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Financing Conditions and Enterprise Resilience in Nigeria after the 2023 Shocks: Evidence from the World Bank Enterprise Surveys

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Abstract
Between 2021 and 2024 Nigerian firms faced a currency redesign, exchange-rate unification, subsidy removal and inflation that averaged 33 per cent in 2024. We ask how financing conditions relate to four dimensions of enterprise performance and adjustment over this period: operational continuity, real sales growth, input sourcing and a partial operating margin. We use the World Bank Enterprise Survey Nigeria 2025, which covers formal private establishments with five or more employees (analytical samples of 954, 917, 963 and 379 (377 with credit status) establishments for the four outcomes). Survey-weighted logit and least-squares models are estimated with robust standard errors, checked against stratified design-based standard errors; unweighted, weight-trimmed and size-stratified estimates are reported alongside. A harmonised re-estimation of the 2014 wave provides a benchmark. In this population, 84.7 per cent of establishments increased naira sales between FY2021 and FY2024, but only 13.4 per cent increased sales after adjusting for the 97.4 per cent rise in consumer prices (31 per cent would have grown even if their prices had risen by only half as much). Credit access ranges from about half of establishments in the North Central zone to 2 to 4 per cent in the North West and North East, where few firms report having no need for a loan. The most stable association concerns sourcing: each one-point increase in the severity of the access-to-finance obstacle (0 to 4) is associated with a 4.8-point higher probability that all material inputs are domestic (95% CI 1.7 to 7.9), mainly among establishments with fewer than 20 employees. Bank working-capital finance is associated with higher real growth only in weighted estimates (16.3 points, 95% CI 1.0 to 31.6); the association is not significant without weights or within either size group, so we treat it as specification-sensitive. Current credit status is not detectably associated with growth or with the partial operating margin; the margin interval (-27.3 to 11.0 points) excludes reductions larger than about 27 points but not smaller ones. Monitoring of Nigerian firms should use real rather than nominal sales; domestic sourcing should not be read as resilience without asking whether it reflects constrained access to import finance; and assessing whether credit, including digital credit, pays for borrowers requires data on loan timing, prices and repayment that current public surveys do not contain. All results are associations from cross-sectional data; the paper does not estimate the causal effect of the shocks or of financing.

Keywords: *Enterprise resilience; financing constraints; working capital; domestic sourcing; real sales growth; operating margin; Nigeria; World Bank Enterprise Surveys****JEL classification:*** *G21; L25; O16; O55.*

I. INTRODUCTION

Between 2021 and 2024 Nigerian firms faced a sequence of shocks. The redesign of naira notes in late 2022 and early 2023 disrupted cash payments; the unification of the official and parallel exchange-rate windows in June 2023 was followed by a large depreciation; the petrol subsidy was removed in the same month; and twelve-month average headline inflation rose from 18.85 per cent in 2022 to 24.66 per cent in 2023 and 33.24 per cent in 2024 (National Bureau of Statistics [NBS], 2025; World Bank, 2025b). For a firm whose inputs are priced in naira but track the dollar, the working capital needed to restock the same physical volume of goods roughly doubled. Access to external finance is therefore a plausible determinant of which firms kept their workforce, maintained real turnover, reconfigured their supply chains and protected their margins.

This paper studies these four outcomes using the 2025 World Bank Enterprise Survey (WBES) for Nigeria, whose reference period (FY2024 compared with FY2021) spans the shock window. The survey covers formal private establishments with five or more employees, so the findings describe this population and not informal micro-enterprises. We ask: (i) how are financing constraints, bank and non-bank working-capital finance and electronic payment use associated with continuity, real growth, sourcing and margins; (ii) is current credit status associated with growth and margins, and can the data say whether credit "pays"; (iii) how much of the estimated associations depend on survey weighting and firm size; and (iv) do the associations differ from those in the 2014 wave?

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The paper makes three contributions, in order of the strength of the evidence. First, it shows that among formal Nigerian establishments, nominal turnover growth over 2021 to 2024 concealed widespread real contraction. Second, it shows that financing obstacles are associated with greater reliance on domestic inputs, mainly among small establishments, so domestic sourcing cannot be read as a resilience outcome without asking whether it reflects constrained access to import finance. Third, it shows the limits of inferring the performance or profitability consequences of borrowing from current credit status, and sets out the data that would be needed.

The paper does not estimate the causal effect of the 2023 shocks or of any policy; it examines how financing conditions relate to firm outcomes over a period that spans them. It does not estimate causal effects of financing, does not study digital or fintech lenders (the survey does not identify them), and does not cover informal or very small enterprises. The 2014 wave is used as a benchmark analysed with identical definitions, not as a before-and-after comparison, because the two waves differ in coverage, sampling frame and conditions.

