How golden are your GOLD and SILVER stocks?

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Tools for Effective Gold & Silver Investments

Some stocks offer you more exposure to the price of the yellow or white metal,than others. From that point of view some stocks might indeed be called more golden than others. But how do you know which ones to pick? The short answer is that we have designed two tools specifically to help you. The possibilities of the Golden StockPicker and the Silver StockPicker allow you to access important data regarding leverage simply and quickly. Why we use trend lines at all? Instead of seeing a full chart with all data, we prefer to know the mathematical equation that gives us a sense of order in these volatile markets. Watching precious metals and equities on a daily basis may cause you to lose your perspective and to act emotionally with your money.

By using trend lines we can separate our analysis from our emotions. If we agree that the trend in a particular stock is best reflected by a specific trend line, we might view this line as the set of prices this stock would have without any emotional factors you are only a few clicks away from these tools and you can go our Tools section and try them out for yourself. They – and the rankings they create - are updated on a daily basis. But, if you want to make the most of the tools and to understand the theory and practice behind them, please read on.

Exposure

We need a method in order to find out how much exposure to the price of gold a particular stock may have and compare it with that of other companies. One way to do this is to dig into the company's profile, balance sheet, profit and loss statement, cash flow statement and other documents. In addition we may want to establish the levels of fixed and variable costs involved, study the company's policies and look into environmental laws that may be pertinent. Sometimes, after you do all that research, situation changes dramatically and/or the market does not agree with you and values the stock differently for a long time. This is one of the reasons that we will not use these methods. We will take a different approach and what the market thinks about a particular stock. If it's true that all the relevant information is discounted in the price, then perhaps we can infer the information we need straight from the price itself. We can do so by performing some statistical calculations on the prices the market gives us. We have decided that the best measure here would be the R – square coefficient.

From the definition (source: Wikipedia): R - square is the coefficient of determination. It is the proportion of variability in a data set that is accounted for by a statistical model. In this case, R - square tells us how much of particular gold stock's price is explained by the price of gold. In other words, it suggests how much of the stock's price is exposed to gold or silver and how much to other factors. Generally, you probably want to invest in a company whose price depends mainly on the price of gold, not on any other factors. You want a company that uses its resources to produce a profit from its precious metals operations, not from other activities. Of course, it makes sense for some companies to seek alternative profit sources - for example there are times, when some of the America's biggest car producers would not be making a profit if it weren't for their financial operations... BUT, after all, you wanted a GOLD stock, right? The closer R - square gets to 100%, the more exposure to gold a particular company has.

Before we proceed with our analysis of the R – square coefficient, we have to digress a bit.

You have to be very careful when applying statistical tools and measures to finance. Sometimes the assumptions used don't correspond to the financial reality. Even if they do, or the error you would have made by using them is really insignificant, you can't be sure that the model gives you what you are looking for. It is common that the author of a particular publication makes the calculations on some data that is not really relevant, or the reasoning behind choosing a particular model is not explained. Not only is this confusing as it is more difficult to understand a particular topic if one does not know the author's assumptions, but it can also be misleading. For example, the reader might not be aware (Why would he? Not everyone needs to be on the cutting edge of statistics or mathematics) of the fact that there were actually many models from which to choose. Choosing similar (but different) sets of input data can lead to dramatic changes in the results and thereby greatly influence their interpretation.

This article will feature some statistical measures and their basic transformations. We will try to explain our methodology as clearly as possible.

Before presenting the results of our calculations we would like to tell you a little more about the way we have constructed our models. First, let us show you how tricky it can be to focus solely on pure numbers. We have already stated that R – square tells you which stock price is explained to a greater extent by the price of gold, so you shouldn't have any trouble playing a little game with these coefficients. Please

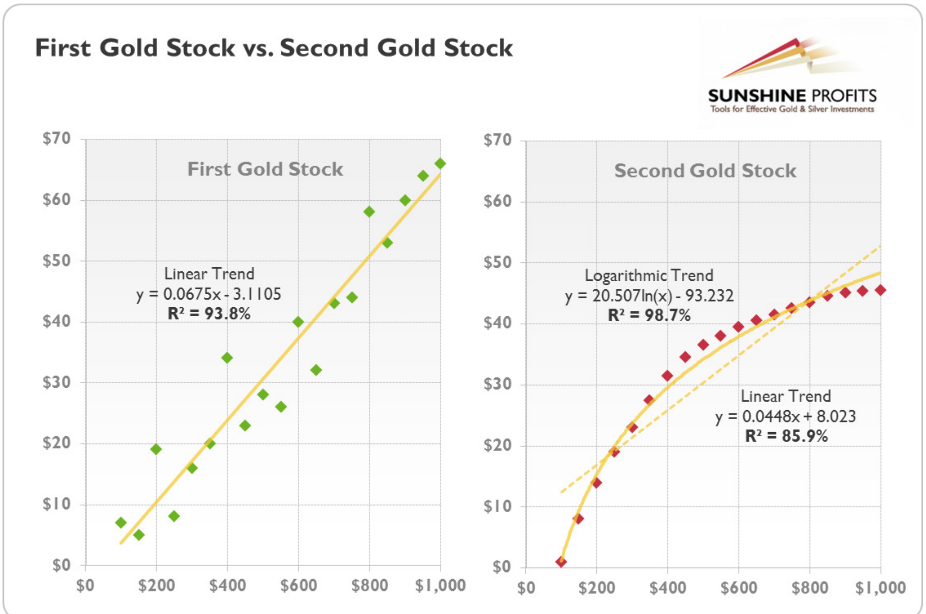

Chart 1: Comparing different trendlines

take a look at the charts below (*Chart 1*). They both represent the relations between two theoretical gold stocks and the price of gold. We have calculated the trend lines for linear models for both stocks (on the Second Gold Stock it's the thin, dotted line) and the respective R – square values. Without looking at the answer right now, try to answer the following question:

Which of these two precious metals stocks is better explained by the price of gold?

So? What is the correct answer?

If you've pointed the Second Gold Stock as the one that has been better explained by the price of gold, then congratulations, you were right. The R – square value is higher in case of stock A only if we look only at the linear relations. If we allow ourselves to calculate this coefficient for different models it becomes clear that the amount of "noise" on the chart with the Second Gold Stock is smaller than in case of the first company. It's not linear, but... who said the relation between gold and gold stocks must be linear?! It does not. In many cases, a company's profits does not relate so directly to the price of the metal itself. This is because many external (not linked with gold or silver directly) factors are involved. Both variable and fixed costs differ from company to company, marketing strategies give different results, management has different pay schemes, and so on. Those were only the differences in profits. Now take into account different dilution of shares and you get the idea why the assumption of linearity is not always fulfilled.

Since R – square can be calculated for various models, we will present you with our results of calculating these coefficients for models we believe to be most accurate. Before you choose your favorite gold/silver stocks and put your money on the table please note that using R – squares obtained from different models may be misleading at times. R – square, as such, tells you how well a particular model reflects a specific dataset. However, higher R – square values may not always mean exactly that a particular gold/silver stock is more influenced by the price of gold/silver (as it was in the case of the above theoretical gold stocks). If stock A has higher R – square than stock B, it may also mean that the model applied to stock A suits it better, than the model applied to stock B suited stock B. You need to be careful when comparing similar values of this coefficient. R – square is always calculated for a particular model. Therefore, R – squares' comparability is limited. We take the view that you can compare stocks only if the difference between coefficients is significant. For example we would not differentiate between stocks that have R – squares of 71% and 73%, but we certainly would between stocks with coefficients of 30% and 80%.

Having said that let's show you an example of how our Golden StockPicker works on one of the stocks that is most influenced by the price of gold, a stock that can give you big bang for the buck.

Below you will find a chart (*Chart 2*) which shows the relation between the price of gold and one of the well-known gold stocks – Royal Gold, Inc. (RGLD). Please take a moment to study the chart before you continue reading.

As you can see, the chart covers data for both gold and RGLD back to the beginning of 2006. That was the time when gold broke out of its trading range in euro and stayed above previous resistance long enough to attract new capital. One might argue whether this is the precise time when the second stage of this bull market began (some prefer to think of the breakout date as the exact beginning), but choosing this date has also additional advantages for our analysis.

The beginning of 2006 is also the moment when prices of precious metals reached important levels: $550 for gold and $10 for silver. Once these milestones were achieved, prices accelerated and peaked a few months later. Since then we have endured a long consolidation phase, during which these important milestones were tested and verified as new super-strong resistance levels. This also supports the assumption that we will not see these levels breached to the downside in the near future – at least during the second phase of this bull market. Of course everything is possible in these volatile markets, but some events such as this one are very unlikely.

Based on the price of gold and the respective RGLD share price, we calculated and attached the trend line which best represents the relation between both variables. Now, let's focus on the shape of the trend line. Please note that the thin red line rises exactly at the same pace for every dollar move in the price of gold. For the record – that is a linear trend line. (Trend lines don't always have to be linear.)

