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CALDERWOOD
CAPITAL RESEARCH

POPULAR DELUSIONS

"The world is at all times the dupe of some bubble or other."
- Col William Rafter

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CALDERWOOD CAPITAL RESEARCH

Uranium update: Interview with Segra Capital

Dylan: Okay, let's get started. Why don't you guys just give a very brief intro into who you are. I know you're known as uranium experts and obviously, given the nature of what you're doing, you'd be happy to be thought of like that. But uranium is actually quite an opportunistic thing for you guys isn't it? There's more to you than just uranium.

Adam: Yes, definitely. I started Segra in 2013. The whole idea was that the hedge fund world generally was becoming way too static. Frankly, it lost its interesting edge in our opinion. Arthur and I also go way back to pretty much the first day of college, and always, I think, tried to be contrarian, out of the box thinkers. I think that was the way that hedge funds were meant to be originally, and slowly but surely, they've become more institutionalized for better or for worse, during my investing career. But before Segra and certainly at Segra, we aimed to go back to the way guys used to do it. It was a little riskier and was certainly based on the idea that we would be contrarian and off the run.

Nuclear power was something that both Arthur and I individually have looked at in a prior life in different ways. We started examining it in 2016 in earnest, and it really dawned on us in 2018 that we could dedicate a significant amount of our time professionally to hopefully being the expert, or at least one of a few experts on the topic.

But yes, we still look at everything that is misunderstood in global markets, both long and short. Nuclear is the right opportunity for us right now but this is a pretty unique market environment we're in now I think, to say the least, so for guys like us, it does feel like a fertile ground for the next many, many years, nuclear and beyond.

Dylan: Well that's a very, very tantalizing statement, given we're supposed to be speaking about uranium, and you just hinted about all these other things that are really interesting.

Adam: We'll stick to uranium today.

Dylan: Yeah, I think there is plenty for us to be getting our teeth into with your nuclear thesis. You guys go back to your undergrad days at Amherst together, don't you?

Arthur: We do. We were actually freshman year roommates. I went to JPMorgan after college, while Adam did a short stint in investment banking that he doesn't like to talk about … Actually, we were less equities folks that time, more credit and debt. I structured derivatives for a short time too. When I came over to Segra in 2014 right when Adam launched the fund, I think our backgrounds really complemented each other. Adam had spent a little more time in equities and commodities, me in debt and credit, so between us we had the capital structure covered.

It really gave us the opportunity to look across assets and across markets and gauge really what was, in our minds, contrary and misunderstood. It's worth noting, for our nuclear thesis, that I covered public utilities at JPMorgan for a time too.

Dylan: You launched this nuclear fund in 2018?

Arthur: Right.

Dylan: But Segra was set up 5 years before that. What were you doing? you were trading credit?

Adam: Well, it was cross-asset. It was a balance, but it was a global opportunistic long-short. Effectively value long's and shorting what we thought were global bubbles. That'd be the very brief description. That's at least what we sought to do. In 2015 we made our first significant uranium investment, it was in a startup, and without going into too much

detail it was a home run, even during the uranium bear market. Sometimes maybe it's better lucky than good.

One of our LPs came to us and said, "Look, not only do we really like the numbers that you've run and the macro analysis that you've done on the nuclear fuel cycle, but you're really the only guys doing this. Nobody else has even answered any questions for us on this market. It really should be a standalone fund. You can make it long/short, you can do all the things that you want to do, but it should be sector dedicated." We really credit that LP for catalyzing the idea of doing this as a separate idea. That's how it all started.

Dylan: We talk reasonably frequently, and we dug quite deeply into your thesis in one of our first issues of our relaunched Popular Delusions back in late 2019, so I think many of our subscribers will understand the idea. But for the benefit of people who maybe aren't as on top of the uranium story or are coming to it newly could you just bring us up to speed at a high level to where are we in te cycle?

Arthur: It's important to maybe explain just which cycle we're talking about when we're talking nuclear. What we like about this industry is that it's relatively straightforward, and it's very forecastable and we think those are two dynamics that you don't find very often in broad commodity markets. Uranium really has got just one use-case. In the 1950s and 1960s there was a military dynamic to it too, but today, the output of a uranium mine really goes to just one user base: the utilities which run 450 odd reactors globally across 30 countries.

Right now, there's another 52 under construction and another 60ish in late-stage planning. We can go into it in more detail if you like, but we think it's a growing demand base, and you can forecast pretty clearly what it's going to look like not 6 months or a year out, which is, I mean if you can forecast 6 months to a year out for gas demand you're pretty brilliant … We can forecast 5 or 7 years out for uranium demand because if you're going to build a new reactor in most of the world it takes 7 to 10 years (actually in China its just 5), and you can see it all happening. You see it in the planning stages, you know when it's going to come online. You can monitor it as its being built and then commissioned.

The flip side is that because reactors are so important to the grids that they run on, you also tend to see announcements for decommissioning 4 to 5 years ahead of time too. For example, Germany is phasing out its nuclear program. It was announced 10 years ago.

The demand profile of this industry is very forecastable. But so is the supply side. It isn't hundreds and hundreds of assets globally. It's 40 or 50 key assets, and then some development projects. And those assets have very defined lives. From uranium discovery to production, oftentimes, uranium can take up to 8 to 10 years.

So, you've got this 8 to10 year forecast period on both supply and demand. But you add in one other unique component, which is that when uranium comes out of the ground it doesn't go directly into a reactor, it still has to go through conversion, enrichment, fuel fabrication. That fuel cycle takes about 2 years.

So, all of this comes together to say that it's a relatively well-defined market, which we can forecast 3 to 5 years ahead.

When we look that far out, we know that to meet the demand profile, you need higher prices and capital investment. Again, sorry to give you the long-winded 101, but I think understanding those dynamics are important, because, in many commodities, the name of the game is what demand or supply is going to look like next quarter. Most of the uranium thesis we're talking about here is 2025, 2027, 2030. That's one of the reasons we like it. It gives us a lot of runway to outline our thoughts.

Adam: I'll answer your question specifically. Arthur talked a lot about the demand and supply visibility, and the various cycles, but I think to your question Dylan about where we are in this cycle … probably in the peak of the commodity bubble in the '07 period, you had some 500-odd uranium or fuel-cycle-related companies compared to somewhere in the of 50 range today.

These are statistics that everyone that's looking at uranium sites knows and recites, so I don't

mean to be pedestrian with some of the things that you've probably heard a million times, but the price of uranium peaked out at $140, and spot was really squeezed. When we launched our dedicated vehicle, spot prices were $18. Today, they're between $28 and $30.

Most importantly, capital investment versus the prior cycle when it was used, is down some 80% across the industry. Essentially, the long-run demand profile doesn't reconcile with the current capacity in place to meet it. That's the setup.

Dylan: You mentioned, it's just about unpacking some of the layers, there's multiple cycles as you said, Arthur. On one level, you've got I suppose a plain old commodity cycle. But then there are other things on top of that.

Adam: That's right. It's quite a unique commodity cycle. Demand is relatively inelastic because of the buying cycles that utilities have. We're Texas-based, so if you had a 50% spike in WTI prices, Arthur and I would probably get in the car, drive 90 minutes, cap an oil well and have barrels flowing in probably 6 weeks. Multiply that anecdote by 50,000 times in the oil market and you create an even supply response to any demand shift in a relatively short order. That can't happen in uranium because of the structural dynamics of both supply and demand. Both are inelastic.

Arthur: When you think about uranium, again, it's just being used for nuclear reactors. If you think about the value proposition of a reactor, you're going to spend a tremendous amount of money upfront for the CapEx of building that facility. But the benefit of it is that you're going to have very defined costs over a very long life. Reactors built today will be operating in 2100, so 60 to 80 years, and they're even talking about 100 year lifespans for some of these assets.

Because the fuel cost is such a small, small percentage of the total cost of power, whether uranium prices are $30 or $100, it doesn't impact your total cost of power very much. If natural gas prices go from $2 to $8, it could completely invalidate the value proposition of a gas plant. So that's the first big difference.

But it means that fuel buyers aren't worried about prices day-to-day. What they're worried about is security of supply because the best way to destroy the value proposition of a nuclear plant is to shut it down and restart it frequently. The worst thing in the world is to run out of fuel and have to shut down, so utilities tend to carry more inventory than you would find in any traditional commodity market.

