Precious Metal Flows, from the Spanish Galleons to Today

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Columbus and “Las Indias”

• The name of “Las Indias” reveals what the initial incentive was
• Columbus wanted to reach the Portuguese Indies in the Far East through the back door
• The intrepid sailors that first undertook the crossing of the Atlantic in three minimal boats of some 51 gross tons each. The flagship was a carrack, the Santa María; the other two, the Pinta and the Niña, caravels.
  • The Santa María came to grief in the Caribbean
  • The Pinta was attacked by Barbary pirates when nearing Spain but was able to reach port
• It was later that galleons were used for the traffic with Europe
• Columbus may have discovered a Continent he never intended to find but he did have the incredible persistence to look for a westward path towards the “Indies”
Fancied: La Niña, La Santamaría, and la Pinta (a carrack and two caravels)
Three strokes of luck

• The great Italian historian Carlo Maria Cipolla spoke of the strokes of luck of the Castilians (responding to an unslated thirst for silver in Eurasia):
  • The trade winds
    • In the Atlantic: south-west to the Canaries; north-west to the Caribbean; north-east to the Azores; back to Palos and Seville
    • In the Pacific: south-west and north to the Philippines; north-east and west to Acapulco
  • The discovery of rich mines
    • The ‘cerro de la plata’ in Potosí (Perú); the silver mines of Guanajuato and Zacatecas in Mexico
  • The ‘patio method’
    • A technical development to separate sulphur and silver by displacing it with mercury (azogue), obtained from Amadén in Spain and Huacavélica in Perú
    • Increased production and helped turn Castile into a mono-product silver economy: the ‘oil curse’ or the ‘Dutch Disease’
A flood of gold and silver

• American silver against the Bible
  • Charles I (of Spain and Italy) and Charles V (of ‘Germany and Flanders) financed his attempted rebuilding of a medieval Empire with silver and the help of German and Italian bankers
  • Europe was transformed by the discovery of America, as that Continent unjustly came to be called, or the Indies, as the Castilians named it, as, through the back door, they tried to break the Portuguese spice monopoly
• A flood of gold and silver washed over Europe and the Eurasian Continent
  • changing the finance of Governments giving rise to a new constellation of power, pitting kings and queens, bankers and merchants, pirates and privateers, against each other
  • transforming the world of money and finance, transmuting trade and banks, raising the level of prices to new heights, and feeding the for silver in a hyper-inflated paper money China
The Castilian Kingdoms and Captaincies
Trade with the Indies

• Until the beginning of the 17th century only a minimal part of the goods needed in the Americas was produced locally, by policy

• Carlo Maria Cipolla quotes a suggestive list of the varied merchandises on those frail ships
  • apart from mercury ventured westward and precious metals eastward
  • In 1594, the merchant Gaspar Gonzalez had the ships laden with “spoons, candelabra, stills to produce rum, razors, leather goods, rosaries, crystal bead collars, cloth, shirts, cambric, velvet, taffeta, handkerchiefs, copper lanterns, and many other things”.

• The return goods (apart from silver) could be scarlet cochineal, blue indigo, medicinal plants, precious woods, sugar, tobacco, and

• From the Philippines, silk, porcelain, and gold: a global market!
The ‘Columbian Exchange’

• Alfred Crosby in 1972 pointed at another more important exchange
• From Europe to the Americas
  • Dreadful small pox epidemics and other infectious diseases
  • Bananas, oranges and lemons, chickens, sheep, horses, cattle, pigs, sugar cane, cotton, wheat, rice
• From the Americas to Europe
  • Cacao, quinine, vanilla, rubber
  • Plants of maize, of potatoes, tomatoes, tobacco, cotton
  • Turkeys... and syphilis?
• And imports of gold and silver!
“Seville” by Alonso Sánchez Coello (1531-1588): Museo de América, Madrid.
The Castilian *trade* monopoly

- In 1503 the overseeing body of all traffic with the Indies, “La Casa de la Contratación” was established in beautiful Seville
- In 1717 the monopoly passed to Cadiz: one can still see the slender towers on top of houses, to exchange information with the incoming fleets
- Foreign merchants concentrated in the monopolising city, as they could not travel to the Indies
- Only the subjects of the King of Spain in Castile, Andalusia, and Navarre were allowed to travel to the America
- Even the Castilians were carefully vetted:
  - Cervantes applied to go to America and was rejected, perhaps because he had spent some time in prison as tax official under suspicion
- King Charles III freed trade within his possessions by steps (1765 to 1778), which allowed dwellers in the Kingdom of Aragon to trade with the Indies

