CERES
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Clouds on the Horizon, Opportunities Beyond

After two years of favorable external conditions, Latin America is now facing an unfavorable context of external factors, defined by a global growth slowdown, a hiking of international interest rates, and a reduction of global commodity prices. Given the region's historical dependency on global factors, this inevitably affects its socioeconomic development and puts the region ahead of a big challenge, once again. However, at the same time, today's permanent demand for food and energy security offers the region great opportunities in the medium and long term. To take advantage of this potential, urgent efforts to overcome competitiveness and institutional barriers will be crucial.

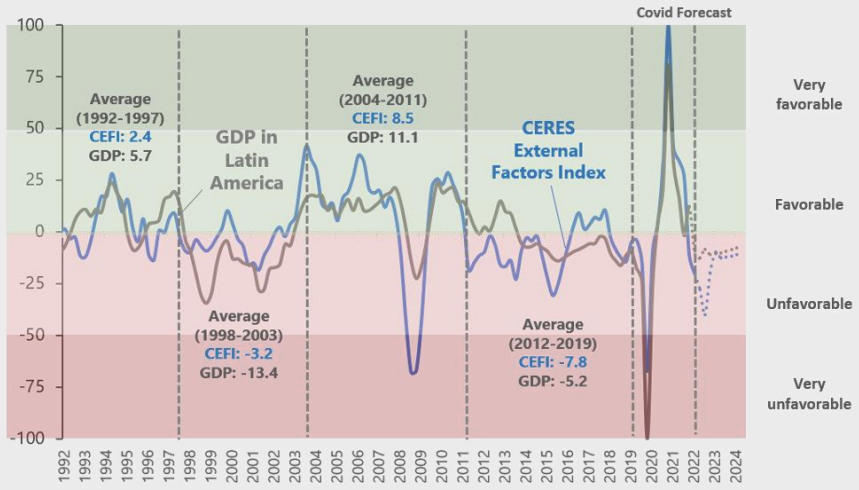
High Dependency on a Deteriorated Global Context

As documented in previous editions of the LMV Regional Report, external factors (i.e., commodity prices, financial indicators, and global economic growth) are key to understanding the short-run economic performance of Latin American economies.[1] After outstanding external conditions, the international outlook has markedly deteriorated over the last few months. In particular, the commodity price rally seems to have ended. Food and oil prices soared during most of this year's first half due to multiple factors: low interest rates, the revival of global demand, Russia's invasion of Ukraine, and high input and transportation costs.

However, the decay of these factors in the second half explains a sudden price decline for commodities. For instance, the interest rate hikes from the Federal Reserve (including a 0.75 percentage points raise on November 2nd) have weakened the commodity market as bond yields foster investment in assets that exhibit a higher reward than futures in metal, food, and oil. As the United States (US) recession looms, China's short-run economic growth will be slower than expected, with a significant impact on the prospects for demand growth. Meanwhile, even though the war's end seems quite distant, Ukraine and Russia have managed to come to terms with re-allowing grain exports and other products through the Black Sea.

Therefore, current global economic conditions have become harsher for Latin American countries. Specifically, global food prices have decreased by 13% since March, while metals prices plummeted by nearly 32% in the same time window. The interest rate on US treasury bonds scratched 4.1% when it was 1.5% a year ago. At the same time, transport fees also show signs of finally returning to normal, and Brent crude oil value has dropped 22% since June. This last point has an ambiguous effect, depending on whether the countries are oil net exporters or importers. The decline in global demand—crucial to explain those above—bears witness to a cooling global economy. The US economy contracted in the first two quarters and expanded in the third, with a performance not good enough to dismiss scenarios where a recession takes place in 2023. Furthermore, although China managed to grow every quarter of 2022, it barely avoided contraction in the second one. A growth rate of roughly 3% is expected for the Chinese economy in 2022, explained mainly by statistical drag.

Figure 1. CERES External Factors Index (CEFI)
Average 1992-2019=0



Source: National data, International Monetary Fund (IMF) – World Economic Outlook (WEO), World Bank, Organisation for Economic Co-operation and Development (OECD), and Federal Reserve System (FED).
Note: Countries considered are Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Paraguay, Peru and Uruguay.

The CERES External Factors Index (CEFI, blue line), depicted in Figure 1, represents a weighted average (by its relevance to affect GDP fluctuations) of the quarterly changes in international food prices (i.e., the food index reported by the World Bank), international metal prices (i.e., the metal index reported by the World Bank), international interest rates (i.e., the 10-year US treasury bonds yield), oil prices (i.e., Brent crude oil), and seasonal GDP for both China and the US. Furthermore, the quarterly changes in actual economic performance (grey line) are added to illustrate the strong correlation between Latin America GDP and external factors.

