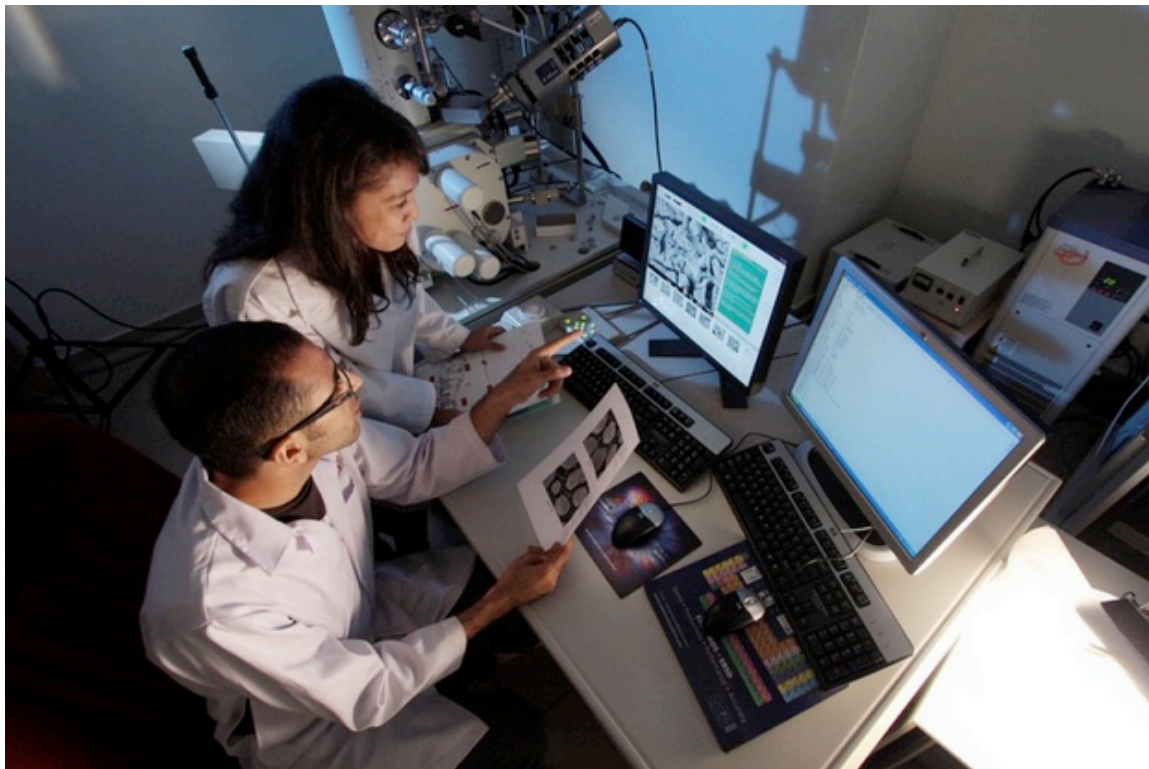




## Beyond Commodities: Argentina's Dynamic Biotech Industry

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The dictionary definition of crucible is “an extremely difficult experience or situation; a severe test or trial”. This is precisely where most of Latin America finds itself with its excessive dependence on commodities as the linchpin of its economy. In good times governments spend commodity windfalls on projects or programs to garner support for the political party in power. In bad times, politicians engage in handwringing and scapegoating, and the governing party borrows excessively to make up the shortfall in revenue from commodity sales.

As the title of a recent article in the online publication Knowledge@Wharton asks: "Can Latin America Free Itself from Dependence on Commodities?" The Bloomberg Commodity Index, which tracks prices of 22 raw materials, closed the third quarter this year with a sharp decline. Making matters worse, the International Monetary Fund has forecast that at the end of 2016, Latin America will remain in a recession for the second consecutive year, with GDP declining by 0.4 percent.

While it is not feasible for Latin America to free itself altogether from dependence on commodities, what the big regional emerging markets of Argentina, Brazil, Chile and Peru can do is to boost their knowledge-based industries and value-added services sectors.

Argentina illustrates, in the first instance, how economic diversification can do precisely that while transforming the very commodities from which to lessen its dependence. The answer? Biotechnology. A key component of technological growth, biotechnology is experiencing dynamic growth throughout the world, including many parts of Latin America. During the last 10 years, R&D investment in Latin America doubled, with Argentina, Brazil and Mexico accounting for 91 percent of the total.

A combination of trade and investment liberalization, improved regulations, better intellectual property protection, national policies and increased resources in support of science and engineering, and expanded post-graduate programs in scientific fields, have resulted in the blossoming of the biotechnology sector.

In the case of Argentina, despite modest budgets, Argentine science has garnered worldwide respect. It is the Latin American nation with the most Nobel Prize laureates, and it has made notable contributions to the Human Genome Project, nanotech, biotech, defense systems, and space research.

Argentina continues to be the third largest producer of biotech crops after the United States and Brazil, producing 14 percent of the world's total biotech crops. Argentina has over 200 biotech firms earning well over USD \$2 billion across the full gamut of areas such as human health, animal health, food processing, and agriculture.

Firms such as Nidera, Bioceceres, and Biocientífica are the cutting edge of biotechnological development. Through the advancement of biotechnology varieties, Argentina has increased their crop yields by 140,000 hectares from last year. Almost all soybean area is planted with biotech seed varieties, while 95 percent of corn area and 100 percent of cotton area are biotech varieties.

An interesting feature of biotech firms is that compared with others they have very low rates (if at all) of bankruptcies, closures, and reduction in business activity. In international rankings among nations in science and technology, Argentina jumped from 144 in 2009 to 79 in 2014 among the 5000 most important institutions and was named one of three institutions only outside Germany to be a locale for branch of the Max Planck Institute.

The role of the State has been and will continue to be dominant, and their financial support of research institutions and researchers has been significant in recent years. The Ministry of Science, Technology, and Productive Innovation (MINCyT), created in 2007, has been instrumental in the development and implementation of policies to create competitive advantages for Argentina in biotechnology. Nevertheless, the country does face a number of daunting obstacles, including insufficient financial support, an IPR regime that needs further strengthening, and a lack of coordination between the public and private sectors to further advance innovation in biotechnology.

It wasn't until President Marci took office in December 2015 that Argentina's agricultural sector experienced a spur of optimism through his implementation of rapid policy changes such as the elimination of all export taxes (except for soybeans which was reduced by 5 percentage points), and the removal of export restrictions (primarily for corn and wheat).

It is unrealistic to expect commodity-dependent nations to significantly lessen their dependence on their main export-earning sector. At the same time, they must harness science and technology to add value to their commodities and invest heavily in knowledge-intensive industries through a parallel path.

Argentina is doing precisely that in biotechnology and serves as a model to be emulated by other nations. Its neighbors in South America would be wise to follow suit.

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