



## Could Sustainability Regulations be the “Yellow Swan” event for Gold ?

Gold has long been a structural part of investor portfolios, benefitting recently from renewed tailwinds from a myriad of macro and geopolitical drivers. While we adhere to many of them, this report delves into the potential implications of upcoming corporate sustainability due diligence regulations and extrapolates the investment implications that may be overlooked by market participants.

**The gold market is characterized by a unique concentration at the refining stage. A selected group of Swiss and European privately held entities dominate this segment. The impending implementation of the EU’s Corporate Sustainability Due Diligence Directive (CSDDD) and its Swiss counterpart could have profound implications for these refiners, potentially reshaping supply dynamics and influencing gold prices. We estimate a supply shock of over 10% and look into a variety of related alternative investment opportunities.**

Our investment approach focuses on identifying unacceptable adverse impacts, working backwards through the value chain, understanding the underlying

incentive structures, and identifying the pivot points and bottlenecks most likely to amplify systemic change. We aim to pinpoint potential catalysts and assess their implications across asset classes and sectors. We also look to work with our clients in how to trigger them. [As a reminder, our philosophy stems from applying an ESG lens to how we are able to see and convey a different picture to a wide audience, inspired by the film industry’s shift from black and white to colour \(1\).](#)

[James Cameron’s record-breaking box-office hit “Avatar” \(2009\) used the appeal of entertainment to reach the widest possible audience with a powerful anti-colonialist message \(2\).](#) He sensitised us to the detrimental impact that extractive industries can have on natural habitats and ecosystems.

Gold mining faces several ESG challenges, notably those related to human rights and environmental degradation. Issues such as the displacement of indigenous communities and the use of hazardous chemicals like mercury and cyanide in the extraction process are particularly concerning. These practices not only endanger the environment but also pose significant health risks to local communities and workers.

## Gold demand and supply dynamics

While non-financial actors primarily drive gold demand, recent years have witnessed increased interest from financial institutions, spurred by macroeconomic factors. We expect this to intensify as the global economy de-dollarises and we witness the expansion of the BRIC countries.

On the supply side, which offers investors greater visibility, gold supply has incrementally grown by 10% over the last decade with the modest 25% share coming from recycling having been static. **Given this stability, any sudden supply disruptions could significantly impact prices. This could be amplified given the erosion of recent market surplus by central banks.**

**Figure 1: Gold market breakdown shows recent volatility has been driven by anticipating financial demand**

Tonnes of Gold	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
<b>Supply</b>										
Mine production	3,167	3,262	3,366	3,515	3,578	3,653	3,599	3,475	3,561	3,612
Net producer hedging	-28	105	13	38	-26	-12	6	-46	-45	-2
Recycled gold	1,197	1,132	1,070	1,233	1,111	1,132	1,273	1,292	1,150	1,144
<b>Total supply</b>	<b>4,336</b>	<b>4,499</b>	<b>4,449</b>	<b>4,786</b>	<b>4,664</b>	<b>4,772</b>	<b>4,878</b>	<b>4,721</b>	<b>4,666</b>	<b>4,755</b>
YoY growth		4%	-1%	8%	-3%	2%	2%	-3%	-1%	2%
<b>Demand</b>										
Jewellery	2,735	2,544	2,479	2,019	2,258	2,285	2,138	1,327	2,221	2,190
Technology	356	348	332	323	333	335	326	303	330	309
<b>Non Financial demand</b>	<b>3,091</b>	<b>2,892</b>	<b>2,811</b>	<b>2,342</b>	<b>2,591</b>	<b>2,620</b>	<b>2,464</b>	<b>1,630</b>	<b>2,551</b>	<b>2,499</b>
YoY growth		-6%	-3%	-17%	11%	1%	-6%	-34%	57%	-2%
Total bar & coin demand	1,730	1,067	1,091	1,073	1,044	1,090	867	900	1,180	1,217
ETFs & similar products	-936	-134	-113	582	266	83	408	874	-173	-110
Central bank & other inst.	630	601	580	395	379	656	605	255	463	1,136
<b>Financial demand</b>	<b>1,424</b>	<b>1,534</b>	<b>1,558</b>	<b>2,050</b>	<b>1,689</b>	<b>1,829</b>	<b>1,880</b>	<b>2,029</b>	<b>1,470</b>	<b>2,243</b>
YoY growth		8%	2%	32%	-18%	8%	3%	8%	-28%	53%
Surplus/Deficit	-178	73	80	394	386	323	534	1,062	645	14
<b>Total demand</b>	<b>4,337</b>	<b>4,499</b>	<b>4,449</b>	<b>4,786</b>	<b>4,666</b>	<b>4,772</b>	<b>4,878</b>	<b>4,721</b>	<b>4,666</b>	<b>4,756</b>
LBMA Gold Price (US\$/oz)	1,411	1,266	1,160	1,251	1,257	1,268	1,393	1,770	1,799	1,800

