

LatAm Equity Strategy

Sustainable agendas moving forward - LatAm ESG Primer 4th edition

Investment Strategy

Sustainable agendas moving forward

2023 was a year of significant progress in LatAm ESG agendas. We saw new taxonomies, adoption of disclosure standards, regulations for carbon credit markets, more capex into energy transition and governments pushing sustainable agendas. For an overview of the main ESG initiatives across industries, please refer to the last section of this report.

Brazil new ESG regulations: ISSB, carbon credits & more

Brazil stood out in 2023 with a wave of new ESG regulations. The country is starting to adopt ISSB (International Sustainability Standards Board) financial sustainability standards. Brazil's govt is working on its carbon credit market framework, which establishes a "cap-and-trade" system, which regulates industry emissions. Guides for labeling ESG investments and a proposal for its first taxonomy were launched.

Taxonomies in LatAm are popping up

Brazil and Chile are working on their own taxonomies based on EU Green taxonomies, and are expected to lead the creation of ones that are specific to extractive industries. Peru is also preparing a taxonomy, while Mexico and Colombia already have their own.

Energy transition accelerates

In 2023, Brazil launched Brazil's Ecological Transition Plan, which should benefit sustainable projects. Meanwhile, LatAm oil & gas giants are increasingly focusing on energy transition programs. Brazil is already an oasis of clean energy (Exhibit 10). 84% of the total electricity generated in the country comes from renewable sources.

Low risk ESG scores do not correlate to better returns

Exporters in BZ (usually linked to High ESG risk) consistently outperformed Low ESG risk since 2021 (Exhibit 30). However, our data shows that companies with improving ESG scores usually outperform companies with declining ESG scores (Exhibit 32). See best-ranking names across third-party ESG scores in Exhibit 34.

ESG equity funds could attract flows as rates decline

Global ESG funds were resilient in the last 2 years, but in LatAm, we continue to see outflows from Brazil ESG funds since 2021. The decline was likely driven by higher rates, as broad equity funds also had outflows in that time frame. We estimate Brazil local funds that are categorized as ESG have only R\$2.8bn AUM, which represent around 1% of total AUM of local equity funds (Exhibit 2).

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Investment Strategy
Latin America

Table of Contents

5 Key ESG themes for LatAm	2
Global ESG flows were resilient	3
Many steps forward in BZ ESG regulation	6
Taxonomies in LatAm are popping up	8
Clean energy in LatAm	10
Carbon credits in LatAm: an overview	12
Uruguay: joining ESG top performers club	14
Measuring relative sovereign risk	15
Corporate ESG scores: Tackling the lack of disclosure	16
ESG scores vs alpha generation	19
Best ranked companies according to 3rd party ESG scores	21
How is ESG being implemented in LatAm?	22
Annex: Sustainability methodology	41
Research Analysts	46

David Beker >>
Bz Econ/FI & LatAm EQ Strategy
Merrill Lynch (Brazil)
+55 11 2188 4371
david.beker@bofa.com

Paula Andrea Soto, CFA >>
LatAm Equity Strategist
Merrill Lynch (Brazil)
+55 11 2188 4226
paula.soto@bofa.com

Carlos Peyrelongue >>
Research Analyst
Merrill Lynch (Mexico)
+52 55 5201 3276
carlos.peyrelongue@bofa.com

Mateus Conceicao >>
LatAm Equity Strategist
Merrill Lynch (Brazil)
+55 11 2188 4201
mateus.conceicao@bofa.com

Panos Seretis >>
Global ESG Strategist
MLI (UK)
+44 78 9521 6470
panos.seretis@bofa.com

See Team Page for List of Analysts

List of acronyms in Exhibit 47

5 Key ESG themes for LatAm

1 – Plenty of new ESG regulations in Brazil

Brazil is taking steps to bring its ESG regulation to international standards. From Jan-24 onwards, Brazilian listed companies can already voluntarily adopt the new ISSB (International Sustainability Standards Board) financial sustainability standards. The government is currently discussing Brazil's first carbon credit market framework. Last year, Brazil launched guides for ESG investments and a proposal for its first taxonomy. Local regulator launched a guide for categorizing ESG/sustainable investments.

2 – Taxonomies in LatAm are popping up

Many Latin American companies and markets are adapting standards based on EU Green taxonomies. Brazil and Chile are working on their own taxonomies and are expected to lead the creation of ones that are specific to extractive industries (something overlooked by EU classifications) given the relevance of the industries in those countries. Mexico and Colombia already have their own sustainable taxonomies; Peru is working on one as well.

3 – Energy transition accelerating in the region

Brazilian government is taking several measures on the energy transition agenda. Finance ministry Fernando Haddad launched Brazil's Ecological Transition Plan, which should benefit sustainable projects.

LatAm oil & gas giants are increasingly focusing on energy transition programs. Among SOEs, Petrobras (Brazil) already announced US\$5.2bn investments into wind and solar energy in the following years. Ecopetrol (Colombia) is investing in green hydrogen plants.

4 – Carbon credit markets under development in the region

The Brazilian lower house approved in Dec-23 a bill creating Brazil's carbon credit market framework, which establishes a "cap-and-trade" system, which regulates industry emissions. Mexico was the first country in LatAm to implement both tax and an emission trading system (ETS). Chile is working on a pilot emission trading system as well.

5 – Inflows into global ESG funds continue, but in LatAm have yet to pick up

Last year was another positive year of inflows into global ESG funds, despite a sharp slowdown in the past two years. In LatAm, we continue to see outflows from Brazil ESG funds since 2021, but the size of outflows was smaller in 2023 vs 2022. We estimate Brazil local funds that are categorized as ESG have only R\$2.8bn AUM, which represent around 1% of total AUM of local equity funds.

Global ESG flows were resilient

Global flows into ESG funds decreased drastically from 2021 onwards, but inflows beat those of non-ESG funds in the last 2 years, and the number of ESG funds is growing. In Brazil, inflows into local ESG funds also decreased from 2021 onwards – likely a reaction to higher rates, as broad equity funds also started to post outflows at the same time.

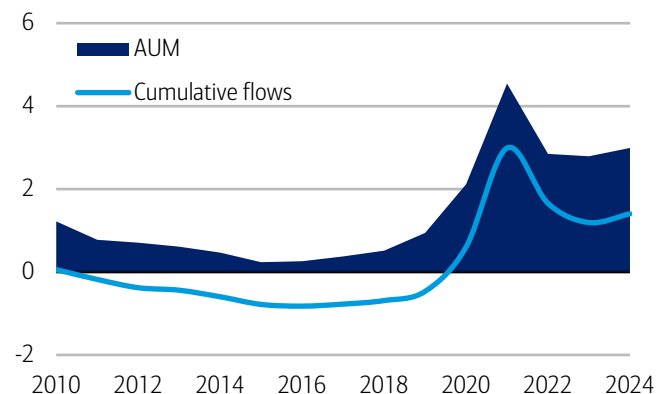
Outflows from Brazil ESG funds slowed down in 2023

In 2023, our data shows R\$0.5bn outflows from funds described as "ESG" in Brazil (vs R\$1.3bn outflows in 2022, Exhibit 1). For reference, all Brazil equity funds had R\$57bn outflows in 2023 vs R\$76bn in 2022 (Exhibit 2). Local ESG funds in Brazil are still tiny, but doubled in the past 5 years. Using Economática data, we estimate Brazil local funds that are categorized as ESG have only R\$2.8bn AUM, which represent around 1% of total AUM of local equity funds.

In Sep-21, flows into local broad equity funds in Brazil peaked. The move started when interest rates started to go up and individuals migrated out of equities and into fixed income. We expect investors to rotate back into equities as we go through the easing cycle in 2024, which could attract flows into the local ESG funds this year.

Exhibit 1: Brazil local ESG funds AUM and Flows (R\$bn)

AUM mostly stable in the last two years...

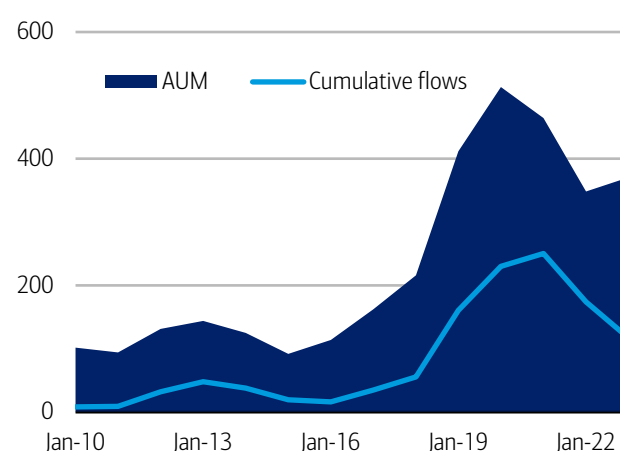


Source: BofA Global Research, Economática

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Exhibit 2: Local equity funds AUM and Flows (R\$bn)

...but AUM remains modest compared to total equity funds



Increase in total assets reflects flows, performance and funds added to the sample.

Source: BofA Global Research, Economática

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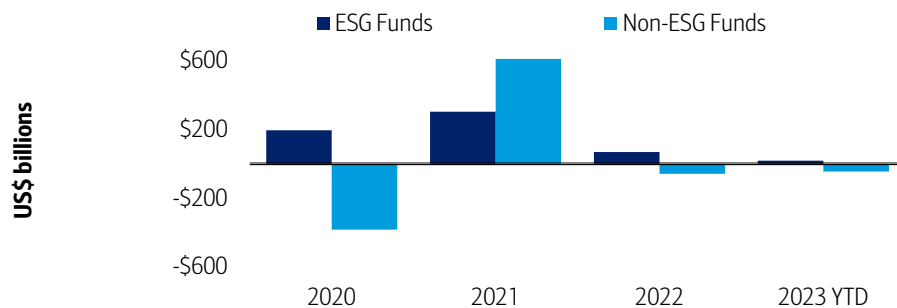
Global ESG funds had inflows in 2023

2023 was another year of inflows for global ESG equity funds overall, although they had a sharp slowdown from 2021 onwards. In 2023 (up to Oct-23), ESG equity funds attracted more flows than non-ESG funds for the second year in a row (Exhibit 3).

At the same time, the number of ESG funds continues to grow, totting up to 3,435 by October 2023 versus 2,930 by December 2022. We think the relative trend (ESG flow outperforming non-ESG flow) should continue, heading into 2024 (see details in [ESG from A to Z: Year Ahead: Five ESG investment trends for 2024](#)). (Exhibit 4, Exhibit 5)

Exhibit 3: Fund flows have been positive for ESG but negative for non-ESG YTD

Global equity ESG and non-ESG fund flows (US\$ bn), 1/2015-10/2023

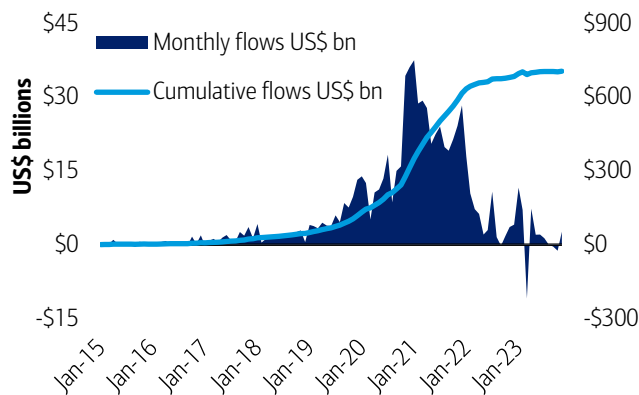


Source: EPFR Informa Financial Intelligence, BofA Global Research

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Exhibit 4: Global ESG equity funds flows (US\$bn, left) and cumulative ESG flows (US\$bn, right), (Jan/15 – Nov/23)

Global ESG equity funds flows decelerated since 2022

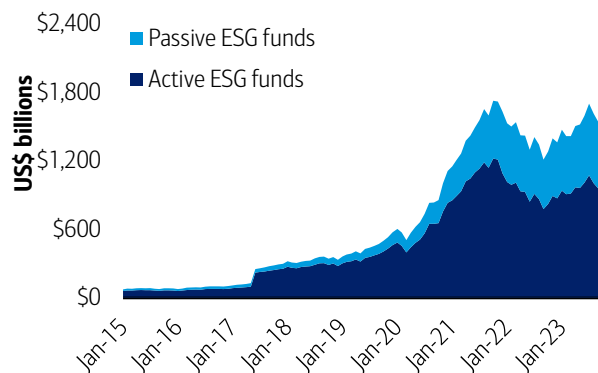


Source: EPFR Informa Financial Intelligence, BofA US ESG Research

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Exhibit 5: Global ESG equity funds AUM, US\$ billions (Jan/15 – Nov/23)

In November, global active ESG funds AUM grew 8.9% MoM, while passive ESG funds AUM grew 10.5% MoM

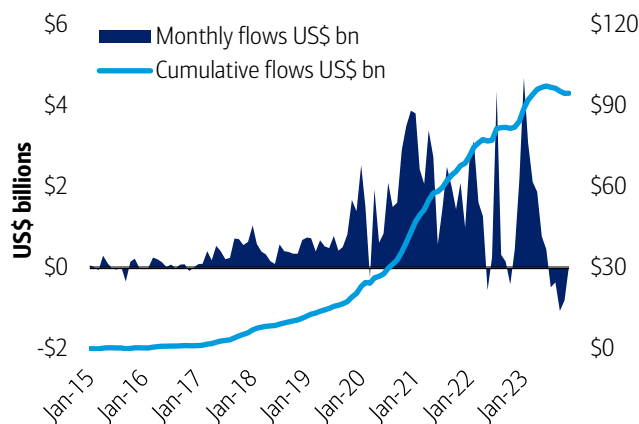


Source: EPFR Informa Financial Intelligence, BofA US ESG Research

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Exhibit 6: Emerging Markets ESG equity funds flows (US\$bn, left) and cumulative ESG flows (US\$bn, right), Jan/15 – Nov/23

Flows into Emerging Markets ESG funds slowed down in 2H23.

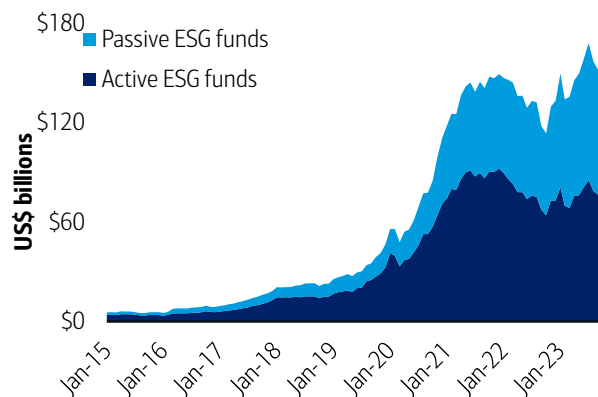


Source: EPFR Informa Financial Intelligence, BofA US ESG Research

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Exhibit 7: Assets under management in Emerging Markets ESG equity funds, US\$ billions (Jan/15-Nov/23)

In November, Emerging Markets active ESG funds AUM grew 4.7% MoM, while passive ESG funds AUM grew 7.7% MoM, 0.4% QoQ, 38.7% YoY



Source: EPFR Informa Financial Intelligence, BofA US ESG Research

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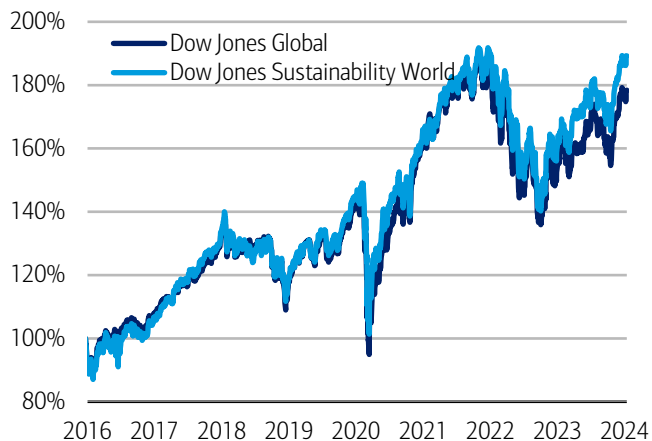
ESG Indices do not always outperform

In the last eight years, global ESG indices didn't consistently outperform broad equity indices (Exhibit 8, Exhibit 9). A possible reason that ESG indices did not outperform is that better ESG scores do not necessarily translate into higher returns (as we will note in the upcoming sections). For reference, both the Dow Jones Sustainability Index and the FTSE4Good Index use their own ESG scores in order to select index members.

Conversely, we saw EM ESG index outperforming the broad index from 2023 (Exhibit 9). At the same period, our global ESG team saw an improvement of EM governance characteristics vs DM (see: [ESG from A to Z - Is DM the new EM?](#)). EM is now a bigger focus for ESG investors: \$4 of every \$5 of global inflows have gone to EM in 1H23.

