

Global Gold Production

There is no denying gold's store-of-value relevance throughout the history of the world. It has been and will always be the ultimate form of currency. Even today gold's alluring and timeless qualities transcend every political, social, and monetary boundary that man puts into place. Gold's core fundamentals will forever be rock solid.

Another key element to gold's fundamentals is simple economics. And it is economics, supply and demand, that will always dictate gold's price over time. On the demand side we have seen a big increase over the years due in large part to population growth and ease of access.

Gold is not just a metal for kings anymore. Over time a large global distribution network has been built that sells gold, in small or large quantities, to anyone who wants to buy it. And with such a rapidly growing world population, especially in the last 100 years, a greater number of people want to own this precious metal.

On the supply side, the onus is on the miners to bring enough gold to market to meet demand. But the miners can't just turn a spigot and spew gold at will. One of the many reasons why gold is precious is its rarity. Simply put, this metal is hard to find. And when it is found, economically extracting it from the earth presents its own challenges.

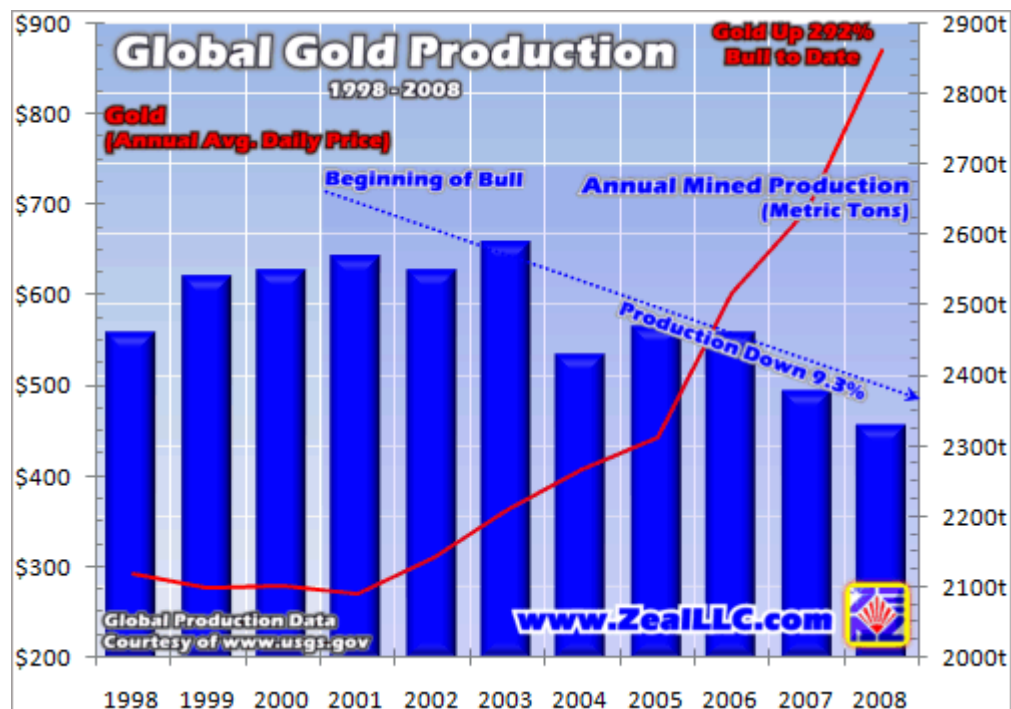
So far the miners have been able to supply gold to the people. But they've really had to ramp up their efforts in the last century to meet skyrocketing demand. Interestingly *over 80%* of the gold mined in the history of the world has happened since 1900, with over two-thirds of this volume in just the last 50 years. We've also seen a *double* in world production just since 1980. This massive production increase is driven by the demand of a growing populace hungry for gold!

But will the mining industry constantly be able to keep up with growing demand? I'll give my opinion on the answer to this question in a bit, but in the mean time I'll say it will continue to be a growing challenge. Mining gold is not as simple as harvesting a crop. This yellow metal is finite, once it is mined there is that much less remaining hidden in the earth.

And these miners have the same geological landscape to work with today as those miners thousands of years ago. The only difference is the low-hanging fruit has already been picked. Gold producers must now search for and mine their gold in locations that may not be very amenable to mining. Many of today's gold mines are located in parts of the world that would not have even been considered in the past based on geography, geology, and/or geopolitics.

And these factors among many are attributable to an alarming trend we are seeing in global mined production volume. According to data provided by the US

Geological Survey, global gold production is at a 12-year low. And provocatively this downward trend has accelerated during a period where the price of gold is skyrocketing.



You would think that with the price of gold rising at such a torrid pace gold miners would ramp up production in order to profit from this trend. But as you can see in this chart this has not been the case, at all. Not only has gold production not responded, but it has dropped at an unsightly pace that has sent shockwaves throughout the gold trade.

