The Pre-Production Sweet Spot

Imagine walking into a casino…
with only two types of slot machines…

…which machine would you rather play?

The PPSS gives us a way to speculate for gains on par with those driven by new discoveries, but with much less risk.

Imagine walking into a casino—the Mineral Exploration Casino—and finding the place full of two types of slot machines. One type is the New Discovery slot machine. The other is the Pre-Production Sweet Spot slot machine.

Both types take only $1,000 bills.

If you spent many years and many thousands of dollars trying out these machines, you would find that the two types had very distinct and different characteristics.

The New Discovery machines would:

- Pay you $10,000 once every 100 times you played.
- Pay you much less than you put in nine times out of ten.
- Sometimes take your $1,000 and turn it into $0.
- Sometimes shut down for no reason just when it looked like you were about to hit the jackpot.
- Sometimes deliver a jackpot, but then the government would swoop in and nationalize, ban, or regulate your jackpot out of existence.

The bottom line would be that unless you could find a way to know in advance which machines would deliver a new discovery jackpot you could actually cash in on, you'd end up losing a lot more money than you made.

… most resource investors fail to realize just how rare valuable discoveries are…

No one ever knows in advance that a discovery will be made. Not me, not the most successful explorer, nor even the most famous speculator. No one.

But the Pre-Production Sweet Spot machines are different:

- They would pay you 74% of the time if you played them all.
- If you could pick which ones would succeed at getting into production, your $1,000 would typically turn into $2,000.
- You'd find that the machines almost never shut down.
- You'd find that you could usually avoid government confiscation by picking machines in safer areas.
- Sometimes your $1,000 would turn into $7,000 or $8,000.

The bottom line would be that unless you had the exceptionally bad luck of picking all the losing machines of this type, you'd end up making a lot more money than you lost.

Now, if your goal wasn't just to have fun, but to make money, which machine would you rather play?

I know my answer…

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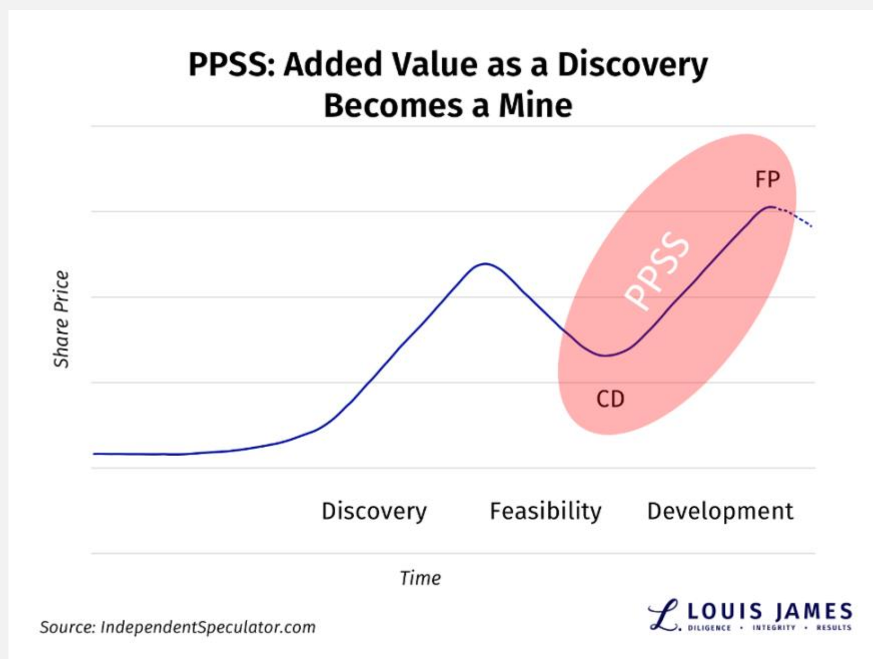
The Pre-Production Sweet Spot

You've probably seen many versions of the "Life Cycle of an Exploration Company" charts many juniors like to use in their marketing materials. It's sometimes called the Lassonde Curve. The slope from a construction decision (CD) up to first production (First Pour, First Plate—FP) is known as the pre-production sweet spot. I call it the PPSS.