Buyers tend not to buy in the spot market. They don't buy the uranium they need today; they buy it in term contracts that commit them to purchase uranium over 5 to 10 years. This is what allows the industry to function. I talked about two very long lead times, both from the mining side and on the reactor side. The benefit of those long-term contracts is that miners know what they're delivering into, which allows them to spend what they need to build enough mine capacity. The utilities know that they're suppliers have that mine running, and they know they have a contract, so they're not worried about their reactor shutting down.

Therefore, the commodity cycle is more driven by a contracting cycle than it is by a capital spending cycle, and when those two get out of whack, you really get this very intense cyclical price discovery moment. That's what we are forecasting for this commodity in the next several years.

Buyers will have to come back to the table to really lock-in contracts to get the committed supply they require over the next decade and our view is that, unless prices are significantly higher, the production side will not be able to meet those contracts.

Dylan: So, this contracting cycle is why you hear a lot of people saying that the spot uranium price is basically irrelevant?

Adam: It's not irrelevant, it just needs to be put in context. It's important in the sense that there are sources of supply in the market. Byproduct supply or some mines that are state-controlled that are less price-sensitive make their way into the spot market year in and year out. But because they're rather price-insensitive pounds, wherever demand is on a given day they're selling will set your spot price. If there's no demand, spot prices can move wildly. And that spot supply, as we call it, is certainly nowhere near enough to make up for what normalized running demand is, in this market.

Said differently, when utilities come back to replace all their long-term coverage, and inventory restock, the spot market can't come anywhere near fulfilling those requirements.

You're in this odd period of time today where long-term contracting has been very muted versus historical levels. That's meant the spot market has been more liquid than the contract market, which in turn is why it has the focus of investors. But what I think most investors are missing is that the spot market only carries weight in a muted demand market, like the one we're in today.

When most market participants are short-term traders or intermediaries, maybe a small amount of utility participation, and then producers themselves - the big producers of the world have actually been spot market buyers - when that's the extent of the spot market, you're not going to get the price discovery that Arthur alluded to.

What you should be looking at, if you were someone investing through the cycle, is what price is necessary to meet the 180 to 200 million pounds of uranium that needs to be acquired for utilities when they contract? The spot market doesn't come anywhere near fulfilling those needs.

Arthur: Just for some rough numbers to contextualize a little, if you look over the last 15 years, 75% to 80% of all pounds put in a reactor will pass the term market (ie the long term contract market). The spot market may drive day-to-day headlines but a very small percentage of delivered pounds to utilities comes out of that market. To the extent that people see higher volumes in that market it's trader churn. It's me selling to you, you selling to me, but it's the same pounds circulating in the market.

It's this contracting cycle that will drive the upmarket, because they'll over-contract their needs when they're nervous about supply. But that same dynamic is what's creating this long bear market, right? In a traditional commodity market, as soon as prices fell below the marginal cost of production, you start to see assets come offline. In this market, prices fell below the marginal cost of production 7 years ago.

Dylan: And this is it taking so long to correct?

Adam: Right. The majority of producers were not selling pounds into the spot market at a loss. They were selling according to their long-term contracts which still priced well above spot. Folks watched spot drop to $18, but Cameco or the other producers were still delivering into several $60, $70, $80 contracts and their blended production was going into a far higher price market.

What we watch more than anything is how that waterfall of contracts is rolling off. It's replacing those contracts that will end up driving the next level of production, and that production is needed to meet demand.

Dylan: An obvious question, where have utility buyers been? Why haven't they come to market? And also just to spell it out, you did say a moment ago, Adam, that uranium *producers* were *buying* in the spot market. I've never come across this in any commodity market before. Can you elaborate?

Adam: Actually, in the last couple of days even junior non-producing uranium miners have used capital that they've raised to go out and buy physical pounds on the spot market and sequester them on their balance sheet. It is definitely unique.

Dylan: And to go back briefly to where we started, when I asked you what stage of the cycle we were in and you said we'd gone from 500 to 50 nuclear/uranium related companies, or that capex had fallen by 80% from its prior peak, when you're talking about some of the carnage, I think that's a data point right there, isn't it? The actual miners of this commodity are finding it cheaper to buy pounds in the spot market to deliver against their contracts than they are pulling the stuff from the ground.

Adam: Right. But you asked about the utilities. What the utilities have been doing.

Dylan: Yes. The original question was where are the utility buyers? What are they doing?

Adam: Well I think we've come at this trade from a different angle from the average uranium investor or commodity investor, which is just to look at the supply side, the miners, maybe talk to the production base and

build a macro thesis based on what those guys are saying. I think we've tried to turn that completely on its head and start with the demand side. A lot of our due diligence has revolved around relationships that we've built with utilities to understand their buying behavior and their psychology given that it is the contract cycle which is really how you end up being proven right or wrong on this investment.

I think we do have a unique view into the way that utilities behave. We sit on industry groups. We're members of the WNA and participate in the drafting committees of their fuel report. We've really come at this from an industry perspective versus your typical commodity investor and because of that, I think we maybe are uniquely positioned to comment on what utilities have been doing.

The average commentator, I think, gets it wrong. The average commentator says, "Utilities are dumb. They don't know what they're doing. They're resting on their laurels in a tight market."

It's actually quite the opposite. Utilities employ probably some of the smartest people we've ever met. Many fuel buyers are nuclear engineers, or in some cases, nuclear physicists. They're really not dumb. They've been around to understand the way that cycles work. But there's a bit of a misalignment of incentives.

The fact is that we are coming out of a very deep bear market. Not only because of things like Fukushima on the demand side and the impacts that that had, and the fact that the Kazakh Mining Company ramped their production into that event, but because utilities were also very well contracted and very well inventoried coming into it, because of the commodity supercycle that had preceded that event.

Dylan, you alluded to the work-off of the last cycle. The hangover was particularly massive this time around given the position that utilities were in in 2010. Over the last couple of years, you're simply looking at a market where, as Arthur pointed out, timing the price cycle of uranium is not in the job spec of any fuel procurement group. That's not what they have to do.

At the same time, they've been in an environment for the last 3 to 5 years in particular where they've been working off of inventories and letting that contract coverage drop because of the dynamics of the last cycle.

They are definitely looking at the market to understand when re-contracting should start. Arthur and I have no doubt in our mind that over the next few years we have to see a very large inventory re-contracting cycle and inventory restocking cycle. But it's not going to happen just because a purely financial analyst expects that it should, because their motives are not purely financial.

Dylan: What are their motives?

Arthur: Well, I think putting yourself in their seat always helps. If you work at a highly regulated US utility, for example, you need to justify why you're going out to procure uranium at the price you're transacting at. The problem isn't just that they might get an offer from a Cameco, that is way above the current spot price, the problem is that you've got this game of chicken where Cameco says, "Not only am I not selling to you at these prices, but I'm actually going to buy alongside you, because it's cheaper for me to buy in the spot market and compete with you for spot pounds than it is for me to produce from my asset base."

You've got Cameco saying say, "$45 or bust", and you've got utilities looking at the spot market at $28 and saying, "How can I tell my board that we should pay a $15 or $16 premium to lock in supply, when for the last 10 years we've been a massively oversupplied market?" That procurement team would be taking a big risk, and the incentive structure for it to take that risk just isn't there.

When we talk to utilities, I don't think any of them would say that prices are going to be here over the next 5 to 10 years. None of them think they're not buying it at $28 because they think prices could go to $24 next leg. What they're saying is, "I understand that you're telling me there's a potential supply issue. When the market gives me signals that prices should be higher, I'll pay higher prices. But until that market signal drives me to $45 or $50, I'm not going to cross that bid-offer proactively because if I'm wrong I'll get fired." These guys

are not getting a bonus for calling the cycle right per say.

Dylan: That's really interesting.

Arthur: If you look at China, for example, China doesn't have that issue *per* se. If you look at China's purchasing behavior over the last several years, they're actually over-purchasing versus their needs showing that they believe prices are too low, so it's not as if every utility is equally constrained. It's really US and European utilities that have been unable to react.

