

The Mexican Mining Bubble that Burst¹

Ivani Vassoler

Similar to the 17th century “Tulipmania” in Holland when tulip bulbs became a top commodity causing a speculative fever that, in the end, ruined thousands of Dutch investors,² Mexico, in the first decades of the 19th century, became a hot spot for Europeans eager to reap huge profits from Mexican silver mines. Yet the mine-investing rush quickly proved to be much less profitable than European investors assumed, and foreign companies withdrew from Mexico, thus souring the newly independent country’s relationship with international investors. While the episode undoubtedly created a bumpy start for an emerging nation desperately in need of capital to finance its development, much less clear, however, is why it happened. As the expectations of high investment returns went unfulfilled, financiers in Europe alleged the one mostly to blame was Alexander von Humboldt (Kellner 1963, 110) for his assessment of the Mexican mines’ potential, described in details in his *Political Essay on the Kingdom of New Spain* (1811). The accusations therefore raise questions as to what really prompted the cash. Did Humboldt exaggerate the quality and abundance of minerals in Mexico and their potential for huge profits, or were his writings misinterpreted, and possibly distorted, by financial experts? Was the crash, in the end, just the product of investors’ greed?

1. During colonial times Mexico, was for the Spanish Crown, simply New Spain. In this article New Spain and Mexico will be employed interchangeably for the sake and clarity of my arguments.

2. According to one estimation, (*The Netherlands Flower Bulb Information Center*) the market frenzy allowed traders of tulip bulbs to earn 60,000 florins (approximately US\$ 44,000) in a month. This was an astronomical sum that made people desperate to cash in on the speculative bulb market. Local governments tried to outlaw the commerce, but they were unsuccessful. As profits rose, family jewels were traded and small businesses were sold, so the revenues could be invested in the tulip business. In 1637, when a group of merchants was unable to get the high prices for the bulbs, the market crashed, leading investors to bankruptcy.

Alexander von Humboldt (1769-1859) spent a year in Mexico, between 1803 and 1804 during a five-year journey of discovery in the Americas. The trip included extended visits to Venezuela, Ecuador, Peru and Cuba, and a three-week stay in the United States. In 1799 he set off on his expedition to Latin America, at that time under control of the Spanish Crown, from which Humboldt received full support to travel to the region. The Spanish king Carlos IV issued Humboldt and his companion, Aimé Bonpland,³ a *carte blanche*-style letter of recommendation, which allowed the two explorers to travel all over the Spanish territories in the New World, with complete freedom to conduct research, make inquiries and collect materials as they wished. Aware of the existence of extensive mineral reservoirs in the Spanish-controlled colonies in the Americas, the king's expectation was that Humboldt's expertise in mineralogy would contribute to an increase of gold and silver production, which in turn would provide fresh resources to the Crown's dilapidated treasury.⁴

Humboldt was, in fact, highly qualified to examine the conditions of the mineral sector in Mexico and possibly that of any other country at that time. He studied geology in Saxony (now Germany) at the Mining Academy in the University of Freiberg, an influential silver-mining community, where a mining code was developed in the early 14th century.⁵ Studying in a mine-focused town under the guidance of professor Abraham G. Werner,⁶ Humboldt acquired conceptual and practical knowledge that he later employed in his research and publications. In Freiberg, Humboldt met a miner scholar from Spain, Andres Del Rio⁷, who was influential in Humboldt's decision to visit Latin America. After his studies in Freiberg, Humboldt started a career

3. Born in La Rochelle, France, in 1773; died in Santa Anna, Uruguay, in 1858. He studied medicine and was also a botanist. During the expedition, in company of Humboldt, Bonpland collected and classified about 6,000 plants, which he later described in details in *Plantes Equinoxiales* (Paris 1810). In Buenos Aires, he was appointed professor of natural history, a position he left to explore other parts of South America. In Paraguay he was arrested, in 1821, accused of being a spy and spent 10 years in jail. Once free, he moved to Santa Anna. Experts consider his principal scientific work to be *Nova Genera et Species Plantarum* (Paris, 1815). See Appletons (2001).

4. Increased revenue was a major objective of the Spanish Crown. As explained by Keen (1992, 129) "a major purpose to which that revenue was applied was the strengthening of the sea and land defenses of the empire."

