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Rating Report

July 2025

Rating Summary

Rationale

Particula assigns a **BBB+** rating to the issuance of the $DSC token by Denario as of July 15, 2025. The token represents co-ownership interests in physical silver granules held in segregated custody by BB Wertmetall AG (BBWAG), a regulated financial intermediary.

The rating positively reflects the bankruptcy-remote structure, supported by the use of segregated custody arrangements, which enhances investor protection and reduces counterparty risk. The incorporation of blockchain-based ownership registration contributes to transparency and legal certainty, strengthening the enforceability of investor rights. Additionally, the availability of multiple investment channels facilitates broader market access. However, the rating considers limited secondary market liquidity, a high minimum redemption threshold, and dependence on issuer-facilitated buybacks, all of which constrain investor exit options and may hinder price discovery. Furthermore, the token remains exposed to technical and network-related risks, as well as an evolving regulatory landscape, which may affect long-term adoption and operational resilience.

Company Overview

Name	Denario AG
Year of Incorporation	2021
City/Country of Issuer	Zurich, Switzerland
Company Stage	Early Stage
No. of Employees	2-10
Funding Stage	Seed
Regulated Country	Switzerland
Licenses & Permits	Recognized as a Financial Intermediary by the Swiss Financial Market Supervisory Authority (FINMA)
Token Name & Symbol	DSC Token ($DSC)
Market Cap (As of July 15, 2025)	$1,108,103.50
Available Networks	Polygon, Plume, Soneium, BNB & Algorand

Recent Developments

In March 2025, Denario introduced the Denario Wallet, developed in collaboration with OnchainLabs. The wallet is a non-custodial, browser-based interface designed to provide secure and direct access to tokenized precious metals. It enables instant purchases of Denario Silver ($DSC) and Gold ($DGC) tokens using $USDT or credit card, thereby enhancing retail accessibility and user experience. To support greater pricing transparency and market integrity, Denario integrated real-time, on-chain price feeds from DIA Association, offering valuation references in USD, EUR, and CHF. In parallel, Denario expanded its blockchain infrastructure through a strategic partnership with Plume Network, a purpose-built Layer 1 protocol designed to facilitate compliant and scalable asset transactions. These initiatives are aligned with Denario's stated long-term strategy to increase utility and interoperability of its tokenized assets within Decentralized Finance (DeFi) ecosystems.

Key Strengths

Regulatory Oversight and Bankruptcy-Remote Structure

The rating reflects the $DSC token's alignment with Swiss financial regulations, which supports investor protection through a structured compliance framework. Denario AG, the issuer, operates as a financial intermediary under the Swiss Anti-Money Laundering Act (AMLA) and is a member of the VQF, a FINMA-recognized self-regulatory organization (SRO). As such, it is subject to periodic KYC and AML audits. Additional oversight is provided through annual financial audits conducted by AML Revisions AG. The token is classified as a ledger-based security under Article 973d et seq. of the Swiss Code of Obligations, providing a clear legal basis for ownership rights. Custody of the underlying physical silver is maintained by BB Wertmetall AG (BBWAG), a regulated financial intermediary and member of the PolyReg SRO. BBWAG holds the assets in segregated custody, within a bankruptcy-remote structure, ensuring separation from issuer's balance sheet. BBWAG holds no disposal rights over the stored metals, mitigating encumbrance and commingling risks. Payment processing is facilitated by Hypothekarbank Lenzburg AG, a FINMA-supervised bank listed on the SIX Swiss Exchange, contributing to operational resilience and regulatory compliance. While the current regulatory framework is robust, the evolving nature of Swiss and EU digital asset regulations introduces uncertainty regarding future compliance requirements and the treatment of secondary market trading activities.

Legally Enforceable Ownership Structure through Tokenization

The $DSC token is legally recognized as a ledger-based security (Registerwertrecht) under Article 973d et seq. of the Swiss Code of Obligations, granting token holders direct co-ownership rights to physical silver granules. The underlying assets are sourced from certified refineries and stored in a regulated Swiss duty-free vault, ensuring legal recognition and alignment with investor protection standards. Under Swiss law, token holders obtain "mittelbarer Besitz" (indirect possession), whereby the custodian holds the physical assets on behalf of all co-owners. Each $DSC token represents a proportional claim to the total silver reserves, with ownership legally segregated from the issuer's balance sheet. This structure enhances enforceability and mitigates issuer credit risk. Custodial arrangements include detailed inventory management and reconciliation, providing ongoing verification of holdings and transparency for token holders. Furthermore, blockchain-based registration under the Swiss legal framework facilitates seamless and legally valid transferability of ownership without requiring physical delivery, enabling efficient trading and portfolio management. Overall, the framework combines regulated financial safeguards with blockchain infrastructure, supporting secure, transparent, and legally enforceable digital asset ownership.

Accessible Investment Structure with Low Capital Thresholds

The rating acknowledges the $DSC token's broad accessibility and low entry barriers, which support wider investor participation in tokenized silver. Investors can acquire tokens through multiple channels, including Honesto, a regulated Swiss investment platform; the Denario Wallet, a non-custodial browser-based solution; and Tokengate, a Web3-enabled interface for direct on-chain purchases. KYC requirements apply only to transactions exceeding CHF 1,000 per month, streamlining onboarding for smaller retail investors while maintaining regulatory compliance. The absence of subscription and redemption fees supports cost efficiency, and transactions are executed at a token price derived from the prevailing spot price of silver, incorporating a total premium of 13.5% for physical allocation, procurement, tokenization, safekeeping, insurance, audits, and distribution. The physical silver backing the token is VAT-exempt under Swiss tax law, further improving the product's cost profile for investors. Compared to models that generate revenues through transactional or redemption-based fees, this approach aims to enhance the predictability in cost exposure and compatibility with Decentralized Finance (DeFi) protocols. Additionally, Denario has co-introduced the Oracle-Free Dollar (OFD), enabling token holders to use $DSC tokens as collateral for lending and borrowing on Binance Smart Chain (BSC) and Polygon. This feature expands utility and liquidity while preserving the asset-backed nature of the token.

Structured Token Design with Technical Efficiency

The rating positively considers the $DSC token's smart contract architecture, which adheres to OpenZeppelin standards and incorporates upgradeable contract logic to support long-term adaptability and compatibility. The contract is deployed on Polygon's Layer-2 infrastructure, benefiting from Ethereum's Proof-of-Stake (PoS) consensus for enhanced security, high transaction throughput, and cost-efficient settlement. The contract follows a modular design and is governed through a multi-signature scheme implemented via Gnosis Safe, enhancing operational oversight and mitigating administrative risk. Token issuance is directly linked to verified physical silver reserves held in excess of the total token supply, resulting in an overcollateralized structure that reinforces the integrity of the asset-backed issuance. The integration of OpenZeppelin's Math library strengthens computational accuracy in financial transactions, contributing to secure and deterministic contract behavior. Overall, the smart contract architecture combines scalability, governance safeguards, and computational robustness, supporting the secure and efficient management of tokenized silver assets.

Key Challenges

Limited Operational Track Record and Market Positioning

Denario AG, established in 2021, has a limited operational track record in the tokenized commodities segment. While the issuer operates as a regulated financial intermediary under the Swiss Anti-Money Laundering Act (AMLA), its capacity to scale operations, navigate evolving regulatory landscapes, and sustain long-term market participation remains unproven. Denario's ability to manage token liquidity, uphold investor confidence, and execute consistent asset-backed transactions over time has yet to be demonstrated. Moreover, the precious metals space is highly competitive, with well-established alternatives such as gold- and silver-backed ETFs, traditional bullion products, and digital asset platforms, offering more mature market infrastructures. Competitors including Paxos Gold ($PAXG) and Kinesis Gold/Silver ($KAU/$KAG) benefit from greater liquidity pools, exchange integrations, and institutional partnerships, whereas Denario's market reach remains at an early stage. Additionally regulatory constraints under the Swiss Banking Act restrict Denario from conducting routine token buy-backs, as such actions may result in reclassification as a public deposit-taking institution. These limitations reduce the issuer's flexibility to support direct redemption mechanisms, thereby heightening investor reliance on third-party trading venues and prevailing secondary market liquidity conditions. Given these factors, the rating underscores the importance of reliable liquidity arrangements, robust governance frameworks and independent oversight mechanisms to support issuer accountability, mitigate structural conflicts, and promote long-term platform viability.

Regulatory and Custodial Oversight Considerations

The $DSC token is issued under Swiss financial regulations, with KYC and AML procedures applied at the point of initial acquisition. KYC verification is required for investments exceeding CHF 1,000 per month, ensuring compliance with Swiss Anti-Money Laundering (AML) standards. However, once issued, tokens are freely transferable on secondary markets without further KYC checks. While this facilitates market accessibility and liquidity, it also introduces potential compliance vulnerabilities, as tokens may be acquired by unvetted parties post-issuance, raising concerns regarding exposure to illicit activity. Furthermore, custodial arrangements assign control over the underlying physical silver to BB Wertmetall AG (BBWAG), a regulated Swiss financial intermediary. Token holders retain indirect ownership rights (*mittelbarer Besitz*), rather than direct control of the assets. Although this model provides legal recognition of ownership, it also introduces custodian-related counterparty risk, particularly in the event of insolvency, operational failure, or compliance breaches. Moreover, physical metal audits are conducted only on a semi-annual basis, limiting the frequency and timeliness of independent verification of the underlying reserves. As a risk mitigation measure, BBWAG maintains insurance coverage over the stored assets, offering an additional layer of protection for investors. The rating incorporates these factors, emphasizing the importance of enhanced transaction monitoring, regular asset verification, and ongoing regulatory alignment to support custodial resilience as the tokenized commodities market continues to develop.

Liquidity Constraints and High Minimum Redemption Requirement

The $DSC token currently faces liquidity limitations, stemming from underdeveloped secondary market infrastructure and modest investor participation. Unlike traditional gold and silver ETFs or established tokenized commodity platforms that benefit from institutional engagement and active trading venues, liquidity for the $DSC token remains primarily dependent on the issuer. The absence of external liquidity providers or broader exchange integrations restricts investor exit options and may hinder market accessibility - particularly during periods of elevated redemption activity. In contrast, comparable tokenized assets often operate within diverse and deeper liquidity pools, supported by multiple market participants, thereby reducing reliance on a single liquidity source. The rating reflects these dynamics, highlighting the importance of expanding external market participation and integrating secondary market support to reduce concentration risk and improve tradability. Additionally, the high minimum physical silver redemption threshold (20kg for silver granules) limits smaller investors' ability to convert holdings into physical assets efficiently. Redemption also incurs handling, storage, and delivery costs, reducing the feasibility of physical asset conversion for retail participants.