Adam: Fuel buyers have several job functions within nuclear and utility and bottom ticking the uranium market isn't one of them. It's just a fact.

If you put a gun to our head and said, "How does the price cycle probably kick off?" we might be seeing some of that here, to tie back to your prior question. Financially motivated players will likely kick it off as maybe the idea gets more attention amongst institutional capital. We just mentioned two juniors yesterday announcing that they were going to buy physical. To a certain extent anyone that has a purely financial and opportunistic motive can front run the cycle. That's been something that we have talked about since the onset of our fund, the risk that non-end users can position ahead of end users. That happened in the last cycle.

Dylan: What happened exactly?

Arthur: It was a bit of a perfect storm. It really started to run in 2005 but it was a 5-year bull market. Prices went all the way from, I think it was $7 or $8 to $140. There were multiple factors. First was the idea that you had utilities feeling very comfortable that it was going to be an oversupplied market for quite some time. Therefore, they drew down their inventory and drew down contract coverage dramatically. At the same time, China and India started discussing new build plans for nuclear and started committing to the nuclear market.

The nuclear program in China is actually very new, really over the last 20 years. You had that new source of demand alongside low contract and low inventory coverage. And you had a few key assets that were expected to be built in the 2008, '09, '10 timeframe which were going to effectively replace some supply that was dropping off.

I won't go into the details, it's a little bit of a long story, but a couple of those assets that were key to balancing the cycle had floods. At that point, utilities moved from saying, "Okay, I'm under contract and under inventory, but I'm not worried about supply," to, "Wait a second, demand's rising, supply is uncertain. I need to go out and buy pounds right now."

What you saw was utilities going contracting at the lows, to securing 30% or 40% of their annual needs in the term market, to then purchasing 150% of their annual needs. They effectively contracted out the next decade of supplies, which is what drove the price spike to $140/lb.

It's taken a decade to work off that contracting. What we see now, and what we like, is that you have similarities to today: the low inventories, the lack of contracting. Last year utilities only contracted 25% of the total demand in the long-term contract market, which is the second-lowest ever outside of Daiichi Fukushima.

Then you've got key assets this turning off or even running out of ore. You've got McArthur River, the largest asset in the world turning off because of low prices. But you have assets that have run for 30, 40 years which are now in depletion. COMINAK in Niger and Ranger in Australia are both out of ore. That's a significant percentage of global demand that's not coming back.

Again, last cycle, it seemed like a perfect storm of catalysts that drove the market to obviously, pretty frothy levels. What we are interested in is the fact that we're seeing the same dynamic start to form today, and you still have the spot price at $25, $28, and you still have equity prices pricing in that reality.

Adam: There was talk about a nuclear renaissance the last time around, especially China's nascent nuclear generation ambitions, similar to India's. Today, that discussion would probably be broadly encapsulated by the idea of the energy transition and the net-zero targets that are being set out. Hitting emissions targets is a key shift to bring the spotlight back on the idea that you cannot shut down nuclear,

replace it with renewables and still achieve your carbon goals.

Dylan: I really liked Arthur's answer earlier, "which cycle?" There are multiple cycles going on here, and you to talk about this energy transition, which is very long cycle. I like this idea of colliding cycles. Let's talk about this. It seems most analysts are quite bearish on Western nuclear demand. The real growth and future demand, the real planning for nuclear is coming in places like China, India and Russia, I believe.

To me it's just so obviously dumb what Germany has done, what even Sweden has started to do, what the West are doing, with their playing easy politics with nuclear. Are there any indications that this is going to change?

Adam: That's quite a high-level question. It's been politically easy to be anti-nuclear over the last 10 years because alternatives like renewables haven't been held to any real scientific or climate standard. So, to answer your question with a question, how serious are governments? How serious do investors think governments are about meeting these targets over the short, medium and long term? I think the answer to that question will dictate how much longer this farce continues.

And it's not just Germany, we have it in the US too. Vermont or California, there are plenty of case studies. When you throw enormous amounts of money at alternative non-carbon emitting generating sources that aren't nuclear while shutting down nuclear and emissions go up. Just how serious are we about actually scrutinizing those numbers in those case studies?

Arthur: I should say an important point. For our thesis to work, we don't need any of it to change. By our numbers we already have 12 to 15 reactors in the US going offline by 2026. Any shift in sentiment just saves current reactors, it doesn't build new ones, but the slightest shift in sentiment could have a real right-tail impact on the trade. Our trade is very much underwritten with the assumption that nuclear goes away in the West.

When we think about renewables specifically, and we're not anti-renewables, we think that they have a phenomenal place in the clean energy transition. With that said, we're at this ideal moment for them where expectations are incredibly high. The common wisdom is that between batteries and renewables, you effectively get a stable grid and that costs will only decline, and that it will all work at grid-scale.

But when we look at other examples we talked about, like Germany and California going from 10% renewables penetration to 25%, it's actually relatively straightforward for most grids and isn't going to put much stress on the system.

Going from 25% to 40% penetration is very difficult though. Above 40% is still relatively academic. It works in Germany, but only because when their grid is unstable, they import power from France, which is nuclear.

Dylan: Do you want to just quickly talk about the role of baseload, and the intermittency problem inherent in renewables? We covered it back in our 2019 work on uranium, and I think most people will understand it, but I'd prefer not to assume. So for the benefit of those just starting to learn about the space …

Arthur: Sure. A nuclear reactor is almost always online, continuously producing power. That scale and that consistency is the value it brings to the grid. For renewables, everybody understands the example of solar, and how the sun obviously works during the day and doesn't work at night. But they actually can have massive swings during the day, and seasonally too. The amount of solar output in California in the summer months for example is double that of the winter months. These generation sources need to do one of two things to try to mirror what nuclear can do. The first is massively overbuild them.

Nuclear's capacity factor is 90-ish percent in the US meaning it runs 90% of the time. Wind and solar are 25%. So you can either build four times as much solar or wind or you can back it up with a battery. But both cause massive issues. If you overbuild renewables to compensate for the fact that they're off a lot of the time you end up with too much power in the grid a lot of the time which really screws up these energy markets.

What we see now in places with heavy wind are these sudden gluts in the electricity supply,

which cause negative power prices a lot of time, which is very, very tough on the market. Generators have to pay businesses to turn off their industrial machines. It makes it that the system costs of running a grid-based on wind and solar incredibly high.

But the biggest problem when people compare different technologies is they never compare apples and apples. You might compare a gigawatt of solar and a gigawatt of nuclear but the gigawatt of solar may run 25% of the time and may not be there when you need it. A gigawatt of nuclear is always there.

Then, when you take into account things like total system cost, transmission requirements, upgrade requirements for renewables, nuclear is often a more competitive economic argument.

Adam: It really annoys him, because it's really weak academic analysis when you bring out something like Lazard's Levelized Cost of Energy study, and they try and make nuclear look bad. It's completely the wrong framework. Forget grid stability issues. It's just financially wrong.

Dylan: Arthur's shaking his head just at the mention of this study. Are you OK Arthur?! Hang in there, because I want to get to the implementation of your thesis, and how you express these kinds of ideas in your portfolio. And I know that the notion of a nuclear renaissance isn't even a part of it. But while we're on the topic, it's interesting the things people push back on when you say nuclear. One is that it's really expensive, and costs much more money in the end than it's modelled to cost in the planning phase. The second is that it's really dangerous to store the waste.

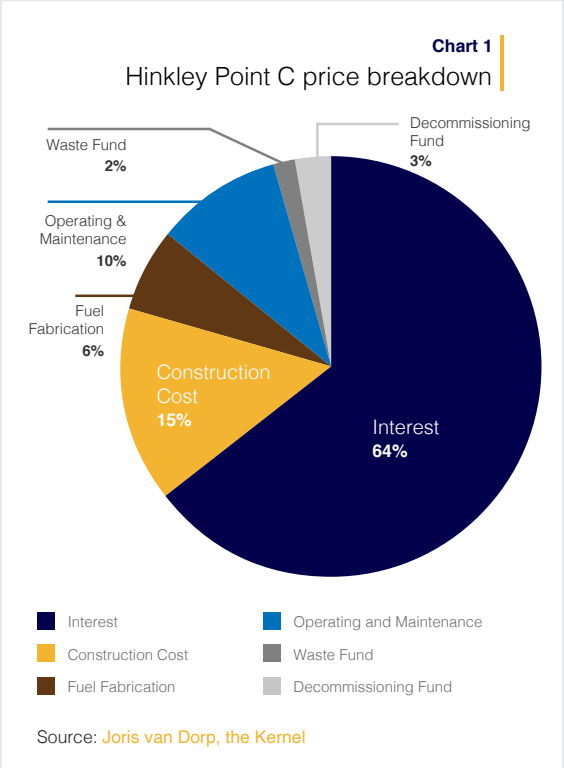
Adam: I'll bullet point the reactors. Arthur, you bullet point the waste points.