Figure 1 shows that the current external conditions are below historical average levels. Considering the 1992-2019 period (i.e., before the COVID-19 pandemic), the highest value was registered in 2004, while the lowest occurred in 2009 (i.e., the aftermath of the global financial crisis). During periods of economic expansion (i.e., 1992-1997 and 2004-2011), the CEFI shows positive values: 2.4% and 8.5% above average, respectively. For times of decline in economic activity (i.e., 1998-2003 and 2012-2019), the CEFI registered values below average: -3.2% and -7.8%, respectively.

Table 1. External Factors: Variance Decomposition

Quarters	Latin America GDP	Food Prices	Metal Prices	Oil Prices	FED Funds Rate	US GDP	China GDP
Q4 2022	92.4%	0.3%	6.1%	0.1%	0.7%	0.2%	0.2%
+4	55.8%	19.5%	4.5%	2.9%	1.1%	2.3%	14.0%
+8	47.1%	20.3%	5.2%	5.9%	6.2%	2.4%	12.9%
+12	39.8%	16.2%	5.0%	5.1%	14.5%	2.1%	17.2%
+16	34.8%	13.2%	4.4%	4.1%	15.9%	2.3%	25.3%
+32	26.3%	10.2%	8.0%	3.7%	19.9%	4.5%	27.5%

Source: National data, International Monetary Fund (IMF) – World Economic Outlook (WEO), World Bank, Organisation for Economic Co-operation and Development (OECD), and Federal Reserve System (FED). Note: Countries considered are Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Paraguay, Peru and Uruguay.

The irruption of the COVID-19 pandemic generated disruptions that CERES's external factors index captured. In fact, during the first months of this global crisis, the CEFI dropped to its lowest levels since the subprime crisis (2008-2009). In the first half of 2021, the index returned to the positive zone, achieving its highest mark ever due to the quick recovery of economic activity—pushed by low interest rates, among others—and the boom in commodity prices.

Assuming commodity prices will remain at their current values for a while, and both the expected US treasury bonds yield values and the growth projections for the 2002-24 period materialize, the conditions would stay at pessimist levels (i.e., CEFI<0). The current situation and the forecasts until 2024 are worse compared to the last three-decade average, leaving Latin American countries challenged to put their economies on a solid growth path. According to IMF's (2022) World Economic Outlook (WEO), Latin America is expected to return to its long-term (1980–2019) growth rate of 2.5 percent (well below that of peer regions) but remaining below its pre-pandemic trend for the following years (e.g., a 5% below by 2024). The IMF has revised its growth forecast for Latin America by -0.8% for 2023, relative to the April 2022 WEO projection. More precisely, the Fund expects Latin American economies to grow by only 1.7% on average in 2023, well below the 6.9% observed in 2021 and the 3.5% expected for 2022.

In order to explore the contribution of each external factor (i.e., the percentage of GDP fluctuation explained by each driver) we have to go a step ahead. We develop an econometric model that considers together the CEFI and the economic activity in the region (also considering the GDP performance of Latin American economies in previous periods).

Table 1 summarizes the results of the variance decomposition of the econometric model for Q4 2022 and 4, 8, 12, 16, and 32 quarters after that. As it can be noticed, Latin America´s GDP loses the capacity to explain its performance by its own lags, given that the changes in the series itself managed to explain 55.8% of its variance four quarters later, while after eight years (32 quarters), the capacity declines to barely 26.3%. A year after the fourth quarter of 2022, the price of food explains 19.5% of the variance of the GDP, the GDP of China explains 14%, and 4.5% is explained by the price of metals. Otherwise, 2.9% of the variance in the economic activity is based on changes in oil prices, 2.3% on US activity, and 1.1% on fluctuations in the interest rates. Nevertheless, the explanatory capacity of most variables included in the model increases with time. After 32 periods, Chinese activity explains 27.5% of the variance, the rate´s evolution 19.9%, food prices 10.2%, metal prices 8%, US GDP 4.5%, and the oil prices 3.7%.

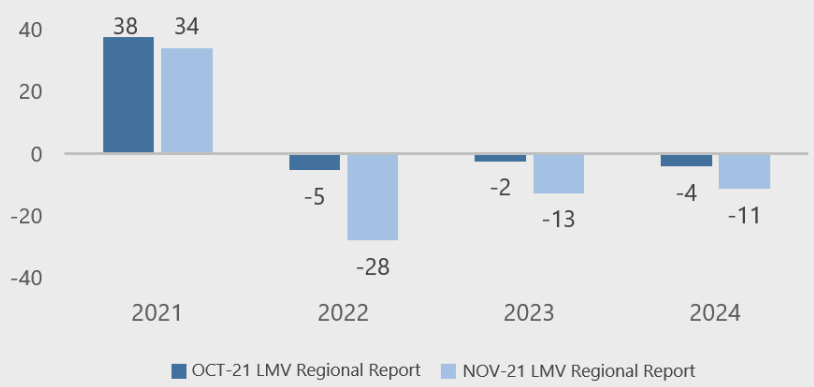
The current dependency on China—well above that of the US economy—is clear from the estimates reported in Table 1. Furthermore, commodity price changes have a more significant effect in the short/medium term due to the shifts in flows quickly reflected in employment and economic activity. However, since changes in the FED funds rate determine the flow of investments, they tend to have a more significant impact in the medium/long term.

