

Trade Without Banks: The **Card-Rail Business Model** for Global Trade Finance

How commercial card pre-authorization delivers a Letter-of-Credit-equivalent irrevocable payment guarantee in about thirty seconds at 30–80 basis points — and why that changes who can afford to trade globally.

\$2.5T

annual trade finance gap,
concentrated in SME trade

~30 sec

order to irrevocable payment
guarantee on card rails

30–80 bps

guarantee cost vs. the multi-point all-
in cost of an LC

1 Abstract

Global trade is a \$30 trillion market whose payment-security instrument — the Letter of Credit — predates the shipping container. LCs work, but their economics only clear for large trades: weeks of issuance time, document examination by hand, correspondent-bank chains, and an all-in cost that routinely reaches several percent of trade value. The result is a \$2.5 trillion annual gap between the trade financing businesses request and what banks approve, and it lands overwhelmingly on small and mid-size firms in emerging markets.

This paper describes the business model NGDB.AI operates in production: for trades under \$10 million, replace the LC with a **commercial card pre-authorization** — an irrevocable, network-settled payment guarantee issued in about thirty seconds at 30–80 basis points, underwritten in real time by AI against the buyer's live banking data. For trades above \$10 million, issue a **digital LC in under four hours** on the same platform. The guarantee, the credit, the payment rails, and the marketplace where trades originate are one integrated system rather than four separate intermediaries.

2 The Instrument Is the Bottleneck

An importer in Dallas and an exporter in Kochi who have never met face the oldest problem in commerce: neither will move first. The exporter won't ship without payment certainty; the importer won't prepay for goods not yet shipped. For four hundred years the answer has been a bank in the middle — today, the documentary Letter of Credit.

The LC's guarantee is genuinely strong. Its delivery mechanism is the problem:

- **Time.** Issuance takes days to weeks; amendments restart the clock. Trade opportunities with live price windows simply expire.
- **Cost.** Issuance fees, advising fees, confirmation fees, document-examination fees, discrepancy fees, and correspondent charges stack into an all-in cost that makes sub-\$1M trades barely worth papering.
- **Paper.** Compliance is judged on documents, not data. A typo in a bill of lading triggers a discrepancy cycle measured in days.
- **Access.** LC limits are collateral-driven. The SME with excellent cash flow but a thin balance sheet — the typical growth importer — is exactly who gets declined. That is the \$2.5T gap.

The market does not lack trust instruments. It lacks a trust instrument whose unit economics work below \$10 million — which is where most of the world's trades actually are.

3 The Insight: the Guarantee Rail Already Exists

A payment guarantee has three requirements: the promise must be irrevocable, the promisor must be credit-worthy, and the beneficiary must be able to verify it instantly. Banks deliver this through the LC. But there is a second global infrastructure that has delivered exactly these three properties for decades, at a scale of billions of authorizations a day: **the card networks**.

A card pre-authorization is an irrevocable hold, honored across every acquiring bank on the planet, verifiable by the merchant in seconds, and backed by a settlement system with dispute and chargeback law refined over fifty years. What kept it out of trade finance was ticket size and underwriting: consumer card limits don't reach \$500K invoices, and no issuer would underwrite a first-time importer in real time.

Both constraints have now moved. Commercial card programs support virtual cards with transaction-level controls and six- and seven-figure limits. And open-banking data — months of real transaction history, categorized and enriched — lets an AI underwriter assess a buyer's repayment capacity from evidence, not collateral, in under two seconds. NGDB.AI's model is the combination:

THE CORE MECHANISM

A buyer-specific credit line, decided by AI against live bank data, is issued as a **virtual commercial card**. At order time, the platform places a pre-authorization hold for the trade amount. The seller sees a network-guaranteed, irrevocable commitment in about thirty seconds — the functional equivalent of a confirmed LC — and ships. Funds are captured on delivery confirmation; the buyer repays on 30–90 day terms.

4 Anatomy of a Card-Rail Trade

1 • ORDER

Buyer confirms a \$120,000 order with a verified seller on the NGDB.AI marketplace or via API.

