CEO agenda for Germany's economic cooperation with Latin America and the Caribbean

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Disclaimer

The CEO agenda, developed in the Latin America Committee of German Business (LADW), presents the most important trends in Latin America and the Caribbean (LATAM) and implications for German companies. This fact-based document shows decision makers in politics and business strategies and initiatives to drive more German engagement in LATAM.

The agenda summarizes the perspective on the economic development of LATAM and the opportunities for German business in the region.

Despite careful checking, no liability can be accepted for the accuracy and completeness of the information.

Published in November 2023.

Recap:
Political and
economic
dynamics changed
since first LADW
CEO agenda in
2019

2019		• First CEO Agenda: Germany's trade and investment presence in Latin America faced some challenges, while Chinese engagement in the region extended beyond commodities and infrastructure
		EU-Mercosur agreement concluded after two decades of negotiations
		The political landscape in South America experienced heightened complexities
2020/21		The region was significantly impacted by the pandemic
		 Germany and the EU adopted a cautious approach in their relations with Latin America, partly influenced by the political situation in Brazil
		• EU-Mercosur agreement faced scrutiny, leading to new demands, especially concerning environmental aspects
		• EU-Mexico Global agreement was modernized and the ratification process is currently been prepared
2022		• Russian invasion in Ukraine and EU embargoes on Russian oil and gas triggered debate in Germany on diversification and new focus on Latin America
		• A change in government in Brazil provided new opportunities for the EU and particularly for the German government
		 Negotiations for the modernization of the EU-Chile agreement were concluded in December, and an interim Trade Agreement was reached
2023		• Germany and the EU have initiated a strategic focus on LATAM, incl. high-level visits, e.g., to Brazil
		• EU-CELAC summit brought together 50 heads of state and government, an event that hadn't taken place since 2015 – investments of ~45 EUR bn were announced as part of the Global-Gateway initiative
		A new CEO agenda is introduced
		 High-level governmental consultations between Germany and Brazil are scheduled for December, the first since 2015
		• Window of opportunity for concluding the EU-Mercosur agreement is likely to close by end of the year
2024/25		• Brazilian presidency of the G20 and hosting of COP30 in 2025 expected to attract substantial international attention to the region
,	ļ	 The European Parliament and U.S. presidential elections may have potential implications for Latin America's political relations

Executive summary

New CEO agenda briefly

Key trends in LATAM and impacts for Germany/EU

5 main strategies for German companies

4 levers for implementation

9 concrete initiatives for more drive beyond status quo

5 success factors for doing business

5 main measures for government support



1 Situation in LATAM

LATAM's economic **potential is substantial**, offering perspectives for **higher margins** than in high-growth Asian markets. Expected low growth overall could be countered by opportunity areas achieving up to +~6% CAGR.

The region holds **significant natural resources and energy supply** (e.g., with ~60% of lithium and ~18% of rare earth reserves globally) with high-capacity potential for renewable energy at falling cost.

Large talent pool available, e.g. in tech fields with ~20% of graduates in higher education for engineering, IT and science. Labor costs among the most competitive in the world.

2 Challenges for Germany

Recent global **political and economic changes** hit Germany's economic landscape hard – need to **diversify supply chains** and **safeguard access to resources and skilled workers**.

Footprint of German companies in LATAM is significant, but **economic investment** remains below potential (only ~3% of Germany's foreign direct investment in the region).

German **exports** to LATAM have not grown over the past 10 years while US and China have built a strong **trade partnership**, with exports increasing 38% (2022: USD 547 bn) and 87% (2022: USD 252 bn) respectively over this period versus 3% for Germany (2022: USD 44 bn).



3 Opportunities and potential projects

Economic reordering of the global ecosystem is taking place (e.g., longterm resource contracts are awarded now). The longer Germany waits to seek new opportunities in LATAM, the harder the climb will be.

More engagement in LATAM could be key to **increase resilience** of the German economy and help companies by **matching sustainability trends**.

Companies could follow main strategies to tap into regional opportunities, such as using import strategy or targeting tech talent. LADW identified possible levers and initiatives to give the engagement in the region more drive.

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• 1: Current situation in LATAM

- 2: Challenges for Germany
- 3: Opportunities for successful business in LATAM

Long version

According to the **European Univer**sity Institute, the economic potential of the region is substantial but with overall low growth expectation



1 Inflation rate based on December of the respective year Source: The Conference Board, ViewPoint EUI

Sustainable energy and associated resources have large markets today and with expected doubledigit growth for renewable energy, lithium, and rare earths

Illustrative – not exhaustive



Countries with large resource reserves

Size of box indicates global market size 2021



1. E.g., green hydrogen, green ammonia, and green methanol

Source: Press search, GVS

LATAM shows high potential in terms of capacity for renewable energies and falling costs



Global green hydrogen market is expected to increase ~15x until 2030 – high investment is required to unlock

Global green hydrogen market size 2022-30, USD bn





Hydrogen is widely used across industries, e.g., fuel feedstock (oil refining), industrial feedstock (ammonia production), as carrier for renewable energy, transport, and industrial applications, e.g., steel production

Global hydrogen market is expected to grow at

~40% p.a. – Chile and Brazil are among the most competitive places in the world to produce green hydrogen for less than ~1.50 USD/kgH2 in 2030

High investments are required for infrastructure and plants, e.g., ~USD 4.5 bn for intelligent electricity grids in Brazil until 2026 and investments of multiple billion USD for largescale plants

Investments for large projects in LATAM usually with shared interest by governments and companies

Green hydrogen as **high value adding resource** with positive impact for the region

Source: "Green Hydrogen Market Size, Share & Trends Analysis Report" by GVR, S&P Global Commodity Insights, "Estado del hidrógeno verde en América Latina y el Caribe" by H2LAC

LATAM with attractive talent pools especially for business and engineering

According to OECD, LATAM has a large talent pool in tech fields with >20% of graduates in higher education for engineering, information technology and science

Germany already has ~700k open positions in tech jobs since 2018 and the gap is expected to increase to ~780k by 2026

Tech fields:Natural sciencesVocational and higher education¹ by field, 2013-2021Number of graduates in millionICTs²15.02.74.76.7



Health

Engineering

Education Business and law

Other

1 Includes Bachelor, Master, Doctoral and upper secondary vocational education

2 Information and Communication Technologies

Source: OECD, Stifterverband 2021

Brazil with ~46 mn people enrolled in secondary education, but only ~8 mn become tertiary graduates



YOUNG POPULATION ONLY

Education by level and age band in Brazil, 2021 Number of students in million

Large number of ~31 mn students that do not start tertiary education as **potential pool of students for new education offerings**, e.g., programming schools



1 Includes students still in secondary education during ages 20-24 2 Until age 34, could graduate later

Source: The world factbook; OECD; Brazilian Government; Team analysis

Brazil with >75 % of students in private

Brazil yearly with~0.5 mn graduates in tech fields and ~0.9 mn in business



Higher education¹ by field, 2020 Number of graduates in million

> Brazil with one of the highest enrollment rates for 40–64-yearolds into higher education programs according to Education GPS by OECD

Attractive talent pool of ~0.5 mn tech graduates and ~0.9 mn business graduates per year with currently low employment rate of ~83% for 25–64-year-olds graduates (~60% overall) in Brazil leads to additional potential for attraction of talent for German companies



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LATAM with attractive tech talent in several tech hubs

Tech hubs as locations with tech talent and founders as part of technological growth in software and hardware industries can be starting points to benefit from talent pool in LATAM

LATAM is widely culturally compatible with western countries, such as the US and Europe as values are converge in the business context

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Large-scale infrastructure initiatives are increasingly targeting LATAM and can drive development in key areas

Illustrative – not exhaustive



- The Belt and Road Initiative (BRI) was announced in October 2013 as part of China's plan for international expansion with economic corridors in Asia, Europe, and Africa – and extended to LATAM.
- In 2021, the **Global Development Initiative (GDI)** was launched as a program for sustainability projects worldwide and is also intended to expand BRI.
- So far, 21 LATAM countries have joined BRI, incl. Argentina, Bolivia, Chile, Uruguay, and Venezuela.

The Partnership for Global Infrastructure and Investment (PGII) is a shared G7 commitment to advance public and private investments in sustainable, inclusive, resilient and quality infrastructure. Through this partnership, the G7 aims to mobilize up to USD 600 bn by 2027 to narrow the infrastructure investment gap in partner countries.

