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Chapter 1 : Precious Metals Industry - Statistics & Facts | Statista

Download Statistics And Technology Of The Precious Metals By S F Emmons And G F Becker written by U. S. Census Office Staff, 10th Census, and has been published by this book supported file pdf, txt, epub, kindle and other format this book has been release on with categories.

Since the beginning of recorded history, gold and silver have been recognized as valuable. But which precious metal is best for investment purposes? And why are they so volatile? There are many ways to buy into precious metals like gold, silver and platinum and a host of good reasons why you should give in to the treasure hunt. It has some industrial applications in dentistry and electronics, but we know it principally as a base for jewelry and as a form of currency. The value of gold is determined by the market 24 hours a day, nearly seven days a week. Gold trades predominantly as a function of sentiment; its price is less affected by the laws of supply and demand. This is because new mine supply is vastly outweighed by the sheer size of above-ground, hoarded gold. To put it simply, when the hoarders feel like selling, the price drops. When they want to buy, new supply is quickly absorbed and the gold prices are driven higher. Several factors account for an increased desire to hoard the yellow metal: When real rates of return in the equity, bond or real estate markets are negative, people regularly flock to gold as an asset that will maintain its value. War or Political Crises: War and political upheaval have always sent people into gold-hoarding mode. The Silver Bullet Unlike gold, the price of silver swings between its perceived role as a store of value and its very tangible role as an industrial metal. For this reason, price fluctuations in the silver market are more volatile than gold. That equation has always fluctuated with new innovations, including: The rise of a vast middle class in the emerging market economies of the East, which created an explosive demand for electrical appliances, medical products, and other industrial items that require silver inputs. Platinum Bombshell Like gold and silver, platinum is traded around the clock on global commodities markets. Like silver, platinum is considered an industrial metal. The greatest demand for platinum comes from automotive catalysts, which are used to reduce the harmfulness of emissions. After this, jewelry accounts for the majority of demand. Petroleum and chemical refining catalysts and the computer industry use up the rest. Platinum mines are heavily concentrated in only two countries: South Africa and Russia. Investors should consider that all of the above factors serve to make platinum the most volatile of the precious metals. Exchange traded funds exist for all three precious metals. ETFs are a convenient and liquid means of purchasing and selling gold, silver or platinum. Common Stocks and Mutual Funds: Shares of precious metals miners are leveraged to price movements in the precious metals. The futures and options markets offer liquidity and leverage to investors who want to make big bets on metals. The greatest potential profits - and losses - can be had with derivative products. Coins and bars are strictly for those who have a place to put them. Certainly, for those who are expecting the worst, bullion is the only option, but for investors with a time horizon, bullion is illiquid and downright bothersome to hold. Certificates offer investors all the benefits of physical gold ownership minus the hassle of transportation and storage. Will Precious Metals Shine for You? From an investment theory standpoint, precious metals also provide low or negative correlation to other asset classes like stocks and bonds. This means that even a small percentage of precious metals in a portfolio will reduce both volatility and risk. Bottom Line Precious metals provide a useful and effective means of diversifying a portfolio. The trick to achieving success with them is to know your goals and risk profile before jumping in. The volatility of the precious metals can be harnessed to accumulate wealth - but left unchecked, it can also lead to ruin. Trading Center Want to learn how to invest? Get a free 10 week email series that will teach you how to start investing. Delivered twice a week, straight to your inbox.