As far as I know, I was the first person to publish research on the gains for shareholders as a company ramps up through the PPSS. It was known that stocks typically rose from the "boring engineering phase" of development to production, but it was assumed the gains were small. After all, everyone could see who was building a mine, so the added value would be priced in in advance… Right?

That's why charts like the above were usually brought up to show the big gains made during discoveries. It's not just possible, but relatively common for stocks to go up 1,000% (10-baggers) as a result of a discovery.

But most resource investors fail to realize just how rare valuable discoveries are—and it turns out that their assumptions about the PPSS were wrong.

I found—and documented—that the gains when a company builds its first mine can be huge. Sometimes they're almost as much as during the discovery phase. But the important difference is that while companies that start building a mine almost always finish the job, companies that set out to make a new discovery rarely do.

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The PPSS gives us a way to speculate for gains on par with those driven by new discoveries, but with much less risk.

Now that I run my own company, I've duplicated and expanded on my past PPSS research. I'm happy to say that my new and more thorough study backs up my previous findings.

Latest PPSS Results

My dataset now includes 115 cases of first-time mine builders, stretching back to the 1980s.

- Cases consist of exploration companies with a published CD or an announcement that construction had started.
- We counted those that reached FP and commercial production (CP).
- We counted those that failed to reach ether FP or CP.
- Cases with incomplete or unclear data were excluded.
- Cases in which existing mines were restarted were excluded.
- Companies buying producing mines or building on existing production were excluded.

...they give us an alternative exit strategy.

The whole exercise is aimed at measuring the typical gains for speculation on the transition from exploration to production—the PPSS.

Here are the basic findings for all 115 cases:

- 91.3% succeed at building their mines (making it from CD to FP).
- 94.8% succeed if we count mines built after a takeover.
- 554.8 days is the average time from CD to FP.
- 98.11% is the average gain from CD to FP.
- 113.8% is the average gain from CD to CP.
- 745.5% is the average gain from CD to FP for the top five cases.
- 21.6% is the average gain during bear markets.
- 131.7% is the average gain during bull markets.
- 73.9% of all PPSS cases delivered positive gains (counting zero as negative).

The overall odds of success are 92%–95%; the average gain of these is almost 100%; and it's possible to bag around 750% on the top performers.

One thing that came out significantly different from last time is that the average result improved notably when holding on after first pour to commercial production. However, the average time to CP is also much longer: 725 days. That's almost half a year more that the 550-day average to reach FP. Many PPSS stocks see prices retreat after FP, or after CP if the mine isn't as profitable as expected. Still, most of those in our data do see additional gains as the companies continue ramping up to CP.

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The extra gains from holding on until CP aren't very large, but they are significant and give us an alternative exit strategy.

This is important because it gives us a good reason to weigh the specifics of a company and current market conditions in deciding when to sell. It makes it less urgent to sell at FP if things are still looking up. I like this added flexibility.

...the whatever number of months they give, look for the final third of them ...

Now, the 115 cases include copper mines, uranium mines, and others. The same PPSS patterns hold true for those, but there are relatively few of them, making the numbers less robust, statistically, so I won't report them here. But I did decide to look at the data for gold and silver mines only. Here's what I found:

- 93% succeed at building their mines (making it from CD to FP).
- 96% succeed if we count mines built after a takeover.
- 558.5 days is the average time from CD to FP.
- 89.5% is the average gain from CD to FP.
- 106.5% is the average gain from CD to CP.
- 594% is the average gain from CD to FP for the top five cases.
- 29.9% is the average gain during bear markets.
- 116.6% is the average gain during bull markets.
- 76% of all gold and silver PPSS cases delivered positive gains.

As you can see, the numbers are roughly similar, but the result for the top five is significantly lower. This tells me not to rule out a good industrial mineral mine that has the right stuff.

Another question worth asking is whether things are different now than they were in the decades before e-trading and ETFs. I decided to look at the data since 2000. That's 101 cases—most of the sample.

