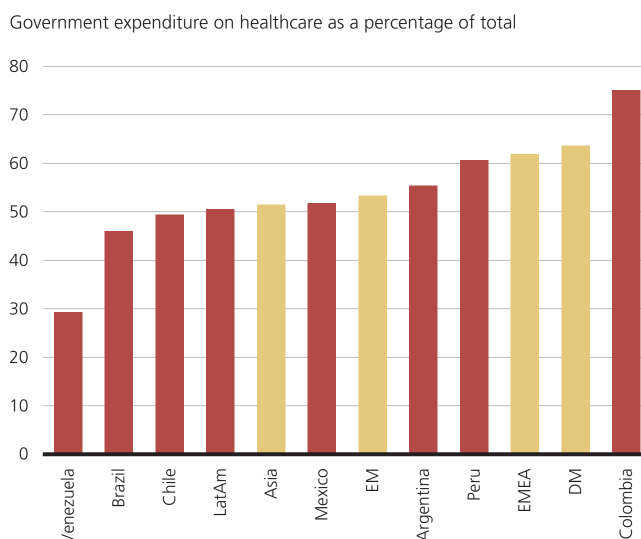
World Economic Forum healthcare ranking (lower is better), 2015–2016



Note: Ranking based on a total of 140 countries
Source: WEF, The Global Competitiveness Report 2015–2016, UBS

Fig. 2: Latin America state spending on healthcare below rich-nation average

Government expenditure on healthcare as a percentage of total



Note: GDP weighted using 2014 figures
Source: World Health Organization, World Economic Outlook, UBS, as of March 2017

diabetes, cardiovascular conditions, and hypertension. The latest data from 2015 indicates that 14% of total deaths in the region are due to communicable diseases while 73.4% are due to NCDs. In comparison, only 69% of total deaths were attributable to NCDs in 2000. This shift toward chronic illnesses, which affects all population groups, will increase the demand for technology and specialized healthcare services in the region.

In Latin America, the state accounted for around 54% of total healthcare expenditures as of 2014, compared with 64% for developed markets. However, this does not mean private sector investments can't improve further. In Colombia, the government makes up 75% of total healthcare spending, yet the country has the lowest ranking in terms of quality, reflecting the importance of private-sector participation.

Another relevant metric is out-of-pocket expenditures, or private medical expenses not covered by the state. In Latin America, such spending had declined from 43% of the total in 1995 to 30% in 2014 – lower than the emerging market average of 35%, but still well above developed markets' 12%. Only Colombia has achieved a level close to advanced nations at 15%, with Brazil a distant second at 25%. By contrast, Venezuela has the highest at 64%. High out-of-pocket spending suggests a need to reduce costs, for example by making generic drugs more widely available, raising efficiencies, or increasing the share of government spending. The prevalence of NCDs also highlights the need for better quality and the role of the private sector in the provision of healthcare services.

How to address these challenges

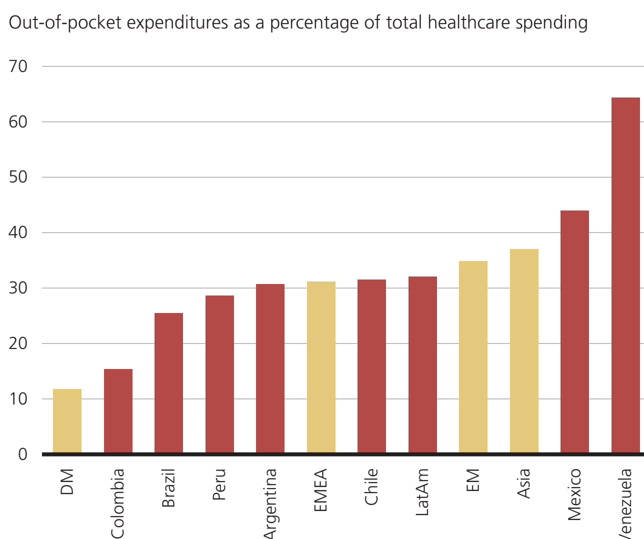
As a result, the region needs to either increase public spending or lower out-of-pocket expenses. Alternative funding mechanisms that promote healthy lifestyles and encourage disease prevention can lower healthcare costs on NCDs down the road. Universal healthcare coverage, which is already on the rise in Latin America according to the World Bank, can also address the inequality issue.

Education expenditure above world average but education quality below average

Governments in Latin America on average spend more on education than the rest of the world. In fact, as a percentage of GDP, education expenditure in the region is on par with that of the OECD, a club of mostly rich economies. Large differences exist within the region, with Brazil at close to 6%, while Peru lags at 3%.

Fig 3: Latin America out-of-pocket expenditures higher than in rich nations

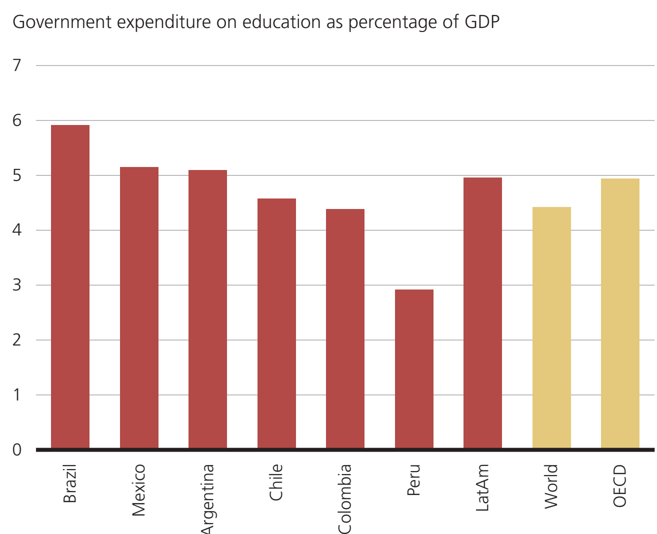
Out-of-pocket expenditures as a percentage of total healthcare spending



Note: GDP weighted using 2014 figures
Source: World Health Organization, World Economic Outlook, UBS, as of 2016

Fig. 4: Latin America education spending in line with Organisation for Economic Co-operation and Development (OECD) averages

Government expenditure on education as percentage of GDP



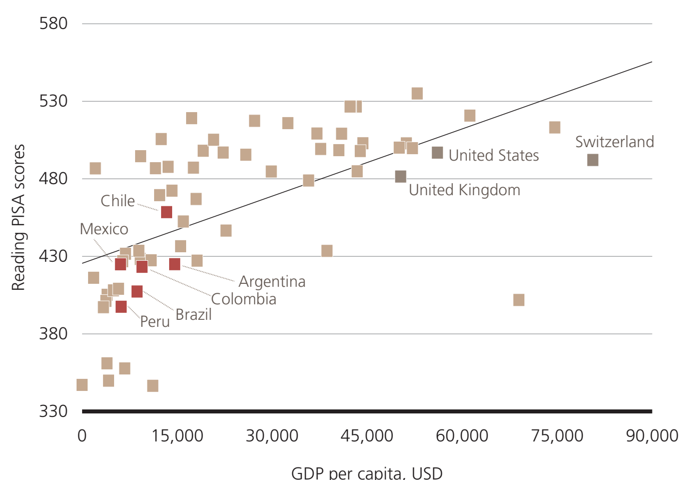
Source: UN World Development Indicators, UBS, Data as of 2012 (Mexico as of 2011)

The region has made large progress in providing access to education, thanks to cash-transfer programs such as Bolsa Familia in Brazil and Oportunidades in Mexico. Current enrollment rates for primary and lower-secondary schools are 94% and 92%, respectively, in line with levels in upper-middle-income countries. The tertiary enrollment ratio is 44%, higher than most emerging markets but still far below the 74% for high-income countries .

Unfortunately, higher amounts of spending and enrollment rates have yet to translate into better quality of education. The OECD's influential Program for International Student Assessment (PISA) tests for 15-year-olds show Latin America lagging OECD peers in all three test categories. According to the UN, almost 50% of students in grades three and six do not reach the minimum proficiency level in mathematics. Fig. 5 shows the PISA reading scores relative to GDP per capita. As expected, countries with higher income per capita tend to have better quality of education. Chile is the only outperformer in Latin America; all other countries are below average relative to their respective income groups, with Brazil and Peru lagging in particular.