Exhibit 8: Global equities 5Y performance: Broad vs ESG indices

Broad index and ESG index had similar performance in the last 5Y

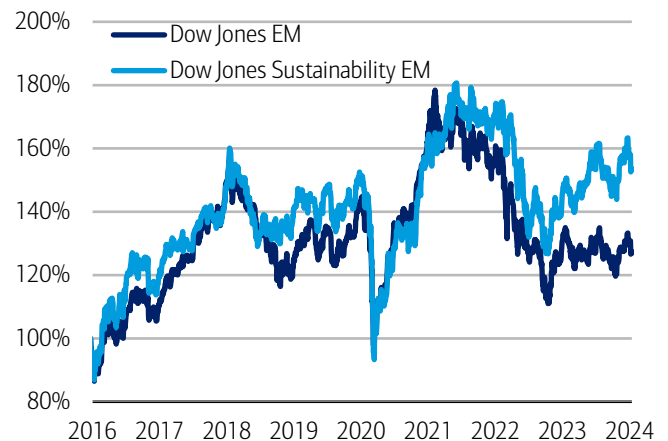


Source: Bloomberg

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Exhibit 9: EM equities 5Y performance: Broad vs ESG indices

ESG index outperformed the broad index in 2023



Source: Bloomberg

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For LatAm in particular, we see mixed results. ESG LatAm regional funds outperformed consistently in the last 10 years, but Brazil ESG funds underperformed the normal index (Exhibit 10).

Exhibit 10: MSCI ESG Leaders vs traditional indices: 14 of 25 outperformed their benchmarks over last 12m

Absolute price return in USD currency (%), as of 3/15/2023. Green = ESG outperformed benchmark, red = ESG underperformed benchmark.

		1m	3m	6m	12m	YTD	3Y	5Y	10Y	12m Fwd P/E	
Global	AC World ESG	4.5	5.3	5.2	19.3	21.1	19.6	68.6	-	19.8	31.0
	AC World	4.7	5.2	4.6	16.9	18.3	13.0	52.9	82.8	18.6	28.6
DM	DM ESG	4.8	5.5	5.6	19.4	21.5	20.8	64.2	98.7	21.0	33.1
	DM	5.1	5.6	5.4	18.6	20.1	18.2	60.9	96.9	19.3	30.3
EM	EM ESG	1.1	1.1	-3.2	4.2	4.3	-19.4	13.3	43.8	-	-
	EM	1.8	1.6	-2.2	4.2	4.7	-19.9	3.0	1.1	14.1	18.6
LatAm	LatAm ESG	6.0	9.1	6.1	33.5	27.7	30.0	30.8	20.4	10.0	19.1
	LatAm	5.0	7.6	3.6	25.8	20.8	6.4	0.9	-18.6	10.0	19.1
	Brazil ESG	4.7	6.7	2.6	31.3	22.8	-19.0	-27.0	-28.8	14.3	19.2
	Brazil	2.6	5.9	4.0	25.8	18.1	-7.6	-11.1	-21.2	8.8	17.6

For more details, see [EU & US Transition CAPEX investment opportunities](#).

Source: BofA US Equity Quant Strategy, Refinitiv, MSCI, Bloomberg. 1m/3m/6m/YTD/12m/3y/5y/10y returns are calculated as of 3/15/2023

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Many steps forward in BZ ESG regulation

Brazil is the country in LatAm with the most regulation related to ESG corporate disclosure and categorization of local investment funds. Last year, the country took important steps to bring ESG regulations closer to international standards, including publishing the first draft of the sustainable taxonomy.

The current Brazilian government launched the Ecological Transition in Aug-23. Key highlights in the project are the carbon credit market regulation, issuance of sovereign sustainable bonds, the green taxonomy, and rules for the “Fundo Clima”, a fund to finance sustainable projects and technology.

Brazil is the first country in the world to adopt new ISSB standards

In Oct-23, Brazil became the first country to formally embrace the new ISSB (International Sustainability Standards Board) financial sustainability standards (IFRS S1 and IFRS S2). These standards establish rules for financial disclosure based on sustainability metrics. The adoption of international standards is part of the CVM ESG road map for 2023 – 2024. According to CVM (local capital markets regulator), the new ISSB standards will be mandatory for publicly traded companies in Brazil, taking effect from January 1, 2026. Companies can voluntarily adopt ISSB from January 1 2024.

Brazil launched a guide for categorizing ESG/sustainable investments

The resolution CVM 175 became effective in Oct-23, and it brings Brazil closer to international standards on investment funds framework. The resolution established rules for identifying investments funds related to sustainability, which is key for fighting greenwashing.

According to the regulation, funds described as “ESG”, “environmental”, “green”, “social”, “sustainable” or any term related to sustainable finance must report:

1) What are the ESG measures adopted; 2) What principles and guidelines are followed according to the denomination; 3) ESG certificates; 4) What is the report format and periodicity of ESG-related analysis.

First sustainable sovereign green bonds in Brazil

In Sep-23, the Brazil government launched the Ecological Transition Plan. The plan aims to increase investments in sustainable projects while reducing social inequality. The government also outlined the first sustainable sovereign bond issuance, which happened in Nov-23. According to the Brazil Finance Ministry, the issuance generated around R\$10bn (approximately US\$2bn).

Brazil local regulator pushing for board diversity

In 2023, CVM approved measures to increase diversity within Brazil publicly traded companies (“ESG Annex”, which was incorporated into resolution CVM 135/22). Companies should include one board member from an underrepresented group. Companies should explain their efforts for electing the first diverse member until 2025, and a second member by 2026. Companies should provide a justification for not complying with the guidelines.

According to a survey run by B3 in Jun-23, out of the 343 Brazilian companies listed in Brazil, 55% did not have women in the management level, and 36% do not have women on the board of directors. Based on racial/ethnic criteria, 336 companies reported not having any black directors on their board of directors.

B3 Novo Mercado: change to free float requirements in 2023

A corporate law (Lei das S.A.) and the Comissão de Valores Mobiliários (CVM), Brazil’s Securities Exchange Commission, have governed the Brazilian corporate sector since 1976. B3 (only local exchange) created voluntary and differentiated levels of listing based on certain corporate governance standards, following several incidents where minority shareholder’s rights were abused. The goal was to align the interests of the controlling shareholder and minority shareholders as much as possible.

B3 created the following distinguished listing levels: Novo Mercado (highest level of corporate governance, currently with 203 companies), Level 2 (25 companies) and Level 1 (25 companies). To be listed on Novo Mercado, a company must have 1) only ON (voting) shares; 2) 100% tag along rights (in case of a change in control, the offer would extend to all shareholders at 100% of the price offered to the controlling shareholder); 3) a minimum 25% of free float; 4) a mandatory offer to buy out all shareholders at economic value in case of delisting; and 5) any dispute between minority and controlling shareholders adjudicated by B3 Arbitration Panel.

In Feb-23, B3 reduced the Novo Mercado free float requirement from 25% to 20% (in line with international standards). New entrants for all listing levels can have free float share even lower than 15% if they meet governance requirements and if the initial public offer is at least R\$1bn.

Levels 1 and 2 are also differentiated listings, but not as strict as the Novo Mercado.

Exhibit 11 summarizes the key differences in each listing.

Exhibit 11: Novo Mercado and levels of corporate governance

B3 levels of corporate governance are one of the earliest attempts to provide ESG perspective into equity investing.



Source: B3

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Coming soon: carbon credit market framework

The Brazilian lower house approved in Dec-23 a bill creating Brazil's carbon credit market framework (PL 2148/15). The proposal now moves back to the senate. The bill establishes a "cap-and-trade" system, which regulates industry emissions.

Earlier in May-23, the Brazilian senate approved a provisional measure (No. 1.151/2022) which enables the development of a carbon credit market and other economic activities in public conservation units, through concessions.

In Europe, the European emission trade scheme (EU ETS) is the world's first and largest cap and trade system. The legislative framework provides the possibility to link the EU ETS with other emissions trading systems in the world depending on system compatibilities and the existence of an absolute cap on emissions. In 2023, Europe launched the EU ETS 2, covering fuel combustion in buildings, road transport and small industries, not covered in EU ETS (it aims to achieve 42% emission reductions in 2030, compared to 2005). The EU ETS was worth around €751bn in 2022 (around US\$801bn today), up 10% from the previous year and representing 87% of the global total.

Taxonomies in LatAm are popping up

Green taxonomy in Brazil could become effective in 2026

In Sep-23, the Brazilian government opened a public consultation for the first Brazilian taxonomy. The project is called “Sustainable Taxonomy Action Plan”. Similarly to the Mexican taxonomy, the proposal includes social goals, like gender equality and diversity. The environmental objectives are focused on the climate change theme, protection of biodiversity and ecosystems, sustainable water and soil management and transition to a circular economy. A new aspect of Brazil and Chile taxonomies is the inclusion of extractive activities within their taxonomy sector coverage. As there is no precedent in international guidelines, Brazil and Chile are expected to pioneer on developing an entirely new taxonomy for extractive industries. See the economic activities covered in Brazil’s taxonomy proposal on Exhibit 12. More details in [Green rules: LatAm steps up its ESG regulation](#).

Brazil taxonomy expected to be mandatory from Jan-26.

Brazil taxonomy key dates: 1) **Set-Oct/23**: Taxonomy under public consultation, 2) **Nov/23**: Consolidation of the first taxonomy draft, 3) **Nov/23**: Taxonomy plan launch during 2023 UN Climate Change Conference (COP28), 4) **Jan-Oct/24**: Discussion/amendments phase, 5) **Nov/23-Nov/24**: Pilot phase, 6) **Nov/24**: Taxonomy publication, 7) **Jan/26**: Start of the mandatory period.

Exhibit 12: Economic activities covered in taxonomies of EU, Colombia, Mexico and Brazil*

Brazil plans to include the extractive industry within its taxonomy sector coverage.

Sector	EU	Colombia	Mexico	Brazil
Agribusiness	x	x	x	x
Extractive industry				x
Manufacturing industry	x	x	x	x
Gas & Energy	x	x	x	x
Water treatment	x	x	x	x
Construction	x	x	x	x
Transportation	x	x	x	x
Information technology	x	x		
Financials				
Real Estate				
Technical specialists	x			
Services				
Education	x			
Healthcare	x			
Carbon storage		x		

*Brazilian sustainable taxonomy in under development.

Source: Brazil government website

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Mexico: new sustainable taxonomy presented in 2023

Mexico’s finance ministry presented in March 2023 a public taxonomy program that will categorize and define ESG investments. Mexico’s initiative is not unique in the region: for example, Brazil already has definitions for categorizing ESG investment funds and Colombia has a green investment taxonomy. Yet Mexico’s guidelines pioneer on the social camp, as it gives insights into a range of diversity & inclusion factors.

Mexico’s taxonomy is based on existent taxonomy from around the world (particularly Europe and Colombia). It aims to focus on climate changes, gender equality and access to basic services.

The Mexican taxonomy establishes sustainable goals within 6 sectors: agriculture, utilities, homebuilders, industrial manufacturers, transportation, and waste management. For instance, the taxonomy defines that petrochemicals shall be wholly or partially based on renewable raw materials, carbon print of the finished products must be lower than of the same product made from fossil raw materials.

Andeans: green taxonomies in the oven

Chilean taxonomy announced in 2022

The Chilean finance ministry announced in 2022 that it was working on a green taxonomy, based on the EU Green taxonomy. One of the key benefits of the Chilean taxonomy would be the identification of activities for green bonds issuance.

Peruvian green taxonomy to focus on environmental issues

The Peruvian Ministry of Environment (MINAM) announced in 2021. The taxonomy is focused on environmental issues, as is the case of the green taxonomy in Colombia. The taxonomies from Mexico, and the ones under discussion Brazil and Chile are broader as they also have a focus on social issues.

Colombia: pioneer in LatAm for green taxonomy

Colombia's green taxonomy is a system that categorizes economic activities and their objectives and strategies related to environmental issues. It was published in 2022 and it was the first of its kind in the region. The Colombian green taxonomy focuses on environmental issues, while other taxonomies in the region (like Mexico's taxonomy from 2023 and the development of the taxonomy in Brazil) also account for social factors.

The green taxonomy will ideally help Colombia contribute to the UNFCCC (United Nations Framework Convention on Climate Change) and Colombia's own environmental goals.

Clean energy in LatAm

LatAm O&G committed to green measures

In Brazil, oil giant Petrobras is more likely to increase focus on renewables, refineries, and other energy transition businesses under the new administration which is more vocal about ESG initiatives. In Sep-23, Petrobras (major oil company) and Vale (major mining company) signed a two-year collaboration protocol to develop low-carbon solutions, positioning Brazil as a potential green hydrogen hotspot.

In Colombia, Ecopetrol (major state-owned oil company) has a green hydrogen project and also bought ISA three years ago, which is broadening their portfolio into electricity transmission and, to a lesser extent, toll roads, and telecom.

In Argentina, YPF, Pampa Energia, and Central Puerto have made major investments in wind power. Tenaris is also building a wind farm in Argentina to reduce its carbon footprint and supply its OCTG (Oil Company Tubular Goods) operations that make tubes for the oil and gas industry.

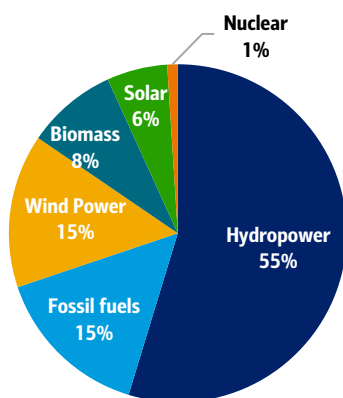
Mentioned companies have projects to reduce carbon emissions in their existing operations, including using renewable electricity where possible, switching from diesel to natural gas for electricity generation, etc.

Brazil: an oasis of clean energy

Brazil has one of the cleanest energy matrices in the world. 84% of the total electricity generated in the country come from renewable sources (+55% hydropower, 15% wind power, 8% biomass, 6% solar). As a comparison, US, China, Japan and India had over 60% of their energy matrices based on fossil fuels in 2022 (Exhibit 14).

Exhibit 13: Electricity Generation by Source in Brazil (2024)

Renewable sources account for 83% of the total energy generation in Brazil

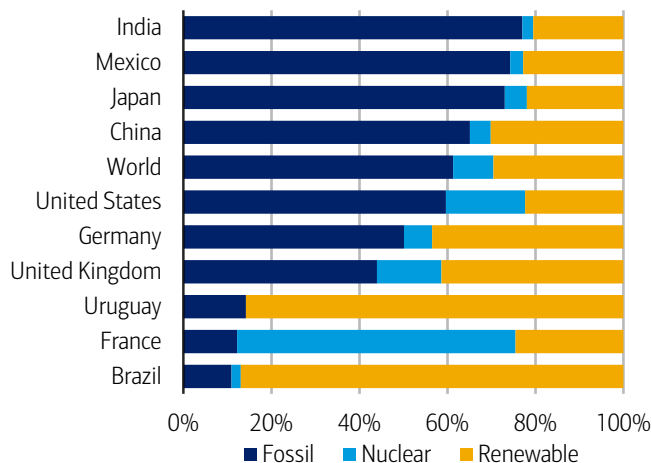


Source: Aneel

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Exhibit 14: Electricity sources in the world (2022)

Brazil has one of the cleanest energy matrices in the world



Source: Our World in Data

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Brazil: Offshore wind power could be a focus in renewables

In the current government, we think there is some potential for a more aggressive investment in renewables and new technologies related to the energy transition. Brazil already stands out in renewable generation, but 170GW in wind offshore potential has not yet started (but could be about to). See details on Brazil opportunities in wind power in [Brazilian Power Generation: Wind offshore in Brazil: Prologue](#).

In its new [24-28 Strategic Plan](#), Petrobras expects allocate up to US\$11.5bn to low carbon & renewables projects over the next five years. According to the company, US\$5.2bn will be allocated into wind and solar energy. Jean Paul Prates, CEO of Petrobras, said offshore wind power is the most obvious choice among the renewable options, given Petrobras's experience in offshore operations.

Hydropower still important in BZ but under environmental scrutiny...

According to the International Energy Agency, hydropower has a key role toward a cleaner energy matrix in the world. Global capacity is expected to grow 17% until 2030, but this is 25% slower than the expansion in the previous decade. Its share of global electricity is stable, mostly due to the rise of other energy sources like coal, wind power, solar and natural gas.

In Brazil, hydropower is likely to remain the most important electricity source. However, new projects aimed at increasing capacity face challenges including environmental concerns and the cost of these efforts.

For example, plans to build a hydroelectric power plant in Belo Monte were engulfed by controversy since the first drafts in the 1970s, largely amid questions about the potential environmental damage of the project. It became operational in mid- 2010s and has been strongly criticized by local communities and indigenous leaders. Brazilian local newspapers reported the plant's dam complex severely lowered the water flow to the region, jeopardizing existing biodiversity and economic means, sources of food and living arrangements of local indigenous population.

Five decades investing in biofuels: Flex fuel cars vs EVs

The early 2000s brought the development of green plastic from sugarcane and the launch of flex fuel cars in 2003 after the convergence of the regulatory framework of ethanol only and flex fuel cars in 2002. This allowed consumers to have the freedom to choose the best cost-benefit when it comes to refueling. From 2010 to 2020, flex fuel cars (FFV) sales grew from 45% of sales to 96% and 80% of the fleet. From 2003 onwards, we saw a boom of cane and ethanol production.

Although EV sales are gaining traction in LatAm, they are still a tiny fraction of sales. In Brazil, local news outlet Infomoney reported that EVs represented around 3.5% of sales, although most are hybrid models. Entirely electric vehicles are just 0.4% of sales. In Brazil, ethanol is a green and economically viable alternative. Experts believe required investments to implement the grid required to have an electrified fleet ranges from US\$210-300bn, near 20% of GDP.