5. As cited in the *Encyclopedia Britannica*.

6. Born in 1750; died in 1817. German geologist, who in the last part of the 18th century was the most notable figure in the investigation of rocks and minerals. He was the first to classify minerals systematically. Under his direction, the mining academy at Freiberg became one of the leading schools in Germany (Columbia 2001).

7. Born in 1764; died in 1849. Studied chemistry and mineralogy at Freiberg, where he befriended Humboldt. In 1794 he went to Mexico and taught at the newly founded *Colégio Nacional de Minería*. Del Rio's course in mineralogy is considered the first formal instruction in the subject in the New World. His book *Manual de Geología* is the first textbook of mineralogy to be published in the Americas (Watson 2004). Del Rio is also famous for the discovery of vanadium, a metallic chemical element used in the strengthening of steel.

in mineralogy in his native country, first as an advisor to the Mining and Smelting Department in Berlin, and later as director general of mines in Franconia. Yet, a career as a government official was not what inspired Humboldt. Taking advantage of a substantial family inheritance, which he shared with his famous brother Wilhelm,⁸ Humboldt prepared what would be forever recognized as a pioneering and one of the most fruitful voyages of exploration and discovery ever made in Latin America (Kellner 1963).

In the company of his friend Bonpland, and carrying almost four dozen scientific instruments, Humboldt touched land for the first time in the New World on July 15, 1799. The first stop on their scientific journey and personal adventure was Cumana, Venezuela. Their travels led them to Mexico, where they arrived on March 23, 1803. During the year in Mexico, which the Spanish Crown had named “New Spain”, Humboldt explored mountains, rivers and volcanoes, examined the ruins of ancient civilizations, observed the traits and attitudes of the native population, analyzed the country’s geography and, its natural environment, and dedicated considerable time to the study of Mexican mines. In Mexico City, Humboldt contacted his old colleague from Freiberg, Andres Del Rio, then director of the National Mining School (Colégio Nacional de Minería) and author of a manuscript that later, with Humboldt’s contribution, would become the first textbook of geology in the Americas. Their partnership deepened Humboldt’s interest in the mineral conditions in Mexico. The results of his meticulous research are presented in *Political Essay on the Kingdom of New Spain*, a firsthand description of the Mexican mining industry. His work, as a compilation of research and vivid descriptions of the working conditions, has never been supplanted. Past and present, those studying Mexico’s economy in the 18th and 19th centuries in one way or another rely on Humboldt’s work and his findings.

Humboldt arrived in Mexico a few years before the end of a colonial era that was financially based, almost exclusively, on the mining industry (Rodriguez O. 1980). Soon after the Conquista,⁹ the production of silver became an unmatched influence on the lives of those residing in New Spain and beyond it. The 3,000 mines scattered throughout the territory, employing around 15,000 men, had a demographic impact, as people moved close to the places of work. Distribution of population also affected agriculture and cattle raising; in the mining towns, personal incomes grew, thus creating markets for other industries (Florescano and Gil Sanches 1980). Writing about the “silver boom” at that time, Mexican historian Lucas Alamán y Escalada (1849)

8. Born in 1767; died in 1835. A philosopher and philologist deeply involved in the reform of Prussian education. His goal was to promote a school system capable of molding citizens who would be able to think for themselves (Wertz 1993).

9. Officially started with the arrival of the first Spaniards in Mexico (1519), under the command of Hernán Cortez.

observed that “without mining neither agriculture, internal trade nor industri-ous occupation of any kind prospers; population decreases or at any rate is stationary; consumption falls and annihilation of foreign trade follows.” So influential was the mining industry in New Spain that even religious life felt its impact, as Franciscans used to say “where is no silver, there is no bible” (Florescano and Gil Sanches 1980, 557-8). For Spain, the precious metals produced by the colonies in the Americas were a much-needed source of income as the Spanish Crown was sinking into massive debt as a result of its military adventures and interest payments to European bankers (Lira 1974).

Beginning with the discovery of the first mines in Zacatecas (1546), Guanajuato (1554), Durango (1563) and subsequently several others, New Spain in 1800 was the world’s number one producer of silver, responsible for more than two-thirds of the global output (Lira 1974). The Spanish Crown allocated the great wealth that resulted from holding the monopoly on silver production to the interests of Spain, which meant very little of that considerable income circulated in New Spain. In what is very revealing of the disastrous economic policies of Spain in the colonies, the Spanish rulers imposed a 10 per cent tax on all silver extracted, and at the same time it monopolized the sale of mercury, which was employed in the amalgamation process of silver ore. Loaded with innumerable regulations and facing constant bureaucracy, the Mexican miners operated without the freedom to invest in their operations and prosper. As expected, the monopolistic system, worsened by mismanagement, curtailed the efficiency and productivity of New Spain’s mining sector. The situation was aggravated by labor shortages caused by epidemics among natives, who were victims of poor working conditions, and sickened by the effects of mercury exposure (Lira 1974).