Projects in LATAM:

- Expanding Digital Access in Costa Rica
- Expanding and modernizing Yilport Port in Ecuador
- The construction of over 1 gigawatt of power in Brazil from renewable sources
- Construction of a USD 0,4 bn Wind Farm complex in Brazil



- The **Global Gateway initiative** was announced in December 2021 based on the 2018 EU-Asia Connectivity Strategy.
- It plans to invest up to **EUR 300 bn** from 2021-27 focusing on Africa, Asia, and Latin America.
- Projects range from underwater data connections from Europe to LATAM to production of green hydrogen.
- Investments from the EU budget set to leverage a multiple in additional investments from other sources, e.g., private companies.

Recent investments in LATAM

Jul

2023

EUR 45 bn investment in Latin America as part of the EU-LAC Global Gateway Investment Agenda (GGIA) with more than 130 projects for green transition, digital transformation, human development, health resilience and vaccines

MoUs signed with Argentina and Chile

Scenario analysis: Despite considerable uncertainties opportunity areas with additional upside for growth in LATAM



2 E.g., modernization of bilateral agreements of EU with Mexico and Chile

ILLUSTRATIVE

3 Assuming similar economic impact of EU/Mercosur trade agreement as in analysis of Ecuador/EU agreement

Source: World Bank, "Assessing the economic impact of the Trade Agreement between the European Union and Ecuador" by the European Commission, press search

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Germany has yet to develop a strong business partnership with LATAM

FDI stock of OECD countries in LATAM, 2021

USD bn



Average investment of OECD countries¹: 79.5

1. All OECD countries if FDI data is provided 2. Estimation based on 2018 FDI stock and 2019 FDI flow data Note: FDI data depend on methodology (immediate investing country basis or ultimate investing country basis) and reporting country (as there are bilateral asymmetries due, e.g., due to valuation methods) Source: OECD

German companies have publicly announced significant investments in Mexico – potentially due to **US-nearshoring** activities



DETAILS ON FDI IN MEXICO AVAILABLE IN LONG VERSION

Selected investments from German companies in Mexico in USD mn



According to ITC, Germany's export share in LATAM hasn't grown for the past 10 years, contrary to its peers



1. Deviation from 100% due to rounding Source: International Trade Centre Trade Map

Eurostat reports that German SMEs have a significant share of ~14% in exports to and ~28% in imports from South America



Governments in LATAM with strong position to create value in the region and collaborate, instead of selling out resources to other countries

364

Small and medium-sized enterprises (<250 employees) 1

2 250 employees or more

Source: EUROSTAT

Share of overall

72%

5,713

Large enterprises²

X%

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Increased attractiveness of existing opportunities in LATAM

Current situation in Germany





German companies adapt their sourcing strategies in response to global supply chain disruptions

Increased potential of LATAM



Region with rich natural resources. e.g., worlds largest lithium reserves



Region with potential for diversification of supply chain while offering comparably low labor costs to



Sustainability trend and climate targets require new partnerships to reach CO₂ neutrality

Countries with

potential and

interest for

decarbonization,

e.g., carbon farming



historical high

export share

globally



Germany currently with ~700k open positions in tech **jobs** and the gap is expected to grow

Positive perception of German industry for **tech export** with

Need for **tech** advancements to stabilize economic situation and increase **productivity**



Large talent pool in

tech fields with many graduates in higher education for relevant fields

Asia

Source: Expert interviews, press search

Five main strategies for German companies to benefit from market conditions in LATAM



Source: Expert interviews, press search

EXEMPLARY

Deep dive import strategy: LATAM with ~60% of lithium and ~18% of rare earth reserves globally

Share of global resource reserves, 2018-22, %



Lithium

~60% of global lithium reserves in LATAM (**11 x more** than in Europe) followed by the US, China, Russia, and Australia

Rare earths

~18% of global rare earths reserves in LATAM (**18 x more** than in Europe), second behind China and followed by Vietnam, Russia and India

Projection of worldwide lithium demand and supply, 2019-30, mn ton LCE¹



Lithium demand will exceed supply already in 2024 – relationship of supply and demand will switch from ~30% excess in 2021 to ~20% shortage in 2025 resulting in rising lithium prices

1 Lithium carbonate equivalent

Note: The boundaries and names shown, and the designations used on this map do not imply official endorsement

Source: Statista, US Geological Survey, Comisión Chilena del Cobre

Deep dive export strategy: Latin America is a potentially attractive market for export manufacturing: Labor costs among

the most competitive in the world

Hourly labor	cost in	manufact	uring
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USD, 2016-2021

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X CAGR 2010-15, % X CAGR 2015-22, % I LATAM countries

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GDP (PPP) per hour worked

USD, 2022 Norway 84 C Switzerland 76 Sweden 74 📤 United States 74 Germany 69 France 66 Honited Kingdom 60 53 C Turkey 🕒 Japan 48 🕘 Taiwan (2021) 46 Poland 44 South Korea 43 🛏 Czechia 43 Hungary 41 💽 Argentina ('21) 29 🜔 Brazil (2021) 19 Mexico 19

LATAM economies with **competitive labor costs**

Given lower productivity and lower GDP per hour, export manufacturing currently only successful in some LATAM countries with low unit labor costs (i.e., output per wage unit) such as Mexico

Export manufacturing is threatened by protectionist tendencies in important receiving markets such as USA

Deep dive B2B productivity strategy: Countries are in strong need of productivity growth to prevent GDP growth rate decline of ~21% by 2030

Productivity growth Employment growth

Contribution of employment and productivity on GDP growth, 2010-30E



Note: Numbers may not sum up due to rounding

Source: World Bank, Statista

Market for German companies varies by country in LATAM – Brazil, Mexico and Argentina with a broad range of opportunities

Relative assessment of countries sectors today Large share of GDP and/or exports Medium share of GDP and/or exports

Assessment is based on sectors with the largest GDP today and exports to other countries; future potential not included





LADW as enabler recommends four possible levers along the five strategies to successfully do business in LATAM

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		Import strategy	Export strategy	B2B productivity strategy	B2C strategy	Talent strategy
A	Single company actions	 Partnering with local companies to access critical resources Installing tech e.g. electrolyzers for green H2 export 	• Expanding produc- tion plants incl. R&D centers in LATAM	 Supplying businesses with technology to increase productivity, e.g., IoT technology, machinery and digital tools 	 Investing to increase purchasing power in the region Adapting products & services to local market needs 	 Working with local universities to establish dual- education systems Offering English courses
B1	B2B actions taken by business coalitions	 Intensifying import of critical/ sustainable resources (lithium, rare earths, energy) e.g., via green hydrogen 	 Establishing low-cost manufacturing/produ ction hubs in the region as part of diversification strategies Reducing/ eliminating 	 Jointly supplying businesses with technology to increase productivity, e.g., IoT technology, machinery, and digital tools 		 Attracting and exchanging talent from local tech hubs Ensuring long-term involvement of European experts to transfer knowledge to the region
B2	Actions taken by business coalitions (group of companies) with governmental support	 Establishing sustainability related standards for project development 	 indirect taxation on products manufactured for export in the region Developing concrete projects e.g., around lithium mining 	 Helping local governments to pursue future- oriented technologies Supporting concrete projects around IoT, smart cities, digital farming & digitization 		 Making targeted investments into training of local talents (e.g., higher education professionals with Master or PhD)
C	Governmental actions	 Supporting partner- ships with states on relevant resource topics, e.g., lithium Increasing free trade by negotiations around EL Establishing double tax 	 Increasing attractiveness of export-based manufacturing y completing J-Mercosur agreement ation agreement 	 Modernizing partnership agreements, esp. between Germany & Brazil reg. industry 4.0, cybersecurity, AI, etc. 		 Supporting education systems for children, college students, & workers Especially supporting dual-education systems

Nine concrete joint initiatives by companies could help drive more engagement in LATAM beyond the status quo (1/2) NOT EXHAUSTIVE – FOR DISCUSSION



Nine concrete joint initiatives by companies could help drive more engagement in LATAM beyond the status quo (2/2) NOT EXHAUSTIVE – FOR DISCUSSION



^{*} MeuFuturo. Digital is an ecosystem of companies and entities with the goal of transforming Brazil for the future of work and education through IT and doubling the Brazilian IT market from 1.5 million to 3 million professionals in 8 years.