2 • DECISION

AI credit engine scores live bank-linked cash flow; decision in seconds, every factor SHAP-explained.

3 • GUARANTEE

Virtual commercial card issued; pre-authorization hold placed. Seller holds an irrevocable commitment.

4 • SHIP

Seller ships against the guarantee. Trade documents are hash-anchored for tamper-evident verification.

5 • CAPTURE

Delivery confirmed; funds captured and settled to the seller. Buyer repays at term end.

Worked example at published tier pricing:

Item	Value
Trade value	\$120,000.00
Guarantee fee (tier A, 30 bps)	\$360.00
Buyer payment terms	90 days after delivery capture
Buyer settles at term	\$120,360.00

The seller is paid on delivery. The buyer receives 90 days of float — working capital that would otherwise require a separate borrowing facility — for a fraction of the all-in cost of an LC on the same trade, decided in seconds instead of weeks.

Above \$10M: the digital LC lane

Card-network economics stop making sense at very large tickets, so the model does not force them there. Trades above \$10M are served by a digital Letter of Credit issued in under four hours on the same platform: UCP 600 rules, SWIFT MT700-series messaging, and the same AI document examination and hash-anchored document custody. One platform, two instruments, routed by trade size.

5 Why the Underwriting Works: AI on Live Bank Data

The LC substitutes collateral for information. The card-rail model substitutes information for collateral — which only works if the information is deep and the model is accountable.

- **Extended cash-flow history.** With buyer consent, the platform ingests transaction history through open-banking aggregation — up to 24 months of inflows, outflows, balances, overdraft and NSF events — rather than a point-in-time statement.
- **Enriched, categorized data.** Merchant categorization, income detection, and recurring-obligation identification turn raw transactions into underwriting features: inflow/outflow ratios, deposit regularity, minimum-balance floors, debt-service signals.
- **Sub-2-second decisions, fully explained.** Credit decisions return in under two seconds at the 99th percentile, and every decision ships with SHAP attributions — the factors, their weights, and their direction. No black boxes in the credit file: essential for buyers, partners, and regulators alike.

- **A real-time risk gate.** Before any capture, a fraud and risk validation pass runs inside the money path with a sub-100-millisecond budget, so guarantee speed never comes at the cost of control.

6 The Revenue Architecture

Because the platform owns the whole trade lifecycle rather than one slice, the model earns on several uncorrelated lines from the same transaction flow:

Line	Mechanism
Guarantee fees	30–80 bps per trade for the card pre-authorization guarantee; risk-tiered.
Financing spread	Margin on 30–90 day buyer terms funded through the supply-chain-finance book.
Digital LC fees	Issuance and examination fees on the >\$10M lane, priced against a bank LC's cost stack.
FX	Cross-currency settlement on marketplace and API trades, with transparent day-one rate display.
Marketplace & SaaS/API	Transaction take-rate on the B2B catalogue, plus embedded-finance API licensing to platforms and lenders.

The strategic property of this stack: every line reinforces underwriting. Payment behavior on guaranteed trades feeds the credit models, which improves approval precision, which grows financeable volume — a data flywheel a monoline guarantee provider or a pure marketplace cannot replicate.

7 Banks: Distribution, Not Disruption

NGDB.AI does not disintermediate banks. It disintermediates the Letter of Credit.

The card-rail guarantee runs *on* regulated financial infrastructure — issuing banks, card networks, acquiring banks — and grows their commercial-card volume. Banks participate in the model as issuing partners, funding partners for the SCF book, and distribution channels offering LC-equivalent guarantees to SME clients they previously declined. What is removed is not the regulated institution; it is a manual, paper-bound instrument whose economics excluded most of the market it was meant to serve.

8 Conclusion

The trade finance gap is not a demand problem or a risk problem — it is an instrument problem. By moving sub-\$10M payment guarantees from documentary credit to card rails, underwriting from collateral to live cash-flow data, and decision time from weeks to seconds, the card-rail model makes the trade guarantee a product any credit-worthy business can afford. The companion papers in this series describe the marketplace where those trades originate (*The Financed Marketplace*) and the AI agent framework on which the platform is built and operated (*The Agentic Enterprise*).