Network and Technical Implementation Risks

The rating incorporates the technical and network-related risks associated with the $DSC token's deployment on Polygon, a Layer-2 network that leverages Ethereum's Proof-of-Stake (PoS) consensus to deliver transaction efficiency and scalability. While Polygon is generally regarded as decentralized, the concentration of validator nodes introduces governance centralization risks, potentially affecting long-term network resilience, security, and operational continuity. The smart contract architecture, based on OpenZeppelin standards, offers flexibility and upgradeability but introduces execution risks related to administrative privileges, and contract modification processes. The absence of automated reserve validation necessitates reliance on off-chain verification, creating operational dependencies that may impede scalability and increase risk of manual error. Token minting is currently conducted manually by the Denario team, following verification of silver purchases and custodial inventory levels. This process introduces human intervention risk, which may impact accuracy, timeliness, and operational reliability. Additionally, while certain security measures are embedded in the contract, inefficiencies in batch processing could reduce contract performance under high transaction volumes. The token supply cap is enforced via a single oracle integration (DIA Data), without redundancy mechanisms such as multi-oracle feeds, data freshness checks, or algorithmic validation, increasing susceptibility to stale or compromised inputs. Furthermore, the absence of on-chain compliance features, including automated KYC and AML enforcement, transfer restrictions, and emergency pause functions further compounds operational risk. The rating reflects these implementation challenges and highlights the importance of enhancing contract security, introducing automated compliance and reserve mechanisms, as well as implementing robust oracle frameworks to support the token's technical integrity and risk management.

Macroeconomic and Precious Metals Market Risks

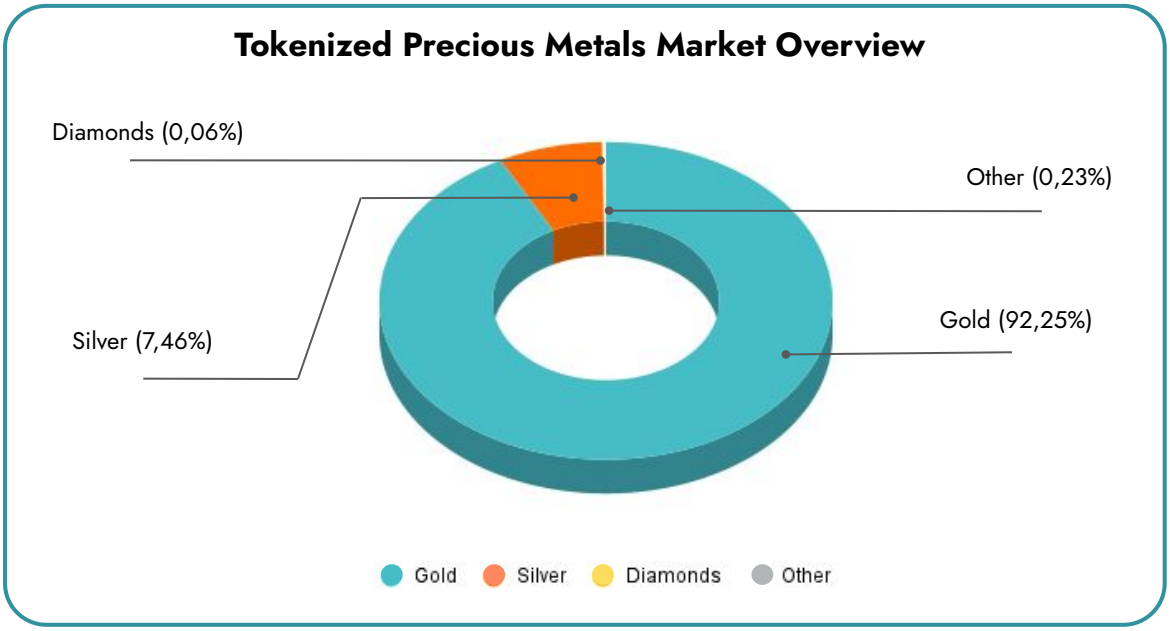
The rating incorporates the macroeconomic and market-specific risks associated with exposure to the precious metals sector. Beyond its continued role as a hedge during periods of elevated uncertainty, silver remains sensitive to changes in interest rate environments, where tighter monetary policy and rising real yields increase the opportunity cost of holding non-yielding assets. While silver outperformed other metals in 2024 - supported by geopolitical tensions, industrial demand, and supply deficits - broader investor sentiment continues to favor yield-generating instruments, limiting the appeal of non-income-producing assets. The underlying silver is sourced by BBWAG from Good Delivery refineries, ensuring quality and alignment with industry standards. However, the global concentration of supply chains introduces vulnerability arising from geopolitical instability, trade restrictions, or regulatory shifts, which may impair sourcing, settlement, or redemption processes. Additionally approximately 75% of global silver production is derived as a byproduct of mining other base metals such as copper, lead, and zinc. A decline in the production of these metals could lead to a contraction in silver supply, tightening market conditions and potentially impacting the token's issuance capacity and redemption dynamics.

Detailed Rating Analysis - Issuer

Emerging Issuer in a Concentrated and Nascent Segment

Founded in 2021, Denario AG is a Switzerland-based issuer of tokenized instruments backed by allocated physical silver and gold. The underlying assets are stored in secure Swiss vaults, and the tokens are structured to provide contractually defined claims on the respective metals. The issuance model adheres to applicable Swiss regulatory standards and combines traditional custodial arrangements with blockchain-based infrastructure.

As of July 2025, Denario offers two products: the $DSC token, backed by physically allocated silver granules, and the $DGC token, backed by physically allocated gold granules. Both instruments are issued in collaboration with BB Wertmetall AG, a Swiss precious metals firm, and reflect claims over metals held in segregated custody. While the legal and custodial framework is consistent with established asset-backed token structures, Denario's overall market presence remains limited compared to larger and more established participants in the tokenized precious metals segment.



Source: Analysis by Particula as of July 15, 2025

The tokenized precious metals market represents a niche but expanding component of the broader real-world asset (RWA) ecosystem, with total on-chain value exceeding $2.0 billion as of July 2025. Gold accounts for over 92% of market value, reflecting sustained demand for blockchain-compatible representations of traditional safe-haven assets. Leading products such as Paxos Gold (PAXG) and Tether Gold (XAUT) are backed by allocated gold stored in audited vaults, though they are structured as unsecured claims against the issuer. In contrast to Denario's product implementation, this design introduces exposure to issuer credit risk and may limit the enforceability of asset claims under stress scenarios.

The recent market entry of established financial institutions, including WisdomTree and HSBC, has contributed to increased institutional recognition of tokenized precious metal. These instruments are gradually incorporated into Decentralized Finance (DeFi) protocols and structured investment products, supporting incremental improvements in liquidity, asset fractionalization, and cross-border accessibility. Despite these developments, adoption remains concentrated among retail-facing digital asset platforms, with institutional penetration still limited. Integration across market participants is uneven, reflecting disparities in technological infrastructure, regulatory positioning, and operational maturity.

While adoption remains uneven and largely retail-driven, the broader tokenized metals segment continues to evolve as a hybrid asset class, combining the inflation-hedging attributes and macroeconomic resilience of precious metals with the programmability, transparency, and settlement efficiency of blockchain infrastructure. This convergence supports the gradual expansion of use cases across investment, collateralization, and cross-border transaction frameworks.

Furthermore the market remains concentrated among a small number of providers. As of July 2025, Paxos and Tether collectively account for the majority of assets under management (AUM) in the segment, each exceeding $800 million. Their scale advantages stem from early market entry, integration into major exchange platforms, and brand recognition, which contribute to superior liquidity profiles and broader adoption.

Silver-backed tokens represent approximately 7.5% of the segments market value, significantly trailing gold due to structural constraints including higher storage costs per unit value, limited institutional adoption, and lower integration within investment portfolios. Nonetheless, silver remains a globally recognized reserve and industrial metal with established use across monetary, investment, and commercial applications. Its dual role supports its continued relevance as a collateral-grade asset within tokenized infrastructure.

Within the tokenized silver segment, Kinesis Silver ($KAG) leads with over $140 million in assets under management (AUM), while other offerings from issuers such as Neomo ($XAGx), Denario ($DSC), Novem ($NXAG), and Aurus ($TXAG) remain still in early phases of adoption. Growth in this segment is constrained by limited integration with active trading venues, and vertically concentrated operating models that consolidate issuance, custody, and distribution without separation of roles. These factors inhibit retail access and restrict the development of secondary market liquidity.

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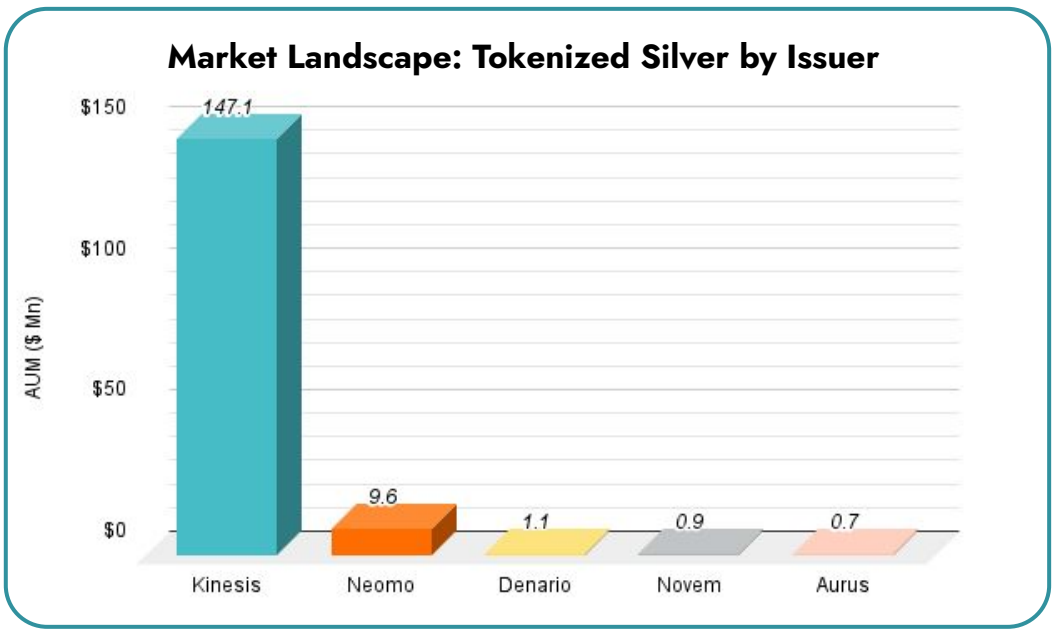

Source: Analysis by Particula as of July 15, 2025

Beyond gold and silver, the tokenized commodity market remains highly fragmented, with limited adoption across experimental instruments such as tokenized diamonds and minor metals. These collectively account for less than 1% of total segment AUM and exhibit limited institutional engagement or market infrastructure support. Over the medium term, the scalability and institutional relevance of tokenized metals will depend on factors such as regulatory recognition, asset segregation frameworks, independent custody structures, and issuer credibility. Market penetration is expected to concentrate around instruments that demonstrate enforceable legal claims, transparent governance, and operational processes aligned with recognized investment and compliance standards.