- 92% succeed at building their mines.
- 96% succeed counting mines built after a takeover.
- 566.1 days is the average time from CD to FP.
- 108.9% is the average gain from CD to FP.
- 123.5% is the average gain from CD to CP.
- 745.5% is still the average gain for the top five cases.
- 25% is the average gain during bear markets.
- 133.3% is the average gain during bull markets.
- 77.2% of all cases delivered positive gains.

As you can see, the same general relationships hold, but the average results are all somewhat better. I'm not surprised. In recent years, we've had far more people trading stocks, easy access to resource investment information on the internet, and more effective ways for the companies to promote mining stocks to target audiences. It makes sense.

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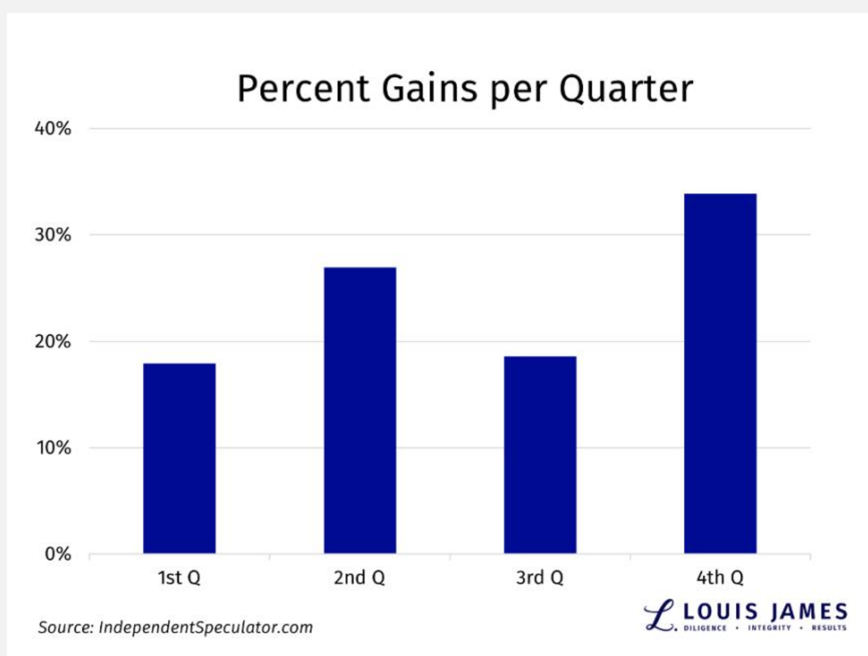
I'm also not surprised that the same patterns were evidently in force before the year 2000. That's just another way of saying that human nature hasn't changed.

The PP "Extra Sweet" Spot

The next thing I asked myself was when most of the gains in the PPSS occur.

My previous work showed that the average rise in share prices tended to accelerate during the final months of construction. But there was a lot of variation in construction time. The average was just under two years, but some took less than a year and some took several years. The last nine months, for example, would be very different things for a one-year case and a five-year case. So I looked at the percentage gains per quarter of completion. A quarter would be six months on a two-year project, a year on a four-year project, and so forth.



The results show a decent start after the construction decision. Gains increase as the word gets out that the company is building a mine. Then there's a slump as construction drags on. The most excitement—and hence highest gains—come in the final quarter as companies race up the slope to production.

Overall, this was pretty much as I expected, but the magnitude of the greater gains in the second quarter surprised me. I expected the big gains in the final quarter, but not so much in the second. I can't argue with the data, but I can look at it in a different way. So I decided to slice the data by thirds, instead of quarters.

