Open Working Group

The Great Unshackling

Why Tokenizing the Payment Misses the Point of Trade Finance's Revolution

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THE AUTHORS

Bob Gravestijn
NETHERLANDS

Bob is a platform strategist and advisor specialising in digital ecosystems, international trade, and sustainable business transformation. With over 15 years' experience, Bob has played a key role in launching and scaling blockchain-powered platforms that connect global trade partners, streamline processes, and enable real-time ESG tracking. He is recognised for integrating platform thinking and ethical governance into complex value chains, helping organisations unlock value and drive sustainable growth. As an advisory board member at The Open Working Group, Bob supports strategic direction, ecosystem development, and the international scaling of innovative digital initiatives.

Andrea Frosinini
ITALY

Andrea is Business Development Manager at XDC Foundation and member of the Board of Advisors at PLI Plugin. He is also Chair of BSCA Europe and a member of the Board of Advisors of TOTTA | Trans-Oceanic Trade Tech Alliance. Leveraging his experience as Chair of the Hyperledger Supply Chain & Trade Finance Special Interest Group, he is bridging traditional trade finance with next-generation solutions, championing digital transformation and decentralized solutions to drive automation, transparency, and efficiency in cross-border transactions.

Design Enrico Costalli

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Abstract:

Current discourse around blockchain in trade finance mistakenly focuses on stablecoins as merely a faster payment rail, overlooking their transformative role as programmable assets within a reconfigured financial stack. This article argues that the true revolution lies not in tokenizing payments, but in converging legal, logical, and settlement layers to create a unified, event-driven ecosystem. Within this architecture, stablecoins and tokenized deposits act as neutral bridge assets and programmable vessels for value, enabling atomic settlement, freeing trapped capital, and, most critically, transforming credit and risk. By integrating protocols like the Model Context Protocol (MCP) to securely connect smart contracts to real-world data, trade obligations become dynamic, liquid financial instruments. This convergence shifts the paradigm from manual, sequential financing to embedded, automated financial engineering—obviating the limitations of legacy rails and unlocking a new global market for trade risk, regardless of the efficiency of local banking systems.

Beyond the Pipe: Why "Better Rails" Is the Wrong Battle

Let's get brutally honest. Recent discussions sketched a grand vision of converged, on-chain trade finance. But two counterarguments keep surfacing, sharp as scalpels, forcing us to refine the blueprint or watch it crumble. They deserve their own deep dive, because they're not wrong—they're just asking the wrong level of question.

The arguments, distilled:

- **The Efficiency Ceiling:** Stablecoins only offer "massive savings" where banking systems are broken. In inefficient markets the uphill battle is real.

- **The Credit Blind Spot:** If trade is about financing (deferred terms, prepayment), just swapping the settlement rail to stablecoins offers "no evident benefit".

These aren’t objections to the future. They are diagnoses of why thinking in terms of "rails" and "settlement legs" is a dead end. They prove the very point: treating digital assets as just a better pipe is a losing game. The victory isn't in replacing the wire; it's in making the need for that final wire an afterthought in a redesigned financial ecosystem.

Let’s dissect this layer by layer.

Layer 1: The Efficiency Paradox – Why "Uphill Adoption" is a Feature, Not a Bug.

The Colombian coffee grower versus the Brazilian aerospace exporter. This comparison frames the entire debate.

- **For Colombia (Inefficient Corridor):** The value proposition is simple, desperate, and immediate. A 7% haircut and 5-day delay via correspondent banking is a tax on existence. A stablecoin is a lifeline. Adoption is driven by pure survival. This is the beachhead.

- **For Brazil (Efficient Corridor):** Here, the local banking system works. Pix is instant. FX markets are deep. A SWIFT GPI payment is reliable and costs tens of bps, not hundreds. Telling a Brazilian treasurer to ditch their integrated banking relationship for the "volatility" and "regulatory grey zone" of stablecoins for a 20-basis-point saving is a non-starter. The "uphill adoption trajectory" is real.

But this misses the seismic shift. The goal is not to convince Brazil to replace Pix with USDC for domestic payroll. The goal is to integrate Brazil's efficient domestic financial system into a more efficient global financial protocol.