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Private mines and the royal fifth

**Gold and silver**

- The Crown did not own the mines in America, be they of gold or silver.
- They were claimed by their discoverers and were private property.
- The metal obtained, however, had to be taken to the office of a public assayer to have its fineness tested and a fifth retained by the Crown.
- The metal bars or cakes were engraved or punched to show all this
  - They could then be legally sent to Spain.
  - If they were taken to the colonial mints, the amounts had to be duly registered
- Smuggling was prevalent, adding up to a third onto official production

**Mercury mines** (in Almadén and Huancavélica), however, were the property of the Crown

- The Crown farmed out or managed them and then sold the mercury at monopoly prices
- So there was lots of smuggling of mercury at low black market prices to moonlighting silver miners

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Mercury transported from Huancavélica on the back of llamas
Gold officially accounted for in Seville (1503-1650) (according to Hamilton)

• Gold: 181 metric tons officially entered Seville from 1503 to 1650
  • Compare with the mighty 10,000 tonnes (320 million ounces) of gold produced in the world in the last half of the nineteenth century
  • With annual production in 1847 from 77 tonnes (2.5 million ounces) to almost 280 tonnes (9 million ounces) in 1852

• Silver was much more important for the Spanish economy and the Monarchy but gold was needed to pay the Spanish infantry in Flanders
Three centuries of silver from the Indies

• If we extend the period from 1492 to 1803, officially extracted silver came to some 82,000 mT, as reckoned by Cipolla
  • Of which a third, after being spent by the Spanish would have been re-exported from Europe to China
  • And a sixth more, directly to China through Acapulco and the Philippines, in exchange for silk - and gold (!) to pay the Spanish infantry in Flanders
• One should add an estimate of illegal production to officially registered silver
  • Since the mercury extracted at Huancavélica came to some 16,300 mT (Espina Montero, 2001), at an average mercury to silver ratio of 1.4: 1, we should add some 11,500 mT to the total
• In total 93,500 metric tonnes
• Compare with the 27 thousand metric tonnes of silver produced in the world in 2016 alone
Real de a ocho (Philip II)
The reign of silver and the return of gold

• Much of this silver was coined, in pieces worth eight reals, “reales de a ocho”
• These pieces came to be so well accepted that they were found in Japan, China, and India. Cipolla carefully explains that in the Far East they were valued by weight and not by tale, so that one often finds them cut in half or quarters to fit the exchange
• In Europe they became so popular that they were accepted at face value, which led to some authorities in Italy, for example, to forbid the circulation of coins proceeding from some mints in the Americas.
• Gold came back to the mints in the 18th c. due to discoveries in Brazil
• But that was nothing compared with the flow from California after the 1848 gold rush, the South African and Australian discoveries, and at the end of the century, Klondike
Gold versus silver

• Silver slowly displaced gold due to its progressively greater abundance (Gresham’s Law)

• From 1497 to 1536 the official silver/gold rate of exchange in Castile was 10.11 to 1

• In 1567 it had risen to 10.61

• In spite of everything, the hunger for silver in China (after its paper money hyperinflation) kept the ratio around 12:1

• But in the 19th c. larger supply from Mexico led to a fall of the price of silver and the bi-metallic systems in Europe rating it at 15:1

• The market today has it at around 74 to 1
Pirates and fleets

• To fight off pirates and privateers it became obligatory to travel in well-armed convoys.
• The earliest fleet to have been organised was in 1535. In July 1561 a decree laid it down that there were to be two convoys per year on the “Carrera de Indias”, the Road to the Indies.
  • One would leave Seville in March or April destined for Mexico to collect the silver and other goods in Vera Cruz
  • The other in August before the hurricane season, to ship back the Peruvian silver, brought to Cartagena de Indias from the port of Callao in Peru.
• It must have been a magnificent (and tempting) spectacle to see the long train of merchants vessels in full sail, headed by the Captain’s armed Galleon, the rear brought up by the Admiral’s Galleon, and two or three men-of-war to windward of the convoy.
The sinking of the San José Galleon off Carthagena June 1708 (“Wager’s Action” by Samuel Scott, National Maritime Museum)
According to Earl Hamilton’s careful calculations, based on the accounts of hospitals and colleges, from 1501 to 1550 prices in Andalusia, the New and the Old Castile, and Valencia increased by 127.74 per cent.