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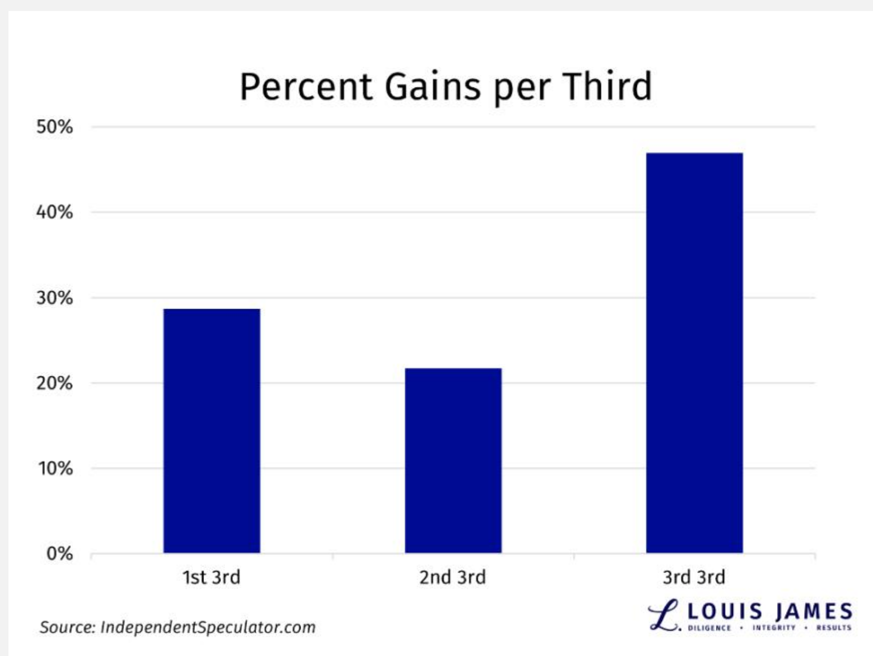


This shows a similar pattern of initial excitement, reduced interest as construction drags on, and much more interest—47% gains—during the final third of the time between CD and FP.

How do we know in advance when a PPSS play is entering its final third or quarter? Well, the actual time it takes to build a mine is often different from the time projected in the project's feasibility study, but that's a good starting point. The better mine-builders out there do frequently report "on time and on budget" progress. So, whatever number of months they give, look for the final third of them to deliver the biggest gains.

The takeaway for me is that while we tend to maximize gains buying in at the CD, there's no huge rush. If we don't notice that a company is building its first mine, we can still cash in on the bulk of the gains well into the construction period.

Add to this the different exit points now available to us (FP and CP), and we have a great deal more flexibility overall as to when to get in and out of PPSS trades. This gives us time to examine the particulars and weigh current market conditions. Intuitively, this tells me we should be able to obtain better results than a "one size fits all" approach would.

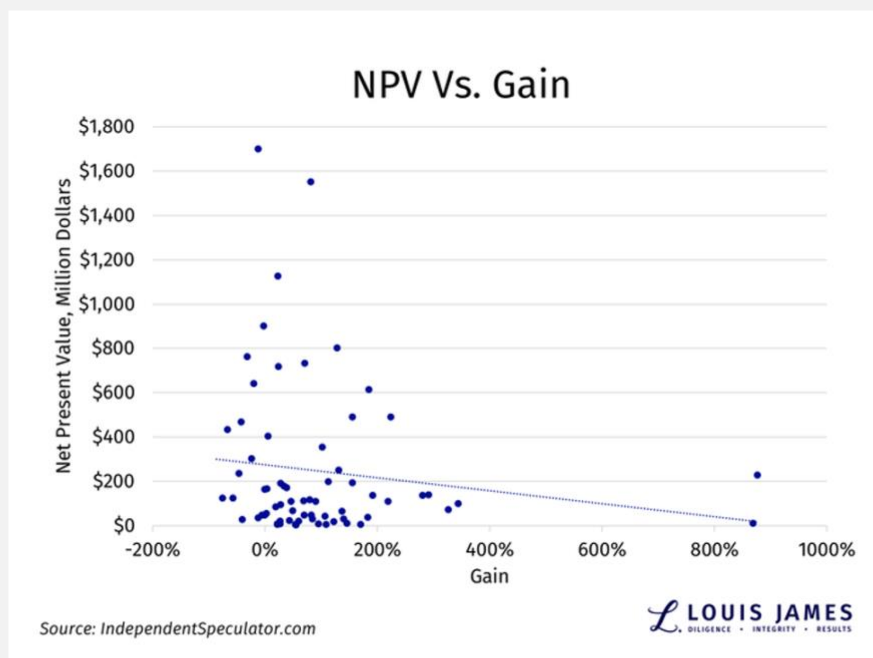
Top Winners

The biggest question ever since I first made my PPSS discovery has always been: "What makes for a top winner?" Those five cases that averaged almost 750% gains