German companies can seize the opportunities now – Five key success factors to thrive in the region Extend market activities together with governments, local companies and institutions

Export products, services, money and know how, e.g., for digitization and technology to LATAM as part of local production, investments or market opportunities

Partner with local businesses to create a network for focus areas, e.g., mining for resource access and import resources and products

Understand the relevant areas and plan long-term alliances

Understanding the region and its countries, risks as an emerging market with high volatility, market potential with 650 million people and a young population

Jointly align on focus areas and approach LATAM countries with concrete projects

German companies to create alliances to propose relevant cooperation projects in LATAM

Empower local employees and ensure long-term involvement

Create a **"winning strategy for LATAM"** by empowering local companies and workforce to **increase productivity**

Ensure **long-term involvement** in the region, e.g., by reliable commitments for resource purchasing

Assure **knowledge transfer** by involving of European experts and **export of technology** as well as ensure **fair treatment** of employees

Harness the unique advantage from LATAM to ensure resource access and diversify supply chains

Improve environmental protection and achieve German climate objectives, e.g., by importing sustainable electricity and diversify energy sources

Support **diversification of supply chains** for German companies

Address local talent pools of highly qualified employees

LATAM has a **large talent** pool incl. tech fields while Germany has a gap in tech roles

The region is **culturally well compatible** with US and Europe

Companies can **benefit from young, highly-educated people** to fill open roles

In addition, companies could be supported by five measures from governments to run successful business in LATAM

Align on strategic topics with industry

Working together with industry to advance strategic topics such as sustainability, digitization and infrastructure

Example: Strategic focus on green hydrogen in LATAM

Support concrete projects

German government to **support concrete projects** such as projects related to resources and energy, which could help companies export technology to the region and ensure resource access like the US and China are doing

Risk mitigation also is needed for major long-term projects in the energy and mining sector through state participation or state guarantees

Example: Support harmonization of technologies and introduction of new products

Intensify government collaboration and eye-level partnerships

Commit to support business activities in the region **long-term** with joint effort in various fields incl. political efforts to stabilize situation consistently, building on MoU for energy partnership and modernization of trade agreements

Example: Implementation of Mercosur/EU agreement and mitigating reservations of NGOs and the agricultural lobby

Enable doing business with a supportive environment

Build trust in partnerships and excite companies for LATAM and strengthen cooperation to **improve political framework** with a focus on increasing free trade and easing and protecting investment with an absence of corruption, limited bureaucracy

Example: Activities for a fair and simple tax systems, e.g., with double taxation agreement; greater security for investments (e.g. state guarantees)

Support education systems in the region

Initiatives to support education systems for children, college students, and workers, e.g., a **dual-education system** could bring lots of advantages for German companies and **drive productivity**

Example: Promotion of education and further qualification, e.g., via dual education system

Source: Expert interviews

The CEO Agenda shows five key takeaways for LATAM



LATAM is a large market that is **becoming increasingly attractive** to businesses due to its abundant natural resources, potential for sustainable energy and talent pool



German companies are currently still **well positioned to engage further** in the LATAM region, e.g., through increasing investment, trade and partnerships - but other countries have become more active in recent years



There are five business strategies for German companies to benefit from market conditions in LATAM, e.g., importing resources, exporting manufactured products, supplying regional businesses with technology to increase productivity, increasing local purchasing power and leveraging LATAM's large talent pool



In order to successfully do business in LATAM, there are four possible levers to execute the five strategies: Single company actions, B2B actions taken by business coalitions, actions taken by business coalitions together with governmental support and merely governmental actions



There are **nine concrete joint initiatives** by companies that could help **drive more engagement in LATAM** beyond the status quo



der Deutschen Wirtschaft

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- Current situation in Latin America and the Caribbean (LATAM)
- German perspective and opportunities in LATAM
- Potential projects and strategies for collaboration between Germany and LATAM
- Country profiles

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1 Inflation rate based on December of the respective year Source: The Conference Board, ViewPoint EUI Countries are in strong need of productivity growth to prevent GDP growth rate decline of ~21% by 2030

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The relative effect of productivity on GDP growth is weakest in Latin America

Contribution of employment growth and productivity growth to GDP growth Average growth rates 2010-20, %



1 Higher employment reflects increased population and changes in participation and employment rates Source: Conference Board Total Economy Database LATAM

Large companies could have higher margins in LATAM than in highgrowth Asian markets



Note: Data 2000-17 is shown, as influence of pandemic lead to short term economic effects, e.g., negative real GDP growth, that overlay long term trend

Source: Corporate Performance Analytics database, WB WDI

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Deep dive: Traditional Tech

Guadalajara



🛑 Mature digital location 🛛 🛑 Emerging digital location

São Paulo: São Paulo is Brazil's commercial and innovation powerhouse, with its dynamic tech community attracting a steady flow of VC funding from all over the world. Over 60% of Brazil's start-up investments are here.

Mexico City: Mexico City enjoys a strategic location, with the US tech hubs only a short flight away

Bogotá: Colombia's growing pool of tech talent, both through university graduates and regional draw, is boosted by the strong start-up scene. Government has also cultivated highquality engineering talent through their Ministry of Science, Technology, and Innovation program.

1. Estimated workforce in traditional tech roles such as software engineers, developers. etc.

2. Estimated total tech start-ups in the city

Source: StartupBlink The Global Startup Ecosystem Index Report 2022, website search

While the traditional tech is mature in many LATAM cities, specializations are still nascent

								1.1	Emerging sp	ecialization	WOSt attr			Least a	
				*		©		-	۲	•	Ö		-		
	Recife	Panama City	Porto Alegre	Monte- video	Monterrey	San José	Curitiba	Medellín	Guada- lajara	Buenos Aires	Lima	Santiago	Bogotá	Mexico City	São Paulo
1 Al- Analytics	1.9	2.0	2.1	1.9	2.1	2.4	2.2	2.1	2.2	2.6	2.5	2.8	3.3	3.9	4.1
2 Cloud	2.0	2.0	2.2	1.9	2.1	2.4	2.2	2.0	2.1	2.6	2.0	2.5	2.7	3.3	3.4
3 Traditional tech	2.4	2.0	2.5	1.9	2.2	2.6	2.7	2.2	2.6	2.6	2.5	2.8	3.8	4.1	4.3
Overall attractiveness	2.0	2.0	2.3	1.9	2.1	2.5	2.4	2.1	2.3	2.6	2.3	2.7	3.1	3.8	3.9

Key Takeaways:

• São Paulo, Mexico City and Bogotá are the major tech hubs in LATAM region with access to big talent pools (large population and high graduate churn out) and lower costs

- Buenos Aires and Santiago are closely emerging due to strong investment by the government and budding start-up ecosystem
- San José, Curitiba and Guadalajara are strong emerging outsourcing/offshoring hubs, offering good English-speaking talent for US-based firms
- Only recently, cloud giants such as Google, Microsoft and Tencent have started moving to the region to setup their data centers. Thus, LATAM is yet to see rise of specific technologybased hubs

SELECTED CITIES ONLY

Scenario analysis: Despite considerable uncertainties opportunity areas with additional upside for growth in LATAM



2 E.g., modernization of bilateral agreements of EU with Mexico and Chile

ILLUSTRATIVE

3 Assuming similar economic impact of EU/Mercosur trade agreement as in analysis of Ecuador/EU agreement

Source: World Bank, "Assessing the economic impact of the Trade Agreement between the European Union and Ecuador" by the European Commission, press search

Content

Long version

- Current situation in Latin America and the Caribbean (LATAM)
- German perspective and opportunities in LATAM
- Potential projects and strategies for collaboration between Germany and LATAM
- Country profiles

Germany has yet to develop a strong business partnership with LATAM

FDI stock of OECD countries in LATAM, 2021

USD bn



Average investment of OECD countries¹: 79.5

1. All OECD countries if FDI data is provided 2. Estimation based on 2018 FDI stock and 2019 FDI flow data Note: FDI data depend on methodology (immediate investing country basis or ultimate investing country basis) and reporting country (as there are bilateral asymmetries due, e.g., due to valuation methods) Source: OECD Industry and governments can collaborate in a three-step approach



Companies take a clear decision regarding long-term engagement in LATAM and communicate ambitions, e.g., regarding diversification in LATAM next to the US and China



Government consequently accompanies long-term engagement in LATAM with overall political activities in the region and dedicated project support



Enabling of doing business can start based on **mutual support and longterm commitments** and targets in:



Activities regarding **export of products**, **services**, **know-how and money** from and to LATAM



Activities regarding **import of resources and products** from the region to Germany as part of **diversification**, as well as addressing **local talent pools**, while pursuing true partnerships and ensuring value creation in the region

Several German companies recently initiated new engagements in the region (1/2)