II. RELATED LITERATURE

Firm-level evidence across developing economies shows that financing obstacles bind more tightly for smaller firms and are associated with slower growth (Beck, Demirgüç-Kunt, & Maksimovic, 2005, 2008). Enterprise Survey data are widely used to classify firms as credit constrained by combining loan applications, rejections and the reasons for not applying (Kuntchev, Ramalho, Rodríguez-Meza, & Yang, 2013). In Africa, infrastructure costs, especially unreliable electricity, depress firm performance alongside finance (Eifert, Gelb, & Ramachandran, 2008). Evidence that relaxing credit constraints raises output comes from quasi-experimental studies (Banerjee & Duflo, 2014; Bruhn & Love, 2014), while randomised evaluations of microcredit find modest average effects on business profits (Banerjee, Karlan, & Zinman, 2015). Whether expanded access improves welfare depends on its terms (Mader, 2018), and working-capital management is linked to profitability through the cash conversion cycle (Deloof, 2003).

For Nigeria, small-business studies have long identified finance as a leading perceived constraint (Mambula, 2002), but firm-level evidence on the 2023 to 2024 shocks has only recently become possible. We add a focus on sourcing. Imports must usually be paid for in advance and in foreign currency, so when credit and foreign exchange are both scarce, constrained firms may buy domestically because import finance is unavailable rather than because domestic sourcing is a chosen resilience strategy.

III. CONCEPTUAL FRAMEWORK

We treat enterprise resilience as multidimensional and do not combine the outcomes into an index, because they need not move together. Operational continuity (no reduction in permanent employment) captures whether a firm kept its productive capacity. Real sales growth captures commercial performance. Full domestic sourcing is an input-adjustment indicator: it can reflect deliberate supply-chain reconfiguration or a constraint on importing, so it is not a resilience measure in itself. The partial operating margin captures how much of each naira of sales remains after the main variable costs. Recovery after a dated shock cannot be measured with a single cross-section; we use exposure to operating shocks only as a moderator.

Two frameworks motivate the hypotheses. In the credit-channel view, firms with weak balance sheets face a higher external finance premium that rises when conditions deteriorate (Bernanke & Gertler, 1995; Bernanke, Gertler, & Gilchrist, 1996). In the financing-constraints literature, constrained firms forgo profitable activity (Fazzari, Hubbard, & Petersen, 1988), while costly borrowing can raise turnover without raising, or while reducing, margins, and accumulated debt can discourage investment (Myers, 1977). Table 1 links each mechanism to a prediction, a measured variable, the result reported below and the main alternative explanations that remain.

Table 1. Mechanisms, predictions, measures and results

Mechanism	Observable prediction	Measure	Result (Section)	Alternatives that remain plausible
Working capital sustains payroll during revenue shortfalls	H1: constraint and obstacle negatively associated with continuity	fin_constrained, fin_obstacle; emp_stable	Not supported in weighted estimates; obstacle negative without weights (5.2, 5.4)	Labour hoarding; firms cut hours rather than jobs
External finance relaxes restocking constraints	H2: bank and non-bank working capital positively associated with real growth	bank_wc, nonbank_wc; real_sales_growth	Bank: positive, weighted only; non-bank: not detected (5.2, 5.4)	Lenders select firms with better prospects; reverse timing

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Imports need prepayment and foreign exchange	H3: obstacle positively associated with full domestic sourcing	fin_obstacle; local_sourcing	Supported; concentratedin small firms; weaker or absent in 2014 (5.2, 5.5)	Sectors with local inputs port different obstacles; reverse causality
Mechanism	Observable prediction	Measure	Result (Section)	Alternatives that remain plausible
Costly credit raises turnover but not margins	H4: credit status negatively associated with partial margin, positively with growth	has_credit, recent_credit; gom, real growth	Neither association detected; wide intervals (5.3)	Interest costs unobserved; credit stock measured after the outcome window
Constraints bind harder after a shock	H5: obstacle association St stronger for shock-exposed firms	Fifin_obstacle x shock exposure	Not supported (5.7)	Low power; shock measure coarse

IV. DATA AND METHODS

4.1. Data and population

We use the WBES Nigeria 2025 (World Bank, 2025a). Fieldwork took place in 2025, and the last completed fiscal year is 2024 for 98.6 per cent of establishments. The survey samples formal private establishments with five or more employees in manufacturing, retail and other services by stratified random sampling, with strata defined by geopolitical zone, sector and size; there is no cluster stage (World Bank, n.d.). Sampling weights under strict eligibility (wstrict) are used throughout. Under the weights, 63.0 per cent of establishments have fewer than 20 employees and the median has 12; in the unweighted sample the figures are 55.0 per cent and 15. Large firms are heavily over-sampled: the 146 establishments with 100 or more employees have a median weight of about 3, against about 78 for establishments with fewer than 20 employees.

The public file identifies zones and whether an establishment is in Lagos (the main business city), but not other states.
For the benchmark we use the 2014 wave of the WBES Nigeria panel file (World Bank, 2015; N= 2,676). The two waves differ in sector coverage, in the sampling frame and in economic conditions, and 361 establishments flagged as panel firms in 2025 cannot be linked to their 2014 records in the public files. The comparison is therefore between two cross-sections analysed with identical definitions, not a panel.

