

Distributorship and Trade Finance Product Design: A Conceptual Framework for New-to-Bank Growth in Emerging Markets

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Abstract- Small and medium distributors are the largest pool of unserved commercial credit demand in emerging markets, yet conventional underwriting rejects them for want of audited accounts, registered collateral and bureau history. This paper argues that the distributorship relationship itself supplies both the information and the enforcement that conventional underwriting cannot obtain, and that a bank can convert a single corporate anchor into a repeatable channel for new-to-bank acquisition only if the product is designed around the ecosystem rather than around the individual borrower. Drawing on trade credit theory, supply chain finance, research on lending technologies and credit rationing, marketing channel dependence, and studies of contract enforcement and informal credit in low-income settings, the paper develops a five layer framework linking ecosystem selection, information substitution, product architecture, channel and servicing design, and portfolio governance to three outcome families: acquisition, relationship depth and risk adjusted return. Fourteen propositions state its claims in falsifiable form, and institutional moderators specify where the design holds and where it fails. It is developed for markets where bureau coverage is shallow, registries incomplete and claims slow to resolve, and argues that the mechanisms trade credit theory identifies as reasons suppliers lend to their buyers, an information advantage, the non-diversion property of goods advanced in kind, and the threat of withdrawing supply, can each be transferred to a bank by design. It offers a design vocabulary for a product family practice has built ahead of theory, a measurement set matched to the acquisition objective, and a testable research agenda.

Keywords: distributor finance; trade credit; supply chain finance; trade finance; new-to-bank acquisition; SME credit; lending technologies; contract enforcement; emerging markets; financial product design

I. INTRODUCTION

A consumer goods manufacturer in West Africa sells through several hundred appointed distributors. Each buys on short credit terms, holds stock in a territory warehouse and resells to hundreds of small retailers. The manufacturer knows each distributor's weekly purchase volume, payment behaviour over several years, territory, storage capacity, rebate history and pattern of returns and claims, and therefore knows which of them can absorb another consignment and which are carrying stock that is not moving.

The bank holding the manufacturer's collection account knows almost none of this. It sees inbound transfers from several hundred account numbers, most held elsewhere. When one of those distributors seeks a working capital facility, the bank asks for audited statements, registered security and a bureau report, has none of the three returned, and declines. It records a credit decision. It is more accurately a product design failure.

The asymmetry is the problem this paper addresses. The information needed to lend safely exists, but on the anchor's systems rather than the bank's. So does the enforcement mechanism, in the anchor's ability to suspend supply to a territory, which in many emerging markets works faster than any remedy a court delivers within the tenor of a working capital facility (Djankov & Shleifer, 2003; Johnson & Woodruff, 2002). What is missing is a design that routes both to the lender.

The stakes are large. Access to finance binds on the growth of small firms, hardest on the smallest and

youngest (Beck & Demircug-Kunt, 2006; Beck & Maksimovic, 2005). The trade finance literature documents a persistent gap concentrated among small enterprises and in Asia and Africa, with rejections driven as much by information insufficiency and compliance cost as by credit quality (Asian Development Bank, 2017; International Chamber of Commerce, 2018; World Trade Organization, 2016). A gap driven by information and unit cost is addressable by design; one driven by insolvency is not. Trade credit theory offers the starting point. Suppliers lend to buyers because they hold an information advantage over banks (Petersen & Rajan, 1997; Smith, 1987), because goods advanced in kind are harder to divert and easier to resell than cash (Burkart & Ellingsen, 2004), and because withdrawing supply disciplines more effectively than litigation (Cunat, 2007). Each is transferable: the information advantage through a data agreement, the in-kind property by paying the supplier directly, the supply threat through a stop-supply undertaking. Read as design guidance, the theory is a product specification.

That product family, called distributor, dealer or channel finance, is widely practised and thinly theorised. The supply chain finance literature has concentrated upstream, on reverse factoring, where a strong buyer's payable is discounted for a weaker supplier (Gelsomino et al., 2016; Lekakos & Serrano, 2016; Liebl et al., 2016; Wuttke et al., 2016). The downstream mirror image, financing a strong seller's receivable from a weaker buyer, has attracted far less attention, even though it is the side of the chain where the unbanked population of firms, and therefore the acquisition opportunity, is largest.

Three questions organise the paper. Which features of the distributorship can substitute for the information and enforcement that conventional underwriting requires, and when does the substitution hold? How should the product be structured, priced, delivered and governed so that it acquires new-to-bank customers at a cost and loss rate that make it economic? And which institutional conditions strengthen or weaken the design?

The paper assembles a design vocabulary for this product family, separating the variables a designer

controls from the conditions that constrain them; makes the acquisition objective explicit where adjacent work leaves it implicit behind working capital arguments; states fourteen falsifiable propositions; and reads together evidence from trade credit theory, lending technology research, channel governance, institutional economics and payments, on the argument that the product is at once a credit, payment, data and acquisition product and fails if anyone is designed in isolation.

II. METHODOLOGY

2.1 Research design and evidence base

This study is conceptual rather than empirical. It develops constructs, specifies relationships among them and states the conditions under which they should hold. Such contributions are judged on the coherence of the constructs and the testability of the relationships rather than on data (MacInnis, 2011; Whetten, 1989). The propositions in section 4.6 are offered for refutation, not reported as findings.

The evidence base was assembled by reading five literatures, each addressing a mechanism the design depends on: trade credit theory, which explains why the supplier lends; lending technology and credit rationing, which explains why the bank does not; supply chain finance, which describes upstream intermediation; channel research, on dependence and private enforcement; and institutional economics, on when private ordering substitutes for courts. Payments, inclusion and scoring research were added because they determine whether the flows the design relies on can be observed (Tranfield et al., 2003; Webster & Watson, 2002).

Inclusion proceeded by design decision. For each decision a designer must make, from anchor selection through limit derivation, disbursement routing, collection capture, onboarding and portfolio governance, the literatures were read for work addressing that decision or the mechanism beneath it. Work was admitted where it spoke to the mechanism even where its context was remote from bank lending, and excluded where its relevance was thematic rather than mechanical.

2.2 Synthesis and proposition development

Synthesis proceeded in four steps. The problem was decomposed into the decisions a designer controls, separated from conditions that constrain but cannot be chosen. Evidence for each was grouped into the eight strands of section 3. The decisions were then ordered by dependency, so that constraining choices appear in earlier layers, which is the framework's principal structural claim. Each relationship was finally stated as a proposition with a measurement set attached, testable against data banks and anchors already generate (Eisenhardt, 1989b; Lawal & Oduleye, 2018a).

III. LITERATURE SYNTHESIS

Terminology is fixed first, because the argument depends on treating the ecosystem rather than the individual firm as the unit of analysis.

A distributorship is a durable relationship in which an appointed intermediary buys goods for resale in a defined territory under terms specifying pricing, volumes, exclusivity and performance. It involves relationship specific investment on both sides, screening at appointment, continuous monitoring, and sanctions operating through the commercial relationship rather than litigation (Anderson & Weitz, 1992; Heide, 1994; Heide & John, 1988). The anchor is the principal at the head of the network, the distributor the financed intermediary, and the ecosystem both together with the retail tier beneath, whose formality determines whether repayment cash is observable (Reardon et al., 2003, 2009).