Remember the chart we used to compare two hypothetical gold stocks? The thick line calculated for the Second Gold Stock was in fact a logarithmic trend line. This type of trend line rises at a higher pace at lower gold prices, but it slows down considerably as the price of gold rises.

Now, let's get back to our chart of RGLD. We've taken into account several types of trend lines and found that the aforementioned linear trend is the best to represent the data that goes back to January 2006. So, the share price of RGLD since 2006 can be best described using the linear model. We can say that, because we've checked R – square values on the same data for different models.

So far we've chosen from linear, logarithmic, power and exponential trend lines. The linear model gave the highest R – square value among all models. **R – square of 77.6% means that in this**

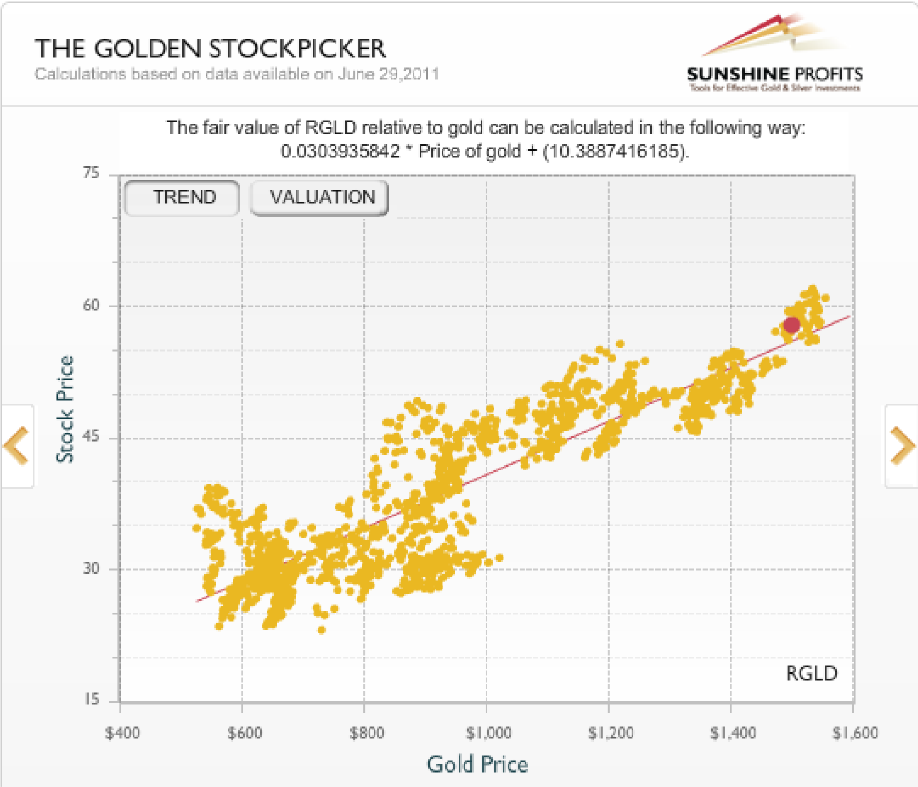

Chart 2: Performance of RGLD relative to the performance of gold (long term)

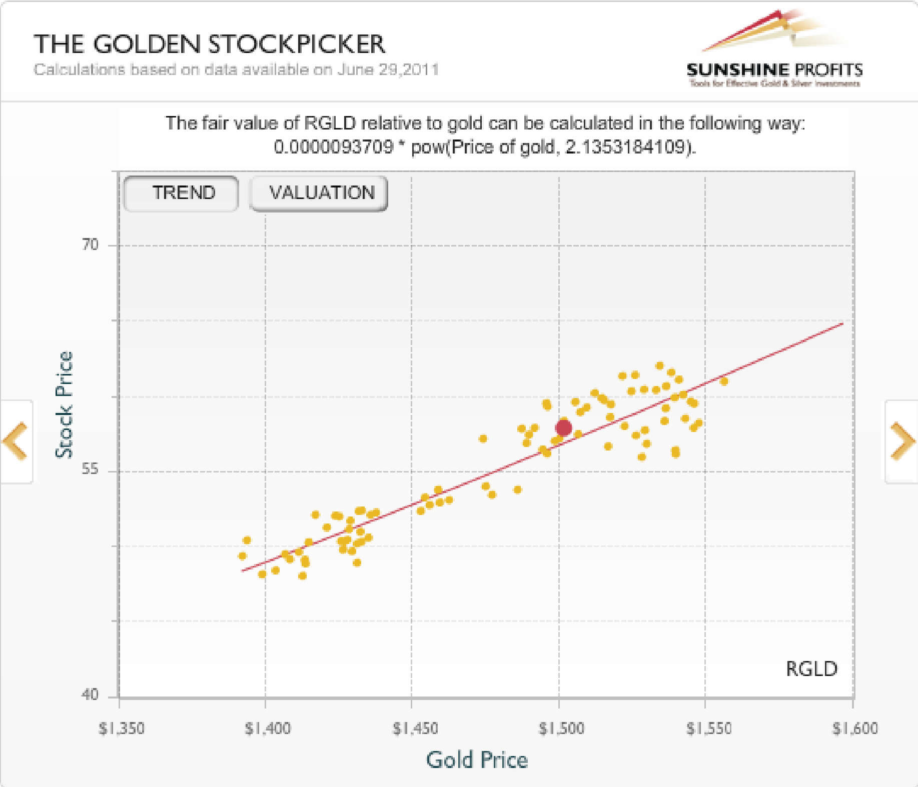

Chart 3: Performance of RGLD relative to the performance of gold (medium term)

model the price of gold accounted for 77.6% of the RGLD's price movement. This is a good result in the long term – if you're looking for stocks with direct exposure to gold, you may consider putting RGLD into your portfolio.

In the search for a coefficient that might better match the current price movement, we have separately calculated the medium-term trend line and R – square (by medium-term we understand a period of last three months). The results of these calculations are to be found on the chart above (*Chart 3*).

The thin red line on the above chart of RGLD represents the trend line which is based on the data exclusively from the last three months. This time **the trend line is a power trend and the R – square value equals 86.2%**. It seems that the company might have gained some exposure to the price of gold, however, the difference between both R – square values is not extreme. The true implications of these values will emerge as we compare them with the results for other gold stocks.
We already know what information we might infer from the value of the R – square coefficient, now we have to be sure that we know what this coefficient does not tell us.

R - square does NOT tell you how much leverage to gold a particular gold stock has. It informs you exactly what percent of past observations (stock prices) have been explained by the price of gold in a particular model and that's it.

Leverage

If you want to know the real leverage, you need to find out exactly how much percentage-wise (theoretically) does a particular gold stock move if the price of the underlying asset (gold) rises by 1%. Choosing the coefficient that decides the slope of the trend line (0.03 in the case of RGLD in the long term) as a measure of leverage for the whole bull market, can be misleading. That means that for every 100 dollar rise in the price of gold, the price of AEM should increase on average by $3. Unfortunately that is not comparable to the coefficients of other stocks, as the nominal prices of stocks are different.

Imagine you have stock A that trades at $100 with a slope coefficient of 0.5, and stock B that trades at $1 with a slope coefficient of 0.1. Which one of them has higher leverage to the price of gold? Remember the slope coefficient tells you how much the stock will gain in dollar terms if the underlying metal rises by one dollar. The answer is stock B. That is the case, since when gold rises by $1 the price of stock A rises by 50 cents which is 0.5%, while stock B rises by 10 cents which is 10% of the stock value. If you want to be leveraged, which stock would you prefer - the one that moves by half percent with every dollar move in the price of gold or the one whose magnitude of movements is 20 times as big – the stock which moves by 10% percent?

Of course the answer is: stock B.

Therefore we have transformed the slope coefficient of RGLD's long term (since 2006) trend line so that it can be comparable to the coefficients of other stocks. The result is about **0.82%**. Please note the word "about" – we cannot say accurately, because in the selected (linear) trend line, the leverage is constant in dollar terms, but if we take into account the share price and the price of gold, we get beta (leverage), which takes diverse values for different gold prices. In fact, only the leverage calculated for power trend lines is constant in percentage terms. Calculating the leverage for a specific gold price is not much of a disadvantage, since non-linear models have different slope coefficients for different gold prices, so the distinction between different prices and following different betas would have to be made anyway.