The stablecoin here isn't the competitor to the Brazilian real or the local banking rail. It's the neutral, programmable interchain asset that connects Brazil's sophisticated domestic economy to a new global layer of trade finance.

Think of it this way:

- **Today**: Brazilian exporter → Brazilian bank → Correspondent bank in NY → Turkish importer's bank → Turkish importer. Value hops across fragmented ledgers.

- **Tomorrow (Rail-Swapping Model):** Brazilian exporter's crypto wallet → USDC on public chain → Turkish importer's crypto wallet. This is the "uphill battle" model. It bypasses all banks, creating regulatory and operational friction.

- **Tomorrow (Converged Protocol Model)**: Brazilian exporter's tokenized BRL deposit (on a regulated digital ledger) ↔ Programmable Trade Contract ↔ the Turkish importer's tokenized TRY deposit. The contract's logic holds the obligation. At maturity, it can settle via the cheapest, most efficient path: a direct ledger-to-ledger transfer of tokenized deposits if available and liquid, or, if that bridge doesn't exist, it automatically routes through the deepest liquidity pool—which could be a USDC pool—as a neutral bridge asset before swapping to the final currency.

In this model, the stablecoin isn't the destination; it's the high-liquidity interstate highway between two sophisticated but isolated financial cities. The Brazilian entity never needs to "adopt stablecoins" as their primary asset. They interact with their local, tokenized BRL. The protocol uses the best available tool for final settlement. The "uphill adoption" vanishes because you're not asking them to climb a hill; you're giving them a tunnel through it.

The efficiency gain in mature markets isn't from slashing wire fees. It's from:

- **Eliminating Pre-Funding & Nostro Gridlock:** Trillions are trapped in global nostro accounts. Programmable settlement frees this capital.

- **Atomic Delivery-vs-Payment (DvP) for Trade:** The moment the eBL title transfers on-chain, payment finalizes. No settlement risk.

- **Unlocking 24/7 Financial Markets:** Trade doesn't stop for weekends or time zones. Why should it be funded?

The stablecoin, in this architecture, becomes the global liquidity backstop that makes this always-on, risk-free settlement possible. Its adoption is not by corporates, but by the infrastructure itself.

But here’s what changed since the last round of debate: the market has stopped treating stablecoins as “crypto plumbing”. It’s starting to treat them as the liquidity backstop of the global financial stack.

The critical shift isn’t that more companies are paying invoices in USDC. The shift is that the world is building stablecoin liquidity the way it built USD clearing and Eurodollar markets: as infrastructure, not ideology.

When stablecoins become the high-liquidity interstate highway, they don’t need permission from the Brazilian treasurer. They don’t need an ERP replatform. They don’t even need a corporate “stablecoin strategy.”

They just need one thing:

deep, compliant, always-on liquidity pools that the protocol can route through, automatically, when the cheapest and fastest settlement path demands it.

That’s the real acceleration. The stablecoin becomes less like a “payment method” and more like:

- a programmable liquidity layer,
- a neutral bridge asset,
- and a failover route when tokenized deposits can’t complete the hop.

And once the liquidity exists, the adoption curve flips.
Not because end-users suddenly love stablecoins—but because the stack quietly defaults to the most efficient settlement state available.

Layer 2: The Credit Angle – Where the Real Revolution Hides (From Financing to Financial Engineering)

This is the most profound point. "If trade needs credit, why do we care about the settlement rail?" This question perfectly encapsulates the old-world mindset: credit and settlement are separate, sequential events.

In the new paradigm, they merge into a continuous, programmable financial state. This is where a protocol like the Model Context Protocol (MCP) becomes a critical enabler. **But MCP’s most explosive implication isn’t that it makes oracles more robust. It’s because it makes autonomous execution viable.**

In practice, MCP is evolving into the standard interface for agentic systems to “plug into” the real world:

- not just reading data,
- but invoking tools,
- executing actions,
- and maintaining stateful workflows across fragmented systems.

This matters because trade finance isn’t a single event. It’s a chain of obligations, conditions, exceptions, and dispute states.

And the reason it stays manual is not because we can’t settle faster.
It stays manual because we can’t safely automate judgement.

MCP changes that.