Trade finance here covers the instruments financing the movement of goods: documentary credits, guarantees, import and export lines, invoice and receivables finance, and the domestic distributor limits that are this paper's focus (Chauffour & Malouche, 2011; Committee on the Global Financial System, 2014). Domestic structures are included deliberately, since contracting correspondent relationships make closed domestic loops more attractive (Erbenova et al., 2016; Financial Stability Board, 2018). The limit is the entry rung of a ladder running to transaction accounts, collections, import lines and term finance, since the business case rests on the ladder rather than the first

facility's margin (Gupta et al., 2004; Reinartz & Kumar, 2003).

A new-to-bank customer has no prior account or facility relationship with the lending institution. The distinction matters because a programme that re-papers existing customers consumes origination capacity without expanding the franchise. Three outcome families follow: acquisition, the number and cost of genuinely new relationships; depth, the non-credit revenue, deposits and additional products they generate; and risk adjusted return, whether the portfolio earns its capital after expected loss.

The remainder of this section synthesises eight strands and closes with what they leave unresolved.

3.1 Why suppliers finance their distributors

Trade credit theory explains the arrangement through several non-exclusive mechanisms. The financing advantage argument holds that suppliers observe buyers more frequently and cheaply than banks, through order patterns, delivery acceptance and payment behaviour (Petersen & Rajan, 1997; Smith, 1987). The liquidation advantage argument holds that a supplier resells its own goods more efficiently than a bank realises generic collateral (Burkart & Ellingsen, 2004; Giannetti et al., 2011). The enforcement argument holds that withdrawing supply disciplines more effectively than litigation, especially where the buyer depends on the product line (Cunat, 2007; Wilner, 2000).

Empirical work supports each and specifies conditions. Terms vary with the relative credit quality and bargaining power of the parties (Fabbri & Klapper, 2016; Klapper et al., 2012; Ng et al., 1999). Firms with weaker bank access rely more on trade credit, and trade credit expands as bank credit contracts (Love et al., 2007; Petersen & Rajan, 1997). Vendor financing is more prevalent where the supplier has a durable interest in the buyer's survival (Brennan et al., 1988; Mian & Smith, 1992). Reviews note that the operational and financial dimensions have been studied largely in isolation (Seifert et al., 2013).

Recent evidence sharpens the mechanisms. Provision is shaped by product market power and relationship

specific investment (Dass et al., 2015), and functions partly as risk shifting whose cost is understated, since the implicit interest in discount terms is large (Chod, 2017; Murfin & Njoroge, 2015). Trade credit propagates liquidity conditions along a chain, suppliers extending more where they can bear it and contracting sharply where they cannot (Barrot, 2016; Shenoy & Williams, 2017). The anchor's willingness to carry receivables is therefore a variable, and a bank entering the chain displaces credit the distributor may never have priced.

Evidence from low-income settings is especially relevant. Studies of Zimbabwean manufacturing and of market institutions across Sub-Saharan Africa find trade credit extended on relationship history and reputation rather than formal financial information, substituting for absent credit infrastructure (Fafchamps, 2004; Fisman & Raturi, 2004). Work on Vietnam finds interfirm credit sustained by relational rather than legal enforcement, with firms lending more readily where an alternative partner would be costly to find (Johnson & Woodruff, 2002; McMillan & Woodruff, 1999). These are precisely the conditions under which anchor linked lending should be feasible.

3.2 Credit rationing and the limits of conventional lending technologies

Banks do not lend to these firms directly for well established reasons. Where lenders cannot distinguish good borrowers from bad, raising the rate worsens the pool, so the market clears by quantity and creditworthy borrowers are rationed (Akerlof, 1970; Stiglitz & Weiss, 1981). Intermediation theory frames the bank's role as delegated monitoring, which presupposes that monitoring is feasible at acceptable cost (Holmstrom & Tirole, 1997; Leland & Pyle, 1977).

Berger and Udell's lending technology framework is the most useful formulation: credit availability depends on the fit between the technology used and the information the firm can produce, transactional technologies requiring hard information opaque firms cannot generate and relationship technologies requiring soft information that does not scale (Berger & Udell, 1998, 2006). Relationship lending delivers real benefits (Boot, 2000; Petersen & Rajan, 1994) but depends on proximity and on structures that act on soft

information (Petersen & Rajan, 2002; Stein, 2002). The result is a gap for firms too opaque for one and too small for the other (Beck & Martinez Peria, 2011; de la Torre & Schmukler, 2010).

Two partial responses exist. Asset-based and receivables technologies shift assessment from the borrower to the underlying asset, and factoring works even under weak enforcement because the relevant risk is the obligor's rather than the seller's (Buzacott & Zhang, 2004; Klapper, 2006). Credit information sharing raises lending and reduces default, which is why its absence binds so tightly in thin-bureau markets (Djankov & Shleifer, 2007; Love & Mylenko, 2003). Neither reaches a distributor with no receivable from a creditworthy obligor and no bureau file.

Recent work refines both and adds a third. Meta-analysis confirms relationship lending benefits whose magnitude depends on the competitive environment (Cenni et al., 2015; Kysucky & Norden, 2016; Love & Martinez Peria, 2015), and the technology used varies with the lender's characteristics as much as the borrower's (Beck, Ioannidou, et al., 2018; Berger et al., 2015). Legal reform evidence is directly relevant: widening pledgeable assets and accelerating repossession measurably increase credit supply (Assuncao et al., 2014; Calomiris et al., 2017; Campello & Larrain, 2016; Ponticelli & Alencar, 2016; Rodano & Tarantino, 2016). Developing market evidence confirms the link between finance access and firm performance (Quartey et al., 2017; Wang, 2016). None establishes how to lend to a firm with neither a statement nor a registrable asset.

3.3 Supply chain finance and its upstream orientation
Supply chain finance emerged as a field concerned with optimising financial flows across firm boundaries rather than within one balance sheet (Hofmann & Kotzab, 2010; Pfohl & Gomm, 2009), and reviews note its concentration on few instruments (Caniato et al., 2016; Gelsomino et al., 2016). Reverse factoring dominates: a strong buyer's payable is discounted so weaker suppliers borrow against the buyer's standing, with documented benefits for supplier working capital and documented barriers to adoption (Lekakos & Serrano, 2016; Liebl et al., 2016).

Adoption has been studied directly. Introduction decisions depend on the buyer's financial position and on how benefits are distributed across the chain (Wuttke et al., 2013, 2016), financial service providers must be engaged on terms fitting corporate requirements (Martin & Hofmann, 2017), and working capital measures such as the cash-to-cash cycle anchor programme design (Protopappa-Sieke & Seifert, 2010; Randall & Farris, 2009).

The field has since been mapped and its boundaries debated (Xu et al., 2018), with attention to the involvement of financial service providers (Martin & Hofmann, 2017; Song et al., 2018) and to when a programme creates value for both parties rather than transferring it (Hofmann & Zumsteg, 2015; Templar et al., 2016; Wandfluh et al., 2016). Reverse factoring has been analysed as a pricing problem, weighing the financing rate against the payment delay conceded (Gruter & Wuttke, 2017; van der Vliet et al., 2015), and as an adoption problem in which uptake follows the strong party's incentives (Iacono et al., 2015). Working capital research supplies the performance link, strongest for constrained firms (Aktas et al., 2015; Banos-Caballero & Martinez-Solano, 2014; Kroes & Manikas, 2014).

