

Working Papers No. 96/06

**Gresham on Horseback: The Monetary
Roots of Spanish American Political
Fragmentation in the Nineteenth Century**

Maria Alejandra Irigoin

© Maria Alejandra Irigoin
College of New Jersey

December 2006

Department of Economic History
London School of Economics
Houghton Street
London, WC2A 2AE

Tel: +44 (0) 20 7955 7860
Fax: +44 (0) 20 7955 7730

Gresham on horseback: The monetary roots of Spanish American political fragmentation in the nineteenth century.

Maria Alejandra Irigoin¹

The economics literature is full of studies of monetary or currency unions ranging from the sterling area before 1914, to the Bretton Woods system later and the euro zone within the European Monetary Union today. A quick search in Econ-Lit returned over 10,000 entries among abstracts and subjects, and a good one thousand titles. None was found for currency or monetary disunion, or fragmentation. Yet, the monetary disintegration that occurred in Spanish America over the period 1800-25, along with the fiscal and political fragmentation that followed the implosion of the Spanish Empire, is one of the most prominent examples of such an economic phenomenon. Moreover, the macroeconomic consequences in the long run for the performance of nineteenth century Latin American economies makes the fragmentation of such an extended monetary union a case well worthy of consideration.

The relevance of the Spanish American silver peso in the development of the world economy after the 16th century has become fully apparent with studies of global monetary history. Its crucial role in the divergence between the European and Asian paths of development in the modern world, or in the backing of Alexander Hamilton's federal US dollar, is known and the literature is as diverse as it is vast in explaining its success. The Spanish American dollar was probably the "single most

¹A first version was presented to the Rutgers' "Workshop in Money, History and Finance" on 6th March 2006. Mark Flandreau, Regina Grafe, Luis Jauregui and Andrew Mitchell read various preliminary drafts. Their comments greatly contributed to improve the paper. It was finally revised while visiting the Global Economic History Network at the LSE, as a Leverhulme visiting research fellow, in spring 2006. Special thanks go to Gareth Austin, Colin Lewis and Patrick O'Brien for their permanent support and suggestions. Errors remain solely mine. I am very grateful to Willem Volters for sharing with me data on the valuation of Spanish American coins in the Philippine shown in the appendix.

successful money” in modern western economies and the international means of payment before the days of the gold standard. These “demand-side explanations” rely on the force of Chinese demand for silver (manifested in the spectacular price premiums for silver) as the force that drove the birth and expansion of global trade.² Spanish possession of American mines and the rents from them were the main cause of Spanish splendour - and decline - between the sixteenth and the nineteenth centuries.

Thus, authors have centred on the effects of China’s demand to explain the demise of the Spanish Empire. Emphasising the importance of the purchasing power of silver, more than the actual quantities of silver produced, Flynn and Giraldez question the “fiscal viability of the (Spanish) Royal Treasury” by the mid-17th century.³ They claim that the fiscal crisis of Imperial Spain was connected to the protracted fall of the value of silver that they indicate occurred somewhere around 1640. Then, the extraordinary profits of silver should have ceased as China’s exchange rate reached parity with the silver exchange rate in Europe at the time. In other words, the premium on the export of silver - as commodity – ended.⁴ However, another spurt of silver demand from China occurred in the first half of the 18th century, when the exchange rate for silver to gold was still 50 per cent higher than the rate in Europe. According to global monetary historians, China’s population and market growth – and probably China’s expansion to the north – explains this second opportunity for European arbitrage and further trade.⁵

² D Flynn and A Giraldez, "Born with a Silver Spoon'. The Origin of World Trade in 1571," *Journal of World History* 6, 2 (1995). explain the rise and success of the silver peso. However their compelling consideration does not account for its demise.

³ D Flynn and A Giraldez, "China and the Spanish Empire," *Revista de Historia Economica* XIV, no. 2 (1996).

⁴ D Flynn and A Giraldez, "Cycles of Silver: Global Economic Unity through the Mid Eighteenth Century," *Journal of World History* 13, no. 2 (2000)., pp. 391-427.

⁵ *Ibid* . p. 403.

Indeed, the Spanish Empire was the largest monetary union ever known. By 1780s within the financial and political strain caused by the Napoleonic wars in Europe, a bankrupted crown and imperial state eventually imploded, opening the way for a series of revolts and revolutions, both in the metropolis and colonies. This led to the colonies' Independence and the emergence of modern Latin American republics in the early 1800s. The implosion of the Empire resulted in the fragmentation of that monetary union and of the existing political structure. This had consequences for trade and production over a wide economic region that had formerly been highly integrated. Furthermore, some implications for the political development of independent Latin America can be drawn from these monetary incidents. Contrary to the traditional assumption of the empire as merely a system to extract fiscal revenues to Europe, the colonial "economic system" organised around silver mining was very integrated and nearly autarkic. It linked regional production and markets across very distant regions. Studies on the production and marketing of silver in colonial Spanish America have estimated that 40 per cent of the total silver output from Potosi in the late sixteenth and seventeenth centuries remained within the domestic economy.⁶ Given its pivotal role in fuelling the expansion of the global economy, historians have attended mainly colonial and modern Spanish American foreign commerce. Thus, domestic trade and regional connections have been largely neglected in studies of the economic history of Latin American countries.

This paper addresses both issues. The first section considers the fragmentation of currency and seignorage that occurred in revolutionary and post independent Mexico. The second section revises similar events in the rest of the Spanish empire, mostly of regions that performed with

⁶ C Assadourian, *El Sistema De La Economía Colonial. El Mercado Interior. Regiones Y Espacio Económico* (Mexico: Nueva Imagen, 1983).

metallic currency. The third analyses the monetary developments arising from the Empire's fragmentation in the River Plate, where paper standards became dominant since very early on in time. The fourth section assesses some of the effects of the fragmentation of currency and seignorage in the frame of recurrent fiscal shortfalls. Lacking the monopoly of seignorage, huge borrowing at ever-increasing interest rates and shorter terms resulted in astronomical debts. Insolvency became a feature of post-independent governments in the region and with it, institutional development weakened. Having the monopoly of currency emission or coinage, inflationary tax became the last resort for funding the state. Both insolvency and inflation characterised the financial development of Latin American republics since very early. The fifth section concludes.

Monetary fragmentation in New Spain-Mexico

New Spain had been the main producer of silver and minter of silver coins in the empire during the 18th century.⁷ Since the 1780s, colonial officials and merchants established in Mexico City had resisted every pressure from similar authorities, miners and merchants in the interior regions to break their monopoly on coinage, and over the attraction of silver to the capital and its Mint. But as silver flowed within the colony - and the world economy - the ebb could not be stopped by zealous *cedulas* and royal orders. Already in the 1790s, the Crown sought to gain some control on the spillage of silver out of the imperial trading system and treasury. As part of overarching reforms to reshape and reinvigorate the imperial revenues in the 1780s, the Crown had established the so-called *fondos de rescates*, endowing a stock of silver

⁷ R Garner, "Long Term Silver Mining Trends in Spanish America: A Comparative Analysis of Peru and México," *American Historical Review* 93, 4 (1988).

money to regional treasuries earmarked to purchase the mineral to be smelted and minted in the Mexico *Casa de Moneda*. This provision of liquid capital to miners, as an advance for their metals, contributed to greater mining output in the interior, and increased silver minting in the capital, which is reflected in the tax returns and coinage for the period. This crown intervention sought on the one hand to foster greater returns to miners – by displacing merchants who had originally bought the mineral – and to reduce contraband and evasion of taxes on the other. Apparently, greater profits for local mining regions and more revenues fuelled the demands for opening other mint houses in the interior yet under imperial rule. Silver originated in the interior would increase its purchasing power, as local *rescate* (minting) would reduce transportation costs and the time lags for the returns from Mexico City's mint. The weakness of the fiscal means to procure the metal (the yield from tithes), and vested interests in the colonial capital and Cadiz, prevented, however, a more efficient working of the *fondos de rescate*.⁸

The disruption of the treasury network in New Spain during the *Insurgencia* (1811-21) prompted Spanish officials finally to authorise the minting of silver coins elsewhere.⁹ Apparently, a similar process had happened in the metropolis following the French invasion in 1808, when the crown re-established the mints in Barcelona and opened others in

⁸ Matamala cites the appropriation of the *fondo de rescate* by Treasury officials for fiscal needs. Distant mining areas like Zacatecas, Chihuahua or Durango resorted to local sources to procure (*rescatar*) the mineral. Mines relatively closer to Mexico, like Pachuca or Real del Monte continued changing metal for money in Mexico. J Matamala, "De Fondo De Rescate a Casa De Moneda Regional, Zacatecas 1790-1828" (paper presented at the Asociación Mexicana de Historia Económica, Mexico City, 2004).

⁹ Memoria, "*Memoria Presentada a La Cámara De Diputados Sobre La Creación Y Estado Actual De Las Casas De Moneda De La Republica*," (México: 1849). (*Memoria* hereafter. In addition, Oaxaca and Morelia coined money, if briefly, on their own initiative while cut off from communications with Mexico City. W Meek, *The Exchange Media of Colonial Mexico* (New York: King's Crown Press, 1948), p.50. Local authorities declared that silver in circulation was scarce, and that budget shortfalls resulted from military expenses. J Matamala, "La Descentralización De La Acuñación En La Nueva España (1810-1821)," *Vetas. San Luis de Potosi* III, 7 (2001), p. 20

Mallorca, Cadiz and Valencia.¹⁰ Alleging “difficulties to send silver remittances to Mexico City” six new official mints appeared in Chihuahua (1811-14), Durango (1811-21), Guadalajara (1812-21), Guanajuato (1812-21), Zacatecas (1810-21) and Sombrerete (1812-12). Most of them worked on the basis of the *fondos de rescates*, although more and more the funds were provided by local sources. Fruitlessly, officials in the capital announced the perils of increasing the numbers of mints “(this) indirectly promotes the insurgency and let’s admit it, the single bond that would keep together the provinces with the capital, has been broken”.¹¹ During that turbulent decade, both Royalists and Patriots struck very low quality silver coins.¹² These coins were known as the “hammered dollars” by the US mint, and were distinguishable from the world famous Spanish “pillar dollar” because they were “decidedly inferior, being worth 101 cents on the average - even compared to the 106.3 cents for Mexico latter coins- and withal very irregular”.¹³

¹⁰ Matamala, "La Descentralización."fn 13-14) R Torres Sanchez, J Gomez Biscarri, and F Perez de Garcia, "Exchange Rate Behaviour and Exchange Rate Puzzles: Why the 18th Century Might Help?", *Facultad Cs Económicas y Sociales. Universidad de Navarra Working Paper* 12/04 (2004).

¹¹ Marques de San Roman, Superintendente of Mexico Mint House, report on 7th march 1813 quoted by Matamala, "De Fondo De Rescate", p. 21.