Chapter 2 : A Beginner's Guide To Precious Metals

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The Internet Industry The precious metals industry is very capital intensive. Constructing mines and building production facilities requires huge sums of capital. Long-term survival requires heavy expenditures to finance production and exploration. Technology has played a big role in the computer and internet industry, but it has also greatly changed the mining industry. Gold is the most popular precious metal for investors. As you may know, gold is a commodity, and, as such, the price for gold fluctuates on a daily basis in the commodity markets. While there is a lot of overlap between the basics of mining gold and silver, the primary focus of here is on the gold market. Gold prices are influenced by numerous variables that include fabricator demand, expected inflation, return on assets and central bank demand. Gold is strongly pegged to supply-and-demand patterns. In general, low prices result in low production, and high prices result in high production. Market forces determine price. The metals industry is not vertically integrated like other industries such as oil and energy. In the metals industry, the companies that mine the gold typically do not refine it, and refiners rarely sell it directly to the public. The industry encompasses three types of firms: These companies have very little in the way of assets. They explore and prove that gold exists in a particular area. The only major assets owned by exploration firms are the rights to drill and a small amount of capital, which is needed to conduct drilling and trenching operations. Once a gold deposit is discovered by exploration companies, they either try to become development firms, or they sell their gold find to development firms. Development firms are those operating on explored areas that have prove to be mines. The only real difference between development and exploration is that, for development firms, their area has proved to be a gold deposit. Producer firms are full-fledged mining companies that extract and produce gold from existing mines; this production can range from a hundred thousand ounces to several million ounces of gold production per year. Each operator in the supply chain has its own strengths and weaknesses. Some companies do well at extracting the metal from the earth, some refine, while others smelt and transform the commodity into a finished product. Other uses for gold include tooth filings, electronics manufacturing and collectibles, but these make up a very small portion of overall demand. Unlike other industries, companies in the mining industry come in all shapes and sizes. Much of the production is done by large blue chip companies, but the exploration side of the industry is full of junior companies looking to hit a home run with a large gold find. The mining industry has plenty of opportunities for speculators and others for income investors. Each year, it lists the worldwide mine production statistics. Increasing production rates means more supply, which ultimately means a lower price for gold - if demand remains stable. Another statistic published in the Gold Survey, scrap recovery refers to the worldwide supply of gold from sources other than mine production. This includes recovered old jewelry, industrial byproducts, etc. Futures Sales by Producers As you probably know, gold trades in the futures markets. Gold producers are constantly monitoring the prices in the futures markets because it determines the price at which they can sell their gold. The Gold Survey lists statistics on producer sales. If producers are selling an increasing amount in the futures market, it could mean that prices will fall very soon. By purchasing futures contracts the producer "locks-in" a price. This denotes gold and silver that is refined and officially recognized as high quality at least It is usually in the form of bars rather than coins. When you hear of investors or central banks holding gold reserves, it is usually in the form of bullion. This refers to mineralized rock that contains metal. Gold producers mine gold ore and then extract the gold from it using either chemicals, extreme heat, or some other method. There are different types of ores, of which the most common are oxide ores and sulphide ores. Analyst Insight The price of gold fluctuates on a minute-by-minute basis, so taking a look at the historical price range is the first place you should look. Many factors determine the price of gold, but it really all comes down to supply and demand. Demand typically does not fluctuate too much, but supply shocks can send prices either soaring or into the doldrums. The difference between production costs

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and the futures price for gold equals the gross profit margins for mining companies. Therefore, the second place you want to look is the cost of production. The main factors to look at are the following: Location - Where is the gold being mined? Political unrest in developing nations has ruined more than one mining company. Developing nations might have cheaper labor and mining costs, but the political risks are huge. If you are risk averse, then look for companies with mines in relatively stable areas of the world. Ore Quality - Ore is mineralized rock that contains metal. Higher quality ore will contain more gold, which is usually reported as ounces of gold per ton of ore. Generally speaking, oxide ores are better because the rock is more porous, making it easier to remove the gold. Mine Type - The type of mine a company uses is a big factor in production costs. Most underground mines are more expensive than open pit mines. Cost of Production The cost of production is probably the most widely followed measure for analyzing a gold producer. The lower the costs, the greater the operating leverage, which means that earnings are more stable and less volatile to changes in the price of gold. The low-cost producer has much more staying power than the marginal producer. Producers usually publish their cost of production in their annual report; this cost includes everything from site preparation to milling and refining. Aside from looking at costs, investors should carefully look over revenue growth. Revenue is output times the selling price for gold, so it may fluctuate from year to year. Well-run companies will attempt to hedge against fluctuating gold prices through the futures markets. Take a look at the revenue fluctuations over the past several years. Ideally, the revenue growth should be smooth. Debt Levels Investors should keep an eye on debt levels, which are on the balance sheet. Poor credit ratings also make it difficult to acquire new businesses. For related reading, see Debt Reckoning. Unlike buildings and machinery, gold companies have large amounts of gold in their vaults and in mines throughout the world. Gold on the balance sheet is unlike other capital assets; gold is seen as currency of last resort. Investors are therefore willing to pay more for a gold company because it is the next best thing to physically holding the gold themselves. There are a few valuation techniques that analysts use when comparing various precious metal companies. The most popular and widely used ratio is market capitalization per ounce of reserves market cap divided by reserves. This indicates to investors what they are paying for each ounce of reserves. Obviously, a lower price is better. Financing is a principal barrier to entry in the precious-metals industry, which is heavily capital intensive. Constructing mines, production facilities, exploration and development and mining equipment all require large sums of capital. This capital is required before the mine is in production. Therefore, favorable financing terms are extremely important. In short, long-term survival in the precious-metal market requires significant capital. The only supply-side issues that miners face deal with government regulations and rules. The supply of land is plentiful, but gaining approval and permits to mine the land can be difficult, especially if environmental risks are high. This translates into buyers seeking lower prices and better contract terms. Substitutes for the precious metals industry include other precious metals such as diamonds, silver, platinum, etc. These are worthy substitutes for gold, but they are not as widely accepted as gold. Gold has the advantage of being standard for a world currency, so a gold bar in the U. As other forms of precious metals such as diamonds gain popularity, they may also become more threatening as substitutes. But gold companies do compete for land. The backbone of a precious metals company is its reserves, and the only way to beef up reserves is to explore for good mining areas. Companies go to great lengths to discover gold deposits, and the discovery is on a first-come-first-serve basis. Mining USA - Here is more data and information on mining.