	Archetype	Description
	New production sites	Expansion of production plants in LATAM in response to increasing demand for certain products, e.g., electric cars, in North America and temporary impacted production in other plants
	Resource access	Contracts with other companies to supply critical resources , e.g., lithium, to exploit the natural resources in LATAM
	Technology provider	Installation of state-of-the-art technology , e.g., electrolyzers for green hydrogen production
+		
$\hat{\cap}^{-}\hat{\cap}$	Interest groups	Partnerships for relevant topics , e.g., resources, to investigate political possibilities, implications of the actions, e.g., exploitation and exchange with other entities

Exemplary

Several German companies recently initiated new engagements in the region (2/2)

Archetype	Description of activities in the region	Recent examples
New production sites	Expansion of production plants in LATAM in response to increasing demand for certain products, e.g., electric cars, in North America and temporary impacted production in other plants	ZF expands presence in LATAM with a new advanced manufacturing plant, a R&D center for autonomous driving technology and an office hub in Mexico with 800 new direct jobs
Resource access	Contracts with other companies to supply critical resources, e.g., lithium , to exploit the natural resources in LATAM	Sign-Off of a multi-year USD 335 mn contract with the US company Livent to supply lithium, an US capital mining company that exploits a facility in Argentina
Technology provider	Installation of state-of-the-art technology, e.g., electrolyzers for green hydrogen production	First industrial hydrogen production plant in Brazil with 120 mn investment and 3 thyssenkrupp electrolyzers with extension planned to produce 40k tons green hydrogen yearly
Interest groups	Partnerships for relevant topics, e.g., resources, to investigate political possibilities, implications of the actions, e.g., exploitation and exchange with other entities	"Responsible Lithium Partnership" in Chile to investigate implications of the lithium exploitation, encourage the exchange of interests group and find solutions

Exemplary

German companies have publicly announced significant investments in Mexico – potentially due to **US-nearshoring** activities



Selected investments from German companies in Mexico, in USD mn



The investments of German companies do not correspond with the economic relevance of the region



LATAM with ~4% of global GDP, but only ~2% of German FDI in 2021

German FDI stock in the region cannot explain the lack of trade with LATAM

Share of region to total in percent 2022 (2021 for FDI)





1. excl. Germany

1.8

Source: World Bank, OECD, IMF, ITC Trade Map

3.7 5.0



The export footprint of the US is largely in line with the economic strength of each region and especially strong within the Americas



Thereof Russia

Share of worldwide export from US and share of worldwide GDP in percent 2022 (2021 for FDI)





1. Numbers have not been reported for all countries

2. excl. US







China's export footprint with high share in Asia and largely aligned with the economic size of the other regions Share of China's worldwide export and share of worldwide GDP in percent 2022

GDP of region

Export from China to region





Source: IMF, ITC Trade Map

7.2

5.0

Percentage of entire region

FDI flows into LATAM from China have weakened in recent years while inflows from the USA have picked up markedly



1 Numbers based on official reports from BEA

2 Numbers based on CEPAL numbers based on cross national mergers and acquisitions and project announcements

Source: CEPAL, BEA

Germany is gradually losing its relative export share, while other countries are gaining momentum) CAGR 2002-12 | 2012-2022

Exports from U.S., China and Germany to the region



1. Deviation from 100% due to rounding Source: International Trade Centre Trade Map The distribution of German exports to the region has remained relatively stable – Brazil and Mexico account for 70%





 Increase of exports from Germany to LATAM by ~2.6% p.a. between 2017 and 2022, with ~18% decrease in 2020

 Positive development in Brazil with ~5.9 % p.a. and in Mexico with ~2.8% p.a. driven by the location of companies in Mexico producing for the US market and the concomitant increase in demand for imported German machinery and components

Eurostat reports that German SMEs have a significant share of ~14% in exports to and ~28% in imports from South America



Import from South America to Germany, 2021

X%

Share of overall

72%

5,713

Large enterprises²



364

Small and medium-sized enterprises (<250 employees) 1

2 250 employees or more

Source: EUROSTAT

New source for critical resources ensuring independent energy supply – currently no export to Germany

1

Germany has an energy deficit, which will increase even further, e.g., substitution of Russian imports required

Energy supply and consumption, 2019, Germany Fl



- Existing gap of ~3.3 EJ for German energy supply
- Imports from Russia account for ~20% of consumption covering large parts of the gap
- German government plans for unstable delivery of Russian gas



In order to achieve national climate targets, Germany needs to transform the energy mix by increasing the share of renewables

Energy mix of final consumption, Germany %





EJ

Partnerships with LATAM address both challenges: substitute energy deficit with renewable energy (e.g., green hydrogen)

Energy supply and consumption, 2020, LATAM



Further growth of supply expected: fossil resources (70% increase in Brazil by higher oil production by 70% in 2030) Renewable energies (3,000 MW increase in Brazil in the next 3 years)

Source: IEA, ifo, press search

Perception of corruption in LATAM is significantly higher than in most EU countries



Corruption Perception Index by country,

German companies must adapt to dynamic market conditions with changes in governments as one of several reasons



The predecessor of Dina Boluarte was removed by the parliament – new elections brought forward to 2024 from 2026 2. Argentina, Brazil, Paraguay, and Uruguay 3. Latin America Political and Electoral Outlook 2023 by the International Institute for Democracy and Electoral Assistance (International IDEA) 4. The Latin America Instability Matrix: Mapping Risks in the Region
 Source: Press search



Constitutional and institutional setup of Brazil with shared power

Newly elected government faces polarization and constitutional limits to most relevant changes, e.g., spending limits

Congress	 Current president does not have a stable majority in congress Each vote must be negotiated individually, there is no party discipline Most relevant changes need constitutional changes, which require qualified majorities and multiple votes in both chambers of congress
Independent judiciary and Supreme Court	• Supreme Court (STF) has shown increasing independence , allowing for the impeachment of President Dilma (2016) and curtailing initiatives of President Bolsonaro (since 2020)
Constitutional budget and spending limits	 Very rigid constitutional spending limit for 2016-36 Great majority of budget earmarked and preassigned, allowing for only marginal shifts
Independent Central Bank	 Mandates of Central Bank President and Board overlap presidential mandates – new government cannot change Central Bank leadership Government does not have control over interest rates and monetary policy
Limitations in the use of SOEs	Prevents assignment of political leaders into leadership positions of SOEs ¹



Trade agreement between the EU and Mercosur countries would create the largest free trade zone globally

Association agreement **between the EU and the MERCOSUR countries**¹ focuses on political dialogue, cooperation and trade

The agreement will **create the largest free trade zone** globally with ~770 mn inhabitants

After almost 20 years of negotiations, an **agreement was reached** on the trade part in 2019, **ratification expected by 2023**

Mercosur is an estimated market for >60k EU companies and a major destination for EU investments with >EUR 380 bn invested in 2017

EU exports to Brazil **support ~850k jobs in the EU**

Main advantages

~90% of all goods traded between the EU and MERCOSUR will be duty free, resulting in yearly savings of ~EUR 4 bn for European exporters

Geographical indications of >350 European food products are **protected** in MERCOSUR, ensuring quality and competitiveness in the region

EU companies will have **better market access and access to public tenders** in areas such as information technology, telecommunications and transport in the MERCOSUR countries

Binding regulations on **sustainable development**, labor, environment and climate incl. provisions **against deforestation**

¹ Argentina, Brazil, Paraguay and Uruguay


Trade agreement between the EU and Mercosur has both approval and criticism among stakeholders

Market perspective

"The agreement is of great macroeconomic and **strategic importance** for Germany. It sends a sustained **positive signal** against protectionist tendencies and in favor of a rules-based and values-based approach to trade policy."

German Ministry BMWK

"The EU agreement has a SME chapter to ensure that the **benefits also** reach small and medium-sized enterprises (SMEs). To date, 85 percent of European exports to Mercosur are subject to customs duties. Accordingly, a large proportion of companies see opportunities for themselves in a trade agreement"

Federation of German Industries (BDI)

"In addition to Austria and France, the Dutch parliament and the parliament of the French-speaking region of Belgium **have already shown great skepticism. Several votes** in the European Parliament on a possible Mercosur agreement **have also been clearly against**."