Relative to the numbers presented in the LMV Regional Report in the second semester of 2021, the current scenario for 2022 is largely more pessimistic than expected.[2] Figure 2 reports the evolution of the CEFI based on expectations. In line with the figures reported in Table 1, the decrease in expectations for the current year was driven mainly by the worse-than-expected performance of China´s economy and the fall in food prices.

In an ongoing scenario of harsher external and internal conditions, Latin American countries must take advantage of the unique opportunity that arises from the problems in the commodities and energy supply chain, and threats of supply cuts caused by the Russian invasion of Ukraine. In this sense, strengthening Latin American international relationships and strategic position plays a significant role in enhancing the trade and investment possibilities of the region.

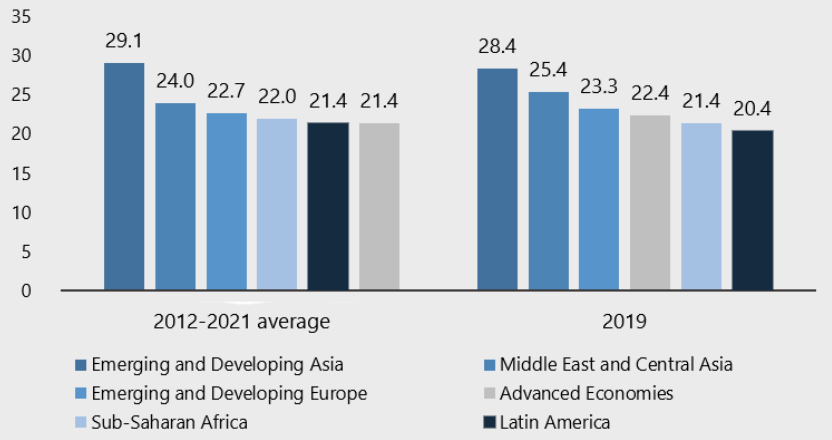
Figure 2. CEFI Expected Values for the End of Each Year

Average 1992-2019=0 [3]



Source: National data, International Monetary Fund (IMF) – World Economic Outlook (WEO), World Bank, Organisation for Economic Co-operation and Development (OECD), and Federal Reserve System (FED).

Figure 3. Investment: An International Perspective
% of GDP



Source: World Bank. Note: 2012-2020 average is reported for those countries with no data for 2021.

A Switch on Partnership and Influence

In the last two decades, Latin America has shifted from a strong dependence on the US to a more balanced setup in which China has become a major trading partner and a critical foreign direct investment (FDI) provider to several Latin American economies (even surpassing the European Union). The Biden administration has barely changed its recent predecessors' policy regarding the economic ties between the US and its neighbor to the south. On the other hand, China has become South America's biggest trade partner. State-controlled banks have loaned around USD 140 billion in just fifteen years, and its companies have made USD 83 billion in acquisitions. "COVID diplomacy" also accomplished its goal of providing several Latin American countries with vaccines and medical equipment.

However, China's strategic engagement with Latin America goes beyond economics. Beijing has gained influence across the region and asked for controversial demands in exchange. For example, Central American countries such as Panama and the Dominican Republic have chosen relations with Beijing over Taipei, as China invests in strategic sectors to boost the economic development of its Latin American allies. A shift from an American sphere of influence to a Chinese one could affect democracy in the continent, no matter how flawed it may already be. China has not discriminated between democratic and authoritarian powers and does not hesitate to send financial aid to dictatorships such as Venezuela or Cuba. Latin American countries closest to the American vision and most investor-friendly, such as Ecuador and Uruguay, cannot find a way through against the closed attitude the US poses. Instead, both countries are currently negotiating a free trade agreement (FTA) with China.

Latin America faces a new opportunity to diversify its trade partners. The Russian invasion of Ukraine—and its consequences on food and energy security—represented a wake-up call for European authorities on the importance of having strategic allies who can serve as a safe source of food commodities. A long-lasting FTA between Mercosur and the European Union may be finally reached. The agreement has been on the verge of materializing for years but always faced resistance from European agricultural protectionism (particularly France). However, the effect of war on food and energy security might be the push for the Europeans to shake Mercosur's hand finally. If the doubts from the European Union are dissipated, everything is in the hands of South American countries. Building a strong relationship with Europe can help Latin America boost its economic growth and reduce its dependence on China and the US.