Fig. 5: Latin American students lag other countries in key test categories

OECD PISA reading scores 2015 and GDP per capita in USD



*Argentina: Coverage is too small to ensure comparability.
Source: OECD Programme for International Student Assessment, World Economic Outlook, UBS, as of March 2017

From quantity to quality: What to do next

Now that most children in Latin America attend schools, the most critical constraint to higher education standards is the poor quality of teachers. Incentives for teaching jobs are low given the low pay: Pre-primary and primary school teachers earn 24% less relative to other professions, while secondary school teachers earn 12% less. Teachers' salaries also rise very slowly, further damping motivation. Another challenge is political, as teachers' unions are large and politically active stakeholders. For example, Mexico passed an education reform in 2014 but is still struggling with implementation amid union-organized protests.

However, successful reform cases can teach lessons for other countries. Chile, the outperformer in the region, adopted national teacher standards ("Marco para la Buena Enseñanza") in 2003 and established a teacher evaluation system to ensure high teacher standards. Investing in teacher professional development can also pay off: Singapore, the best performer in PISA 2015, offers 100 hours a year of paid professional development for every teacher. Financial incentives such as a merit-based pay and promotion system can also motivate better teaching performance.

Finally, private education providers can play an important role, given budget constraints for the public sector. They tend to be more effective at scaling up access to education at a reasonable cost as we have seen in Brazil. Private companies are also particularly effective at linking with industry to ensure workforce skills are aligned with the needs in the labor market. For example, in Colombia, the private sector works with industry and the government to ensure programs are relevant to the needs of employers. More than half of its programs are vocationally focused on key economic sectors, including agribusiness, hotel management, construction, web design, and occupational health.

Productivity

Zooming in on the strength of institutions in the region, investment and development activity, and sustainable development practices

Institutional strength: Forward view vs. rear-view mirror

By Ronaldo Patah, Chief Investment Officer Brazil

Institutional strength and ease of doing business are crucial for developing countries to progress and achieve higher levels of income. In this regard, Latin America has performed poorly relative to global peers over the last decade. More recently, the region's political pendulum has swung to a more positive outlook for both areas, and we expect this trend to continue. Much will depend, however, on whether Brazil can consolidate its structural reform agenda and how well Mexico can fend off the threat of populism in their respective presidential elections in 2018.

Looking at the last ten years of data, Latin America has suffered from an overall decline in the World Bank's Worldwide Governance Indicators. The most acute deterioration has occurred in the area of "control of corruption," with Mexico, Peru, and Venezuela showing the deepest declines. Notably, no country in

Fig. 1: Key Latin American elections in 2017–2018

Country	Description	Date
Mexico	Local elections in the states of Mexico, Nayarit and Coahuila	04-Jun-17
Chile	Primaries: Presidential and parliamentary elections	02-Jul-17
Argentina	Primaries: Parliamentary election	13-Aug-17
Argentina	Parliamentary election	22-Oct-17
Chile	Presidential and parliamentary elections	19-Nov-17
Chile	Second round of presidential election	17-Dec-17
Costa Rica	Presidential and parliamentary elections	Feb-18
El Salvador	Parliamentary election	04-Mar-18
Colombia	Parliamentary election	11-Mar-18
Paraguay	Presidential, parliamentary and local elections	Apr-18
Costa Rica	Second round of presidential election	Apr-18
Colombia	Presidential election	27-May-18
Colombia	Second round of presidential election	17-Jun-18
Mexico	Presidential and parliamentary elections	Jun-18
Brazil	Presidential, parliamentary and local elections	07-Oct-18
Peru	Local elections	TBD
Venezuela	Local elections	TBD

Source: Centro Estrategico Latinoamericano de Geopolítica, local electoral bodies, UBS, as of April 2017

the region has seen an improvement in this dimension over the last ten years. "Government effectiveness," which captures perceptions on the quality of public services, also declined across the region.

In terms of "political stability and absence of violence/terrorism," Latin America experienced some improvement, but the results are mixed. While Peru and Colombia made important strides, Mexico and Chile seem to have gotten worse. A similar picture is evident in "regulatory quality," in which Peru and Colombia also made progress while Argentina and Venezuela deteriorated. "Rule of law" is one of the weaknesses of Latin American economies compared to the rest of the world. It captures the quality of contract enforcement, property rights, and the courts. In this regard, Latin America fares worse than North America, East Asia, and Europe; similar to the Middle East; and better only than Africa. Brazil and Colombia have improved in the last 10 years, while Argentina and Venezuela have taken a dip.

Latin American economies also have a long way to go in terms of "ease of doing business," as the region ranks worse than developed markets, Asia, and Emerging Europe, the Middle East, and Africa (EMEA) in all criteria. This dimension covers ease of "starting a business," "paying taxes," "trading across borders," and "registering property." Relative to the rest of the world, the laggards here are Venezuela, Brazil, and Argentina.

Looking back, it is evident that, on average, measures of institutional strength and ease of doing business have gotten worse in the region. Looking ahead, however, we expect this trend to reverse. In the last one-and-a-half years, some important changes have occurred in the Latin American political and economic landscapes. Argentina, Brazil, and Peru, for example, have all transitioned from populist governments to more pragmatic administrations with more pro-market policy agendas.

Much of the region's political pendulum has swung toward a more promising outlook. The case of Brazil is particularly notable. Although the far-reaching "Lava Jato" corruption investigations and the impeachment of former President Dilma Rousseff are partly to blame for the depth of Brazil's recession in 2015–16, the country's strong push against corruption thanks to an independent judiciary leaves it in better position for the years ahead. The one big question mark is Mexico, where evidence points to a weakening of the country's institutions.

In this changing global political environment, different kinds of leadership phenomena are emerging. We discuss below the cases of Brazil and Mexico, given that the two largest economies in Latin America will face presidential elections in 2018.

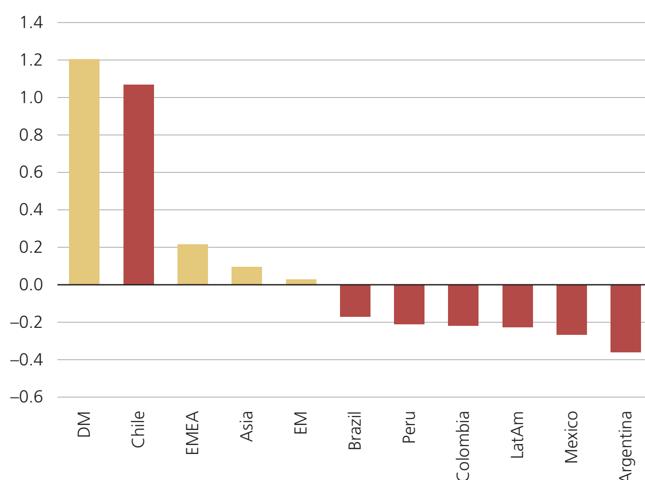
Fig. 2: It's not that easy to do business in Latin America

Economy rankings on ease of doing business (1 = Highest, 190 = Lowest)

Source: World Bank, UBS, as of March 2017

Fig. 3: Latin America lagging emerging market peers in governance standards

Average of Governance indicators in 2015 (2.5 = Highest, -2.5 = Lowest)



Source: World Bank, UBS, as of March 2017

Brazil: The case of the "super-efficient" reality-TV show host
A successful businessman known for being the host of a reality TV show, who had never before been involved in politics, wins an election bearing the flag of a traditional party, defying the odds placed by both opinion polls and political pundits. No, it's not who you think it is.

Latin America has suffered from an overall decline in the World Bank's Worldwide Governance Indicators in the last decade. We expect this trend to reverse.