Arthur: OK

Adam: On reactors it's cherry-picking designs and timing. Without a doubt, the most recent run of reactors in the US have been overtime and over budget. But these have been specific reactor designs versus growing mass production route you get coming out of Asia. Korea has been building on-time and on-budget reactors for decades. The Chinese just reaffirmed they're under $3bn/gW target and 5 year build time for their Hualong One reactors. That would make it competitive on a global scale. You can't just cherry-pick Westinghouse designs with all the problems that they've had over the last multiple decades and say that they're the model for international build projects.

It's academically disingenuous. The fact is that scale and streamlined design are all important, as is by the way being able to start and end a project at the same design without a natural disaster interrupting.

There are certainly builders of reactors that have perfected on budget, on time production at scale, but most commentators just choose not to use those examples. The second thing, and I'll just throw this out there, especially if this is going to people in Europe, just look at Hinkley Point C's lifetime cost breakdown in the UK.



Look at what percentage of the cost of operating the reactor over its lifetime are interest costs. It's a huge piece of the pie. If you took that model and just levelized the interest cost for where wind farms or solar farms are being subsidized, look at where Hinkley's cost per kilowatt hour comes up. It changes the game completely. That's where I'll leave it. Arthur, you can talk about this.

Arthur: Maybe just because I can't help myself, one other comments on cost, is cost in and of itself doesn't mean anything. It's cost relative to other options. I think there's a massive home country bias with most investors. If you're sitting in the US and you're thinking about the cost of natural gas relative to nuclear right now for new builds, you do have a point because in many places in the US you have low natural gas costs.

In China, that's not the case. We have a chart in our deck that I think you've seen, but in China it's both an economic and security argument to go with nuclear. In many parts of the world nuclear, is still the cheapest option after brown coal. If you believe that decarbonization is a major focus and coal will be having issues in the future, nuclear is the next best thing. It's not behind wind and solar and gas, which is a very US and European-centric way to view the world.

Dylan: And the waste storage?

Arthur: You can't compare nuclear to nothing. We need the power. When you compare nuclear to other options, we think that waste costs are one of its major selling points. Yes, there have been issues with nations having central waste repository. It's been debated in the US Yucca Mountain for years. They are making some progress in some countries in Europe, but generally the way that we store waste right now is not a problem. People think of it as this green ooze that is in some way explosive. But waste is just a used pellet. It sits in a big pool of water that takes away a lot of the radioactivity after 5 to 7 years. Then it gets put in something called dry cask storage which looks like just a big cement pillar. Then it sits onsite of a nuclear reactor until you decommission that reactor, so it can sit there for 60, 80 years. It's not explosive, there's no transportation issues.

People think nuclear waste is dangerous but more people were killed falling off their roofs installing solar panels last year in the American southwest than in the entire history of nuclear waste, for 60 years. People are not harmed by waste. People have irrational fear of waste and that's because irrational fears come with the word nuclear.

We can get into a whole psychological argument about that, but if you compare waste disposal in this industry where it's heavily regulated and is actually paid for by the plant, it's in the overall budget, it's part of the cost that we're talking about. Compare that to solar or to wind turbines where there's no plan to deal with used turbines or solar panels, let alone a budget for their safe disposal.

China is going to have a massive solar panel waste issue. Today you take an old solar panel that's been in use in United States for 15 years and gotten the majority of its lifespan out, and you sell it to a third-world country where it can get used for another 5 to 7 years at a lower capacity. Then it gets dumped in landfill, or in the sea or somewhere.

People act as if batteries or solar are a closed-loop system with some way of recycling them. Most of this stuff ends up in landfills and is far more harmful to the environment than nuclear waste ever will be or ever has been.

Dylan: Yeah, it really is an interesting case study in risk perception. But listen, I've blown slightly off-topic. Well actually, it's completely on-topic in that it's relevant to uranium, but as you said, you're not betting on a big Western revival in enthusiasm for nuclear. So, in that sense at least, it's not really relevant to your investment thesis. Let's just go back to that and let's talk about the way that you guys are expressing it in a portfolio.

Adam: Generally speaking, our fund is focused on the fuel cycle. Technically, we can look at anything nuclear-related, new nuclear technologies, as hopefully we've made clear, we're advocates for the whole sector. Really, when we looked at how to skin the cat, being more bullish than the numbers on nuclear demand going forward, where did the pinch point arise? It's clearly on the supply side and the under-investment cycle, that we think we've been through.

Without going through single names in the portfolio construction, in a few words, what differentiates our strategy is that there are some key strategic assets, globally. Necessary assets for the next cycle that are not only needed to balance a constrained market but will serve a strategic purpose given the amount of generation and demand that we see going out through 5, certainly 10 years. They are massively undervalued today versus even a mid-cycle price and mid-case production

profile for those assets, before you've even priced in just how strategic they are.

Some guys might go out there and they might buy the smallest, highest cost, crappiest assets because the price is going to ramp and so you buy the garbage. There's probably something to that. But we are taking an institutional approach to the supply side of this market, where we think if there's any rationality at all and if we're even half correct in our differentiated view on the way the cycle plays out, large scale, good jurisdiction, low-cost mines that can be a smoothing factor in this price cycle, should be at a huge premium in the market.

Dylan: I think in your last letter you were talking about how that garbage has been flying recently. It was a brilliant letter by the way. I was laughing out loud a couple of times.

Arthur: If any of your readers are familiar with junior mining they'll understand. There is a lot of snake oil being sold. Anytime you're dealing with the mining space, you need to be a skeptic and you need to really understand and have a process about how you deploy capital. It's not surprising to us that after a 10-year bear market, in the first innings of a recovery, correlations are very, very high. That leads us to what we're seeing, which is, yes, we've had assets that we really like start to show some promise. But assets that we absolutely hate, run by management teams we would never invest in, are currently moving alongside them.

That's why we've created a long-short vehicle. We think at this point in the cycle we are massively biased to the long side. As the cycle continues, especially if prices go to where we think they'll go, there will be some absolute frauds that end up being phenomenal shorts for us. We would caution against investors spreading their investment across this space, because I think there's a lot of ways to hurt yourself. We think that having, again, an institutional approach, a defined framework, is going to go a long way.

Dylan: It's really ironic that you've got this deep, deep value play yet within it you've got these crazily overvalued pieces of garbage which are flying.

Arthur: You want to be smart, but not too smart. There's also a way to overthink how the cycle's playing out. I think what we're doing is striking the right balance where we understand what is driving a fuel buyer psychology and how they think about asset selection, drives our process. As we speak to fuel buyers, we know which assets they are likely to purchase from in the future. We can tell the difference between somebody painting a picture for us and somebody that really has a value proposition that we believe in.

Dylan: It's only miners, right? That's primarily your kind of area of focus?

Adam: Primarily. It really depends on the opportunity set, but without a doubt, the supply side, the fuel cycle as a whole, it is the core of the opportunity set, but it is a nuclear industry-related fund. Especially to the extent that, as the sector matures, there's probably going to be more things to look at.

Dylan: You took out your first short position recently, didn't you? I was quite interesting to see that in your letter.

Arthur: Yes. None of these markets are going to go in a straight line. We believe that understanding especially the frothier short opportunities, will be really instrumental over the cycle. It's very much long-biased, but we spend a lot of our time looking at companies we don't like trying to make sure we understand that there's an entry point there as well.

Dylan: Arthur, why would buying just an ETF or buying one of these kinds of listed uranium holdings be a dumb idea?

Arthur: I don't know it's a dumb idea. Let's say you take away from this discussion, that it's an interesting topic and for whatever reason, you have an inability to look at an active management structure. If our thesis is proven right, those things probably go up. The question is whether the risk-reward is anywhere near what we're offering.