An astute reader might ask about the slope coefficient, as for example logarithmic function does not have one defined slope. This is why we take the slope at an exact price of silver. For one precise point

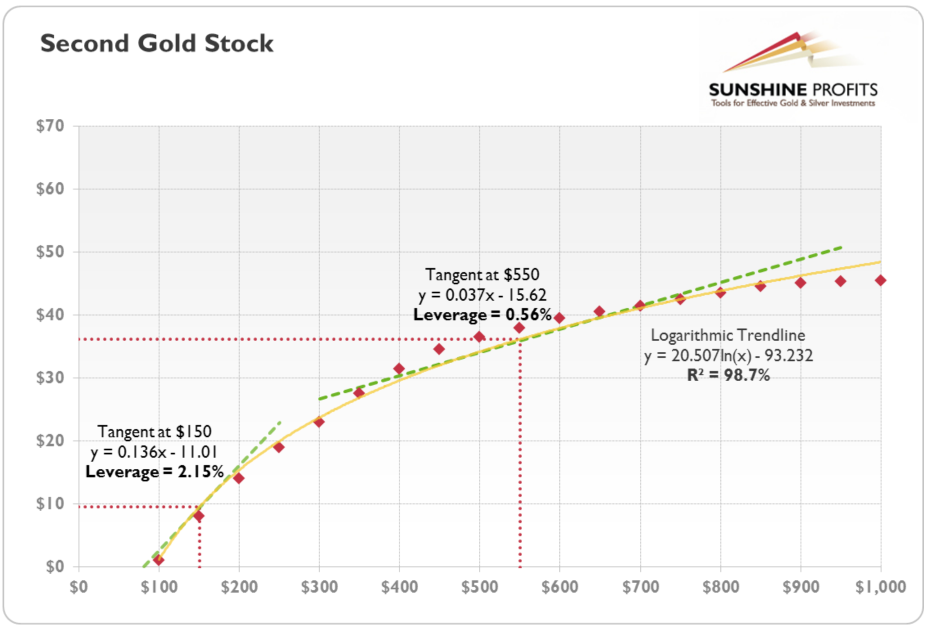

Chart 4: Changes in leverage in the case of a logarithmic trend line

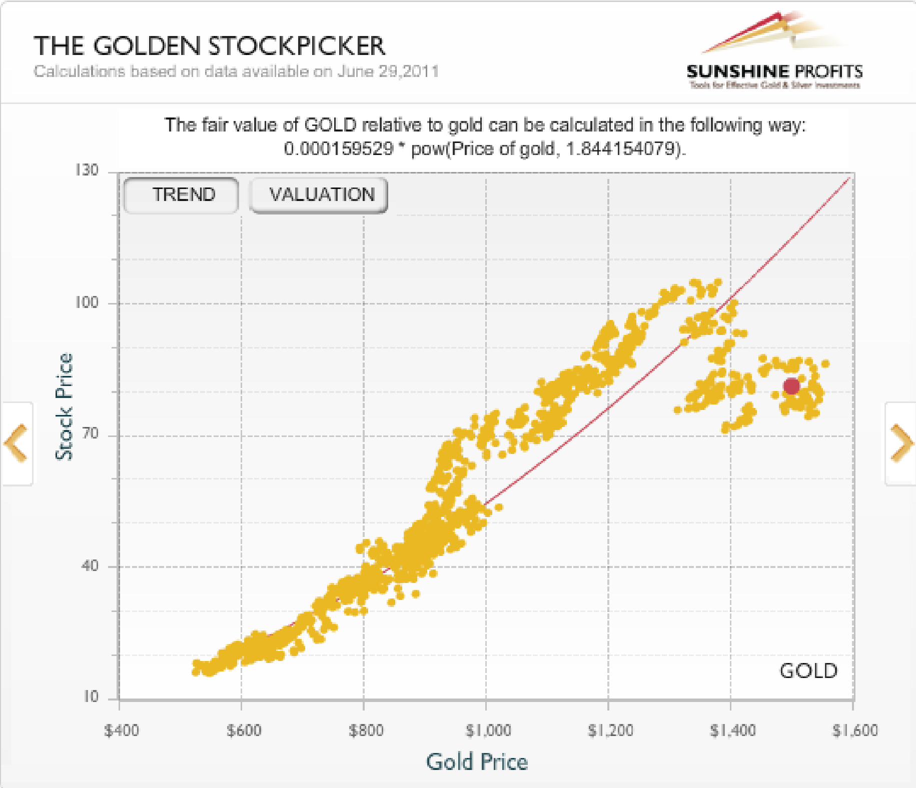

Chart 5: Performance of Randgold relative to the performance of gold (long term)

we might calculate the slope coefficient for the tangent of the trend line.? Please take look at the following chart (*Chart 4*) – we used the same theoretical data as in the earlier example:

Please note, how the leverage changes along with the slope of the tangent, which of course changes along with the price of the underlying metal (gold in this case). Although the price of the Second Stock is very well explained by the price of gold (R – square = 98.7%), the leverage that the company has to offer is very discouraging at higher gold prices. With gold at $550 the price of this stock will rise on average by about half percent, when gold moves one percent up. One could even say in a sarcastic tone, that it is the gold that has leverage to this stock, as it outperforms it without the inherent risk that the stocks carry.

What are the implications of all this for gold stock and silver investors and speculators? The first consequence is quite obvious – you need to know the time frame in which you want to invest or speculate. In the above example if the price of gold were at $100 and you would want to bet your money on the move to $200, then this stock would be great. On the other hand, if the current gold price were $800 and your strategy was to hold this stock until gold reaches $1000 then you should probably consider other options.

Our research shows that when it comes to gold and gold stocks during the second phase of the bull market, they are best characterized by the linear, power and logarithmic trend lines. As we stated earlier, power trend lines mean that the stock's leverage to metal (gold) does not change percentage-wise. For other types of trend lines the leverage (beta) changes along with gold prices.

Here's how you can deal with these conditions for different strategies.

For short-term trades (for example for a 50 dollar move on the price of gold that you expect to take place within the next couple of weeks) you will not make a big mistake by choosing stocks basing your choice on their current betas.

For medium-term transactions you may also stick to current betas, as long as you make sure that the leverage will not change dramatically during the time you want to hold your position.

If you plan to hold your stocks for some time (and take advantage of a large up leg in precious metals) it might be a good idea to take into account the leverage for the average price of the metal (for RGLD this is naturally gold). So, if you expect the price to go from $800 to $1200 you might want to first check the leverage for both $800 and $1200 and then the leverage for the average price – $1000 in this case. A small difference between the beginning and end values tells you that the leverage is fairly stable in this price range and that you really don't need to make any adjustments – results are informative enough.

If there is a huge difference between leverages for a particular stock, you should calculate them manually. That means putting the initial and final price of silver for your transaction into the equation of the appropriate trend line. Then you have to see how much percentage-wise your stock would rise and compare it with other stocks for the same rise in the price of silver. The one which rises most (percentage-wise) is obviously the most leveraged. You can do these calculations roughly reading the values from the charts (not precise) you may find in this article, or, you can use the Tools section (which we recommend) on our website to get gold stock ranking for

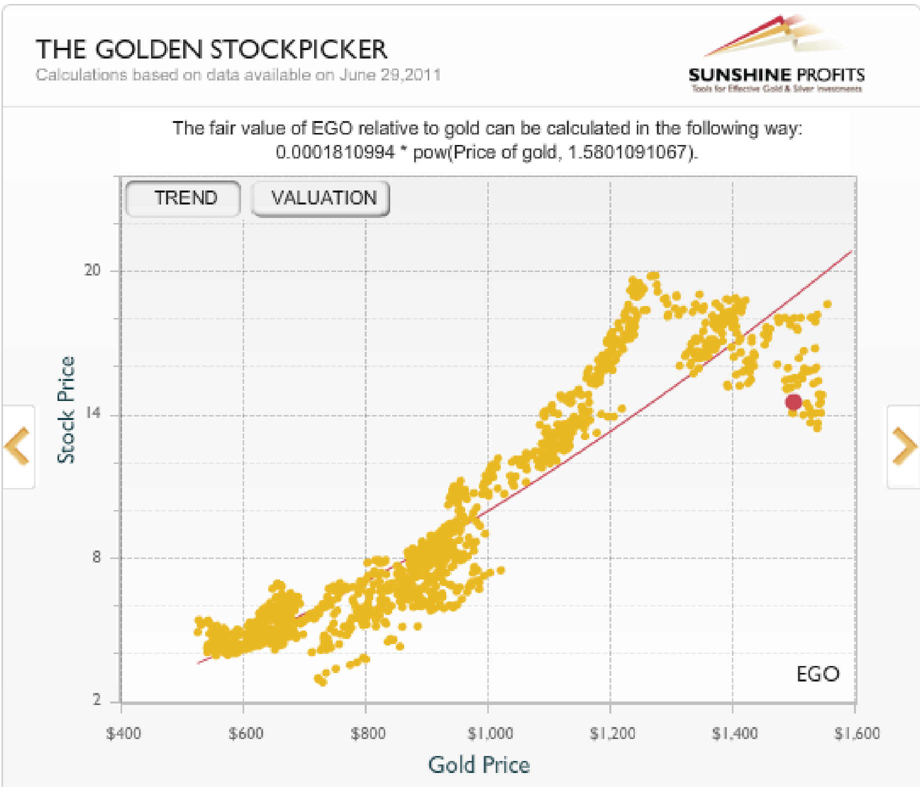

Chart 6: Performance of EGO relative to the performance of gold (long term)

any gold price.