Carbon credits in LatAm: an overview

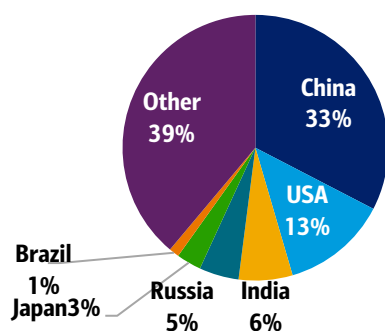
Brazil expected to gain share in carbon markets

As Brazil works through its new carbon credit market regulation (see section [Coming soon: carbon credit market framework](#)), we look at the country's carbon credit potential. Brazil could be key beneficiary of global commitments and incentives to reduce carbon print. Brazil could gain share in an R\$240bn/year carbon credit market given its 1) green energy matrix (85% renewables installed generation capacity), and 2) forests representing 12.2% of global preservations. Brazil is a relatively small CO₂ emitter (1.3% of global emission, vs 32% in China and 14% in USA, Exhibit 15).

The main sources of credits come from forestry/land use and energy generation projects. We also see biogas & waste-management as likely beneficiaries from a booming carbon market. We estimate that Brazil could have an 18% market share in a USD40bn/year market by 2050 based on our proprietary S&D voluntary carbon market model (Exhibit 17). For more details, see [Brazilian Utilities: Carbon Credits in Brazil – A Primer](#).

Exhibit 15: CO₂ emission in 2020, by country

Brazil 1.2% representativeness

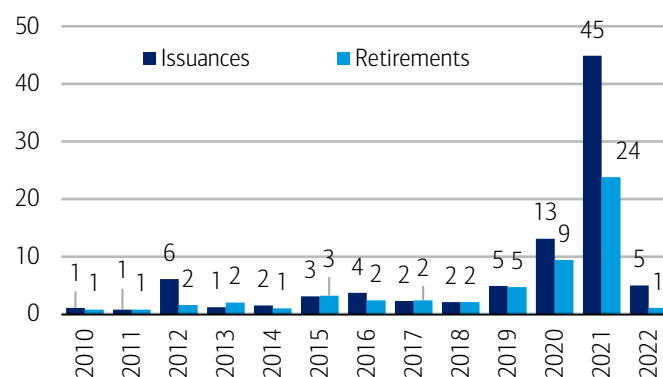


Source: World Bank, CAIT

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Exhibit 16: Voluntary Carbon Credits Market – Brazil

Issuances & Retirements – MtCO₂e



Source: Ecosystem Marketplace

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Exhibit 17: Carbon credit initiatives total Addressable Market by 2050 (USDbn, three scenario outcomes based on proprietary model)

Brazil could represent 17.6% of addressable market in 2050 in our base case.

2050	Carbon credits related projects		Pricing scenario		
			Bear-case	Base-case	Bull-case
Volume Demand	Commitments to date	Global	6	11	16
		Brazil	1	2	3
	Initiative: TSVCM Survey* (Taskforce on Scaling Voluntary Carbon Markets)	Global	11	19	28
		Brazil	2	3	5
	Initiative: NGFS Scenario* (Network of Greening the Financial System)	Global	22	38	56
		Brazil	3	7	10
	Initiative: NGFS "immediate action" 1.5°C pathway	Global	40	71	104
		Brazil	6	12	19
Brazil's Market Share			14.9%	17.6%	17.8%

*TSVM and NGFS are initiatives that aim to meet the goals of the Paris Agreement.

Source: BofA Global Research Estimates

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Petrobras enters the voluntary carbon market for the first time

Brazilian state-owned oil company Petrobras announced last year that they entered the voluntary carbon market by acquiring credits equivalent to 175,000 ton of greenhouse gases. This is part of projects related to the Amazon preservation. According to Petrobras CEO, the strategy will continue: the company informed that they would spend up to US\$120mn in carbon offsets through 2027.

Mexico: a carbon trade pioneer in LatAm

Mexico was the first country in LatAm to implement both tax and an emission trading system (ETS). After the Paris Agreement, Mexico committed to reduce 22% of its emissions by 2030. One of the measures adopted was the establishment of a Carbon Market System in Mexico. The Sistema de Comercio de Emisiones (SCE or “Emission Market System” in english) is based on the “cap and trade” system, which establishes emission thresholds for each economic sector. Mexico started the SCE pilot stage in 2020 and now it is under a transition phase.

In 2013, Mexico’s stock exchanged launched the MEXICO2, a platform to trade carbon credits for voluntary purposes and to compliance with Mexico’s carbon tax system.

Chile: Planning a pilot emission trading system (ETS)

In 2009, Chile established a local platform for voluntary carbon offset trading. According to the International Emissions Trading Association (IETA), a carbon tax was implemented with a value of USD 5/tCO₂ from 2017. In 2022, the government published a 2022-2026 Energy Agenda. In the text, Chile plans to develop a pilot ETS project, designed for the energy sector, as to achieve emissions.

Colombia: focus on carbon taxes

Colombia implemented a carbon tax on fossil fuels in 2017 with a value of USD 5/tCO₂. The government transfers the tax revenues into the “Sustainable Colombia Fund”, which is used to increase investments in social projects. The country also provides a tax reduction incentive based on efforts to reduce carbon emissions.

Uruguay: joining ESG top performers club

Uruguay is one of the world's top performers when it comes to ESG factors. The country leads important regional indexes in all three ESG dimensions and it has positioned itself at the same level as some developed nations.

Environment: leader in energy transition

Uruguay has a clean energy matrix (low emissions vs LatAm, Exhibit 18) ranking among the highest share of electricity production from wind and solar sources. More than 44% of Uruguay's electricity comes from wind and solar power. Green hydrogen projects in Uruguay are gaining appeal from investors, which could represent close to \$6bn (8% GDP) in investments by 2040. Uruguay recently published its first agenda with sustainable goals denominated National Determined Contribution as required by the Paris Agreement (2017).

Social: progress and low poverty levels

Uruguay has the lowest poverty (5%) and extreme poverty rates in LatAm. According to the United Nations Sustainable Development Goals (UNSDG) index in 2021, Uruguay has an overall score of 74.5, which is above the population-weighted average of OECD countries (72.8) and well above the 66.4 average score of the countries in the Latin America and Caribbean region (Exhibit 19).

Governance: A solid democracy

In 2021, Uruguay was ranked 13th worldwide in terms of the strength of its democratic institutions, ranking first in LatAm, according to The Economist Intelligence Unit (EIU). In terms of corruption perception, the country was ranked 18th globally in terms of (lowest corruption perception in LatAm for ten years in a row).

Debt strategy: sustainability-linked bond

In 2022, Uruguay issued its first ESG bond, a new dollar denominated Sovereign Sustainability-Linked Bond (SSLB) maturing in 2034, linking the bond's coupon interest rate to the achievement of environmental performance targets. Some of its features and framework may have a positive contribution for other countries considering similar bonds issuance, especially on reporting and verification. (See more in [LatAm Viewpoint: ESG: lessons from Uruguay's case. Top scores, top demand.](#)).

Exhibit 18: Uruguay has reduced emissions as a % of GDP

Emissions as a % of GDP

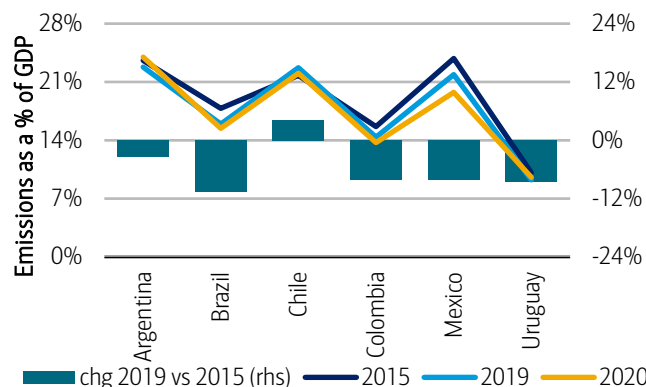
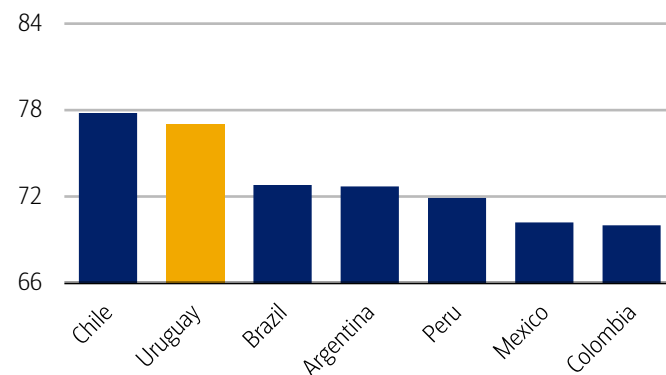


Exhibit 19: Uruguay ranks high in Sustainable Development Goals

UN Sustainable Development Goals score



Measuring relative sovereign risk

ESG scores tend to favor rich countries

S and G indicators tend to be highly correlated with income. Income is also the best predictor of credit spreads, so countries with lower per-capita income already face higher costs of capital, even before ESG enters the frame. In fact, the economies most in need of capital tend to have the lowest sovereign ESG scores. Ironically, economic development would be the best opportunity for EM to raise their ESG scores, as DM's history shows.

EM economies have become more resource-intensive than DM. The latter focuses on services, rather than on manufacturing and mining, and has more advanced technology. Poor fuel exporters face a potential long-run triple whammy of lower revenue due to decarbonization; economic costs from climate change; and ESG-related constraints on capital inflows, including the capital they might need to invest in emission reduction.

In [GEMs Viewpoint: ESG v EM: thinking win/win](#), we highlight five areas investors should focus on to counter these issues, such as using consumption- rather than production-based emissions or comparing countries against their income peer group, for example.

Improving ESG ranks are associated with improving credit quality

In our ESG country model (see [Sovereign ESG reaching new frontier](#)), developed countries still score higher on average. But as it does for DM, the model generates additional differentiating factors between credits even within the same profile/rating, which tends to bring a more defensive focus on higher quality credits.

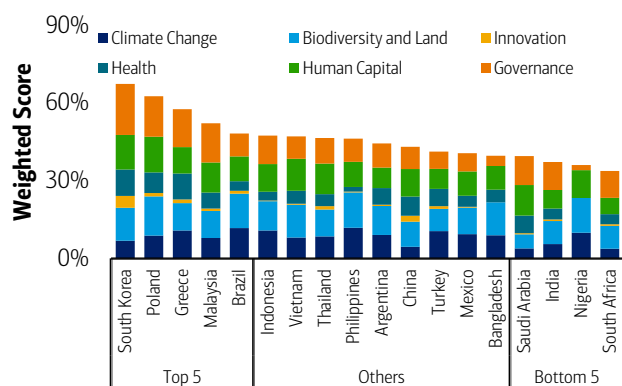
In terms of rankings, Brazil is within the top 5 ranked for EM (Exhibit 20) and also posted the biggest improvement last year (Exhibit 21).

Improving ESG ranks are associated with improving credit quality

We found a high correlation between credit ratings and ESG rankings, but ESG is even more forward looking and offers additional differentiation within ratings bands. Investing in improving ESG scores also likely dovetails with investing in improving credit stories. Our analysis over the last 13 years tentatively shows that improving ESG ranks are associated with improving credit quality, driven mostly in the G (governance) factor.

Exhibit 20: South Korea and Poland top among emerging markets (EMs) on overall ESG

EMs sorted by ESG score calculated across all 34 countries



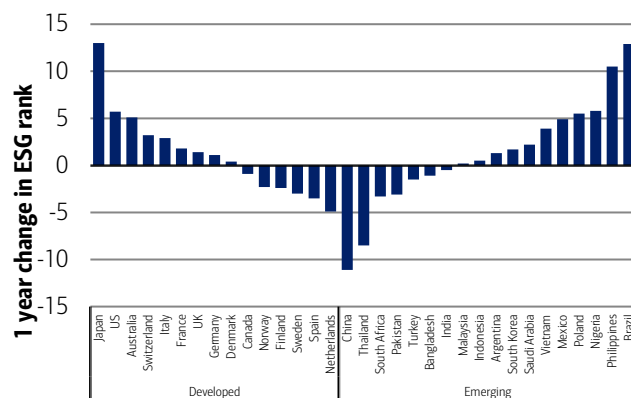
For details see [Sovereign ESG reaching new frontier](#).

Source: BofA Global Research estimates, ESG ranks based on data from World Bank, World Economic Forum, OECD, WHO, Yale, World Resource Institute

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Exhibit 21: Japan, Brazil and Philippines improved the most YoY

Change in ESG ranks, 2023-2022



For details see [Sovereign ESG reaching new frontier](#).

Source: BofA Global Research estimates, ESG ranks based on data from World Bank, World Economic Forum, OECD, WHO, Yale, World Resource Institute

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Corporate ESG scores: Tackling the lack of disclosure

ESG scores summarize a broad set of pillars

Third party ESG scores summarize where companies stand according to a broad set of criteria, such as waste management, air emission and renewable energy programs in the Environmental front; diversity, privacy and supplier standards in the Social front; and board experience, director track record and remuneration in the Governance front.

Coverage has improved through the years, and now 3 of the largest providers of ESG scores (Refinitiv, MSCI and Sustainalytics) have scores more than 75% of our LatAm coverage.

Exhibit 22: Third party ESG scores coverage improving

ESG datasets coverage is above 75% of BofA's LatAm coverage.

Country		BofA coverage	Refinitiv	MSCI	Sustainalytics
BZ	Brazil	145	69%	82%	77%
MX	Mexico	41	93%	93%	88%
CL	Chile	12	83%	100%	92%
CO	Colombia	3	100%	67%	100%
PE	Peru	3	100%	100%	67%
AR	Argentina	9	78%	67%	0%
All	All	213	76%	85%	77%

Source: Refinitiv, MSCI and Sustainalytics

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ESG scores penalize low levels of disclosure

The main issue with 3rd party ESG scores in LatAm is that standardized scores **tend to penalize low levels of disclosure** (Exhibit 23 and Exhibit 24). Investors can argue that ESG disclosure is an essential factor in an ESG score, and that the two should be closely related. We believe this is not the case for LatAm, as ESG investing is only in its early stages. Disclosure levels (and consequently ESG scores) will tend to be higher for large cap, international companies. In the US, the BofA team preferred quant (rather than subjective) datasets for alpha generation. For LatAm, we should be mindful that quant-based datasets could mean dealing with missing data points and a higher exposure to bias.

On the flip side, LatAm could have a lot of room to improve if disclosure levels improve as ESG becomes more mainstream in the region.

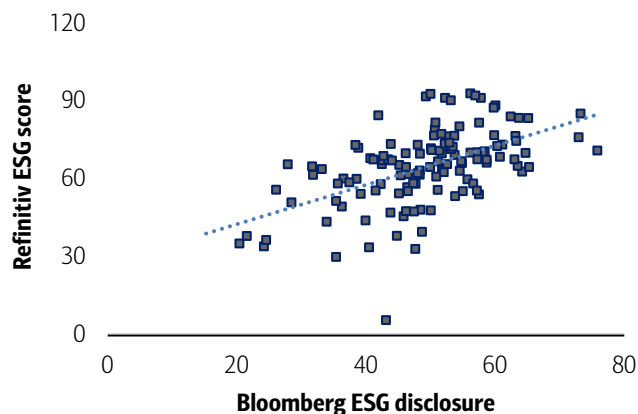
Sustainalytics ESG Risk scores mitigate some of the disclosure bias

In this report, we focus on the **Sustainalytics** dataset for ESG data. We found that their “ESG risk scores” are less significantly correlated with ESG disclosure levels and therefore are less inclined to underestimate LatAm’s ESG accomplishments based on its lower disclosure levels (Exhibit 25).

Note, however, that Sustainalytics’ ESG risk subindustry percentile, calculated on a global basis, is correlated to ESG disclosure levels (Exhibit 26). LatAm companies, on average, have lower disclosure than their global counterparts, and their ESG Risk Ratings rank below their global peers. For more details on Sustainalytics methodology, please refer to [Annex: Sustainalytics methodology](#).

Exhibit 23: Refinitiv ESG scores vs Bloomberg ESG disclosure score

Higher scores correlate with higher levels of disclosure



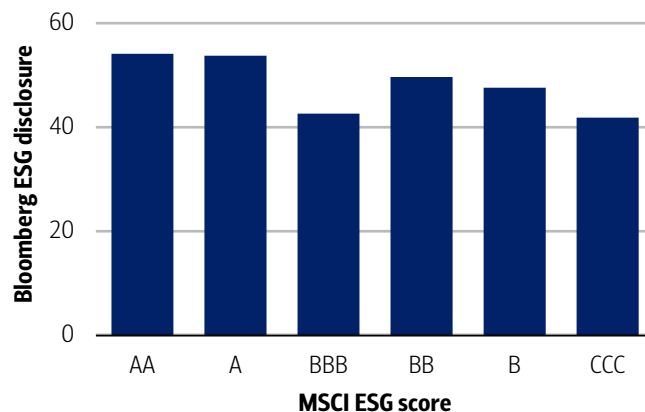
Note: Refinitiv ESG scores reflect the quality of the company ESG profile. Bloomberg ESG Disclosure scores measure the amount of ESG data a company reports publicly, and does not measure the company's performance on any data point.

Source: Refinitiv, Bloomberg

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Exhibit 24: MSCI ESG scores vs Bloomberg ESG disclosure score

Higher scores correlate with higher levels of disclosure



Note: MSCI ESG scores reflect the quality of the company ESG profile. Bloomberg ESG Disclosure scores measure the amount of ESG data a company reports publicly, and does not measure the company's performance on any data point.