Agricultural Newspaper

"Mercosur may look advantageous at first glance but **is not compatible with the adopted EU climate and sustainability goals.** We will continue to defend our position and our criticisms with full force in Brussels"

Austrian Ministry of Agriculture

Signing process

Status quo: After ~20 years of negotiations, an agreement was reached on the trade part in 2019, but ratification is pending

Final agreement needed to move forward – potential renegotiations with difficult conversations expected, due to remaining open questions, e.g., for climate protection and agriculture

EU with complex **ratification process** incl.:

- Formal legal review
- Translation
- Approval by the Council of the EU and European Parliament
- Approval of *all* national parliaments of the EU

EU/Mercosur trade agreement comes into effect with transition period for certain changes

¹ Argentina, Brazil, Paraguay and Uruguay

Source: Commission of the European Union, BMWK, press search

Large-scale infrastructure initiatives are increasingly targeting LATAM and can drive development in key areas

Illustrative – not exhaustive



- The **Belt and Road Initiative (BRI)** was announced in October 2013 as part of China's plan for international expansion with economic corridors in Asia, Europe, and Africa – and extended to LATAM.
- In 2021, the **Global Development Initiative (GDI)** was launched as a program for sustainability projects worldwide and is also intended to expand BRI.
- So far, 21 LATAM countries have joined BRI, incl. Argentina, Bolivia, Chile, Uruguay, and Venezuela.

The Partnership for Global Infrastructure and Investment (PGII) is a shared G7 commitment to advance public and private investments in sustainable, inclusive, resilient and quality infrastructure. Through this partnership, the G7 aims to mobilize up to USD 600 bn by 2027 to narrow the infrastructure investment gap in partner countries.

Projects in LATAM:

- Expanding Digital Access in Costa Rica
- Expanding and modernizing Yilport Port in Ecuador
- The construction of over 1 gigawatt of power in Brazil from renewable sources
- Construction of a USD 0,4 bn Wind Farm complex in Brazil



- The **Global Gateway initiative** was announced in December 2021 based on the 2018 EU-Asia Connectivity Strategy.
- It plans to invest up to EUR 300 bn from 2021-27 focusing on Africa, Asia, and Latin America.
- Projects range from underwater data connections from Europe to LATAM to production of green hydrogen.
- Investments from the EU budget set to leverage a multiple in additional investments from other sources, e.g., private companies.

Recent investments in LATAM

Jul

2023

EUR 45 bn investment in Latin America as part of the EU-LAC Global Gateway Investment Agenda (GGIA) with more than 130 projects for green transition, digital transformation, human development, health resilience and vaccines

MoUs signed with Argentina and Chile



The Global Gateway of the EU will contribute investments for global challenges, such as climate change

The Global Gateway initiative was announced in December 2021 based on the 2018 EU-Asia **Connectivity Strategy**

It plans to invest up to EUR 300 bn from 2021-27 focusing on Africa, Asia, and Latin America Projects range from underwater data connections from Europe to LATAM to usage of green hydrogen

"We will support smart investments in quality infrastructure, respecting the highest social and environmental standards, in line with the EU's values and standards. The Global Gateway strategy is a template for how Europe can build more resilient connections with the world"

European Commission

Investments from the EU budget set to leverage a multiple in additional investments from other sources, e.g., private companies

Recent investments

Jul 2023	EUR 45 bn investment in Latin America as part of the EU-LAC Global Gateway Investment Agenda (GGIA) with more than 130 projects for green transition, digital transformation, human development, health resilience and vaccines MoUs signed with Argentina and Chile
Jan 2023	EUR 0.3 bn investment in South Africa for green recovery and EUR 0.1 bn investment in Africa for regional teaching
Jan 2023	EUR 2.5 bn investment in EU neighbor countries for SME support
Dec 2022	EUR 6 bn investment in Sub-Saharan Africa, Latin American, and Asia-Pacific for renewable energy, digital infrastructure, and climate resilience and health
Dec 2022	EUR 10 bn investment in Southeast Asia for infrastructure



China has gained broad access to the region and its natural resources





FDI

Loans

 So far, 21 LATAM countries have joined the global Chinese infrastructure investment and trade project, incl. Bolivia, Chile, Uruguay, and Venezuela



- Investment into technologyintense industries in recent years
- Chinese loans of ~USD 140 bn in to LATAM governments
- Funding provided mainly for infrastructure

... allow Chinese businesses to gain access

- Trade between China and LATAM at ~USD 480 bn in 2022, with a high growth rate
- China is LATAM's 2nd-largest trading partner



Access

Trade

 Access markets, maritime corridors, and critical commodities through



 investments into infrastructure
 While China is able to export mainly technologically advanced products, it imports a large amount of commodities



China's Belt and Road Initiative has been extended to LATAM



Source: World Bank, press search

Share

global

~75%

~60%

~30%

of



China's policy banks have decreased investments while commercial banks are focusing their investments in the energy sector of LATAM



Chinese investments by number of loans in Latin America by sector, 2005-22

Estimates of China's policy banks investments in LATAM by country, 2005-22, %



Investments





- Shift of investments from policy banks to ٠ commercial banks:
 - Major investments made in energy and infrastructure
 - Majority of deals take place in advanced technologies such as communication, automotive, and electronic components
 - Strong growth in renewable energy over the past few years



China has become the most important trading partner for 3 out of the 6 largest trading economies in the region

Latin American exports by destination, Latin American imports by origin, 2022 2022 % of total, USD bn % of total, USD bn 3 (
Mexico 33 18 1 44 20 78 578 605 🚫 Brazil 54 60 519 273 334 46 38 실 Chile 50 24 - 23 109 103 15 21 76 82 88 Argentina 25 -24 77 68 27 57 Colombia 48 30 14 🏟 Peru 48 60 58 24 26 Overall, very high level of US and China trade market share **Key insights** Mexico and Colombia with US as most important trading partner (imports and exports) China has become the most important trading partner for all others (for Chile only for exports)

NOTE: Numbers may not sum due to rounding

Other Germany US China

Source: ITC Trade Map

Content

Long version

- Current situation in Latin America and the Caribbean (LATAM)
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Increased attractiveness of existing opportunities in LATAM

Current situation in Germany





German companies adapt their sourcing strategies in response to global supply chain disruptions

Increased potential of LATAM



Region with rich natural resources. e.g., worlds largest lithium reserves



Region with potential for diversification of supply chain while offering comparably low labor costs to



Sustainability trend and climate targets of German industry for **tech export** with require new partnerships to reach CO₂ neutrality



Positive perception

historical high

export share

globally



Germany currently with ~700k open positions in tech **jobs** and the gap is expected to grow





Countries with potential and interest for decarbonization, e.g., carbon farming



Need for **tech** advancements to stabilize economic situation and increase **productivity**



Large talent pool in

tech fields with many graduates in higher education for relevant fields

Five main strategies for German companies to benefit from market conditions in LATAM



Source: Expert interviews, press search

EXEMPLARY

Deep dive import strategy: LATAM with ~60% of lithium and ~18% of rare earth reserves globally

Share of global resource reserves, 2018-22, %



Lithium

~60% of global lithium reserves in LATAM (**11 x more** than in Europe) followed by the US, China, Russia, and Australia

Rare earths

~18% of global rare earths reserves in LATAM (**18 x more** than in Europe), second behind China and followed by Vietnam, Russia, and India

Projection of worldwide lithium demand and supply, 2019-30, mn ton LCE¹



Lithium demand will exceed supply already in 2024 – relationship of supply and demand will switch from ~30% excess in 2021 to ~20% shortage in 2025 resulting in rising lithium prices

1 Lithium carbonate equivalent

Note: The boundaries and names shown, and the designations used on this map do not imply official endorsement

Source: Statista, US Geological Survey, Comisión Chilena del Cobre

Deep dive export strategy: Latin America is a potentially attractive market for export manufacturing: Labor costs among

the most competitive in the world

Hourly labor cost in manufacturing

USD, 2016-2021

🛟 Switzerland (2021)	60
🕀 Norway (2021)	57
🛑 Sweden (2021)	51
🛑 Germany (2021)	50
🕕 France (2021)	47
🕌 United States (2016)	39
🏶 United Kingdom (2019)	30
🖲 Japan (2016)	26
💽 South Korea (2016)	23
🖕 Czech Republic (2021)	18
💿 Argentina (2016)	17
🛑 Hungary (2021)	13
🗕 Poland (2021)	12
🔴 Taiwan (2016)	10
🌀 Brazil (2016)	8
📀 Turkey (2016)	6
(•) Mexico (2016)	4

(X) CAGR 2010-15, % (X) CAGR 2015-22, % LATAM countries

0

1

1

(1)

1

0

0

3

(3)

(3)

2

(-2)

(1]

(-1)

1

0

1

 $\left(0 \right)$

 $\begin{bmatrix} 1 \end{bmatrix}$

1

 $\begin{bmatrix} 0 \end{bmatrix}$

(4)