Without having proper (sometimes non-linear) trend lines and without realizing that the leverage usually changes along with the price, your chance of picking optimal stocks for your portfolio is limited.

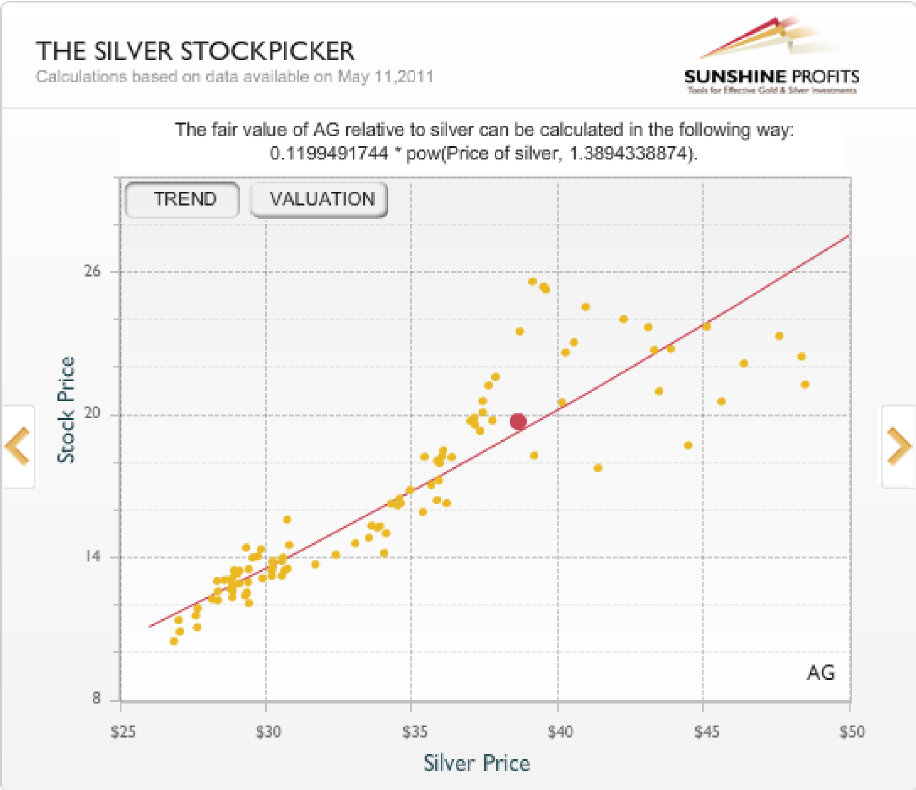

Chart 7: Performance of AG relative to the performance of silver (long term)

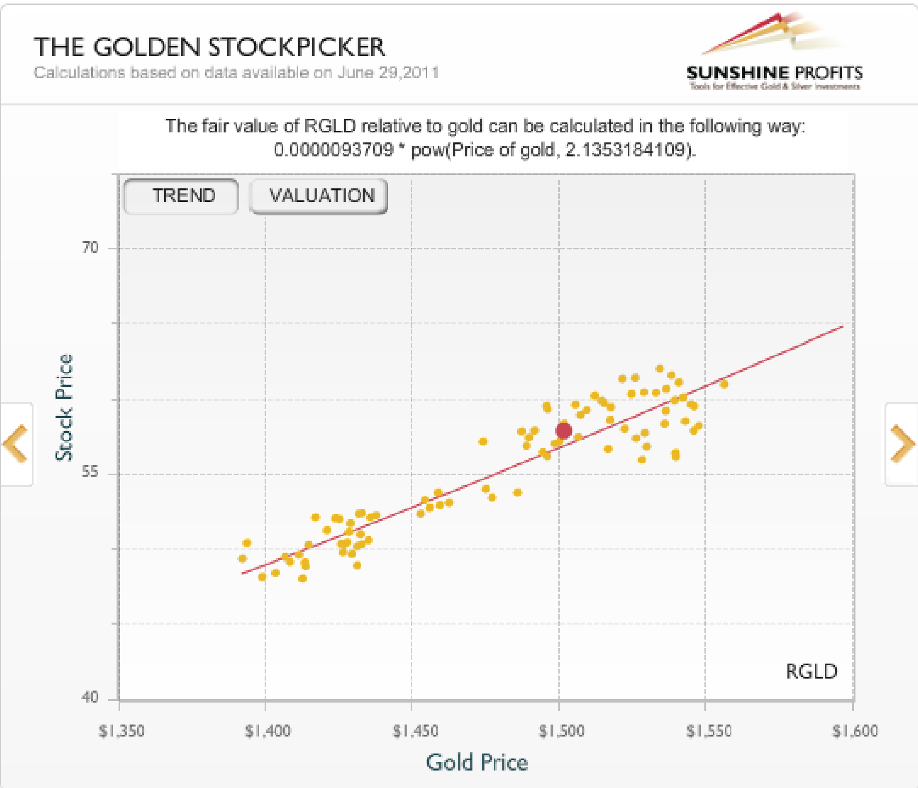

Chart 8: Performance of RGLD relative to the performance of gold (medium term)

Stocks: Long Term

All the numbers we have mentioned prove useful when comparing gold or silver stocks, but they don't give us the clear picture of the whole shape of a particular stock's performance along with rising (or falling) gold prices. In order to fully grasp a stock's performance, it's always best to see the whole picture. Making specific predictions and extrapolating current trends in also a lot easier when having charts in front of you. Well, we won't keep you waiting any longer. The charts below present some of the gold and silver stocks which were included in our research.

First, we will focus on the long term. The chart (*Chart 5*) presents the results for Randgold Resources Ltd. (the ticker for this company is GOLD, but we will refer to it as "Randgold" so to avoid confusion with the precious metal itself).

If we take into account only the second stage of the bull market (since 2006), this stock is really outstanding. No other company has achieved a combination of so high a R – square value and such high leverage to the price of gold. Not only does Randgold's stock price go up at a much higher pace than does gold itself (leverage of **1.84%**), but we also have very strong evidence (R – square of **92.7%**) that this rise stems mainly from soaring gold prices. Due to this fact, we expect this company to attract strong demand from financial institutions. As gold investors, we absolutely love such a situation and view this company as one of the best in the sector.

In the long term Randgold seems to be the leader almost without competition. Why almost? Because there is only one company that is able to achieve results similar to Randgold's. We are speaking about Eldorado Gold Corp. (EGO) (*Chart 6*)

Both the leverage (**1.58%**) and the R – square value (**88.5%**) are smaller than in case of Randgold, however you couldn't exactly grumble at any of these results. If one is looking for a company that offers high leverage to gold in the long term, EGO is the next best thing after Randgold.

The two abovementioned stocks prove to be the most exposed to the price of gold and most leveraged to it. **How about silver stocks?** Which have the most appealing characteristics in the long term?

Our analysis gives a pretty specific answer to these questions. Please, take a look at the chart (*Chart 7*), which presents the results from our Silver StockPicker for First Majestic Silver Corp. (AG).

With the R – square at **86.4%** and leverage at **1.39%**, AG seems to be both exposed and leveraged to silver. What is more, it is the only silver stock in our analysis that has proved to be leveraged to silver. All of this amounts to the observation that AG may prove to be a profitable part of your portfolio in case silver goes up.

How to use: Medium Term

Having discussed stocks that are most exposed and leveraged to gold in the long term, we need to focus on the current situation in the precious metals market with analysis in the **medium term time span,**

which we understand to be the last three months).

Let's start with gold stocks. Which of them offer you favorable leverage to gold? Please, take a look at the charts (*Chart 8*).