Experienced Management Team with Cross-Domain Expertise

Denario AG is led by a founding team with diverse backgrounds spanning financial services, technology development, fiduciary administration, and precious metals markets. Thomas Winkler brings over 20 years of experience in global banking, including senior positions at Goldman Sachs and ABN AMRO. Yonghan Lee has held leadership roles in digital transformation at Deutsche Bank and has led entrepreneurial initiatives across the esports and Web3 sectors. Antonio Tomamichel is a certified Swiss fiduciary expert with specialized experience in financial and administrative compliance. Jason Fisher is a technology entrepreneur with more than 25 years in fintech and impact-driven innovation. Collectively, the team provides a solid foundation for Denario's strategic direction, operational governance, and product development capabilities.

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Thomas Winkler

Thomas Winkler serves as Chairman and Co-Founder of Denario AG, guiding the company's strategic vision, governance, and institutional partnerships. His expertise is grounded in a global finance career that began at Bank Leu AG and progressed through senior roles at Goldman Sachs and ABN AMRO. There, he advised on cross-border M&A and capital markets across Europe, leading complex transactions for multinational clients.

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Yonghan Lee

Yonghan Lee is CEO of Denario AG, and has a background in fintech, blockchain, and esports. He brings over 15 years of experience leading digital transformation initiatives at Deutsche Bank and holding roles at Julius Baer and UBS. He is the founder of SKB Advisors and actively contributes to the Web3 and gaming sectors through his work with AEX-1 and the Swiss Metaverse Association.

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Jason Fisher

Jason Fisher is Co-Founder of Denario AG. He is a serial entrepreneur and technology executive with over 25 years of experience across fintech, AI, and impact-driven ventures. His areas of work spans telecom, digital health, blockchain, and sustainable innovation. At the same time Jason is the CEO and Co-Founder of Cornerstone Technologies International, a multi-service software provider.

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Antonio Tomamichel

Antonio Tomamichel is CFO and Co-Founder of Denario AG, with more than 30 years of fiduciary and financial experience in the commodities and SME sectors. He is the founder of Tomamichel Treuhand, a Swiss fiduciary firm. Antonio's expertise in financial structuring and compliance supports Denario's financial governance and regulatory alignment.

Bankruptcy-Remote Operational Structure under Swiss DLT Framework

Denario AG, a Swiss Aktiengesellschaft (AG), operates as a joint-stock company under Swiss corporate law and serves as an issuer of tokenized claims to physical precious metals. Its issuance model is embedded within a bankruptcy-remote framework under Switzerland's Distributed Ledger Technology (DLT) legislation, which became effective in 2021. These provisions amended various legal statutes, including the Swiss Code of Obligations (CO), to recognize blockchain-based register securities (Registerwertrechte) as enforceable legal instruments.

Denario currently issues two tokens: Denario Silver Coin ($DSC) and Denario Gold Coin ($DGC). Both are structured as uncertificated register securities pursuant to Articles 973d et seq. CO, enabling the digital transfer of legally binding rights without physical documentation. Each token confers a pro-rata, in rem co-ownership right to physical silver or gold granules stored in segregated custody with BB Wertmetall AG (BBWAG). The custody agreement is structured as a genuine contract for the benefit of third parties (Art. 112(2) CO), providing token holders with enforceable rights under Swiss property law. The legal architecture is designed to minimize insolvency exposure, ensuring that token holder rights remain distinct from issuer liabilities in the event of default.

The combination of DLT-based register securities with segregated asset custody contributes to a legally robust and operationally transparent issuance model. However, practical enforceability across jurisdictions and the efficiency of redemptions under stress scenarios remain contingent on the performance and accessibility of the designated custodian.

Regulatory Positioning and Governance Considerations

Denario AG has structured its activities to avoid classification as a regulated financial institution under Swiss law. While the issuance model has been reviewed by the Swiss Financial Market Supervisory Authority (FINMA), it is not subject to licensing requirements under the Banking Act (BankG), Financial Institutions Act (FinIA), or Financial Market Infrastructure Act (FMIA). Key structural features, such as the absence of redemption guarantees, prepayments, or repurchase obligations, ensure that the platform does not engage in deposit-taking or investment services that would trigger authorization.

The issuer also benefits from prospectus exemptions under the Financial Services Act (FinSA), as the tokens confer direct property rights to physical assets rather than entitlements tied to financial performance or derivative exposure. Token issuance is executed only after the underlying metal is secured in custody, further distancing the model from conventional financial intermediation.

Denario is classified as a financial intermediary under the Swiss Anti-Money Laundering Act (AMLA) due to its handling of client onboarding, payment settlement, and token issuance. It is a member of VQF, a FINMA-recognized Self-Regulatory Organization (SRO), and is subject to ongoing compliance reviews. KYC/AML processes, transaction oversight, and coordination with BBWAG are managed internally by Denario.

The issuer's governance structure is characterized by high ownership concentration. As of July 2025, BBWAG holds a 44.12% equity stake in Denario AG. Additionally, BBWAG's CEO, Werner Ullmann, is a co-founder and board member of Denario, underscoring a strong alignment of interests but also amplifying key person dependency and related-party risk. This vertically integrated structure provides operational efficiency and strategic cohesion across issuance, custody, and pricing functions, yet it limits governance independence. Denario does not maintain an independent board or external advisory committees, and strategic control is retained by a small group of founding stakeholders. While several external service providers are engaged to support legal, audit, and operational functions, the lack of independent oversight mechanisms introduces governance and conflict-of-interest risks. In the absence of fiduciary separation or board-level checks, decision-making may be susceptible to internal bias, particularly under stress or dispute scenarios.

Operational Dependencies and Third-Party Engagements

To support its operational, legal, and compliance functions, Denario AG relies on a network of specialized third-party service providers to support its issuance, custody, legal, audit, and transaction infrastructure. These external engagements contribute to regulatory compliance, operational execution, and risk mitigation, but also introduce dependency risks and governance complexity that warrant investor attention.

Custody and Physical Asset Management

BB Wertmetall AG (BBWAG) serves as the exclusive physical custodian of the silver and gold granules backing the tokens issued by Denario AG. Founded in 2009 and headquartered in Lenzburg, Switzerland, BBWAG is a specialized precious metals firm with operational experience in the sourcing, wholesale distribution, and bonded storage of high-purity bullion. The company operates in compliance with the Swiss Anti-Money Laundering Act (AMLA) and is a registered member of PolyReg, a FINMA-recognized self-regulatory organization (SRO).

The custody arrangement is contractually structured to grant token holders enforceable, pro-rata in rem rights under Art. 112(2) of the Swiss Code of Obligations (CO). BBWAG is legally restricted from commingling, pledging, or rehypothecating client assets. Independent audits of the physical reserves are conducted biannually in January and July, complemented by ongoing internal reconciliation processes.

BBWAG's operational responsibilities include the following core functions:

- **Precious Metals Sourcing:** Sources 99.99% pure silver and gold granules directly from LBMA-accredited refiners and manages wholesale procurement agreements. Delivery logistics to bonded storage facilities in Switzerland are handled internally, supporting Denario's issuance capacity and continuous collateralization.
- **Price Discovery:** Publishes real-time buy prices for the underlying metals, establishing the primary input for Denario's token pricing model. This pricing mechanism is based on market inputs and operates independently from centralized benchmarks indices, ensuring daily pricing transparency for token issuance and redemption.
- **Physical Custody:** Holds assets in fully segregated, insured Swiss vaults under a contractual structure that supports direct, in rem claims by token holders. BBWAG is subject to legal prohibitions against commingling or reusing client assets, ensuring asset protection in adverse scenarios.

In addition to its operational responsibilities, BBWAG maintains a material equity stake (44.12%) in Denario AG, and its CEO also serves as a co-founder and board member of the issuer. This creates a vertically integrated structure with heightened counterparty concentration and key-person dependency. While this alignment supports streamlined execution, it raises governance and conflict-of-interest risks in the absence of independent oversight.

On-Ramp and Off-Ramp Infrastructure

Denario AG has established multiple channels facilitating user access and transaction settlement:

- **Honesto AG,** a Swiss fintech platform, provides a compliant retail access point for token purchases within Switzerland.
- **Hypothekarbank Lenzburg,** a FINMA-licensed banking institution, supports direct bank transfers as part of the onboarding flow.

- **Stripe** enables credit card transactions for amounts under CHF 1,000, which fall below Swiss KYC thresholds.

These infrastructure providers collectively enable fiat onboarding, reduce barriers to entry for retail users, and provide a scalable base for broader liquidity access.

Independent Audit and Assurance Providers

Denario AG's financial statements are audited by AML Revisions AG, a Swiss accounting and tax advisory firm. The auditor provides independent assurance over the company's financial disclosures and reporting integrity, supporting operational transparency and financial discipline.

For verification of the underlying physical reserves, the issuer has appointed Trevista Treuhand- und Revisionsgesellschaft AG, a licensed fiduciary and audit firm with expertise in inventory oversight. Trevista conducts biannual verification of the silver and gold holdings in January and July, providing independent assurance of the platform's collateral backing.

While the dual audit framework encompasses both corporate financials and physical reserves, the biannual frequency of reserve verification may be insufficient to meet evolving market standards or investor expectations, particularly during periods of elevated redemption activity or market stress.

Legal Advisory Services

Denario is advised by Lawside, a Zurich-based legal firm specializing in blockchain regulation and tokenized financial instruments. Lawside has issued formal legal opinions on the issuer's regulatory status, affirming its exemption from licensing obligations under the Banking Act, Financial Institutions Act, and Financial Services Act, as well as its qualification for prospectus exemptions. The firm supports Denario's legal positioning within the Swiss regulatory perimeter, though the legal enforceability of the token structure outside of Switzerland remains subject to interpretation under foreign financial laws.

Issuer Governance and Counterparty Concentration

Denario AG operates under a legally recognized structure within the Swiss regulatory environment. However, its internal configuration introduces material risks related to governance concentration and operational dependency. The platform's tightly aligned ownership model and reliance on a vertically integrated service provider constrain independent oversight and may limit service continuity under adverse conditions.