GDP (PPP) per hour worked

USD, 2022 Norway 84 C Switzerland 76 Sweden 74 📤 United States 74 Germany 69 France 66 Honited Kingdom 60 53 C Turkey (1)🕒 Japan 48 🕘 Taiwan (2021) $(\cap$ 46 \bigcirc Poland 44 South Korea \bigcirc 43 (2)🛏 Czechia 43 Hungary 41 $\begin{pmatrix} 1 \end{pmatrix}$ \bigcirc 💽 Argentina ('21) 29 🜔 Brazil (2021) 19 \bigcirc Mexico 19 (1)

IATAM economies with competitive labor costs

Given lower productivity and lower GDP per hour, export manufacturing currently only successful in some LATAM countries with low unit labor costs (i.e., output per wage unit) such as Mexico

Export manufacturing is threatened by protectionist tendencies in important receiving markets such as USA

Deep dive B2B productivity strategy: Countries are in strong need of productivity growth to prevent GDP growth rate decline of ~21% by 2030

Productivity growth Employment growth

Contribution of employment and productivity on GDP growth, 2010-30E



Note: Numbers may not sum up due to rounding

Source: World Bank, Statista

Germany with historically strong position for supplying productivityenhancing technology – but strategy needed as position weakens



Market leader in various process technologies – e.g., Germany has 25.2% world market share in furnace burners for liquid fuel, solid fuel or gas (2022)

Manufacturing



Long-term national Industry 4.0 strategy, with more than 150 members pursuing productivity improvements; IoT spending > USD 45 bn (2021)

Strong supplier of industrial robots: (~22,300 exported robots in 2020, 2nd behind Japan)

World-leading machinery industry (output of EUR 260 bn in 2021, export share of 81%) with high R&D expenditures (3.1% of GDP vs. 2.3% EU average)

Health



Strong German med-tech industry (gross output EUR 33.4 bn in 2019, 65% export share, 5-7% to Latin Amerika, 2 medical device companies in global top 10)

Agriculture



Strong players in agricultural innovation (2 largest German players ~25-30% of Latin American market for crop protection and seeds)

Utilities and renewable energy



2 German OEMs among the top 10 of global wind turbine manufacturers (18% of global market)

Strong domain knowledge in renewable energy installation, operation, maintenance, grid infrastructure, and clean technology (e.g., green hydrogen)

Transportation2 major global truck and bus
manufacturing groups (17% of
global market)

Significant German investments (EUR 1.5 bn p.a. by 2040) in digitization of rail systems LADW as enabler recommends four possible levers along the five strategies to successfully do business in LATAM

N	OT FX	HAUS	TIVF
	01 2/1	1000	110 -

		Import strategy	Export strategy	B2B productivity strategy	B2C strategy	Talent strategy
A	Single company actions	 Partnering with local companies to access critical resources Installing tech e.g. electrolyzers for green H2 export 	• Expanding produc- tion plants incl. R&D centers in LATAM	 Supplying businesses with technology to increase productivity, e.g., IoT technology, machinery and digital tools 	 Investing to increase purchasing power in the region Adapting products & services to local market needs 	 Working with local universities to establish dual- education systems Offering English courses
B1	B2B actions taken by business coalitions	 Intensifying import of critical/ sustainable resources (lithium, rare earths, energy) e.g., via green hydrogen 	 Establishing low-cost manufacturing/produ ction hubs in the region as part of diversification strategies Reducing/ eliminating 	 Jointly supplying businesses with technology to increase productivity, e.g., IoT technology, machinery, and digital tools 		 Attracting and exchanging talent from local tech hubs Ensuring long-term involvement of European experts to transfer knowledge to the region
B2	Actions taken by business coalitions (group of companies) with governmental support	 Establishing sustainability related standards for project development 	 indirect taxation on products manufactured for export in the region Developing concrete projects e.g., around lithium mining 	 Helping local governments to pursue future- oriented technologies Supporting concrete projects around IoT, smart cities, digital farming & digitization 		 Making targeted investments into training of local talents (e.g., higher education professionals with Master or PhD)
C	Governmental actions	 Supporting partner- ships with states on relevant resource topics, e.g., lithium Increasing free trade by negotiations around EU Establishing double tax 	 Increasing attractiveness of export-based manufacturing y completing J-Mercosur agreement ation agreement 	 Modernizing partnership agreements, esp. between Germany & Brazil reg. industry 4.0, cybersecurity, Al, etc. 		 Supporting education systems for children, college students, & workers Especially supporting dual-education systems

Nine concrete joint initiatives by companies could help drive more engagement in LATAM beyond the status quo (1/2) NOT EXHAUSTIVE – FOR DISCUSSION



Nine concrete joint initiatives by companies could help drive more engagement in LATAM beyond the status quo (2/2) NOT EXHAUSTIVE – FOR DISCUSSION



^{*} MeuFuturo. Digital is an ecosystem of companies and entities with the goal of transforming Brazil for the future of work and education through IT and doubling the Brazilian IT market from 1.5 million to 3 million professionals in 8 years.

German companies can seize the opportunities now – Five key success factors to thrive in the region Extend market activities together with governments, local companies, and institutions Export products, services, money and know how, e.g., for digitization and technology to LATAM as part of local production, investments or market opportunities

Partner with local businesses to create a network for focus areas, e.g., mining for resource access and import resources and products

Understand the relevant areas and plan long-term alliances

Understanding the region and its countries, risks as an emerging market with high volatility, market potential with 650 million people and a young population

Jointly align on focus areas and approach LATAM countries with concrete projects

German companies to create alliances to propose relevant cooperation projects in LATAM

Empower local employees and ensure long-term involvement

Create a **"winning strategy for LATAM"** by empowering local companies and workforce to **increase productivity**

Ensure **long-term involvement** in the region, e.g., by reliable commitments for resource purchasing

Assure **knowledge transfer** by involving of European experts and **export of technology** as well as ensure **fair treatment** of employees

Harness the unique advantage from LATAM to ensure resource access and diversify supply chains

Improve environmental protection and achieve German climate objectives, e.g., by importing sustainable electricity and diversify energy sources

Support **diversification of supply chain** for German companies

Address local talent pools of highly qualified employees

LATAM has a **large talent** pool incl. tech fields while Germany has a gap in tech roles

The region is **culturally well compatible** with US and Europe

Companies can **benefit from young, highly-educated people** to fill open roles

In addition, companies could be supported by five measures from governments to run successful business in LATAM

Align on strategic topics with industry

Working together with industry to advance strategic topics such as sustainability, digitization and infrastructure

Example: Strategic focus on green hydrogen in LATAM

Support concrete projects

German government to **support concrete projects** such as projects related to resources and energy, which could help companies export technology to the region and ensure resource access like the US and China are doing

Risk mitigation also is needed for major long-term projects in the energy and mining sector through state participation or state guarantees

Example: Support harmonization of technologies and introduction of new products

Intensify government collaboration and eye-level partnerships

Commit to support business activities in the region **long-term** with joint effort in various fields incl. political efforts to stabilize situation consistently, building on MoU for energy partnership and modernization of trade agreements

Example: Implementation of Mercosur/EU agreement and mitigating reservations of NGOs and the agricultural lobby

Enable doing business with a supportive environment

Build trust in partnerships and excite companies for LATAM and strengthen cooperation to **improve political framework** with a focus on increasing free trade and easing and protecting investment with an absence of corruption, limited bureaucracy

Example: Activities for a fair and simple tax systems, e.g., with double taxation agreement; greater security for investments (e.g. state guarantees)

Support education systems in the region

Initiatives to support education systems for children, college students, and workers, e.g., a **dual-education system** could bring lots of advantages for German companies and **drive productivity**

Example: Promotion of education and further qualification, e.g., via dual education system

Source: Expert interviews

A growing green hydrogen market requires dedicated logistics and infrastructure for distribution and storage

Green hydrogen logistics and infrastructure



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Source: "Estado del hidrógeno verde en América Latina y el Caribe" by H2LAC

ILLUSTRATIVE

German companies already benefit from the green hydrogen opportunities in LATAM (1/2)