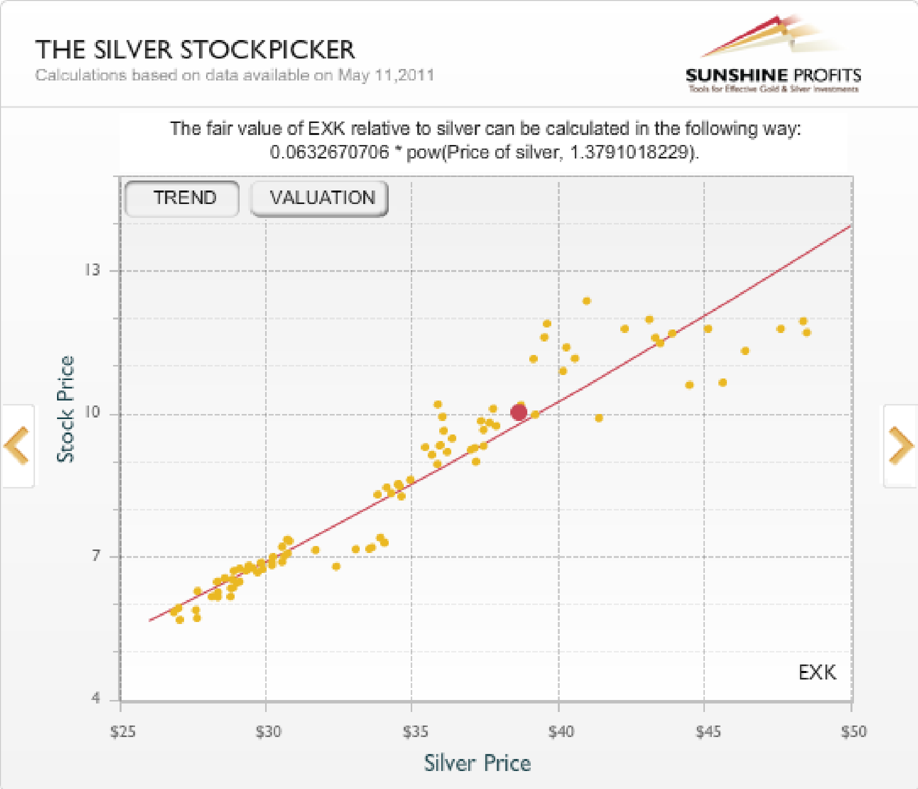

Chart 9: Performance of EXK relative to the performance of silver (medium term)

You have seen this chart before. It is the last chart in the Exposure section – the medium term chart for Royal Gold, Inc. (RGLD). As a matter of fact, **at the moment of writing**, RGLD proves to be the best stock in which to invest in the medium term (in our ranking). With R – square at **86.2%** and leverage at **2.14%** RGLD doesn't have any real competition. The second stock in our ranking – Newcrest Mining Ltd. (NCMGY) – has an R – square of 19.4% and its leverage stands at 0.8% (that means that it doesn't offer any leverage to gold). The rest of the stocks in our ranking perform even worse. However, you should be aware of the fact that the numbers we have presented reflect the situation at the moment of the writing of this report and may change in the future. What is more, the abovementioned stocks serve only as examples of leverage to precious metals (or lack of it) and **not as investment recommendations**. Please bear that in mind while reading this report.

OK, so we have covered the gold stocks in the medium term. What is the situation among silver stock? Are there any particular stocks you would be interested in in the medium term? Once again, you will find the answer to that question on our charts (*Chart 9*).

The above chart presents the company that, at the moment of writing, was both the most exposed one and the most leveraged to silver. This company was Endeavour Silver Corp. (EXK). R – square at the level of **91.1%** and leverage at **1.38%** indicate that you should consider including this company in your portfolio (if you are seeking exposure to silver, of course). Only one other silver stock is leveraged to the metal and seems to threaten EXK's position as the leader in leverage and you've already heard about this stock in our report. Yes, we're speaking about First Majestic Silver Corp. (AG) (*Chart 10*).

AG surely is breathing down EXK's neck. With R – square at **85.4%** and leverage at **1.36%** you definitely would like to consider adding AG to your portfolio along with EXK. As these are the only stocks leveraged to silver in the medium term, you might consider holding them both for diversification purposes.

Under- And Overvaluation

The charts in the above sections are great if you want to focus on a stock's historical performance to decide whether to own it or not. However, it is not very convenient to use them to check if a particular stock is under- or overvalued with regard to its historical performance relative to gold. In other words - the trend line from the above charts describes the AVERAGE values of stocks at given gold prices. When a stock trades above the value suggested by the trend line, one can say that it is overvalued. Conversely, when a stock's price is lower than what one would expect it to be based on the trend line, then one can say that this stock is undervalued.

As an effective strategy you can use this information and make the most of your gold and silver investments by purchasing stocks when they are undervalued, and selling when they are overvalued. Another strategy (if you're risk averse and want to stay in the precious metals market at all times) is to switch from overvalued gold stocks to gold and re-purchase them once they become undervalued to the metal. It is advised for buy-and-hold Investors

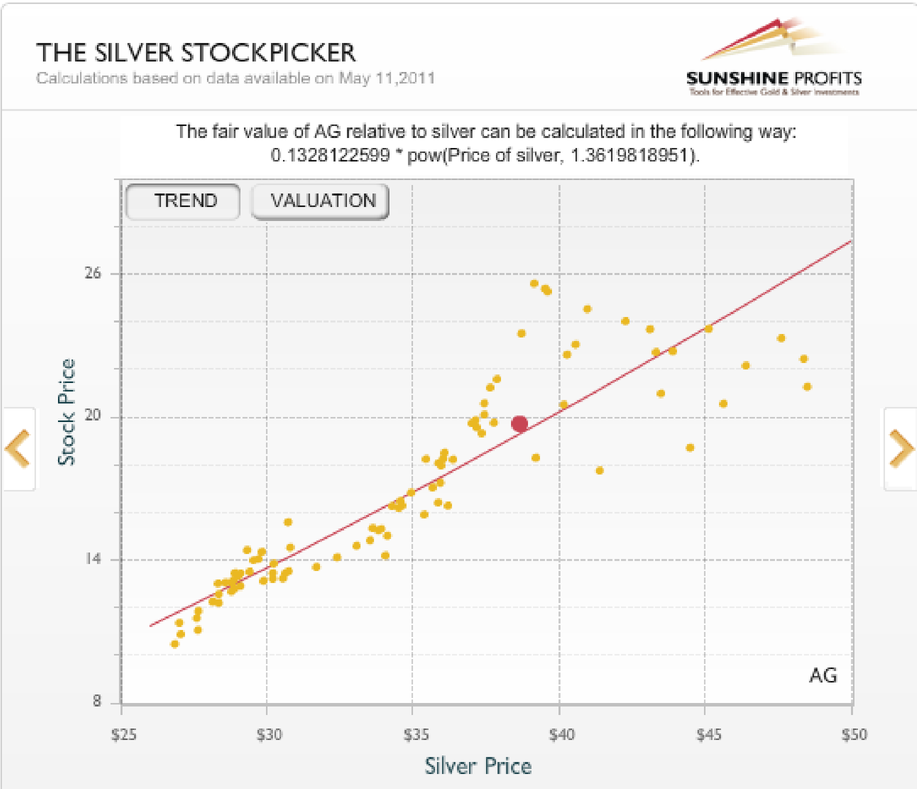

Chart 10: Performance of AG relative to the performance of silver (medium term)

to rebalance their portfolios on a regular basis - selling overvalued stocks to buy undervalued ones might be a very profitable idea.

The Golden StockPicker and Silver StockPicker don't only provide you with a convenient way to check the current status (under- or overvaluation) of gold/silver stocks, but they also tell you what will be the "fair" (meaning the one from the trend line, that is neither over- nor undervalued to gold) value of a stock, if gold or silver moves up or down to a certain level. And yes - all calculations/charts are updated on a daily basis.