Governance Concentration and Oversight Limitations

Ownership of Denario AG is highly concentrated, with over 40% of equity held by BB Wertmetall AG (BBWAG), its exclusive custody and pricing partner, alongside a small group of founding individuals. This alignment facilitates strategic cohesion and operational execution across sourcing, custody, and pricing activities. However, the absence of an independent board, supervisory committee, or external fiduciary oversight limits internal checks and balances. Decision-making authority remains centralized among affiliated parties, heightening exposure to conflicts of interest, particularly in scenarios involving strategic misalignment, operational disruption, or insolvency.

These risks are further amplified by the platform's early-stage status. Formal governance structures, investor protection mechanisms, and transparency practices are still under development, which may present challenges for institutional engagement or constrain effective stakeholder participation during periods of stress.

Custodial Dependency and Counterparty Concentration

Denario's issuance model exhibits structural reliance on BB Wertmetall AG (BBWAG) for multiple core functions, including custody, precious metals sourcing, and real-time pricing inputs for token issuance and redemption. While this vertically integrated setup promotes operational consistency, it consolidates critical responsibilities within a single counterparty and introduces elevated concentration risk. In the absence of redundancy or qualified alternative service providers, operational, financial, or legal disruptions at the counterparty level could materially affect platform continuity and investor access to the underlying assets.

This dependency also introduces heightened key-person risk, given BBWAG's executive involvement and significant equity interest in Denario AG. Without independent governance or a contingency framework for counterparty substitution, the issuer remains exposed to a single point of failure, which may undermine operational resilience under stress conditions. Although token holders are contractually granted pro-rata, in rem rights under Swiss law through a third-party beneficiary arrangement (Art. 112(2) CO), these rights confer indirect possession (*mittelbarer Besitz*) rather than direct physical control over the underlying bullion. While this structure provides a legally enforceable claim under Swiss property law, it may face practical limitations in scenarios involving custodian insolvency, jurisdictional conflicts, or asset seizure attempts in foreign proceedings. The enforceability of these rights depends not only on Swiss legal recognition but also on the cross-border recognition of Swiss in rem entitlements, a process that may be constrained by local private international law regimes or bankruptcy frameworks.

The absence of operational segregation within BBWAG and the lack of defined fallback mechanisms or escrow arrangements further elevate custodial concentration risk. In adverse market conditions or internal disputes, these structural limitations may impair redemption procedures, delay access to collateral, or reduce the legal clarity around asset recovery pathways. In combination with the platform's concentrated governance structure and vertically integrated service model, these factors highlight the relevance of enhanced disclosure, independent oversight, and the development of formal contingency measures to support investor protection and business continuity across jurisdictions.

Cross-Border Regulatory Ambiguity

Denario AG's issuance framework has been reviewed under Swiss law and is not subject to licensing requirements under the Banking Act (BankG), the Financial Institutions Act (FinIA), or prospectus obligations under the Financial Services Act (FinSA). However, its regulatory treatment outside Switzerland remains untested. In foreign jurisdictions, the tokenized co-ownership structure may be interpreted as constituting a security, deposit, or collective investment scheme under local law, potentially triggering licensing, registration, disclosure, or reporting obligations for both the issuer and distributing entities.

Such reclassification may restrict market access, delay exchange onboarding, or expose the issuer and investors to jurisdiction-specific legal and compliance risks, particularly in environments with prescriptive securities law frameworks or retail protection regimes. In several jurisdictions, even technical functionality such as redemption rights or asset valuation mechanisms may be viewed as indicators of regulated financial activity. Moreover, Denario's onboarding and documentation procedures, designed to satisfy Swiss Anti-Money Laundering Act (AMLA) requirements through its affiliation with the VQF self-regulatory organization, may not align with more expansive Anti-Money Laundering (AML) and Know-Your-Customer (KYC) standards applicable in cross-border institutional settings. Of particular relevance is the absence of ongoing KYC obligations for secondary market participants, which may raise compliance concerns under international AML regimes and limit token eligibility for listing on regulated venues.

These jurisdictional limitations introduce regulatory asymmetry, elevating structural uncertainty regarding the token's interoperability across markets. As global tokenization frameworks mature, legal divergence may continue to constrain institutional adoption, regulatory acceptance, and cross-border scalability.

Exposure to Legal Risks

Denario AG's issuance structure introduces legal risk considerations related to the enforceability of token holder rights, the construction of its contractual framework, and the treatment of its tokens under foreign legal regimes. While the structure complies with applicable Swiss regulations, including the use of register-based securities and in rem co-ownership constructs, certain features of the custody and user agreements may constrain investor protection in stress scenarios. These include limitations on redemption procedures, the absence of structured dispute resolution mechanisms, and the lack of a defined wind-down framework. The associated risks do not arise from Denario's legal form per se, but rather from the operational and contractual architecture, particularly for international investors navigating fragmented regulatory environments.

Cross-Border Enforceability of Co-Ownership Rights

Under Swiss law, Denario's issuance model provides token holders with enforceable in rem rights via a third-party beneficiary structure pursuant to Article 112(2) of the Swiss Code of Obligations. However, these rights confer indirect possession (*mittelbarer Besitz*) rather than direct title to the underlying bullion, which remains legally held by BB Wertmetall AG. In cross-border contexts, the legal recognition and enforcement of such rights depend on local conflict-of-law rules, creditor hierarchy provisions, and the willingness of foreign courts to give effect to Swiss property law constructs. In the absence of mutual recognition agreements or harmonized legal frameworks, token holders may encounter significant enforcement barriers, including recharacterization of their rights as contractual claims or subordination to domestic creditors in insolvency proceedings. The lack of a fiduciary agent or trustee further limits token holder coordination in enforcement scenarios, raising practical challenges in asserting claims collectively or initiating legal action. These factors introduce jurisdictional execution risk, which may impede timely asset recovery or investor recourse in non-Swiss proceedings.

Termination Risk and Absence of Structured Wind-Down Mechanisms

The platform currently lacks a designated fallback arrangement, such as a recovery trustee, post-termination escrow structure, or formal liquidation mandate, that would facilitate coordinated asset distribution in the event of custodial default or platform wind-down. While Swiss property law protects token holders' co-ownership rights under a third-party beneficiary structure (Art. 112(2) CO), the absence of a predefined redemption framework or fiduciary oversight layer may delay execution in adverse scenarios. In particular, token holders are not parties to the custody agreement and do not benefit from guaranteed notification or continuity rights in the event of unilateral contract termination. Without formal wind-down procedures or asset allocation protocols, enforcement may default to general civil or insolvency proceedings, which, although legally sound, can entail procedural delays, lack coordinated representation, and reduce investor certainty, particularly for foreign investors operating outside the Swiss jurisdiction.

Dispute Resolution, Legal Standing, and Investor Protection Mechanisms

Legal disputes related to custody fall under the exclusive jurisdiction of the courts of Lenzburg, Switzerland. The platform does not provide for alternative dispute resolution mechanisms, such as arbitration, nor does it include provisions facilitating cross-border enforcement. As token holders are not parties to the custody agreement, their rights, granted under a third-party beneficiary structure, may be procedurally difficult to assert, particularly for non-Swiss investors. In the event of service disruption or custodial default, the documentation lacks formal provisions for wind-down execution, investor notification, or redemption prioritization. The absence of an independent fiduciary or coordinated enforcement mechanism further limits token holders' ability to initiate collective legal action. While enforceable in rem co-ownership rights exist under Swiss law, the platform's documentation does not specify the procedural pathways for exercising these rights during distress scenarios, introducing legal uncertainty and potential delays in asset recovery.

Presented Below is a Comparative Analysis of Denario and Its Market Counterparts:

Issuer	DENARIO	KINESIS	AURUS	NOVEMGOLD	TIAMONDS TOTAL TOKENIZATION
Year of Incorporation	2021	2018	2018	2018	2018
Legal Structure	Denario AG (Swiss Stock Corporation)	Kinesis Cayman (Cayman Islands Exempted Company)	Aurus Markets DMCC (UAE Free Zone Company)	Novem Gold Storage GmbH (Austrian Limited Liability Company)	Tiamonds AG (Liechtenstein Stock Corporation)
Bankruptcy Remote SPV	✓ *	✓ *	✗	✗	✓ *
Regulatory Body	Swiss Financial Market Supervisory Authority (FINMA)	Cayman Islands Monetary Authority (CIMA)	Dubai Multi Commodities Centre Authority (DMCC)	Austrian Trade Authority (Gewerbebehörde)	Financial Market Authority Liechtenstein (FMA)
Regulatory Compliance	Exempt From FINMA Licensing; Compliant With Swiss Banking Act and FinSA (Art. 5(2)); Prospectus Not Required Under FinSA	Registered With Cayman Islands Monetary Authority as VASP Under the Virtual Asset (Service Providers) Act (2020)	Licensed by DMCC Under Crypto-Commodity Free Zone Licensing for Proprietary Crypto-Commodity Activities	Registered Under Austrian Trade Law (GISA Registration); Not Regulated by the Austrian Financial Market Authority (FMA)	Registered Under Liechtenstein Company Law; Tokenization Delegated to LCX AG – Licensed TT Service Provider Under TVTG; Not FMA-Regulated
Investor Profile	Qualified Retail & Institutional Investors	Qualified Retail & Institutional Investors	Qualified Retail & Institutional Investors	Qualified Retail & Institutional Investors	Qualified Retail & Institutional Investors
Investor Geography	Only Qualified Non-U.S. Investors	Only Qualified Non-U.S. Investors	Only Qualified Non-U.S. Investors	Only Qualified Non-U.S. Investors	Only Qualified Non-U.S. Investors
Tokenization Provider	Denario AG	Kinesis Money Lithuania UAB	Aurus Technologies Ltd.	Novem Gold Storage GmbH	LCX AG
Custodian	BB Wertmetall AG (BBWAG)	Allocated Bullion Exchange Ltd.	Brink's Global Services Ltd. / AGA Bullion	Novem Gold Storage GmbH	Tiamonds AG

Disclaimer: The legal and operational framework incorporates features designed to support asset segregation and custodial independence; however, it does not utilize a bankruptcy-remote Special Purpose Vehicle (SPV) structure. The analysis provided herein is based solely on publicly available information as of July 15, 2025.

Well-Structured and Innovative Financial Product

The Particula Digital Asset Classification System (PDACS) categorizes the $DSC token as an *Other Investment Token* within the digital asset landscape. The token is structured to provide price exposure to physical silver, with its value linked to the spot price of investment-grade silver granules held in segregated custody. Unlike *Fund Tokens*, which may confer rights in pooled investment structures or governance participation, $DSC grants pro-rata co-ownership rights based on indirect possession (*mittelbarer Besitz*), rather than direct legal title.