The antiquated Mexican mines did not escape Humboldt’s attentive eyes. His writings stress the shortcomings of the mining methods, including the absence of machines, and that bags of ore weighing between 150 and 350 pounds were lifted to the surface by ropes; in other cases, the ore was brought to the surface by workers who had to climb ladders of about 1,800 steps. His narrative details the difficult experiences of 5,000 men who mixed mercury and pounded metal while working bare feet, and condemns the practice of extracting water from the mines using animal traction. His views on the backwardness of the Mexican mines were, however, tempered by his estimations that productivity could be increased threefold through a variety of technical improvements and more efficient means of pumping out water.¹⁰

During the year Humboldt spent in New Spain, the country’s mining sector produced \$4,620,000 sterling pounds of silver. He estimated that under better conditions, production would increase. He stressed the comparative advantage of Mexican mines for their location at lesser heights and in a tem-

perate climate, contrasting to the higher elevation of Peruvian mines that operated in cold weather. According to him, silver production at Guanajuato mines alone (Central Mexico) was much higher than at the famous mines of Potosi (now Bolivia). Humboldt also recognized the superiority of the Mexican mines when compared to those in Himmelsfurst, Saxony's richest mine at that time (Humboldt 1811). Despite his critical view of mining conditions, Humboldt left New Spain in 1804 convinced that Europeans knew little, if anything, about the wealth of the New World. His faith in the Mexican mines may have awakened the interest of European investors, until then oblivious to the Americas' potential (Kellner 1963). But did his enthusiasm cloud his assessments to a point of misleading investors?

From Mexico, Humboldt travel to Havana, Cuba, and from there to Washington as a guest of honor of president Thomas Jefferson. He left the United States for Europe and never returned to the Americas. Several years later, his *Political Essay on the Kingdom of New Spain* was published in France, and subsequently in London, in 1811. In that same year, New Spain was engulfed in a major upheaval that would culminate 10 years later with a declaration of independence.¹¹ The end of colonial rule in 1821 was preceded by more than a decade of a bloody revolt that, in addition to giving birth to a new country, also doomed the Spanish Crown and hurt the mining industry in Mexico. As the War of Independence progressed, thousands of workers joined the rebel armies against the Spaniards, causing crippling labor shortages. The instability and insecurity that prevailed in the country basically paralyzed all economic activities; lack of mercury and tools, and the absence of workers led to the abandonment of a great number of mines, causing a dramatic drop in silver production (Cue Canovas 1995).

At the end of its struggles, Mexico emerged as an independent country, but its economy was in ruins, and the mining sector in crisis.¹² Nation-building would require capital that only foreigners could provide, and this was a route that the fresh Mexican ruling elite decided to take. Thus, in 1822, about a year after the independence, Lucas Alamán y Escalada, Mexican minister

10. In his writings, Humboldt also made reference to Mexico's poverty and socioeconomic inequalities. In *Political Essay* (1811, 103) he observes that "Mexico is a country of inequality. Nowhere perhaps exist a more frightful inequality in the distribution of wealth, of civilization, of cultivation of the soil, and of the population. The Mexican Indians, seen in the mass, present a picture of profound misery. Relegated to the less fertile districts, indolent by nature and even more so by their political situation, they live only for the day. It is almost impossible to find among them men who enjoy a moderate fortune."

11. The War of Independence officially started on the night of September 15 1810 with the *Grito de Dolores*, the clamor for national liberation led by the Roman Catholic priest Miguel Hidalgo, a resident of Dolores, Guanajuato.