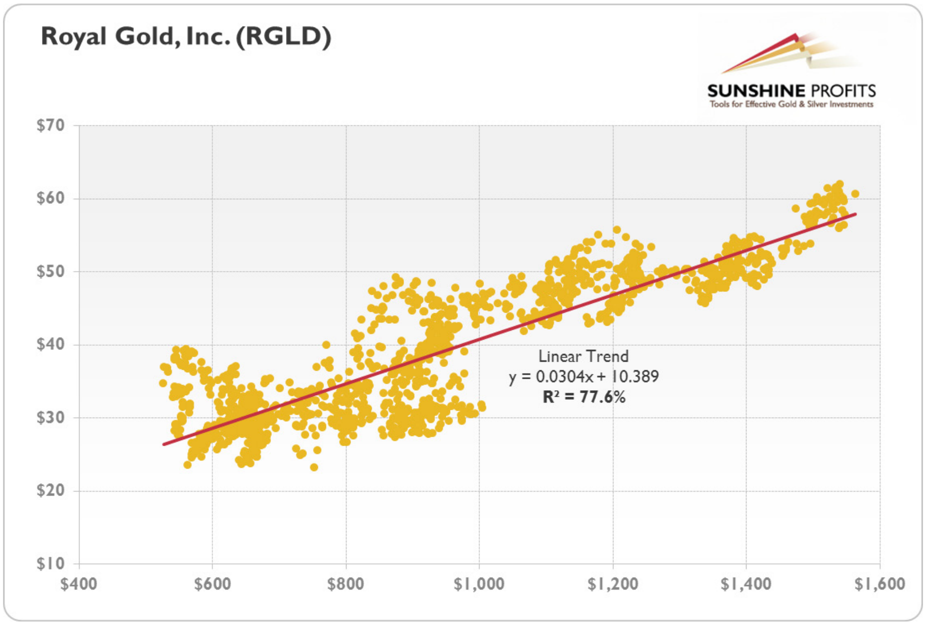

Chart 11: RGLD - linear trend on a linear scale

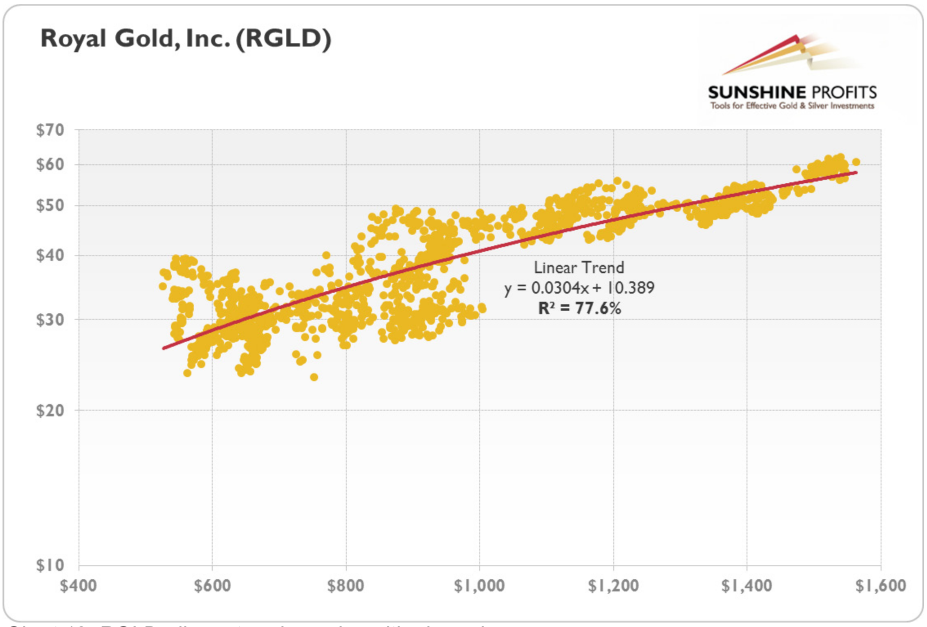

Chart 12: RGLD - linear trend on a logarithmic scale

Rebelancing your portfolio

The properties of stocks may change over time. That means that a stock that is believed to be the best in terms of leverage and exposure to gold at a particular moment in time may not be so in the future. A long-term investor should, according to a popular belief, constantly monitor his portfolio and react to such changes. To find out whether this is really so, we conducted a thorough study of our own.

The study covered the period between 1/1/2006 – 10/10/2011. Our benchmarks were the HUI and XAU indices for gold and silver senior mining stocks, respectively. If bought and held for the abovementioned period, they would have generated gains of 80.10% and 49.93%, respectively. For comparison: an interest rate of 5% compounded annually for these five years would've generated an ROI of 27.63% and a rate of 10% - 61.05%.

In the study we used the following rebalancing strategy, which we will call Constant Interval Rebalancing Strategy (a.k.a. calendar rebalancing): every x days we used the Golden Stock Picker and Silver Stock Picker tools to find current top 5 miners, and x was kept constant throughout the whole period (we will refer to such an x-day period as interval – which means that if x is 10 then we rebalance the portfolio every 10 trading days). We examined various values of x, ranging from 5 to 100, hence obtaining intervals from one to twenty weeks. We tested many different simulation settings (by simulation we mean running through the whole period of 1/1/2006 – 10/10/2011 and rebalancing our seniors portfolio every x days), taking into account such factors as risk tolerance, time horizon, or the amount of money allocated to particular companies. So for every combination of these options we checked 20 different interval values (5 days, 10 days, and so on until 100 days) and found the optimum as well as the average ROI (return on investment) for these 20 intervals.

For gold seniors, the maximum optimal (meaning that if one was able to estimate the best x value) ROI (the profit generated the investment period) was 435.22%, the minimum – 199.75% and the average – 319.96% with standard deviation of 78.76% which, compared with the HUI's ROI of 80.10% looks quite impressive. Simply put, rebalancing your mining stocks allowed you to multiply your gains several times. When we take a look not at the optimum gain out of 20 interval settings, but at their average, the results don't get much worse: their maximum equals 263.04%, minimum – 144.03%, and average – 200.06%, with standard deviation of 30.93%. The minimal profit obtained, taking into account all considered intervals and options was 55.23% - lower than HUI's performance, but such low values were nothing more than rare exceptions.

As far as silver seniors are concerned, the maximum optimal return was 460.62%, the minimum – 246.88% and the average – 322.00% with standard deviation of 47.98% which, compared with the XAU's ROI of 49.93% looks even more impressive than gold seniors' results as XAU's performance is worse than HUI's and silver seniors did yield higher returns. Here again, when we take a look not at the optimum gain out of 20 interval settings, but at their average, the results don't get much worse: their maximum equals 270.16%, minimum – 178.70%, and average – 218.32%, with standard deviation of 25.48%. The minimal profit obtained, taking into account all considered intervals and options was 81.25% - higher not only than XAU's but also than HUI's performance.

These results show that active portfolio rebalancing using Golden Stock Picker/ Silver Stock Picker tools is definitely worth it. Even if you pick an incorrect x value, you will still likely gain by rebalancing your