The world is living in an age of rising anti-establishment sentiment, where electorates challenge the status quo and vote in unexpected ways. Brazil has proven no exception. Similar to the outcome of the last US presidential elections, the recent mayoral election in São Paulo, the largest city in South America, delivered a big upset when João Dória won the seat. Dória had never been in public office before, and was known mainly for being a successful businessman and TV host. Given his victory, one might conclude that the political environment in Brazil is now fertile ground for outsiders. The fact that Dória ran under a traditional party signals something important as well – that the traditional politicians know they need "new faces" to increase their chances in future elections. Although Dória achieved victory in a municipal election, the parallel with the US election is played up strongly in the country's media.

But Dória's triumph was not the only surprise. In his first three months in office, Dória has exceeded expectations about his capability, resulting in such high popularity ratings that he is now being considered to run for the presidency in 2018. A known "workaholic" and not held back by party ideology, Dória uses innovative ideas to address São Paulo's biggest issues, and has been able to solve problems where his predecessors had failed. As a result, his supporters have argued he is raising the bar for other politicians around the country.

Dória's rise must be closely monitored, since it is a success story that could repeat itself in upcoming elections in Latin America. We may be witnessing the beginning of a small revolution in the way people choose politicians, with the potential to strongly shape the region's political arena in the years ahead.

Mexico: Old threat gaining new impetus
In his third attempt to become president, former Mexico City Mayor Andrés Manuel López Obrador continues to present himself as the candidate against the privileged, the corrupt, and the political establishment. At the same time, the incumbent president, Enrique Peña Nieto, is suffering from the lowest approval ratings for the country's head of state in decades. The economic effects of his reforms have been less than anticipated, and people are disappointed with the levels of corruption and the lack of institutional strength in the country. Given the rise of protectionism and anti-immigration policies in the US, López Obrador also presents himself as the only leader who can seemingly stand up to Trump's policies. According to recent polls, López Obrador enjoys positive momentum into the 2018 presidential elections. Nonetheless, Margarita Zavala, the candidate for the center-right PAN, is also riding on similarly high levels of popularity.

López Obrador has expressed a strong disagreement with the Mexican status quo. His knife-edge loss in the 2006 presidential elections mobilized thousands of protesters to the streets complaining against the electoral process. While he may have to moderate his policy platform for him to become a more popular candidate, especially with the middle class and the private sector, his evident populist leanings are a threat to Mexico's hard-fought structural reforms, economic stability, and already weak institutional environment, in our view.

Sustainability: Significant progress, still room to improve

By Rina Kupferschmid-Rojas, Head Sustainable Investing, and Soledad Lopez, Analyst

Latin America has some of the most biodiverse nations in the world. Yet, this wealth of biodiversity is being threatened by a lack of protection for tropical forests, and extreme climate phenomena such as cyclones, flooding, and droughts that have rendered parts of the region vulnerable. In facing these challenges, the region has achieved significant progress in recent years, ranking better than emerging market peers on environmental health, though still lagging developed markets.

Table 1: Environmental, social, and governance indicators

	Environmental Performance Indicator (EPI) score	Climate and energy (from EPI score)	Global competitiveness rank	Human development rank	Control of corruption	Voice and accountability
	2016	2016	2016	2016	2015	2015
China	65.1	74.8	28.0	91.0	–0.3	–1.6
India	53.6	67.2	55.0	131.0	–0.4	0.4
Indonesia	65.9	81.6	37.0	113.0	–0.5	0.1
South Korea	70.6	62.4	26.0	18.0	0.5	0.7
Malaysia	74.2	59.0	18.0	59.0	0.3	–0.3
Philippines	73.7	81.0	47.0	114.0	–0.4	0.1
Thailand	69.5	55.9	32.0	88.0	–0.4	–0.9
Argentina	79.8	75.9	106.0	45.0	–0.6	0.3
Brazil	78.9	56.4	75.0	79.0	–0.4	0.4
Chile	77.7	40.3	35.0	38.0	1.3	1.0
Colombia	75.9	72.6	61.0	95.0	–0.3	–0.1
Mexico	73.6	54.9	57.0	77.0	–0.7	–0.1
Peru	73.0	33.9	69.0	89.0	–0.6	0.2
Venezuela	76.2	70.2	132.0	70.0	–1.3	–1.1
Latin America	**77.0**	**58.7**	**75.5**	**72.9**	**–0.5**	**0.1**
Emerging markets	**68.6**	**70.9**	**41.8**	**82.9**	**–0.3**	**–0.7**
Developed markets	**84.5**	**77.7**	**7.7**	**13.2**	**1.4**	**1.1**
United States	84.7	80.9	3.0	11.0	1.4	1.1
United Kingdom	87.4	84.5	10.0	16.0	1.9	1.3
Japan	80.6	59.2	6.0	17.0	1.6	1.0
France	88.2	80.1	22.0	22.0	1.3	1.2
Germany	84.3	78.2	4.0	4.0	1.8	1.4
Italy	84.5	79.4	43.0	27.0	0.0	1.0

2016 EPI score: Max = 100; Global competitiveness and human development rankings: Lowest = best; Control of corruption and voice of accountability: –2.5 (weak) to 2.5 (strong)
Source: WEF Global Competitiveness report, United Nations, World Bank, IMF, UBS, as of April 2017

Growing urbanization and higher income levels add pressure on resources like water, food, and energy. This increases environmental and social risks. To promote sustainable growth, countries in Latin America are increasingly focusing on improving the quality of government services, greater respect for human rights, greater provision of clean water and good sanitation, and measures to arrest climate change.

In Fig. 1, we look at different metrics as a proxy for the environmental, social, and governance (ESG) indicators in Latin America. The region is doing well in human development and environmental indicators, but could still improve in areas such as corruption and global competitiveness. Chile is leading in terms of control of corruption, while Brazil, Argentina, and Mexico are below the emerging market average in that regard. On indicators such as freedom of expression and free media, the region ranks above other developing countries. Finally, there is large dispersion on the human development indicator, where countries like Chile and Argentina rank near Poland and Portugal, while Brazil, Venezuela, Peru, and Mexico have lower rankings similar to Armenia, Ukraine, and Thailand.

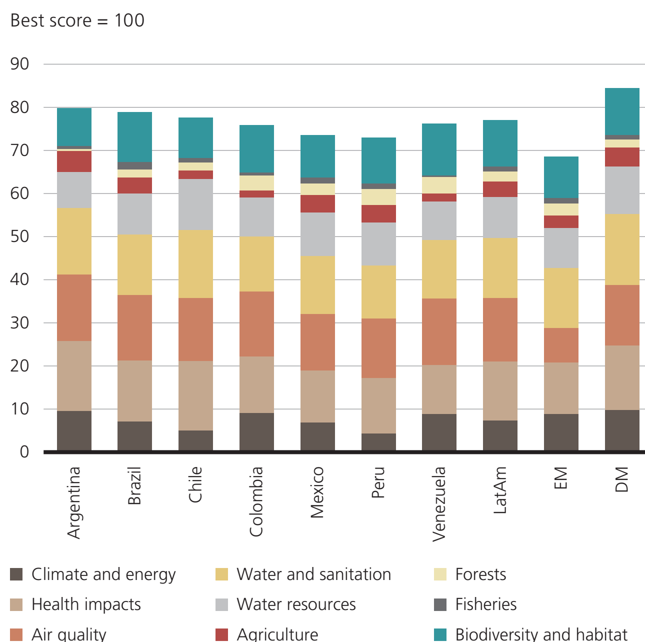
Overall, Latin America has made significant improvements in areas such as corruption and the environment, but there is still a gap relative to developed markets.

Improving quality of life and preserving biodiversity

According to the United Nations Development Program, to achieve the UN Sustainable Development Goals by 2030, Latin America not only has to improve the quality of life, but also preserve and restore biodiversity and ecosystems.

The region ranks better than the average emerging market in the Environmental Performance Index (EPI) but still trails developed countries. The index measures environmental health and the ecosystem, taking into consideration metrics such as risk of water and air pollution, air quality, water and sanitation, forests, agriculture, biodiversity, water resources, and climate change. In Fig. 2, we show how each metric impacts the overall rating. In climate and energy, Latin America ranks below the emerging market average as Brazil, Mexico, Chile, and Peru are lagging. By contrast, in metrics like air quality and fisheries, the region ranks above the average not only for emerging markets, but developed markets as well. Overall, Latin American countries are among the top one-third of the 180 countries in this ranking.