Table 2. Sample flow

Stage	Employment	Real sales growth	Domestic sourcing	Partial margin
All establishments	1,043	1,043	1,043	1,043
Eligible for outcome	All	All	All	Manufacturing (485) and retail (127)
Outcome observed	1,014	971	1,027	409 (336 manufacturing, 76 retail)
Regression sample	954	917	963	379 (377 with credit status)
Main source of attrition	Employment three years earlier	Sales three years earlier (6.6%)	Covariates	Cost items not reported

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4.2.Variables

Table 3. Variable construction

Variable	Survey items	Construction
Employment stability	l1, l2	1 if permanent full-time employees at the end of FY2024 >= the number three yearsearlier
Real sales growth	d2, n3	d2 refers to FY2024 and n3 to sales three years earlier (FY2021). 1 if ln(d2) - ln(n3 x 1.974) > 0, where 1.974 = 1.1885 x 1.2466 x 1.3324, the product of NBS twelve-month average CPI changes for 2022, 2023 and 2024. Continuous version winsorised at the 1st and 99th percentiles
Full domestic sourcing	d12a	1 if 100% of material inputs are of domestic origin
Partial operating margin	d2, n2a, n2e, n2i	(Sales - labour cost - raw materials [manufacturing] - goods bought for resale [retail]) /sales, all for FY2024; winsorised at the 1st (-0.18) and 99th (0.99) percentiles. Excludes energy, rent, transport, depreciation, interest and taxes
Financially constrained	a, k162b, k17, k20a1	1 if the firm applied for a loan or line of credit in FY2024 and was rejected (k20a1 = 3), or did not apply for a reason other than having sufficient capital (k17 = 2 to 7); 0 if it applied and was not rejected, or did not apply because it had sufficient capital (k17 = 1)
Finance obstacle	k30	Access to finance as an obstacle, 0 (none) to 4 (very severe)
Bank / non-bank working capital	k3bc, k3e	1 if any FY2024 working capital was borrowed from banks / from non-bank financial institutions. Digital lenders are not identified separately
Has credit; recent credit	k82a, k82b, k10	Has a loan or line of credit at interview; recent credit = has credit and the most recent loan was approved in 2021 to 2024
Discouraged by interest rates	k17	1 if the main reason for not applying was unfavourable interest rates
E-payment share	k33	Share of receipts paid electronically, 0 to 1
Controls	b5, l1/l2, a4a, b4, d3b/d3c, c22b, a2	Log age; log employment (FY2021 in growth, continuity and margin models; FY2024 in sourcing); manufacturing or retail; female owner; exporter; website; zone effects (North Central reference)
Shock exposure	c6, c9a, ge3	1 if outage losses >= 5% of sales or extreme-weather asset damage; 0 if neither

4.3.Estimation

Binary outcomes are modelled by survey-weighted logistic regression; the margin by weighted least squares. Standard errors are heteroskedasticity-robust (HC1 for logit, HC3 for least squares). Because ignoring stratification does not guarantee conservative standard errors, we also computed design-based standard errors by Taylor linearisation within the survey strata (211 strata; singleton strata contribute no variance). The linearised estimator takes each establishment's weighted score contribution from the estimating equations (for least squares, weight x regressor x residual), centres these within each stratum, sums their outer products with the factor $n_h/(n_h - 1)$, and combines the result with the inverse of the weighted information matrix; this treats establishments as drawn with replacement within strata and applies no finite-population correction. For the logit models these are within 8 per cent of the robust standard errors for every financing variable and change no conclusion; for the margin model the design-based standard errors are smaller than the HC3 errors reported, so the reported margin inference is conservative. We report average marginal effects (AMEs) in percentage points for binary outcomes, with delta-method 95 per cent confidence intervals.

$$\Pr(Y_i = 1) = \Lambda(\alpha + \beta 1\ CONSTR_i + \beta 2\ OBST_i + \beta 3\ BANKWC_i + \beta 4\ NONBANKWC_i + \beta 5\ EPAY_i + X_i\,\gamma + ZONE_i\,\delta)$$