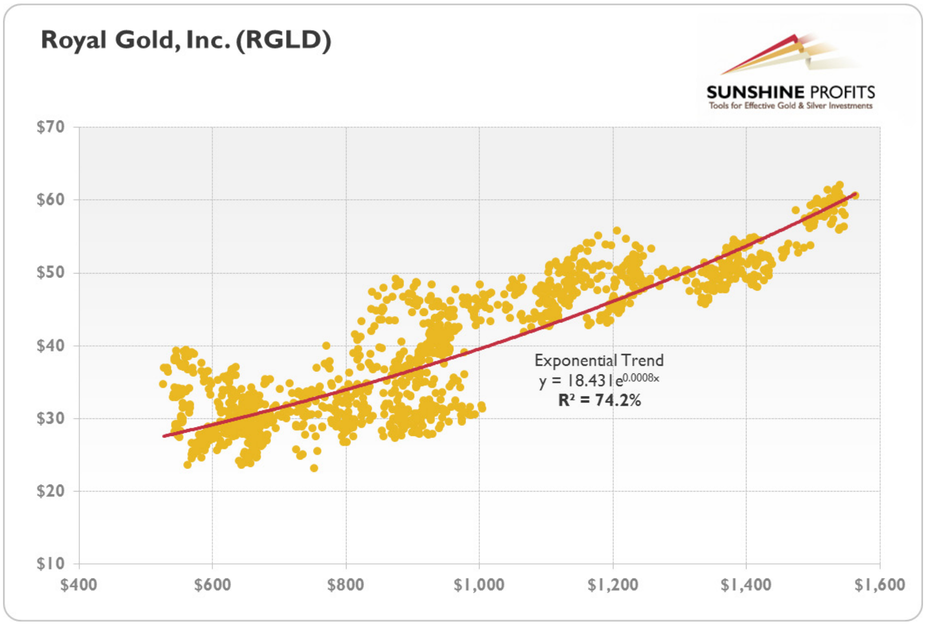

Chart 13: RGLD - exponential trend on a linear scale

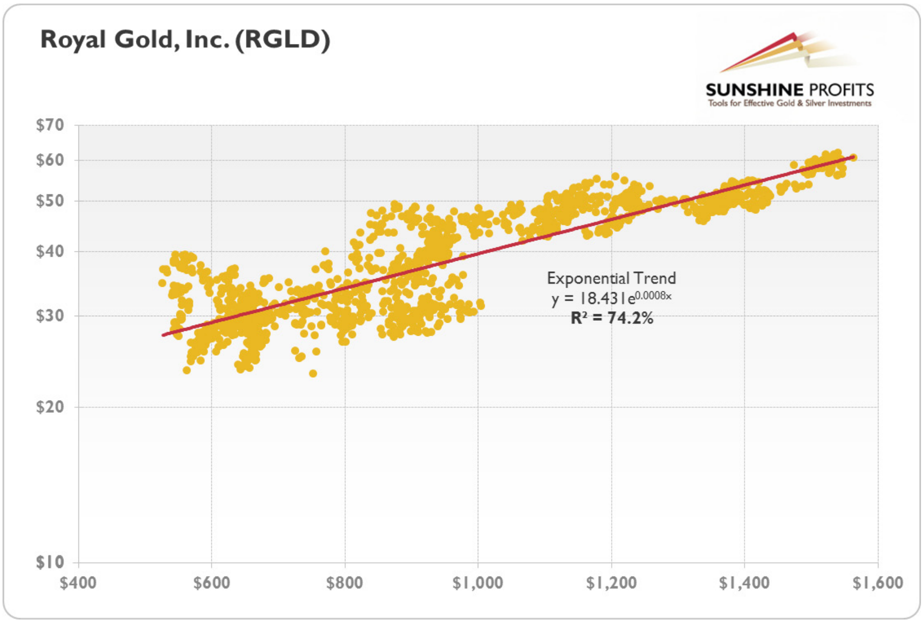

Chart 14: RGLD - exponential trend on a logarithmic scale

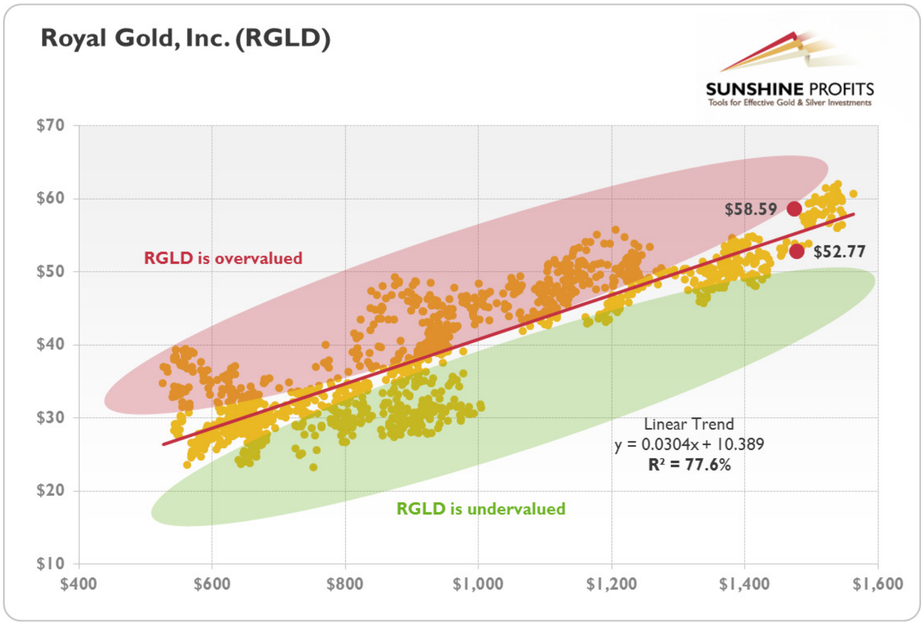

Chart 15: Under- and overvaluation on the example of RGLD

portfolio then by sticking to your first stock selection.

One could argue that instead of broad market indices we should have rather used a top gold or silver stock picked by the Golden Stock Picker or Silver Stock Picker such as GOLD for gold seniors and AG for silver seniors. Doing so would have indeed generated much higher returns: 461.92% and 348.53%, respectively, but it violates one of the most important rules of investing – diversification. What if you picked the stock that was the worst performer? You would surely not want to miss out on the profit potential that the whole sector offers just because you had bad luck when picking a company. It is extremely easy to write that choosing one particular stock would have been the best choice in hindsight, but hardly anybody would put all his money into one single investment.

Just for comparison, we also tested a modified strategy, where instead of top 5 stocks we picked only those stocks that met particular numerical criteria (based on the chosen options such as risk tolerance or time horizon of investment). The main difference was that such strategy allowed having just one company in the portfolio (which happened from time to time) but still, most of the time, provided significantly better diversification that the buy-and-hold strategy consisting of buying just one stock (such as GOLD or AG) and sticking to it for the whole period. In other words, we previously estimated which stocks are good relative to the other ones and invested in them. Now, we will not look at other stocks – we will simply invest in a stock if it performs well relative to gold – and regardless of how it performs relative to other miners.

Such a modified strategy generated slightly better results (when it comes to maximum values) for gold and substantially higher gains for silver (in every aspect but the minimum). As this is meant to be only an addition to the standard “top 5” strategy, we’ll focus only on the optimum returns. And so the results for gold are as follows: maximum – 520.08%, minimum – 24.93%, average – 282.80 and standard deviation – 91.03%, and for silver: maximum 2380.04%, minimum – 14.54%, average – 835.13% and standard deviation – 616.53%. We can easily observe the increased risk that is associated with this strategy: optimum gains are much more volatile – their minimum values are significantly lower and standard deviation higher in comparison with the top 5 version, but so are their maximum values. While gold seniors’ results are not stunning, there are still particular cases that beat GOLD’s outstanding performance. And we can imagine that skewing this strategy even further, so that only one stock would be included in the portfolio at any given time would probably turn out even more lucrative – in hindsight. Silver stocks results are far better than AG's great performance and the same comments as the above ones apply in this case.

To sum up, portfolio rebalancing seems to be a much better portfolio strategy than the passive buy-and-hold. And using Golden Stock Picker/Silver Stock Picker to choose the right stocks when the time of rebalancing comes can significantly increase profits. We would once again like to stress the fact that diversification is extremely important when it comes to investing, and portfolio rebalancing is no exception to this rule. As we've seen, picking more different stocks resulted in making huge profits virtually every time, and these profits didn't differ from one another very much. Picking only one stock, one can end up with an astronomically high return, but one can also lose a substantial portion of the capital, should the stock suddenly fall off the cliff. Even though single stocks performance seems alluring, one needs to remember that it is always easy to find best performers in hindsight. And even if one were forced to use such strategy, it would still be a better strategy to systematically rebalance the "portfolio".

We are currently working on a tool designed specifically to aid investors in rebalancing their portfolio, based on their own unique preferences, but we would like to write out some general guidelines here. The above-mentioned study confirmed our presumptions that time horizon has the strongest influence on choosing the optimum interval (i.e. the one that generates the highest profits). We will discuss portfolio rebalancing from different time horizon perspectives for illustrative purposes only, as the notion of rebalancing concerns mainly long-term investments.

The influence of the time horizon of investment on the length of the optimum interval was more visible in the case of gold stocks, where optimum intervals coincided with the definitions of short and medium term that we use in this report (30 and 90 days, respectively.) For short term in 66.7% of the cases, the optimum interval was between 20 and 30 days. For medium term, in 66.7% of the cases, it was equal to 90 days. So it turns out that – with the short- and medium-term perspective in mind – most of the time it makes sense to rebalance portfolio every time a completely new set of data needed to rate stocks becomes available. That is every 30 days for the short-term approach and every 90 days for the medium-term one. Since for our purposes long term is considered to contain all days from the beginning of 2006 up to a given point, we couldn't expect optimum interval to coincide with the length of the period – half of the time optimum interval was 35 days and the other half – 60 days – higher than most low term cases and lower than most medium term ones, hence it can be viewed as some sort of average of these two. This may be due to the fact that, since long term contains that much data, it eliminates extreme values such as 10-20 and 80-100 days.

This tendency – that short term calls for shorter intervals, medium term for the longest and long term, containing much more data, is somewhere in between and flattens out extreme cases – holds for silver stocks as well, but the coincidence of optimum intervals' values and short- and medium-term's lengths is not as strong as when it comes to gold stocks. For short term in 88.3% of the cases, the optimum interval was between 15 and 35 days, for the medium one half of the time it was 25 and the other half – 60 and for long term in 75% cases it was 25 and for the remaining 25% – 40.

So what does it all mean for me?

It means that using Golden StockPicker and Silver StockPicker can be a great help to you not only when choosing stocks for short- or medium-term trades, but also when choosing and rebalancing you long-term mining stock investments. In fact, best results should be achieved by rebalancing your gold stocks every 35 or 60 days (the former should be a bit more profitable but a bit more time consuming), and your silver stocks every 25 or 40 days (both are good). Finally, we suggest that you buy stocks of more than one or two companies (say 5, just like we did in our study) as diversification greatly reduces your risks and helps you make a decent profit even if you happen to make a mistake choosing your interval or if the best performing company in the past goes bust due to some unexpected and random event.

What's the deal with linear and non-linear trends? Dangers of linearity

In this report we have often referred to both linear and nonlinear trend lines when comparing performance of different gold / silver stocks. We have also provided information on under- and overvaluation of stocks. Now we would like to explain how one can estimate whether a particular stock is under- or overvalued to gold / silver at a given moment using various types of trend lines.

Before we tell you more about the method of estimating over- and undervaluation of stocks, we need to emphasize a few issues that are very important in such an analysis, but are often ignored. First of all, using inappropriate trend lines might result in viewing undervalued stocks as overvalued and vice-versa. **Choosing a specific trend lines is absolutely crucial.** Before adding new trend lines, you also need to focus on the scale in which the data is presented on the chart you are currently using. For example, choosing a logarithmic scale instead of a linear one makes exponential trend lines appear as linear ones. Without further investigation one might think of such a trend line as normal and sustainable in the long term, which is very rarely the case.

On the example of the charts below, we are going to show you specifically the dangers inherent in assuming linearity. We will use actual data for one of our favorite gold stocks at the moment of writing – Royal Gold, Inc. (RGLD). The chart below features this company share prices in relation to the price of gold since the beginning of 2006 (Chart 11).