Because once an AI agent can securely query:

- logistics milestones,
- invoice registries,
- ERP status,

- sanctions screening systems,
- credit history,
- and shipment-level IoT evidence…

…then the agent can do what humans currently do with Excel, email, and committee meetings:

It can continuously reprice risk, re-evaluate performance, and execute financing logic in real time.

This is the real leap from automation to *financial engineering*:

- settlement becomes conditional,
- credit becomes dynamic,
- and risk becomes liquid.

Stablecoins provide the programmable bearer instrument.
MCP provides the sensory nervous system.
Agentic AI provides the execution intelligence.

Together, they turn trade finance into an always-on machine.

MCP acts as a standardized "USB-C port for AI", allowing intelligent agents to securely connect to the diverse external data sources—logistics APIs, IoT sensors, corporate databases—that verify real-world performance and creditworthiness. It bridges the off-chain world of physical events and financial data with the on-chain world of smart contracts and programmable money.

This is no longer theoretical. Large institutions are already testing the exact thesis: stablecoins are used not as “payments”, but as a way to manufacture LC-like certainty without the LC.

The early experiments are telling because they don’t try to rip out the banking system. They try to replicate what the LC really is:

- certainty of payment,
- conditionality based on performance,
- and enforceable sequencing of state transitions.

The stablecoin is not the product.
The stablecoin is the instrument that allows the product to become programmable.

And that matters because it reveals the deeper truth behind the “credit blind spot” objection:

stablecoins don’t compete with credit. They turn credit into software.

Which means the relevant question isn’t “Does *USDC reduce wire fees?”*
The relevant question is, “*Can programmable money collapse the LC stack into code and a continuous state?”*

Because once the answer is yes, the LC stops being a document product.
It becomes a programmable obligation with liquid, tradable risk.

Let's deconstruct the two credit scenarios:

Scenario A: Seller Finances Buyer (Deferred Terms, e.g., 90-day invoice)

- **Old World:** Seller carries receivable risk for 90 days. At day 90, the buyer instructs the bank to pay. Settlement friction occurs.

- **Rail-Swap Fallacy:** Using a stablecoin at day 90 saves on wire fees. Minimal benefit. The credit problem is untouched.

- **Converged Protocol World:** The credit obligation itself is the digital asset.

    1. The 90-day deferred payment term is programmed into the smart contract at the outset.

    2. This creates a future stablecoin cash flow (or tokenized deposit cash flow).

    3. An AI agent, connected via MCP to real-time shipping data and the buyer’s on-chain transaction history, can dynamically assess and attest to the progressing health of the transaction.

    4. Instantly, this future cash flow can be tokenized and used as collateral or sold. The seller's bank can offer an immediate advance at a dynamic rate based on the buyer's on-chain credit reputation *and* the AI-verified performance data. A DeFi pool can bid to fund it. The receivable becomes liquid the moment it is created.

    5. The moment the transaction enters a verified “healthy state,” the agent can trigger financing automatically—without waiting for day-30 credit review cycles.
    It can solicit bids from multiple liquidity sources (banks, funds, or on-chain pools), select the cheapest advance rate, and execute the funding leg directly into the trade contract.

    6. If the state degrades—delay at port, inspection risk, quality flags—the agent doesn’t “sound an alarm”.

It rewrites the risk profile of the obligation in real time:

- increasing collateral requirements,
- throttling tranche releases,
- pricing the receivable dynamically,
- or triggering insurance workflows.

That’s the difference between “digitising trade finance” and *turning trade finance into a self-adjusting risk instrument.*

The receivable is no longer a static promise.
It becomes a live state machine with automated credit intelligence embedded in the contract itself.

The "benefit" isn't at day 90. It's at day 0. The stablecoin isn't used for the final settlement; it's the base denomination of a new, globally liquid market for trade risk, with intelligence provided by MCP-connected systems turning opaque operations into transparent, financiable events. It turns illiquid, opaque credit into a transparent, tradable asset. The seller gets financing cheaper and faster; the buyer preserves their credit terms.