¹² The standard Spanish peso de a 8 reales was .902 of a thousandth fineness and 28.76 grams. The *provisional royalist peso* coined in Durango had .895 fineness, 40 mm diameter and 26.84 grams. The one struck at (Real del Catorce) was 32.01 grams. At Sombrerete it weighed 26.66 grams and had a 42 mm diameter. Coins occasionally struck in Oaxaca weighed 27.33 grams and 39.5 mm. Those from Chihuahua weighed 26.04 grams. Among the patriots' monies, coins struck in Michoacan were 27.91 grams and 39.6mm. In Veracruz, a 2 reales coins weighed only 5.69 grams 26.6mm. Pesos from Guerrero, known as Morelos piece, weighed 19.04 grams and 38.8 mm. The Morelos SUD constituted a payment promise to be exchanged for its face value as soon as possible. It weighed 24.53 grams and 38.5 mm. Insurgents also minted copper in Acapulco and Guerrero. Royalists counter-stamped small denomination coins of 4 reales. In Veracruz, Zacatecas pesos (28.66 grams and 40.6 mm) were stamped again by Spaniards. The Chihuahua mint had a huge variety of issues. So the authorities, army and merchants were obliged to use counter-stamps to secure its circulation. In 1821-23 Emperor Iturbide coined pesos of .902 fineness, 26.95 grams and 40 mm, together with small denomination copper coins.

www.cmonedam.com.mx/cmm/numismatica/hist.htm

¹³ They “may be known by their defaced appearance, which is not due to wear but to blow of the hammer, by which they were coined”. United States 39th Congress, 3rd

The number of provincial mints increased with the definitive fall of Spanish rule in 1821. The first Mexican Constitution of 1824, known as the Federal Constitution, maintained the prerogative of coining silver in each state that already had a mint at work, stipulating – ineffectually - that the federal government was responsible for overseeing the standards at each establishment.¹⁴ However, the Constitution provided no indication about the means to purchase the metal from miners. Thus, the monopoly over the coinage of the former Imperial *Casa de Moneda* in Mexico City ended altogether, along with the monetary system that had existed for centuries in the richest part of the Empire. Thereafter, these states had an additional and powerful source to fund their participation in the armed conflict that characterised Mexican political development over the century: the dispute between centralism and federalism over the republic's constitution.

The existence of several mints was an impediment to the republican government to enjoy seignorage as a source of revenues and made it impossible to execute decisions as a monopolistic monetary authority. From 1811 to 1821 the six new *Casas* minted approximately one quarter of the coins produced in the country.¹⁵ Between 1822 and 1824 the proportion increased to more than a half of the total Mexican silver coins, since minting in the capital plummeted. In the 1840s there were ten *Casas* manufacturing hundreds of millions of silver coins (as well as gold valued at 27 million pesos), which all contributed to

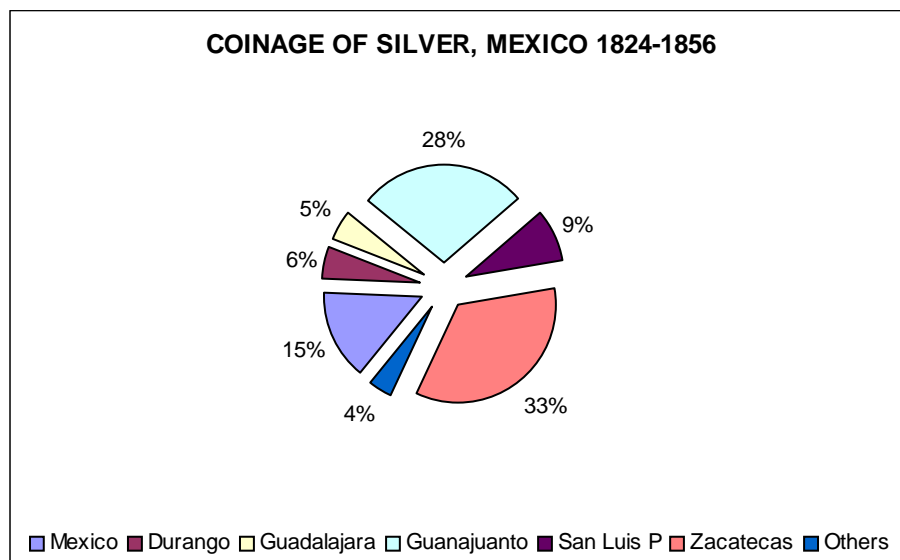
Session, Ex Doc. 71. House of Rep. Letter from the Secretary of the Treasury. 11th February 1857.

¹⁴ In 1828 another mint house opened in San Luis Potosi. Chihuahua resumed coinage in 1832. Guadalupe y Calvo's operated after 1843 and Culiacan from 1846, and, a small mint struck pesos briefly in Tlapan, within today's Mexico city as a separate mint between 1828-30.

¹⁵ Memoria, "*Memoria Presentada*." R Ortiz Peralta, "Las Casas De Moneda Provinciales En Mexico En El Siglo Xix", in *La Moneda En Mexico*, ed. Batiz Vazquez & Covarrubias (Mexico: Inst Mora, 1998), p.134.

expanding the amount of currency in circulation.¹⁶ Between 1824 and 1856, the mint in the capital city coined only 65 million silver pesos, less than a sixth of the Mexican currency of the period, while the others combined produced a further 365 million.¹⁷ This reduction of coinage at the former main Imperial mint was partly due to the shortfall of silver coming into the capital city, now diverted to other provincial mints. Meanwhile the overall legal output of silver was decreasing. The different capacities of producing silver coins in the several mint houses must have affected the stock and circulation of money in Mexico.

Figure 1. Coinage of Silver, Mexico mint houses 1824-1856



Source: own estimates from *Memoria Presentada a la Camara de Diputados* (Mexico, 1849)

¹⁶ Between 1824 and 1839 Mexico City coined 24.2 million pesos, Guanajuato 29.5 million and Zacatecas 70.5 millions pesos *Memoria*, "*Memoria Presentada*." In 1847 the mint at Mexico City was rented out and in the following decades all the other mints were run privately, most of them by US merchants. In 1861 Benito Juarez introduced the decimal system for fractional money.

¹⁷ Zacatecas' mint only coined 144 million pesos in the same period; Guanajuato coined 121 million, and Durango, Guadalajara and San Luis Potosi combined struck more pesos than the Mexico City mint. L Carbo, *Historia Monetaria Y Cambiaria Del Ecuador* (Quito: 1978), p. 36.

The fragmentation of coinage had to prejudice merchants' commercial interests in Mexico City and in the subsidiary port of Veracruz. Given the location of these new mints, silver from Chihuahua or Hermosillo had easier access to overseas markets through the port of Guaymas on the Pacific. Mexican pesos struck in Durango, Cualiacan, Guadalajara or Zacatecas must have enjoyed better purchasing power on imports brought via Mazatlan or San Blas on the Pacific than via the colonial overland route from Veracruz. Similarly, the ports of Tampico or Matamoros on the Gulf must have favoured silver minted in nearby San Luis Potosi, Guanajuato or Zacatecas. This relative proximity to alternative ports through which silver could be exchanged in the still buoyant trade with China, or into the Atlantic economy, allowed them to avoid the former monopolistic intervention of merchants in Mexico City or Veracruz. Taken together with the different production capacities (in terms of metal endowment), this must have affected the purchasing power of silver pesos differently in relation to imports at every individual region. Regional mercantile elites and networks had to develop accordingly. So contemporary political strife between Centralists in Mexico City and Federalists in the states is not surprising.¹⁸

Thus, there was ample room for competition among the *Casa de Monedas* to attract silver bars to mint. In the years 1823-27 metal from other regions in Zacatecas mint house averaged 45 per cent of the more than 20 million pesos coined there. Silver bars came from San Luis Potosi

¹⁸ In addition, Mexico City also minted small denomination copper coins amounting to 5-8 million pesos. Ibid.36). In the late 1830s manipulation in the coinage of copper provoked social discontent with dramatic if short-lived political turmoil in Mexico City. J Torres Medina, "La Ronda De Los Monederos Falsos. Falsificadores De Moneda De Cobre (1835-1842)," in *La Moneda En Mexico*, ed. Batiz, Vazquez & Covarrubias (Mexico: Instituto Mora, 1998).. In 1880 there were still 11 mint houses in Mexico. Between 1893 and 1903 all of them closed but the one in Mexico City following a reform by Minister Limantour. Only then did the Federal government recover the monopoly over seigniorage.)D Lopez Rosado, *Historia Del Peso Mexicano* (Mexico: FCE, 1975), p. 56.

(25%) Durango (13%) Sombrerete (8%) and Chihuahua (2%).¹⁹

However, these neighbouring mining regions had their own mint. On the one hand, differential cost of transport, time to obtain the returns in money and the price of the silver bars taken for smelting and minting *were* important in the decision of miners to take their metal to one or another place. Thus, overall, relative availability of silver had also to affect the flows and intensity of trade within regions and ultimately overseas. On the other hand, mints in the hands of the states could render extra income from seignorage. Repeated deficits coupled with inelastic public expenditure within a context of very reluctant sources for domestic borrowing had to make attractive the resort to mint houses as sources of revenue. After all debasement and monetary manipulations were anything but new: they had old colonial antecedents.²⁰ All of this ought to have been reflected in different relative prices or profits for miners and in the quality of pesos coined in these regional mints, namely in the exchange rates of Mexican pesos within the country.²¹ This should be considered in addition to transport costs and war damages in assessing the economic capacity of silver mining and the performance of the aggregate economy in nineteenth century Mexico.

Thus, one of the most valuable and traditional features of the Spanish American peso was broken: the standard of quality. Historians have paid little attention to the differences in appearance, fineness or weight of the Mexican silver coins in the post-independence period.

¹⁹ Matamala, "De Fondo De Rescate". Appendix.

²⁰ In 1728-1730 the peso piece had been reduced in weight and fineness to 417.6 grains at .9166 fineness (11 *dineros*): the pillar peso. In 1772 Carlos III lowered the fineness again to .90278 (10 *dineros* 20 grains) but the weight remained the same in the coins known as the "bust peso".

²¹ A personal communication from Dr. A. Ibarra (UNAM) about miners in Guadalupe & Calvo avoiding the minting of silver bars, despite having paid all taxes and mint charges, is very indicative. According to his sources, miners had a great incentive to smuggle their silver. Profits from keeping silver in lumps or in bars had to be greater than the costs from seignorage. In the utility function of miners, the risk of adulteration of silver once coined could well explain this otherwise irrational behaviour.

However, scattered evidence presented in the appendix suggests they were wide. Crown officials had already been reluctant to open new mints, and regretted the creation of the provincial mints as “dangerous to the governance of the kingdom”.²² According to historians the post-independence, the Mexican peso initially lost its acceptance “because the world was not used to the new design introduced after 1824” that substituted the bust of Spanish sovereigns for the eagle. In the Philippines, as the “[ruling class] were all royalists, they could not tolerate the circulation of coins proceeding from the provinces in revolt ... this it would be a tacit approval of the insurrection in [the Philippines] whereas the sovereign had spared no sacrifice and no effort in the pacification of these republican countries which were now in upheaval and anarchy and unable to guarantee the purity of the metal which they coined”.²³

In China the Mexican coin was received at 15 per cent below the usual parity for the old Spanish pesos.²⁴ China had been the main customer for Spanish and Mexican pesos since the sixteenth century. Whereas the pesos bearing the bust of Carlos IV enjoyed a thirty percent premium on the intrinsic value there, the Chinese soon distinguished the differences between old and new silver coins minted in Spanish America. Pesos struck in Chile, Bolivia or Peru, for reasons explained below, suffered discounts in Asian markets, whereas Mexican coins traded at premium. Even pesos minted in republican Mexico were not equally regarded, depending on the letter that indicated the original mint house. Apparently coins struck in Guadalajara were notoriously less favoured

²²Matamala, “La Descentralización”, p. 22 with the backing of the *Consulados* merchants formed guilds from Mexico and Veracruz. They tried to close provisional mints in 1816, but the reaction of miners and merchants in the provinces impeded it. Losses from missing seignorage were estimated at 5% of the Mexico mint's profits.