Please note that both the trend line and the scale on the vertical axis are linear. As stated a few paragraphs earlier – it is very important to keep these factors in mind when looking at a chart. Let's see what happens if we change the scale to logarithmic (Chart 12).

Please take a look at the thick trend line. That's right – it's the same linear trend line as before, but this time the logarithmic scale makes it look just like a logarithmic trend line. In fact, if the original trend line hadn't been linear but exponential, the final outcome in the logarithmic scale would have been linear. You'll be able to see such a situation on the charts below.
First, the exponential trend line in a linear scale (Chart 13).

The trend line is getting steeper as the leverage increases along with the price of gold. Now, please take a look at identical trend lines in a logarithmic scale (Chart 14).

Notice that the exponential trend line takes a precisely linear form in this scale. This is nothing extraordinary, as the logarithmic scale is usually used to show stock appreciation percentage-wise, whereas the exponential trend line means that the growth is constant in percentage terms. Constant growth in percentage terms, shown on the scale that reflects this type of growth, naturally takes the form of a straight line.

Please note that although it may not be visible on this chart, this trend line implies rising leverage to gold in percentage terms (percentage move for every 1% change of gold's price). This is a very strong assumption. In our research we've chosen trend lines for many gold and silver stocks and only a couple of them were best represented by exponential trend lines. If it's not enough to prove that this assumption is not generally fulfilled, we might add that even for these particular stocks, R-square and leverage were both minimal. This means that this type of trend line was not very useful. Therefore, you should be extremely careful when it appears that a particular stock seems to react exponentially to the price of gold/silver.

With this background, we would like to show you a simple way of recognizing whether specific gold/silver stocks are under- or overvalued at a particular moment. First, let's think about why we use trend lines at all. Instead of seeing a full chart with all data we prefer to know the mathematical equation that gives us a sense of order in these volatile markets. Watching precious metals and equities on a daily basis may cause you to lose your perspective and to act emotionally with your money. By using trend lines we can separate our analysis from our emotions. If we agree that the trend in a particular stock is best reflected by a specific trend line, we might view this line as the set of prices this stock would have without any emotional factors. That would imply that **if a stock currently trades below its trend line it might be considered undervalued**, as fear makes some investors sell their positions prematurely. Of course, similar analysis applies to stocks trading above their respective trend line. Excessive optimism causes investors to buy stocks even at very high prices. Therefore, **if we see a gold stock trading above its trend line, that means that it's currently overvalued to gold**. One strategy is to sell it and use the proceeds to buy the metal itself. Of course, you may use this information as you wish and apply any other strategy, for example, selling the stock and waiting for a pull-back to purchase it again. Below we present a chart with an illustration of such an analysis (Chart 15).

We've chosen two situations, one when RGLD traded at $58.59 (gold at $1,474.20) and the second when RGLD was at $52.77 (gold at $1,477.33). According to our trend line, the fair price for this stock with gold at $1,474.20 is about $55.20 and the fair price with gold at $1,477.33 is approximately $55.30. The difference between $58.59 and $55.20 is the optimism premium ($3.39 in this case) and the difference between $52.77 and $55.30 is the fear discount ($2.53 here). As you may see, these differences are significant – 6.1% and 4.6% of RGLD's theoretical (derived from the trend line) value. What is more important, under different conditions these differences can be much bigger. **Based on under- and overvaluation it was possible to gain a sizeable amount of money even without a significant change in the price of underlying metal**. If you factor in the rise of gold, then you can achieve a really amazing rate of return on your investments. There is quite a potential for profit if you are able to buy when everyone else despises gold stocks and sell when they are universally loved. Before you rush to purchase undervalued stocks, please note that it's just one of the methods of picking good entry and exit moments. It's not very precise but it's pretty reliable and simple to apply.

As you see, choosing appropriate trend lines is of fundamental importance to this analysis, as it decides whether we will qualify a particular stock as under- or overvalued. **We must therefore pay special attention to choosing the best trend lines before we begin our analysis**. Please take a look at what would be the implications of not paying enough attention to this matter (Chart 16).

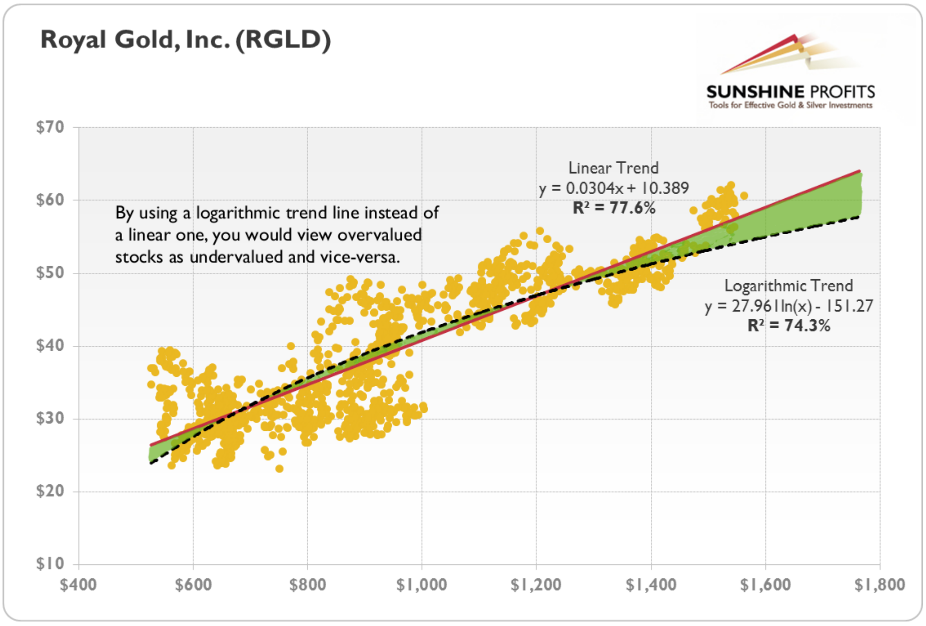

Chart 16: Under- and overvaluation of RGLD relative to different trend lines

The green area represents the combinations of gold and stock prices at which you would change your judgment regarding under- or overvaluation, depending on which trend line you would use. For example, if you used a logarithmic trend line with gold at $1,540.03 and RGLD trading at $56.15, you would think that the fair price for the stock is about $53.94 and consider it overvalued. Purchasing at this price may prove disadvantageous, however our analysis suggests that under given conditions, RGLD would be undervalued. According to a linear trend line, which we find the most appropriate for RGLD, this stock's fair value with gold at $1,540.03 is about $57.21. The higher the gold price would go, the wider the gap between the trend lines would get. This means that if you used the logarithmic trend line, you would be more likely to make a wrong evaluation of a particular stock as the price of the underlying metal advanced.
The same type of inaccuracies applies to trend lines presented in the logarithmic scale. Although trend lines might look different, it does not mean that they represent a particular stock better or worse. A different scale is just a different way of seeing the same trend line, with all benefits and disadvantages that this specific trend line has. Please remember to always use the trend lines that best reflect a stocks' performance. R – square might be helpful in determining which one you should use.

Use with caution

Before you choose your favorite gold and silver stocks and make a purchase or add to your positions, we encourage you to make additional analysis covering fundamental and technical aspects of these companies. Nonetheless, if we were asked to pick only one best method of selecting top gold/silver stocks, it would be the approach featured in this report. Please also remember that it's not a bad idea to diversify your holdings, meaning that it's prudent to hold more than just one gold or silver stock.

Although we strongly believe that the statistical measures used in this essay are very helpful in choosing stocks for one's portfolio and we use it ourselves, we must inform you that not all assumption made in statistical models are necessarily fulfilled in the capital markets.

They are of lesser meaning if we use this data to compare stocks between themselves. Even if each calculated coefficient is biased as a result of assuming normal distribution of returns, it does not pose a serious threat as long as you only use the results for comparison. If all the results were biased for the same reason, most likely the relations between them would not be affected. Therefore, we believe that the calculations made in order to complete this report and in the Golden StockPicker / Silver StockPicker tools are reliable.

We would also like to emphasize the fact that this report has been prepared to highlight the possibilities of using leverage in your investment strategies and not to give investment recommendations. Therefore, none of the examples of stocks which we have provided should be treated as investment recommendations. The fact that a particular stock has shown considerable exposure and/or leverage to precious metals at the moment when we created this report, does not necessarily mean that it will maintain such a relationship in the future.

Final word

In this report we have covered the topics of exposure, leverage and valuation. You will find these topics extremely useful when analyzing the performance of gold or silver stocks. As a matter of fact, you don't need to calculate the appropriate leverage and exposure measures on your own as we have designed two tools specifically to deal with that matter. The Golden StockPicker and the Silver StockPicker allow you to access important data regarding leverage simply and quickly. You are only a few clicks away from these tools, so go to our Tools section and try them out for yourself. Naturally, they – and the rankings they create - are updated on a daily basis

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