Scenario B: Buyer Pre-pays Seller (Prepayment Risk)

- **Old World: Buyer faces counterparty risk.** Did the seller ship? Are they legitimate? They rely on reputations and weak legal recourse.
- **Rail-Swap Fallacy:** Sending a stablecoin prepayment is just faster fiat. Arguably riskier!
- **Converged Protocol World**: Prepayment becomes programmable, conditional escrow.
    1. Buyer locks stablecoins (or tokenized deposits) in the smart contract.
    2. The contract is connected via MCP to data sources like carrier telematics and port authority systems.
    3. Funds are programmatically released only upon proof of performance verified by these MCP-connected sources (e.g., eBL issuance, IoT data confirming container geolocation).

This isn't a payment; it's a forced performance bond. It gives the buyer guaranteed performance and the seller guaranteed payment upon delivery. The "benefit" is the elimination of counterparty risk, not the speed of the initial transfer.

Further, this prepayment escrow can itself be financed. The buyer's bank can provide a loan directly into the escrow contract, with the purchased goods as the programmatically tracked collateral. This is collateralized lending with perfect, automated monitoring, where the lender’s AI agents use MCP to maintain a real-time audit trail of the asset.

“*The Evident Benefit is Not in Switching Rails, But in Obviating Their Limitations.*”

The credit angle doesn't diminish the value of programmable digital assets; it elevates them to the core of the solution. The benefit is moving from:

- Financing as a separate, manual product (a loan, an LC) offered by a bank…
- ...to Financial Engineering as an embedded, automated layer of the trade transaction itself, powered by the seamless integration of AI and real-world data via protocols like MCP.

The stablecoin is the perfect vehicle for this because it is:

- **Programmable:** It can be locked, streamed, released, and fractionalized by code.
- **Neutral:** It isn't the liability of any trade party, reducing settlement risk.
- **Global:** It provides a universal unit of account for this new global market of trade risk.

Synthesis: The Three-Layer Cake of Transformation

To truly answer the counterarguments, we must stop thinking linearly (problem → rail solution). We must think in stacks:

1. **Base Layer:** The Legal/Data Protocol (MLETR, URDTT, Oracles & MCP). This solves the "document checking" and interoperability problem. It creates trust in digital evidence. MCP standardizes how AI and smart contracts access the vast universe of off-chain data, making oracles more robust, secure, and developer-friendly.
2. **Logic Layer:** The Smart Contract (The "Reborn LC"). This encodes the commercial and credit terms. It defines the if-this-then-that for performance, payment, and penalties. It transforms obligations into programmable states. This layer uses the data pipeline established by MCP to make its decisions.
3. **Settlement/Value Layer:** The Menu of Digital Assets (Stablecoins, CBDCs, Tokenized Deposits). This is the execution layer for the Logic Layer. Its role is to be a flawless, final, programmable bearer instrument.

The "evident benefit" appears only when all three layers converge.

- **For the Colombian grower**, the convergence delivers salvation from a broken system.
- **For the Brazilian exporter**, the convergence delivers access to a new global liquidity pool for their receivables and eliminates counterparty risk in new markets, all while letting them keep using their local currency for daily business.
- **For anyone extending credit**, the convergence turns a risky, illiquid balance sheet item into a potentially risk-managed, liquid asset.

The conclusion is inescapable. The debate about stablecoins as a "cross-border payment rail" is a shallow skirmish. The real war is for the architecture of global trade finance itself. Digital assets are the crucial, enabling troops in that war—not because they are better wires, but because they are the first form of money that can truly breathe life into the code that will govern the future of commerce. Protocols like MCP are the essential nervous system that connects that code to the real world.

The uphill adoption in efficient markets isn't a barrier. It's a signpost pointing away from trivial applications and toward monumental ones. The credit angle isn't a rebuttal. It's the coordinates for the treasure map. Now, let's start digging where it matters.

Most people in trade and supply chains know the pain: complex paperwork, fragmented data, and settlement that lags far behind the physical flow of goods. The interesting bit is that blockchains now allow assets, documents, and money to run on a single programmable rail. Layers, tokens, and stablecoins are not buzzwords here; they form a fairly elegant architecture for end-to-end, event-driven trade.

And this is where the narrative quietly breaks from the old objection: regulation is no longer the fog—it’s the scaffolding.