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Until the nation began to ramp up the dramatic economic reforms that began in , however, its role in the global economy and its standing within global commerce statistics was stunted. The economic reforms, which began with a handful of free-trade zones, have unleashed a dragon as powerful as any in ancient mythology. With an annual average GDP growth of In the basic materials sector, part of that growth as readers of this publication can attest has been fueled by scrap materials imported from the United States and other nations. Although there remain business cycles and ups and downs and notwithstanding the sub-prime-mortgage-induced crisis of , scrap recyclers have enjoyed a remarkably healthy demand for their materials for more than 10 years, and often China is a leading cause. But in business as in life, all good things must come to an end. Even as they have enjoyed the boom of the past 10 or more years, recyclers find themselves asking: What happens as some of the factors causing Chinese scrap metal, paper and plastic buyers to need this material begin to change? What might be the effects when Chinese buyers start backing away from the table, either because of reduced appetites or because they have the ability to satisfy their appetites with materials from closer to home? A nation of 1. Just five years later, in , that total had climbed to just less than 20 million metric tons, with Asia almost entirely responsible for the growth. As nonferrous scrap processors in the U. Among the more remarkable side effects has been that even after U. In previous decades, if the U. After the past several years, recyclers and traders of scrap materials in North America are paying far more attention to the health of the Chinese economy, figuring that if China catches cold, the symptoms are certain to travel overseas. The rate at which apartment towers, office buildings and transportation arteries are being constructed in China is now of utmost interest to scrap recyclers, since these metals-intensive activities ultimately rely on scrap feedstock. The ability of China to source more scrap materials within its own borders is a key variable on the supply side. On the plastics side, Wang says Chinese manufacturers led by those in the packaging, construction and appliance sectors consumed some 18 million metric tons of plastic scrap in Some 10 million tons of that 56 percent was sourced domestically but 8 million tons 44 percent was imported. High-grade supply changes are considerable, however, Engle observed. On the OCC supply side, although China is ranked as having a lower recovery rate of 60 percent for the grade, this is probably inaccurate because China is a net exporter of the boxes it makes. Likewise, the European and North American OCC recovery rates in the 70 percent range may be slightly overstated because those regions are net importers of boxes made in China and other parts of Asia. Starting with street scavengers and office cleaning crews, few recycling opportunities seem to be missed in China. There are more and more collection and baling facilities in many cities. Many of the autos and appliances that have been replaced remain in operation with a second owner, so the scrappage rate is not yet considered to be high. Inevitably, though, cars and washing machines that have been maintained by two or more owners can only delay their trip to a scrap yard, not cancel it. Post-Boom Hangovers Veteran scrap processors and traders have experienced the boom and bust cycle before, in some cases many times. In their minds, the nature of the downward cycle to come is an object of curiosity at least as much as its timing. Paper recyclers remember a very severe demand and price drop in , when a frenzy of OCC buying by mills in Asia drove the price higher before that activity ceased abruptly. In , copper prices that continue to trade near historically high levels could carry the greatest potential for damage. Since copper is traded on a continual basis at exchanges in Chicago, London and Shanghai, pricing for the red metal moves swiftly upon the release of all types of government statistical disclosures or corporate earnings reports. In February, Chinese steel mills churned out 1. A Reuters report indicated mills were ramping up operations in anticipation of greater demand for steel in March and April. In mid-March, copper pricing in Shanghai fell 0. The author is editorial director