The operations literature models the financing choice formally, comparing supplier and bank financing of capital constrained retailers (Jing et al., 2012; Kouvelis & Zhao, 2012), analysing contract design under financial constraints and bankruptcy costs (Kouvelis & Zhao, 2016), modelling trade credit as risk sharing (Yang & Birge, 2018), and examining buyer intermediated supplier financing (Tunca & Zhu, 2018). Deferred payment has been analysed as a control against supplier opportunism (Babich & Tang, 2012). These models optimise contracts within a stylised chain; they do not address the acquisition problem, and they assume an enforcement environment emerging market programmes cannot rely on.

3.4 Channel relationships, dependence and private enforcement

Channel research supplies the most precise account of the relationship the framework proposes to finance. Dependence is created by transaction-specific

investment, and pledges such as territory exclusivity and inventory commitments act as credible signals (Anderson & Weitz, 1992; Heide & John, 1988). Governance is substantially non-contractual, operating through norms, monitoring and the expectation of continuity (Heide, 1994; Macaulay, 1963). Perceived interdependence shapes cooperation, and asymmetric dependence produces different behaviour from balanced dependence (Jap & Ganesan, 2000; Kumar et al., 1995).

Relationship marketing research establishes that commitment and trust mediate the effect of relational investment on performance, most strongly where switching costs are high and alternatives scarce (Morgan & Hunt, 1994; Palmatier et al., 2006). Channel organisation research emphasises that control over territory allocation and supply is the operative sanction in most distribution systems (Frazier, 1999). Incentive alignment is itself a design problem, and misalignment produces distortions no amount of monitoring corrects (Cachon, 2003; Narayanan & Raman, 2004).

3.5 Institutions, enforcement and private ordering

Whether private enforcement substitutes for public enforcement is an institutional question. The transaction cost tradition explains why relationship specific investment produces governance that economises on contracting (Williamson, 1979, 1985), and the relational view locates advantage in ties between firms rather than within them (Dyer & Singh, 1998; Uzzi, 1997). Institutional economics establishes that the cost and speed of enforcement varies enormously across jurisdictions and shapes the structure of credit (Djankov & Shleifer, 2003; La Porta et al., 1998).

Institutional voids research applies this to emerging markets: where bureaus are shallow, registries incomplete and courts slow, intermediaries perform the screening, monitoring and sanctioning that formal institutions perform elsewhere (Khanna & Palepu, 2010; Mair & Marti, 2009). A distributorship network is such an intermediary, screening entrants at appointment, enforcing terms, monitoring continuously and sanctioning defection without recourse to public institutions. Financing that rides on

that private order should outperform financing that assumes the public one, consistent with evidence that interfirm credit persists where courts are unusable (Fafchamps, 2004; Johnson & Woodruff, 2002; McMillan & Woodruff, 1999).

Agency theory supplies the caution. Where one party acts on information the other cannot verify, contracts must be designed against the informed party's interests rather than in reliance on them (Eisenhardt, 1989a; Jensen & Meckling, 1976). Anchor supplied information is not neutral evidence; it is produced by a party with a commercial interest in the volume of credit extended.

3.6 Trade finance, the financing gap and regulatory context

The trade finance literature documents the gap and its concentration. Survey evidence places unmet demand in the trillions, with small firms rejected disproportionately and the shortfall concentrated in developing Asia and Africa (Asian Development Bank, 2017; International Chamber of Commerce, 2018; World Trade Organization, 2016). Theory explains payment term choice as a function of relative financing costs and enforcement quality across jurisdictions (Hoefele & Yu, 2016; Schmidt-Eisenlohr, 2013), and firm-level work documents how financing shapes trade patterns (Antras & Foley, 2015; Eck et al., 2015). Crisis evidence establishes that trade finance shocks transmit to real export activity (Auboin & Engemann, 2014; Chauffour & Malouche, 2011; Niepmann & Schmidt-Eisenlohr, 2017b).

Matched bank and firm data strengthen the causal claim. Credit supply shocks transmit to export volumes through the specific banks that finance them (Paravisini et al., 2015), bank risk-bearing capacity shapes which instruments exporters can use (Niepmann & Schmidt-Eisenlohr, 2017a), and trade credit partly substitutes when bank finance contracts (Demir & Javorcik, 2018; Feenstra et al., 2014). Provisioning research supplies the regulatory counterpart (Cohen & Edwards, 2017; Kruger et al., 2018), and the correspondent banking literature shows withdrawal concentrating on smaller and poorer jurisdictions (Committee on Payments and Market Infrastructures, 2016; World Bank, 2015).

Regulatory context matters for product economics. Basel III finalisation altered capital treatment across exposure classes (Basel Committee on Banking Supervision, 2017), and expected credit loss accounting moved provision to origination (Basel Committee on Banking Supervision, 2015; Beatty & Liao, 2014; Novotny-Farkas, 2016). Two consequences follow. Profitability of a short tenor, high turnover, unsecured facility depends heavily on the tenor assumption and the behavioural data feeding the model. And facilities generating frequent signals are advantaged: a monthly revolving limit yields twelve observations a year where an annual bullet loan yields one. Compliance cost compounds this, falling disproportionately on small tickets (Erbenova et al., 2016; Financial Stability Board, 2018; Lawal & Oduleye, 2018b).

3.7 Payments infrastructure, digital data and new screening signals

Implementation depends on infrastructure. Account ownership has risen, driven in Sub-Saharan Africa by mobile money, though coverage and depth of usage remain uneven (Demirguc-Kunt et al., 2018; Suri, 2017). Mobile money has measurable effects on risk sharing, consumption smoothing and poverty, establishing that the rails carry real economic weight (Beck, Pamuk, et al., 2018; Jack & Suri, 2014; Suri & Jack, 2016).

Recent evidence links the rails to firm outcomes. Determinants of account ownership and usage have been mapped globally and for Africa (Allen et al., 2016; Zins & Weill, 2016), reviews synthesise the household and macroeconomic evidence (Aron, 2018), and enterprise surveys associate mobile money use with firm investment, saving and access to finance (Gosavi, 2018; Islam et al., 2018; Ky et al., 2018; Ouma et al., 2017). The relevance here is narrow and decisive: where retail collections move through observable rails, a distributor's cash flow becomes visible, which is the precondition for both structural repayment capture and first party scoring.

Digital data as a screening input bears directly on layer two. Behavioural and transactional data rival or complement bureau information in predictive power (Berg et al., 2018; Khandani et al., 2010), and the

scoring literature supplies methods and benchmarks (Lessmann et al., 2015; Louzada et al., 2016; Thomas, 2000). Fraud research establishes the techniques and limits of automated monitoring (Akeju et al., 2018; Baesens & Verbeke, 2015; Butaru et al., 2016; West & Bhattacharya, 2016). The fintech literature documents non-traditional lenders reaching borrowers incumbents decline, and debates whether this expands access or redistributes it (Buchak et al., 2018; Iyer et al., 2016; Jagtiani & Lemieux, 2018; Leong et al., 2017; Philippon, 2016).