In the past, stablecoins were trapped in a contradiction: to become institutional, they needed regulatory clarity, but to get regulatory clarity, they needed institutional adoption.

That loop is now breaking.

Jurisdictions are moving from “Should this exist?” to “How do we supervise it?” And that matters, because stablecoins cannot power the settlement layer of global trade without predictable rules around:

- reserves and redemption,
- issuer accountability,

- segregation of assets,
- and enforceable consumer and institutional protections.

This is not a philosophical moment. It’s an engineering moment.

Once regulated stablecoin issuance becomes normalised—especially for commercial use cases—the “stablecoin as grey-zone instrument” narrative collapses, and the stablecoin becomes what it always should have been:

a programmable, regulated wrapper around fiat settlement, usable by machines at scale.

In other words, it becomes a legitimate component of the settlement/value layer of the stack—not a parallel system competing with banks, but a neutral bridge asset usable by the protocol itself.

A layered stack, like the internet

It helps to think of blockchains the way the internet and TCP/IP underpin everything online: most users never see the lower layers, but they rely on them completely.

- **Layer 0** - Digital infrastructure: Comparable to the internet backbone and TCP/IP: networking, communication, and interoperability fabric between chains and nodes. It ensures that participants can connect, route messages, and, increasingly, move value and data across multiple chains reliably. This layer also encompasses critical bridging protocols like the Model Context Protocol (MCP), which standardizes how applications (like AI agents and smart contracts) connect to external data sources and tools outside the blockchain, effectively linking the on-chain and off-chain worlds.

- **Layer 1 –** Ledger**,** consensus, native asset: This is the base blockchain: a globally shared ledger where transactions are ordered and finalised through consensus (e.g., proof-of-stake). It also defines the native coin (BTC, ETH, etc.) used to pay fees and incentivise validators who secure the network and agree on state.

- **Layer 2 –** Scalable execution on top: Layer 2 sits on top of a specific Layer 1 to provide higher throughput and lower fees. They execute transactions and then periodically commit proofs or summaries back to the L1, inheriting its security while offering a better UX for high-volume use cases.

- **Layer 3 –** Application and domain logic: This is where domain-specific stacks live: wallets, DeFi, supply-chain and trade platforms, and risk and analytics dashboards. In some architectures this also includes app-specific rollups or chains tuned for particular verticals. Business users mostly interact here, while L0–L2 handle connectivity, consensus, and settlement guarantees.

With that in mind, a single L1 or L2 can host three core ingredients for trade: tokenised objects, smart-contract logic, and programmable money.

On-chain trade objects: assets and documents as tokens

On one chain (L1 or L2), you can model trade artefacts as on-chain objects:

- **Asset and logistics tokens**: Shipments, containers, inventory positions, or even individual high-value items become tokens whose ownership and status transitions are recorded on a chain. This turns “Where is it, and who owns it now?” into a query against a shared state machine instead of email chains.

- **Document and claim tokens**: invoices, warehouse receipts, bills of lading, and credit insurance can be represented as tokens or token-backed records. The token encodes rights and claims (to goods, to cash flows), allowing transfer and financing without re-keying the same information across multiple systems.

- **Process state on-chain**: Milestones – loaded, departed, arrived, cleared, inspected – are written to the ledger by connected platforms, logistics providers, or IoT gateways. The reliability and richness of this data are supercharged by protocols like MCP, which provide a standardized, secure way for AI-driven oracles and agents to fetch and verify this information from proprietary or legacy systems. The result is a single, time-stamped process history, not a patchwork of siloed status feeds.

This is not just digitisation; it is the convergence of operational and financial state into a shared execution environment.

Smart contracts as executable trade terms

On that shared state, smart contracts express the logic that today lives in fragmented procedures, covenants, and spreadsheets.

- Contracts encode conditional flows: partial releases on loading, holdbacks until inspection, automatic extensions on delay, and triggers for insurance and dispute workflows.

- They operate directly on tokens (assets, documents, and receivables) and balances, so “if this event occurs, then move these rights and this value” becomes an executable rule, not a checklist.

- The conditional logic ("if this event occurs") is powered by data feeds. MCP makes integrating and managing these diverse, real-world data feeds—from ERP systems to satellite tracking—far more efficient and secure, turning smart contracts from simple escrow boxes into intelligent, reactive trade engines.