The token is deployed on the Polygon network, which offers Layer 2 scalability while inheriting consensus security from Ethereum's Proof-of-Stake (PoS) protocol. The network enables high transaction throughput, low settlement costs, and rapid finality, supported by a consistent operational track record since inception. However, the validator set on Polygon remains relatively concentrated, both in terms of stake distribution and geographic dispersion. A material share of validation power is held by a limited number of entities, several of which rely on overlapping cloud infrastructure providers. These structural characteristics introduce governance concentration and infrastructure dependency risks, which may constrain the level of decentralization typically associated with public blockchain environments. Overall, $DSC leverages Polygon's established technical infrastructure in combination with structured financial engineering to provide a scalable and adaptable product framework, designed to meet the evolving requirements of the digital asset investors.

Robust Technical Framework Developed by Denario

The $DSC smart contract (DSCV2) is implemented using a modular, upgradeable framework consistent with widely adopted OpenZeppelin standards. It utilizes *ERC20Upgradeable* and *Ownable2StepUpgradeable* templates, incorporates secure arithmetic operations via the OpenZeppelin Math library, and includes external interfaces to support oracle integration and custom error handling. A dual-versioning architecture separates interface upgrades from core logic changes, facilitating controlled contract evolution and maintaining backward compatibility.

A distinguishing structural element is the segregation of fee-related state variables through a custom storage layout defined via inline assembly. While common in upgradeable contract architectures, this approach requires strict version management to ensure storage integrity during upgrades. The contract supports minting and burning functions, governed by designated roles, and includes an embedded transfer fee mechanism implemented through an overridden *_update()* function. While the fee structure is technically enabled, it is currently inactive, with fee parameters set to zero. Any future modification to these parameters is subject to a six-month cooldown period and requires approval via a 2-of-4 multi-signature governance process, providing procedural safeguards and mitigating the risk of uncoordinated parameter changes. Key operational functions, including minting, fee administration, and reserve validation, are executed manually. Although the design allows for structured intervention, this reliance on off-chain execution introduces process dependencies that may affect scalability and responsiveness, particularly under stress conditions. The *collectFees()* function remains inactive under the current zero-fee configuration, and the existing batch processing logic has raised concerns related to gas exhaustion. The development team has proposed replacing this mechanism with a scheduled alternative to address these limitations.

In summary, the $DSC contract architecture reflects a deliberate trade-off between upgrade flexibility and governance control, supported by established code standards and internal safeguards. However, the continued reliance on manual procedures highlights the importance of operational consistency and suggests potential benefits from increased automation to enhance resilience and scalability over time.

Technical Risk Management Controls

- **Access Control & Governance:** The $DSC token contract and the associated DIA oracle contract define three primary roles: owner, minter, and oracleUpdater, each responsible for specific administrative tasks including minting, burning, fee settings, and oracle updates. Role execution is governed through a Gnosis Safe multi-signature wallet, requiring 2-of-4 approvals from designated founders and shareholders. This setup enforces shared control and basic separation of duties across key functions but carries a moderate governance risk due to its dependence on a limited number of trusted signers, without automated fallback mechanisms or broader role specialization.

- **Oracle Integration and Reserve Validation:** The $DSC contract supports integration with an external oracle feed, currently provided by DIA, to enforce a supply cap tied to volume of the silver reserves. When enabled, minting is contingent on the oracle reporting a reserve value that covers both the new issuance and total existing supply. The minting function itself is restricted to authorized roles. If no oracle address is configured, minting proceeds without reserve validation, which exposes the system to oracle dependency risks.

- **Smart Contract Architecture and Reentrancy Protections:** The contract is built using OpenZeppelin's *ERC20Upgradeable* and *Ownable2StepUpgradeable* templates, with safe math calculations and modular upgradeability. Key storage elements, including fee configurations, are segregated using inline assembly. State updates precede external calls to prevent basic reentrancy attacks, although no explicit *ReentrancyGuard* is implemented. While reliance on *block.timestamp* is limited, its use in fee logic requires ongoing monitoring. Unsafe patterns such as *delegatecall* and *tx.origin* are avoided, and the contract has no dependency on pseudorandom functions.

- **Compliance Controls and Data Privacy:** The token contract does not implement on-chain KYC/AML verification, whitelisting, or blacklisting functions. All compliance processes, including user verification and jurisdictional access restrictions, are conducted off-chain. Although this approach aligns with the CMTA standard in Switzerland, it presents elevated regulatory risks in jurisdictions requiring automated transfer restrictions or real-time compliance enforcement. The absence of pause or circuit-breaker mechanisms further limits the issuer's ability to respond swiftly to emergency scenarios.

Operational and Technical Risk Considerations

While the $DSC token operates on a strong technical framework, the rating identifies a range of technical risks across high, medium, and low categories. Addressing these risk factors could enhance the token's operational integrity and enhance investor confidence.

Centralized Privilege Structure

The reliance on a small group of designated signers introduces governance risk. Although the multi-signature wallet offers some oversight, the lack of further role specialization, procedural constraints, or automated controls leaves the system exposed to signer compromise or coordination failures. This centralized structure could hinder emergency responses or allow unauthorized modifications. Without independent checks or automated triggers, decision-making remains heavily manual and potentially slow. Over time, this could affect stakeholder confidence and increase operational risk as the system scales.

Manual Minting and Fee Configuration

The contract architecture does not automate any part of the minting workflow. Oracle-referenced supply caps exist but can be bypassed if the oracle is unset. Reserve validation is handled manually by the operations team and lacks algorithmic enforcement. The *collectFees* function, while technically sound, introduces gas exhaustion risks in batch mode and remains inactive due to a zero-fee configuration.

Future fee adjustments would require multi-signature approval and are subject to a six-month time lock, limiting operational flexibility while promoting procedural discipline.

Oracle and Data Integrity Risks:

The reliance on a single price feed poses a medium risk in the event of stale, compromised, or delayed oracle data. The absence of time-based validity checks or multi-source verification reduces resilience against external data manipulation or provider outages. Given that reserve alignment and issuance approvals are manually processed, the risk of incorrect reserve alignment due to human error or misjudgment remains material.

Reserve Attestation and Verification Controls:

The $DSC token's reserve verification relies on biannual audits conducted by Trevista Treuhand- und Revisionsgesellschaft AG. The January 2025 audit, published with a several-month delay in May 2025, underscores potential limitations in verification timeliness, particularly during periods of heightened issuance or market volatility. While off-chain attestations remain common, an increasing number of market participants have adopted monthly audits or on-chain proof-of-reserve mechanisms to strengthen transparency and provide real-time collateral assurance. In this context, the current verification cadence might be less aligned with evolving industry practices and investor expectations.

Risk Mitigation Considerations

The $DSC contract demonstrates a technically sound foundation based on established development standards but exhibits structural limitations due to its reliance on centralized governance, manual process execution, and minimal automation of key control mechanisms. These design choices introduce elevated execution and oversight risks, which may affect the token's scalability, operational resilience, and alignment with investor expectations regarding transparency, automated control enforcement, and governance discipline in digital asset frameworks.

Several mitigants could address these vulnerabilities. Progressive automation of operational workflows may reduce the systemic risk associated with manual intervention. For example, implementing programmatic KYC/AML verification via standardized interfaces could improve regulatory alignment and reduce administrative dependencies. Similarly, introducing on-chain whitelist and blacklist functionalities would enable real-time enforcement of jurisdictional transfer restrictions, strengthening compliance capabilities. In addition, the integration of automated minting logic, specifically, algorithmic enforcement of reserve ratios, could enhance issuance discipline and mitigate discretionary risk. Complementary measures such as regular proof-of-reserve attestations and circuit breaker mechanisms triggered by predefined thresholds may improve the protocol's ability to respond to adverse market conditions or operational stress events.

With regard to data integrity, improvements to oracle architecture may be warranted. Incorporating a *maxAge* parameter could prevent reliance on outdated price inputs, while adopting a multi-oracle configuration requiring consensus across independent data providers may reduce the risks associated with single-source dependency. Where technically feasible, the use of on-chain attestations to validate physical reserve backing could further enhance auditability and investor confidence. The current access control structure, limited to owner and minter roles, may benefit from expanded role granularity. Defining additional operational roles would support a more robust separation of duties and reduce governance concentration risk. Although basic safeguards such as safe math operations and update ordering are in place, implementing an explicit reentrancy guard could further strengthen protection against common attack vectors. Additionally, the introduction of a protocol-level emergency pause function, subject to multi-signature approval and procedural time delays, would enable controlled responses to critical threats without undermining governance integrity.

Market Activity

As of July 2025, the $DSC token reflects a total supply of 26,550 tokens held across 47 unique wallets, with approximately 148 recorded on-chain transfers. The current distribution remains concentrated, with the five largest holders collectively controlling more than 60% of outstanding supply. The single largest wallet retains over 25%, indicating a material concentration risk from a governance and liquidity perspective.

Secondary market activity remains limited. Token holders primarily retain positions for long-term exposure rather than short-term trading. This pattern reflects the underlying asset's linkage to physical silver, a historically low-velocity investment class. Although $DSC is accepted as overcollateralized backing within the Oracle Freedom Dollar (OFD) ecosystem, broader market liquidity remains constrained in the absence of on-chain trading pairs and exchange integrations. The token's reference price is derived from spot market data provided by BB Wertmetall AG and delivered via a DIA oracle feed. While this mechanism supports reliable reserve valuation and issuance constraints, the lack of active market-making and observable trading spreads limits transparency into effective execution prices. Consequently, real-time price discovery remains dependent on off-chain inputs and internal reference pricing, which may limit usability in Decentralized Finance (DeFi) applications requiring live market feeds or mark-to-market valuation.

To date, redemption activity appears limited, with no public data on execution volumes or processing times. While tokens are redeemable against physical silver reserves, the requirement for prior off-chain onboarding and identity verification may inhibit seamless exit optionality. At present, the token is not listed on centralized exchanges and maintains no confirmed integrations with decentralized liquidity protocols. No known automated market maker (AMM) pools exist, and there is no evidence of ongoing market-making support. Although the issuer has indicated a willingness to explore broader distribution channels, timelines and concrete execution plans remain undisclosed. In comparative terms, $DSC lags peer silver tokens, such as Kinesis Silver, in terms of trading volume, infrastructure integration, and observed liquidity.

Overall, the token exhibits characteristics consistent with an early-stage product lifecycle, supported by a concentrated, buy-to-hold investor base. However, the lack of established trading infrastructure, opaque price discovery, and limited redemption visibility may pose liquidity risks for investors seeking more dynamic exposure or timely exit options.