The Strategic Importance of Latin America

Latin America has failed to obtain sustainable economic growth for at least half a century. The region has also failed to reduce inequality, provide quality public services, and fight delinquency and corruption. Given the generalized lack of trust in governments and local authorities, the stability of its democratic institutions is far from ideal. And still, despite being home to just about 850 million people, Latin America can produce crops for roughly 1.5 billion people. For instance, the region has more than half of the world's sugarcane, 21% of its oils, 15% of its fruits, and 18% of its corn. It is also responsible for the annual production of 54 million tons of meat, representing 16% of the world's total, including 22% of chicken and 27% of beef. This makes Latin America the world's largest net exporter of food and agricultural goods. Latin America also plays a key role in the extraction of many important minerals: 52% of the world's silver, 16% of its gold, 23% of its zinc, and 45% of its copper. The region is also responsible for 36% of the world's lithium production, a metal needed to manufacture efficient batteries (crucial for the green energy transition), phones, computers, and cars.

That said, Latin America's share of global GDP is less than 10%. However, several international episodes have provided evidence of an intimately interconnected and interdependent world economy, where economies can play a crucial role regardless of their relative size. For example, the economic influence of Russia and Ukraine has exceeded by far what could be expected given their GDP. Still, it relied on their crucial role in commodity production, particularly gas, oil, and wheat. Both countries account for approximately just half the GDP of Latin America. Yet, the impact of the war has been highly disruptive to the normal functioning of international markets, and the conflict partially halted global economic growth. In an unstable scenario where countries seek secure ways of providing food, energy, and raw materials, Latin America can take advantage and be a trustworthy provider. However, it seems worth asking if Latin American economies are sound enough to fulfill this role.

Renewable Energy: A New Hope for Latin America

Investment in Latin America had been slightly declining even before the COVID-19 pandemic. The region needs to reach the levels observed in other emerging and developing countries to start a new path of sustainable growth.

Figure 3 shows that Latin American economies stand several GDP points below other regions relative to last decade's average and the latest available pre-pandemic record in terms of investment (about 8 GDP points below Emerging and Developing Asia). Attracting foreign direct investment plays a vital role in this regard and even more for countries on the development path. It stimulates its development possibilities by promoting economic growth, creating new jobs, and introducing technology and know-how to new forms of production.

More than 13,000 FDI projects were announced worldwide during 2021, according to fDi Markets (a Financial Times data monitor that tracks greenfield cross-border investment).[4] These projects involved a total capital investment of USD 610 billion and created more than 1.6 million jobs. In recent

Table 2. FDI in Renewable Energy in Latin America

by Country, 2012-21

Country	Renewable Energy (RE)		Total		% of Total		% of Latin American RE	
	Capital Investment (USD bn)	Project numbers	Capital Investment (USD bn)	Project numbers	Capital Investment (USD bn)	Project numbers	Capital Investment (USD bn)	Project numbers
Chile	44.7	235	82.2	1,125	54%	21%	37%	36%
Brazil	34.3	160	190.2	3,079	18%	5%	29%	25%
Uruguay	2.1	20	14.0	195	15%	10%	2%	3%
Paraguay	0.8	1	6.8	92	12%	1%	1%	0%
Mexico	25.8	142	241.3	4,648	11%	3%	21%	22%
Colombia	4.3	26	42.8	1,347	10%	2%	4%	4%
Ecuador	0.8	6	8.4	164	10%	4%	1%	1%
Peru	5.8	42	77.4	1,053	8%	4%	5%	7%
Argentina	1.6	14	52.2	854	3%	2%	1%	2%
Bolivia	-	-	9.5	79	0%	0%	0%	0%
Total	**120.2**	**646**	**724.8**	**12,636**	**17%**	**5%**	**100%**	**100%**

Source: fDi Markets. Note: Data from selected Latin American countries (Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Mexico, Paraguay, Peru, and Uruguay). 2021 includes projects from January to October.

years, sustainability—and its energy transition—has reshaped global investment patterns. The renewable energy sector retained its position, for the third year in a row, as the top sector by capital investment (USD 85.2 billion).[5] In the first half of 2022, this sector was also the primary recipient of new FDI projects (22% of total announcements), primarily due to mega-projects into hydrogen production.[6]

Hydrogen has been hailed as the fuel of the future. It has tremendous potential as a clean energy source, as it does not emit greenhouse gas when used by the end user. But the problem lies in the cost and the difficulty of production. Although hydrogen is the most abundant element on Earth, it is not easy to obtain since it barely exists in its pure state in nature. It must be generated by separating it from other substances that contain it, like water, coal, and natural gas.