Distributed ledger approaches attracted attention in this period, with proposed applications in trade documentation, traceability and settlement (Catalini & Gans, 2016; Korpela et al., 2017; Kshetri, 2018; Yermack, 2017). Their significance for distributor finance is not settlement but verification: evidencing a shipment to several parties with counterparty consent is what an invoice-linked limit depends on.

3.8 Distribution, value chains and small enterprise participation

Value chain research supplies the structural context. Chain governance determines how margin, risk and upgrading opportunities are distributed (Gereffi et al., 2005; Kaplinsky & Morris, 2001). The transformation of agrifood and consumer goods distribution in developing countries has reorganised intermediation and altered the terms on which small participants take part (Reardon et al., 2003, 2009). Contract farming shows both the benefits of participation and the selection effects determining who participates (Barrett et al., 2012; Poulton et al., 2010). Agricultural value chain finance documents the instruments built on these relationships, including input credit, warehouse receipts and anchor-linked lending (Christen & Anderson, 2013; Miller & Jones, 2010).

Recent work concentrates on the midstream, the wholesalers and distributors whose expansion has been called a quiet revolution and whose financing is the least documented part of the system (Reardon, 2015). Reviews of contract farming find welfare gains that are real but conditional on selection into the arrangement (Bellemare & Bloem, 2018; Maertens & Vande Velde, 2017; Ton et al., 2018), and resilience frameworks identify the correlated shocks that make

chain-level exposure behave differently from firm-level exposure (Vroegindewey & Hodbod, 2018). Base of the pyramid reviews caution that distribution to low-income markets has proved harder than early accounts suggested (Kolk & Rufin, 2014; Rivera-Santos et al., 2015).

Enterprise-level evidence completes the picture. Returns to capital in microenterprises can be high, implying that capital constraints bind on real activity (de Mel & Woodruff, 2008; Karlan et al., 2014), though microcredit evaluations find modest average effects, cautioning against treating access as sufficient (Banerjee et al., 2015). Work on low-income distribution documents the capability required to serve dispersed small intermediaries (Sheth, 2011; Vachani & Smith, 2008). Operational research adds the mechanics: inventory availability and uptime (Okonkwo et al., 2018b), procurement optimisation (Okonkwo et al., 2018a), chain coordination and the distortion of demand signals passing through intermediaries (Chopra & Meindl, 2016; Lee et al., 1997; Mentzer et al., 2001), and supply chain risk and resilience (Kleindorfer & Saad, 2005; Tang, 2006).

3.9 Theoretical lenses

Four lenses organise the synthesis, each carrying a specific design implication.

Information asymmetry and credit rationing. Rationing arises where lenders cannot distinguish good borrowers from bad at any price (Akerlof, 1970; Stiglitz & Weiss, 1981). The response is not to price for the average but to import a screening signal from a party that can already distinguish. The anchor's ledger is that signal, and the lending technology literature explains why the bank cannot generate an equivalent (Berger & Udell, 2006; Stein, 2002).

Transaction cost economics and relationship specific investment. A distributor that has built a warehouse, fleet and retailer relationships for one brand in one territory cannot redeploy those assets cheaply (Williamson, 1979, 1985). High switching cost makes the anchor's sanctions credible; high replacement cost makes its support undertakings credible (Heide & John, 1988; Kumar et al., 1995). Both matter, and they operate in opposite directions.

The relational view. Value can reside in the tie between firms rather than within either (Dyer & Singh, 1998; Uzzi, 1997). A bank financing a network monetises relational investment made by the anchor without having made it, which is at once the source of the programme's economics and of its fragility, since the bank does not control the asset it monetises.

Institutional theory and private ordering. Where formal enforcement is slow, private ordering substitutes (Khanna & Palepu, 2010; Mair & Marti, 2009). Design should therefore weight structural mitigants, operating through control of goods and cash, above legal mitigants operating through enforceable claims. This is the framework's most consequential prescription for emerging markets, supported by evidence that interfirm credit survives where courts do not function (Fafchamps, 2004; Johnson & Woodruff, 2002; McMillan & Woodruff, 1999).

Three things remain unresolved. Trade credit theory explains why the supplier lends but stops where a bank might intermediate downstream. Supply chain finance describes intermediation almost exclusively upstream, where the geometry is inverted and results do not transfer. And the lending technology literature, written before third party transaction data was routinely shareable, has no category for a technology whose input is another firm's records. Section 4 addresses all three, treating the institutional conditions of section 3.5 as explicit moderators.

IV. CONCEPTUAL MODEL

The framework comprises five design layers, moderating market conditions and three outcome families. The layers are ordered by dependency: a defect in an upper layer cannot be repaired by sophistication in a lower one.

Table 1. The five design layers, the decisions each governs, and the failure that follows when absent.

Layer	Decisions it governs	Primary outcome served	Failure mode if absent
1. Ecosystem selection	Anchor credit quality, network depth, mutual dependence, willingness to support	Acquisition capacity	Priced as though mitigated while carrying unsecured small enterprise risk
2. Information substitution	Purchase history, payment behaviour, stock turn, dilution, tenure, collection observability	Risk adjusted return	Limits set on statements the borrower cannot produce, so creditworthy firms are rationed
3. Product architecture	Limit rule, tenor, disbursement and collection routes, support, pricing, currency	Risk adjusted return	Cash diverted, tenor mismatched, facility ceases to self-liquidate
4. Channel and servicing	Onboarding, identity verification, activation, first drawdown, renewal	Acquisition	Limits approved but never drawn; unit economics destroyed by manual handling
5. Portfolio governance	Ecosystem limits, provisioning, early warning, data and assurance controls	Risk adjusted return	Correlated exposure reported as diversified; deterioration detected only at arrears

4.1 Layer one: ecosystem selection

The first decision is which anchor to work with, and it is the decision most often made for relationship

reasons rather than design reasons. Four attributes should govern it.

Anchor credit quality matters because the anchor is a counterparty wherever it provides support, and because a distressed anchor damages its network before its own obligations, by stretching terms and pushing stock. The earnings management literature documents the incentive to accelerate shipments into a reporting period, which is how anchor stress propagates into distributor balance sheets (Healy & Wahlen, 1999; Roychowdhury, 2006).

Network depth and homogeneity determine whether a limit rule written once can be applied hundreds of times. A dozen heterogeneous distributors will not amortise the build, and small ticket economics are unforgiving of bespoke assessment (Berger & Udell, 1998; de la Torre & Schmukler, 2010).

Mutual dependence is the pivot. The anchor's power to sanction rises with the distributor's switching cost, while the credibility of its support undertakings rises with the cost of replacing that distributor in that territory (Heide & John, 1988; Jap & Ganesan, 2000; Kumar et al., 1995). Programmes work best where both are high.

Willingness covers what the anchor will sign: data sharing, stop-supply undertakings, buyback of unsold stock, rebate dilution, first loss cover, or nothing (Mbonu et al., 2018; Wuttke et al., 2013). Where it will sign nothing, the programme is unsecured small enterprise lending with an introduction and should be priced as such.