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Chapter 4 : Precious Metals Archives - Future Money Trends

Excerpt from Statistics and Technology of the Precious Metals: Prepared Under the Direction of Clarence King, Special Agent As regards the best method for conducting such an investigation, the experience gained in this study would seem to teach that, while that employed here would produce the most perfect results under very favorable conditions, these conditions might demand an impracticably.

There can be no question that As said last week, that is one of the most important drivers for gold, next to In December, literally nobody was talking about gold. Meantime, everybody is bullish, lead by major financial institutions. Deutsche Bank is the latest major financial institution to become bullish take on gold. Even mainstream media has jumped on the gold bandwagon. Irrational exuberance is one of the words that pops up as we try to describe the scenario that is unfolding. But extreme readings offer opportunities. And we see a huge opportunity in one of the senior mining producers, It appears investors were not really amused with the speech of Mrs. From a long term perspective, gold did what it had to do: The long term silver chart is truly spectacular. The first chart below shows spot silver since the start of the bull market. The first peak in was quite incredible, but the second Never seen before, the damage is huge. Gold, meantime, is making its comeback. The yellow metal went several percentages higher in all currencies. We believe mainstream media has overly emphasized the importance of the interest rate hike. Crude oil is the most important energy asset in the Gold remains firm above its recent lows.

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Chapter 5 : Physical precious metal investments globally by metal | Statistic

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The details and data in the report will allow you to identify three important factors in the market which are products, revenue, and growth profitability. The automotive sensors procurement report offers a comprehensive overview of the market competitiveness score in terms of the performance of products and analytical data along with the statistics, which will further help you have a better understanding of the market in the best of your interest. Interested to know more about the scope of our reports? Here are the main highlights of the report: What are the main overview and scope of the products in the Precious Metals in Additive Manufacturing market? What are the revenue and sales of Precious Metals in Additive Manufacturing by type and application? Who are the main market players in the Precious Metals in Additive Manufacturing market? What are the sales data of the existing players in this market? What marketing strategies are used by the leading market players in Precious Metals in Additive Manufacturing? What are the development trends of the Precious Metals in Additive Manufacturing market? What factors affect the revenue growth of Precious Metals in Additive Manufacturing market? What are the factors adding to increasing demand of the products in the Precious Metals in Additive Manufacturing market? How is the rise in technological advancements helping in revenue growth? Does population growth also help in revenue generation? What are the criterias for the growing disposable income of Precious Metals in Additive Manufacturing market? The implications of data collected using the particular methodology is discussed here. This section also explains how the inaccuracies in the data collected will be accounted by the market analysts. Further Outcomes of the Precious Metals in Additive Manufacturing market Usually the market report sample ends with a section on further outcomes. Here ways in which the research report can provide additional benefits to the users are clearly mentioned. This section also explains how businesses can beat the competition by employing results of the market research in a unique manner. It covers the current market size of the Precious Metals in Additive Manufacturing along with the growth rate over the years. It will enable market researchers to monitor future profitability and make vital decisions for sustainable growth.