As the red line illustrates gold's secular bull began in 2001, finally changing direction after a long and brutal bear market drove down prices to ridiculous lows in the \$200s. To match this bull the blue-shaded area provides a picture of the corresponding global production trend. And you'll notice that in the first 3 years of gold's bull production was steady. This is not a surprise as you figure it would take the producers a few years to ramp up supply.

But instead of supply increasing in response to growing demand and rising prices, it took a turn to the downside. And what's even more amazing is the persistence of this downtrend. Since 2001 gold production is down a staggering 9.3%! In 2008 there were 7.7m fewer ounces of gold produced than in 2001.

Now from an economic perspective this chart clearly displays the supply side of the imbalance that has shaped this bull. And with gold demand on the rise it is natural for prices to trend higher. But with particular focus on this supply side,

let's try to gain an understanding of what this trend may mean for the future of gold.

In my eyes there are two strategic reasons why production is down. First are the growing challenges that gold miners are faced with today. And second is that prices are *not high enough* for gold companies to make the structural changes necessary to ramp up production.

As for the challenges, these come in all shapes and sizes. And these challenges are quite important to understand. I've dedicated entire essays to [gold mining challenges](#) in recent years, so I won't exhaust the subject here. But I will provide a couple of interesting examples.

One of the largest-scale examples is South Africa. SA had long been the world's premier gold producer. As recent as 1970 this country was responsible for *over two-thirds* of global gold production, producing a whopping 32m ounces that year. Its massive gold deposits that knife through the earth's crust have been the source of a large volume of rich high-grade gold.

But as mentioned above the low-hanging fruit has now been picked. South Africa's easy-to-access near-surface gold zones have been depleted for the most part and the economics are not as robust pulling gold from deeper in the earth. There are other external factors that have contributed to SA's gold mining woes such as currency and power issues. But the fact is less near-surface gold and higher operating costs to mine the deeper gold have led to the fall of South Africa's gold mining dominance.

Interestingly South Africa's rapid production decline was a big impetus for the previous secular gold bull of the 1970s. By 1975 SA only produced about 23m ozs, a nearly 30% decline from 5 years earlier. With such a big drop from the world's largest gold producer there was ample reason for the price of gold to rise.

This trend of declining gold production from South Africa has continued through current. And after such dominance it is amazing that it is no longer the world's largest gold producer. In 2007 China took over the top spot and then in 2008 the United States even passed it by. SA is now number three with Australia right on its heels. In 2008 it produced just over 7m ounces of gold, a staggering *77% drop* from 1970 levels and its lowest volume in *86 years*.

Well with global gold production obviously growing since 1970, the rest of the world has picked up South Africa's slack. And interestingly it is technology that has enabled this to happen. The mere mention of this technology drives environmentalists crazy, but heap leaching has revolutionized the gold mining industry.

Leaching gold out of ore is not a new or complicated chemical process, but its utilization on a large scale has radically changed the face of mining for gold. Newmont Mining was the first company to roll out this technology on a large-scale basis in the early 1970s, utilizing it at its operations in Nevada's prolific Carlin Trend. And heap leaching is now used at the majority of large-scale gold mines throughout the world.

Having had the chance to tour a massive heap-leach gold mining operation first hand, I must admit this technology is quite impressive. Essentially mined ore is crushed to a certain size and then placed on a giant leach pad. The ore is then irrigated with a leach solution (for gold this solution is diluted cyanide) that dissolves the gold out of the ore. After eventually percolating to the bottom of the leach pad this solution is collected for processing.

This leach pad can be thought of like a super-large bath tub. It is lined with a thick layer of plastic, and when the ore is "cleaned" of its gold the bathwater is drained and sent off for processing. The gold is eventually converted back to its physical form via a variety of processes and becomes the shiny yellow metal you see today.

Heap leaching has allowed miners to tap lower-grade gold deposits that would not have been economical prior to this technology. I can't imagine how high the gold price would be today if heap leaching wasn't available. But even with this technology and others, it is still getting harder and harder to find the big gold deposits that will eventually become the next generation of mines.

Finding these deposits requires large-scale exploration efforts. And exploring for and eventually developing gold mines demands massive amounts of capital. This is a major reason why gold bulls are secular in nature. Gold prices need to be high enough, for long enough, to give mining companies the incentive to perform gold exploration and development.

Coming out of a bear the miners were settled into a prolonged period of low prices where there was no incentive to spend money on exploration. And after years of neglect in this area the pipeline of major gold discoveries and mine development projects runs thin. It can take up to 10 years and billions of dollars to build a large-scale gold mine. So perhaps it is no wonder production lags in the first part of a gold bull, such as we are seeing today. It can be looked at as a bear-market-recovery period.

But even though it takes a while to react to higher gold prices, it is still a concern that gold production is continuing to fall 8 years into this bull. And you don't have to look too far at the individual mining companies to see that this problem is industry-wide. We have seen a lot of consolidation in this bull market, with a flurry of M&A activity. But even the miners at the top of the heap, those

seemingly at the vanguard of the M&A food chain, have experienced material declines in their production volume.