²³ S Perez Gilbert, "Manila Galleons and Mexican Pieces of Eight," *Numismática. Revista de la Sociedad Iberoamericana de Estudios Numismáticos* IV, 18 (1955), p. 52.

²⁴Lopez Rosado, *Historia Del Peso.*, 47) recalls that an appreciation followed, restoring the premium that the Spanish American coins had traditionally enjoyed in the Far East. No dates are provided.

among the Mexican pesos.²⁵ Coins from these provincial mints circulated widely in China “with different degree of acceptance”.²⁶

Hence, it is plausible to think that they also circulated at different exchange rates within Mexico. Local knowledge or information would have ensued preferences for different types of pesos or money, and this should have manifested in different prices. Similar observations on standards were made at the other end of the trade with silver pesos. US merchants were then the main intermediaries of trade with China and in the export of Mexican silver pesos.²⁷ The US mint observed in 1835 “the tendency of Mexican dollars of more recent issues to deviate from their proper standard, which has been noticed in the reports on foreign coins within the last two years. It appears equally conspicuous in some of the latest dates. This however, seems to be almost exclusively confined to the issues of the provincial mints, and is not in any material degree observable in the coinage executed at the city of Mexico”.²⁸ There, as in the rest of Spanish America, the scarcity of circulating medium became mentioned repeatedly. This and the acceptance of foreign coins in payment of taxes is indicative of extended Gresham law effects in the currency system, at least within the territories of the former Spanish Empire.²⁹

²⁵ They were called *peso del anzuelo* (angle peso) in reference to the letter G stamped in the coins for Guadalajara mint.

²⁶ J McMaster, "Aventuras Asiáticas Del Peso Mexicano," *Historia Mexicana* 8, no. Julio 1958-Junio 1959 (1958), p.388.

²⁷ T Pitkin, *Statistical View of the Commerce of the USA Including and Account of Banks, Manufactures and Internal Trade and Improvements: Together with That of the Revenues and Expenditures of the General Government Accompanied with Numerous Tables* (New Haven: Durrie & Peck, 1835). table I-II p. 153-56. Irigoien, “Bringing the New World back in Global History”. Paper presented at Latin American Boston Area Workshop, Harvard 2005.

²⁸ United States, 23rd Congress 2nd Session. Doc.60 House of Rep. Assay of foreign coins, "Letter from the Secretary of the Treasury transmitting a report of the Director of the Mint". 6th January 1835.

²⁹ Thus, the success of the 1903 monetary reform in Mexico, which allowed the country to adhere to the Gold Standard, is explained by “the success of the (federal) government at surveying the characteristics of coins, which was impossible before

According to this well-known notion, if two coins are in circulation, the relative face values of which differ from the relative quality of its bullion content, the dearer coin will be extracted from circulation for melting down or hoarding. This first distortion would generate a consequent phenomenon where “bad money drives out good money”. The observed drainage of specie in post-independent Latin America overall was a result of the hoarding of the good currency within a context of multiple coins in circulation. This would cause distortions in relative prices, fuel speculative pressures, prejudice the creation of capital markets and - given the structure of imports and exports in Colonial Spanish America and the structure of taxation in post colonial republics - protracted further market fragmentation. Undesirable economic and social effects from the coexistence of diverse coins and paper notes would ultimately foster regional disputes and political disorder during the building of republican institutions in the aftermath of the fall of the Imperial rule.

A Spanish American phenomenon

The monetary chaos extended to other mining economies like New Granada, today Colombia, Ecuador and Venezuela. Already in colonial times, the gold coins minted in both Bogotá and Popayan did not keep up with the Spanish colonial standard. Because of imperial transfers of revenues - the *situados* - various silver pieces coined at different mints also circulated in the wider region. With the Revolution, Patriots in control of Cartagena in 1811 debased silver coins and minted copper until 1815. Royalists in Popayan minted silver pieces of any quality or weight.³⁰ They

given the number of mint houses at work” Lopez Rosado, *Historia Del Peso*..pp. 49-50, 58). Emphasis added.

³⁰ C Iza Teran, "Las Monedas Quiteñas,"

http://www.museosdelbancocentral.org/numismatica/ponencias/Carlos_Iza1.pdf. (na).

took the minting press on horseback from Popayan to Quito to create money with which to pay for troops. Established in Pasto, the press allowed only the cutting of small denomination coins made of smelted silver expropriated from particulars and churches. The Pasto coins were worth 8 or 9 *dineros* (.666 or .750 of a thousandth fineness). In Bogota silver pesos of different quality were minted (the so-called *chinas*) between 1814 and 1821.³¹

The constitutional assembly of 1821 sought to restore stability and directed that the coinage of silver and gold should conform to the usual colonial standards. However, until 1828 the government continued minting much lower quality pieces stamped with the year of the constitution 1821 as a (false) guarantee of the silver content. These coins had a fineness of .666 and .538 in a thousandth part of pure silver (or 8 *dineros* and 7 *dineros* 12 grains) and were called *de la India*, because of the head of an Indian women struck on the reverse of the coin. In the early 1830s reports from the Assayer at the US mint found that gold coins from Colombia “among themselves, present varieties meriting notice”.³² Whereas silver pesos struck in Colombian mints varied from the intrinsic value of 75 cents to newer pieces worth about 93 or 95 cents.

According to a contemporary, insolvent governments of the time lacked the means to run the mint and procure a sound standard for the Colombian pesos.³³ Hence several attempts in the late 1820s and 1830s

³¹ Because people rejected these coins, the governor imposed a fine of \$ 4 upon anybody who would refuse to take them, without further evidence than the verbal testimony of 2 witnesses. Fiat money was tried in 1821 and again in 1838 in the form of treasury bills. The following pages drew information from A Meisel, *El Patrón Metálico, 1821-1879 (El Banco de la Republica. Antecedentes, evolución, estructura. ch 1)* (Banco de la Republica de Colombia, 1990 [cited]); available from www.banrep.gov.co/blaavirtual/letra-b/banrep/hbinx.htm.

³² "Those from Bogotá were found to be 21 carats fine, corresponding to 84.84 cents per pennyweight while those of Popayan were of 20 carats 2 grains fine, corresponding to 83.58 cents per pennyweight. United States 22nd Congress. 1st Session. Doc 115. House of Rep. 15th February 1833.

³³ J Restrepo, *Memoria Sobre La Amonedación De Oro Y Plata En La Nueva Granada* (Bogota: 1860)., 14

to redeem the bad silver in circulation, and reform the currency, were never accomplished. Furthermore new coins were in greater demand in neighbouring Ecuador and Venezuela so it was hard to withdraw the poorer quality coins from circulation in Bogotá.³⁴ Apparently Gresham law effects, which were imported from coexisting silver in circulation in the Caribbean, also made the policy more difficult.³⁵ Every reform to unify the circulating medium included a fixed exchange rate at which the old coins would be changed or received by the Treasury. As the export of bullion remained prohibited, incorrect valuations of actual market prices ultimately accelerated the substitution of currencies. Along with the monetary turmoil that so many diverse circulating coins cause, the former Spanish viceroyalty was dismembered into three different political entities before 1830.

With debasement and currencies of different quality in circulation, gold and good silver were heavily hoarded. Hence specie in circulation appeared (on the surface) to be short. Rightly, the Colombian economic historian Adolfo Meisel argues that the problem was not currency scarcity but the poor quality of coins.³⁶ The alleged shortage of circulating medium

³⁴ In what is present day Ecuador, gold in powder or silver bars smelted in Riobamba circulated domestically better than coined gold during colonial rule. After Independence Colombian and Peruvian coins circulated widely. Because of different intrinsic values they disappeared out of circulation, and in 1830 the government started printing money. Paper notes were accepted at par for 50% of import duties. In 1832 a Mint started coining gold and silver while establishing exchange rates with foreign currencies. The Ecuadorian silver peso had .875 grains fineness and 30.64 grams of weight. However after 1838 worse quality coins from Colombia and Bolivia began pouring into the country, and the official standard could not be maintained. Huge forgery occurred and in 1845-47 the first monetary crisis ever recorded occurred in Ecuador. Between 1859 and 1862 the government authorised the establishment of private banks of issue that printed inconvertible paper pesos. The over issue of notes and the speculative expansion of credit followed. In the short run the paper currency experienced inflation and depreciation. The gold premium reached 60% by 1874, the time of the "second" monetary crisis. Carbo, *Historia Monetaria Y.*

³⁵ F Safford, "Commerce and Enterprise in Central Colombia, 1821-1870" (PhD, Columbia, 1965).quoted in J Jaramillo, A Meisel, and M Urrutia, "Continuities and Discontinuities in the Fiscal and Monetary Institutions of New Granada," ed. M Bordo and R Cortes Conde (New York: Cambridge University Press, 2001)., n. 55.

³⁶ Jaramillo, Meisel, and Urrutia, "Continuities and Discontinuities."

was notorious in the whole region during the 1840s. Reforms in 1846-48 were more effective at stabilising the currency in Colombia. The colonial fractional units for currency were decimalized, silver was coined with .900 of a thousandth fineness and, more importantly, the export of bullion or un-coined gold was then permitted with a six per cent duty. In the following years coinage was reduced dramatically. However, according to historians, after 1850 Colombian prices steadily increased over the next 30 years.³⁷ Apparently Colombian exports boomed and the pressure to coin local bullion was reduced.³⁸ The improvement in the balance of payments avoided deflation, and even domestic prices rose. Yet the causality of the relation between a more stable currency and the economic recovery deserves further research.

Republican governments in colonies further south also retained the monopoly over the minting of silver coins. They maintained their authority over monetary policy and could therefore collect revenues from seignorage. However, there were significant changes regarding the colonial monetary system that had been in place previously. In Peru the export of silver bars was prohibited, and when coined shipments of silver were subject to a five per cent tax. As the republican government was financially broke, it was unable to make advances upon the metals for coinage so it could not effectively run the mint house. Already by 1826 the mint was operated semi-privately by British merchants, who procured the capital to purchase silver and produced pesos. British Consuls estimated the seignorage at 14 per cent of the silver value. According to the same source there were great advantages in illicit exports of silver *piña* or un-coined silver, so contraband trade was huge.³⁹ Yet the same observer

³⁷ Meisel, *El Patron Metálico* ([cited]).

³⁸ On exports see J Ocampo, *Colombia Y La Economía Mundial, 1830-1910* (Bogota: 1984).

³⁹ R Humphreys, *British Consular Reports on the Trade and Politics of Latin America, 1824-1826* (London: 1940), 150. Comparing the relative value of silver lumps and

noted that there was no smuggling of silver in lumps from Chile after the government allowed its export with a seven per cent duty. Chile had a more relaxed fiscal policy about the extraction of metals, but bullion bore a heavier seignorage tax (18%).⁴⁰ As the financial position of Chilean governments was more comfortable they also had a more sound currency policy.