Fig. 2: Latin America ranks above emerging markets in Environmental Performance Index



Source: Environmental Performance Index 2016, UBS

Based on EPI rankings, the region falls between developed and other emerging markets. To enhance its environmental efforts, Latin America has put together a wide range of actions, ranging from the promotion of reforestation to the increased use of renewable energy. Countries like Brazil, Colombia, and Peru have among the lowest emissions in the region. In the last five years, Brazil, Mexico, and Colombia have committed to reducing greenhouse gas emissions and achieve zero deforestation, while Chile and Uruguay have focused on renewable energy. In fact, between 2006 and 2013, total renewable energy capacity in the region increased more than 270%.

Sustainability in financial markets: Brazil leading the way

Brazil has made several improvements through the launch of two local sustainability-related indices: the BM&F Bovespa Corporate Sustainability Index in 2005 and the Brazil Carbon Efficient Index in 2010. The first serves as a tool for a comparative analysis of the performance of companies listed in the BM&F Bovespa from a corporate sustainability perspective. The second supports the country's adherence to international initiatives related to carbon disclosures. In addition, close to 60% of companies in the Bovespa already publish sustainability reports. Elsewhere in the region, Mexico introduced in 2010 the IPC Sustainable Index, which requires companies to comply with ESG standards.

MSCI Latin America: How sustainable is the index?

To understand the sustainable investment profile of the equity market in Latin America, we analyzed the ESG ratings of the constituents of the MSCI Latin America index. We used the MSCI ESG Research ratings, which rank companies between AAA (best) and CCC (worst) and encompass the three ESG pillars and their sub-categories. Environment includes climate change, natural resources, pollution, and waste; the social sphere comprises human capital, product liability, stakeholder opposition, and social opportunities; and governance reflects corporate governance.

One-third of the companies in MSCI Latin America have above-average ESG ratings (A, AA, or AAA) compared with 21% for MSCI Emerging Markets (see Figs. 3 and 4). Banks and beverage companies in Brazil and Mexico have the highest ratings, while con-

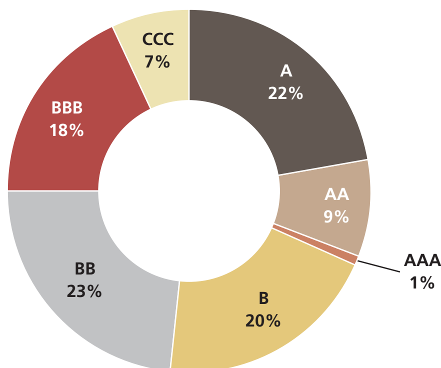
To enhance its environmental efforts, Latin America has put together a wide range of actions, ranging from the promotion of reforestation to the increased use of renewable energy.

glomerates and metals and mining firms in Mexico and steel companies in Brazil have the worst ratings (CCC). Usually, mining and steel companies tend to have issues around toxic spills, emissions, and hazardous waste. These can cause pollution of water and land and have negative effects on biodiversity and health. Another issue prevalent in the region is corruption as exemplified by the Lava Jato scandal in Brazil, leading to a low score on the ratings. Finally, in the retail and food industry, some companies are lagging in the areas of waste management and product safety.

Nevertheless, we believe the region will continue to improve in these areas, providing opportunities for investors seeking to integrate ESG considerations into their portfolio. In fact, the MSCI EM Latin America ESG Index has outperformed MSCI Latin America since September 2007. In the longer term, higher-rated ESG companies should provide lower exposure to tail-risk events due to a lower level of stock-specific risk.

Now we take a look at a few ongoing trends which are expected to have opposing effects on the region's productivity (see next two pages). On the one hand, we focus on the growing Latin American start-up ecosystem, which is promoting the modernization and diversification of economies in the region. On the other hand, we analyze some endemic issues holding progress in Latin America back, including a large informal economy and low levels of public safety.

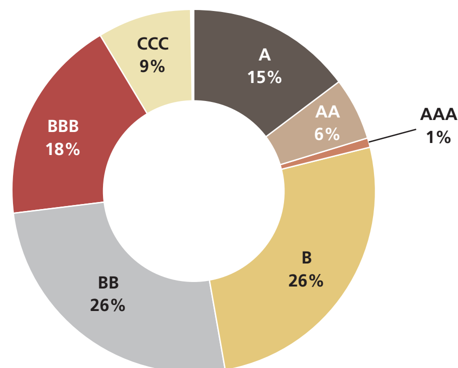
Fig. 3: Rating distribution of Latin American companies on ESG criteria



Note: ESG = Environmental, social, and governance; AAA = best, CCC = worst
Source: MSCI ESG Research, UBS, as of March 2017

Fig. 4: Rating distribution of emerging market companies on ESG criteria

In percentage of 815 companies from MSCI Emerging Markets index



Note: ESG = Environmental, social, and governance; AAA = best, CCC = worst
Source: MSCI ESG Research, UBS, as of March 2017

Enhancing trends

Pockets of innovation: From 'Chilecon' to 'Palermo' valleys

By Alejo Czerwonko, Ph.D., Strategist

In the past five years, the Latin American start-up ecosystem has grown considerably in size. This has been due, at least in part, to the implementation of programs aimed at supporting entrepreneurship in a number of countries. These developments are helping promote the modernization and diversification of economies in the region.

The Latin American start-up ecosystem has grown considerably in size, which is helping promote the modernization and diversification of economies in the region.

Chile is often considered a first mover in this space, as it launched the official Start-Up Chile program in 2010, which has since led to the creation of over 1,300 startups, reaching reported valuations of USD 1.4bn. More broadly, coordinated public and private efforts in the country have earned it the "Chilecon Valley" moniker, drawing comparisons to the famous Californian innovation hub. Mexico has also made good progress in promoting start-ups through the creation of the National Institute of Entrepreneurship (INADEM) in 2013, resulting in an improved institutional framework for this type of firms. Programs of a similar nature have been running in Colombia and Peru as well, triggering rapid growth in start-up numbers in cities like Bogotá, Medellín and Lima.

During the 2000s, Argentina became a global IT development hub despite limited governmental help. And earlier this year, the country approved the Entrepreneurship Law, which hopes to create new businesses in a day, grant tax benefits to investors, incentivize accelerators, and introduce financing options for those seeking to enter the business world. Also this year, the city of Buenos Aires ran an advertising campaign with the moto "Dare to become entrepreneurial" in order to encourage people to launch new projects and to spread the word about new governmental programs to support early-stage companies. The borough of Palermo in Buenos Aires is expanding its start-up base rapidly.

Brazil is another interesting case in the region. Despite little government support (a startup government program designed to emulate the one in Chile was discontinued in 2014) and considerable difficulties in starting a business (Brazil ranks among the countries with the largest barriers to entrepreneurship in the world, according to the Organisation for Economic Cooperation and Development), the country is managing to thrive in the area.

Although data is scarce, several media reports say the number of Latin American start-ups since 2010 has grown steadily, with several thousand currently being listed in websites such as AngelList and StartupRanking.

Money starting to flow into Latin American start-ups

Latin America has been attracting growing interest from venture capital investors on the back of the developments described above. The Latin American Private Equity and Venture Capital Association, for instance, reports that venture capital investments in the region have been steadily climbing over the past five years, with activity picking up speed since 2015. Renowned Silicon Valley investors, including Andreessen Horowitz and Sequoia Capital, have increased their exposure to the region through a number of high profile acquisitions.

Dampening trends

Endemic issues: The informal economy and public safety

By Alejo Czerwonko, Ph.D., Strategist and Esteban Polidura, Chief Investment Officer Mexico

The informal economy consists of activities taking place outside the legal and regulatory frameworks. Although firms and workers operating in this manner escape taxation, they also fail to enjoy the protection and services that the state can provide. A large informal economy makes use of public goods without paying taxes to support them, and this weighs on a country's growth.

The International Labour Organization estimates 46.7% of the workforce operates under informal conditions in the region.