The world's four largest gold miners combine to produce over one-quarter of the annual mined supply of gold. But amazingly Barrick Gold, Newmont Mining, AngloGold Ashanti, and Gold Fields have 2009 production forecasts that are *20% lower* than total volume from just 3 years ago. These four majors will collectively produce *5m ounces less* gold than they did in 2006!

There are a myriad of reasons why this is happening across the entire gold mining industry. Whether operational, geological (lower-than-expected grades), geopolitical, environmental, or countless other reasons, presently operating gold mines are producing less and new mines aren't being brought into production fast enough to replace the depleted ones. This is a simple formula for lower overall production.

In terms of the overall economic balance there has long been a large gap between mined supply and total demand. And while this gap has been filled by other major supply sources such as scrap sales and central bank sales, this falling production volume does not bode well for the future balance of the gold trade.

If you are interested in perusing formal supply and demand data on the gold trade, I encourage you to look at that which [GFMS](#) puts together for the [World Gold Council](#). Not surprisingly there have been structural supply deficits over the course of gold's secular bull. And while this recent global economic crisis has lowered gold demand on the fabrication front (jewelry and industrial) and increased scrap supply from folks trying to cash in on gold's price strength, it is investment demand that is really going to drive the remaining years of this bull.

And even though investment demand is on the rise, we have only seen the tip of the iceberg considering the rampant inflation fears that will take hold of the markets sooner rather than later. The central banks and scrap sellers will only be able to supplement mined supply so much.

Scrap sales in particular are the second largest supplier of gold, far more than central bank sales. And a good portion of the recent surge is a result of distress selling. This type of selling will quickly be exhausted. The poor souls willing to pawn their jewelry and ornamentals to raise cash will eventually run out of such items to sell. And many of these folks will be buyers again when they realize it is not the end of the world and remember why they owned gold in the first place.

Ultimately it is gold mining, which is responsible for about 60% of total supply, that will carry the burden of meeting what will continue to be growing investment demand. And to answer the question above, yes, the mining industry will be able to keep up with demand over the long run. But the key is, only at the right price.

Even though there has been a lengthy production decline, the world is not running out of gold to mine. And it is not likely that we have seen a peak in mined production. Now the low-hanging-fruit idiom is very important to understand in regards to the future of this industry. It *will* be more expensive to extract the lower-grade gold that the miners of the past have left us with, but there is still plenty left. Heck, if the price was high enough gold could even be extracted from ocean water. It is all a matter of perspective.

And from what I can see the perspective of today's miner is that the gold price is not high enough and/or has not stayed high enough for long enough yet to warrant any semblance of a growth spurt in this industry. Now this gold bull has ramped capex for exploration up over the 1990s. In the previous decade there was practically no such thing as exploration budgets as those miners that survived had to do just that, survive.

But there have been some impressive gold discoveries in recent years. And there has also been renewed activity at the sites of earlier discoveries that have become economical at this higher gold price. But there has not been a rush to develop operations and bring mines into commercial production. Some of this has to do with the lagging effect that I mentioned above, it just takes time to bring mines online. But miners also want to see consistently higher gold prices before they invest the massive capex that it requires to construct mines.

As an investor there are many ways to take advantage of what will likely be a resurgence of gold production in the latter half of this bull market. First is actually investing in gold. If demand continues to rise, driven by investment, simple economics tell us the price of gold has to rise if supply from the mining side continues to be strained.

Another way to invest is in the stocks of these mining companies. Investing and speculating in gold stocks is riskier than doing so in the physical metal. But because of their profits leverage they offer excellent reward potential. The gold miners that are able to control their operating costs and leverage gold's gains should see their stocks greatly outperform the gains of the underlying metal.

At Zeal we have been trading gold stocks since gold's bull began in 2001. And over this time this sector has been one of the best-performing in the entire markets. We also loaded up on gold stocks in their extreme weakness around the lows of the stock panic. And so far these trades in our [weekly](#) and [monthly](#) newsletters have excellent unrealized gains.

And there is ample opportunity to buy gold stocks even today as they are still [undervalued](#) relative to gold. Gold is pushing forward on its [quest](#) to pierce the \$1000 barrier and beyond, which should happen this year. And if this happens gold stocks should post awesome gains. If you are looking for a contrarian

perspective on these wild and crazy markets and would like a peek at our trades, please [subscribe](#) to one of our acclaimed newsletters today.

The bottom line is global mined gold production has fallen at an alarming rate since the beginning of this gold bull. Even though ramping up volume in an infrastructurally-challenged industry is going to lag gold's price rise, this trend must reverse soon if supply is to meet growing demand.

The gold mining industry is indeed faced with a growing number of challenges in producing its product. But these challenges can be overcome if the price is right. And the only way gold miners are going to invest the huge capital it takes to build enough new mines to grow this industry is if the gold price stays high and continues to rise. Ultimately the stocks of the companies tasked with boosting gold production will thrive throughout the course of this secular bull.

Scott Wright

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