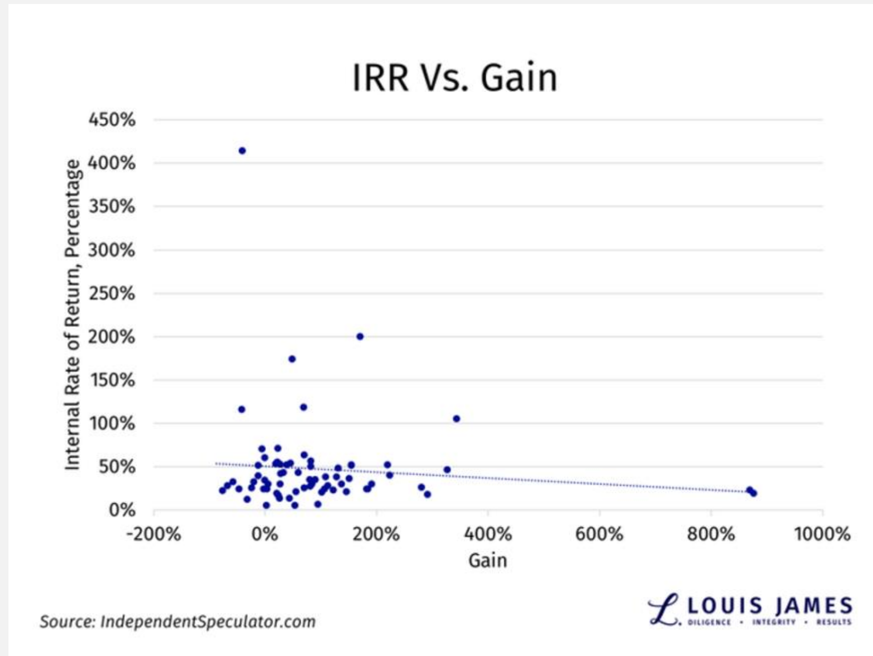
really do stand out as a group, high above the others. What distinguishes them from the rest?

The honest answer is that I haven't found a formula for predicting the top winners yet. I've tried sorting companies on various factors that seem relevant, but that produced only modest correlations.

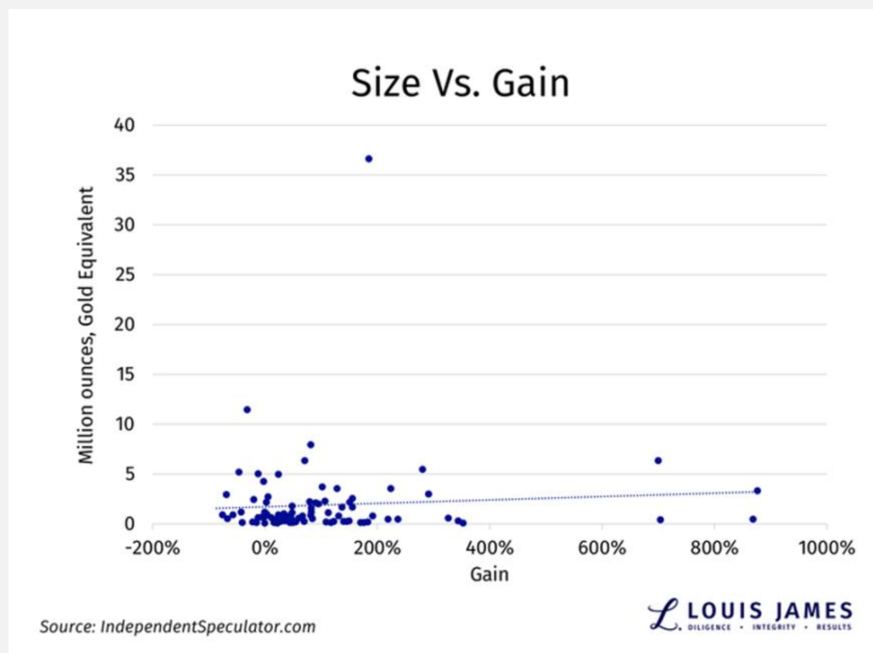
For instance, you might think that the net present value (NPV) of a mine under construction would be strongly correlated with share price gains as it nears completion and goes into production. "What's it worth?" seems like a reasonable place to start. But as you can see in the chart below, the correlation between PPSS gains and project NPV is actually **negative**.