12. According to Rodríguez O. (1980), in 1820 the greatest mining region, Guanajuato, produced silver worth of \$22,000,000 pesos, while in 1801 this value was calculated at \$47,000,000 pesos.

of foreign affairs, and a miner, recruited a French company to invest in silver production in Mexico (Kellner 1963). Jumping for the first time as a sovereign nation into the changing waters of the international economy, Mexico experienced firsthand the volatility of the international markets. With an initial capital of \$240,000 pounds, having Alamán as chairman of the board, and in possession of several mines close to Guanajuato, the Franco-Mexican Association simply failed.¹³ Its remnants were transferred to London under the name United-Mexican Association, inaugurating a 25-year period in which foreign investments in Mexican mines would be made essentially by the British. Between 1825 and 1850, a half-dozen British mining companies were established in Mexico. They all collapsed. Because foreign companies started operations in Mexico after the War of Independence, weren't European investors aware of the poor conditions of the country's mines and the destruction caused by the prolonged warfare? If investors relied on Humboldt's writings to make their financial decisions, as they said they did, was there nobody to alert them to the fact that his famous book was based on a field study conducted before the armed conflict that so greatly damaged the mining sector?

While it is plausible to assume that Humboldt's expertise, fame, notable book and faith in the Mexican mines did persuade investors to place their hopes in Mexico's silver production, one could argue that the very same reasons would be enough to convince investors to act with moderation. Although it is true that Humboldt believed there were mineral riches in Mexico, he also publicly exposed the industry's great shortcomings, and the need for sound technical improvements. He never spoke of quick, easy huge profits. Rather, he stressed the superiority of the Mexican mines when compared to others that he knew elsewhere, and the potential for increases in silver production in Mexico provided the mines underwent a process of modernization. Yet, investors apparently took his words as a guarantee of huge profits. Some of them were apparently ignorant of the ruined Mexican mines and the climate of chaos that prevailed in Mexico in the aftermath of war, while others were simply unscrupulous traders pursuing quick, easy money. In the end they all invested in Mexican mines, through a handful of British firms, which in their inflated prospectuses recommended investors read Humboldt's Political Essay on the Kingdom of New Spain (Cornish 2004).

13. Kellner (1963, 107) observes that the Franco-Mexican Company offered the position of chairman of the board to Humboldt, who declined the offer with the following statement: "My disinclination for public affairs has been the reason for my repeated refusal of the honorable offers... You know how much I have been provoked by the mere idea of lending my name to the direction of the mining company... With this mental attitude for which I am known, with this innate horror for everything appertaining to the alleged mysteries of diplomacy, how could I be tempted to deviate from a position to which I have adhered for a long time and which seems the only one tenable for a man of letters living in a foreign country."

Employing Humboldt and his writings as involuntary tools of their marketing strategies, the firms promoted Mexico as a land of almost inextinguishable mining resources. Their public relations campaigns were reinforced by English diplomat Henry George Ward who, after visiting the town of Durango in 1826, declared that the Mexican mines would have a great future with the influx of foreign capitals.¹⁴ And John Taylor, the well-known English mining engineer who founded the British Real del Monte (one of the firms with operations in Mexico) published a document in 1825 – “Statements respecting the profits of mining in Mexico” – in which he contended that with prudent administration, profits of between 30 and 50 percent might be secured from the Mexican venture. Yet, Taylor went further to say that...

The collateral evidence to support the probabilities of such expectation is to be derived from the great amounts of profit formerly acquired and the statements of the proportion of costs in working mines to the actual amount of value of return. Many particulars of this kind are before the public and particularly in the works of Baron Humboldt: they have I know, excited ridicule of some, and have been treated seriously by others as exaggerations brought forth to tempt the unwary. The fact of enormous profit in many cases rests upon very good evidence; supposing that there were also very numerous cases of loss, that will only prove what I am all along ready to admit that mining to be profitable must be attended with skill and care...My inference from the whole is that mining in neither a certain source of immeasurable wealth, to be obtained by everyone who was lucky enough to get a share in any mine, in any place and under any kind of arrangement, nor is mining as it seems now the fashion, all a bubble, cheat and delusion...In Mexico, the number of unoccupied mines is still very great, but though that is the case, it is not capital alone that will work them. A great quantity of skill, experience and of labor also is required, and therefore, as the number both of able managers and experienced workmen is limited, so must be the extent of prudent enterprise.¹⁵

It is somewhat intriguing that with his experience and critical view, the sensible Taylor did not foresee the upcoming disaster. His company, British Real del Monte, lost in Mexico the astronomical sum, at that time, of \$5,000,000 pounds. The prospect of 50-percent profits proved to be extremely unrealistic. In the beginning, and taken by the notion of a highly profitable New World, Europeans and particularly the British embarked on a risky financial enterprise, thus contributing to a market frenzy when the shares' prices skyrocketed. Yet, as one company's failure led to another, stocks' values collapsed, ruining investors. As the Mexican mining bubble burst, foreign investors turned their anger against Humboldt, who received