Potosi had been the original source of silver in the spectacular rise of the Spanish peso in the sixteenth century until the 1640s. During the convulsive years of 1810-25, the Spanish and several insurgent armies battled for control of the region despite the fact that mining output had long been in decline.⁴¹ Once the republic of Bolivia was established in 1825, the colonial mint at Potosi remained in the hands of the republican government. In the aftermath of Independence, Bolivia was coining around 1.8 to 2.4 millions pesos per annum. The dearth of small change moved to decree the minting of small denomination coins (of half and a quarter real) with a lower content of silver than the usual, .902 in a thousandth of fineness.⁴² In 1829, pure silver was reduced to .666 in the smaller denomination coins. The peso piece continued to be minted under the usual fineness and content. Other apparent features remained identical. Adulteration meant a 26.15 per cent reduction in the metallic base of the smaller coins in relation to the peso. This began to be

coined as a remittance to England in 1826, which included costs of freight, insurance, duties and other charges, the difference was about 9 % in favour of *plata piña* (silver lumps) This included an extra charge of 7% upon the price of silver in lumps from "expenses of smuggling" Ricketts to Canning, 27 December 1826, cited by Humphreys, *British Consular Reports*, p.151.

⁴⁰ Humphreys, *British Consular Reports*, p. 95

⁴¹ The River Plate Confederation led by Buenos Aires tried repeatedly to control present-day Bolivia. Whereas indigenous resistance persisted in the countryside, the Spaniards harshly controlled the big towns. The mint was ransacked every time it changed hands until 1825, when the Revolutionary armies triumphed.

⁴² According to the decree, coins in circulation had disappeared because of "the extraction of silver" decree of 10th October 1829 reproduced in G Prados Robles, "Efectos Monetarios De La Adulteración Monetaria En Bolivia, 1830-1870," *Revista de Humanidades y Ciencias Sociales* 2da epoca, no. 1 (1995). Appendix 2. The colonial standard in Potosi was 10 *dineros* 20 grains of fineness (.902) and 542 grains of weight.

distinguished as the *peso fuerte* (hard peso), and the adulterated coins as *pesos febles* (feeble peso). Repeated adulteration of the silver content permitted an increase in the quantity of money in circulation in nominal terms. Thereafter the coinage of adulterated pieces resulted in an artificial expansion of currency, namely a debasement of the Bolivian silver currency.

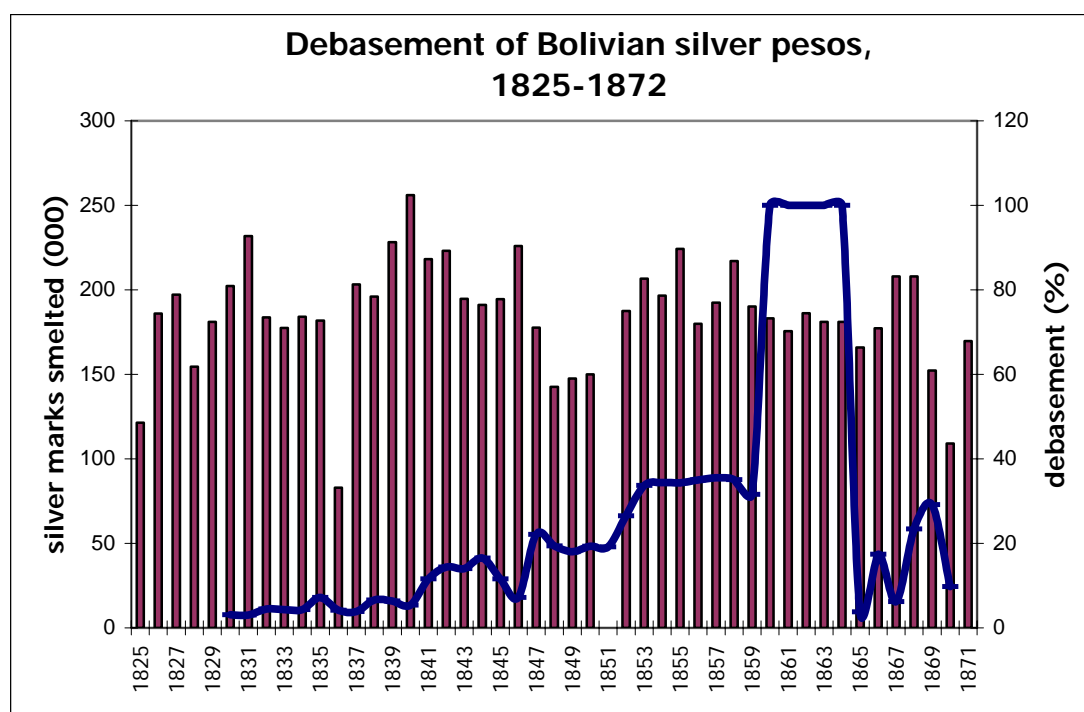
Debasement as a monetary policy of the Bolivian government began in 1830 and was initially low. It represented about five per cent of the total coinage of the decade. The proportion of bad coins increased four-fold in the 1840s, and during the 1850s they formed the 40 per cent of the stock of money coined in Bolivia. In the 1860s all the Bolivian pesos were feeble or debased.⁴³ However this was independent of the availability of metal to the Mint. As shown in Figure 2, the number of silver marks purchased and smelted at the Casa de Moneda remained steady throughout the period of heavy debasement of Bolivian coins. The international price of silver could neither account for the pressure to adulterate the currency: the silver ounce fluctuated below 16 to the gold ounce in London. Only after 1874 silver prices fell steadily in the international markets.

As an attempt to change this monetary policy, Bolivia (as well as Peru) introduced a decimal system for the fraction of the peso in 1863. However, this extravagant debasement continued until the early 1870s. In 1872, exports of silver were finally free and so was minting thereafter. This reform ended the government monopoly of coinage but created a paper currency, and an incipient government-owned establishment

⁴³ The reform tried to change the existing bi-monetary system resuming the coinage of .902 fineness silver coins, the *peso boliviano*. However these pieces weighed 400 grains, which made them equivalent to the feeble pesos. In 1865 a further debasement was made to small denomination coins, the notorious *Melgarejos*, which were worth only 6 *dineros*, or .500 fineness of pure silver.

initiated Bolivia's banking system.⁴⁴ One of the first operations was the redemption of all the feeble coins with bank notes at a fixed exchange rate. At that time the international economy was decisively moving towards the rule of gold standard. The decreasing international price of silver finally pushed Bolivia to move to a fiduciary standard. Ironically the legal production of silver also recovered to the levels not achieved since shortly before the revolution.⁴⁵

Figure 2. Debasement of Bolivian silver peso, 1826-1872



Source: Debasement: own estimates from Mitre, *El Monedero de los Andes*, appx 4 and 5, pp 118-19; Silver marks from Mitre *Los Patriarcas de la Plata*, appx A.

⁴⁴ L Peñaloza Cordero, *Nueva Historia Económica De Bolivia. Comercio Moneda Y Banco* (La Paz: 1944).

⁴⁵ Over the century legal production had fallen from around 1400 tonnes in late colonial times to about 840 tonnes in the 1800s. Further contraction ensued, and from 1830 to 1860 average production of legal silver per decade was 500 tonnes according to official figures. A Mitre, *El Monedero De Los Andes. Region Económica Y Moneda Boliviana En El Siglo Xix* (La Paz: HisBol, 1986), Table II.

A paper story

Further south, in the poorly silver endowed regions of the empire, paper money took shape very early as circulating medium. Although in the River Plate region Buenos Aires governments inaugurated the use of paper currency shortly after the revolution, this was not a revolutionary expedient. The *Banco de San Carlos*, established in Madrid the 1780s increasingly printed paper notes *vales de Carlos IV* to fund the war-shattered Spanish Crown and finances. In 1798, the *Banco* interrupted convertibility of the notes by suspending their acceptance at par. The institution, the paper instrument and the Crown itself barely survived a few years more.⁴⁶ By 1817 a quasi-bank *Caja de Depositos* started issuing paper scrip as a government liability, which was received at the Customs House. The mass of paper created by this institution, plus several other instruments like treasury bills, originated in the expenses of the revolutionary armies. It resulted in a seriously growing monetary disorder. As paper notes circulated in a secondary market, private money also appeared. These were the antecedents to the creation of the *Banco de Descuentos* in 1822. Originally it sought to restore monetary order and provide liquidity, although this bank (the single financial institution that persisted in the region until the 1870s) transformed soon into a government bank of issue. After 1826 the printing of inconvertible paper notes by the bank became one of the pillars of Buenos Aires' economic and political leadership over neighbouring regions.⁴⁷

⁴⁶ This paper money and the institution lasted longer than the monarchy as it remained being a source of finance for the government after the fall of the Monarchy. P Tedde de Lorca and C Marichal, *La Formación De Los Bancos Centrales En España Y América Latina (Siglos Xix Y Xx)*, ed. Banco de España, vol. 29 (Madrid: 1994), E White, "Fueron Inflacionarias Las Finanzas Estatales En El Siglo Xviii? Una Nueva Interpretación De Los Vales Reales," *Revista de Historia Económica* 5, no. 3 (1987).

⁴⁷ MA Irigoín, "Inconvertible Paper Currency, Inflation and Economic Performance in Early Nineteenth Century Argentina," *Journal of Latin American Studies* 32, no. 2 (2000).

The other provinces that were confederated in the former colonial River Plate, known as the *Provincias Unidas*, also created their own money. Those with some adequate mineral resources occasionally minted silver coins of an average fineness of .750 of a thousandth.⁴⁸ Others, further away from the Andean mines and better able to export their pastoral produce through the Atlantic, tried a fiduciary currency to cope with the shortage of specie. All of them eventually failed. This was the case with money printed in 1840 in Tucuman, when the ruling Northern League tried to raise resources to fight Buenos Aires. The failure came despite the League's (futile) imposition of capital punishment on those who refused to accept the notes.⁴⁹ Ultimately the 'flight' of bullion to Buenos Aires in silver or gold ounces, which were the reserves of these paper monies, explains the differential successes of fiduciary experiments in the River Plate.⁵⁰ As a result all sort of monies circulated in the interior of the River Plate. By the 1840s Bolivian silver coins were so abundant that they acquired the status of legal tender in the interior provinces of present day Argentina, where they had a different rate of exchange. Chilean gold circulated also in Mendoza, as Brazilian *reals* did in Corrientes and Entre Rios. Indeed monetary diversity lasted until 1881 when the 'gold peso' was adopted as a national monetary unit.⁵¹

Unlike other contemporary experiments to fund major political transitions with fiat money, such as the Continental in North America or

⁴⁸ Between 1831 and 1857 provinces like La Rioja minted about half million pesos of intermediate quality. Salta and Cordoba also coined silver. Although significant in terms of their regional GDP, on the whole the sums were minor. J Alvarez, *Temas De Historia Económica Argentina*, ed. R Levene, *Junta De Historia Y Numismática. Bteca De Historia Argentina Y Americana* (Buenos Aires: El Ateneo, 1929).p 99), M Omiste, *Crónicas Potosinas; Notas Historica, Estadísticas, Biográficas* (Potosi: 1893).p., 19).

⁴⁹T Halperin Donghi, *Revolución Y Guerra. Formación De Una Élite Dirigente En La Argentina Criolla* (México: Siglo XXI, 1979), p. 91.