Absolute Ownership Rights to Physical Silver Granules

The $DSC token issued by Denario confers enforceable property rights over allocated physical silver granules held in custody by BB Wertmetall AG (BBWAG) in Switzerland. These rights are established through a contract for the benefit of third parties pursuant to Article 112(2) of the Swiss Code of Obligations and are underpinned by Article 641 of the Swiss Civil Code, which governs rights in rem. Accordingly, each token represents a direct co-ownership interest in the underlying bullion, providing token holders with absolute, asset-linked rights rather than contractual claims. This structure stands in contrast to relative rights, which entitle holders to performance from a counterparty, such as payment or redemption, but do not convey ownership of a specific asset. Absolute rights, by comparison, grant a legally recognized entitlement to the asset itself, enforceable against third parties, including in insolvency proceedings. In the case of $DSC, this translates into a proportionate, legally protected interest in the vaulted physical silver, as opposed to a mere redemption claim for its value.

BBWAG operates as the exclusive custodian, holding client assets in segregated storage and contractually restricted from pledging, lending, or otherwise disposing of the silver. In the event of custodian insolvency, the legal structure supports the preservation of token holder claims. However, the enforceability of these rights is contingent on the token holder being included in the issuer's off-chain registry and having completed identity verification. While tokens are transferable on-chain without restriction, redemption rights are only recognized for verified and registered holders.

Presented Below is a Comparative Analysis of Denario's $DSC and Its Market Counterparts:

Issuer	DENARIO	KINESIS	AURUS	NOVEMGOLD	TIAMONDS TOTAL TOKENIZATION
Token	$DSC	$KAG	$TXAG	$NXAG	TS#019
Token Price	$43.37*	$38.37	$0.84	$38.35	$55.00
Circulating Supply	26,550.00	3,666,960.43	789,840.20	24,434.15	1
Network	Polygon	Kinesis Chain (Stellar)	Ethereum	BNB Smart Chain	Ethereum
Token Standard	ERC-20	ERC-20	ERC-20	BEP-20	ERC-721
Token Classification	Other Investment Token	Other Investment Token	Other Investment Token	Other Investment Token	Other Investment Token
Token Holder Rights	Absolute Rights Token	Relative Rights Token	Relative Rights Token	Relative Rights Token	Absolute Rights Token
Underlying Asset	Allocated Silver Granules	Allocated Silver Bars	Allocated Silver Bars or Coins	Allocated Silver Bars or Coins	Allocated Silver Bars
Backing Ratio (Per Token)	1 Oz of Silver Granules	1 Oz of Silver Bars	1 Gram of Silver Bars or Coins	1 Oz of Silver Bars or Coins	1 Oz of Silver Bars
Minimum Investment Quantity	1 Oz of Silver Granules	100 Oz of Silver Bars	1 Gram of Silver Bars or Coins	1 Oz of Silver Bars or Coins	1 Oz of Silver Bars
Minimum Redemption Quantity	1 Oz of Silver Granules	200 Oz of Silver Bars	1 Gram of Silver Bars or Coins	1 Oz of Silver Bars or Coins	1 Oz of Silver Bars
Redemption Fees (Token)	0.00%	0.45%	N/A	N/A	N/A
Physical Redemption Option	✓	✓	✓	✗	✓
Proof of Reserves	✓	✓	✗	✗	✓

**The price of the $DSC token issued by Denario reflects all associated fees and does not involve any ongoing charges, such as for storage, insurance, or audit services. Investors are responsible only for the applicable network gas fees at the time of each transaction. For the other tokens evaluated in this review, comparable disclosure regarding pricing structure and fee components was not identified in publicly available sources.*

Disclaimer: The above comparative analysis was based solely on publicly available information as of July 15, 2025

Liquidity Framework & Operational Process

The $DSC tokens operate within a defined issuance and liquidity framework designed to facilitate secure issuance and investor access to tokenized physical silver. While this framework is structured for efficiency and transparency, its performance remains subject to the performance of external service providers, settlement timelines, and the reliability of off-chain reconciliation and verification processes.

Issuance Process

1. **Investment Contributions:** Qualified investors initiate the subscription process by expressing interest in purchasing $DSC tokens and submitting identification information through one of three onboarding channels: Honesto (regulated custodial interface), Denario Wallet (non-custodial Web3 wallet), or Denario Tokengate (on-chain wallet-to-wallet purchases). Depending on the onboarding route, investors may fund their purchase via fiat, credit card, USDT, or BTC.

2. **Payment Processing:** For primary issuance, investor payments are processed by Denario AG. Fiat contributions are settled into Denario's corporate account, while crypto payments are converted into fiat at the time of transaction. All payments above CHF 1,000 per month are subject to internal KYC verification procedures in line with onboarding provider standards. Transactions below this threshold may proceed without formal KYC/AML checks, based on the exemption provided under Article 7(1)(c) of the Swiss Anti-Money Laundering Ordinance (AMLO). Investor identities and payment details are reconciled to ensure procedural integrity.

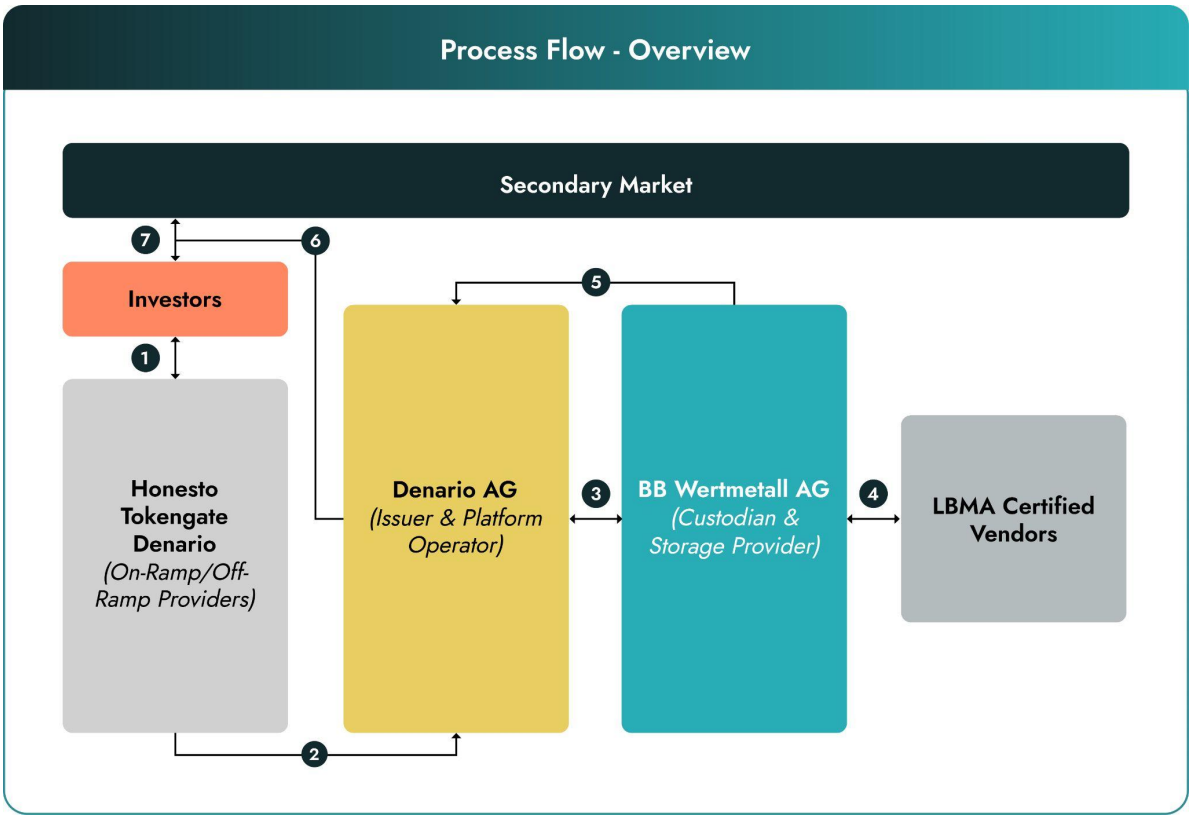
3. **Metal Procurement Coordination:** If existing $DSC inventory is unavailable, Denario AG instructs BB Wertmetall AG (BBWAG) to acquire physical silver at the confirmed final purchase price. Denario retains sole authority to initiate procurement instructions following investor subscriptions.

4. **Silver Sourcing and Custody Confirmation:** BBWAG sources LBMA-certified silver from approved vendors and arranges segregated storage on behalf of $DSC token holders. Custody is maintained in the name of Denario AG for the benefit of token holders.

5. **Reconciliation and Validation:** Upon receiving storage confirmation that sourcing is complete by BBWAG, Denario AG conducts internal reconciliation. This includes validating the silver purchase, final pricing, and investor contributions. Denario confirms that token issuance aligns with verified silver holdings, maintaining a centralized oversight process.

6. **Token Minting and Distribution:** Following reconciliation, Denario mints $DSC tokens on the Polygon blockchain corresponding to the verified amount of silver held in custody. Tokens are then distributed to investor wallets. Tokens are distributed to investor wallets, subject to a potential 24-hour delay to support post-verification controls and operational integrity.

The $DSC operational process is structured to enable end-to-end issuance finalization within a T+2 settlement timeline, aligning off-chain physical silver procurement with on-chain token delivery. The model aims to ensure a strict 1:1 backing of each issued token with silver reserves and compliance with regulatory requirements under Swiss law, providing investors with legally enforceable co-ownership rights rather than synthetic exposure. In contrast to tokenized instruments that utilize fund structures or synthetic representations, $DSC establishes a direct linkage to the acquisition and segregation of physical silver granules held in custody. This co-ownership model enhances asset transparency and legal clarity but also introduces specific settlement risks, as the token issuance is contingent on the timely procurement and third-party verification of the underlying metal. The process is significantly reliant on manual coordination between Denario AG and BBWAG, the appointed custodian, which may lead to operational delays during periods of elevated transaction volume or under adverse market conditions.



Source: Analysis by Particula

Redemption Process

The $DSC token allows for redemption through multiple predefined pathways, enabling holders to convert tokens into an equivalent value of physical silver or, subject to availability, alternative off-chain settlement options.

1. **Redemption Request Initiation:** Investors initiate a redemption request via the Denario platform interface, specifying the quantity of $DSC tokens to be redeemed and submitting the necessary wallet and identification details.

2. **Redemption Conditions Review:** Redemptions are only permitted in whole token increments, with a minimum of one full token (1 oz). Fractional token redemptions are not supported. Each redemption request undergoes manual review by Denario AG to verify investor's identity and eligibility, confirm wallet balances, and ensure compliance with applicable contractual terms. Requests exceeding CHF 100,000 may be subject to enhanced due diligence.

3. **Redemption Pathway Selection:** Holders may choose from the following redemption pathways:

    - **Physical Silver Delivery**: Token holders may redeem tokens for physical silver, which can be collected in person from BB Wertmetall AG (BBWAG) or shipped via an insured logistics provider. Associated shipping, handling, and insurance costs are borne by the investor.

