



Posted on April 20, 2023

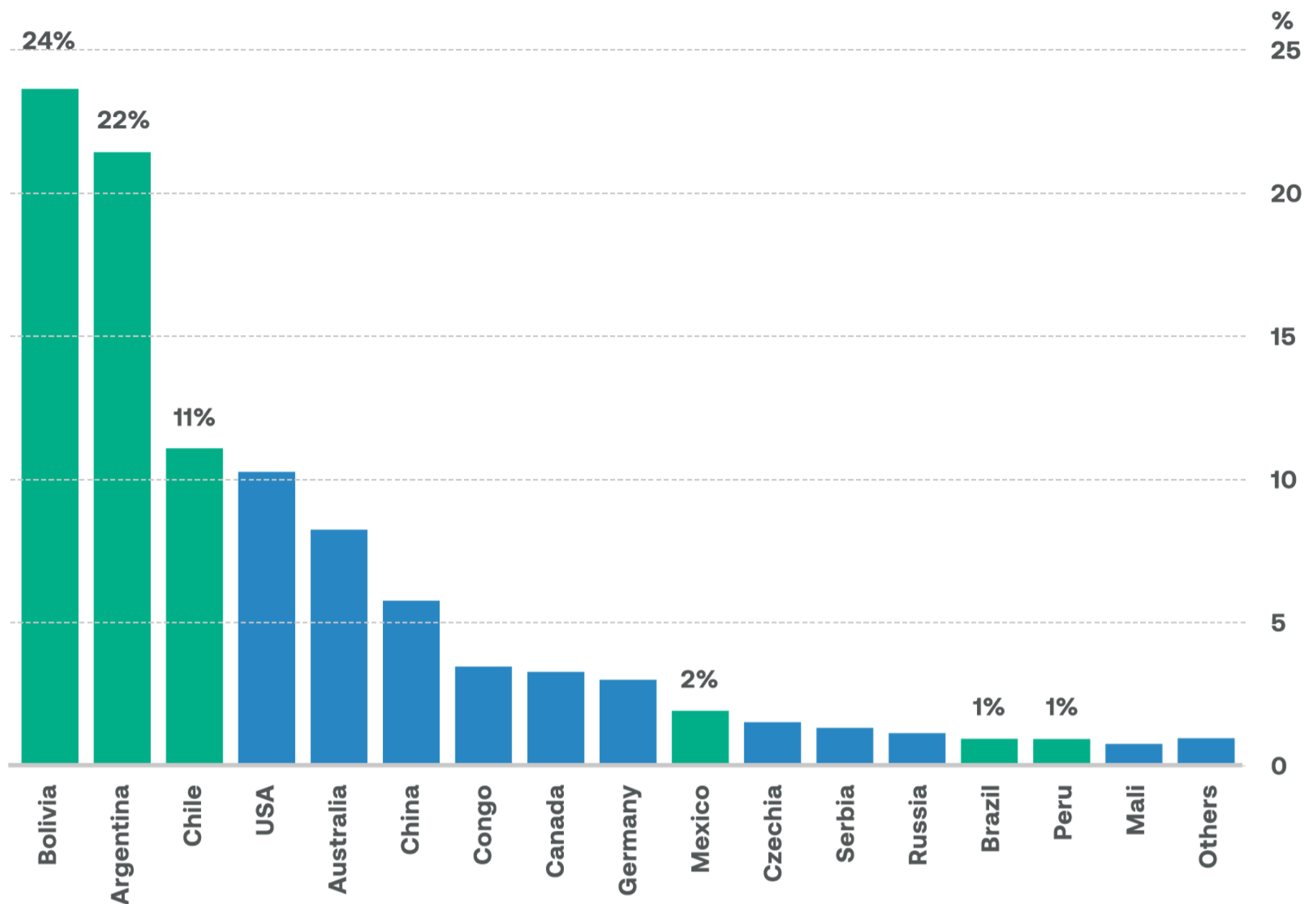
# Lithium and Latin America

Latin America and Lithium are intertwined in a nascent relationship. It is estimated that out of the 89 million tons of lithium reserves in the world, as much as 60% of these are found in Latin America. The majority of these deposits, over 55% of total global deposits, lie in a region known as the “Lithium Triangle”, comprised of Chile, Argentina, and Bolivia. As we can see on the chart, approximately 24% of lithium resources lie in Bolivia, 22% in Argentina, and 11% in Chile.

Mexico, Brazil, and Peru also play into the mix, as these three countries combined represent about 4% of global resources.