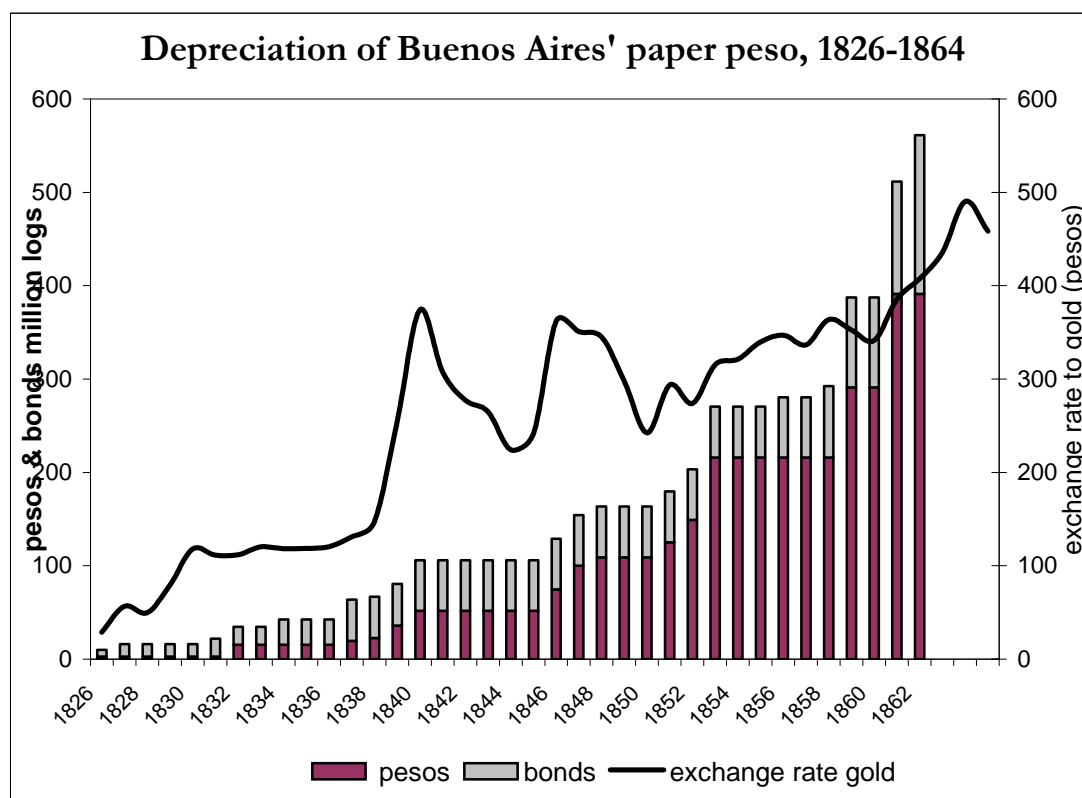
⁵⁰ That was the fate of other ephemeral banking experiences as the Confederation and the Brazilian *Maua* banks. Tedde de Lorca and Marichal, *La Formación De Los Bancos Centrales*.

⁵¹ Alvarez, *Temas De Historia Económica Argentina*, pp. 97, 100-1.

the *assignats* during the French revolution, the paper peso of Buenos Aires enjoyed a long if turbulent life of 40 years, until 1867. Buenos Aires' inconvertible paper peso remained in circulation, despite repeated massive issues, because of the fiscal fragmentation that followed the fall of the empire in the River Plate. Receiving paper notes in return for taxes was the mechanism conceived by the Buenos Aires' government to enforce acceptance of the peso as legal tender. Buenos Aires controlled the Customs House at the single port in the region that had access to overseas trade. The bulk of her ordinary income came from duties on imports largely consumed far beyond the province. Duties were paid in paper pesos, the Buenos Aires currency. Thus, this artificial demand for paper notes helped them remain in circulation despite the lack of metallic reserves. As a result Buenos Aires pesos performed far better than other provincial currencies in replacing scarce bullion.

From 1826 the expansion of currency became the ultimate means to meet fiscal deficits in Buenos Aires. With recurrent issues of paper the effects of inflation 'tax' (the erosion of the future value of government obligations due to inflation) were reduced over time. This obliged the government to issue even more money. There were times when the expansion of currency was substantial, so high depreciation followed. Subsequently inflationary expectations raised the price of hard currency even further and a process of currency substitution began. Gold ounces, silver *pesos fuertes* or feeble pesos and any other metallic currencies were preferred to worthless paper scrip. Currency substitution was aggravated because inflationary episodes were followed by marked appreciation of the paper peso and deflation. As illustrated by figure 3, high volatility in the exchange rate was a fundamental part of Buenos Aires monetary policy in the period.

Figure 3. Depreciation of Buenos Aires' paper peso, 1826-1864



Source: Irigoien, *Inconvertible Paper Currency*.

High inflation began in Buenos Aires (today Argentina) as early as 1826, following the decree of inconvertibility. A blockade to the port during the war with Brazil (1825-28) strangled imports to Buenos Aires and with it, the source of ordinary income: Customs. With inelastic military expenditures, the issue of bonds and of inconvertible paper money ensued to solve the fiscal deficit. In the 1830s, the financial position of the government improved, credit recovered and the peso appreciated as the economy grew (though mildly) on real terms. After 1837 contentious regional relations with the Bolivia-Peru Confederation over the collection of Customs revenues led to an increase in military spending that wasted the weak fiscal recovery. European blockades to the port during 1838-41 and 1845-48 magnified the extreme dependence of Buenos Aires revenues on import taxes. Further contraction of domestic sources of

borrowing, partly due to previous inflationary policies, obliged the government to resort to printing paper pesos for funds. With massive expansion of currency, depreciation peaked and prices of consumer goods skyrocketed.⁵² In the aftermath of these episodes, sudden appreciation of the exchange rate provoked deflations with serious prejudices to trade that led to a chain of bankruptcies. During the 1850s, in the final stages of the civil war before the definitive constitution of present day Argentina, the monetary means to wage war and fund the deficit continued. However the effects on currency depreciation and volatility clearly differed as displayed in the graph.⁵³

Economic effects of monetary fragmentation

With the inheritance of fiscal and financial exhaustion from colonial times, republican governments faced difficult alternatives to meet post-independence fiscal disequilibria. Deficits continually recurred in Latin American republics thereafter. Sources of domestic borrowing were depleted and tax reforms were highly constrained by the harsh exaction imposed by Bourbon rule and Republican experiments further concentrated the tax burden. The issue of funded debt was an early recourse of post-independence Administrations to bring more flexibility for financial manoeuvre by postponing short-term obligations. Floating debt

⁵² Estimates of the composition of Buenos Aires' imports indicate that about 90% of them were foodstuffs and wage goods. Similarly one third of the European goods imported were re-exported further inland. Irigoin, "Inconvertible Paper Currency, Inflation and Economic Performance in Early Nineteenth Century Argentina."

⁵³ In the 1820s Buenos Aires' floating debt from revolutionary wars was consolidated in a 5 millions pesos funded debt. By 1837 it increased to 34 million pesos in nominal values. In 1840 another attempt to float bonds for further 10 millions had to be sold to the bank, which printed paper pesos to purchase them, to secure a 60% (nominal) price. This was the last sale of public stock until 1856, when Buenos Aires was renegotiating with Baring Bros the defaulted of 1824 loan and a major fiscal reform was under way. M Irigoin, "Finance, Politics and Economics in Buenos Aires, 1820s-1860s: The Political Economy of Currency Stabilisation" (PhD, University of London - London School of Economics, 2000).

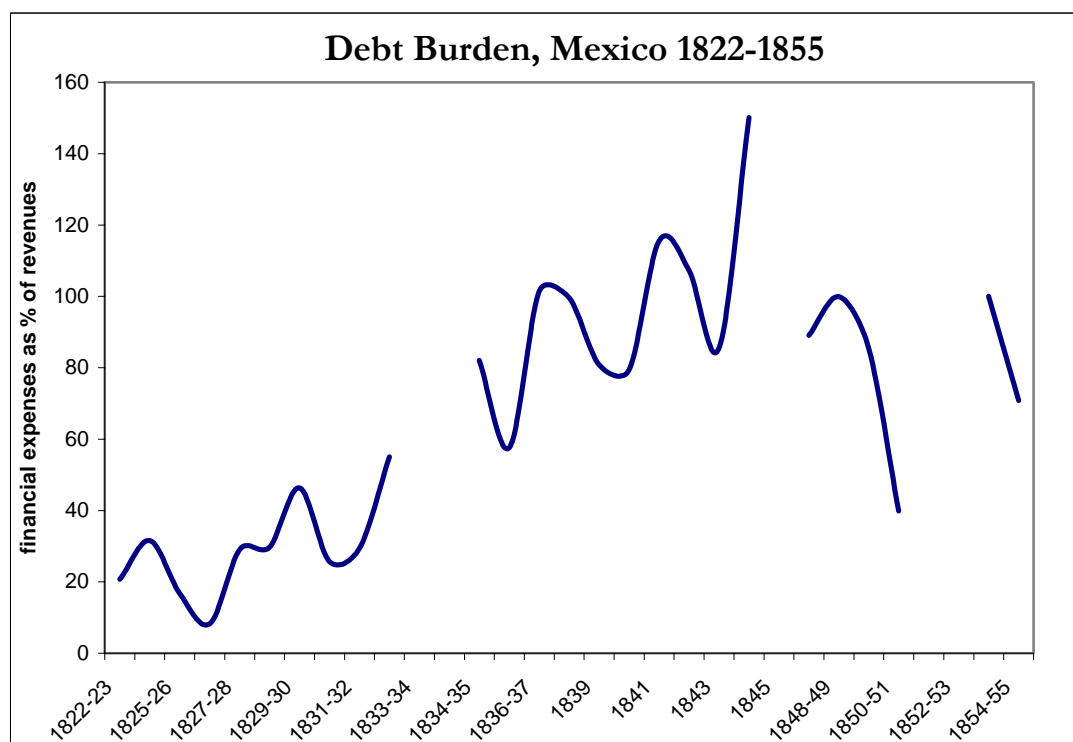
was consolidated in the aftermath of the revolution. Old colonial debts had mounted with exactions and forced loans imposed equally by revolutionaries and royalists in the period.⁵⁴

Shortly after Independence was complete in 1825, with the fall of the last Spanish strongholds, Potosi and Ayacucho, and Britain's diplomatic recognition of these new republics, Latin American countries experienced the first – of a long series of – disastrous attempt to resort to international debt markets. The first Latin American debt crisis took place after a few years of heavy and dear borrowing in a highly liquid financial environment, the London market after the Napoleonic wars. All countries but Brazil defaulted their obligations, which precluded alternative debt finance thereafter for a good 40 or 50 years.

Hence, post-independent governments throughout the former Spanish Empire issued long term bonds while trying new fiscal recipes. Yet because of the exhaustion of lenders and the effects of rapid inflation and monetary instability, public bonds never developed as a sound source of finance, and domestic capital markets never took shape. Budget deficits provoked an early recourse to local merchants for funds. These private sources lent money or sold goods to the government and received promissory bills, treasury notes, and interest bearing *vales* to be redeemed at Customs. In fact, the repetition of this practice resulted in a mortgage on future income, and governments either needed more money or received less revenue every time. So the volume of paper scrip increased as the financial mess worsened.

⁵⁴ Marichal describes the phenomenal rate of borrowing of the Crown from the colonial subjects in the previous years of the Independence. C Marichal, *La Bancarrota Del Virreynato. Nueva España Y Las Finanzas Del Imperio Español, 1780-1810* (Mexico: FCE, 1999).

Figure 4 Debt Burden, Mexico 1822-1855



Source: Own estimates from B Tenenbaum, *Politics of Penury* table B, pp 180-81.