The ideal way to produce it would be directly from water—a substance present in 70% of the planet—with a process called electrolysis—that splits water into oxygen and hydrogen—and powered by renewables to get an utterly emissions-free production process. This is what is known as "green" hydrogen. However, it is usually an expensive process for which much electrical energy is needed to power the electrolyzers. Only around 5% of total hydrogen production today comes from electrolysis. The rest is from fossil fuels emitting carbon dioxide (CO_2).

Most worldwide production is "grey" hydrogen. It is created mainly from natural gas using a steam methane reforming process, which releases greenhouse gases into the atmosphere. As an alternative, to improve the carbon footprint of this process, "blue" hydrogen also uses fossil fuels but with a method called Carbon Capture and Storage (CCS) captures the CO_2 emissions and stores them underground.

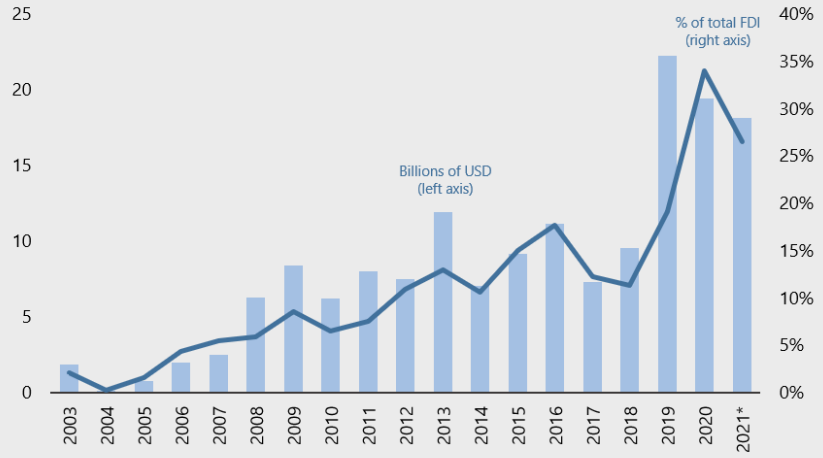
Although these options do not end the world's energy dependence on fossil fuels, they are cheaper ways to generate hydrogen. According to experts, they could be a bridge to reach the transition to net-zero emissions.[7] It can help build a market until enough renewable energy is available and electrolyzers become more efficient and cost-effective.

Hydrogen can transform harder-to-decarbonize energy-intensive sectors like heavy industry and long-haul transport. Its use can play an important role in steel, cement, and chemicals industries and refineries, as well as an alternative fuel for aviation, maritime, road, and rail transportation. Other applications could be for heating and electricity generation, and it can also help balance the supply of and demand for renewable electricity and serve as long-term seasonal storage. Hydrogen is transportable and storable both in gaseous—distributed through pipelines—and liquid state, which due to its significantly reduced volume, can be helpful for long distances and export.

Latin America is one of the geographic regions with the most renewable energy potential to produce low-carbon hydrogen and—in a world fighting against climate change—can play a significant role in the international push for this alternative, as stated by the International Energy Agency (IEA) in a recent report.[8] Global need for energy security due to the ongoing Russia-Ukraine war bolster this and bring a new dynamic and urgency to these discussions. Given Latin America's production potential, the continent could become a strategic new energy partner to Europe, which vows to reduce its Russian natural gas dependency by two-thirds within less than a year. The European Union plans to produce 10 million tons of renewable hydrogen and import 10 million tons by 2030. Current talks for a European Union-Mercosur free trade agreement can provide a space for such negotiations.[9]

This potential represents a significant opportunity for the region to attract new investments and establish itself as a global green fuel supply chain hub. Low-carbon hydrogen projects are characterized as large-scale investments—especially if compared with traditional production sectors of Latin America—and

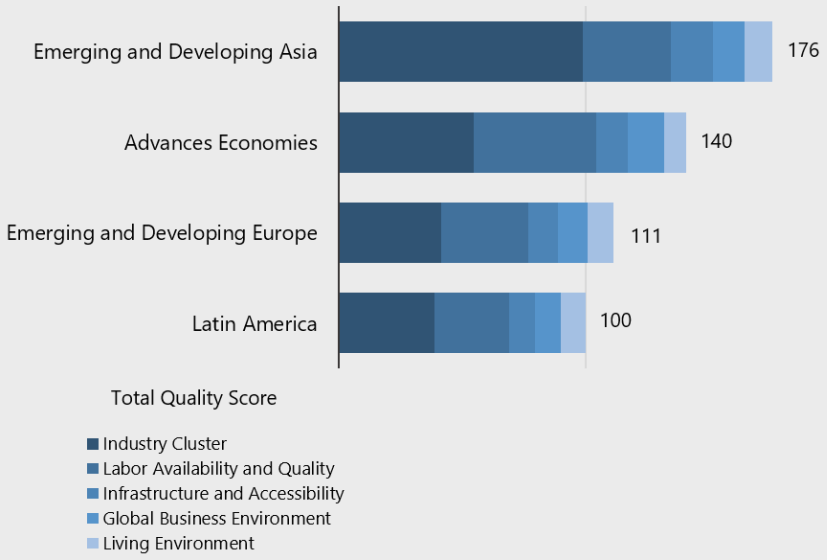
Figure 4. FDI in Renewable Energy in Latin America



Source: fDi Markets. Note: Data from selected Latin American countries (Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, México, Paraguay, Peru, and Uruguay). *2021 includes projects from January to October and estimates for the rest of the year.