The informal economy is widespread in Latin America. Focusing on employment indicators, for instance, the International Labour Organization estimates 46.7% of the workforce operates under informal conditions in the region. The proportion of formal employment increased in the region during 2009-2014, but hit a wall in 2015 and the trend has been reversing since. Mexico, Colombia and Peru stand out as the countries with shares of informal employment above 55%. The corresponding numbers for Brazil and Chile are more favorable (below 40%), and Argentina and Venezuela stand somewhere in between these two groups. Although countries are making efforts to bring firms and workers to the light (see the example below), the region faces huge challenges.

Mexico making progress from a very low base

According to the country's National Statistics Institute, 57% of the Mexican population was employed in the informal sector in 2016, accounting for less than 25% of the gross domestic product. Several programs have been launched to foster the informal sector's formalization in recent years. These include a new fiscal incorporation regime that allows small and medium enterprises to gradually transition into formality within 10 years. In addition, all acquisitions at the federal and state levels now demand that suppliers are fully formalized. Financing has also been used to promote formalization; Infonavit and Infonacot (mortgages and consumer credit) are now readily available for those who register with the social security entities and pay taxes.

Public safety: Growing pains, little response

Homicide rates in Latin America are among the highest in the word, second only to those in African countries, according to the European Institute for Crime Prevention and Control. Also, while average international homicide rates remained constant throughout the 2000s globally, Central America and the Caribbean showed increases. Within the countries under our coverage, Venezuela has shown a sizable worsening in the security situation in recent years.

In this context, public safety remains a top concern among Latin American residents. Roughly one in three adults in the region reported low levels of public safety as the number one problem affecting their country, according to the 2014 edition of the Latin American barometer published by Vanderbilt University. Interestingly, despite economic progress in the region for most of this century, citizens are more worried about crime and violence now than they were a decade ago.

Given what the data is showing and how relevant the issue is to the electorate, it is surprising that policy makers are not making public safety a key priority.

Physical capital

Focus on the region's stock of capital, investment activity, and infrastructure

Capital opportunities in Latin America

By Renato Grandmont,
Chief Investment Officer Latin America

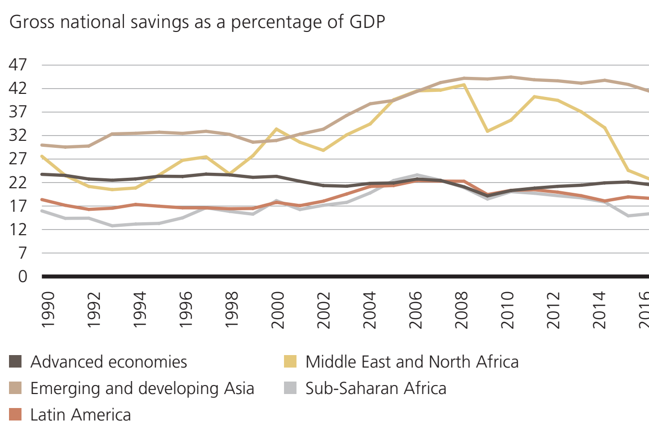
High savings rates and deep domestic capital markets are key ingredients for sustainable GDP growth. In this analysis, we look at the structure of the region's access to domestic sources of private sector capital and highlight some differences. Overall, gross domestic savings as a percentage of GDP have barely improved in the last 20 years. Domestic capital markets – such as banking, lending, and equity capital markets – remain shallow. Chile stands out in terms of the availability of domestic capital. We see clear opportunities for the private sector to participate in areas such as banking and the provision of capital to entrepreneurs.

Domestic sources of capital

The availability of capital depends on a country's domestic savings rates and attractiveness and openness to foreign investors. In Latin America, domestic savings as a percentage of GDP have barely improved in the last 20 years, at 18.6% as of 2016 – comparable to Sub-Saharan Africa which is also below 20%, according to IMF data. By contrast, emerging Asia has the highest savings rate, at 41%. Within Latin America, Chile, Mexico, Peru, and Venezuela have ratios above 20%. Peru stands out for having increased its ratio by over five percentage points since 1990 to 20.9%. It is joined by Mexico and Colombia as the only countries to have increased their ratio to levels above the past 25-year average. Argentina saw the worst decline, while Brazil's saving rate remained stable.

Fig. 1: Historical gross national savings by region

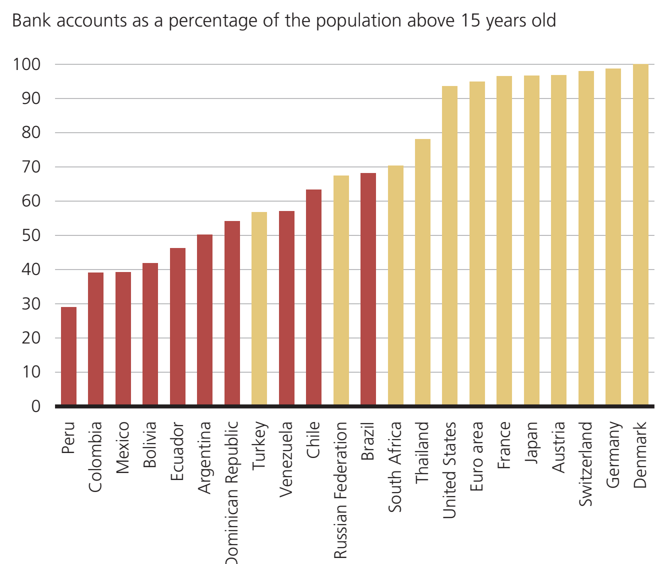
Gross national savings as a percentage of GDP



Source: IMF World Economic Outlook database, UBS, as of October 2016

Fig. 2: Banking penetration rates across countries

Bank accounts as a percentage of the population above 15 years old



Source: World Bank Global Financial Inclusion Database, UBS, as of 2015

Another important source of domestic capital is the pension system. In 1980, Chile privatized its own, creating a system that became a model for many countries. It moved to a mandatory capital funded system run by investment funds. The system's annual contributions represent around 3.5% of GDP. Today, Chile has the region's largest pension fund assets at 69% of GDP, while its neighbors are at the 20% level, and well below the 79% in the US.

A developed pension system helps improve domestic financial markets as fund managers look for short-term and especially long-term opportunities to invest by allocating capital to productive projects (to the extent that regulations ensure that a portion of the funds stays in the country).

Domestic financial markets

A well-functioning financial market improves the allocation of resources, which in turn strengthens growth and wealth creation. In this context, we look at three aspects of the private financial market: Banking, lending, and equity capital markets. We found that all areas present opportunities for improvement.

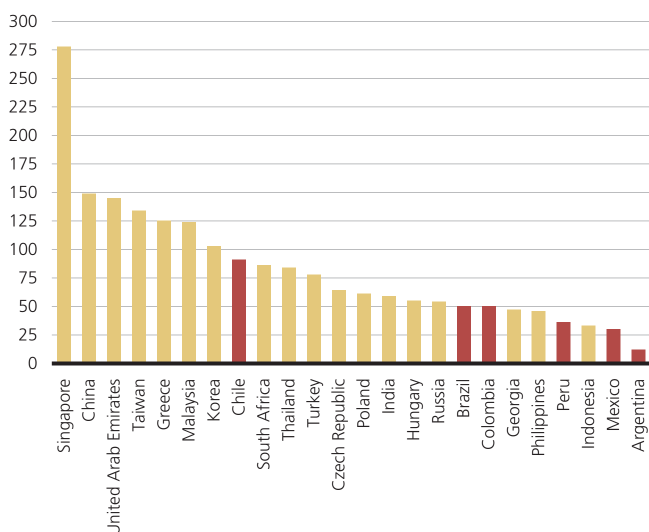
Banking penetration – Banking penetration reflects several economic indicators such as income levels and distribution (poor income distributions normally lead to lower banking penetration). Crucially, it also influences credit availability (though credit cards, mortgages, and car and consumer financing) as well as investment accounts. According to the Global Financial Inclusion Database of 2014, 62% of adults worldwide have an account with a bank, financial institution, or mobile money transfer provider. For Latin America, that number stood at 51%, at par with Europe and Central Asia (51%), higher than South Asia (46%), the Middle East (14%), and Sub-Saharan Africa (34%), but lower than Asia Pacific (60%) and high-income OECD (94%).