4.2 Layer two: information substitution

The second layer replaces the missing financial statement with a constructed one, assembled from the anchor's records and the bank's own observations.

Six inputs carry most of the weight. Purchase volume and stability over twenty four months proxies scale and seasonality and forms the base of the limit (Klapper et al., 2012; Ng et al., 1999). Payment behaviour against the anchor's terms is the strongest single predictor (Petersen & Rajan, 1997; Thomas, 2000). Stock turn sets the tenor and flags the

distributor buying to meet a rebate target (Hofmann & Kotzab, 2010; Okonkwo et al., 2018b; Randall & Farris, 2009). Dilution reduces recoverable value (Klapper, 2006; Mian & Smith, 1992). Tenure and territory proxy relationship specific investment (Anderson & Weitz, 1992; Heide, 1994). And collection observability converts a third party signal into a first party one (Beck, Pamuk, et al., 2018; Demirguc-Kunt et al., 2018).

The question is not whether these variables predict default but whether they predict it well enough, at low enough acquisition cost, to beat not lending at all. Banks measure the losses they incur and not the margin they forgo, which biases the comparison. The scoring literature supplies the estimation methods and the benchmarks against which such a model should be judged (Berg et al., 2018; Khandani et al., 2010; Lessmann et al., 2015).

4.3 Layer three: product architecture

The architecture layer is where the mechanisms identified in trade credit theory are actually installed. Four choices dominate the rest.

Route the cash to the anchor, never to the distributor. Disbursement against a verified invoice, paid to the anchor, preserves the in-kind character that makes supplier credit comparatively safe (Burkart & Ellingsen, 2004; Giannetti et al., 2011). Cash paid into a distributor's account is fungible and will meet whatever problem is most urgent that week.

Match tenor to the inventory conversion cycle rather than to convention. A facility that outlives the goods it financed is no longer financing a transaction; it is financing a deficit. Working capital measures provide the calibration (Hofmann & Kotzab, 2010; Protopappa-Sieke & Seifert, 2010; Randall & Farris, 2009).

Make repayment a by-product of normal operations. Where retail collections flow through a bank-controlled channel, repayment competes with nothing; where the distributor must decide each month to transfer funds, repayment competes with restocking,

wages and tax (Demirguc-Kunt et al., 2018; Jack & Suri, 2014).

Design a ladder, not a product. The first facility should be the smallest, most structured and most self-liquidating available, with good behaviour unlocking a revolving clean limit, then import lines and guarantees, then term finance. The ladder converts acquisition into depth, paralleling lifetime value management (Gupta et al., 2004; Reinartz & Kumar, 2003; Venkatesan & Kumar, 2004).

The remaining variables follow: limit rule, collection route, support structure, pricing, documentation and currency. Currency deserves emphasis. A distributor earns in local currency and sells into a retail market with limited pricing power, so financing imported goods in foreign currency transfers devaluation risk to the party least able to bear it. Where the anchor imports, the import line belongs on the anchor's facility (Hoefele & Yu, 2016; Schmidt-Eisenlohr, 2013).

4.4 Layer four: channel and servicing

Programmes fail quietly at onboarding more often than loudly at default. A limit approved but never drawn produces cost, no revenue and a disappointed anchor. Three frictions dominate: document collection and identity verification, account opening where the distributor banks elsewhere, and the first drawdown, which requires the anchor's order system and the bank's disbursement system to agree about an invoice. Every avoidable manual step reduces conversion and destroys unit economics (Badmus et al., 2018; de la Torre & Schmukler, 2010).

The anchor's field force is the most underused asset in the design. Territory managers visit distributors regularly, are trusted, and want credit available (Frazier, 1999; Vachani & Smith, 2008). Enlisting them for document collection and activation changes cost per account materially, and adoption research explains why capability built without reference to the channel carrying it goes unused (Liebl et al., 2016; Wuttke et al., 2013). It also introduces incentive risk, since a sales force paid on volume will sell credit to

move stock (Narayanan & Raman, 2004; Roychowdhury, 2006).

4.5 Layer five: portfolio governance

Governance differs from ordinary commercial credit in three respects. Exposure is correlated within a network, since the common drivers are anchor health and territory demand, so limits must be set per ecosystem rather than per obligor (Kleindorfer & Saad, 2005; Tang, 2006). Expected credit loss modelling should use behavioural rather than contractual maturity for revolving limits (Basel Committee on Banking Supervision, 2015; Novotny-Farkas, 2016). And early warning should rest on operating signals, a fall in purchase frequency or a rise in dilution, which move weeks before a missed payment (Adeyelu, 2018; Lee et al., 1997).

The control environment deserves the same care as the credit rules. Data sharing between two firms creates obligations around sensitivity, retention and purpose limitation (Mbonu et al., 2018); independent verification is required because the anchor both nominates borrowers and confirms invoices (Akeju et al., 2018; Babich & Tang, 2012); and internal audit capability determines whether controls operate as designed (Akomolafe & Agu, 2018; Dogbatsey & Ebhojie, 2018).

4.6 Propositions

The propositions state the framework's claims in testable form. Each concerns the effect of a design or ecosystem variable on an acquisition, depth or return outcome, holding the others constant.

Ecosystem effects

P1. The higher the mutual dependence between anchor and distributor, measured by territory exclusivity, tenure and relationship specific investment, the lower the realised default rate on anchor linked limits, controlling for size (Cunat, 2007; Heide & John, 1988; Kumar et al., 1995).

P2. Deterioration in the anchor's own credit quality raises distributor default rates within the network with a lead, because a stressed anchor stretches terms and

pushes stock before missing its own obligations (Roychowdhury, 2006; Wilner, 2000).

P3. Programme unit economics are non-linear in network size: below a threshold number of active distributors per anchor, fixed origination and monitoring costs exceed net revenue whatever the pricing (Berger & Udell, 1998; de la Torre & Schmukler, 2010).

Information effects

P4. Limits derived from verified purchase and payment history outperform limits derived from financial statements, showing a lower default rate at equal or higher approval rate, and the advantage grows as bureau coverage falls (Berg et al., 2018; Berger & Udell, 2006; Love & Mylenko, 2003).

P5. Dilution rate, returns, claims and rebate adjustments as a share of invoiced value, predicts default independently of payment behaviour and is under-weighted in rules relying on purchase volume alone (Klapper, 2006; Mian & Smith, 1992).

P6. Once the distributor routes retail collections through the lending bank, first party account behaviour dominates anchor supplied data in predictive power within two to three cycles, which is what makes the information-rich variant feasible (Berg et al., 2018; Demirguc-Kunt et al., 2018; Khandani et al., 2010).

Architecture effects

P7. Disbursement paid directly to the anchor against a verified invoice produces a lower loss given default than disbursement into the distributor's account, because it preserves the in-kind character of the credit (Burkart & Ellingsen, 2004; Giannetti et al., 2011).

P8. Tenor matched to the observed inventory conversion cycle reduces default frequency and evergreening relative to a fixed tenor, most strongly for fast moving, low margin categories (Buzacott & Zhang, 2004; Hofmann & Kotzab, 2010; Randall & Farris, 2009).