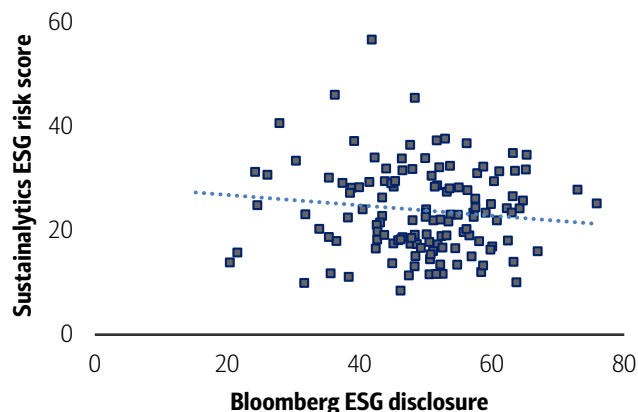
Source: MSCI, Bloomberg

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Exhibit 25: Sustainalytics ESG risk score vs Bloomberg ESG disclosure

Sustainalytics ESG risk scores are not as correlated with disclosure levels as other third party providers.

Note that higher Sustainalytics' "ESG risk score" imply worse ESG profiles



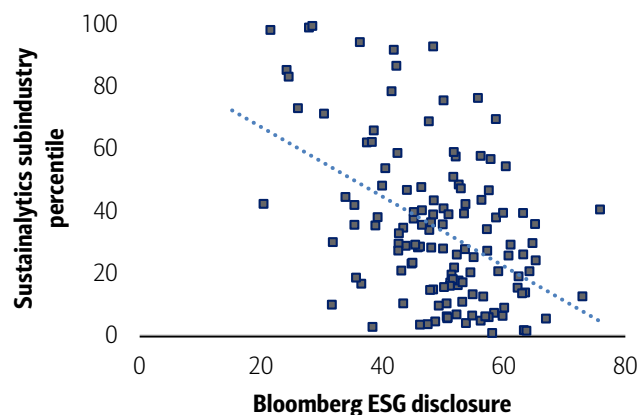
Note: Sustainalytics ESG risk scores reflect the quality of the company ESG profile. Bloomberg ESG Disclosure scores measure the amount of ESG data a company reports publicly, and does not measure the company's performance on any data point.

Source: Sustainalytics, Bloomberg

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Exhibit 26: Sustainalytics percentile vs Bloomberg ESG disclosure

LatAm companies, on average, have lower disclosure than their global counterparts, and their ESG Risk Rating rank below their global peers.



Note: Sustainalytics ESG risk scores reflect the quality of the company ESG profile. Sustainalytics' ESG risk subindustry percentile is calculated on a global basis. Bloomberg ESG Disclosure scores measure the amount of ESG data a company reports publicly, and does not measure the company's performance on any data point.

Source: Sustainalytics, Bloomberg

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LatAm weight in ESG global indices is not impacted by the lack of disclosure

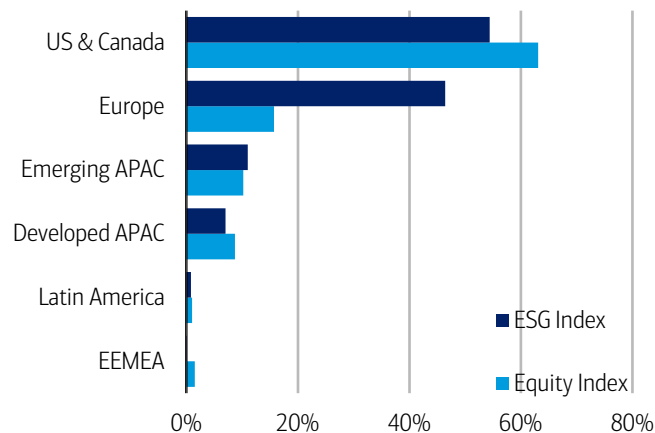
In theory, one could expect the weight of LatAm companies within ESG indices to be negatively impacted by the region's low ESG disclosure levels (which tend to be correlated with lower ESG scores, as we observed earlier). However, providers often apply their methodology to a single region and then aggregate the results, mitigating the impact.

In Exhibit 27 we list some of the main ESG indices in the world: DJSI World Index, DJSI Emerging Markets, FTSE4Good All World and FTSE4Good Emerging. We also highlight ISE, a local ESG index in Brazil.

The weight of LatAm in World ESG indices, while small, is similar to the weight in the broad indices. The weight of LatAm in EM ESG indices, however, is bigger than that in broad EM equity indices (Exhibit 28).

Exhibit 27: Regional weights in global ESG index and equity index

LatAm has similar weights in the EM and broad indices.



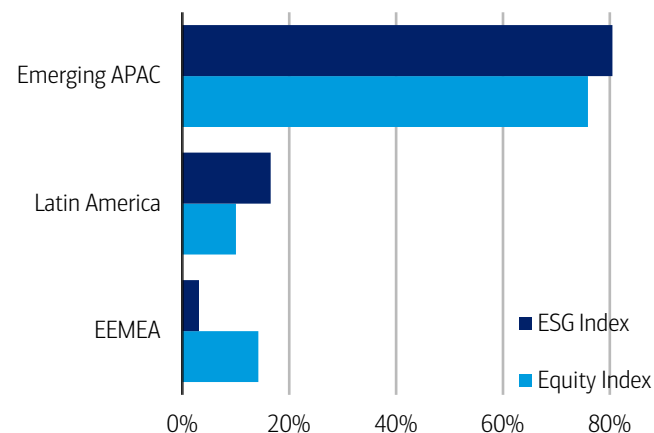
(*)Note: Dow Jones Sustainability World Index and Dow Jones Global Index were used

Source: BofA Global Research, S&P Dow Jones Indices

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Exhibit 28: Regional weights in EM ESG index and equity index

Within EM, LatAm has a higher weight within the ESG index than the broad index.



(*)Note: Dow Jones Sustainability Emerging Markets Index and Dow Jones Emerging Markets

Source: BofA Global Research, S&P Dow Jones Indices

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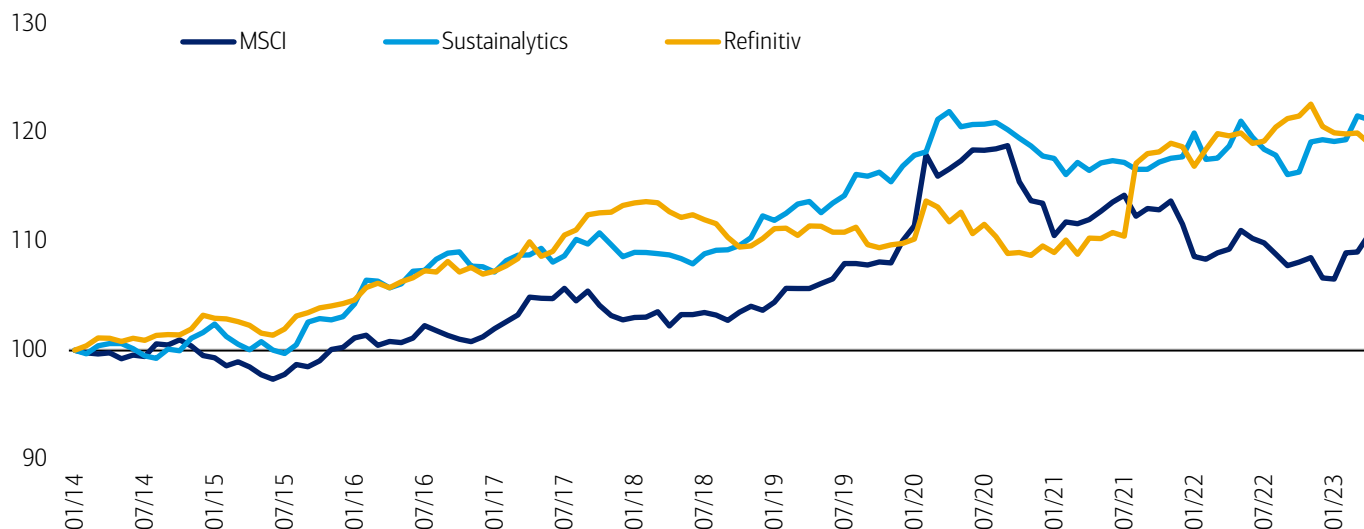
ESG scores vs alpha generation

Does ESG investing really truly produce alpha?

ESG skeptics argue that outperformance of ESG funds or companies highly-ranked on ESG reflects momentum, given the significant asset influx into ESG funds in the past years (Exhibit 29). Other studies like one from Scientific Beta argue that any alpha was actually the result of exposure to other factors, particularly quality. Our US team argues this is the wrong debate. Alpha generation can depend on a variety of factors such as inflows, fundamentals, catalysts and, importantly, valuation. It's important not to overpay for "good" companies.

Exhibit 29: Companies with top ranked ESG scores have been outperforming

Relative performance of top quintile companies by ESG scores vs. equal-weighted universe, 01/2014-4/2023



Source: MSCI ESG Research LLC, Sustainalytics, Refinitiv, FactSet, BofA US Equity & Quant Strategy

This performance is backtested and does not represent the actual performance of any account or fund. Backtested performance depicts the theoretical (not actual) performance of a particular strategy over the time period indicated. No representation is being made that any actual portfolio is likely to have achieved returns similar to those shown herein.

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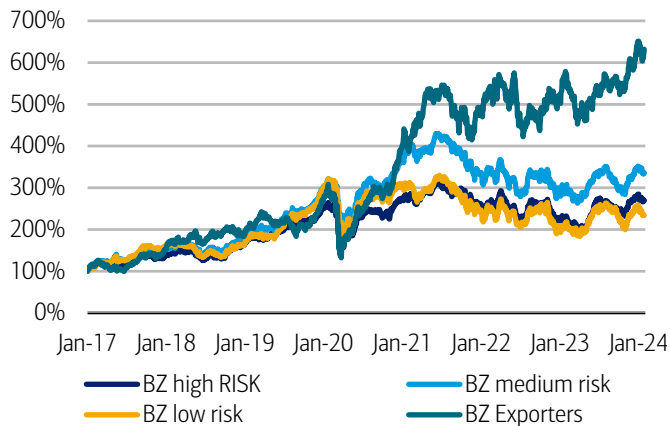
LatAm: Best ESG scores don't always imply higher returns

Our results on ESG scores vs price performance were mixed. Better ESG profiles do not always imply higher returns neither in Brazil nor in Mexico. For example, in Brazil (Exhibit 30), exporters (usually linked to High ESG risk) outperformed Low ESG risk since 2021. On the other hand, Low and Mid ESG risk companies presented a higher return against High ESG risk until 2022. Ideally, we would need to control for as many other factors as possible. But results were also not significantly relevant at a sector level either.

Note: In order to see how different ESG profiles perform in LatAm, we used Sustainalytics scores to separate our coverage in Brazil and Mexico into 3 groups: 1) "Low ESG Risk" group, comprised of the companies with the 30% lowest ESG risk scores, 2) "High ESG Risk" group, comprised of the companies with the 30% highest ESG risk scores, and 3) "Mid ESG Risk" which groups everything in between. Note that higher Sustainalytics' "ESG risk scores" imply worse ESG profiles. We also separated exporters from this analysis as their return often strongly correlates with commodity prices more than any other factor.

Exhibit 30: Brazilian companies ESG groups

Better ESG profile doesn't translate into extra returns



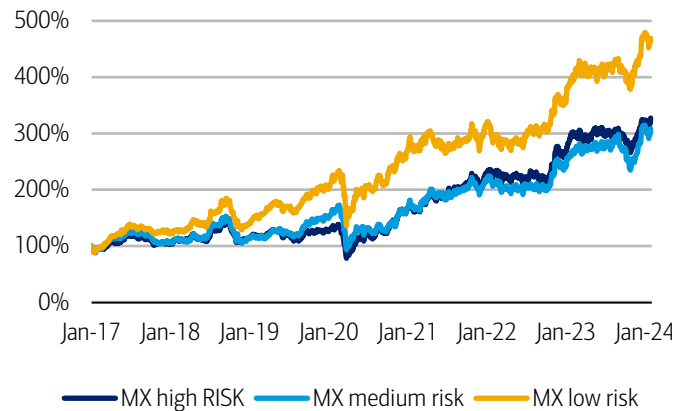
(*)Note: Low ESG Risk – 30% lowest Brazilian companies ESG rating; High ESG Risk – 30% highest Brazilian companies ESG rating. Stock returns were equally weighted within each group.

Source: BofA Global Research, Sustainalytics, Bloomberg

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Exhibit 31: Mexican companies ESG groups

Better ESG profile doesn't translate into extra returns



(*)Note: Low ESG Risk – 30% lowest Mexican companies ESG rating; High ESG Risk – 30% highest Mexican companies ESG rating. Stock returns were equally weighted within each group.

Source: BofA Global Research, Sustainalytics, Bloomberg

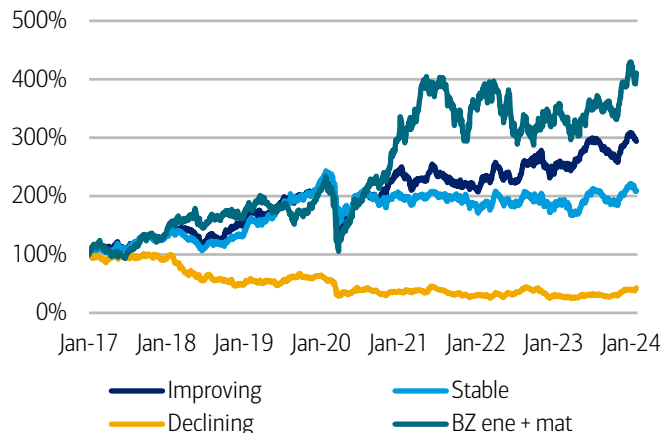
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Improving ESG metrics = higher returns

Companies whose ESG scores improved through the years outperformed companies with declining ESG scores in both Brazil (apart from Exporters) and Mexico. In Brazil, the improving group also had lower volatility, leading to higher risk-adjusted returns.

Exhibit 32: Brazilian companies ESG improvement groups

In our sample, ESG score improvements translated to better returns



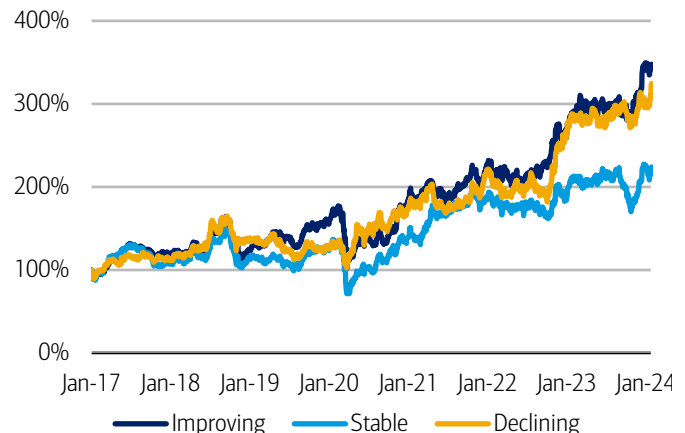
Note: Stocks were equally weighted within each group.

Source: BofA Global Research, Sustainalytics, Bloomberg

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Exhibit 33: Mexico companies ESG improvement groups

In our sample, ESG score improvements translated to better returns



Note: Stocks were equally weighted within each group.

Source: BofA Global Research, Sustainalytics, Bloomberg

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ESG as quality factor**Better ESG profile = more expensive**

ESG profiles correlate to more expensive valuations in both Brazil and Mexico, but sector distribution explains at least part of the reason. Specific sectors often have worse ESG scores overall, such as commodity producers/exporters (Materials, Energy). These industries with worse ESG profiles are often value stories with low P/E ratios. They often have higher EPS volatility as well. We assessed this issue in detail in [LatAm Equity Strategy: ESG Primer: 2022 edition - ESG Matters in LatAm](#). This sector bias is particularly problematic for LatAm given the large weight of commodities in the region.

Best ranked companies according to 3rd party ESG scores

Consumers & financials among best ranked, commodities rank worst

We screened for best-ranked companies among our analyzed 3rd party providers (MSCI, Refinitiv and Sustainalytics). The screen encompasses many names within Financials and both C. Discretionary and C. Staples, and none within Materials and Energy.

Unfortunately, the weight of Materials and Energy in LatAm indices is among the highest.

Exhibit 34: Companies with high ESG ratings on different providers

25 companies have a MSCI ESG rating of A or above, Refinitiv score on the top 50% and Sustainalytics ESG Risk score on the bottom 50%.

Company Name	BBG Ticker	Country	Sector	Industry	Mkt Cap (US\$m)
Mercado Libre	MELI US Equity	BZ	Consumer Discretionary	Broadline Retail	89,637
Walmex	WALMEX* MM Equity	MX	Consumer Staples	Consumer Staples Distribution	72,971
AmBev	ABEV3 BZ Equity	BZ	Consumer Staples	Beverages	41,345
Bradesco	BBDC4 BZ Equity	BZ	Financials	Banks	30,942
Banorte	GFNORTEO MM Equity	MX	Financials	Banks	30,433
Santander Brasil	SANB11 BZ Equity	BZ	Financials	Banks	21,750
Arca	AC* MM Equity	MX	Consumer Staples	Beverages	19,632
Vivo	VIVT3 BZ Equity	BZ	Communication Services	Diversified Telecommunication	17,392
B3 SA	B3SA3 BZ Equity	BZ	Financials	Capital Markets	14,933
Credicorp	BAP US Equity	PE	Financials	Banks	11,915
TIM	TIMS3 BZ Equity	BZ	Communication Services	Wireless Telecommunication Ser	8,603
Raia Drogasil	RADL3 BZ Equity	BZ	Consumer Staples	Consumer Staples Distribution	8,577
BanColombia	PFBCOLO CB Equity	CO	Financials	Banks	8,057
Falabella	FALAB CI Equity	CL	Consumer Discretionary	Broadline Retail	6,038
BR Distribuidora	VBRR3 BZ Equity	BZ	Consumer Discretionary	Specialty Retail	5,457
CCR	CCRO3 BZ Equity	BZ	Industrials	Transportation Infrastructure	5,334
TOTVS	TOTS3 BZ Equity	BZ	Information Technology	Software	3,926
Vesta	VESTA* MM Equity	MX	Real Estate	Real Estate Management & Devel	3,179
Lojas Renner	LREN3 BZ Equity	BZ	Consumer Discretionary	Specialty Retail	3,044
Genera	GENER* MM Equity	MX	Financials	Consumer Finance	2,136
Coca-Cola Andina	ANDINAB CI Equity	CL	Consumer Staples	Beverages	2,110
PARAUCO	PARAUCO CI Equity	CL	Real Estate	Real Estate Management & Devel	1,415
Ecorodovias	ECOR3 BZ Equity	BZ	Industrials	Transportation Infrastructure	1,233
Grupo BMV	BOLSAA MM Equity	MX	Financials	Capital Markets	1,165
Movida	MOV13 BZ Equity	BZ	Industrials	Ground Transportation	666

This screen is not a recommended list either individually or as a group of stocks. Investors should consider the fundamentals of the companies and their own individual circumstances/objectives before making any investment decision.