Lacking monopolistic control over coinage, republican administrations in Mexico used borrowing to stay afloat. The so-called “politics of penury” characterizes how the costs of Mexican Treasury escalated so rapidly during the Federalist and the Centralist regimes. To meet the deficit inherited by the Constitutional Government in 1824 the Treasury obtained 8 million pesos from the first loan for 16 million in bonds at five per cent and 30 years maturity. Thereafter the government’s indebtedness grew over the years when even revenues were falling shorter in every year. Further borrowing was only possible as loans were made in a way that lenders could use their certificates to pay for taxes.⁵⁵ Not surprisingly, effective interest rates skyrocketed, tax burden

⁵⁵ As Tenenbaum notes, Mexican governments both Federalists and Centralists, “rather than reform the tax system, ... searched for ways to buy time until the system began to work as planned. B Tenenbaum, *The Politics of Penury: Debts and Taxes in Mexico, 1821-1856* (Austin: 1986), p. 30.

increased with higher tariffs of multiplied with newer levies, and the yet fiscal income became slimmer.⁵⁶ With foreign credit curtailed, local moneylenders financed the Government at allegedly “usurious” rates. In 1840, although Treasury expenditure was listed as 12.5 million pesos, only \$2,375,314 corresponded to actual spending. The remaining 10 millions pesos were defrayments for loans, interests payments and repayment of money on deposit in the Treasury, namely “4.21 pesos for every one for genuine expenses”.⁵⁷ Hence, every government had to borrow even more in every year, but at shorter terms and facing higher interests rates, than their predecessors.⁵⁸

The inter-temporal budget constraint arising from further borrowing at more expensive rates, while committing future revenues to service the debt, ended in astronomical rates of debt burden.⁵⁹ Borrowing at ever-higher rates and shorter terms of maturity was a secure way to build up a debt crisis. Nineteenth-century European experts considered a 35 per cent interest service to revenues ratio with the “greatest prudence”; above 45 per cent “the situation looked bleak”; and when reaching 55 to 60 per cent “the slightest problem shall induce to restructuring”.⁶⁰ If these were the benchmarks for international capital markets and capital flows, how did Mexico’s 120 per cent ratio - shown in figure 4 - look to potential

⁵⁶ The government paid rates as high as 536% in 1828, 308% in 1829-30 and 232% in 1831. Ibid., 32

⁵⁷ In 1845 the revenues collected \$4,780,000 should suffered a deduction of 15,460,000 “pledged to one debt or another” Ibid., Table 9.

⁵⁸ In 1853 the domestic debt amounted to \$61,950,033 and included debts from colonial times and with Spanish subjects after Independence. The foreign debt represented \$55,816,991. C Vazquez Mantecon, *Santa Anna Y La Encrucijada De a Historia. La Dictadura (1853-1855)* (Mexico: FCE, 1986)., p. 137. The total debt of Mexico was \$117,767,024, nearly half of the amount of legal silver exported in the same period (1825-1851): \$237,126,061. M Lerdo de Tejada, *Comercio Exterior De Mexico Desde La Conquista Hasta Hoy* (Mexico: Banco Nacional de Comercio Exterior, 1853/1967), Table 52.

⁵⁹ T Sargent and N Wallace, "Some Unpleasant Monetarist Arithmetic," *Federal Reserve Bank of Minneapolis Quarterly Review* 1981, no. Fall (1981).

⁶⁰ Taken from M Flandreau, "Sovereign Risk and Reputation: Developing Perceptions in the Past Age of Globalisation" (paper presented at the Economic History European Society, Madrid, 2003).

lenders? Insolvent governments were unlikely to establish or enforce any long-term rule and order. In 1901 the Mexican historian Justo Sierra still observed, “When salaries are paid revolutions fade, so fiscal insufficiency fuelled political instability”.⁶¹

Elsewhere, without riches comparable to Mexican silver but with an effective monopoly over seignorage, the other available resort was the inflation tax. At first adulterated coins or paper money circulated for their nominal value or did not produce serious inflationary effects. In most places debasement concurred with a minor expansion in the demand for money due to the revolutionary wars mobilisation. Yet without an equivalent increase in the productivity of the economy, the repeated expansion of currency would sooner or later manifest itself in inflation. In the 1830s the coinage of feeble pesos did not seem to have such an impact in Bolivia. Yet in the 1840s inflation was already noticeable, and in the 1850s further debasement was unavoidable. Otherwise, Bolivia could not maintain its imports nor fund its already shaky treasury.

Yet Bolivia could not afford an autonomous monetary policy. Dependence on other countries for trade and the retinue of *ad valorem* taxes “imported” foreign inflation and amplified the residual effects on the price of imports caused by monetary manipulations elsewhere. Despite debasing its currency, because of existing mercantile networks and geographical constraints, Bolivia was obliged to trade with neighbours whose currencies were even worse. Chilean government strictly prohibited the introduction of debased coins from Bolivia in payments for imported goods. This was unnecessary in the port of Valparaiso where merchants only accepted *pesos fuertes* from Bolivian importers. Initially, Peru took no comparable measures for political and economic vested interests. Until the 1840s, lacking of major export commodities and within

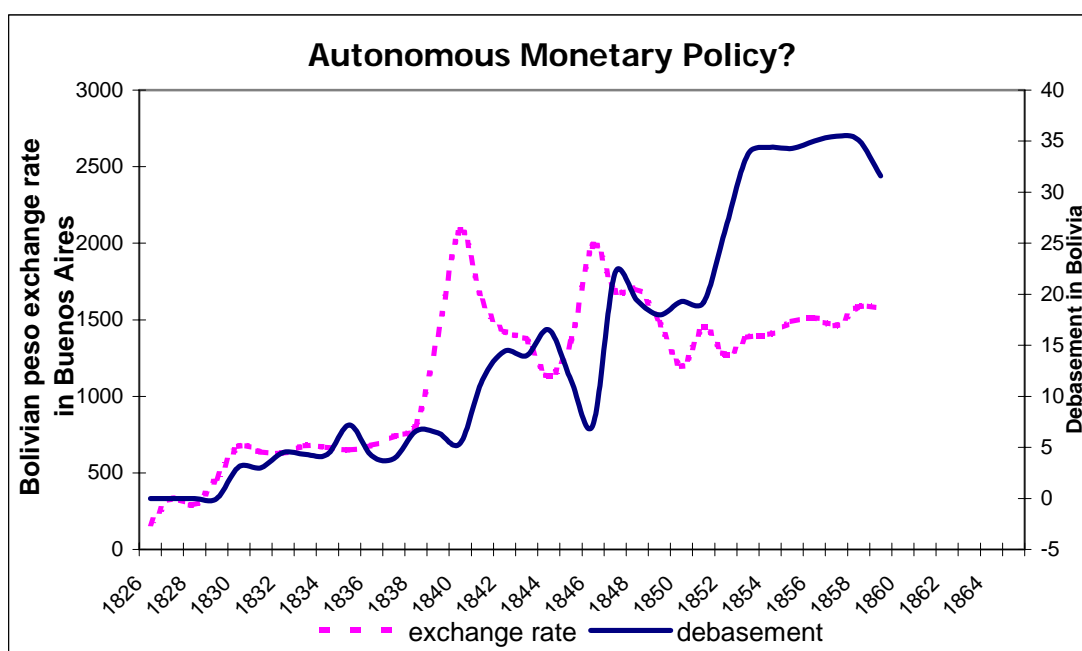
⁶¹ J. Sierra, *The Political Evolution of Mexican People* (Mexico, 1901), 191, quoted in Tenenbaum, *The Politics of Penury*, p. 53, n.33.

a massive financial disarray in Peru, the agricultural districts in the south of the country had in the neighbouring Bolivian demand a substantial market for their produce. On the other hand, until 1841 there were several attempts to organise a political Confederation between the two regions. Thereafter, the *guano* export boom bailed out the Peruvian treasury - if temporarily – and the economy grew. The southern agriculture moved to the production of wool for export overseas and even though the populated regions in northern Bolivia continued provisioning in those markets, Bolivian consumers had to face greater price increases. Peru's government stopped receiving the feeble pesos for taxes and ill feelings about Peru increased in Bolivia together with prices. Warfare broke out within the Peruvian-Bolivian Confederation, and continued as domestic strife in Bolivia until the mid 1850s.⁶²

Bolivian pesos of all kinds were always taken at par in the very southern regions. As mentioned at the port of Buenos Aires and the intermediate mercantile sites throughout the old way to the Atlantic, Bolivian pesos were either legal tender or well received. Figure 5 shows the effects of Buenos Aires' poor monetary policy, with which they could only meet the deficits, on Bolivian currency. Decisions on monetary affairs taken in Buenos Aires reverberated in Bolivia. Waves of paper notes into the Buenos Aires market shook the purchasing power of Bolivian silver pesos, and sudden appreciation or depreciation of the silver exchange rate became exogenous shocks. With the depreciation of the Buenos Aires peso exchange rate, Bolivian imports cheapened. When the opposite occurred, Bolivia had to debase further to maintain the level of imports. A highly volatile paper peso on the Atlantic ultimately drove monetary policy in the highlands of Potosi.

⁶² P Gootenberg, *Between Silver and Guano: Commercial Policy and State in Post Independence Peru* (Princeton: Princeton University Press, 1991).

Figure 5. Autonomous Monetary Policy? Bolivian peso debasement and exchange rate in Buenos Aires, 1826-1860.



Source: same figures 2 & 3.

Mutual recriminations about the economic effects from the circulation of debased currency underpinned a permanent tension between Bolivians and Peruvians. Often they turned into military skirmishes. Yet, an intense commerce - long established since colonial times - in the region over the border made fruitless Bolivian claims to pursue an autonomous monetary policy, or Peruvian attempts to halt the circulation of *feble pesos* in the South - even if at an increasingly discounted rate.⁶³

Traditionally economic historians have stressed the role of relatively greater openness to trade in explaining the economic success of some Latin American republics after the 1870s. Very recently some North American scholars have revised the accepted picture of the forces

⁶³ P Vargas, *Reflexiones Económicas Sobre La Moneda Feble En Bolivia Y Moneda Actual De 400 Granos De Peso Y Ley De 10 Dinero Y 20 Granos* (Potosí: Tipografía de Pedro España, 1863).

underlying of commercial policies in Latin America before the Great Depression. They were surprised by the degree of protectionism (high tariffs) that prevailed early in the region.⁶⁴ This allegedly restrained Latin America from exploiting the forces, and enjoying the benefits, of globalisation. In comparison with other economies outside the north Atlantic, the nominal degree of protectionism in post-independent Latin America was very high, and much higher than elsewhere during the first age of globalisation. As has been widely referred to in the literature, the authors also observe that early republican governments had strong fiscal objectives driving the tariff policy. So tariff was a “revenue source and a protective device for special interests”, which precluded the gains from trade and further integration into the global economy.

However, if Custom duties were paid with depreciated paper money and bonds that circulated at huge discounts in secondary markets, the effects from financial and monetary policies on the tariff and Customs yields should be included to assess more accurately the degree of protectionism in those economies. This was common currency for international merchants of the period as the information was available along with local prices and Custom duties from correspondents in the River Plate. For instance, the “Price Current list” of Baring’s agents in Buenos Aires and one of the most established American houses, Lynch, Zimmermann & Co, had a blank space to fill by hand in the printed item: “Duties [blank] payable in paper which being at [blank] per cent discount, reduces them in proportion”.⁶⁵ The blank spaces were filled in handwritten and varied (inversely proportional) according to the urgency of the treasury and the prevailing exchange rate. The first varied from “half” to

⁶⁴ J Coatsworth and J Williamson, "The Roots of Latin American Protectionism. Looking before the Great Depression," *NBER-WP* 8999 (2002).