    - **Cash Equivalent Payout**: Subject to availability and platform capacity, Denario AG may offer a cash equivalent payout based on the prevailing spot price of silver granules, net of any applicable gas fees associated with the transaction. Payouts may be made in CHF or USDC, depending on investor preference and platform capabilities.

    - **Vault Transfer or Custodial Reassignment**: Investors may request a transfer of their silver entitlement to an alternative eligible custodian, subject to administrative review and legal documentation.

4. **Redemption Processing and Custodian Instruction:** Once the redemption request is approved and the pathway confirmed, Denario AG instructs BB Wertmetall AG (BBWAG) to allocate the corresponding amount of silver from the segregated custody accounts held on behalf of $DSC investors under Article 112(2) of the Swiss Code of Obligations

5. **Token Burn and Confirmation:** Upon completion of the redemption the corresponding tokens are burned on-chain to reflect the release of the underlying asset. A confirmation of the redemption is provided to the investor.

Issuance and Redemption Risk Factors

Although both the issuance and redemption processes are formally defined, several structural and operational characteristics introduce risks that may affect execution timelines, investor accessibility, and settlement predictability:

Lifecycle Execution Risks:

The issuance and redemption of $DSC tokens involve interdependent operational pathways, each governed by specific procedural requirements. These include predefined eligibility criteria, minimum transaction thresholds, and coordination between Denario AG, BB Wertmetall AG, and relevant third-party service providers. While the process is initiated through BBWAG's online platform, enabling digital submission and order tracking, key steps, including investor request validation, custodian instruction, and transaction processing, require manual execution. This partial automation introduces operational friction and timing variability, as critical stages still rely on human intervention. These dependencies may reduce responsiveness during periods of elevated transaction volume, constrain transaction scalability, and limit liquidity access for certain investor profiles

Minimum Transaction and Eligibility Thresholds:

The $DSC token framework imposes fixed thresholds and eligibility requirements that apply across both issuance and redemption processes. Tokens can only be issued or redeemed in whole-unit increments (1 oz), with no accommodation for fractional transactions. For physical redemptions involving silver granules, a materially higher threshold of 20 kilograms is required, significantly limiting feasibility for smaller holders. Additionally, redemption requests exceeding CHF 100,000 may be subject to enhanced due diligence, including submission of supporting documentation. These design features may constrain accessibility for smaller investors, reduce liquidity flexibility, and introduce processing variability for larger transactions. The absence of fractional capabilities may also limit token distribution granularity and secondary market participation, particularly among retail or low-volume investors.

Custodial, Liquidity, and Settlement Dependencies:

The fulfillment of issuance and redemption obligations is reliant on the operational availability of the designated custodian, BB Wertmetall AG, and associated logistics partners. While the underlying silver is held on a fully allocated 1:1 basis in segregated custody, the execution of physical transfers and ownership updates remains subject to manual coordination and real-time asset handling. The custody agreement outlines core responsibilities, such as asset segregation, reconciliation procedures, and inventory tracking. As a result, processing speed is contingent on the issuer's internal capacity and the custodian's ability to access, prepare, and release the metal. Operational disruptions, including vault access constraints, inventory bottlenecks, or third-party coordination failures, may introduce settlement delays and limit process predictability under stressed market or volume conditions.

Access and Compliance Framework

Access to the $DSC token is governed by a compliance framework structured to align with the Swiss Anti-Money Laundering Act (AMLA), Financial Market Supervisory Authority (FINMA) guidance, and international standards established by the Financial Action Task Force (FATF).

Prospective investors are generally subject to Know Your Customer (KYC) screening, including verification of identity documents, proof of residential address, and screening against international sanctions and politically exposed person (PEP) lists. These checks are conducted off-chain and manually processed via integrated third-party compliance platforms engaged by Denario AG or Denario AG itself. However, pursuant to Swiss AML regulations, transactions below CHF 1,000 per calendar month are exempt from formal identification requirements. As a result, onboarding procedures vary across the token holder base, introducing differences in verification coverage at the point of entry.

The $DSC token can be subscribed through three primary distribution channels. Denario's website facilitates direct over-the-counter (OTC) transactions, primarily targeting qualified investors, with a minimum subscription amount of CHF 100,000 and preferential terms. Retail investors may access the token via the Tokengate platform, which offers entry from as low as EUR 107, and through the Honesto mobile application, which operates under the scope of Swiss regulatory oversight.

Participation is restricted for the following investor categories:

- U.S. persons, as defined under Rule 902(k) of Regulation S of the U.S. Securities Act of 1933;
- Individuals and entities listed on sanctions registers maintained by the Swiss State Secretariat for Economic Affairs (SECO), FATF, or equivalent international authorities;
- Investors from jurisdictions deemed high risk under internal compliance policies and service provider criteria.

These restrictions apply at both onboarding and redemption stages. However, the token's smart contract does not implement compliance enforcement features such as address whitelisting, permissioned transfers, or automated identity verification. Accordingly, eligibility requirements are not programmatically enforced post-issuance, and lifecycle control mechanisms remain limited.

Lifecycle Controls & Secondary Market Compliance Risk

Following issuance, $DSC tokens are freely transferable on-chain without embedded compliance safeguards. The absence of smart contract-level controls, such as transfer restrictions, dynamic identity verification, or address-based eligibility filters, means that secondary market participants may acquire tokens without undergoing formal KYC screening. This is particularly relevant for transactions below the CHF 1,000 threshold, which are exempt from identification under Swiss AML regulation.

The lack of technical enforcement mechanisms introduces a structural compliance gap. Token holders who have not completed onboarding verification may face redemption delays or be required to undergo ex-post identity checks to access the underlying asset. While redemption requests exceeding CHF 100,000 may trigger enhanced due diligence procedures, including submission of source-of-wealth documentation and financial background information, these measures are manually administered and not automatically triggered by transaction size or smart contract logic. No periodic re-screening or dynamic reassessment of investor identity is conducted post-subscription. Therefore, over time and across token transfers, identity verification coverage may decline, potentially weakening compliance assurance and regulatory alignment across secondary market activity.

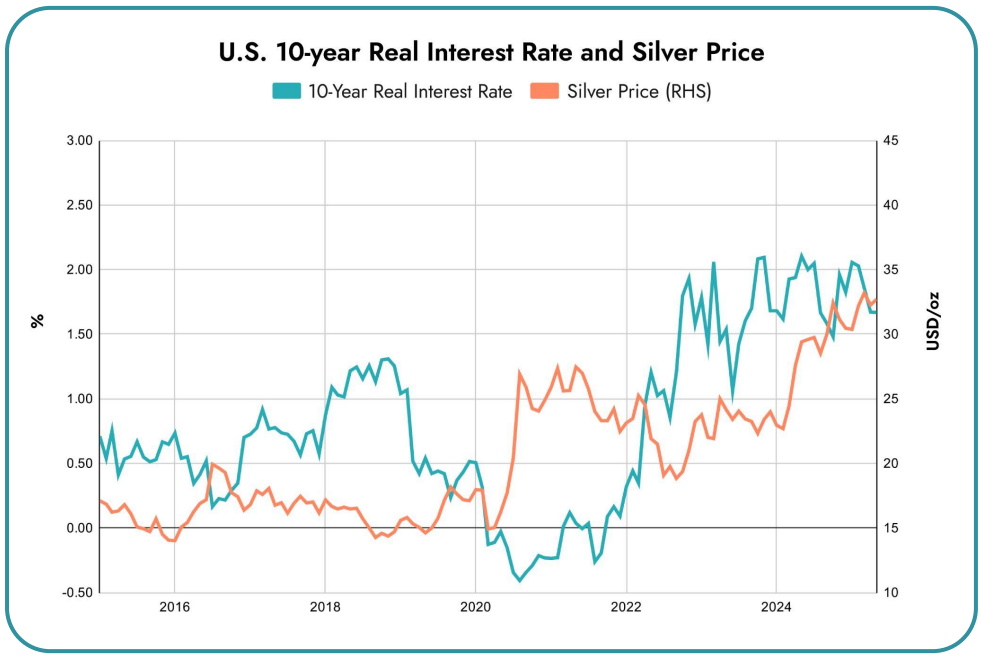
Detailed Rating Analysis - Underlying Asset

Offers Exposure to Physical Silver

Silver, as both a precious and industrial metal, occupies a unique position in global commodity markets. In recent quarters, the global silver market has exhibited a confluence of traditional macroeconomic drivers and sector-specific dynamics, reflecting both cyclical and structural forces. Following a period of subdued volatility through mid-2023, silver prices have shown renewed momentum, supported by tighter physical markets, reduced COMEX-registered inventories, and investor repositioning amid persistent inflationary pressures and shifting interest rate expectations. As of July 2025, silver is trading in the range of USD 36-39 per troy ounce, reflecting a year-on-year appreciation of approximately 25%, recovering from mid-2022 lows that were driven by a strong dollar and restrictive monetary conditions.

Since late 2022, and more notably in late 2023, silver prices have trended upward, supported by a weakening USD, recovering industrial activity in Asia, and safe-haven flows amid rising geopolitical tensions. Technical indicators, including the 200-day moving average and relative strength index (RSI), confirm this trend. The RSI has remained in the range of 55 to 60 throughout Q2 2025, indicating stable upward price momentum without entering levels typically associated with short-term overextension. Volatility has remained elevated, with average monthly price fluctuations exceeding 10% on several occasions since November 2023. The recent price recovery contrasts with the weaker performance observed in early 2023, when aggressive rate hikes by the US Federal Reserve and other G10 central banks dampened investor demand for non-yielding assets. In parallel, silver-backed Exchange-Traded Funds (ETFs) have emerged as a material component of investment demand driven by their scale and liquidity. During periods of heightened market uncertainty, such as in 2020, silver ETFs recorded substantial inflows, with global holdings increasing by more than 300 million ounces over the course of the year. This surge in demand contributed to pronounced price appreciation and temporary shortages in the physical market.