Source: BofA Global Research, Sustainalytics, Refinitiv, MSCI, Bloomberg

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How is ESG being implemented in LatAm?

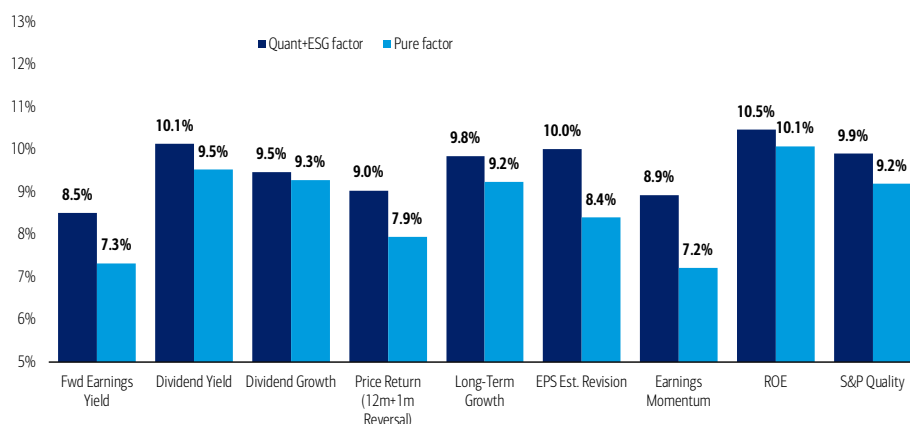
In this section we provide a brief summary of ESG across industries in LatAm. We highlight sector-wide ESG tailwinds and headwinds as well as individual companies' initiatives.

ESG consistently augmented alpha when added to fundamental inv.screens

Using the popular investment styles, BofA quantitative analysts found that adding ESG as a second equal-weighted factor to each screen would have improved performance both on an absolute and on a risk-adjusted basis. The improvement stood out most for earnings measures but was also effective for Dividend, Value, Momentum and Quality screens. Adding ESG to fundamental investment techniques would have improved alpha and risk adjusted returns. This chart is based on US data but can be used as a proxy for the region.

Exhibit 35: ESG has consistently augmented alpha when added to fundamental investment screens

Annualized total returns (backtested) of top quintile stocks by factor vs. ESG-blend factor (12/2005-10/2023)



Source: BofA US ESG Research, Refinitiv

This performance is backtested and does not represent the actual performance of any account or fund. Backtested performance depicts the theoretical (not actual) performance of a particular strategy over the time period indicated. No representation is being made that any actual portfolio is likely to have achieved returns similar to those shown herein.

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Oil Gas and Petrochemicals

Latam Oil/Petchem companies have continued to respond and adopt more aggressive targets. Net zero targets are now more frequent, including Petrobras' commitment to reach net zero in a time frame consistent with the Paris Climate Accords. Despite target setting, we believe that companies will achieve their goals, but might not present a significant progress in the future as we have witnessed so far. However, corporate management acknowledge the importance of continuous progress for investors.

Companies have been making major changes to expand into renewables

Some companies have made major investments in areas that put them at the forefront of the Latam Oil & Gas/Petchem group in terms of adjusting their strategies to meet ESG challenges. These stocks are focused on expansion in recycling, renewable, and new technologies that could lead the energy transition. Ecopetrol has 1) expanded into electricity transmission via its acquisition of a 51.4% stake in ISA (Interconexión Eléctrica) in 2021; 2) allocated US\$1.4 billion in projects to generate value with sustainability and technology between 2022 and 2024, besides ISA; and 3) on average expects to invest between US\$5.2-6 billion annually by 2040 in Energy Transition growth. Vibra Energia made a major move into renewables with a purchase of a stake in Comerc, which will have a total of 1,836MW of wind and solar power by 2024, and is also

expanding in natural gas/ethanol/electricity trading. Alpek recently acquired PET (polyethylene terephthalate) sheet producer OCTAL, which has a lower carbon footprint, and the company is continuing to grow rPET (recycled PET) capacity. Orbia has been investing in the production of components for lithium-ion batteries (Polyvinylidene Fluoride and Lithium Hexafluorophosphate), which are necessary for increasing the penetration of Electric Vehicles in the world.

Petrobras, a laggard up until now, could move more aggressively into renewables under the new govt.

Petrobras has focused mostly in recent years on restoring its financial health and streamlining its portfolio, with its ESG strategy focused on its operations and limited moves into cleaner businesses. That began to change with Petrobras' 2023-27 business plan which included potential investments in renewables and other technologies that look toward the energy transition. These are specifically in three segments: 1) offshore wind power; 2) hydrogen; and 3) carbon capture.

Since the 2022 election, the management team – led by CEO Jean Paul Prates – looks set to invest more aggressively in renewables and new technologies related to the energy transition. Jean Paul Prates has stated that offshore wind power should be the priority within the renewables segment given Petrobras's expertise in operating in the challenging offshore environment. Although investments in renewables could prove to be positive over the long term, such investments would be a new area for Petrobras. It will be critical that these projects are well designed with adequate pricing and technical support to protect returns and eliminate the risk of value destruction. Offshore wind energy takes advantage of the strong offshore winds, which can be higher and more constant than onshore wind due to the absence of barriers. At the same time, Offshore wind requires large structures that are installed on the seabed.

In the 2024-28 business plan, Petrobras announced a US\$11.5 billion capex to reinforce their commitment to reduce carbon footprint. This investment is divided in three main pillars: 1) decarbonization of operations (US\$3.9 billion capex); 2) Low carbon energies and biorefining (US\$7 billion capex); and 3) R&D in low-carbon (US\$0.7 billion). As of 2023, 6% of this capex is already being implemented.

Environmental

The post-pandemic economic recovery in 2021 and in 2022 are likely to lead to more difficult comparisons for some ESG metrics. Over the mid - to long term, we expect industry efforts to reduce emissions, combined with eventual peaking in demand for hydrocarbons and increased focus on new energies, to lead to faster improvement in "E" metrics.

Social

Gender equality remains a challenge for Oil & Gas companies. Only one of the companies under our coverage have no women on the board, but most have a lower representation vs. global peers. Enauta is the positive highlight with 40% of women in leadership positions, in line with its 43% female workforce. After Enauta, Ultrapar is the company with the highest overall gender diversity among the Latam Oil and Gas segment, with 33% of female employees. Other leaders include Orbia (30%) and 3R (29%). We also highlight that other companies are committed to increasing diversity in their workforce: Petrobras, for example, expects to reach 30% of women in the Board of Directors, Executive Board and Fiscal Board until 2026 and increase by 10% the nomination of black people for the board by 2030. Also, it is worth highlighting that many oil companies focus their ESG strategies in the "S", including 3R Petroleum and PetroRecôncavo, which gather resources to support and develop local communities located in the poorest regions of Brazil.

Governance

Petrobras was the center of the largest Brazilian corruption scheme ever ("Car Wash"). Since then, the company has worked closely with Brazilian and U.S. authorities to fully investigate the related crimes and improve its corporate governance, with a special focus on strict internal controls as part of the Petrobras Corruption Prevention Program. The recent change in government have increased concerns about its independence and added to worries related to governance. This has increased the risk of possible government influence in the company's operations (especially in relation to fuel prices).

Utilities

We view Brazilian Utilities as well positioned to benefit from investors' increasingly ESG-weight in investment decisions, namely due to an 83% clean energy matrix, social investments directly impacting over 120k employees, and encouraging trends in terms of diversity & inclusion as well as management alignment. Not coincidentally, Brazilian Utilities represent ~22% in B3's sustainability index, though only 12% of Ibovespa. Nevertheless, it looks to be only the beginning of the journey as we expect ESG-focus to increase both by the Utilities and by investors.

Environmental

Brazilian Utilities offer a differentiated exposure to energy transition, combining: 1) attractive natural resources (83% energy matrix from clean-sources), 2) ~R\$80bn/year estimated investments in upcoming years, and 3) attractive regulatory framework for renewables. Highlights are Serena, AES Brasil and Engie Brasil (100% of their energy generation comes from renewable sources). Some of Engie's power plants are also allowed to issue green bonds.

Social

In our Utilities Coverage, 95% of companies reported investments in education programs as one of their Social initiatives. Combined, these companies invested ~R\$1bn/year in Social programs, representing 1% of their EBITDA. Neoenergia leads Social investments with ~R\$345mn/year investments, and also, as per employee training, it offers 84 hours in training (vs sector's avg. of 38 hours).

Governance

On average, 45% of Utilities' boards are occupied by independent members, meaning members that are not executives at the company. In regards of leadership & management, CTEEP stands with the greatest Women Presence standards (60% of board of directors). As per management alignment, Equatorial's variable-compensation for management reaches 86% (as % total), followed by Eneva at ~84% and Serena at ~84%.

Food and Beverages

Environmental

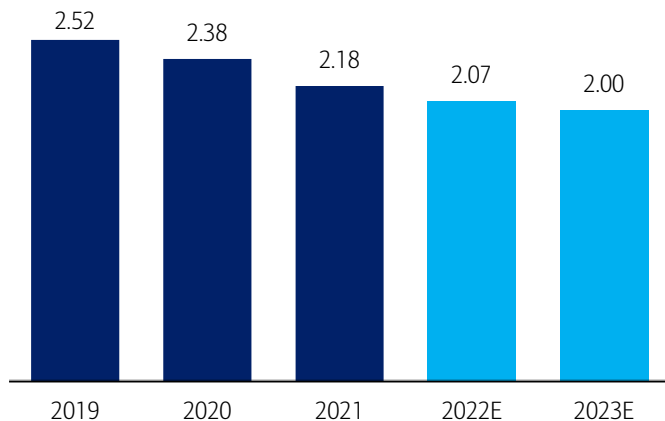
Deforestation in the protein supply chain is the main point of attention in the food sector. Companies have been investing to increase the tracking of indirect suppliers of cattle, especially in the Amazon region as a way to comply with international requirements. Currently the largest meatpackers already have 100% of its direct suppliers monitored, with plans to achieve zero deforestation in its entire supply chain and reach full traceability by 2025.

JBS launched in 2021 a new tracking system based on blockchain technology. Marfrig since 2021 has reinstated 2,501 farms to its supplier base, with its program "Marfrig Verde+", by helping them operate in compliance with the Marfrig sustainability rules. With this program and other initiatives, the company was able to reach a 71% tracking of its indirect suppliers in the 3Q22.

Beverage companies use large quantities of water and plastic, to mitigate this issue Ambev, Femsa and Arca all set goals to reduce their use of water and plastic. Ambev is working towards making all their bottles returnable or 100% recycled until 2025, with the help of its online platform, also the company goal is to neutralize plastic pollution and scope 1 and 2 emissions by 2025 and 2030 respectively.

Exhibit 36: Ambev water consumption (hl/hl)

The company has been making efforts to reduce water consumption

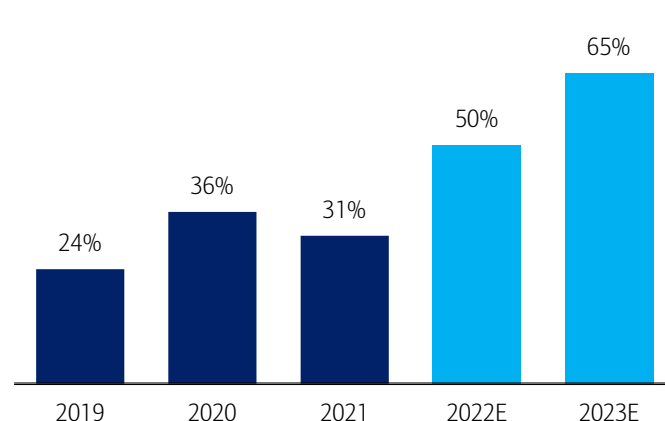


Source: Ambev IR and BofA Global Research

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Exhibit 37: Ambev percentage of plastic neutralization

The company is developing ways to reduce plastic use



Source: Ambev IR and BofA Global Research

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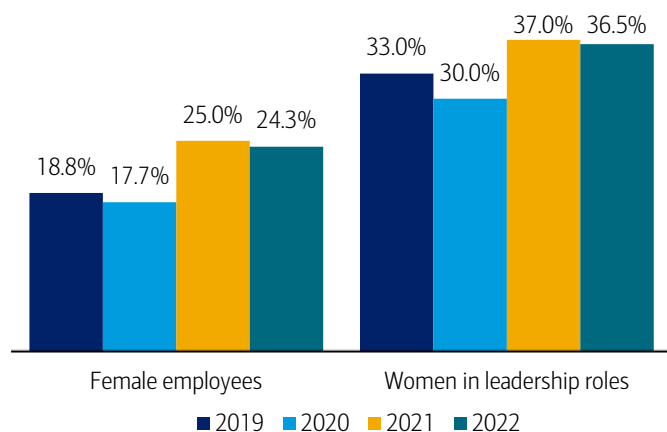
Social

JBS program “Fazer o Bem faz Bem”, accounted for around R\$400mn in donations for projects to fight the Covid pandemic in Brazil. Ambev started the Bora program, to provide the tools that small entrepreneurs need to thrive, creating a positive impact to individuals and the society. Ambev also has the water brand Ama, whose profits are used to provide access to clean water for people in need. Bimbo has the Good Neighbor Project that helps communities that live near Bimbo's work centers.

Both beverages and protein sectors are taking actions to improve gender hiring equality, however they still have a way to go to include more woman in the workforce. Ambev is already above the Brazilian average of 43% female employees at 45%, close to its goal of 50%, at the same time taking action to improve the share of woman in leadership positions.

Exhibit 38: Ambev female employees and woman in leadership roles

Ambev plans to continue to increase gender diversity

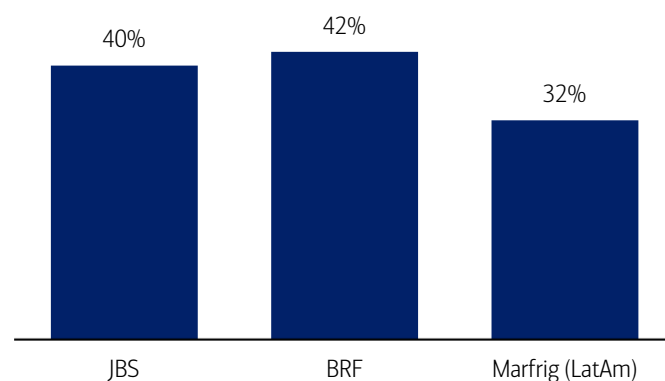


Source: Ambev IR and BofA Global Research

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Exhibit 39: Woman in leadership positions in Brazil (2022)

The meat industry still has a way to go to include more woman in leadership roles



Source: Companies IR and BofA Global Research

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Agribusiness

Environmental

Agribusiness has been a sector closely followed in Brazil due to its intrinsic link to the environment agenda in the country. Brazil has near 90mn hectares of planted area that should continue to grow in the future as degraded grassland is converted to productive farms. We see three main topics when it comes to Environment in Agribusiness: 1) usage of biological defensives, 2) development of biofuels and 3) crop rotation.

Biologicals are currently only 2% of the crop protection chemicals' market in Brazil, but growth has been robust. Since the 17/18 season, the biological market has been growing at a 53% CAGR to R\$1.8bn. Biological defensives are complementary to chemicals and help to reduce the toxins on the soil, and fight crop diseases in a more sustainable way. At the same time, biologics should help Brazil to reduce its reliance on imports of crop defensives, creating jobs and turning agriculture more sustainable.

Biofuels are also a sector in which Brazil has a leadership. The country produces ethanol both from corn and sugarcane and blends it in the gasoline at 27.5% blend as well as the sale of E100 (100% ethanol). Sugarcane mills can also use byproducts such as vinnasse to replace the use of fertilizers and to produce biomethane. Another byproduct of the cane is energy, as the bagasse can be used in boilers to generate steam and energy.

Brazil is also accelerating the development of the second-generation ethanol, which uses the cane bagasse and straw. Raizen is leading the way with a construction of new plants that should yield additional 2bn liters of ethanol without growing planted area of cane. The country is also a large producer of biodiesel, which is blended 10% on diesel, using mostly soy oil, and tallow. In the future, mills could also produce biodiesel from the corn oil generated in the corn ethanol production.