P9. Where enforcement is weak, structural mitigants such as payment routing, collection control and stop-supply undertakings reduce loss more than legal

mitigants such as guarantees and registered security, and the ranking reverses only where courts resolve claims within the facility's tenor (Cunat, 2007; Djankov & Shleifer, 2003; Johnson & Woodruff, 2002).

P10. Anchor support is effective only where the cost of replacing the distributor is high; where distributors are easily replaced it is honoured selectively and its realised value falls well below its contracted value (Heide & John, 1988; Jap & Ganesan, 2000; McMillan & Woodruff, 1999).

Channel and acquisition effects

P11. Below a price threshold, the depth of digital onboarding affects new-to-bank conversion more than the interest rate, because the binding constraint for an unbanked distributor is access rather than cost (Demirguc-Kunt et al., 2018; Jagtiani & Lemieux, 2018; Suri, 2017).

P12. Involving the anchor's field sales force in onboarding lowers cost per acquired account and raises activation, while raising the risk that credit is sold to meet sales targets, so the net effect depends on whether field incentives track volume or portfolio performance (Frazier, 1999; Narayanan & Raman, 2004; Roychowdhury, 2006).

Depth and return effects

P13. Bundling a transaction account and collection rails at origination raises the probability that a new-to-bank distributor generates non-credit revenue within twelve months, and the deposit float offsets funding cost (Beck, Pamuk, et al., 2018; Jack & Suri, 2014).

P14. Risk adjusted return rises with explicit graduation management along the ladder; programmes that do not track graduation capture acquisition value without capturing relationship value (Reinartz & Kumar, 2003; Venkatesan & Kumar, 2004).

DISCUSSION

5.1 Dependency among design layers

The ordering explains an otherwise puzzling pattern: disappointing programmes are usually remediated at layer three, through revised limit rules or tighter tenors, when the defect originated at layer one.

Channel research finds the durability of a principal-intermediary tie established at selection rather than manufactured afterwards through terms (Anderson & Weitz, 1992; Heide, 1994; Heide & John, 1988). Lending economics finds that the unit cost of assessment, a property of the population, determines viability (Berger & Udell, 1998; de la Torre & Schmukler, 2010). Adoption research finds capability built without reference to the chain carrying it goes unused (Liebl et al., 2016; Wuttke et al., 2016).

5.2 Anchor records as a distinct lending technology

Berger and Udell distinguish technologies by their primary information input: financial statement lending, asset-based lending, factoring, scoring and relationship lending (Berger & Udell, 2006). Anchor linked lending fits none cleanly. Its input is verified third party transaction history, hard in the sense of being recorded and auditable, yet available for firms producing no statements. It is not factoring, since the distributor holds no receivable from a creditworthy obligor. It is not relationship lending, since the relationship supplying the information is not the bank's.

This has a consequence for evaluation. The relevant comparison is not between an anchor linked limit and a conventional facility to the same borrower, since that facility does not exist; the borrower was declined. It is between lending on behavioural evidence and not lending at all, so the loss rate must be weighed against forgone margin rather than an incumbent book (Stiglitz & Weiss, 1981). Work showing that lenders can infer quality from the behaviour of better-informed third parties is the closest existing analogue (Berg et al., 2018; Iyer et al., 2016).

The claim has a limit. A technology whose input comes from an interested party is only as reliable as that party's incentives, and agency theory holds that contracts should be designed against the informed party's interest rather than in reliance on it (Eisenhardt, 1989a; Jensen & Meckling, 1976). Where the anchor both nominates borrowers and confirms the transactions financed, two controls have been outsourced to one source (Akeju et al., 2018; Babich & Tang, 2012). The technology therefore needs an

independent verification layer whose cost belongs in the unit economics.

5.3 Why structural design dominates credit design

A guarantee is a claim whose value depends on a legal process; a disbursement routed to the anchor against a verified invoice is a control operating before the risk is taken. Where claims resolve slowly the second is worth more, even though credit committees are better equipped to evaluate the first. Comparative institutional evidence on the cost and duration of enforcement makes the ranking concrete rather than rhetorical (Djankov & Shleifer, 2003; Johnson & Woodruff, 2002; La Porta et al., 1998).

The trade credit literature supports the conclusion from the mechanism side. Supplier credit works not because suppliers write better contracts but because they lend in a form hard to divert and possible to withdraw (Burkart & Ellingsen, 2004; Cunat, 2007; Giannetti et al., 2011). A bank reproducing those properties inherits the protection; one lending cash against a promise does not, whatever the documentation says. The prescription is uncomfortable for institutions organised around credit assessment: the consequential decisions here are made by payments and operations, and governance treating them as implementation detail will underweight them. This is also why the product is a ladder rather than a facility. Each repayment cycle through a bank-controlled collection channel improves the information set that set the limit. A programme without that return path is a sequence of individually underwritten loans sharing an introduction, and will neither improve its pricing nor generate the relationship depth on which its business case rests (Gupta et al., 2004; Reinartz & Kumar, 2003; Venkatesan & Kumar, 2004).

5.4 Why upstream findings do not transfer

In reverse factoring the financed party is owed money by a strong counterparty, so the bank's exposure is largely to that counterparty and the weak party's credit quality is secondary (Lekakos & Serrano, 2016; Liebl et al., 2016). In distributor finance the financed party owes money to the strong counterparty, so exposure is to the weak party, mitigated only by whatever support

the anchor provides. The geometry is inverted, and three consequences follow.

Information requirements are higher downstream, since the bank takes the distributor's risk. Support is contingent rather than structural, since an anchor's undertaking can be revisited whereas an upstream payable is already incurred. And concentration differs: downstream programmes concentrate on a correlated population assessed only through the anchor's records, which argues for the ecosystem as the unit of limit setting (Kleindorfer & Saad, 2005; Tang, 2006). Formal models reach compatible conclusions but assume enforcement the institutional evidence does not support (Jing et al., 2012; Kouvelis & Zhao, 2012, 2016; Yang & Birge, 2018).

5.5 Failure modes and boundary conditions

The framework's usefulness depends partly on naming the ways it breaks.

Channel stuffing. The most serious and least discussed risk. An anchor under pressure to meet a sales target can use the programme to push inventory into the network, recognising revenue on shipments the retail market will not absorb, leaving the bank financing that revenue recognition and holding the risk of unsold stock (Healy & Wahlen, 1999; Roychowdhury, 2006). Rising purchase volume with falling stock turn is the signature, and a limit rule based on volume alone accommodates rather than detects it.

Anchor contagion. Exposure within one network is correlated by construction, so an anchor's distress, a territory demand shock or a category regulation hits the whole portfolio at once. Single obligor limits do not capture this, and a programme reported as hundreds of small diversified exposures may in substance be a handful of large ones (Kleindorfer & Saad, 2005; Tang, 2006).

Support that evaporates. Stop-supply undertakings, buyback commitments and rebate dilution are costly for the anchor to honour at exactly the moment they are needed. Where the distributor is easily replaced the anchor may prefer to lose the relationship rather than

fund the shortfall, so the mitigant on which the limit was approved proves to have been a statement of intent (Heide & John, 1988; Jap & Ganesan, 2000; Wilner, 2000).