Chapter 6 : Full text of "Statistics and Technology of the Precious Metals"

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Nonetheless, the following analysis should apply to silver and other precious metals producers. Gold mining companies range from those concentrating solely on exploration, to junior producers mining a few hundred thousand ounces at a handful of mines, to senior producers mining millions of ounces via many mines located throughout the world. Our industry has a significant concentration of senior producers. Gold miners are also subject to governmental and extensive environmental regulation. Gold production is capital intensive, with producers operating under moderate debt-to-capital ratios. Increases in mineable reserves and production are primarily accomplished by exploration or acquisition, with the latter usually funded via cash and debt, though equity is issued on occasion. A direct quantitative evaluation of these reserves may not be realistic information may be incomplete or not readily available. However, an indirect valuation may be accomplished, and is often useful. This method assumes that the market value accorded the company imparts an assessment of the value of the reserves. To get a per-ounce valuation, divide this figure by the estimated recoverable ounces in reserves. However, additions at higher cost may also add value, but they would need to be particularly prospective in nature, have a low associated mining cost, or present cost synergies to existing facilities. Finally, we mention that yearend reserve statistics are measured at what is then considered a long-term sustainable price, which may differ considerably from the current quote. Moreover, the measuring price may vary from year to year. Nonetheless, most companies provide information that allows for an apples-to-apples comparison. We note that a higher measuring price will usually have a positive effect on reserves. Accordingly, development expenditures should be allocated economically, with an eye towards minimizing cash operating costs over the life of the mine. In the last few years, gold mining companies have experienced meaningful inflationary pressures in the costs of equipment, energy, labor, consumables, etc. Currency translation effects have also been a factor in this regard. Most companies present their quarterly operating statistics in good detail. Throughput statistics tons mined, etc. All else equal, the lower these expenses, singularly and in aggregate, the better. In the ensuing interim, though, bullion prices have increased at an even faster pace, which has allowed the industry to continue generating good cash flow and an acceptable return on existing mines. It is possible that this figure may rise in the future as new mines are brought into production, given the current escalation in development costs. However, a higher initial investment, if accompanied by a healthy cash flow in the early years of a property, can still deliver an acceptable return. Share Prices Gold mining stocks usually trade in line with gold prices.

Chapter 7 : Spark of Innovation - Recycling Today

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The devices detect the slightest differences in alloys and are thus also suited for the authentication of valuable specie or the analysis of complex decorative coatings. This produces an attractive, white satin sheen. The result of both methods is a veneer of much higher silver content than the substrate, which complicates the determination of the fineness, and therefore, of the value of the silverware. This works accurately for silver-plated items because the silver content in the plating is consistent. However, with blanching the silver content decreases steadily as the distance from the surface increases which makes the determination much more difficult. Blanched silver coin and enlarged image of the cross-section. The coin was cut in half to gather a depth-dependant profile for verification. The blanching of silver coins is shown in Fig. Depth dependant silver content of a halved coin. The nominal silver content is Authenticity testing of gold bullion using electrical conductivity Gold and precious metals have always been popular investment objects. This is why the demand for fast, reliable and non-destructive testing has also been on the rise. To determine the authenticity of gold bullion " non-destructively and therefore without loss of value " its electrical conductivity is measured using the eddy current method according to ASTM E By taking measurements from both sides toward the middle, the entire depth of the bullion can be measured, testing the genuineness of the fine gold. Hidden enclosures of non-precious metals with a comparable density ϵ . A penetration depth at least to the very centre of the bullion is necessary in order to detect even tiny inclusions at its core. For small ingots ϵ . Any influence of the conductivity value by various thicknesses is avoided by operating with the correct measuring range and the thickness compensation. The electrical field to determine the conductivity penetrates through the gold bullion, forgeries show different conductivity values and can therefore be easily detected, wherever they are located. Measuring the electrical conductivity is a precise yet quick method for testing " non-destructively " the genuineness of valuable items made of precious metals. X-ray fluorescence analysis XRFA is a suitable complement for accurately determining their composition. Because the buyer usually has only a few minutes to estimate the value of gold items presented for sale, methods like touchstone analysis are often used: The industry demands a precise, quick and foolproof method for testing gold content that is, above all, non-destructive. Various items potentially presented for sale to gold buyers Besides the weight, the gold content of an object determines its value. The commonly-used analysis methods pose different disadvantages for retail buyers of personal gold items: Fire assaying is time consuming and relies on chemical processes, and despite the fact that touchstone analysis also requires acids for testing, the results are still not always reliable. Because both methods damage the item in varying degrees, neither really meets the needs of the industry. Fast and easy-to-use, the XAN features excellent long-term stability and rarely ever requires calibration. Operation is as simple as opening the hood, placing the item on the inspection window, closing the hood and starting the inspection with the press of a button. In less than a minute the exact content of gold and various other elements is presented on the screen. Functionality and the minimization of running costs took high priority during development of the XAN Designed without moving parts " thus eliminating wear and tear " the XAN is truly a precision instrument meant for real-life, daily use. With this measurement system, jewelry and other gold items can be analysed quickly, accurately and non-destructively. Precious metal analysis via X-ray fluorescence for assaying offices and precious metals refineries For assayers and refiners of precious metals, material analysis instruments must fulfill exacting requirements. Just determining the precise gold content is not enough: It is important to ascertain the complete composition of the alloy, including elements like platinum or silver. In addition to reliably generating comprehensive, accurate, and reproducible results, the ideal analysis procedure should also be fast, easy to use, and " of course! Fire assaying cupellation is the traditional method for determining gold content, whether for gold bars, coins or valuable jewellery. Fortunately, the well-established X-ray fluorescence method XRF provides an excellent alternative for