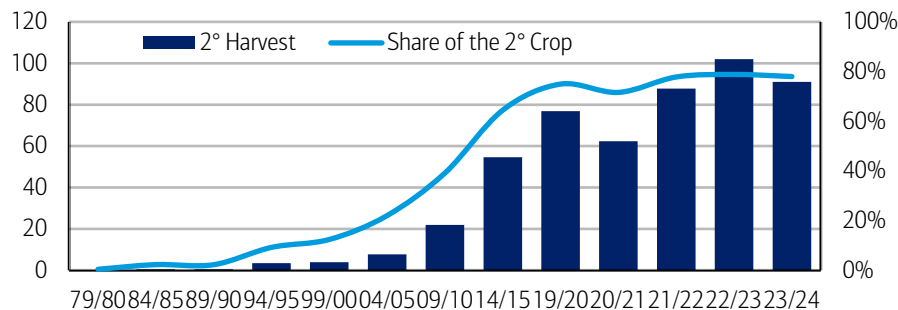
The third topic is regarding crop rotation. Soybean and corn represent 80% of the total planted area in Brazil (including second harvest season). The lack of rotation with other cultures could impose a risk in the long term, given lack of biodiversity on the soil. In this scenario, EMBRAPA, Brazilian R&D company that is part of the Ministry of Agriculture, is investing new varieties of wheat, for example. In the last season, Brazil planted 3mn hectares of wheat, 12% higher YoY. Last estimates indicate that Brazil harvested 9.7mn tons, 81% of its needs.

Social

Food security became a main topic of concern since the pandemic outbreak and following the war in Ukraine. Brazil plays a key role in guaranteeing the global food security. The country has been able to grow its agriculture output way ahead of the planted area due to the planting of two, or even three, crop seasons per year. Since 2000, second corn crop has been growing at a 12% CAGR in terms of production and became 80% of the total corn production in country.

Exhibit 40: Corn 2° harvest production (in mn tons) Vs. Share of the total corn crop

The corn second crop became dominant as a way to avoid logistics competition with soy



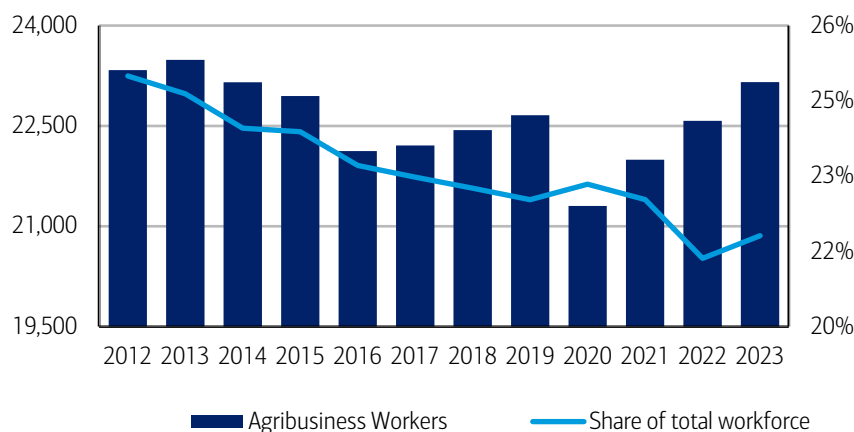
Source: CONAB and BofA Global Research

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The adoption of the two-crop system allowed for more investment in the countryside of the country, not only attracting workers to the fields, but to the entire supply chain, including manufacturing, retail, transportation, and industrialization. The sector employs 23mm citizens, 22% of the Brazilian total workforce in the country. Men are still the majority of the Agro workforce in Brazil (62%), vs. the average of 56% of the total Brazilian workforce.

Exhibit 41: Agribusiness workers (in thousands) Vs. share of the total workforce

The agribusiness sector hires 22% of all Brazilian workforce

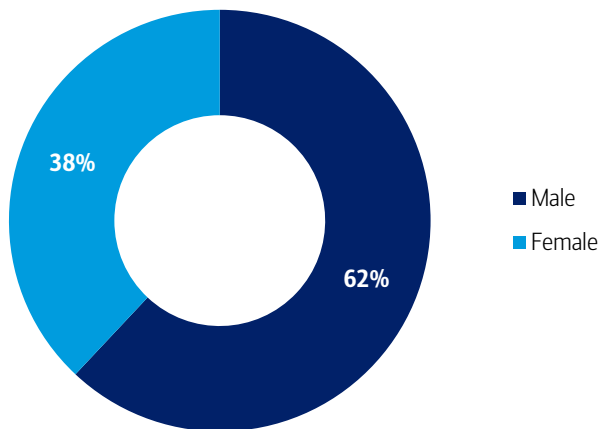


Source: CEPEA Esalq and BofA Global Research

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Exhibit 42: Share of female employees in the Agro sector

Women are less represented in the Agro sector than in the Brazilian average

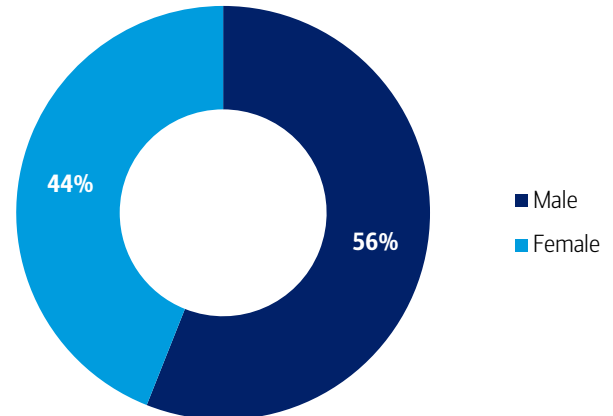


Source: CEPEA Esalq and BofA Global Research

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Exhibit 43: Share of female employees in Brazil

Women represent 44% of employees in Brazil



Source: CEPEA Esalq and BofA Global Research

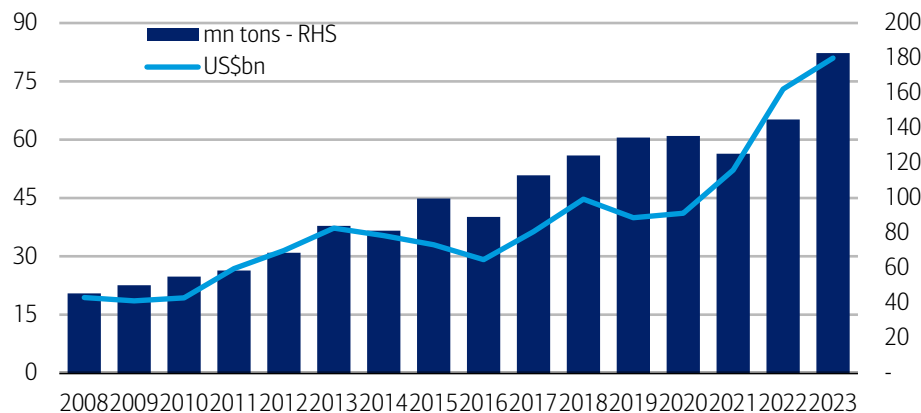
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On the other hand, the sector is undergoing a relevant change in terms of education. The percentage of employees that finished high school in the sector was 38% in 2023, vs. 29% in 2012. 15% went graduated in college in 2023, vs. 9% in 2012.

The second crop season brought more dollars to Brazil too. Exports of grains accounted for R\$352.6bn in 2021, helping the country to attract dollars into the country.

Exhibit 44: Brazilian soybean and corn exports

In the last 15 years, export grew 10% per year in USD



Source: MDIC and BofA Global Research

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Governance

Governance in the agribusiness in Brazil has been improving. The sector has access to many financing options for farmers, that helped producers to be professionalized. The CPR, a receivable security issued by farmers to retailers in order to finance the acquisition of crop inputs was a game change for the sector back in 1994. At the same time, retailers started to be able to raise capital to finance those operations with a products like FIDC (a receivable funds). More recently, the FIAGRO, a financing product that can be either used to finance short term operations like FIDCs, or long-term operations. These products allow for a tax incentive for investors and the diversification of the underlying operations helps players to reduce risks.

Transportation

ESG initiatives in transportation sector are mainly on the environmental front given industry's large use of resources, especially fuel.

Environmental

Car rental companies are focusing on increasing renewable energy consumption and also increasing the participation of Electric Vehicles (EVs) on their fleet. In 2022, 100% of the energy used by Localiza came from clean sources. Movida plans to become carbon neutral by 2030 and turning carbon negative by 2040. On electrification, the company expects EVs to account for 20% of the fleet until 2030. Azul reports that it already reduced CO2 emissions per RPK by 21% since 2016, while seeking to become a net zero company until 2045. The company also announced a partnership with the German company "Lilium" showing interest in acquiring 220 eVTOLs (Electric vertical takeoff and landing aircrafts). Volaris foresees to reduce CO2 per RPK emissions by 35% in 2030 vs 2015 levels (currently at -14.8% vs 2015). Rumo also has efforts on that direction as it plans to reduce CO2 emissions per RTK by 21% until 2030, considering 2020 levels.

Social

Ecorodovias offers the "Ecoviver", a project that promotes environmental education for vulnerable communities in their area of operation. Rumo offers the opportunity for minimum security inmates to work on public road conservation, as means of reducing their sentence, in partnership with the government of Paraná. Localiza developed the "Connected with the Future" project to help young students in public schools to think about the future and the job market. Furthermore, it launched the "Localiza Institute" which plans to support selected projects that will help young students through qualification and insertion in jobs related to Localizes business. CCR institute, company's NGO focused on social transformation through social projects, impacted more than 718k people and more 1740k people, directly and indirectly, with its project in the first three quarters of 2022.

Governance

Some of the companies have been able to increase the relevance of woman for executive positions. For instance, at CCR there is a goal of 60% of medium and high leadership positions being held by a women in 2023 and at both Ecorodovias and Movida, there is commitment for women participation in leadership positions to become 50% by 2030.

Transportation - Mexico

Mexican transportation companies work on energy efficiency and providing the best quality of life to their workers.

Environmental

GAP's proposed 2030 goals and targets on environmental commitment include: 1) to align at the UN zero emissions scenario, mapping scope 3 emission, establishing alliances with main generators to set integrated reduction goals and seeking a 90% reduction in GAP-controlled emissions by 2030; 2) carry out measures to take advantage of 100% of treated wastewater in Mexican airports, replacing water consumption from wells or local networks; 3) implementation of actions to prevent 50% of waste generated in Mexican airports, from dumped in landfills. 78% of OMA's energy was provided by wind-generated energy (10-year PPA since 2019) as of 2022 and all 13 airports have the Environmental Quality Certification awarded by PROFEPA. OMA has investment P\$250mn in installation of solar panels during 2021 and approximately 17.8% of the company's energy consumption needs were produced by its solar panels in 2022. ASUR is an active participant of United Nations Global Compact at a national level (Mexico), regional (Latin America) level and international level. Its airports' environmental management systems are certified under ISO 14001. PINFRA began the works for its

Clean Energy Plan that includes the placement of photovoltaic cells in all its toll road booths and along strategic sections of its roads to minimize its non-renewable energy consumption. Near-term goal is to provide 85% of PINFRA's energy needs and 100% coverage by 2023. GMXT emission reduction initiatives for 2023 include: 1) decreasing and gaining efficiency in the consumption of energy through new technologies and longer and faster trains; 2) incorporating 30 hybrid locomotives that will consume natural gas, which is the least polluting fossil fuel.

Social

OMA has an in-kind and in-cash donations program that focuses on social organizations that support various causes. It prioritizes donations to institutions that are not connected to its airports. In 2022, donations were made to support firefighters, and to enhance civil protection in some of the municipalities that are contiguous to OMA's operations. This support was reflected in the acquisition of personal protective equipment for firefighters in the states of Guerrero, Nuevo León, Sinaloa, Tamaulipas, and Zacatecas. In addition, furniture was donated to benefit the Civil Society Organizations dedicated to social causes such as children with cancer, disabilities, and orphanages. ASUR also offers employee trainings: in 2022, 93,724 man hours of training were provided for the company's 2,001 employees. Gender equality still remains an issue. 64% of ASUR's workforce is male and 76% of OMA's workforce is male. There are three women executives in ASUR, and seven in OMA (2022 figures). GAP's social empowerment proposed 2030 goals and targets include: 1) actions aimed at doubling the number of participants/students in GAP Foundation and community centers; 2) develop plans to reach 50% of women in responsibility positions within GAP; 3) actions so that at least 5% of newly created GAP positions should be allocated for persons with disabilities. Since 2008 ASUR has been recognized each year as a Socially Responsible Company by the Centro Mexicano para la Filantropía (CEMEFI).

Governance

Mexican transportation companies are aligned with the best international governance practices. OMA's corporate governance is based on international corporate ethics, transparency and compliance standards. Practices are regulated by CNBV and SEC and compliance of requirements established by Sarbanes-Oxley Law. GAP's proposed 2030 goals and targets for ethical governance include: 1) implement measures to help position GAP in the Top 10 of the S&P Sustainability Yearbook; 2) implement systems and processes for the identification, treatment and communication of cases of human rights violations; 3) implement GAP program to combat human trafficking in its airports. ASUR corporate governance rules protect the rights of minority shareholders where a majority of the members of ASUR's Board of Directors are independent. Moreover, its Audit Committee is made up exclusively of independent members.

Cement – Mexico

Environmental

On the environmental side, CX tackles environmental issues on four fronts: (1) Air Quality, (2) Water Optimization, (3) Biodiversity Conservation and (4) Circular Economy.

#1 Air Quality: Cement production emits environmental pollutants, mainly in the form of atmospheric emissions such as particulate matter (PM), nitrogen oxides, and sulfur compounds, which are subject to national legislation and local regulation. Cemex invests US\$13mn in 2021 (with equivalent amounts going forward) to monitor and reduce air emissions. In addition, it has implemented surveillance of all its kilns. By 2030 CX looks to cut by 85% dust emissions, a 66% reduction of SO_x and a 41% reduction in NO_x (compared to a 2005 baseline),

#2 Water Optimization: Cemex's goal for 2030 is to develop Water Action Plans for 100% of sites in high and extremely high-water stress areas. These Action Plans are divided into 5 modules. Each has a set of objectives to optimize water use at CX sites.

#3 Biodiversity Conservation: Cemex is working to protect biodiversity and maximize its contribution to nature conservation. They do this by minimizing the environmental impacts of their operations, such as habitat degradation, species alteration, changes in groundwater levels, discharges to water bodies, and dust emissions.

Cemex has collaborated with organizations such as BirdLife International and the Wildlife Habitat Council (WHC), which engage employees and local communities in wildlife enhancement initiatives and foster opportunities for coexistence between our industry and natural habitats.

#4 Circular Economy: Cemex's objective is to maximize the use of waste produced by society and other industries. During 2021, CX managed close to 23 million tons of waste and non-recyclable by-products, 57 times more waste than sent to landfill.

Cemex is responsible for recovering 95% of the total waste generated for reuse or recycling within our operations. As a result, only 5% went to landfill. By 2030, their goal is to increase by 50% the amount of waste and by-products they capture as alternative fuels and alternative raw materials.

The Path to Net Zero

In October of 2018, Cemex and GCC joined other 40 global cement and concrete producers to set up "The Global Cement and Concrete Association", or GCCA, a global industry association with the goal of participating in sustainable development goals. [Link to website](#). The group represents 80% of concrete production outside China and approximately 40% of global cement production.

Cemex has established an internal program, called **Future in Action**, focused on developing lower-carbon products, solutions, and processes to become a net-zero CO₂ company. The objective is achieving carbon neutrality by setting aggressive decarbonization goals—become a net-zero CO₂ company by 2050. But for more immediate action, its 2030 goals include:

2030 Goals:

Scope 1 Goals*

47% less of CO₂ per ton of cementitious material

35% less of carbon content in concrete

Scope 2 Goals

65% in clean electricity consumption

New Scope 3 Goals**

25% reduction in CO₂ per ton of purchased clinker and cement

30% reduction in transport emissions

40% reduction of scope 3 emissions per ton of purchased fuels

42% reduction in absolute scope 3 emissions from the use of traded fuels

* vs. 1990 baseline

** vs. 2020 baseline

Social

On the Social front we are also seeing specific targets by Latam Cement companies to address community issues. Cemex for example has set up a Social Impact Strategy to collaborate with the communities where they operate to create and implement locally tailored Community Engagement Plans (CEPs). CEPs are comprised of programs focused on developing people and communities and on preserving the environment — with an emphasis on advancing gender equality.

Cemex also engages in education. A significant part of CEMEX's education and capability development efforts occurs through our 70 Community Centers located in Colombia, Costa Rica, Guatemala, Mexico, Panama, Puerto Rico, and the United States. These education centers implement scholarships, provide courses, workshops, and set up programs that foster experience, knowledge, and the development of technical and life skills.

Governance

Cement companies in our sector have traced a path to higher corporate standards. Cemex, for example, has set a first set of measures, in this direction. They include, (1) single vote for directors, (2) decreasing the number of board members to 15 from 12 members, and (3) greater disclosure of director remuneration. This is a positive step and we expect a rollout of additional measures aligned with global best practices.

Malls & Properties

Malls & Properties companies have a social role, as they contribute to the urban development in cities.