Figure 5. Quality Overview of Investment Destinations

Renewable Energy; Latin America=100



Source: fDi Benchmark. Note: Renewable Energy sector includes "Biomass R&D Centre," "Fuel Cells R&D Centre," "Photovoltaics R&D Centre," "Renewable Energy Technology Centre," "Solar Energy," and "Wind Energy." Regional grouping from selected countries is defined as follows: Latin America – Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Mexico, Paraguay, Peru, and Uruguay; Emerging and Developing Asia – India, Indonesia, Malaysia, and Vietnam; Emerging and Developing Europe – Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Lithuania, Poland, Romania, Serbia, and Turkey; Advances Economies – Ireland, Israel, New Zealand, Portugal, Slovak Republic, and Slovenia.

could help diversify economies and develop a new export industry, unlocking new trade opportunities with commensurate geoeconomic and geopolitical consequences. Furthermore, hydrogen demand in Latin America is expected to grow by as much as two-thirds by 2030,[10] which could facilitate much of the regional hydrogen infrastructure development and its establishment to become well-positioned to export excess production to the international market.

Latin America is one of the world's leading regions for renewable energy use today. According to the International Renewable Energy Agency (IRENA), more than a quarter of its primary energy comes from renewables, twice the global average. Primarily thanks to the historical development of hydropower, renewables make up almost 60% of the region's power generation, much higher than the worldwide average of 35%. But more recently, countries have begun deploying increasing levels of variable renewables, benefiting from the region's abundant low-cost and high-quality solar and wind resources,[11] with the installed capacity of these sources growing more than fifty-fold between 2008 and 2019.

Most experts estimate that in the next decade, the costs associated with green hydrogen production will fall by 70% or even more if electricity prices from renewable sources continue to decline, as they are currently doing.[12] Besides, research conducted by Stanford University and the Technical University of Munich found that hydrogen production can take advantage of fluctuations in electricity prices and intermittent renewable power generation and make it more economical.[13] Even though the costs of solar and wind power have been falling steadily, renewable electricity still has a fundamental drawback because sometimes it is insufficient to meet the demand (it is only produced when the sun is shining or the wind is blowing) while, at the same time, sometimes it is generated in excess and lost, or not produced, since it cannot be stored economically. A win-win solution could be to use this surplus renewable energy to make pure hydrogen, fostering at the same time renewables integration in power systems.

At least 11 Latin American countries have either already developed or currently preparing national hydrogen strategies and roadmaps.[14] It is predicted that hydrogen could account for up to 12%-22% of global energy use by 2050, from virtually nothing today.[15] Investment interest in hydrogen energy has been rising globally, with a wave of low-carbon projects in the early stages of development in the region.

In 2021, Latin America attracted 1,111 projects totaling around USD 64 billion in announced investments, conforming to the fDi Markets database. Renewable energy held firm for the third year as the sector of most significant interest for FDI. According to data from a group of selected Latin American countries (Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Mexico, Paraguay, Peru, and Uruguay), which represents more than 80% of projects in the region, the sector was equivalent to a quarter of the total amount of investments announced for the region in 2019-2021 (Figure 4). In considering the last decade, FDI in renewable energy accounted for 17% of regional total capital investment, reaching USD 120 billion and followed by "Metals" (10%), "Transportation & Warehousing" (9%), "Communications" (9%) and "Coal, oil & gas" (8%). In 2016-2020 the number of renewables foreign direct investment projects in Latin America doubled to more than 400, compared to the previous five years. The sector expanded by 60% in terms of capital attracted, whereas investment decreased by 3% across all sectors in the same period. As shown in Table 2, among the region, Chile is the primary recipient of FDI in renewable energy, which accounted for 54% of the country's total foreign capital investment between 2012 and 2021, followed by Brazil (18%) and Uruguay (15%).

European companies contributed more than 70% of the inbound greenfield investment in renewables in Latin America over the last ten years. Spain and Italy topped the list (27% and 14% of the total, respectively). US-based investors represent, in turn, 9% of capital, Canada 4%, and China 3%.

The region, however, still has a long way to go in terms of competitiveness, as suggested by fDi Benchmark data. This tool, also from The Financial Times, measures investment attractiveness, assessing investment destinations' relative qualities and costs. Quality factors considered include the availability of labor and skills, the size of the existing industry clusters, infrastructure and accessibility, business environment, and quality of living.