One way banks offer credit is through credit cards. In high-income OECD countries, 53% of adults own a credit card, according to the 2014 database. This number drops to 10% in developing economies. Latin America stands out for having the highest ownership of credit cards among developing economies, but even that is only 20%.

Loan market – Looking at loan-to-GDP ratios, Chile stands out for having the highest ratio in the region, at 91%, while its neighbors are at levels of 50% and below, with Argentina a paltry 12%. By comparison, the ratios in some key Asian countries (South Korea, China, Singapore) are above 100%. Breaking down the loan data into corporate and personal segments,

Fig. 3: Size of loan market by country

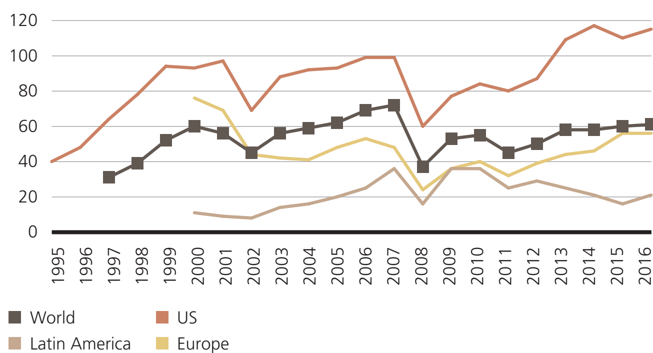
Loans as a percentage of GDP



Source: Central banks and UBS estimates, as of 2016

Fig. 4: Equity market capitalization by region

MSCI index market capitalization as a percentage of GDP, in %



Source: Bloomberg, IMF, UBS, as of March 2017

we see that Peru has more corporate loans than Mexico (23% vs. 19% of total loans), while Colombia has more personal loans than Mexico (20% vs. 11%). Clearly, there is an opportunity to increase the loan market in most countries in the region.

The overall availability of credit in the economy is key for entrepreneurs to be successful as they need capital to grow their businesses. This capital need normally moves in phases – from bank loans to debt and equity capital market access. In Latin America, the World Economic Forum survey on competitiveness found that entrepreneurs in Chile have the easiest access to venture capital funds – scoring even better than high-income OECD countries – while Argentina ranks last.

Equity markets – Latin America's equity market capitalization as a percentage of GDP has been relatively stable for the past ten years, at around 20%. Over the same period, the US ratio has increased from 100% to 120%, while Europe's has remained stable at around 50%. For 2016 Chile has the highest market capitalization level within the region, at around 50% of GDP, clearly supported by its developed pension fund system, while Argentina lags at 5%. Chile also has the second highest number of listed companies at 223, behind Brazil with 345 but ahead of Mexico's 136. Unfortunately, over the past ten years, most countries have seen a decline in the number of listed companies, and Chile was no exception. However, this decline has been less severe compared to developed countries. Asia, on the other hand, saw an increase in the number of listed companies, with China and Turkey recording the highest number of new listings. In Latin America, only Peru and Brazil saw increases in the past decade – by a barely noticeable 0.9% and 0.1%, respectively.

Combining these results, we see how countries with more developed domestic savings structures are able to better finance internal growth and attract foreign direct investments (FDI). Not surprisingly, Chile received the largest average amount of FDI as a percentage of GDP, at 8.8% between 2011 and 2015, compared to Brazil's 3.7% and Mexico's 2.5%, according to the World Bank.

Table 5: Listed domestic companies by country

Country	Number of listed domestic companies in 2015	Change from 2005–2015	2005–2015 change in % per annum
China	2827	1450	7.5%
Indonesia	521	185	4.5%
Turkey	392	135	4.3%
Thailand	639	135	2.4%
India	5835	1072	2.1%
Peru	212	19	0.9%
Hungary	45	1	0.2%
Brazil	345	3	0.1%
Argentina	93	–7	–0.7%
Chile	223	–22	–0.9%
Mexico	136	–14	–1.0%
Germany	555	–93	–1.5%
United States	4381	–764	–1.6%
Switzerland	234	–50	–1.9%
Colombia	69	–29	–3.4%
France	490	–259	–4.2%

Source: World Bank, World Federation of Exchanges, UBS, as of 23 March 2017

Table 6: Pension fund assets by country

Pension fund assets as a percentage of GDP, 2015

Country	% of GDP
United States	79.4
Chile	**69.6**
Bolivia (2010)	**27.3**
Colombia	**20.4**
Peru	**20.3**
Mexico	**15.6**
Brazil	**11.6**
Norway	9.6
Spain	9.6
Argentina (2007)	**8.9**
Czech Republic	8.3
Poland	8
Italy	6.9
Germany	6.6
Russia	6
Belgium	5.8
China	1.4
France	0.6

Source: OECD, UBS, as of 5 April 2017

Infrastructure opportunities in Latin America

By Renato Grandmont, Chief Investment Officer
Latin America

Latin America is spending roughly half of the 6% of GDP that it has been prescribed to invest in infrastructure each year. As a result, infrastructure systems in the region are generally insufficient, inefficient, and of poor quality. This makes Latin American infrastructure an attractive investment opportunity, in our view. An obvious area of focus is transportation given the deficiencies in inter-regional and intra-regional linkages. In sectors such as electricity and telecom, private sector participation is increasing, yet much remains to be done. Chile stands out for having above-average infrastructure metrics in the region.

Infrastructure is part of the physical capital structure of a country and is a factor of production that can facilitate economic activity by enhancing productivity, competitiveness, and trade in goods and services.

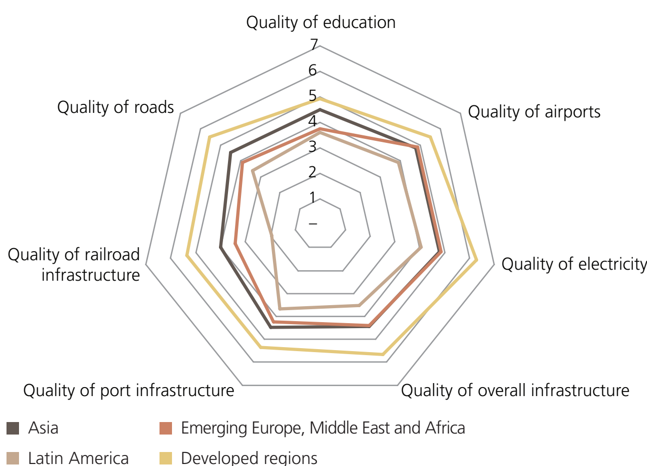
The World Bank estimates that the required infrastructure investment in the developing world to satisfy new demand while maintaining service for existing infrastructure amounts to 6% of GDP each year[1]. Between 2009 and 2013, total annual infrastructure investment averaged only 3.1% of GDP for the six largest Latin American countries, according to the InfraLatAm report published by a group of multilateral organizations[2]. Of this rate, public outlay accounted for 1.9% and private investment 1.2%. Over the same period, Peru spent the most as a percentage of GDP, at 5.1%, followed by Chile at 3.3%, Brazil at 3.1%, Colombia 3%, Argentina 2%, and Mexico 1.8%. For most of these countries, the average public spending on infrastructure was larger than private investment; the exception is Brazil, where private-sector participation in energy and telecommunications is significant.

In addition to underinvestment, Latin America ranks poorly in terms of quality of infrastructure compared to both advanced and other developing nations, according to the World Economic Forum's 2014 Global Competitiveness Index. Within the region, Chile ranks highest in infrastructure quality, followed by Mexico, Colombia, Peru, Brazil, Argentina, and Venezuela.