I found this rather shocking when I first discovered it. But then I thought that the real bottom line isn't total value, but return on investment. After all, margin is king. So I looked at the correlation between internal rate of return (IRR) and PPSS gains. The result was negative again.



No joy there, so I tried dumbing it down. What if we just look at the size of the deposits in question? As you can see in the charts below, I had a little more luck here, but just a smidge. The relationship isn't strong enough to make for an investable guideline.



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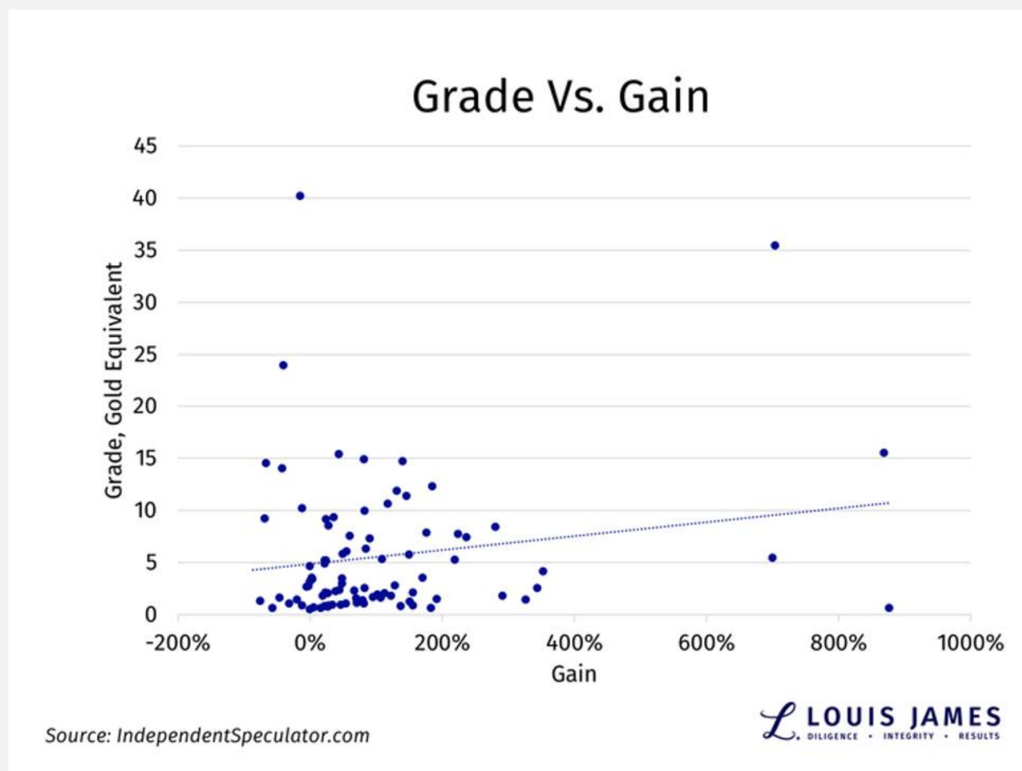
Next, I looked at grade. I know that margin is king (high grade at very high cost is not as good as decent grade at very low cost), but what if most investors just chase high-grade headlines?



As you can see, the result is positive, but not greatly so. Critically, there's a set of very high-grade stories that handed substantial losses to investors (the high dots on the left). This makes it dangerous to use grade alone as a criterion when buying into PPSS plays.