14. Great Britain officially recognized Mexico as an independent nation in 1825.

15. As cited by Kellner (1963, 109-110).

the allegations with a great deal of indignation (Kellner 1963). In the face of the accusations, Humboldt found defenders who stressed that the Mexican mining bubble and the subsequent market failure were attributable to a wave of speculation. In 1830, the British publication *Quarterly Mining Review* summarized the events as follows:¹⁶

By fraud and trickery and by putting in practice every art in which gamblers and swindlers are conversant, and in which several persons in elevated ranks in society were strongly suspected of being concerned, the trafficking in shares was carried to such extent as it can only be paralleled by the once famous, or rather infamous, tulipmania of Holland.

But since not all investors were speculators, it seems more appropriate to examine their ruin and the British firms' debacle as a result of sheer ignorance and investors' bad timing, the latter being a consequence of the former. To begin with, soon after gaining the independence, Mexico was plagued by political instability. The new Mexican government was coping with constant internal strife, illustrated by the fact that between 1821 and 1950 only one president, Guadalupe Victoria, completed his term, in 1828. In the two subsequent decades the country was ruled by 20 governments and about 100 cabinets (Rodriguez O. 1980). Compounding the problem, foreigners did not know how to deal with the heavy bureaucracy the country had inherited from the colonial administration. Tasting freedom for the first time, Mexican workers were restive, and several labor disputes ensued. In addition, the War of Independence heavily damaged the country's infrastructure, leading to delivery delays, a situation worsened by poor communication systems. It is well known, for instance, that several steam engines that were shipped from England to Mexico were never used because they were stranded on precarious roads, unable to reach the mining areas (Rodriguez O. 1980). Facing high costs of necessary imports, and operating in red, the companies refused to sink more money into the enterprises, leading to their demise.

Humboldt was influential, but it takes more than a book to attract foreign capital to a country. Once the foreign investors arrive, it certainly takes more than enthusiasm and optimism to transform investments into profitable enterprises. It does not require a great stretch of imagination to conclude that Humboldt's comprehensive description of New Spain's mineral deposits and his positive assessment of the mines' potential did in fact awaken the interest of Europeans in the New World. To assume, however, that he was responsible for the wave of speculation and the debacle that ensued is another story entirely. Lack of knowledge, bad timing and poor management played a huge role in the firms' failures, which made Mexico's first contact with the agents of the international economy an unpleasant experience. In any, and to some

16. *Ibidem*

extent ironic case, Humboldt's faith in the Mexican mines was vindicated in the end. As the 19th century progressed and Mexico settled down, silver production became a quite lucrative business for companies and individuals.

References:

- Alamán y Escalada, Lucas. 1849. *Historia de Méjico* (5 vol., 1849-1852), Mexico.
- Appletons Encyclopedia. 2001. <http://www.famousamericans.net/aimebonpland/>
- Columbia. 2001. *The Columbia Encyclopedia, Sixth Edition*.
- Cornish. 2004. "Cornish Miners in Latin America (1812-1848) and the Development of an International Labour Market". <<http://www.ex.ac.uk/cornishlatin>>
- Cue Canovas, Augustin. 1995. *Historia Social y Económica de México 1521-1854*, Mexico: Trillas Ed.
- Freiberg, 2004. *Encyclopedia Britannica*.
- Florescano, Enrique and Isabel Gil Sanchez. 1980. *Historia General de México*, vol I. Mexico: El Colegio de México.
- Humboldt, Alexander von. 1811. *Political Essay on the Kingdom of New Spain*, IV volumes. London.
- Keen, Benjamin. 1992. *A History of Latin America*, Boston and Toronto: Houghton Mifflin Co.
- Kellner, L. 1963. *Alexander von Humboldt*, New York: Oxford University Press.
- Lira, Andres. 1974. *México Tu Historia, El Gobierno Virreinal*. Mexico: Salvat Mexicana Ed
- Rodriguez O, Jamie. 1980. "Down From Colonialism: Mexico 19th Century Crisis". *Historical Text Archive*
- Quarterly Mining Review. 1830. Great Britain.
- Watson, W.P. 2004. <http://www.polybiblio.com/watbooks/2482.html>
- Wertz, Marianna. 1993. "Humboldt", *The American Almanac; The New Federalist*.