If you look at ETFs, the way that they're constructed tends to be very strange. There's URA which is really only has 65% or 70% uranium exposure and they have a bunch of very random big nuclear-related industrial exposure. You're not even fully allocated to the thesis because the idea that Hyundai in Korea is going to move based on nuclear power is very low, so it's just very inefficient.

In addition to that, a lot of the junior miners they own, are the ones that in our minds, are completely irrational. They don't make any fundamental sense. There's some portions of those ETFs which are closer to frauds than opportunities. ETFs are a very blunt instrument and, in this market, where nuance and asset quality is key, we would actually recommend that anybody that wants to do the work pick assets that they really understand and know about. We go underground. We go up to Canada. We're at sites dealing with management teams. There's a lot of work that goes into our process, but we would advocate for anyone paying attention in the space, to be an active manager.

Additionally, if you look at physical uranium, don't get us wrong, the risk-reward to us is very clear buying in the 20s when we think that you need at a minimum the 50s or 60s, and it will likely overshoot to the 80s and 90s, is a very good risk-reward. If we're right on our thesis, the leverage you're going to get from the miners going from being viewed as an exploration or early-stage development play to a profitable producer, the rerating is just dramatically greater. If you believe the thesis enough to be in the commodity, your risk-reward actually ends up being a lot better in these high-quality developers in our framework.

Dylan: You said last time we talked that you were *more* bullish now than you were a year ago, even though your fund just doubled in the last year. How to reconcile that?

Arthur: What I would say is two things have happened. One, we have much firmer commitments from governments around the world with their carbon policies. Just by way of example, we talked a little bit about it, but China just came out with their 5 year plan. They are officially targeting 70 gigawatts of nuclear by 2025.

Now, if you compare that to third-party consultant forecast in the mid-50s. Xi Jinping's 5 year plan was the most specific on nuclear out of any other energy transition technology and targets the most references. This is a huge shift for the industry.

If you were going to graph out a mid-case, a bull case and a bear case, the government policies we've seen implemented and committed to over the last 18 months make the bear low case very, very unlikely today. Joe Biden's come out and not only supported nuclear for the first time as a Democrat, in close to 40 years, he also has committed to 2035 carbon neutrality of the electricity grid. By our math, if you take those 15 nuclear reactors out, it's almost impossible to get there.

Look at Illinois or Pennsylvania. You're talking about 80%, 90% of your clean energy coming from nuclear and you have a clean energy target in 2030. Tell me how you take away 80%, 90% of the clean energy currently on grid while trying to get rid of fossil fuels and hit that target in 10 years? The answer is it doesn't happen.

On supply, the bear case for the last few years has always been that the Kazakhs are very low cost on a relative basis, to a lot of mines globally. They weren't producing that much in recent years, but if we ever go back up to $30/lb they'll turn on the taps. But, last August we were at $34/lb and not only did they not turn on the taps, they actually extended their forecasted production cuts out to 2023.

What we're seeing is much more constraint on the supply side, full commitment to looking at value over volume from the current producers. They're also proactively buying in the spot market alongside a demand profile that's just getting much firmer. Yes, prices are higher than where we were purchasing names a year ago, but the risk reward profile of the trade has improved dramatically.

Dylan: Right. You guys did just recently open up again for that reason?

Arthur: Yes. We closed a year ago, but the liquidity in our names has allowed us to be much more open to taking new capital. In today's market, deployment is much less of an issue than it was a year ago.

Dylan: Okay. Is there anything else that we haven't covered that you think is relevant or that you would like to mention?

Arthur: I think you're going to start seeing more and more headlines. I think you're going to see concrete details from the Biden administration in the next 2 or 3 months. You're also going to see some reactor life decisions out of Exelon. You're going to start to see that demand picture we're arguing for is

firming up, actually coming into play, with specific assets and specific headlines from the government.

The other point is just this idea that ESG investing is driving a lot of flows in today's market. We think that nuclear and uranium specifically have a phenomenal ESG argument, and I don't think that's well appreciated by most institutional investors. One place we're spending a lot of our time is advocating with rating agencies and large pools of capital to correctly recognize nuclear and its fuel cycle within their ESG framework, and to the extent that is successful, which we hope it will be, you're just talking about a much larger pool of capital willing to underwrite a thesis 5 to 7 years out.

If you're investing, we say this often, in nickel or copper or anything else related to the battery transition or electrification, you're underwriting a 5 to 7 year thesis. Relative to what you're expected to commit to with those themes, which is fundamentally higher UV penetrations, more electrification, et cetera. With uranium all you have to underwrite is that if prices stay this low, the market is unable to balance. It's a much simpler less risky thesis for investors to wrap their arms around.

Dylan: I think that's a pretty good place to leave it. Gentlemen, thanks so much for your time and insight. Massively appreciated.

Arthur: Cool, thanks.

Adam: Thanks

Will higher yields derail the bubble?

Last month we articulated some of the historical precedents for what we think is happening today. Namely, that history is replete with carbon-copy examples of inflationary booms which were dangerously stimulated by central banks, tricked by benign readings of CPI inflation, into thinking that the economy was running at a safe temperature. And we've been getting plenty of pushback. The main one is that rising yields are likely to be at best a headwind to future gains and at worst the end of a pin, that bursts the bubble.

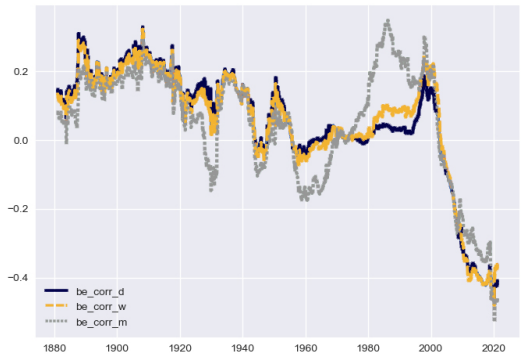
We have a lot of sympathy with this counter. And our crystal ball is no less foggy than anyone else's. We also reserve the right to change our mind when we see fit (or just to be plain old wrong). But right now, we still think a bubble is more likely than a bust. If anything, the data suggest we should expect more volatility, but this can coexist with a stock market which trends higher. In the following few charts, we'll show why.

Equities and bonds, can and do, part company

The starting point is to understand that implicit in the belief that risk markets can't go higher when bond markets are going lower isn't so clear empirically, even if it is intuitively. Chart 1 shows the long-run history of the correlation between equity and bond markets, the three lines plotting the correlation between daily, weekly and monthly percentage changes in the S&P500 and US Treasury Bond total return indices respectively.

It's an interesting that in recent decades the correlation has been deeply negative. You don't actually have to look very hard to find the first evidence that equities and bonds, can and do move in opposite directions. The 1920s and 1960s stand out as obvious examples of equity bull markets which occurred in rising yield (ie falling bond return) environments.

Chart 1
US Bond-Equity correlation since the 19th century



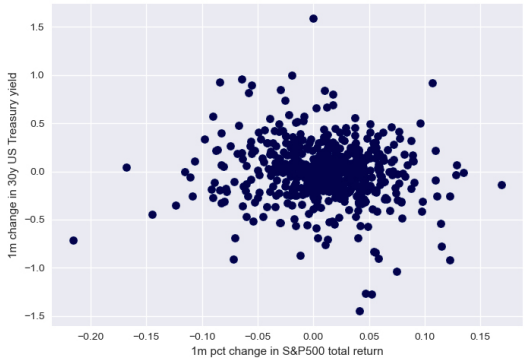
Source: Calderwood Capital Research

But it's also interesting that the negative correlation most of today's financial practitioners take for granted is actually anomalous. Historically, the correlation has been positive. So, if rising bond yields are to check the bull market in equities, that correlation has to flip back round to being positive. Of course, this is very possible. The chart shows very clearly that the correlation has been historically unstable. But why *should* it turn now? We're not sure, and for the time being, we'd emphasise once again that rising bond yields, aren't a "nailed on" negative for equities.

Even more interesting than the direction of correlation is the direction of price. What we're more interested in is what a rising yield environment looks like. And again, the answer isn't clear. A good way to see this is by looking at a scatter plot of bond and equity price changes, which we've done in Chart 2. It shows that there's not much of a relationship, no matter how hard you squint.