Archetype	Description
Funding provider	Planning and economic assessment of feasibility Financing for large-scale projects
Technology developer	Development and delivery of world-leading technology for electricity generation (e.g., for wind and solar), hydrogen infrastructure, and production plants
Infrastructure builder	Construction of storage and distribution systems, e.g., pipelines and ammonia ¹ production plants Provision of infrastructure for export of green hydrogen or ammonia, e.g., ports
Green hydrogen producer	Planning and setup of new hydrogen plants, as well as scaling of production and operations Associated operations, e.g., for electricity generation and ammonia
Green hydrogen user	Usage of green hydrogen in LATAM, e.g., for steel production or refineries, to power trucks and ships Export of green hydrogen/ammonia or direct reduced iron to Germany

Exemplary

German companies already benefit from the green hydrogen opportunities in LATAM (2/2)

 Archetype	Description	Recent examples
Funding provider	Planning and economical assessment of feasibility Financing for large-scale projects	Financing for wind farm for electricity in Argentina
Technology developer	Development and delivery of world leading technology for electricity generation (e.g., for wind and solar), hydrogen infrastructure and production plants	Delivery of technology, e.g., efficient electrolysis technology, in Argentina, Chile and Brazil SIEMENS GOOGGY (1) thyssenkrupp
Infrastructure builder	Construction of storage and distribution systems, e.g., pipelines and ammonia ¹ production facilities Provision of infrastructure for export of green hydrogen, ammonia or direct reduced iron, e.g., ports	Competencies for construction of hydrogen pipeline network in Germany ("GET H2" project) © ECCONCENTION
Green hydrogen producer	Planning and setup of new hydrogen plants and scaling of production and ongoing operationsAssociated operations, e.g., for electricity generation and ammonia	Competencies for production of green hydrogen in Germany ("GET H2" project)
Green hydrogen user	Usage of green hydrogen in LATAM, e.g., for steel production, refineries, trucks and ships Export of green hydrogen/ ammonia or direct reduced iron to Germany	Competencies for usage of green hydrogen in steel production in Germany ("GET H2" project)

Exemplary



Scaling production of green hydrogen in Brazil as potential joint project

Not exhaustive

point, as ...

+

Green

hydrogen

in Brazil is

topic, as ...

the ideal

starting

Arguments for first pursuing green hydrogen promotion in Brazil in initial projects

Brazil is a great starting Pull factors

- Brazil is Latin America's largest economy,
 representing ~30% of its GDP
- German technology is well established and welcome in Brazil
- Given higher demand for sustainable energy, Brazil currently starting first green hydrogen plants
 - Construction of 'world's largest green hydrogen and ammonia plant' started in Brazil
 - Several studies for transport, technology cycle and feasibility ongoing
 - Several memoranda of understanding signed to implement large-scale hydrogen plants, also with foreign companies, e.g., from Australia
- Brazil is among the most competitive places in the
 world to produce green hydrogen for

~USD 1.50/kgH2 in 2030¹ with potential to export green electricity based on solar and wind indirectly via ammonia or direct reduced iron

The government of Brazil² has created a **new** secretariat that will focus on facilitating the growth of the green hydrogen sector

Push factors



Many German companies are already active in Brazil and have relevant expertise, e.g., several German automotive companies with plants in Brazil



- German companies with highly competitive
- **technology,** e.g., world-leading technologies for high-efficiency electrolysis plants
- $\hat{\langle}_{0}^{-}\hat{\rangle}$
- Green hydrogen relevant for many German companies, e.g., as producers or consumers, with 3 core trends focusing on critical and sustainable resources: (I) energy transition, (II) sustainability, and (III) geopolitical challenges, e.g., diversification



Green hydrogen demands collaboration of companies in an ecosystem and is **thus a well**suited topic for joint efforts abroad

German government is **taking active role at home** to accelerate German energy transition and supports flagship projects for green hydrogen, e.g., H2Brazil to promote green hydrogen in Brazil³

1. According to LCOH benchmark 2. National Institute of Clean Energies in Brazil 3. Mainly focused on scenario planning, knowledge exchange, learning, research, and evaluation of economic viability

Source: Deutsche Bundesregierung, press search

Recent politics and economic changes increase the strategic relevance of LATAM

Four key trends with high relevance in LATAM for German companies



Focus topics as core value proposition of LATAM

Today, some governments support their businesses abroad – Germany is relying on multilateral organizations

Scope: Global economic activities

Examples of countries with active diplomacy

- The Belt one Road Initiative (BRI) opened doors to China's foreign investment, China targeting large infrastructure projects. Investments in the initiative have commercial benefits accruing to China, such as through exclusive building and operating contracts and locked-in financing for Chinese companies China with targeted politics for resource and investments, with increasing direct investments, e.g., ~21% of FDI of LATAM in 2020 from China¹ US Provides government-to-government trade assistance support through the International Trade Administration (ITA) to ensure open and effective engagement with foreign officials on behalf of US companies, such as opening new markets and unstick shipments held in error The US are major trading partner and source of investment for many companies in LATAM and **11 countries with free-trade agreements** There are **public entities aimed at assisting French companies abroad** and France promoting French development cooperation, such as Agence Française de Développement, e.g., with ongoing negotiations for construction of a toll road in Kenya, to be done by French firms and actively negotiated by government
- ItalyItalian economic diplomacy aimed to support Italian companies abroad in their
commercial penetration of emerging markets and to strengthen their positioning
in traditional ones and promote the country's growth

German diplomacy

The German government relies on promoting free trade through multilateral organizations (e.g., IMF or WTO), foreign aid and trade agreements to be extended by comprehensive EU association agreement with Mercosur² in the future (to be ratified)

Especially in LATAM, Germany has political capital, yet not as large as in trade

Current Latin America strategy is based on agreement and concept from 2010 with few efforts for intensified cooperation, e.g., as part of the Latin America and Caribbean Initiative, launched in 2019

German government wants to open a new chapter in relations with Brazil, focusing on faster progress on the Mercosur trade agreement and cooperation on climate protection

Tagesschau, February 2023

1. Includes Chinese capital transferred via third countries

2. South American trade bloc with Argentina, Brazil, Paraguay, and Uruguay as full members

Source: Deutsche Bundesregierung, Auswärtiges Amt, Congressional Research Service, Comisión Económica para América Latina y el Caribe (CEPAL), press search

Market for German companies varies by country in LATAM – Brazil, Mexico and Argentina with a broad range of opportunities

Relative assessment of countries sectors today Large share of GDP and/or exports Medium share of GDP and/or exports

Assessment is based on sectors with the largest GDP today and exports to other countries; future potential not included





The CEO Agenda shows five key takeaways for LATAM



LATAM is a large market that is **becoming increasingly attractive** to businesses due to its abundant natural resources, potential for sustainable energy and talent pool



German companies are currently still **well positioned to engage further** in the LATAM region, e.g., through increasing investment, trade and partnerships - but other countries have become more active in recent years



There are five business strategies for German companies to benefit from market conditions in LATAM, e.g., importing resources, exporting manufactured products, supplying regional businesses with technology to increase productivity, increasing local purchasing power and leveraging LATAM's large talent pool



In order to successfully do business in LATAM, there are four possible levers to execute the five strategies: Single company actions, B2B actions taken by business coalitions, actions taken by business coalitions together with governmental support and merely governmental actions



There are **nine concrete joint initiatives** by companies that could help **drive more engagement in LATAM** beyond the status quo

Content

Long version

- Current situation in Latin America and the Caribbean (LATAM)
- German perspective and opportunities in LATAM
- Potential projects and strategies for collaboration between Germany and LATAM
- Country profiles



Argentina – country profile

Country description

- 2nd-largest country in South America •
- Shares borders with Bolivia, Brazil, Chile, Paraguay and Uruguay; has a • coast on the Atlantic Ocean
- 39.6% of the population is between 25 and 54 years old ٠
- 1/3 of the population lives in Buenos Aires, the country's capital ٠
- The south remains sparsely populated ٠
- In terms of **commercial exchanges**, its most important partners are ٠ Brazil. China and the US
- Argentina suffered during most of the 20th century from recurring ٠ economic crises, persistent fiscal and current account deficits, high inflation, mounting external debt and capital flight

Key information	
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Political system Presidential republic	Corruption Perceptions Index Score 38
$\hat{\mathcal{C}}$	

Population 45,510,000



Credit rating score Ca

National currency



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Inward FDI for 2022

17.5 USD bn

exchange rate
130.6 ARS/USD

	2022	2027E
Nominal GDP USD bn	630.9	736.1
Unemployment rate	7.1%	6.9%
Inflation % of change over prev. year	72.5%	25.2%
Public debt % of GDP	85%	68.1%

Regulatory background

- Tax for an inclusive and supportive Argentina broadens the taxable transactions and increases the reverse withholding taxes applicable for certain transactions
- Foreign Investment Law (Law 21.382) legal framework for FDI outlining ٠ that foreign investors have the same rights and obligations as local investors and may use local credit with the same rights and under the same conditions as domestic national-capital companies

