

## World production of silver 2010.

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Silver production increased steadily since 2005. Thus since 2006 it beat its record production. Silver production increased while production of gold falls, yet the gold-producing countries are twice as many as silver producers. Silver production is more complex than the production of gold because it is

### I. Silver production: bi-product.

According to the USGS, the production of silver in the world in 2009 is estimated at 21 400 tonnes, 688 million ounces of silver, it is a new record for silver production. In 2008, production was 21 300 tonnes of silver, or 684.8 million ounces of silver. In 2009, silver production has benefited from the rapid rise in prices of copper, [zinc](#), lead and gold.

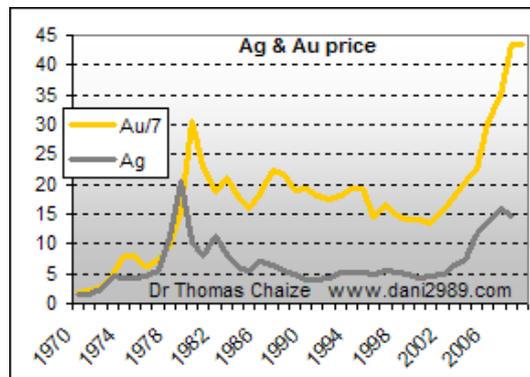
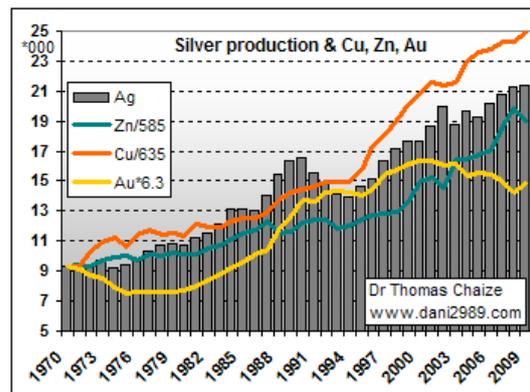
Only a small third of production of silver comes from silver mines, one small third is produced by zinc and lead mines, one quarter by copper mines and eighth in gold mines. Experience; look for a mine that produced strictly for silver and you will

This graph shows that the curve of the production of silver follows the production of copper and zinc (metals industry) more than production of gold (precious metal). More than half of silver production in the world comes from zinc and copper mines. As such, it is logical that production of silver mainly follows production of these two metals, while that of gold represents only a fading eighth in the production of silver. Price of silver tends to follow that of the gold cons its production changes according to the production of copper and zinc.

For world silver producers, the price of copper, zinc, lead and gold is more important than its of one ounce of silver. The largest share of their income comes from copper, zinc and gold. Silver production ultimately depends more than price per pound of copper or zinc as the price of one ounce of

much more related to other metals. Mines producing only silver are more rare than mines that produce only [gold](#). Distribution of demand between industry and investment is not the same for silver and gold.

see it is rare. Among the 15 first silver mines in the world, only two produce only silver.



silver. Just as the production of platinum is inseparable from palladium, silver production is inseparable from the production of industrial metals such as copper, zinc and lead. Thus the top five of silver producers owned by the top 5 of copper, zinc, lead and gold producers.

## II. Silver-producing countries.

In 2009, three countries stand silver producers: Peru, Mexico and China.

Since 2002, **Peru** is the largest producer of silver in the world. In 2009, Peru produced 125.3 million ounces of silver, i.e 2 900 tonnes of silver. Silver production in Peru has almost doubled since 1998. Peru is the second largest producer of copper and zinc, the fourth in lead and fifth in gold. Four largest mines in Peru produce half silver of country. It primarily produces zinc, gold, copper, and even molybdenum. Silver production in Peru is an associated production. Its first place of silver producer is the result of the high level of the four other productions.

**China** is the second world's largest producer of silver with 96.4 million ounces of silver (3 000 tons). China is also the largest producer of zinc, lead, gold and the fourth largest producer of copper, its place was therefore surprising.

**Mexico**, after record years of 2005 to 2008, significantly decreases it saw a significant decline in its production of silver in 2009 with 80.3 million ounces of silver, a decrease of 22.8% from the peak year of 2008 ( 104 million ounces of silver). The third of the Mexican silver production comes from single large silver mine which is the second in world; it also produces lead and zinc.