Source: World Gold Council Data as of 30.6.2023. Sprott Gold Monitor(3).

## Shifting our focus to the regulatory environment

Regulations targeting corporate actions rather than disclosures tend to be more effective: “If you accuse me of lying, I’ll sheepishly apologise and start telling you the ugly truth”. “If you punish me for my actions, I’ll run to make amends”. The impending CSDDD (4), with potential penalties linked to revenues, could drive companies to adopt more rigorous supply chain due diligence practices. The threat of a 5% of revenue penalty under will most likely jolt more rigorous action in how companies’ due diligence their supply chain.

One need only look at what the threat of a 4% penalty did under GDPR. For low margin businesses like refineries (0.5% to 3% gross margins on average) there is

an even greater tendency to be overzealous in implementing sustainability issues into the due diligence of their supply chain. The Swiss Supply Chain Act (DDTrO) has already prompted companies to reevaluate their compliance strategies, especially concerning human rights.(5)

The plot twist in this story, however, depends on how closely Swiss regulations may harmonise with Europe: The European and Swiss directives both mandate companies to ensure their operations respect and uphold fundamental human rights. Both legislations emphasise specific scrutiny on operations in Conflict Zones which is particularly relevant to gold miners

given the abundance of gold resources in such politically volatile regions.

Where we do see a significant deviation is in the scope for Environmental issues, unlike the European directive, DDTro has a lighter focus on Environmental issues outside of those that affect Human Rights. An earlier attempt at a supply chain legislation, the Responsible Business Initiative (RBI) had a stronger environmental

## Environmental concerns

**The use of chemicals like cyanide and mercury in gold extraction has long been a point of contention. While cyanide leaching is prevalent in large-scale mining operations, mercury is more common in artisanal mining.**

Both chemicals pose significant environmental and health risks. Incidents like Newmont's 2000 Baia Mare cyanide spill in Romania underscore the potential consequences of mishandling these substances.<sup>(7)</sup> This was the worst environmental disaster in Europe since Chernobyl. 30 major accidents involving cyanide have occurred in the last 25 years <sup>(8)</sup>. From a financial perspective, the use of cyanide can reduce extraction costs by up to 20%, but this is overshadowed by the long term costs from incidents where this can contaminate water sources, harm aquatic life, and pose severe health risks to local communities, not to mention the health hazard for any workers that may come into contact with it, should the proper processes not be respected. UNEP estimates that 90% of artisanal gold mining use Mercury, accounting for 37% of global mercury pollution. Predominantly due to its low cost and ease of application <sup>(9)</sup>. However, many countries are moving to ban or restrict its use because of its severe environmental and health implications. Mercury is a potent neurotoxin, and its release into the environment can contaminate water sources, harm aquatic life, and enter the food chain, posing risks to both wildlife and humans. According to a study by the British Medical Journal <sup>(10)</sup>, up to 100m people are exposed to the toxic effects of Mercury amongst miners and general populations. While there are methods to mitigate mercury emissions, such as retorts to capture vapor during heating, they are not always employed due to lack of awareness or resources. The long-term effects on biodiversity are concerning, with mercury causing reproductive issues in fish and biomagnifying up the food chain. Following the landmark Minamata Convention on Mercury, UNEP spearheaded the Global Mercury Partnership <sup>(11)</sup> which continues to make significant strides in campaigning to end the use of Mercury in small scale gold mining.

remit. This was voted down by the majority of cantons, despite winning the popular vote. <sup>(6)</sup>

**We expect future iterations will bring Environmental issues more into focus as companies are given the time to implement their processes. This highly speculative assumption forms the basis for the thesis of this paper.**



It is worth noting that larger operations refrain from using Mercury due to these environmental concerns, but as artisanal mining is estimated to account for over 20% of the total volume of gold mined according to UNEP <sup>(9)</sup>, this becomes a meaningful contribution to the potential supply at risk from a more robust supply chain due diligence by refiners.