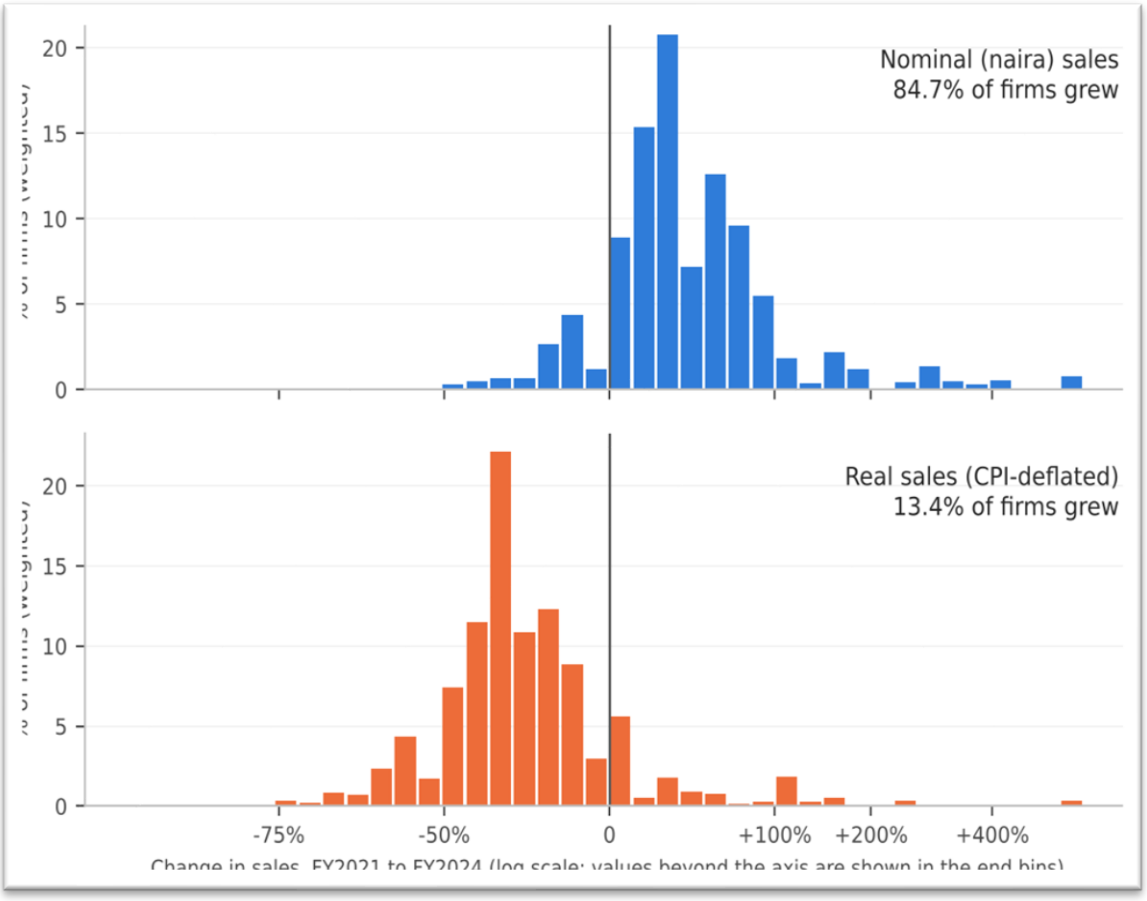
The weighted estimates are the primary specification because they describe the target population. Because the weights shift influence towards small firms, we report three companions: unweighted estimates (the sample, tilted to large manufacturers), estimates with the top 1 per cent of weights capped (to test whether a few observations drive the weighted results), and estimates separately for establishments with fewer than 20 and with 20 or more employees.

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V. RESULTS

5.1Real and nominal performance

Figure 1. Distribution of the change in sales between FY2021 and FY2024, nominal and real



Note: Weighted distribution, N = 971. Real sales deflate FY2021 sales by the cumulative CPI change of 97.4%. Log changes are binned at intervals of 0.1.

Figure 1 shows the central descriptive fact. In nominal terms the median establishment increased sales by about 35 per cent (log change 0.30); in real terms the median establishment's sales fell by about 32 per cent (log change -0.38). The share with positive growth falls from 84.7 to 13.4 per cent once inflation is taken into account. Among manufacturing and retail establishments with margin data, the corresponding shares are 91.8 and 14.1 per cent. These are estimates for formal establishments with five or more employees; deflating with the consumer price index assumes that output prices moved with consumer prices. Because firms' output prices may have risen more slowly or faster than consumer prices, we report the share with real growth under alternati ve price increases. These are scenarios, not observed output-price indices, and they do not identify the share of firms whose physical output rose: 31 per cent if prices rose by 50 per cent, 17 per cent if by 75 per cent, and 8 per cent if by 125 per cent. A majority of establishments would have grown in real terms only if their output prices had risen by less than about 30 per cent, against a 97 per cent rise in consumer prices. Survey respondents and users of nominal figures are prone to money illusion, the tendency to judge changes in nominal rather than real terms (Shafir, Diamond, & Tversky, 1997), which is one reason why reporting firm performance in nominal terms during high inflation can mislead.

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Table 4. Descriptive statistics, WBES Nigeria 2025 and harmonised 2014 benchmark

Variable	2025 weighted	2025 unweighted	2025 n	2014 weighted
Employment stability	85.7%	84.2%	1,014	79.3%
Real sales growth	13.4%	15.8%	971	38.4%
Nominal sales growth	84.7%	84.8%	971	-
Full domestic sourcing	69.6%	67.7%	1,027	65.8%
Partial operating margin (margin sample)	44.7%	45.2%	409	-
Financially constrained	52.7%	54.6%	1,025	44.3%
Finance obstacle (0-4)	2.10	2.09	1,036	1.72
Bank working capital	8.4%	10.5%	1,026	16.9%
Non-bank working capital	6.4%	5.3%	1,026	16.3%
Has loan or line of credit	20.6%	20.2%	1,037	11.4%
Credit approved 2021 to 2024	11.4%	11.0%	1,037	-
E-payment share of receipts	69.3%	70.9%	1,024	-
Fewer than 20 employees	63.0%	55.0%	1,041	-
Manufacturing	24.0%	46.5%	1,043	36.6%
Any female owner	18.6%	23.2%	1,034	-
Exporter	6.7%	7.6%	1,041	-

Note: The 2014 margin is not reported because cost items in that wave contain unit inconsistencies (the mean margin is negative), so the 2014 margin data are not used.