⁶⁵ “Lynch, Zimmermann & Co Price Current” was printed weekly in Buenos Aires and sent to overseas correspondents. Brown & Ives papers “South American Correspondents” B 308. F1. PS59 (several dates) in John Carter Brown Library – Brown University Providence RI.

“one third” of the duty, and the second stated the percentage of discount that paper pesos had in the market. Domestically, depreciation of pesos and *ad valorem* taxes on consumer goods resulted in distortions of relative prices and provoked major redistribution of income and the tax burden. These distortions finally granted sizeable protection or subsidies to some sectors, particularly exporters of non-metallic commodities at the expense of consumers. Abroad, the acceptance of depreciated paper money by urged bankrupted treasuries in full payment of taxes lowered whatever protectionist effects high tariffs could have had. Protection for whatever local manufactures, if any indeed, came out of making imports relatively dearer by higher exchange rates. As in other current revisions of globalisation, the contemporary macroeconomic situation (and hence the "good domestic policies" or lack of thereof) underlies the benefits these countries could have received from the expansion of international trade and financial markets characterised by globalisation in this period.⁶⁶

Conclusions

The collapse of the Imperial rule did not provoke major changes in taxation nor in the matrix of revenue collection. With the disappearance of the colonial Treasury network, that distributed revenues throughout, and demands for funding the establishment of a replacement authority of some sort, political fragmentation ensued. Indeed, the new political units emerged from within the fiscal structure of the Empire. Thus, fiscal receipts and coinage fell into the hands of new local authorities. Regional elites could hence defend their individual economic interests and be part of the dispute over the design of the new revenue collection unit, the republican state. The fiscal and monetary unit that the Spanish Empire was in South American, dismembered and gave way to an increasing

⁶⁶Flandreau, "Sovereign Risk".

number of fiscally and monetary autonomous smaller entities that were the inception of modern Latin American republics.

Where governments could enjoy the monopoly over seignorage, the expansion of currency (either by coinage or by printing paper money) was the last source of revenue to which all these political entities resorted. Elsewhere, as in the case of Mexico, the building of a mounting debt protracted repeated debt and political crises. Peru endured at least twenty years of serious recession compounded with deflation. Financially weakened administrations could not exercise their rule without disputes. Weak institutionalism ensued and the fiscal and political constitution of these republics was delayed by long civil warfare. Peace and stability were achieved only when the competition for revenues and seignorage ended. Then, stable institutions and credible rules of the game took shape, and foreign capital returned to assist in the building of markets and polities. Some countries fared better than others in the redistribution of income within the fragmented empire together with the inflow of fresh money. Those with appropriate resource endowments occasionally, or more lastingly, benefited from ongoing globalisation. In the long run none of them achieved true, intensive and sustainable, economic growth.

The monetary fragmentation of the empire was a major channel for the strife over fiscal resources among the colonies. Deficits recurred, and given the impossibility of tax smoothing policy, deficit financing by inflationary means further aggravated the fiscal position of the competing states. As insolvency became recurrent, monetary manipulation was the ultimate mean to fund the bankrupted states. Significant consequences for the economy's performance resulted from complete and repeated fiscal inefficiency, an insufficient fiscal base, and the overwhelming allocation of the tax burden on consumers. The results were huge market disintegration, higher and massive transaction costs, crowding out,

severe distortions in prices and exchange rates, and ultimately more inflation.

In the long run erosion of revenues and increasing debt burdens generated a similarly perverse vicious circle. Currency substitution aggravated effects from volatile exchange rates in one place but amplified effects from monetary manipulations elsewhere. These distortions were undesirable imports that burdened additionally consumption and reduced revenues. The most expedient reaction of post-independent rulers was to further increase tariff - or to reinforce internal Customs - aiming to gather rather faster than greater yields from import duties. This meant greater internal barriers to trade, which undermined tax yields in the long run for chronically unbalanced treasuries. Having unequal access to foreign commerce because of geography - and factor endowments favourable to the development of a commodity export led economy (other than silver)- the ultimate effect was to pass the burden on "foreign" neighbouring consumers. This ultimately destabilised the political basis of any attempt to recreate a set of sovereign authorities, now in a fragment of the former empire. The monetary disunion of the empire propitiated the strife, commercial and political, among the parts of a formerly integrated economy. Tariff and monetary policies in the period resemble the beggar thy neighbour policies known world-wide at the time of another currency fragmentation: the fall of the Gold Standard. In fact economic integration in Latin America has proven a elusive desideratum since the times of Simon Bolivar.

Thus, assessing the economic performance of South American republics in the post-independence by using macroeconomic aggregates - with ex-post and reduced form of data - faces a major problem: to what extent these political units were in existence by the 1820s? Indeed, fully-fledged Latin American republics were not obvious before the 1860s. The required information for GDP, GDP per capita, even population figures at

aggregate level is only available (or robust enough) after the 1880s at best. So, were the national boundaries of these countries in the 1860s predetermined? Only by then had nation-scale administrations, currencies and revenue collection, been fully established without disputes. Indeed, the strife about the form (fiscal and political form, or constitution) had ended and the emerging republics were also developing an incipient monetary sovereignty. Similarly, neo-institutional interpretations of Spanish America Independence, which depict a region absorbed by disorder, endemic civil wars and despotic rule that altogether wasted the growth potential of these economies, fail to answer the question: What was the warfare or the political strife about? As they emphasise the territorial fragmentation, the long civil warfare that prevailed after the end of Spanish rule and interpret the resulting political instability as a corollary of Independence, they offer an ad-hoc exogenous political explanation for the region's institutional failure. Independence is thus seen as exogenous to the economic analysis following the birth of the modern republics.

Those aggregates by the 1880s are themselves the results of economic and political processes in the former colonial regions, which initiated with the monetary disunion of the colonies and ended with the creation of nation-scale markets. The fragmentation of the currency union that was the Spanish Empire generated a diversity of monies, resulting from the coexistence of several monetary authorities (mints and banks of issue, plus private monies). It caused greater instability and distributed the Gresham effects beyond each political unit. The effects on markets and trade nurtured political reactions to the widespread Gresham effects in the overall region. They are at the roots of the subsequent development of the political units that emerged within during the nineteenth century, the Latin American republics.

Thereafter, monetary more than political uncertainty prevailed. This impeded the establishment of financial institutions and weakened the

scope for capital markets. Capital was available through informal and more expensive sources. Higher transaction costs checked investments and reduced growth. Inflation became endemic, and remained as the means to fund fiscal deficits, and growth was extensive because technology stagnated. The lack of improvements in infrastructure kept transport costs for the domestic economies extremely high. The lack of investment in technology and domestic transport made it impossible for the Latin American economies to benefit from falling costs of long-distance maritime freight. Coastal areas profited at the expense of the interior (inland) economies. Different regions performed distinctively: Economic growth measured at the federal or national level may have stagnated but certain regions within a country outperformed others. Disparities, regional and within countries, broadened after independence. Thus, widening inequalities affected the prospect for sustainable growth over time and fuelled persistent regional conflicts.

References

- Alvarez, J. *Temas De Historia Economica Argentina*. Edited by R Levene, Junta De Historia Y Numimastica. Bteca De Historia Argentina Y Americana. Buenos Aires: El Ateneo, 1929.
- Assadourian, CS. *El Sistema De La Economia Colonial. El Mercado Interior. Regiones Y Espacio Economico*. Mexico: Nueva Imagen, 1983.
- Carbo, LA. *Historia Monetaria Y Cambiaria Del Ecuador*. Quito, 1978.
- Coatsworth, J., and J. Williamson. "The Roots of Latin American Protectionism. Looking before the Great Depression." *NBER-WP* 8999 (2002).
- Flandreau, M. "Sovereign Risk and Reputation: Developing Perceptions in the Past Age of Globalisation." Paper presented at the Economic History European Society, Madrid 2003.
- Flynn, DO, and AO Giraldez. "'Born with a Silver Spoon'. The Origin of World Trade in 1571." *Journal of World History* 6, no. 2 (1995): 201-21.
- . "China and the Spanish Empire." *Revista de Historia Economica* XIV, no. 2 (1996): 309-38.
- . "Cycles of Silver: Global Economic Unity through the Mid Eighteenth Century." *Journal of World History* 13, no. 2 (2000): 391-427.
- Garner, R. "Long Term Silver Mining Trends in Spanish America: A Comparative Analysis of Peru and México." *American Historical Review* 93, no. 4 (1988): 898-935.
- Gootenberg, P. *Between Silver and Guano: Commercial Policy and State in Post Independence Peru*. Princeton: Princeton University Press, 1991.

- Halperin Donghi, T. *Revolución Y Guerra. Formación De Una Élite Dirigente En La Argentina Criolla*. Mexico: Siglo XXI, 1979.
- Humphreys, RA. *British Consular Reports on the Trade and Politics of Latin America, 1824-1826*. London, 1940.
- Irigoin, MA. "Finance, Politics and Economics in Buenos Aires, 1820s-1860s: The Political Economy of Currency Stabilisation." PhD, University of London- London School of Economics, 2000.
- . "Inconvertible Paper Currency, Inflation and Economic Performance in Early Nineteenth Century Argentina." *Journal of Latin American Studies* 32, no. 2 (2000): 302-33.
- Iza Teran, C. "Las Monedas Quitenas."
http://www.museosdelbancocentral.org/numismatica/ponencias/Carlos_Iza1.pdf. (na).
- Jaramillo, J, A Meisel, and M Urrutia. "Continuities and Discontinuities in the Fiscal and Monetary Institutions of New Granada." edited by M Bordo and R Cortes Conde, 414-47. New York: Cambridge University Press, 2001.
- Lerdo de Tejada, M. *Comercio Exterior De Mexico Desde La Conquista Hasta Hoy*. Mexico: Banco Nacional de Comercio Exterior, 1853/1967.
- Lopez Rosado, D. *Historia Del Peso Mexicano*. Mexico: FCE, 1975.
- Marichal, C. *La Bancarrota Del Virreynato. Nueva España Y Las Finanzas Del Imperio Español, 1780-1810*. Mexico: FCE, 1999.
- Matamala, J. "De Fondo De Rescate a Casa De Moneda Regional, Zacatecas 1790-1828." Paper presented at the Asociación Mexicana de Historia Económica, Mexico City 2004.
- Matamala, JF. "La Descentralización De La Acuñación En La Nueva España (1810-1821)." *Vetas. San Luis de Potosí* III, no. 7 (2001): 13-27.

- McMaster, J. "Aventuras Asiaticas Del Peso Mexicano." *Historia Mexicana* 8, no. Julio 1958-Junio 1959 (1958): 372-99.
- Meek, WT. *The Exchange Media of Colonial Mexico*. New York: King's Crown Press, 1948.
- Meisel, A. *El Patron Metalico, 1821-1879 (El Banco de la Republica. Antecedentes, evolucion, estructura. ch 1)* Banco de la Republica de Colombia, 1990. Available from www.banrep.gov.co/blaavirtual/letra-b/banrep/hbinx.htm.
- Memoria. "*Memoria Presentada a La Camara De Diputados Sobre La Creacion Y Estado Actual De Las Casas De Moneda De La Republica.*" Mexico, 1849.
- Mitre, A. *El Monedero De Los Andres. Region Economica Y Moneda Boliviana En El Siglo Xix*. La Paz: HisBol, 1986.
- Ocampo, JA. *Colombia Y La Economia Mundial, 1830-1910*. Bogota, 1984.
- Omiste, M. *Cronicas Potosinas; Notas Historica, Estadisticas, Biograficas*. Potosi, 1893.
- Ortiz Peralta, R. "Las Casas De Moneda Provinciales En Mexico En El Siglo Xix." In *La Moneda En Mexico*, edited by Batiz Vazquez & Covarrubias. Mexico: Inst Mora, 1998.
- Peñaloza Cordero, L. *Nueva Historia Economica De Bolivia. Comercio Moneda Y Banco*. La Paz, 1944.
- Perez Gilbert, S. "Manila Galleons and Mexican Pieces of Eight." *Numismatica. Revista de la Sociedad Iberoamericana de Estudios Numismaticos* IV, no. 18 (1955): 39-54.
- Pitkin, T. *Statistical View of the Commerce of the USA Including and Account of Banks, Manufactures and Internal Trade and Improvements: Together with That of the Revenues and Expenditures of the General Government Accompanied with Numerous Tables*. New Haven: Durrie & Peck, 1835.