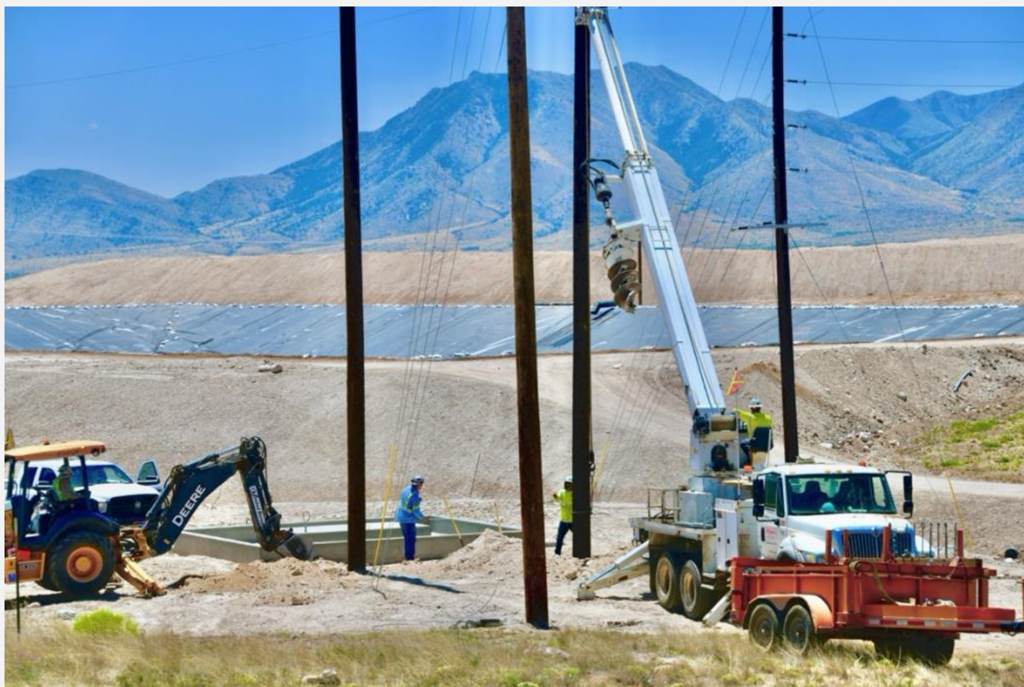
I've looked at a lot of these cases in great detail now, and I've developed a pretty good sense of what matters. It's not something I can quantify yet, but I'm working on that. I also have a much clearer picture of what makes for the worst losers…

"Top" Losers

One thing we can do to improve our results while we work on predicting top winners is to avoid the worst losers. If we can do that, our average results have to improve. But how to know in advance?

Well, some of my worst investment outcomes have resulted from betting on "little engine that could" stories. These are small mines that are cheap to build and seem to

offer high margins. This offers speculators a quick shot at cash flow and, in theory, big returns.



So I looked at the data, excluding companies building mines with annual throughput equivalent to less than 50,000 ounces of gold.

Here are the results:

- 98% succeed at building their mines (making it from CD to FP).
- 100% succeed if we count mines built after a takeover.
- 631.3 days is the average time from CD to FP.
- 101.9% is the average gain from CD to FP.
- 136.2% is the average gain from CD to CP.
- 598.8% is the average gain from CD to FP for the top five cases.
- -0.4% is the average gain during bear markets.
- 145.7% is the average gain during bull markets.
- 72.1% of all gold and silver PPSS cases delivered positive gains.

All of the metrics are better, except for the longer construction time—which is obvious—and the poorer performance during bear markets, which I didn't expect.

Perhaps it makes sense, however. In a bear market, share prices in the big, visible names are going to get hammered by lower commodity prices even if construction goes well. But a small outfit that builds a little, high-grade mine could attract a small but very enthusiastic following that bids the thinly traded stock up.

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On the other paw, we're dealing with a relatively small number of cases, so outliers can have a larger effect. (This is true in all the charts above, as well.) Also, there are a number of cases for which we don't have annual throughput data.

Here's what the numbers look like excluding cases with unknown throughput:

- 98.9% succeed at building their mines (making it from CD to FP).
- 100% succeed if we count mines built after a takeover.
- 572.2 days is the average time from CD to FP.
- 96.2% is the average gain from CD to FP.
- 119.2% is the average gain from CD to CP.
- 604% is the average gain from CD to FP for the top five cases.
- 19.4% is the average gain during bear markets.
- 129.3% is the average gain during bull markets.
- 77% of all gold and silver PPSS cases delivered positive gains.