Chart 2

Changes in equity prices and bond yields (1971-present, monthly changes)

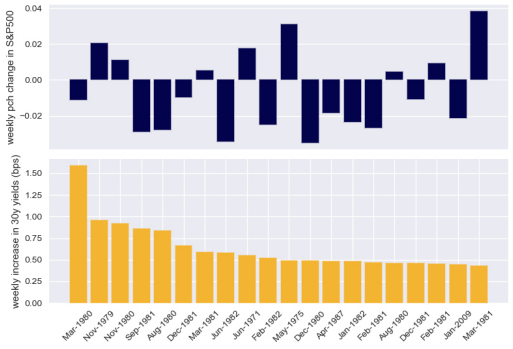


Source: Calderwood Capital Research

Chart 3 digs further by taking the twenty worst bond market routs over the last fifty years (as measured by the largest one week increase in 30y yields and shown on the bottom panel) and comparing them to equity performance over the same time (top panel). While equities don't *generally* do so well during such episodes, there have been plenty of exceptions.

Chart 3

Equity returns during bond market weakness



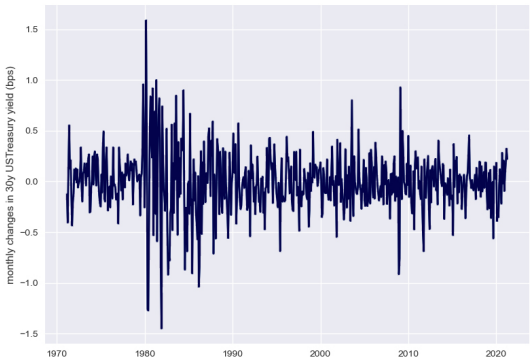
Source: Calderwood Capital Research

When you look closer though, you see that nearly all the weeks with the biggest yield increases occurred in the 1970s when yields were much higher than they are today. Equally, yield moves would therefore have been higher, as chart 4 which plots monthly changes in the 30 yr Treasury yield over the last 50 years shows very clearly.

Indeed, for those worrying about what an "out of control" bond market might look like, this is an interesting period to consider and one we'll look at more closely in a moment.

Chart 4

monthly changes in bond yields

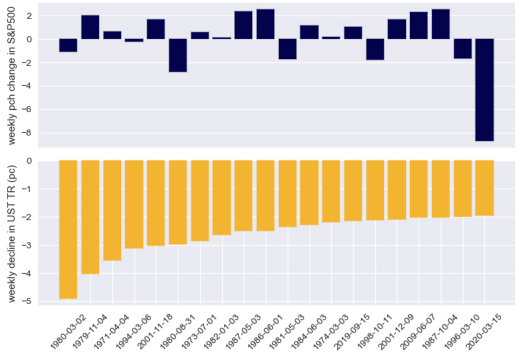


Source: Calderwood Capital Research

But first, let's correct Chart 3 for this 70's bias by thinking about bond market weakness not in terms of the changes in government bond yields, but in terms of the percentage changes in government bond total return indices. When we rerun the analysis we get the results shown in Chart 5.

Chart 5

Performance of equities during the worst performing bond weeks (1971-present)



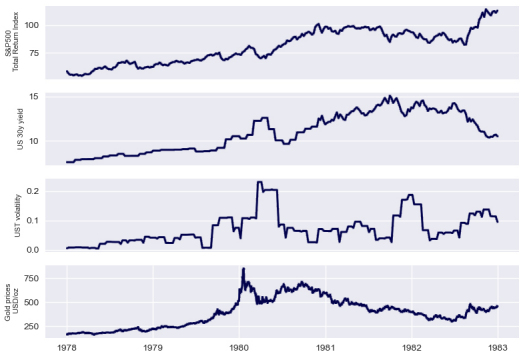
Source: Calderwood Capital Research

The results aren't so different from those we saw in Chart 3, although we now see that the worst bond market episodes are less concentrated in the 1970s. Instead with the exception of the middle of March 2020, equities have done pretty well during periods which were toughest on government bond markets (interestingly enough, as we look at our "worst twenty" bond market weeks over the sample period, the 'taper tantrum' of 2013 doesn't even show up, let alone the moves we've seen so far this year.)

The fact remains that it was the 1970s and 1980s which saw the biggest gyrations in bond markets. Commodity markets were booming, the Hunt Brothers were trying to corner the silver market, inflation was accelerating, and few believed that the Fed, or any other central bank, had much appetite for the deflationary medicine required to arrest explosive money supply growth.

Chart 6

The 'great volatility', a financial market snapshot



Source: Calderwood Capital Research

The S&P500 total return is plotted on the top panel, the 30y US Treasury yield on the second, US Treasury bond realized volatility on the third, and gold on the fourth. The surge in bond volatility is evident in the third panel, as is that in the gold market on the bottom one. Yet it's both interesting and relevant that equities performed so well under such circumstances. Again, rising bond yields needn't be a cap on rising equity prices.

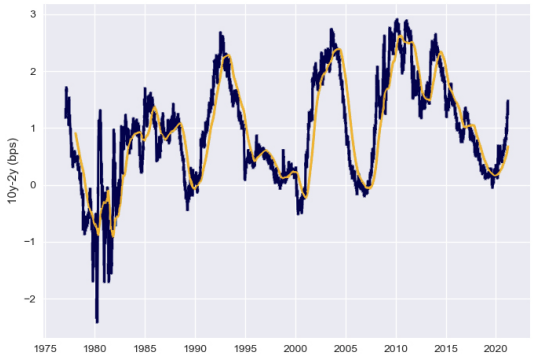
A steepening yield curve correlates with higher volatility, not returns

It could be argued that to focus on bond yields in isolation is to ignore more important information contained in the shape of the yield curve. We have sympathy with this idea. The problem is that it isn't clear how relevant yield curve information is for equity markets.

Chart 7 shows the difference between the 10y Treasury and the 2y. It shows that for all of the attention recent yield moves have had, the slope of the curve is almost smack in the middle of its historical range. Indeed, we could see another 150bps of steepening before we might think we're in 'the Fed is losing control' territory.

Chart 7

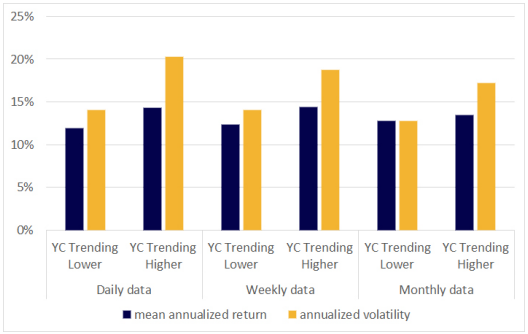
Fifty years of US yield curve history



Source: Calderwood Capital Research

What happens if the curve becomes very steep? Not very much, according to the data. The easiest way to see how the shape of the curve is evolving is to compare it to its moving average which Chart 7 does, but not in a way which is very insightful. So we sorted the history into two periods: those when the yield curve was above its moving average (ie the yield curve is steepening), and those when it was below its moving average (ie the yield curve is flattening). We looked at daily changes, weekly changes and monthly changes and show the results in the following chart.

Chart 8
Stock market performance by yield curve regime



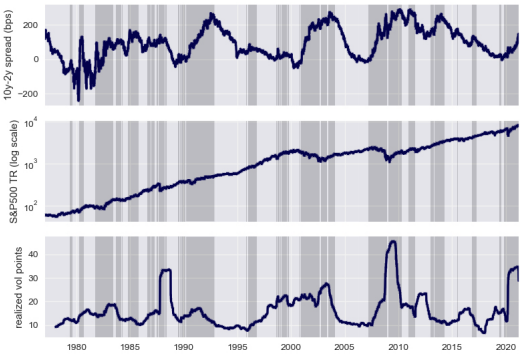
Source: Calderwood Capital Research

The dark bars show the stock market mean annualized return, the light bars its mean annualized volatility. At first glance, it looks as though equity markets do better when the yield curve is steepening (ie the curve is trending higher). This is marginally true in the monthly data, and less marginally so in the daily and weekly data. But when you look more closely, you see that volatility appears much higher when the curve is steepening too. In other words, if there is a higher equity return during yield steepening environments, those returns come with higher volatility.