## Global Lithium Reserves

*Source: United Nations Development Program,  
U.S. Geological Survey, Insigneo, as of 2022*

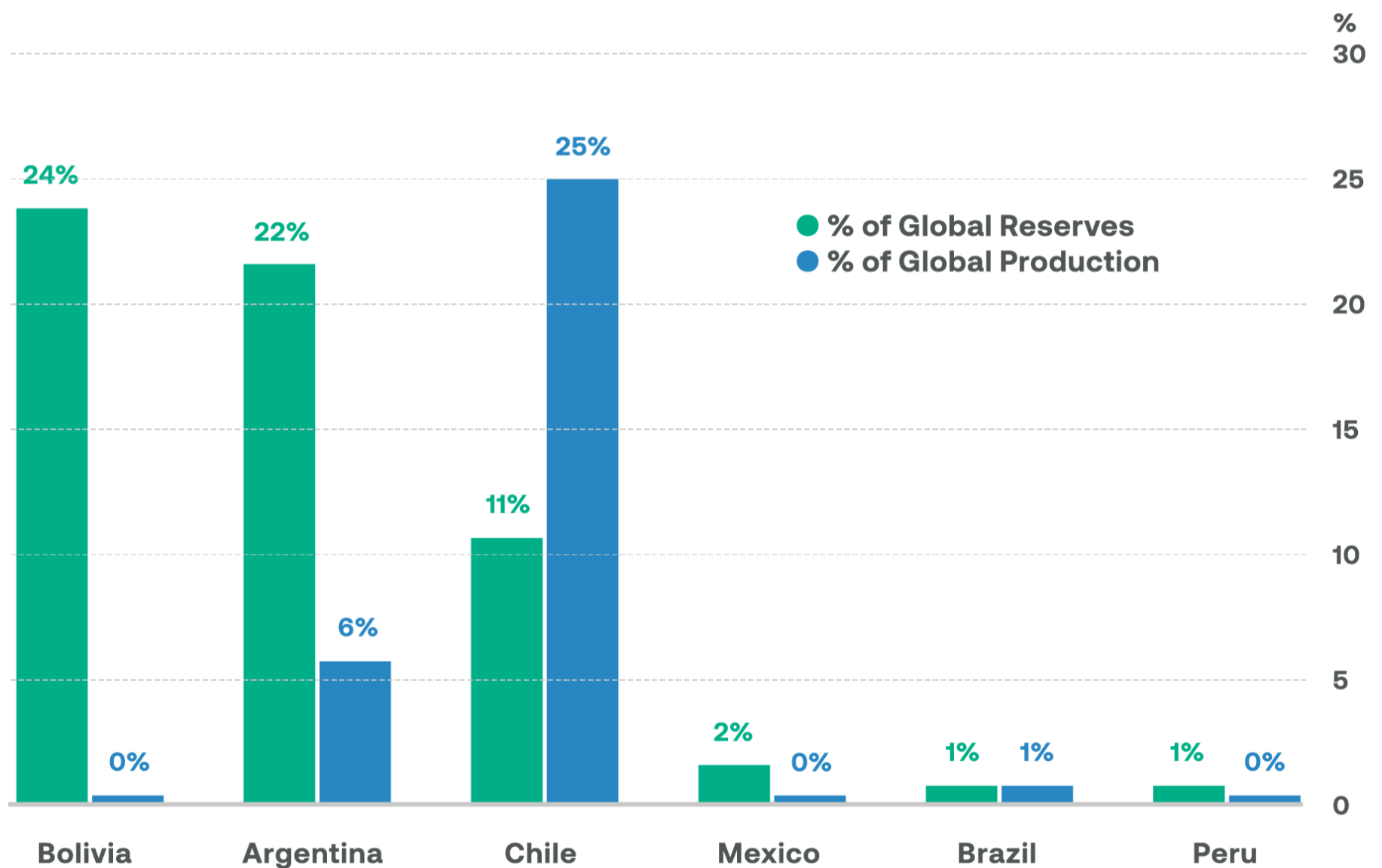


However, not all lithium reserves are created equal. The basic raw materials needed for the creation of lithium generally come from two sources: a mineral rock called Spodumene and a salt-based brine. As of 2020, 65% of lithium production stemmed from Spodumene, 33% from brine, and 2% from other sources. Most of the production of Spodumene is in Australia, while brine production is mostly found in the salt flats of Chile and Argentina. It is because of the resources in these flats, that the “Lithium Triangle” has the potential to have a major impact on the region. That being said, lithium can be hard and expensive to produce, particularly in regions requiring intensive mining. This could explain why certain countries, such as Mexico, are having limited success developing this industry. In a recent report by the United Nations Development Program, the UN Assistant-Secretary General and UNDP Regional Director for Latin America and the Caribbean noted that industry experts believe that “the marginal cost of producing refined lithium of both carbonate and hydroxide would range between \$6,000-\$8,000/ton through 2036.” (Luis Felipe Lopez-Calva, UNDP, 2022). This cost level poses significant limitations to the development of reserves in certain countries in the region. When we compare the potential reserves that could be mined, against what countries are actually producing, we can see the effects of these high costs of production. For example, as we pointed out before, Bolivia accounts for 24% of global lithium deposits, with Argentina and Chile coming in at 22% and 11%, respectively. However, data from the U.S. Geological Survey, and published by the United Nations Development Program, paint a different picture with regards to actual production. As we can see on the next chart, despite accounting for the largest amount of reserves in the world as of 2021, Bolivia accounted for 0% of global lithium production. On the other hand, accounting for only 11% of reserves, Chile accounted for 25% for global production. So, why this discrepancy?

Blessed by geography, Chile is home to the largest portion of the Atacama Desert. As a result, the country has some of the best lithium brine deposits in the world, which again due to favorable geography, can be produced at relatively lower costs than in other regions. Additionally, the country’s access to the Pacific Ocean gives it easy access to ports, from which the product can be exported to Asia. For these reasons, Albemarle and Sociedad Quimica y Minera de Chile, two of the world’s largest producers of lithium, have meaningful operations in the country. However, permitting and other regulatory constraints pose a challenge for production growth in Chile, as well as in other countries in the region.