**Chile** is the fourth largest silver producer in the world with 64.3 million ounces. There is a direct correlation between the growth of copper production in Chile and its silver production. Chile is by far the largest producer of copper, its copper production is 4 times higher than the second largest producer of copper.

**Australia** is the fifth largest silver producer with 57.8 million ounces of silver produced in 2009. The first silver mine in the world is Australian, it is a polymetallic mine: silver-lead-zinc. It produces 5%

of world production of silver and 60% of Australian production.

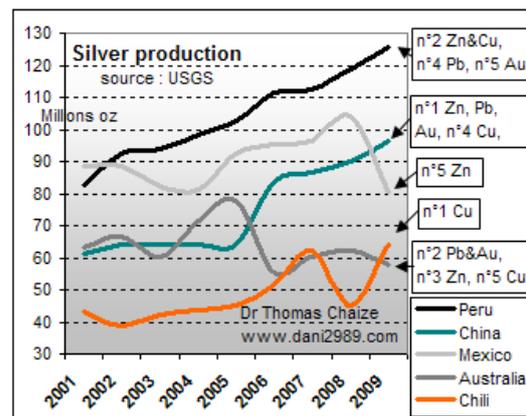
**Bolivia** produced 43.7 million ounces of silver. Its production triple in 3 years after the opening of two new giant mines (gold, silver, zinc and silver).

**Russia**, the seventh largest producer of silver in the world, last year it produces 41.7 million ounces of silver. The first silver mines in the country produces over a third of national production and it is a mixed gold-silver mine.

**USA** is the eighth silver producers with 39.5 million ounces. In 1997 USA were the second with 69.1 million ounces of silver. First U.S. silver producer produces more than a quarter of silver production. It is also the second largest producer of zinc and the third of lead.

**Poland** is the ninth largest producer of silver with 38.5 million ounces of silver. 100% of It production comes from a single copper mine...

There are about fifty other countries that produce the silver in smaller quantities (Kazakhstan, Sweden, Morocco, Indonesia, Uzbekistan, Brazil, South Africa, Korea, Japan, Spain...).



## III. Using silver.

Industrial demand for silver is about half of the silver demand. In period of growth this demand is higher, it is less in times of crisis. Industrial demand includes photographic film, the use in electronics as a conductor (mobile phones, computers, solar cells ...), uses bactericidal (nanotechnology, textiles, dressings, health, water purifiers...), welding, catalysts, dental amalgam ... Silver is valued in the industry for its physical qualities: ductility, malleability and conductivity. With the miniaturization of electronics, its physical qualities are increasingly used (it is a better electrical conductor than copper). The increase in industrial demand offsets the decline in photographic film. Jewelry is the second source using silver after industrial demand, ¼ of the application. The rest of application is used for the

manufacture of coins and silver investment. For coins and investment demand increases in periods of crisis and decline in periods of growth inversely related to industry demand.

The differences between gold and silver are not limited to production, demand is also distributed differently between industry, jewelry and investment. Jewellery is half of demand for gold cons ¼ for the silver. Industrial demand accounts for 1 / 10 the demand for gold (electronics and dentistry) and half for the silver. The share of investment represents more than a third for gold and a quarter for the silver. The demand for gold looks for investment and jewellery while for the silver industrial demand is predominant.

Weight of stocks is also different between gold and silver by recycling is a 1/3 for gold cons 1/5 for

silver (the difference between mine production and

The share of industrial demand in the consumption of silver has remained stable for 20 years (between 60 and 65%), new industrial applications replacing declining photographic film. Each year new applications use silver and gradually grey metal becomes essential in the industry. The uniqueness of the production of silver is its dependence vis-à-vis of copper, zinc, lead and gold mines. Silver is a kind of luxury joker for producers of copper, zinc, lead and gold. Silver is rarer than its price would indicate, because its production like secondary

consumption).

metal allows it, temporarily, to be produced abundantly. What weighs today on the price of one ounce of silver could soon have the opposite effect. If the demand for silver increases, which will certainly happen given its physical and investor interest, supply of silver will always depend on the production of copper, zinc, lead and the gold. In my opinion, whatever the price of silver opening a new copper or zinc mine will not happen just because the demand for silver increases...

**Dr Thomas Chaize**

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