Fictitious and connected distributors. Where the anchor nominates borrowers and confirms invoices, independent verification of a sample of deliveries, and of the retail network behind a distributor, is not optional (Akeju et al., 2018; West & Bhattacharya, 2016).

Silent onboarding failure. Limits approved, announced to the anchor and never drawn. Cost is incurred, no revenue arrives, and the anchor concludes the bank cannot execute. This is a layer four defect usually misdiagnosed as weak demand (Badmus et al., 2018; Liebl et al., 2016; Wuttke et al., 2016).

Foreign currency mismatch. Financing imported goods in foreign currency for a local currency earner where convertibility or devaluation risk exists. The exposure is invisible until large, and is not diversifiable within an ecosystem because every distributor sits on the same side of it (Hoefele & Yu, 2016; Lawal & Oduleye, 2018b; Schmidt-Eisenlohr, 2013).

Data dependence without portability. A programme wholly dependent on one anchor's systems has no continuity if that relationship ends. Building first party behavioural data from the distributor's own account activity is the hedge (Berg et al., 2018; Khandani et al., 2010; Mbonu et al., 2018).

Control cost overwhelming unit economics. Requirements calibrated for large ticket corporate credit make small ticket distributor lending uneconomic if applied without proportionality, and the regulatory and correspondent banking evidence shows the burden falling hardest on the smallest participants (Basel Committee on Banking Supervision, 2017; Erbenova et al., 2016; Financial Stability Board, 2018).

Table 2. Failure modes, the layer at which each originates, and the signal that detects it.

Failure mode	Layer of origin	Detecting signal
Channel stuffing	Layers 1 and 2	Rising purchase volume with falling stock turn
Anchor contagion	Layer 5	Ecosystem concentration and migration in the anchor's credit quality
Support that evaporates	Layer 1	Ratio of realised to contracted anchor support
Fictitious or connected distributors	Layers 2 and 5	Independent verification of deliveries and of the retail network behind each distributor
Silent onboarding failure	Layer 4	Approval to activation ratio; days to first drawdown
Foreign currency mismatch	Layer 3	Currency of the limit against the currency of distributor revenue
Data dependence without portability	Layer 2	Share of scoring inputs from the bank's own accounts rather than the anchor's systems
Control cost overwhelming unit economics	Layer 4	Fully loaded cost per acquired account against net revenue

The boundary conditions follow. The framework requires an anchor with a genuine network and a genuine interest in its distributors' liquidity; infrastructure sufficient to observe and capture collections; a legal environment in which structural mitigants can at least be documented; and an institution willing to accept correlated exposure and govern it. Where these fail, the product is unsecured small enterprise lending with a warm introduction, and should carry that name and price.

VI. IMPLICATIONS

6.1 Implications for theory

The framework contributes a downstream counterpart to a literature built almost entirely on upstream structures, with the institutional setting made explicit rather than assumed. The operations tradition optimises contracts within a stylised chain and treats enforcement as costless (Jing et al., 2012; Kouvelis & Zhao, 2012, 2016); treating enforceability as a moderator instead allows evidence from weak-enforcement settings to be integrated with evidence

from strong ones (Djankov & Shleifer, 2003; Fafchamps, 2004; Johnson & Woodruff, 2002).

It also extends the lending technology framework. Berger and Udell's typology, developed before third party transaction data was routinely shareable, has no category for a technology whose input is another firm's verified records (Berger & Udell, 1998, 2006). Adding that category reaches beyond distribution: any setting where a principal keeps high-frequency records on dependent small counterparties is a candidate, including franchising, agency networks and contract farming (Barrett et al., 2012; Miller & Jones, 2010).

The framework also makes acquisition an explicit dependent variable. Adjacent work evaluates supply chain finance on working capital efficiency and cost reduction, which are real but are not the objectives these programmes are approved on. Specifying acquisition, depth and risk adjusted return as three outcome families with measures attached allows the product to be judged against the objective it was built

to serve (Gupta et al., 2004; Lawal & Oduleye, 2018a; Reinartz & Kumar, 2003).

6.2 Sequencing the product ladder

Implementation should proceed from the most structured variant to the least. The entry structure is an anchor-supported, invoice-specific limit disbursed to the anchor. The second is a supported performance limit, where the anchor provides first loss cover, buyback or rebate dilution rather than full recourse. The third is a clean behavioural limit resting on data sharing and stop-supply undertakings, feasible once the bank holds its own loss history and first party collection data (Berg et al., 2018; Khandani et al., 2010). Attempting the third early is a common error; remaining at the first is a commercial one.

6.3 Measuring programme performance

A programme judged only on asset growth and non-performing loans will be optimised into either a small, safe, uneconomic book or a large, fast, loss-making one. The measurement set should match the three outcome families.

For acquisition the essential measures are the new-to-bank share of onboarded distributors, fully loaded cost per acquired account, the approval to activation ratio, and days to first drawdown; the last two are most often missing and reveal whether layer four friction has destroyed the economics. For depth they are the share of collections routed through the bank, deposit balance, and graduation rate along the ladder (Gupta et al., 2004; Reinartz & Kumar, 2003; Venkatesan & Kumar, 2004). For return they are utilisation, revolving velocity, delinquency, realised against contracted support, and return per ecosystem (Basel Committee on Banking Supervision, 2015; Tang, 2006).

Two measures deserve emphasis. Revolving velocity is the cleanest detector of a facility that has stopped self-liquidating: a limit drawn and repaid eleven times last year and four this year is financing a deficit whatever its arrears status (Hofmann & Kotzab, 2010; Randall & Farris, 2009). And the ratio of realised to contracted anchor support is the only honest test of

whether the mitigant the credit committee relied on exists (Wilner, 2000).

6.4 Governance and control

The control architecture spans three domains. Credit governance covers ecosystem limits, concentration and provisioning (Basel Committee on Banking Supervision, 2015; Novotny-Farkas, 2016; Tang, 2006). Data governance covers the sharing arrangement with the anchor, including sensitivity classification, retention and purpose limitation (Mbonu et al., 2018). Assurance covers independent verification of deliveries and distributor existence, with internal audit capability to confirm the controls operate (Adeyelu, 2018; Akeju et al., 2018; Akomolafe & Agu, 2018; Dogbatsey & Ebhojie, 2018). Control has a cost, and proportionality matters for a product whose economics depend on low unit cost (Basel Committee on Banking Supervision, 2017; Erbenova et al., 2016).

6.5 Implications for anchor firms

For anchor firms the framework identifies a trade-off rarely made explicit in negotiation. Support through guarantees or first loss cover consumes the anchor's own credit capacity and caps the programme at its appetite rather than the network's need. Support through data sharing and stop-supply undertakings consumes no balance sheet but exposes the anchor to the consequences of enforcing against its own distributors (Heide, 1994; Morgan & Hunt, 1994). Most default to the first because it is familiar, then find it does not scale.

The framework also implies a governance obligation. Because limit rules consume the anchor's transaction records, the quality of those records becomes a credit variable and the discipline of the order-to-cash process ceases to be purely internal (Mentzer et al., 2001; Okonkwo et al., 2018a). Anchors treating the programme as sales enablement, without investment in record quality and without insulating limit recommendations from sales incentives, create the

channel stuffing exposure of section 5.5 (Narayanan & Raman, 2004; Roychowdhury, 2006).