In our view, the large infrastructure deficit in the region is a government policy opportunity to gen-

Fig. 1: General quality of infrastructure by region

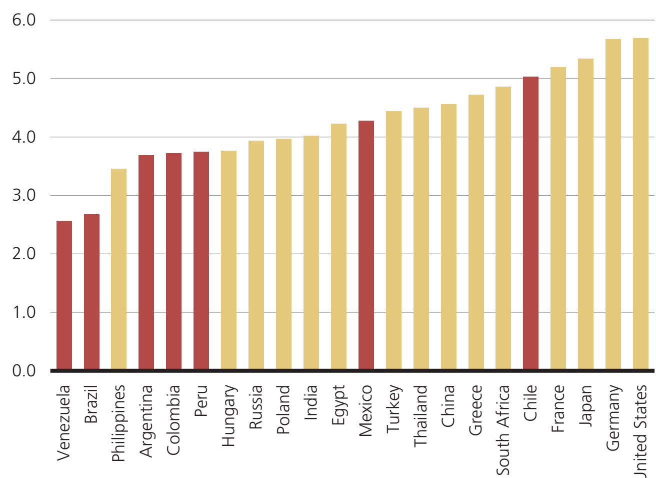
General quality of infrastructure (7 is best), 2014–2015



Range: 1 = Lowest, 7 = Highest
Source: World Economic Forum, Global Competitiveness Index 2014–2015, UBS

Fig. 2: Quality of port infrastructure across countries

Quality of port infrastructure (7 is best), 2014–2015



Source: World Economic Forum, Global Competitiveness Index 2014–2015, UBS

erate faster growth and increase competitiveness, as well as an investment opportunity for the private sector to tap. Increasingly, governments are looking into public-private partnerships to develop infrastructure without burdening fiscal accounts.

Transportation

Transportation is essential for the internal development of a country and the competitiveness of exports of goods and services, including tourism. It can be divided into the following subcomponents.

Ports – Latin America moves the least amount of containers than any other region, accounting for only 7% of global container port traffic, according to 2014 World Bank data. The quality of the region's port systems also ranks poorest among the three larger emerging market regions, according to the 2014 Global Competitiveness Index. Within the region, Chile and Mexico are considered to have above-average port facilities, while Brazil and Venezuela have the poorest.

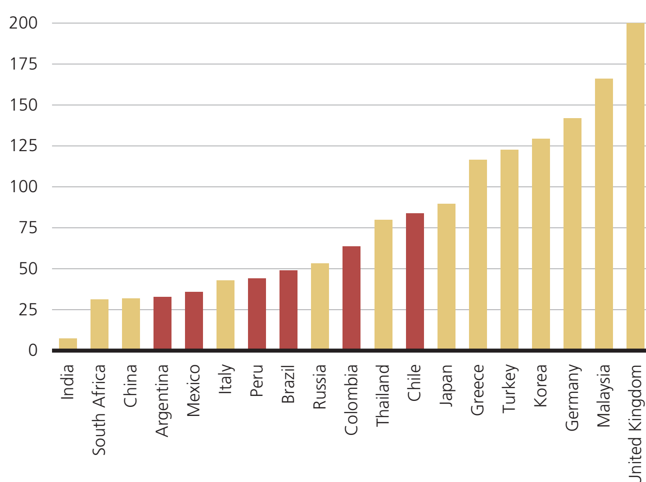
Airports – Latin America has the most airport facilities as a percentage of total land area among emerging markets, at 0.06% or double the average for developing nations as a whole, according to World Bank–CIA data for 2013. In terms of number of passengers carried relative to the total population, the region clocks in with 45%, more than Asia (25%) but less than Europe, the Middle East and Africa (56%), and significantly less than developed countries (174%). Within the region, Chile (84%), Colombia (64%), and Brazil (50%) carry the most, followed by Peru (45%), Mexico (36%), Argentina (33%), and Venezuela (21%). Yet, by the first metric – airports as a percentage of total land area – Mexico leads at 0.09%, followed by Colombia (0.08%), Chile (0.06%), and Brazil (0.05%). By comparison, the US is at 0.15% while the average for developing regions is 0.11%.

The data highlights some deficiencies. For example, why isn't Mexico utilizing its airports more, or why isn't Brazil developing its airport infrastructure? To the experienced traveler, the scarcity of internal flights and the concentration of international flights through one main city present a problem. To the investor, they present an opportunity, in our view.

Railroads – With only 0.5% of the territory covered by rail lines, Latin America ranks as the lowest among the three larger emerging market regions. By comparison, Asia has 1% and EMEA 0.8%, while developed markets have 3.1%. Within the region, Mexico (1.4%), Argentina (0.9%), and Chile (0.7%) rank highest, while Brazil lags at 0.4%, Colombia at 0.15%, and Venezuela at 0.04%. A good railroad system

Fig. 3: Airport traffic by country

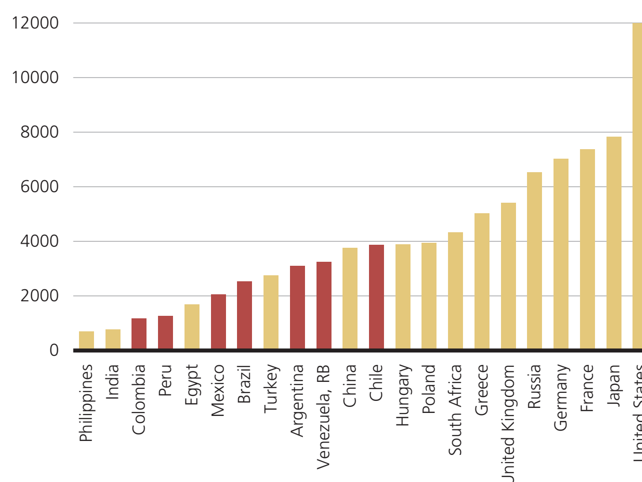
Airline passengers carried as a percentage of total population, 2015



Source: World Bank, World Development Indicators 2015, UBS

Fig. 4: Electricity consumption by country

Electric power consumption in kWh per capita, 2015



Source: World Bank, World Development Indicators 2015, UBS

Santos Dumont Airport is the second major airport serving Rio de Janeiro, Brazil.

would significantly improve the efficiency of exports for countries like Brazil, which still moves large quantities of cargo by truck on roads of poor quality. The Global Competitiveness Index ranks roads as the weakest part of Latin American infrastructure.

Telecommunications

While mobile penetration tends to be high across the region – above 90% for most countries as of 2014 – broadband internet penetration leaves much to be desired, at around 10% of the population compared to above 25% for some developed markets. Latin America also lags in TV broadcast stations as a percentage of the territory, at 0.007% compared to the average of 0.028% for all emerging markets, according to World Bank–CIA data for 2013–2014.

Electricity

Although over 90% of the population in major Latin American countries has access to electricity, consumption rates are very low. The region's 4,248 per capita kilowatt consumption in 2013 is 53% that of developed markets and the lowest among all emerging economies. On a per-capita basis, Chile uses 30% of what is consumed in the US and 103% of the consumption in China, while Mexico consumes only 16% and 55% and Brazil 19% and 67%, respectively. The consumption of electricity, one of the main inputs of production, reflects economic activity. Underinvestment in the sector can therefore result in electricity crises with damaging economic and political consequences.

Investment implications and policy recommendations

Jorge Mariscal, Chief Investment Officer Emerging Markets; Michael Bolliger, Head EM Asset Allocation; and Alejo Czerwonko, Ph.D., Strategist

In terms of performance, Latin American assets have done considerably better than those in other countries in the last 20 years. The end of hyperinflation and the shifts in monetary policy and exchange rate regimes to inflation targeting and floating exchange rate regimes, respectively, have helped bring down inflation rates, foster growth and reduce vulnerabilities to global and local shocks in most Latin American countries. We believe that for most countries, the focus on low inflation and fiscal prudence will continue in years to come.

Blessing and curse

Moreover, the surge in commodity prices has boosted asset prices of commodity exporting countries. This provided tremendous support to Latin America markets from the beginning of the 21st century to the global financial crisis. While this was supportive for most countries in the region, it also buttressed populist measures, such as indiscriminate subsidies, and discouraged the implementation of structural reforms. With the slump in commodity prices in early 2014, the pressure on commodity exporters increased substantially. Although this has been a painful experience for local and international investors alike, the sizable adjustment of exchange rates in Latin America has revived competitiveness and triggered a new round of market-friendly reforms that should boost competitiveness over the medium to longer term.

How big are the markets for Latin American assets?