### Zooming out to the bigger picture.

Whilst our analysis focuses on credible changes in how gold is extracted, we don't expect efforts to cap the actual volume of gold mined. Having said that, given the global push to address biodiversity risks, it is worth noting the sheer volume of rock and waste material that is created by gold mining. As the investment community broadens its environmental lens from carbon emissions to also consider biodiversity loss, we expect the criticism faced by Bitcoin for its energy consumption to be just as intense when considering gold mining's exponential consumption of natural habitats.

The average gold grade and waste to ore ratios have steadily fallen over the last few decades as high-grade deposits get depleted and more efficient mining methods have made it economically viable to dig even greater volumes of rock for the same amount of gold. Assuming an average gold grade of 2grams/ton (and falling), the 3600 tonnes of annual gold mined would require 1.8bn tonnes of ore. At a waste to ore ratio of 3:1 (and rising), **we need to dig up 5.4bn tonnes of waste rock every year. Basically the equivalent of 830 pyramids of Giza or digging up a surface equal to half of Belgium.** That's a lot of rocks!

## The key lies with the refiners

Whilst some of the major mining giants do have their own refining capacity, it is estimated that **up to 90% of gold produced annually is sold to refiners**. Of these, **between 60%-70% of gold refining is done in Switzerland**,<sup>(12)</sup> with the top 5 players dominating the global industry (Valcambi, PAMP, Argor-Heraeus, Metalor and the German Heraeus). These are all privately held and therefore have limited publicly available information, but it is safe to say to say that they are large enough to fall well within the scope of due diligence regulations.

Whilst all their sustainability reports proclaim great intentions and impressive processes, the actual implementation is challenging to assess given the wide array of topics to cover. Some topics such as how they all look to reduce their emissions in their own operations are now standard and must have elements but unless regulation becomes prescriptive, it is no surprise to find a lack of specificity on environmental issues within the supply chain.

**Figure 2: Concentrated global refining capacity**

Top gold refiners	Country	Estimated annual capacity (tonnes)
Valcambi	Swiss	2,000
Metalor	Swiss	500
PAMP	Swiss	450
Argor-Heraeus	Swiss	400
Heraeus	German	400
<b>Total capacity top 5</b>		<b>3,750</b>

Source: Bullionstar (13), estimates from company websites.

As an example, let us take a closer look at Valcambi's precious metal supply chain policy ([here](#)). Their adherence to Human Right norms within their supply chain is highly prescriptive and reflects guidelines such as the those set out by the OECD and LBMA. The enforcement seems relatively credible given their compliance officer has the authority to deny any high-risk business partners according to these definitions. This is to be expected given the new specificity of the Swiss DDTro regulations.

On Environmental issues however, whilst they do set out an expectation that their partners minimise potential negative impacts and that procedures should be in place to treat hazardous waste and mitigate consequences any incidents may have. Should the scope of DDTro eventually be revised, their compliance and data managements processes would already be in place to undertake a more prescriptive due diligence on the use of Cyanide and Mercury by their mining partners.



## Estimating the supply at risk

**These 5 firms alone have enough capacity to refine all the gold produced annually, any significant change in their due diligence requirements is likely to have a direct knock-on effect on supply and price.** Whilst highly dubious, we make some wide assumptions in *figure 3* as an attempt to estimate the potential supply at risk from such scrutiny.

We first try and break down the supply of gold produced between publicly quoted companies (70%) artisanal miners (20%) and other privately held miners including state owned entities (10%). We then strip out the top 5 mining companies (Newmont, Barrick Gold, AngloGold Ashanti, Kinross and Polyus Gold) who collectively produce 534 tonnes of Gold and are all committed to responsible mining with relatively robust ESG policies and environmental initiatives underway and although all of them use cyanide, safety processes have come a long way since Baia Marre, even though Barrick had several incidents over the years including the 2015 spills in Voladero Argentina.