5.2. Main estimates

Table 5. Main estimates, survey-weighted (percentage points)

	(1) Employment stability	(2) Real sales growth	(3) Full domestic sourcing	(4) Partial operating margin
Financially constrained	+4.8 (3.7)	+4.4 (3.1)	+0.1 (4.4)	+2.0 (6.7)
Finance obstacle (0-4)	-0.5 (1.4)	-1.0 (1.3)	+4.8*** (1.6)	-1.6 (2.7)
Bank working capital	-11.8* (6.8)	+16.3** (7.8)	-7.2 (7.8)	-9.8 (10.2)
Non-bank working capital	+6.7 (4.2)	+5.7 (8.9)	+3.8 (7.1)	-0.6 (11.6)
E-payment share (0-1)	+10.6 (7.7)	+11.3 (8.0)	-27.8*** (10.4)	+1.9 (17.9)
Log firm age	-7.1** (3.2)	-1.9 (2.6)	-5.9* (3.6)	+4.2 (8.0)
	(1) Employment stability	(2) Real sales growth	(3) Full domestic sourcing	(4) Partial operating margin
Log employment, FY2021	-5.5*** (1.5)	-2.6 (2.2)	-	+9.2*** (3.4)
Log employment, FY2024	-	-	-7.4*** (2.3)	-
Manufacturing	+6.2* (3.5)	+6.7 (4.4)	+0.4 (5.2)	-
Retail (margin sample)	-	-	-	+2.3 (8.2)
Female owner	+3.3 (3.8)	+4.5 (4.2)	-9.1* (5.2)	-0.5 (5.6)
Exporter	-7.3 (7.5)	-3.5 (5.4)	-47.2*** (8.5)	-3.5 (8.9)
Own website	+9.5*** (3.2)	+1.3 (3.5)	-3.7 (4.2)	-
North East	+6.0 (5.1)	+31.6** (13.5)	+29.5*** (2.7)	+17.5 (12.7)
North West	+4.2 (5.2)	+11.3 (10.1)	+19.8*** (5.7)	+23.1** (9.2)
South East	-0.5 (6.3)	+2.5 (8.5)	+2.7 (7.1)	+10.6 (10.0)
South South	+2.1 (6.3)	+19.5* (11.8)	+10.6* (5.7)	+18.3 (13.4)
South West	-1.0 (4.8)	+10.0 (6.9)	+21.5*** (5.1)	+12.6 (8.6)
Observations	954	917	963	379
Weighted outcome mean	0.862	0.128	0.698	0.457
Pseudo-R^2 / R^2	0.151	0.082	0.222	0.260
AUC	0.746	0.707	0.805	-

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Note: Columns 1 to 3 report AMEs from weighted logit with HC1 standard errors; column 4 reports weighted least-squares coefficients x 100 (percentage points of sales) with HC3 standard errors. Column 4 uses manufacturing and retail establishments and includes a retail indicator instead of manufacturing. *** p < 0.01, ** p < 0.05, * p < 0.10.

Continuity (H1). No finance variable is significantly associated with employment stability in the weighted model; H1 is not supported. Bank working capital has a negative point estimate (-11.8 points, p = 0.08). Section 5.4 shows that this association is concentrated among establishments with 20 or more employees. It could reflect firms under pressure being more likely to borrow, or other differences between borrowers and non-borrowers; the design cannot separate these, and it should not be read as borrowing causing job losses. A distress-borrowing reading is plausible: larger firms whose revenue fell may both have shed staff and drawn on bank working-capital lines to cover payments, in which case the borrowing is a response to the same pressure that reduced employment. This reading fits the size-stratified estimates in Table 7, where the association is concentrated among establishments with 20 or more employees (-23.6 points, p = 0.009) and absent among smaller ones.

Real growth (H2). Bank working capital is associated with a 16.3-point higher probability of real growth (95% CI 1.0 to 31.6) against a weighted base rate of 12.8 per cent. Non-bank working capital (54 users) and the constraint indicator are not significantly associated with growth. H2 is partly supported for bank finance only, and Section 5.4 shows that this support depends on weighting. North East establishments were more likely to report real growth than North Central establishments (31. 6 points). This estimate rests on 122 establishments, is unexpected given the security situation in the zone, and could reflect sampling of surviving firms in its main cities; we do not interpret it further.

Sourcing (H3). Each one-point increase in the finance obstacle is associated with a 4.8-point higher probability of full domestic sourcing (95% CI 1.7 to 7.9). Moving from no electronic receipts to all receipts electronic is associated with a 27.8-point lower probability, and exporters are much less likely to rely only on domestic inputs. H3 is supported.