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analysing the content of precious metals without damaging the object. Providing precision rates of 0.

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Chapter 8 : Industry Overview: Precious Metals

Precious metals, such as gold, silver and platinum, are among the most valuable commodities worldwide. The value of the materials is determined by their relative scarcity.

What Are Technology Metals? As a relatively new term, coined by Jack Lifton in and now widely used in the industry, there are probably a number of alternative definitions out there. There are of course numerous other uses and applications of these metals. Almost all technology metals are byproducts of the production of base metals, with the exception of the rare earth metals, as a group, and lithium. Prior to World War II, there were many metals for which there were no practical uses. They were literally laboratory curiosities available only in small quantities, obtained at high costs in both time and money. Nickel after that rapidly became a high volume production metal. In the first few years of the 20th Century, malleable tungsten was developed at General Electric and it rapidly displaced all other materials for use as filaments in incandescent light bulbs. Tungsten production increased, and shortly thereafter tungsten steels were developed and used, at first for military armor and armor piercing projectiles. Tungsten carbide for cutting tools soon after that revolutionized precision machining, just in time to make mass produced engines a reality. Aluminum was then more expensive than gold. Keep in mind that only a lunatic or a visionary would have predicted in , that common people would cook with aluminum pots and pans less than a century later, and that even in the idea of nickel stainless steel kitchen appliances for the masses would have been considered fantasy nonsense. World War II transformed a sleepy academic discipline, the study of the physical properties of all of the metals, into modern metallurgy with its emphasis on developing end uses for metals based not just on their properties as structural materials but even more important, on their newly categorized electrical, electronic, and magnetic properties for use in technology. Fifty years ago, it was unclear which, if any of the then minor metals would be most useful for practical mass producible technologies. Prior to World War I, only the structural, decorative, simple electrical transmission and storage, and monetary metals were well known even to the metallurgists of the day. The last naturally occurring metal to be discovered was rhenium and that was only in . What no one knew between the wars was that it would be important to know which, if any, of the little used minor metals could in fact be produced in significant volume at a significant yearly rate of production. There was no need for any such information, certainly not in academia, where most of these studies would be then undertaken. The equation was simple; no use equals no demand and therefore no attempt to supply in quantity. World War II was the single most important driver for the transformation of the minor metals into the technology metals. Economics as a limitation to innovation was put aside and national security became the only driver for the development of the technologies for jet and rocket engines, radio and radar, electronic computing, and super weapons. The chemical engineers then began systematically to learn how to find, refine, and mass produce the formerly minor metals, now desperately needed for war technology. After the hot part of World War II ended, a 50 year long Cold War immediately ensued, during which the postwar uneconomic overproduction of minor metals for the new technologies continued, and the increasingly surplus production was diverted to high volume civilian consumer uses, spun off from technologies developed for the military on a cost plus basis. So, at the same time, today, that we have become totally dependent on the technology metals for the mass production of necessary consumer goods such as miniaturized electronics, large scale television and cinema displays, electronic data processing, and personal communications,. The problem is that the bulk of the technology metals is now used for civilian production and the military instead of catalyzing the supply and taking a priority position, is now simply another customer. Estimated global production of various metals in [technology metals are in red:

Chapter 9 : Kitco Commentary

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