For the top 5 we assume only 5% of their supply doesn't qualify whilst other publicly quoted companies and the large privately held ones, would not be surprised to see 20% of their production rejected. This may take a few years to address and will require some financing. Gold Field just issued a 5-7 year \$1.2bn sustainability linked loan in June, which includes some provisions for water stewardship <sup>(14)</sup>.

Gold from artisanal mining is usually aggregated via numerous traders and other companies before being sent to refiners, this makes provenance even more difficult to diligence. It would be unreasonable to expect that the 90% that use Mercury will be disqualified without adapting their approaches, but we would not be surprised if 45% of their supply is deemed unacceptable.

**Figure 3: We estimate 496 tonnes of gold could be at risk. This represents just over 10% of total gold supply and effectively wipes out the entire supply growth created over the last decade.(see i**

	Tonnes produced (2022)	Estimated tonnes sold to refiners (X 90%)	Estimated tonnes refined in Switzerland and Europe (X 70% market share)	Our assumption of the proportion at risk of failing stricter due diligence	Estimated tonnes of gold supply at risk
Total Gold Supply	4,755				
Recycled gold	1,144				
Mined Gold	3,612	3,251			
A - From publicly quoted companies (70%)	2,528	2,276	1,593		
- Of which the top 5 miners	534	480	336	5%	17
- Other publicly quoted miners	1,995	1,795	1,257	20%	251
B - From Artisanal mining (20%)	722	650	455	40%	182
C - From other Privately held miners (10%)	361	325	228	20%	46
<b>Total</b>			<b>2,276</b>		<b>496</b>

Source: World Gold Council, Kalmus Capital estimates, company annual reports, UNEP reports, see end notes

To illustrate the type of supply potentially at risk, from environmental concerns only, let us take a look at Novagold (TSE: NG).

This is a \$1.3bn pure play gold miner focused on the Donlin Gold project they own the rights for in Alaska in partnership with Barrick Gold. **This is expected to become one of the world's largest gold mines with 39 million ounces of high-grade gold over a 25 square mile area the size of Manhattan (15).** Whilst the CEO boasted their ESG credentials in recent presentations, this mainly revolved around how much they are doing for the communities and indigenous people.

However according to a lawsuit by Earthjustice, (16) **the mine is expected to result in a 40% increase in mercury deposition and require a 471 foot tailing dam to permanently store 550 million tonnes of mining waste. They would need to create a 1850-foot-deep lake containing arsenic mercury, selenium and other metals and they would have to operate a wastewater treatment plant, for all time, even after the mine closes.**

That is after permanently destroying 2877 acres of wetland and risking catastrophic damage to the local rivers and salmon industry should there ever be an accident. It is no surprise they are facing a barrage of lawsuits from various local tribes.

**This provides us with an interesting litmus test to monitor how the Swiss refiners would view Novagold as a potential partner.**

Whilst our estimates focused on the environmental requirements that may not yet be formalised, there is still a significant supply that is potentially at risk from the implementation of human rights or other regulatory sustainability elements enforced by responsible sourcing.

The power yielded by these 5 refiners cannot be underestimated. They try and live up to their responsibility in addressing systemic risks by partnering with industry and governmental bodies, but that does not guarantee outcomes, nor keeps them immune from regulatory scrutiny. This is best highlighted by a fire that killed 27 workers in May 2023 at a Peruvian miner whose only client is Metalor (17). This happened despite Metalor's 2020 partnership with the NGO Swiss Better Gold to ensure sustainable supply chains.

In the film Gold (2016), Matthew McConaughey did a great job at conveying to audiences the disconnect between the western animal spirits driving the gold investment markets and the ESG realities on the ground in the global south (18).

# Investment implications

We share some insights on how various investment strategies may both benefit from, as well as contribute to this thesis to varying degrees. While we do not make any investment recommendations, we aim to illustrate how we think about Alternative Investment strategies based on their transmission mechanisms, rather than solely as avenues for diversified returns.