Interestingly, when you run the appropriate tests for statistical significance you don't find much to get excited about in terms of different return expectations. The Mann-Whitney test statistic strongly suggests that both sets of data come from the same distribution (ie one mean isn't materially different from the other, with p-values of around 0.3). But the Levene test, which compares variances finds overwhelmingly that volatility *is* significantly higher during steepening regimes (p-values close to zero).

Chart 9 shows this quite well. The top panel shows the 10y-2y US Treasury curve, the second panel the S&P500 index, and the bottom one the realized volatility of the S&P500. The shaded areas represent periods during which the yield curve was steepening. While such periods have been ambiguous for stock market returns, they've been fairly *un*ambiguous for volatility. This is the world we've been in for the last year, and this, we think, is what we're currently experiencing.

Chart 9
Yield curve steepening and equity volatility



Source: Calderwood Capital Research

The ghost of JP Morgan

When asked what he thought the stock market would do in the future, John Pierpont Morgan would avoid the question, saying only that "It will be volatile". But today, that seems like the right forecast. There's plenty of concern that central banks will taper, tighten, or lose control of inflation and so there's plenty of scope for volatility as markets price those changes.

The data says quite clearly that such volatility is normal for this stage of the cycle. What it does not say clearly is that higher bond yields, or particular shapes of the yield curve are much use at forecasting where stock markets will go next.

Therefore, we don't see why higher bond yields must *necessarily* put an end to this bull run. We continue to place more weight on the historical playbooks we detailed last month. And view the risks as being tilted more towards the right tail than to the left.

Tales from the bezzle: Lex Greensill and the danger of a slick salesman

"*At any given time there exists an inventory of undiscovered embezzlement in—or more precisely not in—the country's business and banks. This inventory – it should perhaps be called the bezzle – amounts at any moment to many millions of dollars. It also varies in size with the business cycle. In good times people are relaxed, trusting, and money is plentiful. But even though money is plentiful, there are always many people who need more. Under these circumstances the rate of embezzlement grows, the rate of discovery falls off, and the bezzle increases rapidly. In depression all this is reversed.*"

JK Galbraith, the Great Crash of 1929

"There was a failure to ask basic questions about him and how his business had so quickly become a big player in such a significant market."

Paul Myners CBE, former British Financial Services Secretary

"I will repeat an old saw for banks - especially in the light of Greensill and Credit Suisse. Due diligence is not hard. You just have to do it."

John Hempton, Bronte Capital[1]

We're not sure how closely our research clients follow the goings-on in some of the more arcane corners of finance. We follow them intently because we invest in them, but every now and then something happens to bring the fringe to the frontline. So, it has been with the spectacular and sudden demise of Lex Greensill, and the firm he started nearly ten years ago, Greensill Capital.

We follow the private credit market, and especially its short-duration flavours, because it overlaps very naturally with what we do as investors. Our activities in the space mean we have a perspective on this particular fiasco, which we'd like to share. Like all good financial disaster porn, it's easy to go down a rabbit hole. There are already many intriguing, if familiar themes (eye-popping hubris, rogue traders, embarrassed former prime ministers) but we'll try to keep it short. We expect the details will make a good book one day, but for the sake of brevity we will focus on the higher-level lessons which are highly relevant to allocators. In what follows, we'll tease some of them out as concisely as we can.[2]

The Greensill narrative

Greensill Capital, the 'King of Supply Chain Finance', was only a few months ago, managing around $15bn in assets. Its *shtick* was "supply chain finance", which goes under many names - factoring, trade-finance, inventory-finance, receivables-finance, etc – but is in essence the same thing: the funding of working capital.

Suppose a business takes three months from procuring the supplies it needs to manufacturing/growing/purchasing its product and shipping to its customers. Then suppose that after shipping its product to customer, that customer takes a further three months to pay its invoice. In total, the business

[1] https://twitter.com/John_Hempton/status/1370438170496561153?s=20

[2] There are some excellent sources for getting up to speed with the Greensill story. The FT and the WSJ have admirably reported on it, while John Hempton at Bronte, Steve Clapham at Beyond the Balance Sheet and Marc Rubenstein at Net Interest have been asking all the right questions, and digging deeper than most in trying to answer them (as usual). If you do want to set aside a couple of hours to get on top of what has happened, and how we got here, they should be your first google searches

has to fund itself for six months. Lending to that business for a short period of time on the basis of some kind of collateral (its raw materials, inventory receipts, receivables etc) to shorten that cash conversion cycle is the essence of supply chain finance.

Lex Greensill, founder of his eponymous firm, spun it into something much more grandiose sounding. Its stated mission was to democratise finance, stand up for the little guy and in so doing, "make the world a better place" (and yes, he *did* actually say that[3]).

To understand how Greensill got away with such a brazen narrative, it's important to understand what an attractive source of funding working capital can be if used effectively. If you can procure goods without paying for them upfront, sell those goods to customers and then receive the cash from your customer before you've paid your supplier, you're found the holy grail of capitalism. You've made profit without putting up any capital. Moreover, if you can keep that trick going indefinitely, you're using someone else's capital to grow your business. Indefinitely. It's a very neat way of obtaining free leverage for those who can pull it off, and one need look no further than Amazon's history of positive working cashflow to see just how powerful the effect can be.

Of course, most businesses aren't as good at executing such an aggressive working capital strategy as Amazon, but they'll try anyway, squeezing their smaller partners by delaying payments to suppliers until they themselves have been paid by their customers.

Enter Greensill. Instead of waiting ninety days to receive payment from, say, BigFoodRetailer Ltd, a supplier could instead sell its receivable to Greensill in return for cash right now. Greensill would in turn present that receivable to BigFoodRetailer, waiting out the ninety days to be paid in full, in effect being paid to take on the BigFoodRetailer credit risk in the meantime (ie Greensill becomes a BigFoodRetailer creditor instead of the supplier). The supplier is happy because it's cash cycle is shortened. Greensill is happy because it is paid very well for miniscule credit risk. BigFoodRetailer Ltd doesn't care one way or the other.[4]

That's the theory, anyway. The eagle eyed among you might have noticed that such a scheme doesn't *necessarily* help out the little guy any more than, say, a loan shark helps out little guys with pay day loans. Both are paid in excess of the transaction's credit risk because their customers are credit constrained.

But there's also the potential for collusion between Greensill and the larger businesses it is supposedly fighting against. For example, suppose BigFoodRetailer was to artificially lengthen its supplier payment cycle to 120 days, presenting Greensill as a 'solution' for the supplier to receive earlier payment (in return for a commensurately higher fee, of course). Greensill and Vodafone could split the fees. Vodafone gets cheaper financing, Grensill gets its return, and the small business gets … screwed.

Of course, that's not to say that this is what Greensill or other supply chain finance practitioners were or are doing. It's just to reality-check the "make the world a better place" narrative, which will be important in what follows. In essence, there's absolutely nothing intrinsically wrong with the activity. Banks *are* pulling out from the business of supply chain finance. Small creditworthy borrowers without access to public credit markets (and therefore central bank liquidity) *are* capital constrained. And there *are* barriers to entering the market, in terms of evaluating, processing and monitoring loans which imply a higher return in excess of the transaction's credit risk. If done properly, therefore, supply chain finance should have a valid role in the economy and offer an interesting low-risk strategy for investors.

But on the 1st of March, Credit Suisse gated all four of its supply chain finance funds citing

[3] "Unlocking capital for the modern world", Softbank promotional video https://www.youtube.com/watch?v=74eJYxRpAOI&t=159s

[4] Large banks have generally been exiting the trade finance business because of new capital requirements put in place by Dodd Frank and Basle III, while smaller banks typically prefer to focus their limited processing and form-filling capacity on making a small number of larger and longer-term loans, rather than a large number of smaller short -term ones

'valuation uncertainties'. It turns out that those funds were actually just white-labelled Greensill funds. A few days later, Greensill was in administration, it's largest investor (Softbank) had written down the $1.5bn investment it made in the company less than two years earlier, and its largest credit exposure (Sanjeev Gupta, the British steel tycoon) was teetering on the brink of insolvency. How had such an apparently low risk strategy become so toxic? And what are the lessons?