Resource nationalism is another dynamic that we are seeing play a role in limiting lithium production in the region. Fearing the influence of other countries on their reserves, countries like Bolivia and Mexico are pushing for the creation of an OPEC-like “Lithium Cartel” to act as a group in setting prices for the product. However, this attempt to set price controls could prove to be detrimental to some countries in the region, as not all lithium reserves and their mining requirements are equal. Additionally, given the region’s fluctuating political environment, this could also add an extra layer of complexity to an already volatile pricing backdrop for the commodity. Lithium pricing is dictated by different variables across different markets. After lithium is mined from Spodumene or produced from brine, these raw materials must then be processed into lithium carbonate and lithium hydroxide, the chemicals that are used to create batteries. Approximately, 65% of this processing takes place in China. As a result, pricing varies depending on the type and quality of the material, as well as the market where it is produced or processed. As we can imagine, the demand for lithium has increased over the past decade as demand for Electric Vehicles has meaningfully grown around the world. Demand has increased significantly in North America and Asia, particularly in the United States and China. As could be expected, this has driven prices of lithium through the roof. Prices for some of the key chemical components needed to produce lithium are much more expensive than they were over the last 5 years. However, over the past few months, lithium prices have retreated off their highs by as much as 20%, particularly in China. This latest drop was caused by lower end market demand in that country. In our view, prices could remain volatile over the short-term. However, the supply/demand dynamics for lithium are still favorable, and although prices could come down temporarily from elevated levels, their trend is most likely to continue to point upward over the long-term.

### Lithium: Global Reserves Vs Global Production



Source: United Nations Development Program, U.S. Geological Survey, Insigneo, as of 2022

As mentioned before, most of the processing of raw lithium into finished products happens in China.

There is interest from both the United States and China to increase the amount of processing facilities in Latin America. The United States, for example, is interested in this dynamic for two reasons. First, there is the geographic advantage to having lithium mined and fully processed close to end markets at home.

Companies like Albemarle already have a presence in the country, yet other companies are also making inroads, as evidenced by Tesla's newly announced lithium processing plant in Texas. However, and likely more important, processing lithium in Latin America would eliminate the country's dependence on China for this part of the production chain. As we can imagine, diversifying its production and processing base has meaningful implications for the United States, from a national security standpoint.

If Latin America adopts policies that will create a benign environment for lithium producers, the region could be poised to be a big beneficiary of the increased long-term demand for this product. If instead governments enact policies that make it difficult for companies to establish themselves in the region, the benefits of this natural resource could be limited. Granted, all stake holders have to derive some form of benefit from the abundance of lithium in the region. Compromise that favors everyone involved is key. ■



Mauricio Viaud – Insigneo's Senior Investment Strategist and Portfolio Manager.