**1-Responsibly sourced gold bullion:** Should this supply shock occur in a relatively short period of time we would not be surprised to see a 30% spike in the price of gold before miners have the time and resources to adapt their practices in a radical enough way. *This could be amplified by a “yellow swan event” emanating from the gold leasing market.* Significant amounts of gold, including those held by many central banks generate a return by being leased out. A portion of this is borrowed by miners looking to hedge their exposure to the price of gold who sell it to finance their operations with the aim of using the gold produced to cover their liability to the lenders, like any futures contract on commodities presumed to be fungible. *Given the concentration of their customers, any difficulty they may encounter delivering “non-compliant” gold would send them scrambling to buy back gold on the open market, triggering a short squeeze.* The data on this is opaque but given the Gold Lease Rate (GLR), which is the spread of the Gold Forward Rate over LIBOR, is close to a 10 year high (19), this could hint at banks being less inclined to risk lending out their gold.

**2- ESG integrated active gold funds:** Investors typically seek exposure to equity in gold miners as a leveraged exposure to the price of gold. This assumption may no longer hold, particularly for diversified or passive funds as overall revenues drop and capital expenditures across the industry skyrocket in response to these more stringent requirements. We expect greater dispersion to benefit active managers including long/short equity managers equipped with a sharp ESG lens that can generate alpha by picking out the winners and or even shorting the losers.

**3-Turnaround special situations:** Activist or distressed debt managers will have a dearth of opportunities to controlling stakes in mining operations that may have been over-levered given the capital intensive nature of the industry. They will be able to add significant impact and financial value creation through by undertaking operational turnarounds by having the right approach to hazardous practices and capitalise on enforcing the required improvements in their Human Rights and Environmental risks.

**4 – Recycling roll ups:** As an increasing amount of supply will need to come from recycling, private equity managers focused on consolidating this fragmented and highly inefficient industry will stand to benefit from the significant cost synergies and supply shortfall they can fill.

**5 - Growth funds focused on innovations in extraction methods:** Significant strides are being made in alternative extraction methods such as Thisulfate Leaching, Gravity separation, Bioleaching and Froth Flotation. Technologies that detoxify Cyanide such as GreenGold’s ReCYN which also recovers the Cyanide for reuse also stand to benefit.

**6- Private credit and sustainability linked loans:** Funds financing the transition with strong sustainability due diligence capabilities are well positioned to accelerate the improvements needed at most mining operations or issuing bonds dedicated to funding the necessary capital expenditures.

**7- Streaming contracts:** Unlike royalties which give holders a set % of production from a mine, steaming contracts gives investors the right to purchase up to a certain proportion of the production of a mine at a predefined discount. Funds specialised in royalties and streaming should apply a strong sustainability lens in discerning which miners to select for such contracts. This rewards investors with a strong return whilst mitigating the risk of a mine not having their gold accepted for sale.

**8- Blockchain based MRV projects:** One of opportunities we are most excited about are the emergent Measurement Reporting and Validation (MRV) innovations designed to enable traceability and responsible sourcing across supply chains. Whilst many web 3 projects are often criticised for being solutions looking for a problem, in this case, we consider Blockchain to be one of the only viable solutions to meet the scale, complexity and level of trust required to cover such supply chains.

**At Kalmus Capital, we apply our proprietary SITI™ framework to understand client sustainability preferences and match them to the most appropriate investment opportunities.**

*Please note that is not financial advice and none of the information provided here is verified and should not be relied on for any investment decisions. In the interest of full disclosure, the author and our clients are invested in some of the above opportunities.*