Partial margin. No finance variable is significantly associated with the partial operating margin in the weighted model. The obstacle coefficient is -1.6 points per obstacle point (p = 0.54); Section 5.4 shows that it is larger and significant without weights.

5.3. Credit status, timing and margins (H4)

Table 6. Credit status and timing: real sales growth (AME, points) and partial operating margin (points of sales), weighted

	Real sales growth	Partial operating margin
Has loan or line of credit (at interview)	+0.4 (5.4)	-8.2 (9.8); 95% CI -27.3 to 11.0
Credit approved 2021 to 2024	+2.1 (6.4)	-10.8 (11.7); 95% CI -33.7 to 12.1
Discouraged by interest rates	+4.4 (4.5)	+4.8 (8.5)
Observations	915	377

Note: Each credit measure is added separately to the models in Table 5, columns 2 and 4. 114 establishments have credit approved in 2021 to 2024; 75 credit holders are in the margin regression. *** p < 0.01, ** p < 0.05, * p < 0.10.

Credit is recorded at the interview date, after the FY2021 to FY2024 window over which growth is measured, so an establishment holding credit in 2025 may not have borrowed during the window, and one that borrowed and repaid in 2022 is classified as having no credit. As a timing sensitivity analysis, not a solution to the problem, we use the year of approval of the most recent loan to identify 114 establishments whose current credit was approved in 2021 to 2024. Neither measure is associated with growth or with the partial margin. The results describe the association between current (or recently approved) credit and outcomes measured over the preceding years, not the effect of borrowing during the shock. Even for recently approved credit, the data cannot show whether the loan preceded the change in sales or was taken because performance had already deteriorated.

The margin estimates are imprecise. With 75 credit holders, the minimum effect detectable with 80 per cent power at the 5 per cent level is about 27 percentage points of sales. The 95 per cent interval for current credit runs from -27.3 to 11.0 points. The data are therefore inconsistent, at conventional confidence, with credit holders having partial margins more than about 27 points lower than comparable firms, so a large erosion of margins before financing costs among borrowers can be ruled out; they cannot rule out a reduction of 20 points or an increase of 10.

The minimum detectable effect indicates limited precision, not adequate power for every substantively important effect. The paper therefore tests a necessary condition of the "growth without margins" hypothesis (that borrowers have lower margins before financing costs) and does not detect it; it does not test the full hypothesis, because interest costs are not recorded. Whether credit pays for borrowers cannot be determined from these data.

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Establishments that did not apply because of interest rates have margins 11.1 points higher in a median regression (p = 0.030) and 7.9 points higher after removing influential observations (p = 0.045), but not in the weighted model. Firms with strong margins may finance themselves and judge borrowing at current rates not worthwhile, or firms that avoid costly credit may avoid cost pressures; the data cannot distinguish these explanations.

5.4. Weighting, firm size and robustness

The weights are dispersed: the largest is 37 times the median, and the ten largest account for 8.3 per cent of the total. Capping the top 1 per cent of weights changes no estimate materially (Table 7), so the weighted results are not driven by a handful of observations. The differences between weighted and unweighted estimates instead reflect composition: the weights give most influence to establishments with fewer than 20 employees, while the unweighted sample includes 146 establishments with 100 or more employees.

Table 7. Sensitivity of key estimates to weighting and firm size (percentage points)

Outcome: variable	Weighted (baseline)	Top 1% weights capped	Unweighted	Weighted, < 20 employees	Weighted, 20+ employees
Employment: finance obstacle	-0.5 (1.4)	-0.7 (1.4)	-3.0*** (0.9)	-2.6 (1.9)	-1.1 (2.2)
Employment: bank working capital	-11.8* (6.8)	-10.7 (6.6)	-1.8 (4.1)	-3.0 (5.6)	-23.6*** (9.0)
Employment: e-payment share	+10.6 (7.7)	+9.9 (7.7)	+14.4*** (5.4)	+9.8 (8.8)	+10.8 (10.5)
Real growth: bank working capital	+16.3** (7.8)	+16.5** (7.9)	+6.2 (5.1)	+13.5 (12.1)	+8.4 (8.5)
Real growth: non-bank working capital	+5.7 (8.9)	+5.5 (9.0)	+1.7 (6.4)	+9.5 (11.7)	-0.6 (6.7)
Sourcing: finance obstacle	+4.8*** (1.6)	+4.7*** (1.6)	+3.2*** (1.1)	+7.3*** (1.9)	+3.0 (2.2)
Sourcing: e-payment share	-27.8*** (10.4)	-27.3*** (10.3)	-28.3*** (7.2)	-27.5** (11.9)	-33.8* (18.9)
Sourcing: bank working capital	-7.2 (7.8)	-7.1 (7.8)	-16.6*** (5.1)	-13.6 (15.0)	-7.3 (8.2)
Margin: finance obstacle	-1.6 (2.7)	-1.5 (2.6)	-3.4*** (1.2)	-0.0 (3.1)	-3.3 (4.8)
Margin: bank working capital	-9.8 (10.2)	-9.2 (10.1)	-0.2 (5.2)	+12.4 (20.4)	-55.0** (26.7)
Observations (employment model)	954	954	954	527	427

Note: AMEs for employment, growth and sourcing; least-squares coefficients x 100 for the margin. Full control sets as in Table 5. Size groups use FY2024 employment. *** p < 0.01, ** p < 0.05, * p < 0.10.