For the renewable energy sector[16] Latin America's overall quality score (Figure 5, Latin America=100) is well below that of Emerging and Developing Asia (-43%) but also lower than that of Advances Economies (-29%) and Emerging and Developing Europe (-10%).[17] Brazil, Mexico, and Chile are the Latin American countries that fare better in the ranking.

"Industry cluster" and "labor availability and quality" are the two most influential categories for investment decisions. More specifically, across the entire list of 26 subcategories measured, "experienced industry-specific staff" is the most relevant item (which contributes 19% of the total score), which stands out the necessity of policies committed to high-quality education and training to offer prepared and capable employees to new foreign projects.

Latin America's "industry cluster" score for renewable energy is 30% and 60% below that of Advanced Economies and Emerging and Developing Asia, respectively. Regarding "labor availability and quality," Latin America's score is 40% and 15% below that of Advanced Economies and Emerging and Developing Asia, respectively. On the other hand, not only does Brazil outperform every country in Latin America, but it also exhibits a higher score in these categories than most countries in the developing world.

In terms of cost-effectiveness, Latin American countries are better positioned compared to the Advances Economies group, which should represent an incentive for investors from these countries to settle in the region. Regarding other emerging and developing countries, Latin America faces more challenging competition.

Latin America has the structural advantages that could make the region a global leader in low-carbon hydrogen production. Its abundant renewable energy sets the necessary base conditions, with competitive costs that make it attractive for investors, and country-level roadmaps also contribute towards this goal. But in practice, some significant obstacles must be overcome quickly and effectively to take advantage of these opportunities.

Scaling up low-carbon hydrogen production and use will require investments in enabling infrastructure, including pipelines, transmission lines, transport, storage, port terminals, and fueling stations. Although the region already faces competitive costs, considerable reductions will also be needed. Technology advances play a crucial role here. Encouraging the installation of value chains to manufacture equipment (such as electrolyzers and fuel cells) could help cut production costs and create highly skilled jobs and economic opportunities for the region.[18] In this sense, hydrogen's widespread adoption, and FDI attraction depend on all these factors. During the coming years, initial efforts should focus on supporting them, along with regulatory and financial incentives frameworks, and building regional agenda and cooperation mechanisms to take advantage of synergies to increase competitiveness.[19]

Final Remarks

Latin America faces an unfavorable context of external factors, mostly driven by slower-than-anticipated global growth: a more probable "hard landing" scenario in the United States where inflation persistency could make Federal Reserve's tighten monetary policy last longer than originally expected; a Eurozone facing a winter recession fueled by both the Russia-Ukraine war and a deepening energy crisis; and lockdowns still affecting the Chinese economic performance due to Beijing's Zero-COVID policy.[20] Additionally, elevated inflation and rising interest rates will potentially generate a surge in the cost of financing and a possible outflow of capital from emerging economies.

As depicted by "The Three-Little-Pigs" Index introduced in the last issue of the LMV Regional Report, several Latin American countries exhibit certain financial fragility (i.e., more debts to pay than international reserves).[21]

However, every cloud has a silver lining. This complex global scenario also needs for food and energy security, offering Latin America great opportunities in the medium and long term. To take advantage of them, Latin America must urgently implement a structural reform agenda to improve competitiveness and boost economic activity mainly through private investment, as presented in the April 2021 LMV Regional Report.[22]

References

Calvo, G. A., Leiderman, L., & Reinhart, C. M. (1993). Capital inflows and real exchange rate appreciation in Latin America: The role of external factors, International Monetary Fund, IMF Staff Papers, Vol. 40, No. 1.

CERES (2021a). Towards a Dual Agenda of Structural Reforms. Latin America Macro Vista Regional Reports. Center for Latin America. April 2021.

CERES (2021b). Tailwinds in the Short Run Coupled with Long Run Challenges. Latin America Macro Vista Regional Reports. Center for Latin America. October 2021.

CERES (2022). Straw, Wood and Brick: Latin America in the Context of Global Inflation. Latin America Macro Vista Regional Reports. Center for Latin America. April 2022.

Cohan, L., & Levy Yeyati, E. (2012). What have I done to deserve this? Global winds and Latin American growth, Brookings Institution, Washington D.C.

Economic Commission for Latin America and the Caribbean, ECLAC (2021), Latin America and the Caribbean Has All the Right Conditions to Become a Renewable Energy Hub with Great Potential in Green Hydrogen.

fDi Intelligence (2022a). The fDi Report 2022: Global greenfield investment trends. Financial Times.

fDi Intelligence (2022b). The 1H22 investment matrix. Financial Times.

Glenk, G. & Reichelstein, S. (2019). Economics of converting renewable power to hydrogen. Nat Energy 4, 216–222.