Latin American financial assets today account for less than 5% of a globally diversified portfolio. Relative to other emerging markets, fixed-income is the most important asset class in the region. Within a diversified basket of emerging market sovereign or corporate bonds, Latin America typically accounts for 30-40% of the exposure. Several of the most liquid sovereign bond markets are found in Latin America, with Mexico, Brazil, Argentina, Colombia, and Peru typically accounting for a large part of emerging market credit allocations. Also, in the local fixed-income space – i.e., sovereign bonds denominated in local currencies – Latin America is typically the single-most important region in terms of its weight in a diversified benchmark.

On the equity side, Latin America accounts for 13% of the MSCI Emerging Market (EM) benchmark. Brazil is the single-most important market in Latin America, with a weight of around 7% in the MSCI EM benchmark, followed by Mexico's 4% weight. But relative to the large markets in Asia – China alone accounts for roughly one-quarter of the MSCI EM index – Latin America is less important.

We expect the weight of Latin American assets in global indices to increase in the years ahead, in line with the benign longer-term growth outlook and the further development of the region's financial sector. In 2016, the region's ratio of market capitalization to GDP stood at 21%, vs. 84% for developed markets. The development of Latin America's financial industry should result in greater opportunities to diversify and obtain attractive returns in the medium and long term.

The relevance of currencies

A view on exchange rates should form an integral part of any investment decision in Latin America, and any foreign market for that matter. In recent years, exchange rate fluctuations were linked to 30-50% of the region's stock market volatility in USD terms.

The good news is that currencies have adjusted meaningfully over recent years and still look fair-to-attractive from a valuation perspective. In terms of their real effective exchange rates, a trade-weighted

basket of exchange rates that also accounts for inflation differentials indicates that currencies in Latin America trade in line or below their 10-year average. From a fundamental support perspective, current account balances have shown signs of improvement lately, a reflection of more competitive exchange rate valuations. Therefore, we believe that in the next 6-12 months, large exchange rate adjustments are unlikely to offset the investment returns made in local markets. Moreover, the average yield of 8.25% that investors can earn in local foreign exchange or fixed income markets is a multiple of the average yield earned in the developed world, both in nominal and real terms. Such a pick-up in interest rate carry can make a meaningful contribution to the total return of an investment over a multi-year horizon.

Policy recommendations

As we prepared this paper, it became increasingly clear that Latin America has ample potential to generate sustainable domestic-led growth, but much work needs to be done and success is far from guaranteed. We have listed policy recommendations that we believe countries in the region are well advised to follow:

Nurture domestic sources of growth. The export-led growth model is a risky one in a world of global rebalancing and more protectionist developed economies. It also remains unclear to us whether the trade relations between China and the region can fill the void.

Human capital and demographics: Latin America's "demographic bonus" can only be growth-supportive if it is accompanied by proper education and healthcare investment.

- In healthcare, the region needs to either increase public spending or lower out-of-pocket expenses. Alternative funding mechanisms that promote healthy lifestyles and encourage disease prevention can lower healthcare costs on non-communicable diseases down the road. Universal healthcare coverage, which is already on the rise in Latin America according to the World Bank, can also address the inequality issue.
- Quantity does not always equal quality in education. Successful reform cases can teach lessons for other countries. Chile adopted national teacher standards ("Marco para la Buena Enseñanza") in 2003 and established a teacher evaluation system to ensure high teacher standards. The private sector should also play a role in education. It tends to be more effective at scaling up access at a reasonable cost as we have seen in Brazil. In Colombia, the private sector works with the government to ensure programs are relevant to the needs of employers.

Productivity: Increased institutional strength and ease of doing business are indispensable for economic and social progress in the region.

- Countries need to pursue an undeterred fight against corruption. Although the far-reaching "Lava Jato" corruption investigations and the impeachment of former President Dilma Rousseff are partly to blame for the depth of Brazil's recession in 2015–16, the country's strong push against corruption thanks to an independent judiciary leaves it in a better position for the years ahead.
- Given the heavy electoral calendar of the next 18 months, countries need to fend off the threat of populism. Argentina, Brazil and Peru have all transitioned from populist governments and provide good examples of what constructive policy agendas look like. In this changing global political environment, different leadership styles are emerging. João Dória's rise in Brazil must be closely monitored, since it is a success story that could repeat itself in upcoming elections across Latin America.
- Countries need to strive to modernize and diversify their economies. The "Chilecon Valley," for example, exemplifies coordinated public and private efforts to boost productivity.
- A large informal sector cripples overall economic activity. Mexico has launched several programs to foster formalization in recent years. These included a new fiscal incorporation regime that uses financing to promote formalization.
- Higher growth loses appeal unless it is sustainable. To achieve the UN Sustainable Development Goals by 2030, Latin America has to improve the quality of life and also must preserve and restore biodiver-

sity and ecosystems. Blueprints for the latter include Brazil, Mexico, and Colombia's commitment to reduce greenhouse gas emissions and achieve zero deforestation, as well as Chile's and Uruguay's focus on renewable energy.

Physical capital: Latin America lags in the accumulation of this key production factor.

- Low savings constrain investment rates. Domestic savings as a percentage of GDP have barely improved in the last 20 years in Latin America. Peru should be taken as a role model, as it has managed to increase its domestic savings ratio by over five percentage points since 1990.
- Countries need to deepen their domestic financial markets. Chile remains the poster child in this regard, with the highest equity market capitalization level at around 50% of GDP, which is clearly supported by its more developed pension fund system.
- The region needs to re-focus on infrastructure and look into public-private partnerships to develop infrastructure without burdening fiscal accounts. Peru has managed to increase infrastructure spending the most – to 5.1% of GDP – in recent years thanks to a number of initiatives.

Latin America's seven largest economies at a glance

Strengths	Weaknesses
Argentina: High levels of human development indicators and good reform momentum. **Brazil**: Large domestic market and powerful and diverse industrial base. **Chile**: High quality of institutions, relatively low corruption, and best infrastructure base in the region. **Colombia**: Relatively strong institutions and solid track record in economic policy management. **Mexico**: Shares 2,000-mile border with the largest economy in the world. Most promising demographic dynamics in the region. **Peru**: Posting highest growth rate among large regional economies, favorable demographics. **Venezuela**: Resource endowment, strategic geographical location.	**Argentina**: Poor quality of institutions and high levels of corruption. Unsustainable pension obligations. **Brazil**: Dire state of fiscal accounts with highest debt-to-GDP ratio in the region. **Chile**: Commodity dependence, pension system to face challenges as population ages. **Colombia**: Narrow manufacturing base, low healthcare indicators. **Mexico**: Poor quality of institutions and rule of law, high levels of crime, very large informal economy. **Peru**: Resource-dependent economy, low educatoin and healthcare rankings. **Venezuela**: Unsustainably weak institutions and economic policy path.
Opportunities	**Threats**
Argentina: Leverage large human capital base and resource endowment to return to high growth rates. **Brazil**: Support reform momentum under Michel Temer's administration to address the country's key strucural constraints. **Chile**: Consolidate leadership position in the region and diversify economy through thriving start-up ecosystem. **Colombia**: Leverage the peace dividend to foster investment and growth. **Mexico**: Follow Brazil's lead in its quest to tackle corruption. **Peru**: Consolidate market-friendly economic policy path under new administration. **Venezuela**: Implement radical shift in the direction of economic policy that unlocks growth potential.	**Argentina**: Latent powerful populist forces. **Brazil**: Volatile political environment, corruption still pervasive despite recent progress. **Chile**: Shift to bigger government economic model with populistic leanings in upcoming election. **Colombia**: A return to violence. Extended period of low energy prices. **Mexico**: Increased protectionism from the US and high levels of popularity of populist candidate López Obrador ahead of the 2018 elections. **Peru**: Highly unequal income distribution, large informal economy. **Venezuela**: Acute social instability resulting from continued economic hardship. *Source: UBS, April 2017*

Publication details

Latin America beyond peak trade
Chief Investment Office
Wealth Management Research white paper
Publication date
26 April 2017

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Special thanks to Alfredo Martinez for his help in the preparation of this report.

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Images
Getty, iStock

Languages
English, Spanish and Portuguese

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Endnotes

Reassessing trade and investment partnerships

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Infrastructure opportunities in Latin America

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