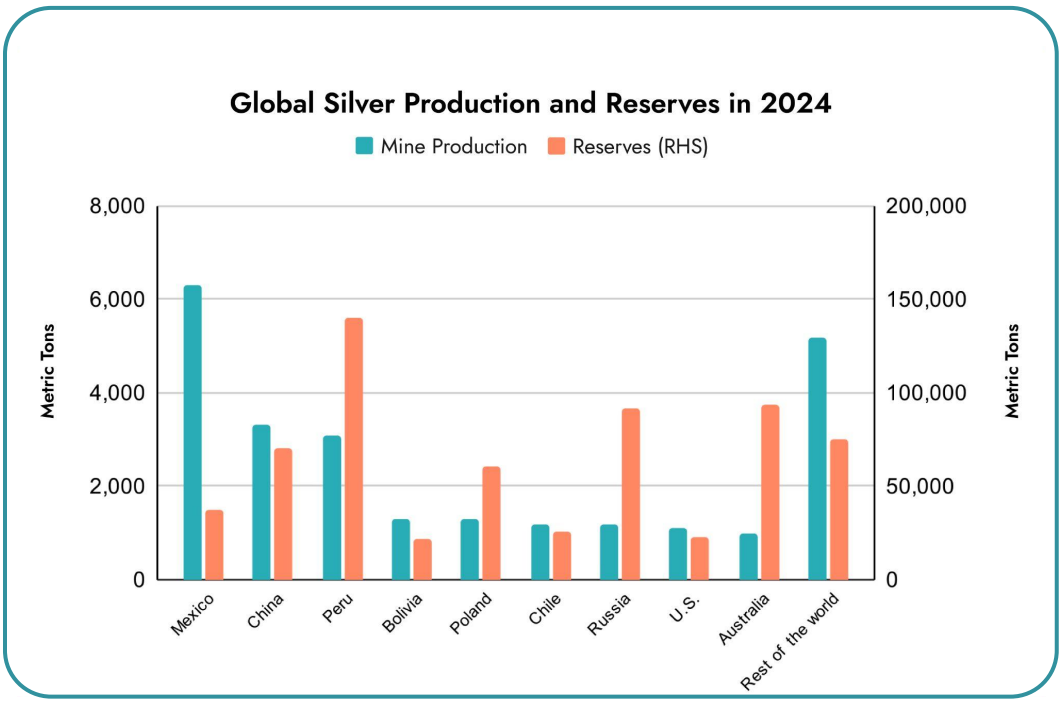
Historically, silver prices have exhibited a strong inverse correlation with U.S. 10-year real interest rates, reflecting the metal's sensitivity to monetary policy and inflation expectations. However, while the post-pandemic tightening cycle initially exerted downward pressure, continued industrial demand and constrained supply renewed the price support. These dynamics illustrate silver's dual role as both a financial asset and industrial input, with price behavior influenced by the prevailing macroeconomic environment.



Source: Cleveland Fed, London Bullion Market Association, Particula

Supply Chain Dynamics

Mine production rose moderately to approximately 25,000 metric tons in 2024, marking a 3.1% year-on-year increase. Key production hubs include Mexico, China, Peru, Bolivia, Poland, Chile, and Russia, with Mexico maintaining its position as the world's largest silver producer, accounting for roughly 24% of global mine output. Peru, Russia, and Australia collectively hold over 51% of global silver reserves. Secondary supply from recycling increased by 4.6% year-on-year, supported by improved recovery from electronics and industrial waste, particularly in East Asia. Despite these increases, the market remained in a structural deficit for the third consecutive year, estimated at approximately 85 million ounces, helping to stabilize prices despite ongoing monetary headwinds. Silver's stock-to-flow characteristics differentiate it from other precious metals. In contrast to gold, which is primarily held as a store of value, silver is heavily consumed in industrial applications, gradually reducing above-ground inventories. The combination of a low stock-to-flow ratio and the predominance of by-product extraction further limits supply elasticity, contributing to short-term imbalances during periods of increased demand.



Source: U.S. Geological Survey, Particula

Supply Chain Analysis

The silver supply chain is characterized by geographic concentration and operational interdependence among miners, refiners, and fabricators. Primary silver mining remains limited, with most silver extracted as a by-product of lead, zinc, copper, and gold mining. This structural feature constrains supply responsiveness to price signals, as silver output is largely contingent on the production strategies of base metal miners. Major mining firms with substantial silver output include Fresnillo plc, Southern Copper, Glencore, and Polymetal International.

Refining capacity is distributed across key jurisdictions. Major silver refineries are located in Switzerland (e.g., Metalor), Germany (e.g., Heraeus), China (e.g., Zijin Mining), and India. These facilities convert mined output into refined bullion suitable for industrial use and investment-grade applications. Shipments from Latin American mines to Asian and European refineries rely on established maritime routes but remain vulnerable to disruptions at key chokepoints, such as the Panama Canal and the Red Sea, as evidenced by recent geopolitical tensions.

The fabrication and industrial utilization segment is increasingly concentrated in East Asia, particularly in the electronics, solar, and automotive sectors. Consequently, any disruptions in East Asian manufacturing - due to energy availability, regulatory changes, or logistics - may disproportionately impact global silver demand elasticity.

Liquidity Dynamics

Liquidity in the global silver market remains robust in derivative segments but less uniform across physical markets. The London Bullion Market Association (LBMA) and the COMEX (operated by CME Group) continue to serve as the principal venues for wholesale silver trading and price discovery. COMEX silver futures have maintained average daily volumes of 150,000 to 200,000 contracts over the past year, translating into notional exposures of approximately 750 million to 1 billion ounces. These deep markets provide hedging and arbitrage opportunities for institutional participants but may, at times, diverge from physical market fundamentals during periods of speculative positioning.

Physical market liquidity is more variable and region-specific. While wholesale trading in LBMA-accredited bars remains orderly, premiums over spot have widened intermittently, particularly during episodes of refinery constraints or strong industrial restocking. Mid-2024 saw delivery delays and premium increases in East Asia, driven by supply bottlenecks and tightening inventories. During the same period, COMEX-registered inventories declined to multi-year lows of approximately 27 million ounces, further constraining market availability. Retail market liquidity, particularly for small bars and minted coins, has exhibited higher variability than institutional channels. Premiums occasionally reached 20-30% above spot during periods of heightened demand, reflecting production capacity constraints and geographic imbalances in distribution.

Silver Market Risk Analysis

Several interrelated risks continue to influence the outlook for silver markets:

- **Macroeconomic Risks:** Persistently high interest rates, particularly in the U.S. and EU, could suppress investment demand. Conversely, a rapid shift toward monetary easing in response to economic stress could amplify silver's volatility due to speculative inflows.
- **Geopolitical Risks:** Supply chain exposure to politically sensitive regions, such as Latin America and the South China Sea, introduces material transport and operational risks. Sanctions, export controls, or civil unrest in mining regions could constrain supply.
- **Regulatory and Environmental Risks:** More stringent environmental, social, and governance (ESG) standards in major mining jurisdictions may limit future output growth or increase compliance costs. Additionally, increased scrutiny of artisanal mining, particularly in developing economies, poses challenges for traceability and ethical sourcing.
- **Technological Substitution Risk:** Advances in material science may reduce the intensity of silver usage in photovoltaics and electronics. While such substitution is unlikely to materially impact demand in the near term, long-term effects merit monitoring.

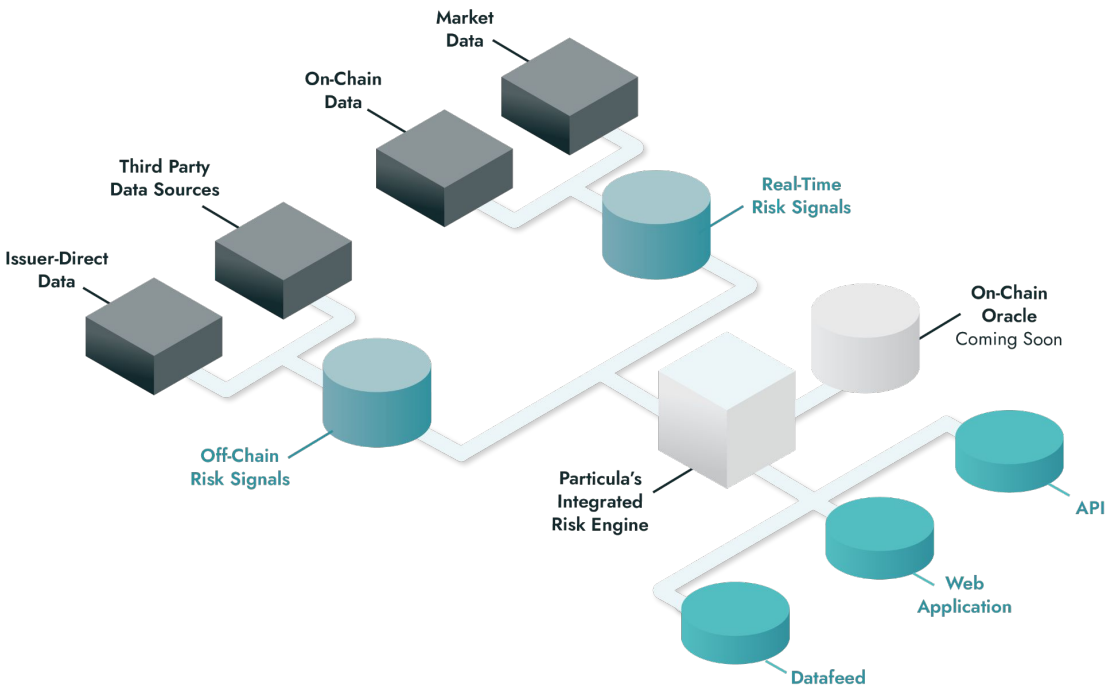
The silver market continues to be shaped by intersecting forces, structural supply constraints, evolving industrial demand, and the macroeconomic environment. While elevated interest rates represent a near-term challenge for investor demand, the metal's dual role as an industrial input and financial hedge supports its ongoing relevance. Persistent structural deficits, low stock-to-flow dynamics, and elevated physical premiums underscore the current tightness in market conditions.

Analytical Approach

Particula's digital asset risk rating methodology employs a comprehensive analytical approach that combines traditional asset evaluation principles with advanced technology. This methodology diligently assesses each issuance on the categories compliance, economic viability, technological resilience, ESG performance and operational security, offering investors a deep understanding of risks and opportunities on issuer, token and underlying asset.

Particula's principles acknowledge the difference between digital assets and analog assets and integrate direct data from issuers, conduct thorough security checks and incorporate real-time blockchain data as well as market trends to provide timely and accurate assessments for navigating the landscape of digital assets. A complete overview of our analytical approach and the rating methodology is available on request.

Grade	Rating	Definitions
Investment Grade	AAA	Highest Quality, Minimal Risk
	AA	Very High Quality, Low Risk
	A	High Quality, Low-Medium Risk
	BBB	Good Quality, Medium Risk
Speculative Grade	BB	Speculative, High Risk
	B	Highly Speculative, Very High Risk
	CCC	Substantial Risk
	CC	Very High Risk, Approaching Exposure
	C	High Risk, In Exposure or Likely to be Exposed
	D	Full Exposure



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This assessment is based on publicly available information as well as confidential information provided by Denario. The analysis specifically pertains to the token issued on the Polygon blockchain. The management of Denario has reviewed and commented on the content of this assessment.

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