The Greensill reality

It turns out that the bulk of the insurance Greensill purchased to offload its credit risk was underwritten by one company. Moreover, the guy responsible for underwriting credit risk at that company had blown through his internal limits, for which he was fired. The insurance was not renewed by the company's newly installed credit underwriter, and so Greensill's loans had no protection, and Credit Suisse (CS) had no confidence that they were 'money good'. By gating with a view to liquidating the four Greensill funds collectively worth $10bn, Greensill suddenly found itself both unable to recycle maturing loans into new ones and, relatedly, on hook for some of the more reckless credit exposures it had underwritten through Greensill Bank, the German subsidiary it bought in 2014.

Does Greensill's collapse demonstrate that short term private credit strategies are fundamentally dodgy? We can't say definitively if we'd have avoided the Greensill problems had we been presented with the opportunity to invest because we never were. This in itself is interesting, as we'll come to below. But we're pretty sure there would have been sufficient red flags for any thorough enough researcher to have given the lender a pass.

Red Flag #1: Where were the returns coming from?

Any analyst will tell you that while the numbers you load into a spreadsheet to value company's capital structure are interesting and important, even more crucial is an understanding of the underlying process that drove the numbers in the first place. The same is true when allocating to a manager. Where are his/her returns coming from?

Greensill's narrative was clear enough. By providing liquidity to SMEs which were so capital constrained and hedging the credit exposure it was left with, it could charge a fee well in excess of any risks which remained.

But many of the facts didn't 'triangulate' with this. The deals Greensill were doing were supposed to benefit the small suppliers by freeing up their working capital. The ultimate creditor who pays out the receivable should be largely uninterested in the transaction as it makes no difference to them if they're paying the small supplier or Greensill.

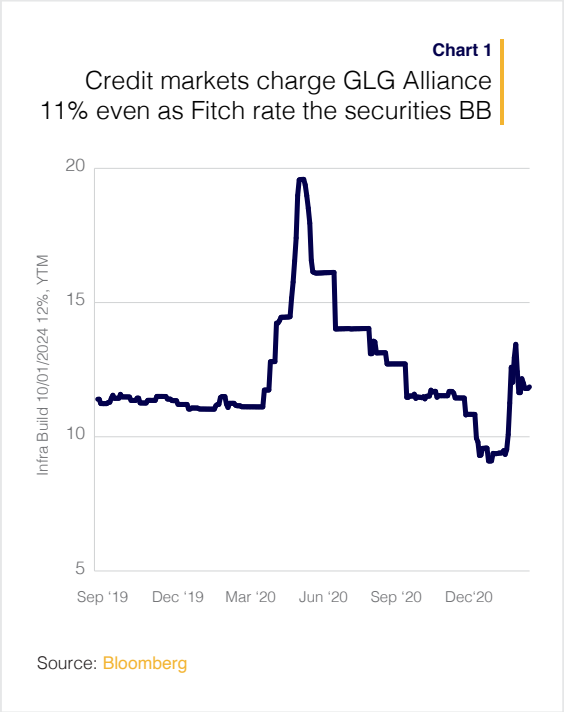
Yet many of Greensill's clients seemed heavily reliant on them, using the funds raised from the lender to invest in long-term business assets (in Financial Statement terms, the cashflows should really be classified as investing cashflows, not operating cashflows). When asked why he was buying up a bunch of steel assets with questionable economics, Sanjeev Gupta, founder of the GLG Alliance and Greensill's largest customer, explicitly rationalised his thesis as "… investing in businesses which have been starved of capital. To do so we use a variety of funding mechanisms, one of which is supply chain finance."

The same Sanjeev Gupta's high yield bond debut in September 2019 was a disaster. Despite a BB rating from Fitch and scaling back the offering from $475m to $325m, with him personally making up the shortfall, the issue was only placed with an eye watering 11% coupon (vs the ~4% his rating should have allowed)[5], where it has continued to trade since (see chart 1). If *these* frothy credit markets balked at lending to Gupta for less than double digit yields, what kind of deals had Greensill been doing?

It's not uncommon to find private credit players with pedigree who've suffered one or two defaults in the past ten or fifteen years. The good ones can credibly demonstrate skill

[5] "Sanjeev Gupta faces steep borrowing costs in junk bond sale" FT, Sept 20th, 2019

in underwriting and managing credit risk. Yet there were plenty of indicators that Greensill was a reckless underwriter, being involved in several high-profile bankruptcies (and frauds) in recent years, including NMC Health, Brighthouse, Abengoa and Agritrade. Even without having the information we have now, this alone should have been clear that something didn't smell right.



Red flag #2: How alert are the investors you're investing alongside?

As we said, we had barely come across Greensill in our travels (we'd heard of them as funders of business, but not as fund raisers for a fund). As we checked in with our network over the last few weeks, it became clear that no investors we knew had come across them either. Yet thanks to Softbank's investment, this was the biggest "fintech" unicorn in Britain, which had reportedly funded something like some $40 billion of deals in its lifetime. Where had it raised the money from?

Enter Credit Suisse, which had set up four supply-chain finance funds to invest exclusively in Greensill funds (collectively owning $10bn of Greensill transactions), and which were stuffed into its' private bank HNW (High net worth) clients. The thing is, if we or others in our network had come across Greensill on our travels we'd have asked them some questions which they likely would have struggled to answer. HNW clients at CS, and especially those thinking they're investing in a fund with CS oversight? Not so much.

Red flag #3: Breakneck AUM growth should pose its own questions

It's well known that growth is the enemy of returns. The more capital you have to deploy, the more difficult it becomes to maintain the same quality of investments. But there is a less well-known risk that comes with rapid asset growth too, which is that today's growth can hide yesterday's mistakes.

Suppose you raise $40m and hurry to put it all to work in the first investment you can find. Then suppose that the investment earns the kind of returns your research deserves, and that in a couple of years you have to write it down by 50%. But now suppose that in those three years, you're such an astonishingly good salesperson that you increased your aum to £2bn. That disastrous 50% write down amounts to a loss of $20m, which is barely noticeable on today's $2bn portfolio.

Of course, if that 50% write down was genuinely an outlier attributable to plain bad luck, and the rest of the portfolio was thoughtfully assembled, there will be no ultimate problem. But if that 50% write down is systemic, and the result of the same shoddy underwriting process, it will only be masked by future spectacular aum, and ultimately reveal itself when that growth slows. This is likely to be what happened at Greensill. Recent and rapid growth should raise its own questions.

Red flag #4: People who brag about their good intentions likely don't have any

We already highlighted Lex Geensill's promotional video for Softbank, recorded in

2019 in which he talked about his desire to "make the world a better place." Yet people who continuously reference their good intentions, their honesty, integrity, or trustworthiness are often protesting too much. Never forget what a big deal Bernard Madoff used to make about having his 'name on the door'. It's a lesson I've learned the hard way in my career, but actions speak more loudly and eloquently than words.

Of course, a time-honoured way to signal your respectability and integrity to the outside world is to present yourself as member of the establishment. Madoff was a former NASDAQ chairman. Lex Greensill was a former advisor to the British government and recipient of a CBE from Prince Charles in 2017, who'd hired the ex-British Prime Minister David Cameron as his senior advisor.

It's not hard to imagine such connections being name-dropped into conversations with the upper echelons at big organisations like Credit Suisse or Soft Bank, and smoothing the way for fast-track treatment, but of course, this is speculative. What's known is that at best, being good at raising capital isn't the same as being good at deploying capital. At worst, it can be an attempt to deflect attention away from the inadequacy.

There is nothing new under the sun

It seems to us that the lessons from the debacle are interesting, not because they're especially novel, but precisely because they're not. They're the same lessons one could have learned from any prior episode of financial fraud, from Ivar Kreuger to Jeff Skilling to Bernie Madoff. According to Alex Gibney, director of the new HBO documentary about Elizabeth Holes, "There's a tendency in Silicon Valley, and in capitalism more generally to fake it till you make it, and sometime that faking it can have disastrous consequences."

It's funny how recuring that idea is. Or as is written in the Bible (Ecclesiastes 1:9), "What has been will be again; what has been done will be done again: there is nothing new under the sun."

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