## End notes

1. Kalmus White paper on ESG and the movie industry: <http://bit.ly/3XfmLCa>
2. James Cameron message in Avatar: <https://science.time.com/2010/09/29/qa-avator-director-james-cameron-on-oil-sands-and-environmentalism/>
3. Sprott Gold Monitor <https://sprott.com/media/6604/sprott-gold-monitor-q2-2023.pdf>
4. European CSDDD: [https://eur-lex.europa.eu/resource.html?uri=cellar:bc4dcea4-9584-11ec-b4e4-01aa75ed71a1.0001.02/DOC\\_1&format=PDF-2023%20amendments](https://eur-lex.europa.eu/resource.html?uri=cellar:bc4dcea4-9584-11ec-b4e4-01aa75ed71a1.0001.02/DOC_1&format=PDF-2023%20amendments) [https://www.europarl.europa.eu/doceo/document/TA-9-2023-0209\\_EN.pdf](https://www.europarl.europa.eu/doceo/document/TA-9-2023-0209_EN.pdf)
5. Swiss DDTro <https://www.fedlex.admin.ch/eli/cc/2021/847/en>
6. Swiss voting against RBI: <https://www.business-humanrights.org/en/latest-news/swiss-due-diligence-initiative-set-for-public-referendum-as-parliament-only-opts-for-reporting-centred-proposal/>
7. Baia Mare Cyanide incident [https://en.wikipedia.org/wiki/2000\\_Baia\\_Mare\\_cyanide\\_spill](https://en.wikipedia.org/wiki/2000_Baia_Mare_cyanide_spill)
8. Cyanide use <https://www.mining-technology.com/features/featureshould-cyanide-still-be-used-in-modern-day-mining-4809245/?cf-view>
9. UNEP on Mercury use in Artisanal mining: <https://www.unep.org/globalmercurypartnership/news/story/ending-toxic-trail-small-scale-gold-mining>
10. BMJ toxic impact of Mercury: [https://oem.bmj.com/content/75/Suppl\\_2/A242.2](https://oem.bmj.com/content/75/Suppl_2/A242.2)
11. UNEP Global Mercury Partnership <https://www.unep.org/globalmercurypartnership/who-we-are>
12. Swiss dominance of gold refining [https://www.swissinfo.ch/eng/business/multinationals\\_the-shady-origins-of-gold-refined-in-switzerland/44621040](https://www.swissinfo.ch/eng/business/multinationals_the-shady-origins-of-gold-refined-in-switzerland/44621040)
13. Swiss refiners capacity: <https://www.bullionstar.com/gold-university/swiss-gold-market#heading-5>
- Valcambi responsible sourcing supply chain policy: [https://www.valcambi.com/fileadmin/media/valcambi/PDF\\_files/Precious\\_Metals\\_Supply\\_Chain\\_Policy\\_v11.pdf](https://www.valcambi.com/fileadmin/media/valcambi/PDF_files/Precious_Metals_Supply_Chain_Policy_v11.pdf)
14. Goldfields sustainability linked bon: <https://www.goldfields.com/news-article.php?articleID=13157#:~:text=For%20the%20first%20time%2C%20the,up%20to%20US%24400m.>
15. Novagold Donlin mine: [https://www.novagold.com/properties/donlin\\_gold/overview/](https://www.novagold.com/properties/donlin_gold/overview/)
16. Earthjustice law suit : <https://earthjustice.org/press/2023/southwest-alaska-tribes-sue-in-federal-court-to-halt-the-donlin-gold-mine>
17. Metalor's Peruvian mine partner fire <https://www.business-humanrights.org/en/latest-news/peru-gold-mine-where-27-workers-died-in-a-fire-was-one-of-swiss-metalors-partner-in-initiative-to-ensure-responsible-sourcing-from-informal-miners/>
18. Gold (206) trailer <https://www.youtube.com/watch?v=gLXPv5NsA4>
19. Gold Leasing rate chart: <https://monetary-metals.com/data-science-charts/gold-lease-rates/>

## About us

Kalmus Capital is an independent sustainable investment advisory firm working with asset owners, asset managers, non profit organisations and technology innovations. We focus on innovating and scaling investment solutions and MRV tools adapted to ESG and impact investing. Our edge lies in scrutinising the transmission mechanisms across the investment value chain to identify the addressable pivot points that amplify impact. We partner with a select group of subject experts across the ESG spectrum. Kalmus Capital is a registered investment advisor with the ARIF based in Switzerland.

## About the author

**Joseph Naayem, CFA** is the founder and Managing Partner of Kalmus Capital. He has spent most of his career at the intersection of sustainable finance and alternative investments. In 2020 in partnership with Contrast Capital, he worked on redesigning and rewriting the new mandatory PRI reporting and assessment framework. Joseph previously ran UBS Wealth Management's Hedge Fund advisory business in Europe, and has spent most of his career as a portfolio manager and fund analyst in various European Fund of Funds. In 2013 he co-founded Prius Partners, one of the first SaaS solutions to map ESG data to fund holdings and was an early stage investor in various early stage impact innovations. He also loves movies and may be prone to occasionally overstretching some analogies.

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