Environmental

Malls focus on being energy efficient. Iguatemi, Multiplan, Allos and Parque Arauco all mention switching light bulbs to LED and replacing A/C equipment for newer, more efficient models, as well as automating many of the malls' functions. Companies also claim to be pursuing maximum water reuse. Allos mentions initiatives to tackle other forms of pollution (e.g. luminous and visual). Multiplan has been investing in photovoltaic panels/solar energy for its malls: the panels that supply 100% of VillageMall have already contributed with 40k tons less CO₂ emissions since 2019 (equivalent to the planting of more than 22k trees). DANHOS issued its first thematic bond, a Sustainability-Linked Bond (SLB) that is linked to the percentage of its portfolio that is LEED Gold or Platinum certified in operation and maintenance for a total amount of P\$2.5bn. VESTA is committed to reducing the impact on the environment of its operations where 19% of its GLA will have a Green Certification by 2025. TERRA has 2.5 million square feet of GLA certified with a recognized third-party independent verification, which represents 7% of its total GLA. FIBRAPL has been named for the third time in a row industrial sector leader by the Global Real Estate Sustainability Benchmark (GRESB) for being the best performers in environmental stewardship, social responsibility, and governance. As part of its commitment to be net zero by 2040, FIBRAPL has certified almost 19mn square feet with BOMA Best. 35.6% of Fibrampq's GLA has Green building certification coverage while its sustainability and green financing linked portion of its drawn debt stands at 59%.

Social

Malls foster long term and sustainable with their communities and customers. Multiplan uses malls' infrastructure to promote social initiatives, such as the Giving Tree project, which promotes charities for children in need. During the Covid crisis, Multiplan has made parking lots available for Covid vaccination in 3 malls. Iguatemi signed in 2019 the Woman's Empowerment Principle's (WEP's), a project of the UN and the Global Pact. Fibra Danhos participated in the Symbolic Signing of the Commitment to the Women's Empowerment Principles at the 2023 Business Meeting of the Global Compact Mexico.

Parque Arauco offered more than 1500 free activities for the community. VESTA is currently contributing funds through 200 scholarships for nurses caring for people stricken with the Covid virus and for the purchase of medical equipment for clinics in the State of Mexico as well as the temporary upgrade of clinics in Mexico City and Tijuana. FIBRAMQ has partnered with the Mexican non-for-profit, INROADS de Mexico, to develop IMPAC(+), a talent support program that enables social mobility opportunities for emerging youth. FIBRAPL has provided training to 240 people in the Mexico City market as part of its Community Workforce Initiative. Vesta is committed to reducing the salary gap within the management level in 15% where its human resources department has been implementing various actions related to reducing its salary gap. 71% of Terrafina's tenants follow ESG practices.

Governance

Many of Brazilian Malls are listed in Novo Mercado, such as Multiplan and Allos. On Fibras, Terrafina will seek shareholder approval for the internalization of its external advisor. Parque Arauco is in 18th place on Great Place to Work in Colombia. TERRA's strategic actions are aligned with the 2030 Agenda through the Sustainable Development Goals (SDG). Fibra Danhos' Integrated Annual Report 2022 was recognized internationally, winning six nominations for the LACP Vision Awards reflecting its commitment to the transparency of its presented results information. Vesta is committed to the diversity within its Board of Directors, Committees and Employees where its Board of Directors will include three women as permanent members.

Metals & Mining

The Metals & Mining industry has a high energy consumption, so most of the ESG initiatives revolve around the environmental side and use of resources, especially in the quest for carbon neutral steelmaking. After the Brumation dam collapse tragedy, social and dam safety initiatives were increased by nearly all companies.

Environmental

Most of the initiatives focus on energy and water usage, the main relevant resources for Metals & Mining companies. Many companies use internally recycled water, and some also use internally generated power. ~90% of Vale's energy consumption comes from renewable sources, in Brazil this percentage is higher at ~99%, with 96% guaranteed by concession contracts and own assets. Vale has a stated goal of being carbon neutral by 2050, in line with the Paris Agreement.

Vale also developed its green briquette, a technology that will help steelmakers cut their carbon emissions by up to 10%. Vale has also signed MoUs with major global steelmakers, such as Ternium and Nippon Steel, to help develop decarbonization solutions in steel production.

CSN produces almost all the energy it needs and reuses all but 1% of the water it uses. Usiminas has a project to recover water springs in Brazil which already recovered 4,490 springs, in 2022 their reuse index on their operations was 93%. Besides, due to water and energy crisis in 2021, Usiminas is developing a tool to record deviations related to waste of resources in general, including water. 97.6% of the water used in Gerdau's production is reused and CO2 emissions per ton of steel are half of the global average. Gerdau has a target to reduce its CO2 emissions to 0.83t of CO2 per ton of steel until 2031, from 2021's 0.9t, they want to be carbon neutral until 2050.

CSN produces almost all the energy it needs and reuses all but 1% of the water it uses. Usiminas has a project to recover water springs in Brazil which already recovered 4,490 springs, in 2021 their reuse index on their operations was 92.5%. Besides, due to water and energy crisis in 2021, Usiminas is developing a tool to record deviations related to waste of resources in general, including water. 97.6% of the water used in Gerdau's production is reused and CO2 emissions per ton of steel are half of the global average. Gerdau has a target to reduce its CO2 emissions to 0.83t of CO2 per ton of steel until 2031, from 2021's 0.9t, they want to be carbon neutral until 2050.

Social

All of the companies helped fight the Covid pandemic. Gerdau, for instance, donated R\$20mn to municipalities in which they operate. Vale increased its community initiatives after the dam disasters and has a goal of reducing employees' risk exposure and having zero fatal injuries by 2025. In addition, Vale said it is working on reducing gender inequality, aiming to double female representation in its workforce, to 26% overall and 20% of its leadership by 2030. CSN also aims to double the percentage of women in the workforce, from 14% to 28% by 2025. ~24% of Gerdau's leadership positions are occupied by women, and the company has policies to increase people with disabilities' (PwDs) share in the workforce, in 2021 there were ~700 PwDs in the company's workforce.

Governance

Vale made the most concrete changes to its governance structure in order to align management incentives with ESG efforts. A 3rd independent board member and independent investigation committees were created in 2019. Vale also improved ESG disclosure by creating a portal to increase ESG transparency and linked 20% of C-level long-term compensation to ESG factors, an initiative Usiminas took as well. CSN created an ESG committee as an advisory body to its board. However, female underrepresentation on boards persists in Metals & Mining companies. Only one of Gerdau's 9 board members is a woman. CSN, Grupo Mexico, Southern Copper and Usiminas are the negative highlights, currently there are no women on their boards.

Pulp & Paper

Pulp and paper ESG initiatives typically focus on environmental, though social and governance factors receive interest as well. Common themes across the industry are efforts to reduce water and energy consumption, the latter including emphasizing renewable and self-generated energy sources. Reduced energy consumption typically brings with it reduced greenhouse gas (GHG) emissions, based on our North America team's analysis ([see their report](#)).

Environmental

The LatAm P&P companies use mosaic-shaped planting in the forests, which helps with preservation of fauna and flora. Additionally, Klabin and Suzano have initiatives to reduce water usage. In terms of longer-term strategies and goals, Suzano set several ambitious environmental goals for 2025, such as a target to reduce carbon emissions by 40Mt while also integrating environmental analysis in its latest capital projects, including the new Ribas do Rio Pardo / Cerrado mill. Meantime, Klabin was the first Brazilian company to issue a 30-year green bond and also use a 90% renewable energy matrix. CMPC developed in 2017 the Corporate Purpose Statement to guide its sustainability strategic focus. The sustainability focus aims at risks the company is exposed to and out of its control, material issues and alignment to the 2030 agenda goals and targets. Copec's forestry division Arauco was the first forestry company in the world to be certified as carbon neutral, and CMPC has had some wins here as well. ESG is also presenting an opportunity to P&P companies, given their net carbon removers position. Suzano has a pipeline of over 30Mt of CO₂ to be turned into credits, of which 7.5Mt are in the validation phase and could be sold in the voluntary market in the near term.

Social

All LatAm P&P companies helped fight the pandemic in their areas of operation. Suzano works to improve the Brazilian Education Index (IDEB) by 40% in areas where it operates through 2030. The company also has programs to fight poverty in said areas, as well as initiatives to foster increased participation in its workforce by minorities, people with disabilities and LGBTQI+. In 2015, Klabin started community forums with society representatives and other constituencies to resolve problems in local communities - this initiative was presented at the UN in 2018. The company also has projects to help local

farmers with environmental registers and sustainable practices, which will benefit family-farm agriculture and income. CMPC invested more than US\$40mn in 2019 in projects to help communities the company operates in. The projects are divided in seven categories: culture & integration, education & skills development, entrepreneurship & productive coexistence, local supply chain, forest & ecosystem services, sustainable cities & quality of life and access to water and sanitation. Copec established the “Copec al servicio de Chile” program including initiatives related to health, food, heating and donations, linked to different institutions. It created programs in Chile to support school continuity and local businesses, serving more than 28 communities in the country.

Governance

Pulp & Paper companies seek to attain high standards of global governance and ESG is gradually being incorporated into the decision-making process. For example, Klabin integrated sustainable development goals into its strategy agenda through KODS (Klabin Objectives for Sustainable Development). Since 2021 Suzano is doing an annual ESG call to disclose ESG initiatives, accomplishments and targets to the market. CMPC reports that its governance practices are aligned with the best international practices, while Copec has created an ethics committee to guide the company in its practices and principles.

Capital Goods

Capital goods companies continue to focus on improving the use of resources efficiency as their businesses are overall intensive on energy and raw materials.

Environmental

On autoparts, we note that most of them are focusing on reducing CO2 emissions, industrial waste and increasing recycling of inputs. WEG focus on reducing the use of resources and providing solutions for clients to do so as well. We note that WEG is exposed to several decarbonization trends like solar and wind energy, fleet electrification and energy storage. There is a disseminated move for using resources more efficiently. Randon wants to reduce by 40% the emission of greenhouse gases in 2030 and to zero the trash discard in landfills and rivers effluents. In 2021, Tupy dedicated 57% of its R&D investments to projects linked to sustainability such as battery recycling and hydrogen motors. Moreover, with the acquisition of MWM, Tupy expects to add exposition to motors powered by bio methane and bio-generators that use residuals from agricultural activities to produce electricity.

Social

lochpe Foundation runs projects in Mexico and in Brazil focused on education. The company also highlights the Corporate Social Responsibility audit program, executed by Volvo Group in the company’s plant in Cruzeiro – BR, in which lochpe classified as the biggest grade among all of the suppliers worldwide.

Governance

Risk structures are efficient. Most of the companies have no overlap between chairman and CEO and a sizeable share of the boards is composed by independent board members. Diversity remains an issue for Capital Goods companies as few women are in leadership roles in these companies. Despite that, Randon intends to double the share of women in leadership positions until 2025 (from 2020).

Financials

We see banks' commitment to the ESG agenda translated into well-established goals and targets to be fulfilled in the medium and long term. Indeed, several companies in the financial sector are included in ESG-related indexes, such as the Dow Jones Sustainability Index, FTSE4Good Index, ISE B3 and many Bloomberg indices. Importantly, i) on the environmental side, many credit lines and fixed income products are linked to sustainability goals, promoting best practices among their clients, ii) on the social side, the four largest banks in our coverage employ over 320k people in Brazil, as well as managing their own social institutions, and iii) on the governance side, banks count on strict models to manage multiple types of risk, especially considering their relevance for the macro environment. The large banks under our coverage are signatories of multiple international agreements related to sustainable development (SDG), transparency (GRI, IR), climate change (TCFD), sustainable business (PRI) and diversity/human rights. The sequential improvement in financial companies' commitment to ESG is reflected in the ESG risk score provided by Sustainalytics, which reflects how risks have been addressed (closer to zero, the better).

Better ESG score across LatAm financials

ESG score has overall improved across the LatAm financials space, as lower scores are showing better ESG risk management. Banco de Chile, Santander Chile, B3, Banorte and Cielo are the LatAm financials with the best ESG scorings, while IRB Brasil, Porto Seguro and Itau Corpbanca have the worst ESG scorings. We noticed ESG improvements were more notable at Santander Chile and Itau Corpbanca. While ESG metrics deteriorated at Banrisul and B3.

Exhibit 45: Brazil banks and non-bank - Average ESG score

Non-banks (B3, Cielo, BB Seguridade) showing better ESG metrics when compared to the banks

Brazil Banks	2014	2018	2022	2023
Bradesco	42	24	21	21
Banco do Brasil	41	38	21	19
Banrisul	42	24	21	25
Santander Brasil		31	23	19
BTG Pactual		52	24	23
Itau Unibanco	39	33	26	25
Average	41	34	23	22
Brazil Non-Banks	2014	2018	2022	2023
B3	28	26	15	17
Cielo	16	13	18	17
BB Seguridade	35	31	19	18
Porto Seguro	37	36	33	29
IRB Brasil		35	36	35
Average	29	28	24	23

Source: BofA Global Research, Sustainalytics

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Exhibit 46: Mexican and Andean banks – Average ESG score

Except Itau Corpbanca, we noticed significant ESG improvements across the banks

Mexican banks	2014	2018	2022	2023
Banorte	38	29	17	17
Inbursa	54	47	34	27
Average	46	38	26	22
Andean banks	2014	2018	2022	2023
Banco de Chile	43	38	18	14.5
Bancolombia	42	26	19	17.8
Credicorp	43	34	24	22.1
BCI	44	38	29	27.3
Santander Chile	42	37	30	15
Itau Corpbanca		38	41	27.5
Average	43	35	27	21

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Environmental

Banks have been increasingly involved in credit origination to sustainable causes and in the issuance of green bonds, with all companies working under the Equator Principles (international rules that regulate minimum social and environmental criteria for a credit concession). Also, there is a blue commitment program across the region to promote electro-mobility, use of renewable energy and ESG investment funds.

By September 2023, Itau Unibanco has financed R\$ 327bn (82% of the target for 2025) in sustainable projects (related to energy, agribusiness, pulp and paper, health and education). Itau Unibanco also has a project dedicated to incentivizing innovation and entrepreneurship in ESG called CUBO ESG. On the other hand, Mexican bank Banorte's

financed emissions represented 43.5% coverage of credit portfolio (oil & gas, power generation, real estate, temporary accommodation, and mortgage). On Andean banks, since 2022, Banco de Chile runs the Blue Commitment to Chile framework and among the initiatives is the Sustainable Financing Framework, which provides financing to projects that generate positive environmental impact.

Many companies in our coverage have already committed to be Net Zero between 2030 and 2050. As banks pursue sustainability throughout their whole value chain, many Brazilian banks signed the Net Zero Bank Commitment (UNEP FI), committing credit portfolios to be net zero by 2050. In 2020, Itau Unibanco, Santander and Bradesco launched the Amazon Plan, whose objective is sustainable development in the Amazon, with three strategic focuses: i) supporting environmental conservation and the development of the bioeconomy; ii) investing in sustainable infrastructure; iii) contribute to the guarantee of basic population rights. In 2022, B3 launched a guide to companies on sustainability and ESG.

Social

Brazilian banks have consistently demonstrated strong commitment to education programs, financing several scholarships. Bradesco finances the Fundação Bradesco, a major social and educational program which benefits more than 60k students in 40 schools through Brazil (in the last 10 years, the bank invested R\$8.9bn). Itaú has not only education programs, but also has been pioneer in promoting social mobility in large urban centers. With Santander Universidades, Santander supplied 103k scholarships for university students. On other hand, Banorte has created alliances to offer accessible services to blind people, and an agreement with the UNESCO to strengthen social inclusion in Mexico. While Banco de Chile reached 3.9k people through its financial education program “Cuentas con el Chile”.

In addition to these programs, Brazilian banks have been showing efforts for promoting diversity in their workforce. Bradesco’s leadership positions are held 34% by women and 22% by black people. By 2025, Itau Unibanco targets to have 35-40% women in leadership positions and to have a hiring inflow of 50% woman and 40% black people. As for Santander, 40% of female leadership and black employees’ participation is expected to be achieved by 2025. On Andean banks, on Credicorp, women represent 55% of employees and 27% of senior leaders. On Mexican financials, women represent 43% of total employees and 46% of the directors on Qualitas.

Governance

Banks developed specific structures to deal with potential impacts, such as credit quality, minimum liquidity, compliance, macroeconomic environment, and client protection, given their importance to the credit industry/economy in the country. Most recently, banks mapped and addressed concerns related to cybersecurity, with efforts for data protection and transparency in the use of customer’s information. Banorte has been recognized on its digital transformation strategy and its customer-centric vision of its product design.

In addition, bonus payments for high staff have been defined by the achievement of business metrics, as well as risk exposure. Importantly, independent members represent about 45% of Brazilian banks’ boards, while financial companies in Mexico reached about 55%. Qualitas has 17% of the Board of Directors represented by women, while 67% of the Board is integrated by independent members. On Andean banks, Credicorp and Bancolombia have 30-33% of the Board of Directors integrated by women.

Retail

Retail’s consumer facing orientation has triggered wide-spread activity in product, packaging, supply chain, recycling, reuse, energy efficiency and other efforts to reduce environmental footprints. Efforts have been recognized by sustainability index inclusion and awards. The 2023 S&P Global Sustainability Yearbook includes Cencosud, Falabella, Hypera, and Lojas Renner.

Environmental:

Natura may lead our coverage in terms of its environmental initiatives. It was the first B Corporation certified in Brazil, it has been carbon neutral since 2007, over 90% of its ingredients come from natural, sustainable sources. Natura also received the Leaping Bunny certification given by Cruelty Free International. In 2022, Natura announced a “Commitment to Life” for 2030, a comprehensive sustainability plan which will step up actions to tackle some of the world’s most pressing issues, including climate and protection of the Amazon, the defense of Human Rights and ensuring equality and inclusion throughout its network, while embracing circularity and regeneration. Another industry highlight is Lojas Renner, which became carbon neutral in 2015, and in 2021 obtained all of its energy from renewable sources (solar, wind, biomass and small hydroelectric plants). Other efforts include energy efficient lighting, refrigeration, climate control, the increased use of electrical vehicles.