Three patterns stand out. First, the obstacle-sourcing association is concentrated among small establishments (7.3 points, p < 0.001) and smaller and not significant among larger ones (3.0 points, p = 0.18); because small firms dominate the weighted population, the weighted estimate exceeds the unweighted one. Second, the negative association between bank working capital and employment stability comes from establishments with 20 or more employees (-23.6 points, p = 0.009). Third, neither size group shows a significant bank-finance association with growth on its own, so the weighted result in Table 5 should be read as fragile. The margin-obstacle association is larger without weights (-3.4 points, p = 0.006), in a median regression (-2.7, p = 0.085) and after dropping 13 influential observations (-4.2, p < 0.001), but it is small in the weighted model; we treat it as suggestive for the sampled establishments and not established for the population.

Pooling manufacturing and retail is supported by an insignificant credit-by-retail interaction (p = 0.59). The size-stratified margin models rest on 213 and 166 establishments and are not interpreted.

5.5. The sourcing association: sector, customs and 2014

Table 8. Full domestic sourcing and finance obstacle by sector (weighted)

Sector	n	Full domestic sourcing	Mean finance obstacle
Food	123	81.1%	2.18
Garments	121	77.5%	2.40
Fabricated metals	108	75.2%	2.19
Other manufacturing	125	67.2%	2.11
Professional activities	155	60.5%	1.96
Retail	127	59.0%	1.88
Other services	268	77.2%	2.19

The survey does not ask about access to foreign exchange, so the import-finance interpretation cannot be tested directly. Three checks narrow the alternatives. First, adding the customs and trade-regulation obstacle (d30b) leaves the finance-obstacle AME unchanged (5.1 points, p = 0.002), so the association is not a general reflection of trade frictions. Second, replacing the manufacturing indicator with seven sector indicators gives 4.3 points (p = 0.008), so it is not explained by the sectors in which firms operate (Table 8 shows that domestic sourcing ranges from 59 per cent in retail to 81 per cent in food). Third, the association is similar for manufacturers (4.5 points, p = 0.056) and non-manufacturers (4.6 points, p = 0.010). In the 2014 wave the association is close to zero (Table 9); in a pooled model the difference between waves is positive but only marginally

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significant (p = 0.075). The pattern is consistent with constrained firms sourcing domestically because import finance became harder to obtain, but reverse causality and unobserved firm characteristics remain possible. The 2014 comparison is informative despite the marginal interaction: the 2014 wave refers to FY2013, before the foreign-exchange shortages of 2015 to 2016 and 2023 to 2024, so an association that is absent then and present in 2025 is what the import-finance interpretation would predict. It is not a test of that interpretation, because the waves also differ in coverage and other conditions.

Table 9. Harmonised specification, 2014 and 2025 waves (AMEs, percentage points, weighted logit)

	Employment 2014	Employment 2025	Real growth 2014	Real growth 2025	Sourcing 2014	Sourcing 2025
Financially constrained	-2.2 (3.5)	+5.0 (3.6)	+11.3* (6.0)	+4.3 (3.1)	-5.0 (7.1)	+0.2 (4.4)
Finance obstacle	+1.4 (2.3)	-0.8 (1.4)	-5.5** (2.5)	-1.2 (1.3)	-1.6 (2.7)	+5.5*** (1.6)
Bank working capital	-9.6 (6.9)	-11.2 (6.8)	+9.8 (7.8)	+16.4** (8.1)	-22.0** (9.2)	-7.9 (7.8)
Non-bank working capital	-1.8 (5.4)	+7.1* (4.1)	+0.5 (8.1)	+5.4 (8.9)	-7.2 (7.0)	+4.3 (7.3)
Observations	1672	963	1287	924	726	972

Note: Identical definitions and controls in both waves; the e-payment share is excluded because it was not asked in 2014. 2014 sales are deflated by the cumulative CPI change over 2011 to 2013 (34.9%). *** p < 0.01, ** p < 0.05, * p < 0.10.

The 2014 benchmark also matters for the literature. With the 2014 data, an unweighted model yields a non-bank working-capital AME of about 16 points on sales growth (p < 0.001), but the weighted harmonised estimate is +0.5 points (p = 0.95). Associations of this kind in Enterprise Survey data can therefore depend on whether the analysis describes the sample or the population.