6.6 Implications for policy and regulation

For policy, interventions aimed at the trade finance gap may be better directed at the information and cost layers than the capital layer. Where rejection follows from documentation, verification and unit cost rather than insolvency, capital subsidy addresses the wrong constraint (Asian Development Bank, 2017; International Chamber of Commerce, 2018). Investment in credit information infrastructure, digital identity and interoperable rails addresses the binding one (Allen et al., 2016; Aron, 2018; Beck, Pamuk, et al., 2018; Demircuc-Kunt et al., 2018; Djankov & Shleifer, 2007; Love & Mylenko, 2003). Collateral and insolvency reform belongs in the same category, since widening pledgeable assets and shortening resolution both expand credit supply (Calomiris et al., 2017; Campello & Larrain, 2016; Ponticelli & Alencar, 2016).

Proportionality matters. Requirements calibrated for large exposures make small ticket lending uneconomic, and the contraction of correspondent banking shows compliance cost redistributing access rather than risk (Basel Committee on Banking Supervision, 2017; Erbenova et al., 2016; Financial Stability Board, 2018). A posture permitting tiered due diligence for programmes with structural mitigants, such as payment routing to a known anchor and collection capture through regulated rails, would expand access without expanding risk.

The distributional question is a policy question rather than a commercial one. Whether distributor finance expands trade and incomes or redistributes working capital burden between tiers determines whether it merits public support. Value chain research indicates the answer is neither obvious nor uniform across chains (Barrett et al., 2012; Gereffi et al., 2005; Reardon et al., 2009), and credit intervention evaluations caution against assuming access alone

produces the intended outcomes (Banerjee et al., 2015; de Mel & Woodruff, 2008).

VII. LIMITATIONS AND FUTURE RESEARCH

7.1 Limitations

Several limitations qualify the contribution. The most important is that this is a conceptual paper offering a structure and propositions, not evidence that they hold. No primary data were collected, no loss histories analysed and no programme outcomes observed. Every directional claim in section 4.6 is a hypothesis, and the framework is a specification of what to measure rather than a report of what has been found (MacInnis, 2011; Whetten, 1989).

Second, conceptual synthesis cannot establish magnitude. Where the paper states that a design choice reduces loss or raises conversion, the direction is argued from mechanism and the effect size is unknown. The literature establishes that the mechanisms operate and specifies their conditions, but the strength of each in a distributor finance portfolio is an empirical question (Gelsomino et al., 2016; Seifert et al., 2013; Xu et al., 2018).

Third, cross-literature transfer carries risk. Evidence from channel research, from operations models of chain financing and from studies of interfirm credit in particular national settings was admitted because each addresses a mechanism the framework depends on, but those settings differ in transaction size, margin structure, regulatory intensity and counterparty sophistication. Treating institutional conditions as explicit moderators manages the risk without eliminating it.

Fourth, the framework assumes the anchor's records are accurate and its incentives can be disciplined through contract design and independent verification. Where records are poor, sales incentives unmanaged, or the distributor population includes connected or fictitious entities, the information substitution fails. Section 5.5 treats these as failure modes, but the paper does not specify how much verification is enough, and

that threshold is setting-specific (Babich & Tang, 2012; Jensen & Meckling, 1976).

Fifth, generalisability across categories and markets is untested. The framework should behave differently for fast moving low margin goods, seasonal agricultural inputs, regulated pharmaceutical distribution and price-controlled commodities, since stock turn, dilution, correlation structure and regulatory screening differ (Barrett et al., 2012; Miller & Jones, 2010; Reardon et al., 2009). As presented it is a general structure whose parameterisation for any category remains to be established.

Finally, a note on scope. Illustrative examples are composites constructed for exposition and do not describe identifiable firms, and nothing in this paper constitutes investment, legal or credit advice.

7.2 Future research

Several propositions are testable with data that banks and anchor firms already hold, and the agenda below is ordered by feasibility.

Propositions P4 and P5 are predictive exercises comparing models built on anchor-supplied transaction variables against models built on statement and bureau data for the same applicant population. The obstacle is selection, since rejected applicants have no observed outcome, requiring either relaxed approval for a period or a reject inference strategy. The modelling apparatus and evaluation criteria are established (Baensens & Verbeke, 2015; Lessmann et al., 2015; Louzada et al., 2016; Thomas, 2000), and evidence that digital traces carry incremental predictive content provides the benchmark (Berg et al., 2018; Khandani et al., 2010).

Propositions P7 and P8 suit staged rollout, since banks change disbursement routing and tenor policy across networks at different times, producing quasi-experimental variation. Propositions P9 and P10 require cross-market comparison, matching portfolio outcomes to enforcement quality measures such as the time and cost of resolving a commercial claim, for

which comparative institutional data exist (Djankov & Shleifer, 2003, 2007; La Porta et al., 1998).

Propositions P1, P2, P3 and P14 sit at programme rather than loan level and suit multiple case designs, since distinguishable programmes within one institution are few and the mechanisms are best observed in the field (Eisenhardt, 1989b). Propositions P11 and P12 are candidates for field experiments in onboarding design, inexpensive to run and rarely run, for which the microenterprise experimental literature provides precedent (Banerjee et al., 2015; de Mel & Woodruff, 2008; Karlan et al., 2014).

Three broader questions sit beyond the framework. The first is welfare: whether distributor finance expands trade and incomes or redistributes working capital burden between tiers, which requires chain-level measurement (Bellemare & Bloem, 2018; Gereffi et al., 2005; Reardon, 2015; Reardon et al., 2009). The second is competitive: whether banks retain this business as anchors, platforms and non-bank lenders acquire the capability to originate against the same data (Buchak et al., 2018; Jagtiani & Lemieux, 2018; Philippon, 2016). The third is infrastructural: how far maturing payment rails, digital identity and ledger verification change the feasible design space, currently mapped more by pilots than evidence (Catalini & Gans, 2016; Korpela et al., 2017; Kshetri, 2018; Yermack, 2017).

VIII. CONCLUSION

The distributor a bank declines for want of audited accounts is typically a firm whose commercial history is documented, verified and monitored by a counterparty the same bank already serves. The information exists. So does the enforcement mechanism, and where courts are slow it is the more reliable of the two. What has been missing is a design connecting them, and an acquisition logic justifying one.

The paper has proposed a five layer framework, grounded in the trade credit mechanisms that explain why suppliers finance their buyers, the lending technology literature that explains why banks do not, and the institutional evidence on when private

enforcement substitutes for public. Its claims are that ecosystem selection constrains everything downstream; that the anchor's transaction record is a distinct lending technology; that structural mitigants outrank legal ones where courts are slow; and that the product's value lies in relationships acquired rather than assets booked.

Where the boundary conditions hold, the design converts a single corporate relationship into a repeatable channel for acquiring hundreds of commercial customers who are creditworthy on evidence no bureau in their market has recorded. With a trade finance gap concentrated among such firms, that is a large amount of value sitting on the wrong side of an information boundary, and product design rather than credit policy is the instrument for crossing it.

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