Social:

In terms of social, Magalu created a “Social World” within its SuperApp, offering products from more than 60 NGOs and Social Impact businesses. Magalu is also moving decisively to increase the proportion of black employees in management positions with targeted efforts to recruit, train, and retain Brazilians of color. Mercadolibre’s efforts to democratize commerce has created a platform which is now the primary source of income for about 1.8 million families throughout Latin America, and supports multiple programs to foster impact entrepreneurship across the region. Petz leads Brazil’s largest pet adoption program “Adote Petz”, with nearly 66k adoptions throughout the company’s history, and partners with NGOs to raise funds for the expansion and renovation of shelters for rescued animals. Grupo Pão de Açúcar develops different initiatives for each of its banners, ranging from healthy and sustainable food to training for socially vulnerable youth or promoting micro entrepreneurship in vulnerable areas.

Governance:

The majority of our coverage is listed on the Novo Mercado, which does require single share structures, board independence thresholds, tag-along rights and other protections for minorities. Regulations, while in-line or superior to many developed market benchmarks, do not require detailed disclosure of management KPI’s, nor are they explicitly protective of transfer pricing, in addition to other gaps. Management compensation is linked to ESG targets for companies such as Assaí, Lojas Renner, and Natura.

Health Care

The healthcare industry is already closely linked to ESG practices normally, however, some of the companies we cover have been pioneers in improving best practices even further, especially in this moment of pandemic. Among them we have practices such as:

Environmental

Hapvida recognizing the importance of taking care of the environment, in 2020 created a sustainability department to balance economic, social and environmental dimensions in the Company, establishing on each of its units a Health Services Waste Management Plan monitoring water and waste consumption and applying action plans to reduce its consumption. Additionally, in 2020 Rede D’Or migrated several Sao Luiz units to wholesale market for cleaner and renewable energy, having Hospital Sao Rafael using solar energy as main energy source for its hot water system. Rede D’Or has reduced diesel consumption by 68% in 2020.

Social

The pandemic presented several challenges, but some companies stood out to help on the hard times, Rede D’Or made donation of R\$220mn for the pandemic to the government of all Brazilian states where they operate, being recognized by Forbes Magazine, among the 5 largest companies who donated to fight Covid-19. Additionally,

adapting to the needs and learns that the pandemic left, companies have shown significant attention to telemedicine, Fleury has enhanced its Saude ID platform performing 915k teleconsultations since launched. Additionally, Hapvida and GNDI one of the largest healthcare operators merged, and the consolidation of the sector could bring economies of scale for more competitive prices, a broader coverage and improved quality.

Governance

Hapvida has adhered to the “Code of Best Corporate Governance Practices” (IBGC) with the intend to pursue a solid institutional environment, The Company is also subject to Novo Mercado Regulations and counts with two independent Board Member out of 9 members, while Rede D’Or has 2 independent member out of 7 members and also belongs to Novo Mercado, both companies having at least 20% of their board members being independent, accompanied by Audit, Corporate Risk and Sustainability Committees and Commissions.

Education

Education companies have environmental initiatives around self-generating energy and increasing the share of renewable energy. Companies also have in their mission an important social aspect of improving the country’s educational levels.

Environmental

Afya has 3,615 MWh per year of power generation capacity in photovoltaic plants, installed in nine schools and 17% of the total energy consumed by its operations is supplied by solar energy, versus 8% in 2021. In 2020, YDUQS concluded its distributed generation project, with the implementation of a solar plant in the state of Rio de Janeiro with the capacity to produce 270 MWh/month. In 2022, the project represented 5% of YDUQS’ energy consumption from renewable sources which totals 77% of total company’s energy consumption. It is estimated that in 10 years of operation the project will be able to avoid the emission of 2 thousand tons of carbon dioxide equivalent (tCO₂e). Anima created a standard Waste Management Plan for the entire Anima Ecosystem, in addition to standardizing the principles for measuring energy performance.

Social

Afya benefited 7,960+ people from the social responsibility initiatives carried out by their operations. Also, Afya collected 3 tons of food in campaigns carried out by IPEMEDs and distributed to local communities. Vitru launched in 2020 the “Autismos Presentes” project, a pioneer in training teachers on autism spectrum disorders. During the pandemic, YDUQS made available the “Com Você” program, offering exemption from tuition and flexible monthly payments for students of Institutions that had experienced a significant loss or reduction of income.

Governance

40% of the members of Afya’s Board of Directors are women and 30% of the members of the Board are independent. Also, Afya adopted variable compensation targets for executives supported by the company’s ESG projects, in addition to NPS (students, doctors and employees), organizational climate, revenue growth and FCO). Vitru has several advisory committees to the board for an in-depth discussion of relevant topics. Anima’s board of directors is composed of a majority of independent directors and an expanded competence matrix, including strategy, corporate governance and digital transformation.

Telecommunications

Telecommunication sector has advanced in the ESG practices, among the best practices we recognize on the sector are the following:

Environmental

America Movil has a history of over 10 years of publishing their Sustainability Report and in 2018 created the Corporate Sustainability Executive Committee to look forward to a “smart sustainability” strategy, adhering to the United Nations Sustainable Development Goals. Tim Brazil has focused efforts towards energy consumption control, assuming the commitment of an 80% increase in energy efficiency by 2025 through two main fronts, pursuing renewable sources and establishing a target of recycling at least 95% of the waste generated by its operations. Vivo has been included for the 11th consecutive time in the Corporate Sustainability Index (ISE B3) and in the Brazilian Climate Resilience Index, becoming the first and only Telco in Brazil to have 100% renewable energy. Additionally, Televisa has set a GHG emissions target reduction of 10% by 2025 and Totvs has around 98% of its energy consumed coming from renewable sources. In general the sector has looked for the use of renewable energy, accompanied by water consumption reduction.

Social

Connectivity has gained even more relevance worldwide after the pandemic, as digitalization has become a top priority, therefore telecommunications companies have focused efforts on reaching more underserved cities. This has also been supported in Brazil by regional internet providers like Brisanet, Unifique and Desktop. In addition, one of the main changes in the Brazilian and Mexican telecom sector in recent years was the roll out of 5G, which should further increase in adoption in 2024 improving the quality and speed of connectivity. For the 5G spectrum auction in Brazil, several commitments were made by the companies to deliver connectivity to public schools and remote regions, which should have a positive social impact, as there will be less connectivity isolation. Most commitments are due in 2026.

Governance

Tim Brasil belongs to Novo Mercado and Vivo has 9 independent directors from 12 members. Most companies in the sector count with Audit Committees to bring confidence to information provided while following best practices in the market.

Annex: Sustainalytics methodology

The following offers a short overview of the methodological aspects of the ESG Risk Ratings that was launched in September 2018 by Sustainalytics. Readers that are interested to go beyond the methodology can refer to the three volume White Paper series that was published since the product launch. The publications are available on the official website of the data provider.

What the ESG risk ratings measure

The ESG Risk Ratings measure the degree to which a company's economic value (enterprise value) is at risk driven by ESG factors or, more technically speaking, the magnitude of a company's unmanaged ESG risks. The ESG Risk Ratings comprise two dimensions, Exposure and Management, to assess how much unmanaged ESG risk a company is exposed to.

For each company, unmanaged risk is measured by evaluating a unique set of material ESG issues based on both the company's exposure to and management of those issues. The resulting unmanaged risk for each issue is then summed to provide one score that represents the company's overall ESG risk.

A company's ESG Risk Rating is comprised of a quantitative score and a risk category. The quantitative score represents units of unmanaged ESG risk with lower scores representing less unmanaged risk. Unmanaged Risk is measured on an open-ended scale starting at zero (no risk) and, for 95% of cases, a maximum score below 50. Based on their quantitative scores, companies are grouped into one of five risk categories (negligible, low, medium, high, severe). These risk categories are absolute, meaning that a 'high risk' assessment reflects a comparable degree of unmanaged ESG risk across all sub-industries covered. This means that a bank, for example, can be directly compared with an oil company or any other type of company. One point of risk is one point of risk (equivalence principle), no matter which company or which issue it applies to, and points of risk add up across issues to create overall scores.

Defining materiality and risk

An issue is considered to be material within the ESG Risk Ratings if its presence or absence in financial reporting is likely to influence the decisions made by a reasonable investor. To be considered relevant in the ESG Risk Ratings, an issue must have a potentially substantial impact on the economic value of a company and, hence, its financial risk- and return profile from an investment perspective. It is important to distinguish the ESG Risk Ratings' use of materiality as a concept from narrower legal or accounting-focused definitions. Not every issue Sustainalytics considers as material in the rating is legally required to be disclosed in company reporting.

Note that an underlying premise of the ESG Risk Ratings is that the world is transitioning to a more sustainable economy and that the effective management of ESG risks should, therefore, be associated with superior long-term enterprise value, *ceteris paribus*. Some issues are considered material from an ESG perspective even if the financial consequences are not fully measurable today.

Exhibit 47: List of acronyms

List of acronyms mentioned in this report

ESG	Enviromental, Social and Governance
AUM	Assets under management
EM	Emerging Markets
DM	Developed markets
E&P	Exploration and production
TMT	Technology, media and telecom
MP	provisional measures
OCTG	Oil Company Tubular Goods
CVM	Brazil local regulator for capital markets
SME	Small and mid-size enterpresides
F&B	Food & Beverages
PET	Polyethylene terephthalate
Evs	Electric Vehicles
eVTOLs	Electric vertical takeoff and landing aircrafts
WHC	Wildlife Habitat Council
GCCA	The Global Cement and Concrete Association
CEPs	Community Engagement Plans
WEPs	Woman's Empowerment Principle
SDG	Sustainable Development Goals
GHG	Greenhouse gas
IDEB	Brazilian Education Index
R&D	Research & Development
P&P	Pulp & Paper
NGO	Non-governmental organization

Source: BofA Global Research

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Special Disclosures

Enauta Participacoes SA: BofA Securities is currently acting as financial advisor to QatarEnergy Brasil Ltda. in connection with its proposed sale to Enauta Participações S.A., which was announced on December 25, 2023.

Banco Bradesco: The Brazilian affiliate of BofA Securities is currently acting as a Buy-side Advisor to Elo Participações Ltda. (an affiliate of Banco Bradesco S.A. and Banco do Brasil SA) in connection with its proposed share acquisition of Cielo SA by means of a delisting tender offer, which was announced on Monday, February 5, 2024.

Bancolombia: BofA Securities is currently acting as a financial advisor to Grupo de Inversiones Suramericana SA in connection with an agreement to divest ownership in Grupo Nutresa SA in exchange for shares of Grupo Sura and Grupo Argos.

Disclosures

Important Disclosures

FUNDAMENTAL EQUITY OPINION KEY: Opinions include a Volatility Risk Rating, an Investment Rating and an Income Rating. **VOLATILITY RISK RATINGS**, indicators of potential price fluctuation, are: A - Low, B - Medium and C - High. **INVESTMENT RATINGS** reflect the analyst's assessment of both a stock's absolute total return potential as well as its attractiveness for investment relative to other stocks within its Coverage Cluster (defined below). Our investment ratings are: 1 - Buy stocks are expected to have a total return of at least 10% and are the most attractive stocks in the coverage cluster; 2 - Neutral stocks are expected to remain flat or increase in value and are less attractive than Buy rated stocks and 3 - Underperform stocks are the least attractive stocks in a coverage cluster. An investment rating of 6 (No Rating) indicates that a stock is no longer trading on the basis of fundamentals. Analysts assign investment ratings considering, among other things, the 0-12 month total return expectation for a stock and the firm's guidelines for ratings dispersions (shown in the table below). The current price objective for a stock should be referenced to better understand the total return expectation at any given time. The price objective reflects the analyst's view of the potential price appreciation (depreciation).

Investment rating	Total return expectation (within 12-month period of date of initial rating)	Ratings dispersion guidelines for coverage cluster ^{R1}
Buy	≥ 10%	≤ 70%
Neutral	≥ 0%	≤ 30%
Underperform	N/A	≥ 20%

^{R1} Ratings dispersions may vary from time to time where BofA Global Research believes it better reflects the investment prospects of stocks in a Coverage Cluster.

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Research Analysts

David Beker >>

Bz Econ/FI & LatAm EQ Strategy
Merrill Lynch (Brazil)
david.beker@bofa.com

LatAm Equity Strategy

David Beker >>

Bz Econ/FI & LatAm EQ Strategy
Merrill Lynch (Brazil)
david.beker@bofa.com

Paula Andrea Soto, CFA >>

LatAm Equity Strategist
Merrill Lynch (Brazil)
paula.soto@bofa.com

Carlos Peyrelongue >>

Research Analyst
Merrill Lynch (Mexico)
carlos.peyrelongue@bofa.com

Mateus Conceicao >>

LatAm Equity Strategist
Merrill Lynch (Brazil)
mateus.conceicao@bofa.com

LatAm FI/ FX Strategy & Economics

David Beker >>

Bz Econ/FI & LatAm EQ Strategy
Merrill Lynch (Brazil)
david.beker@bofa.com

Jane Brauer

Sovereign Debt FI Strategist
BofAS
jane.brauer@bofa.com

Natacha Perez

Brazil Economist
Merrill Lynch (Brazil)
natacha.perez@bofa.com

Carlos Capistran

Canada and Mexico Economist
BofAS
carlos.capistran@bofa.com

Sebastian Rondeau

LatAm FI/FX Strategist
BofAS
sebastian.rondeau@bofa.com

Alexander Müller

Andean(ex-Ven) Carib Economist
BofAS
alexander.muller@bofa.com

Lucas Martin, CFA

Sovereign Debt FI Strategist
BofAS
lucas.martin@bofa.com

Ezequiel Aguirre

LatAm FI/FX Strategist
BofAS
ezequiel.aguirre2@bofa.com

Pedro Diaz

Caribbean Economist
BofAS
pdiaz2@bofa.com

Christian Gonzalez Rojas

LatAm Local Markets Strategist
BofAS
christian.gonzalezrojas@bofa.com

LatAm Corporate Credit Research

Anne Milne

Research Analyst
BofAS
anne.milne@bofa.com

Carlos Assumpcao, CFA

Research Analyst
Merrill Lynch (Brazil)
carlos.assumpcao@bofa.com

Jason Amoratis

Research Analyst
BofAS
jason.amoratis@bofa.com

Agribusiness and Food & Beverages

Isabella Simonato >>

Research Analyst
Merrill Lynch (Brazil)
isabella.simonato@bofa.com

Fernando Olvera >>

Research Analyst
Merrill Lynch (Mexico)
folvera@bofa.com

Electric and Water Utilities

Arthur Pereira, CFA >>

Research Analyst
Merrill Lynch (Brazil)
arthur.pereira@bofa.com

Gustavo Faria >>

Research Analyst
Merrill Lynch (Brazil)
gustavo.faria@bofa.com

Financial Institutions

Mario Pierry

Research Analyst
BofAS
mario.pierry@bofa.com

Ernesto Gabilondo >>

Research Analyst
Merrill Lynch (Mexico)
ernesto.gabilondo@bofa.com

Flavio Yoshida >>

Research Analyst
Merrill Lynch (Brazil)
flavio.yoshida@bofa.com

Antonio Ruetter >>

Research Analyst
Merrill Lynch (Brazil)
antonio.ruetter@bofa.com

Real Estate, cement and MX transportation

Carlos Peyrelongue >>

Research Analyst
Merrill Lynch (Mexico)
carlos.peyrelongue@bofa.com

Aline Caldeira >>

Research Analyst
Merrill Lynch (Brazil)
aline.caldeira@bofa.com

Alan Macias >>

Research Analyst
Merrill Lynch (Mexico)
alan.macias@bofa.com

Daniel Rojas Vielman >>

Research Analyst
Merrill Lynch (Mexico)
daniel.rojas2@bofa.com

Retail

Robert E. Ford Aguilar, CFA

Research Analyst
BofAS
robert.e.ford@bofa.com

Melissa Byun, CFA

Research Analyst
BofAS
melissa.byun@bofa.com

Vinicius Pretto >>

Research Analyst
Merrill Lynch (Brazil)
vinicius.pretto@bofa.com

Wellington Santana >>

Research Analyst
Merrill Lynch (Brazil)
wellington.santana@bofa.com

Natural Resources

Caio Ribeiro

Research Analyst
BofAS
caio.ribeiro@bofa.com

Leonardo Marcondes >>

Research Analyst
Merrill Lynch (Brazil)
leonardo.marcondes@bofa.com

Leonardo Neratika >>

Research Analyst
Merrill Lynch (Brazil)
leonardo.neratika@bofa.com

Guilherme Rosito >>

Research Analyst
Merrill Lynch (Brazil)
guilherme.rosito@bofa.com

Telecommunications, Education and Healthcare

Fred Mendes, CFA >>

Research Analyst
Merrill Lynch (Brazil)
fred.mendes@bofa.com

Gustavo Tiseo >>

Research Analyst
Merrill Lynch (Brazil)
gustavo.tiseo@bofa.com

Lucca R Brendim >>

Research Analyst
Merrill Lynch (Brazil)
lucca.brendim@bofa.com

Mirela Oliveira >>

Research Analyst
Merrill Lynch (Brazil)
mirela.oliveira@bofa.com

Transportation & Capital Goods

Rogério Araujo >>

Research Analyst
Merrill Lynch (Brazil)
rogerio.araujo@bofa.com

Gabriel Frazao >>

Research Analyst
Merrill Lynch (Brazil)
gabriel.frazao@bofa.com

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