- Prados Robles, G. "Efectos Monetarios De La Adulteracion Monetaria En Bolivia, 1830-1870." *Revista de Humanidades y Ciencias Sociales* 2da epoca, no. 1 (1995): 35-76.
- Restrepo, JM. *Memoria Sobre La Amonedacion De Oro Y Plata En La Nueva Granada*. Bogota, 1860.
- Safford, F. "Commerce and Enterprise in Central Colombia, 1821-1870." PhD, Columbia, 1965.
- Sargent, TJ, and N Wallace. "Some Unpleasant Monetarist Arithmetic." *Federal Reserve Bank of Minneapolis Quarterly Review* 1981, no. Fall (1981).
- Tedde de Lorca, P, and C Marichal. *La Formacion De Los Bancos Centrales En Espana Y America Latina (Siglos Xix Y Xx)*. Edited by Banco de Espana. Vol. 29. Madrid, 1994.
- Tenenbaum, B. *The Politics of Penury: Debts and Taxes in Mexico, 1821-1856*. Austin, 1986.
- Torres Medina, J. "La Ronda De Los Monederos Falsos. Falsificadores De Moneda De Cobre (1835-1842)." In *La Moneda En Mexico*, edited by Batiz Vazquez & Covarrubias, 107-30. Mexico: Instituto Mora, 1998.
- Torres Sanchez, R, J Gomez Biscarri, and F Perez de Garcia. "Exchange Rate Behaviour and Exchange Rate Puzzles: Why the 18th Century Might Help?" *Facultad Cs Economicas y Sociales. Universidad de Navarra Working Paper* 12/04 (2004).
- Vargas, P. *Reflexiones Economicas Sobre La Moneda Feble En Bolivia Y Moneda Actual De 400 Granos De Peso Y Ley De 10 Dinero Y 20 Granos*. Potosi: Tipografia de Pedro Espania, 1863.
- Vazquez Mantecon, C. *Santa Anna Y La Encrucijada De a Historia. La Dictadura (1853-1855)*. Mexico: FCE, 1986.

White, E. "Fueron Inflacionarias Las Finanzas Estatales En El Siglo Xviii?
Una Nueva Interpretacion De Los Vales Reales." *Revista de
Historia Economica* 5, no. 3 (1987): 509-26.

Appendix 1

Coinage of silver pesos in republican Mexico, 1824-1856
Annual average in million pesos

<u>Mint house</u>	<u>1824-29</u>	<u>1830-39</u>	<u>1840-49</u>	<u>1850-56</u>
Mexico city	2,347	1,018	1,838	3,182
Chihuahua		1,900	0,420	0,300
Durango	0,970	0,900	0,685	0,590
1826				
Guadalajara	0,684	0,593	0,939	0,546
Guanajuato	0,965	2,585	4,580	6,102
San Luis	1,475	1,158	1,450	1,760
Potosi				
Zacatecas	4,574	5,287	5,744	3,601

Source: Memoria Presentada a La Camara De Diputados Sobre La Creacion Y Estado Actual De Las Casas De Moneda De La Republica." Mexico, 1849

Mexican coins after 1811¹

Colonial standard after 1772/6

	Denomination	Die	Fineness		Weight g.		
Up to							
1808	8 reales	"Carolus"	0.903		27.0602	(24.4293 fine silver + 2.6342 alloy)	
Date	Denomination	Die	Fineness	Mint mark	Weight g.	Diameter mm.	Edge
1811	8 reales	Ferd VII	0.895	none	26.84	39.5	ornamented
1811	8 reales	Ferd VII	0.895	none	32.01	40	striated
1811	8 reales	Ferd VII	0.895	none	26.66	42	plain
1812	8 reales	Ferd VII	0.895	none	27.33	39.5	ornamented
1815	8 reales	Ferd VII	0.895	none	26.04	39.2	ornamented
1811	8 reales	Ferd VII	0.895	none	19.04	38.8	plain
1812	2 reales	Ferd VII	0.895	none	5.69	26.2	plain
1812	8 reales	Ferd VII	0.895	none	27.92	39.6	plain
1812	8 reales	Ferd VII	0.895	none	24.53	38.5	ornamented
no date	4 reales	Ferd VII	0.895	none	11.99	35.5	plain
no date	8 reales	Ferd VII	0.895	MexicoMo	26.89	39.7	ornamented
1811	8 reales	Ferd VII	0.895	none	28.66	40.6	plain
1812	8 reales	Ferd VII	0.895	none	26.24	39.2	plain
1812	8 reales	Ferd VII	0.895	ChihuahuaC^	26.23	40.7	ornamented
1822	8 reales	Ferd VII	0.902	MexicoMo	26.95	40	ornamented
1822	8 reales	Ferd VII	0.902	MexicoMo	26.99	40	ornamented

¹ **Source:** Numismatic Office. Banco de Mexico

Valuation of Spanish American coins in Philippines.

Class of peso coin	net weight grains	fineness grains
Peso Old Spanish	499.2	445.08
Mexico of 1831	502.08	450.48
of 1832	495.48	442.8
of 1833	502.68	451.2
Bolivia 1829	499.56	450.36
Bolivia 1832	499.08	450.36
Peru 1832	499.08	450.36
Peru 1832	494.4	445.32
Peru 1833	498.6	450.72
Chile 1833	505.92	456.21
River Plate	491.76	442.24
1/2 (4 reals) peso Old Spanish	249.6	222.48
id of Bolivia	250.56	168.6
1/4 (2 reals) peso Old Spanish	124.8	111.24
id of Mexico	123.48	111
id of Central America	114	103.68
id of Bolivia	125.64	84.84
id of Colombia Cundinamarca	124.86	84.72
1/8 (1 real) peso Old Spanish	62.1	55.68
id Central America	58.2	52.2
id of Colombia Cundinamarca	95.4	44.4
id of Nueva Granada	48.6	27.48

Source: Oropilla y Fortich, Q *Philippine Counterstamped Coins, 1828-1839* (Manila 2001) Table 9.1. Monetary table of American and Spanish American coins p. 173

LONDON SCHOOL OF ECONOMICS
ECONOMIC HISTORY DEPARTMENT WORKING PAPERS
(from 2002 onwards) For a full list of titles visit our webpage at
<http://www.lse.ac.uk/>

2002

- WP67 Precocious British Industrialization: A General Equilibrium Perspective
N. F. R. Crafts and C. Knick Harley
- WP68 Social Insurance Regimes: crises and 'reform' in the Argentine and Brazil, since c. 1900
Colin M. Lewis and Peter Lloyd-Sherlock
- WP69 Can profitable arbitrage opportunities in the raw cotton market explain Britain's continued preference for mule spinning?
Timothy Leunig

2003

- WP70 The Decline and Fall of the European Film Industry: Sunk Costs, Market Size and Market Structure, 1890-1927
Gerben Bakker
- WP71 The globalisation of codfish and wool: Spanish-English-North American triangular trade in the early modern period
Regina Grafe
- WP72 Piece rates and learning: understanding work and production in the New England textile industry a century ago
Timothy Leunig
- WP73 Workers and 'Subalterns'. A comparative study of labour in Africa, Asia and Latin America
Colin M. Lewis (editor)
- WP74 Was the Bundesbank's credibility undermined during the process of German reunification?
Matthias Morys

- WP75 Steam as a General Purpose Technology: A Growth Accounting Perspective
Nicholas F. R. Crafts
- WP76 Fact or Fiction? Re-examination of Chinese Premodern Population Statistics
Kent G. Deng
- WP77 Autarkic Policy and Efficiency in Spanish Industrial Sector. An Estimation of the Domestic Resource Cost in 1958.
Elena Martínez Ruiz
- WP78 The Post-War Rise of World Trade: Does the Bretton Woods System Deserve Credit?
Andrew G. Terborgh
- WP79 Quantifying the Contribution of Technological Change to Economic Growth in Different Eras: A Review of the Evidence
Nicholas F. R. Crafts
- WP80 Bureau Competition and Economic Policies in Nazi Germany, 1933-39
Oliver Volckart

2004

- WP81 At the origins of increased productivity growth in services. Productivity, social savings and the consumer surplus of the film industry, 1900-1938
Gerben Bakker
- WP82 The Effects of the 1925 Portuguese Bank Note Crisis
Henry Wigan
- WP83 Trade, Convergence and Globalisation: the dynamics of change in the international income distribution, 1950-1998
Philip Epstein, Peter Howlett & Max-Stephan Schulze
- WP84 Reconstructing the Industrial Revolution: Analyses, Perceptions and Conceptions of Britain's Precocious Transition to Europe's First Industrial Society
Giorgio Riello & Patrick K. O'Brien

- WP85 The Canton of Berne as an Investor on the London Capital Market in the 18th Century
Stefan Altorfer
- WP86 News from London: Greek Government Bonds on the London Stock Exchange, 1914-1929
Olga Christodoulaki & Jeremy Penzer
- WP87 The World Economy in the 1990s: A Long Run Perspective
Nicholas F.R. Crafts

2005

- WP88 Labour Market Adjustment to Economic Downturns in the Catalan textile industry, 1880-1910. Did Employers Breach Implicit Contracts?
Jordi Domenech
- WP89 Business Culture and Entrepreneurship in the Ionian Islands under British Rule, 1815-1864
Sakis Gekas
- WP90 Ottoman State Finance: A Study of Fiscal Deficits and Internal Debt in 1859-63
Keiko Kiyotaki
- WP91 Fiscal and Financial Preconditions for the Rise of British Naval Hegemony 1485-1815
Patrick Karl O'Brien
- WP92 An Estimate of Imperial Austria's Gross Domestic Fixed Capital Stock, 1870-1913: Methods, Sources and Results
Max-Stephan Schulze

2006

- WP93 Harbingers of Dissolution? Grain Prices, Borders and Nationalism in the Hapsburg Economy before the First World War
Max-Stephan Schulze and Nikolaus Wolf

- WP94 Rodney Hilton, *Marxism and the Transition from Feudalism to Capitalism*
S. R. Epstein
Forthcoming in C. Dyer, P. Cross, C. Wickham (eds.)
***Rodney Hilton's Middle Ages, 400-1600* Cambridge UP 2007**
- WP95 *Mercantilist Institutions for the Pursuit of Power with Profit. The Management of Britain's National Debt, 1756-1815*
Patrick Karl O'Brien
- WP96 *Gresham on Horseback: The Monetary Roots of Spanish American Political Fragmentation in the Nineteenth Century*
Maria Alejandra Irigoin