5.6. Regional access to credit: demand or supply?

Table 10. Credit access, applications and reasons for not applying, by region (weighted)

Region	N	Has credit	Applied in FY2024	Rejected (applicants)	No need (non-applicants)	Interest too high (non-applicants)	Finance obstacle
North Central	164	50.8%	10.7%	0 of 16	69.3%	17.3%	1.78
Rest of South West	115	29.7%	33.0%	3 of 33	42.9%	11.8%	2.48
South East	122	17.2%	15.2%	1 of 17	9.4%	56.4%	2.98
Lagos	229	12.7%	9.6%	1 of 22	47.2%	30.4%	1.62
South South	150	9.2%	9.4%	5 of 15	32.4%	25.8%	2.92
North West	141	3.6%	1.5%	3 of 11	22.8%	32.6%	1.86
North East	122	2.3%	7.7%	2 of 8	27.9%	42.1%	1.77

Note: Lagos is the main business city in the South West; "rest of South West" includes Ogun, Oyo and other states not identified separately.

Credit access varies roughly twenty-fold across regions, from 50.8 per cent of establishments in the North Central zone to 3.6 per cent in the North West and 2.3 per cent in the North East. The low-access northern zones are not regions where firms say they do not need credit: among non-applicants, only 22.8 per cent in the North West and 27.9 per cent in the North East report having sufficient capital, compared with 69.3 per cent in the North Central zone, and 32.6 and 42.1 per cent cite unfavourable interest rates. Rejections are rare everywhere because few firms apply.

The pattern is more consistent with discouragement by price and terms than with lack of demand, although stated reasons are self-reported and the survey cannot separate supply from the pricing of risk. In Lagos, about half of non-applicants report no need for a loan, and the finance obstacle is the lowest of any region.

5.7. Shock exposure (H5)

About 36 per cent of establishments with complete information lost at least 5 per cent of sales to power outages or suffered extreme-weather damage. The interaction between the finance obstacle and shock exposure is +0.5 points for real growth (p = 0.87) and +3.5 points for continuity (p = 0.32). H5 is not supported: the data provide no evidence that financing obstacles mattered more for shock-exposed firms. With samples of about 700, an interaction of a few percentage points could not be detected, so the result does not show that no difference exists.

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VI. DISCUSSION

The clearest results are descriptive and concern the scale of real contraction, the regional distribution of credit, and the link between financing obstacles and domestic sourcing among small firms. The sourcing result changes how domestic sourcing should be read: in 2025 it is partly a marker of constraint, not only of adaptation. Policies that encourage local sourcing may therefore need to be paired with working-capital support for the small firms that currently source domestically because they cannot finance imports.

The credit results are weak, and the reasons matter for future work. Bank working capital is associated with real growth only in the weighted model, and neither current nor recently approved credit is associated with growth or margins. The data record credit at interview rather than over the outcome window, do not identify lenders or prices, and contain few borrowers.

Within those limits, the paper finds no evidence that credit holders had higher or lower margins than comparable firms before financing costs. It cannot say whether credit paid, and it says nothing specific about digital lenders, which the survey does not identify.

The unexpected negative association between bank working capital and employment among larger establishments is consistent with distressed firms turning to banks, and with banks lending to firms restructuring their workforce. Neither explanation can be tested here.

6.1.Limitations

The design is cross-sectional; financing variables are measured at the end of, or after, the outcome window. The survey covers formal establishments with five or more employees. Sales three years earlier are recalled. Deflating by the consumer price index assumes output prices moved with consumer prices. The partial margin omits interest and overheads and is available only for manufacturing and retail. State identifiers other than Lagos are not released. Foreign-exchange access is not observed, so the mechanism behind the sourcing result is inferred, not tested.

VII. CONCLUSION AND IMPLICATIONS

The findings can be ranked by the strength of the evidence. Most robust: formal Nigerian firms came through 2021 to 2024 with nominal growth and real contraction, and credit reaches about half of formal firms in the North Central zone but a few per cent in the North West and North East, where firms report being discouraged rather than not needing credit. Robust across specifications but not causally identified: financing obstacles are associated with heavier reliance on domestic inputs, mainly among small establishments. Specification-sensitive: bank working capital is associated with real growth only in the weighted population. Inconclusive: current credit status is not detectably associated with growth or partial margins, and the margin estimates are imprecise.

One pattern deserves attention in the design of credit-guarantee schemes. Firms that stayed away from credit because of interest rates have higher partial margins in the median and influence-trimmed estimates (though not in the weighted model). If the firms best placed to use credit are among those deterred by its price, guarantees that only lower collateral requirements may miss them; schemes that address the cost of credit, or that are evaluated for whom they reach, may be more relevant. This is a hypothesis for evaluation, not a finding about any scheme.

Three implications follow, each framed as a monitoring or research priority rather than a demonstrated effect. First, statistical agencies and programmes should report firm performance in real terms. Second, local-content and import-substitution policies should check whether domestic sourcing reflects constrained access to import finance. Third, to know whether credit, including digital credit, helps or harms borrowers, Nigeria needs data linking loan amounts, prices, timing and repayment to firm accounts, for example through linkage of licensed lenders' records to enterprise surveys or a borrower module in the next WBES round.

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[25]. Data and code availability: Both WBES datasets are available from the World Bank Enterprise Surveys portal on registration. The replication package (variable construction, estimation and table code, data dictionary and README) accompanies this submission.