Upcoming elections

- **Next election date** October 2023 (presidential and legislative)
- **Representatives to elect** president, senators and deputies
- Last election's abstentionism 25% (presidential, 2019) ٠
- N° of political parties 20 •



Brazil – country profile

Country description

- 8th-largest economy in the world ٠
- Shares borders with Argentina, Bolivia, Colombia, French Guiana, Guyana, Paraguay, Peru, Suriname, Uruguay and Venezuela; has a coast on the Atlantic Ocean
- 43.83% of the population is between 25 and 54 years old •
- Population core is in the southeast, near the coast ٠
- Member of the Common Market of the South (Mercosur), which is currently negotiating FTAs with Canada and the EU
- In terms of **commercial exchanges**, its most important partners are China, US, and Argentina

Key information		
fo		A CONTRACT OF A
Political system Federal presidential republic	Corruption Perceptions Index Score 38	Inward FDI for 2022 88.2 USD bn
\hat{c}		(6)
Population 214,800,000	Credit rating score Ba2	National currency exchange rate
		5.169 BRL/USD

	2022	2027E
Nominal GDP USD bn	1,869	2,346
Unemployment rate	9.3%	8.3%
Inflation % of change over prev. year	9.3%	3.3%
Public debt % of GDP	75.5%	86.4%

Regulatory background

- New legislation to help start-ups gets rid of some regulatory licenses and conditions to start business operations and states that government agents are forbidden to apply different proceedings or requests between two companies within same conditions
- Provisional regulations establishing new beneficial rules for the taxation of income tax for nonresident investors - expanded the list of zero aliquot scenarios for financial applications of nonresident taxpayers, with the aim of attracting new investments from abroad

Upcoming elections

- Next election date October 2026 (presidential and 2/3 of senate)
- Representatives to elect president, federal senators and deputies
- Last elections abstentionism 21% (presidential, 2022)
- N° of political parties 32



Chile – country profile

Country description

- One of the lowest poverty rates in Latin America but among the worst inequality ranks of the region
- Shares borders with Argentina, Bolivia and Peru; has a coast on the ٠ Pacific Ocean
- 42.58% of the population is between 25 and 54 years old •
- 90% of the population lives in the middle of the country, near the capital Santiago
- In terms of **commercial exchanges**, its most important partners are China, the US and Japan

Key information



Corruption

score

67

Political system Presidential Republic





Population 19,600,000



Credit rating score

A2

Inward FDI for 2022 16.0 USD bn

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National currency exchange rate 874.4 CLP/USD

	2022	2027E
Nominal GDP USD bn	298.8	461.9
Unemployment rate	8%	6.6%
Inflation % of change over prev. year	11.7%	2.4%
Public debt % of GDP	36.8%	39.6%

Regulatory background

- Climate Change Framework Law establishes climate change management instruments at the national, regional, and local level and creates a National System of Access to Information and Citizen Participation on Climate Change that establishes guidelines and financial mechanisms to address climate change
- Regulatory framework to regulate the new forms of work linked to digital platforms – companies must provide health and safety trainings, insurance, grant workers the right to organize in trade unions, and protect workers rights

Upcoming elections

- Next election date November 2025 (presidential and legislative)
- Representatives to elect president, deputies, and 50% of senators
- Last elections abstentionism 53% (presidential, 2021) •
- N° of political parties 24



Colombia – country profile

Country description

- 4th-largest economy in Latin America and the 44th-largest in the world
- National borders with Venezuela, Brazil, Peru, Ecuador and Panama
- Commercial ports and exits to the Atlantic and Pacific Ocean
- Colombia has 15 trade agreements, the most important ones being with the US and the EU
- Founding member of the Pacific Alliance in 2012, a trade bloc formed jointly with Chile, Peru and Mexico
- Young population, **60% are under 35 years old** and 66% are of working age (15-64 years)

Key Information		
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Political system Presidential republic	Corruption perceptions index score 39	Inward FDI for 2022 15.9 USD bn
\hat{c}		(*************************************
Population 51,265,841	Credit rating score Baa2	National currency exchange rate
		4,256.2 COP/USD

	2022	2027E
Nominal GDP USD bn	329.1	465.2
Unemployment rate	8.5%	6.8%
Inflation % of change over prev. year	10.2%	3.1%
Public debt % of GDP	68.2%	70.7%

Regulatory background

- Energy Transition Law guidelines for the development and export of zero and low-emission hydrogen in the country, as well as the regulation for the development of activities aimed at generating electricity through geothermal energy
- Foreign investment the country has a comprehensive legal framework for business and foreign direct investment (FDI), and, according to the OECD, is one of the easiest countries in LATAM to do business in

Upcoming elections

- Next election date March 2026 (legislative) | May 2026 (executive)
- **Representatives to elect** president and vice president, 108 senators and 188 representatives
- Last elections abstentionism 45.08% (first round, 2022) and 41.91% (second round, 2022)
- N° of political parties¹ 20
- 1. Political parties that are currently part of the legislative branch; this does not mean that there are no other parties

Source: Government website, EIU – Viewpoint, Moody's, World Bank, NDI, CPI Transparency, Consejo Nacional Electoral, Universidad de los Andes, CIA World Fact Book, press search



Mexico – country profile

Country description

- 10th-most populated country in the world •
- Shares borders with the US, Guatemala and Belize; has exits and commercial ports on the Pacific and the Atlantic Ocean
- Young population, 66.6% of the population is between 25 and 54 years ٠ old, with an average age of 29
- Mexico is the 2nd largest economy in LATAM and has considerable sources of natural resources like petroleum, natural gas, wood, gold, silver, etc.
- In terms of commercial international treaties, Mexico has signed 13, the most recent one with USA and Canada

Key information





Corruption

perceptions index

score

31

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Political system Federal presidential republic

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Population 130,262,220





exchange rate 20.15 MXN/USD

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Inward FDI for 2022

41.2 USD bn

National currency

Unemployment rate	3.5%	3.5%
Inflation % of change over prev. year	7.9%	2.9%
Public debt % of GDP	50.5%	50.9%

2022

1,409

2027F

1,665

Regulatory background

Nominal GDP

USD bn

- Law on General Import and Export Taxes establishes the quotas that, according to the classification of the merchandise, will be used to determine the General Import and Export Taxes
- General Law on Ecological Balance and Environmental Protection provisions that refer to the preservation and restoration of the ecological balance and protection of the environment. Its provisions are of public order and social interest and have the objective of promoting sustainable development

Upcoming elections

- Next election date July 2024 (presidential)
- **Representatives to elect** president and senate reps
- Last elections abstentionism 36.58% (presidential, 2018)
- No of political parties¹ 7

Political parties that are currently part of the legislative branch; this does not mean that there are no other parties 1.

Source: Government website, EIU - Viewpoint, Moody's, World Bank, NDI, CPI Transparency, Consejo Nacional Electoral, CIA World Fact Book, press search



Peru – country profile

Country description

- 6th biggest country in Latin America in terms of GDP •
- 5th most populated country in Latin America
- Shares borders with Bolivia, Brazil, Chile, Colombia and Ecuador; has a ٠ coast on the Pacific Ocean
- Young population, 53% of the population is younger than 24 years old ٠
- Almost 1/3 of Peru's population lives in the country's capital, Lima •
- In terms of **commercial exchanges**, its most important partners are • China, the US and South Korea

Key information

90	
600	



36

Political system Presidential republic

 $\sum_{i=1}^{n}$

Population

33,359,416



Corruption perceptions index score

I	nward FDI for 2022
	10.8 USD bn

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Credit rating score Baa1

National currency exchange rate 3.84 PEN/USD

Nominal GDP USD bn	2022 241.5	2027E 302
Inflation % of change over prev. year	7.8%	2.6%
Public debt % of GDP	35.4%	36.9%

Regulatory background

- **Regulation on Real State Tax for Foreign Companies** applied to all real estate owned by foreign companies operating in Peru. It is paid once a year and its rates are based on the value of the property calculated by multiples of Peruvian tax units
- Supreme decree approving the Roadmap to a Circular Economy in the Industrial Sector – has the objective of following an action plan that will encourage industrial production under a circular economy approach and manage information related to circular productivity

Upcoming elections

- Next election date April 2026 (presidential)
- **Representatives to elect** president and congress
- Last elections abstentionism 30% (presidential, 2021)
- No of political parties 14