This looks a lot more like the base set of all cases.

The average outcome of a successful PPSS play remains around a 100% gain in the share price.

Overall, these findings fit what my mentors taught me: "Go big or go home." I've grown very cautious about small mines, and it would take a lot to convince me to invest in one—whether it was a bull or bear market.

Regardless, the worst-case number is an almost zero gain. That's not much downside for a bear market. This is an important strength of the PPSS strategy.

And the improved numbers excluding the very small mines give us a new guideline to implement in our speculative investing.

Methodological Note

It's reasonable and wise for skeptical speculators to ask how valid my conclusions are.

Frankly, my biggest concern is that we only have 115 cases. That's a small enough number that extreme outliers can have an arguably excessive impact on average results. For instance, removing the smallest mines had a strong impact on the average gain during bear markets.

But think about how often you hear of a junior explorer making the transition to production…

Most mines are built by existing producers. A publicly traded exploration company building its first mine is a relatively rare event. I can think of only a handful per year. Some years, it doesn't happen at all.

In my PPSS data, there are 3.5 cases per year.

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I can't prove it, but I think that mean I've actually found most of them. But let's say I've only found half, or a third. If I did a statistical analysis based on one third of the entire population of a country, or even a city, the results would be very sound, statistically.

Also, I've redone this research several times now. Each time, I've added more cases, but it's been a long time since I found any new cases I missed in the past. The new cases in this iteration are all new mines built since the last time I did this research.

A key point is that while the dataset is small enough that new cases to change the results noticeably, the general pattern has not changed since I first discovered it.

The average outcome of a successful PPSS play remains around a 100% gain in the share price.

So, yes, my results are subject to change based on new data, especially extreme outliers. But I'm highly confident of my findings—and I'm putting my own money at risk based on this research.

A Rising Tide Does NOT Lift All Ships

Investors like to say that a rising tide lifts all ships. It's a nice idea, but clearly not true. Some investment ships—even in the pre-production sweet spot (PPSS)—have huge, gaping holes in their hulls. They stay right on the bottom. Others have hidden holes or weaknesses and sink after an initial surge. In other words, an average increase doesn't mean all investments will increase.

PPSS plays are relatively low risk speculations—but only relatively. They are not risk-free.

This report details a general speculative investment strategy built on years of research. But the devil is always in the details.

It's possible to take major losses betting on PPSS plays without careful due diligence.

Consider…

The average numbers are quite compelling. The average gain for companies that succeed at building their mines is around 100%.

But that's an average.

The top five winners from a construction decision (CD) to First Pour (FP) delivered gains of:

- 578%
- 700%
- 704%
- 869%
- 876%

Fantastic!

But the bottom five yielded:

- -83%
- -76%
- -69%
- -67%
- -57%

Not so great.

It's possible to take major losses betting on PPSS plays without careful due diligence.

Yes, almost 74% of all PPSS cases yielded some sort of positive gains, but that doesn't mean that all of these were substantial gains. Here's a closer look at that:

- Of PPSS companies that built their mines, **22.9% failed to yield any positive gain at all**.
- Some **30.5% yielded negligible or minor gains** (less than 20% over almost two years).
- And **a good 45.7%% yielded only modest gains** (less than 40% over almost two years).

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Bottom line: While PPSS plays are a much safer way to play, you can't just throw darts at the PPSS board and expect to make a fortune.

Due diligence—my specialty—still matters.

Conclusion

There's still much to learn as I watch and study PPSS plays in real time going forward. As this gives me an edge over my competitors, I hope you'll understand if I keep further details of my findings to myself. Subscribers to ***The Independent Speculator*** get to benefit from what I learn as I publish my own PPSS speculations.

The bottom line is simple, and I offer it to you for free: **PPSS plays are sweeter than ever**.

Deploying capital into PPSS companies developing projects in the minerals I'm most bullish on is my top priority.

To find out which PPSS plays I'm betting on,
try out *The Independent Speculator*

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