Because the underlying Layer 1/2 uses consensus to agree on the state, counterparties do not need to reconcile separate ledgers; instead, they can reason over a shared canonical transaction history.

Stablecoins as programmable settlement rails

Introduce stablecoins – on-chain representations of fiat (USD, EUR, etc.) – on the same execution layer:

- Stablecoins serve as always-on settlement rails, providing finality in minutes or seconds, along with cryptographic proof of payment and traceability that surpasses traditional correspondent banking in many corridors.

- More importantly, they are programmable money: smart contracts can hold them in escrow, release them in tranches, split them across parties, or route them through liquidity pools and FX functions as part of a single transaction graph.

Now, the ledger, trade objects, logic, and cash all exist within a single atomic environment.

A stylised trade flow, end-to-end

Consider a cross-border shipment financed under structured terms, implemented on a single L2:

1. **Origination and setup**:
    - Goods and key documents are tokenised; rights to the underlying cargo and receivables are captured on-chain.
    - The buyer (or a financier) funds a smart contract in a USD or EUR stablecoin, with logic mirroring the commercial and legal terms.
2. **Execution and conditional performance**:
    - As logistics milestones are confirmed by MCP-connected data sources (carriers, terminals, IoT platforms), the contract updates its internal state automatically and trustlessly.
    - On shipping confirmation, a fraction of the stablecoins is released to the seller; on arrival and clearance, further tranches flow, while fees to logistics providers, insurers, or lenders are automatically carved out.
3. **FX and preference handling**:
    - If the buyer sources liquidity in a USD stablecoin but the seller prefers EUR exposure, the contract can route through an on-chain liquidity pool

to perform a swap as part of settlement, so each side sees its preferred currency without post-trade FX operations.

4. **Finalisation and auditability**
    - Once final delivery conditions are satisfied, the remaining stablecoins are disbursed, and the rights embedded in the asset and document tokens are updated to reflect completion.
    - The entire flow – from initial funding through every state change and value transfer – is captured in a single, consensus-secured ledger, dramatically simplifying audit, risk analysis, and secondary financing.

All of this can run on a single chain within the same stack:

- **Layer 0** provides the internet-like connectivity and routing, including protocols like MCP for real-world data access.
- **Layer 1** ensures consensus and data integrity, with a native coin for base incentives.
- **Layer 2** (if used) provides scale and cost efficiency ,
- **Layer 3** exposes this as a domain-specific trade and supply-chain experience to users.

Why this is strategically interesting

For practitioners, this is not about sprinkling “blockchain” on existing processes. It is about:

- Collapsing operational, documentary, and cash flows into a single programmable substrate.
- Reducing reconciliation and settlement latency by design, rather than by adding yet another integration layer.
- Enabling new risk and liquidity products that are natively event-driven, because both risk and value are modelled as on-chain objects governed by code. The integration of AI via protocols like MCP is the catalyst that will make these products truly dynamic and intelligent, moving beyond simple automation to predictive and adaptive financial engineering.

The deeper implication is that once these agentic workflows become normalised, the trade finance operating model flips:

- from manual workflow orchestration,
- to autonomous obligation execution.

Trade contracts stop being passive legal artifacts.
They become active financial engines that:

- monitor performance,
- price risk,
- trigger funding,
- and settle obligations…

…without calling a bank desk, without waiting for batch cycles, and without asking humans to reconcile reality.

This is why “stablecoins as rails” is the wrong fight.

The rails are just the transport layer.

The revolution is the stack:

- regulated programmable value,
- executable logic,
- and agentic intelligence connected to the real-world state via MCP.

That is the architecture of trade finance when it stops being a product and becomes a protocol.

The analogy to the internet is apt: just as TCP/IP quietly enabled entire digital industries, a well-designed L0–L3 stack for value and state—where protocols like MCP seamlessly bridge the digital and physical realms—may quietly rewire how trade is executed, financed, and monitored without asking end-users to care about the layers at all.

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The greatest danger
in times of turbulence
is not the turbulence itself,
but to act with
yesterday's logic

— Peter Drucker

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