Heinrich-Böll-Stiftung (2022). Green hydrogen as a substitute to Russian gas. Could Latin America be an energy partner to Europe?

Inter-American Development Bank, IDB (2008). All that glitters may not be gold: Assessing Latin America's recent macroeconomic performance, report coordinated by Izquierdo, A. and Talvi, E. with contributions of Catao, L.; Cavallo, E. and Powell, A., Research Department, April 2008.

International Energy Agency, IEA (2020). Latin America's hydrogen opportunity. From national strategies to regional cooperation.

International Energy Agency, IEA (2021). Hydrogen in Latin America. From near-term opportunities to large-scale deployment.

International Monetary Fund, IMF (2021). Regional economic outlook. Western Hemisphere: A Long and Winding Road to Recovery. October 2021.

International Monetary Fund, IMF (2022). Regional economic outlook. Western Hemisphere: Navigating tighter global financial conditions. October 2022.
IRENA (2022). Geopolitics of the Energy Transformation: The Hydrogen Factor. International Renewable Energy Agency, Abu Dhabi.
Izquierdo, A., Romero, R., & Talvi, E. (2008) Booms and busts in Latin America: The role of external factors, Inter-American Development Bank, Research Department, February 2008.
Munyo, I. & Veiga, L. (2022). Entrepreneurship and Economic Growth, Journal of the Knowledge Economy, DOI:10.1007/s13132-022-01032-8.
National Geographic (2022). Ventajas e inconvenientes del hidrógeno como combustible alternativo.
Österholm, P., & Zettelmeyer, J. (2007). The effect of external conditions on growth in Latin America, International Monetary Fund, IMF Working Paper, WP/07/176, July 2007.
Reinhart, C., Calvo, G., & Leiderman, L. (1994). The capital inflows problem: Concepts and issues. Contemporary Economic Policy XII, 3, 54–66.
Reinhart, C., Calvo, G., Fernández Arias, E., & Talvi, E. (2001). Growth and external financing in Latin America, Inter-American Development Bank, prepared for the Seminar "What is Holding Back Growth in Latin America and the Caribbean? What Should Governments Do, Santiago de Chile.

Notes

[1] See CERES (2021b) for a previous edition of the LMV Regional Report, where the influence of external factors on Latin American economic performance is discussed in more detail. See also Calvo et al. (1993), Cohan & Levy Yeyati (2012), IDB (2008), Izquierdo et al. (2008), Munyo & Veiga (2022), Österholm & Zettelmeyer (2007), Reinhart et al. (1994, 2001).
[2] CERES (2021b).
[3] GDP forecasts at each period are taken from WEO Database. Is supposed that commodities values stay at the last available value on each period until 2024, whilst the values for FED funds rate are the observed until 2022Q3 and then projected based on market forecasts.
[4] Greenfield refers to a form of FDI where a parent company establishes a subsidiary in a foreign country. Since the information is obtained from press documents, investment projects of small or medium-sized companies, as well as those developed in places with less media coverage, are less likely to be included. In addition, it is possible that some projects that were announced, but cancelled or not yet fully carried out, are included. However, the information available is very detailed and disaggregated, which is not possible from official information.
[5] fDi Intelligence (2022a).
[6] fDi Intelligence (2022b).
[7] National Geographic (2022).
[8] IEA (2021).
[9] Heinrich-Böll-Stiftung (2022).
[10] IEA (2021).
[11] IEA (2020).
[12] National Geographic (2022).
[13] Glenk & Reichelstein (2019).
[14] Chile (published), Argentina, Bolivia, Brazil, Colombia, Costa Rica, El Salvador, Panama, Paraguay, Trinidad and Tobago, and Uruguay (in preparation); according to IEA (2021).
[15] See IRENA (2022). In all projections, green hydrogen is the dominant production method, complemented by blue hydrogen.
[16] Includes "Biomass R&D Centre", "Fuel cells R&D Centre", "Photovoltaics R&D Centre", "Renewable Energy Technology Centre", "Solar Energy" and "Wind Energy."
[17] Regional grouping from selected countries defined as follows: Latin America – Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Mexico, Paraguay, Peru and Uruguay; Emerging and Developing Asia – India, Indonesia, Malaysia and Vietnam; Emerging and Developing Europe – Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Lithuania, Poland, Romania, Serbia and Turkey; Advances Economies – Ireland, Israel, New Zealand, Portugal, Slovak Republic, and Slovenia.
[18] IEA (2021).
[19] ECLAC (2021).
[20] IMF (2022).
[21] See CERES (2022) for further details regarding "The Three-Little-Pigs" Index and Latin America's vulnerability to an external financing cut-off.
[22] See CERES (2021a) for a discussion on Latin America's current barriers to productivity and the structural reform agenda needed to improve competitiveness and boost economic activity through private investment.