The rise continued, so that by 1600 the increase from 1501 had been 252 per cent (three and a half times).

252 per cent over 99 years is, according to my calculations, a 1 per cent annual rate of inflation. This must have looked large in a Europe that had suffered from stark deflation in the 15th c. due to a great dearth of silver.

But to us, poor subjects of Authorities intent on maximising the inflation tax under the pretext of fostering growth, it appears small.

The explanation for such a low inflation rate was that 40% of the Indies’ silver ended in China.

So, when the Hapsburgs of the 17th c., Phillip III and IV, ran out of funds, they launched the great copper inflation.
The curse of Midas

• Spain suffered the so called ‘oil curse’ in the 16th and 17th centuries.
  • The precious metals became the main, almost single, product of the Spanish economy
  • A plethora of rich mines together with great technological advances in the extraction of silver made the kingdom made its rulers pursue unreachable political and religious goals of domination
  • It has left us with a magnificent heritage in art, architecture, music, literature, shared by twenty three republics and a kingdom.
  • But for two centuries unfortunately everything Spain touched seemed to turn to gold and silver
The virtues of the gold standard and the danger of *fiat* money

- The gold standard as a discipline on the issuing of legal tender currency
  - A harsh master
  - But effective in keeping prices stable, when the system was played by the rules

- Instead, Keynes spoke of the “the barbarous relic of the gold standard” and proposed that the managers of monetary policy should not be politicians, but civil servants (like Keynes himself?)

- The effects of that inflation on 16\textsuperscript{th} and 17\textsuperscript{th} century Castile
  - Initial economic and business expansion
  - Overwhelming military power
  - Inflation and the Midas effect

- The 1929-34 Great Depression and the 2007-10 Great Recession are a poor advertisement for a pure *fiat* money cum Central Bank regime
Consumer Price level in the US (1775-2012)
(1775=1) Reinhart and Rogoff (AEA 2013)
The move away from monetary gold

- Executive Order 6102 is a US presidential executive order signed on April 5, 1933, by President Franklin Delano Roosevelt "forbidding the hoarding of gold coin, gold bullion, and gold certificates within the continental United States".

- Criminalized the possession of monetary gold by any individual, partnership, association or corporation, under penalty of $10,000 and/or up to five to ten years imprisonment.

- Forcibly sold to the Government at the new rate of $34/ounce

- **Rescinded** by President Ford in 1974

- President Nixon **closed** the gold window in 1971

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The conditions of the gold standard

- The conditions for stably linking the currency to gold are exacting
- The same as those for a fixed Exchange rate system such as Hong Kong’s
  - A reserve of gold equal to or greater than the stock of high-powered money
  - No Budget deficit
  - Flexible prices
  - Flexible wages downwards
  - No anti-cyclical fiscal policy
  - No capital controls
  - No monetary policy
Gold held by Central Banks and Governments (metric tonnes) Source: <sbcgold.com>
Great Open Questions

• Central Banks are not averse to keeping a gold reserve, to what purpose?
  • Not a very productive asset!
  • “The primitive passion for solid metal” mocked Keynes

• Do gold standard currencies have a future?
  • Governments and people still consider gold to have exchange and asset value
  • But the large quantity of gold held by governments and their unpredictable management of this reserve makes the price of gold unstable

• If some digital private money succeeds in being widely used, it may be the one that links its value to gold
  • But for people to believe that the link to gold will be maintained the issuer may need a large reserve of gold
Gold and silver are beautiful

- The precious metals, apart from their monetary and industrial uses, have non-material value in private use
  - Ordinary people value gold for being seductive, incorruptible and rare
  - We use it symbolically and ceremonially
  - We love to give it and to hold it
  - We also see it as a resource for a rainy day
- Silver
  - ‘The family silver’: we use it for meals on special occasions
  - Admire it in the great Cathedrals of Spain, Portugal and Latin America
  - Our Authorities still imitate it in our small coins, though inflation has made them unaffordable or vanishing

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