When Global Banks Leave: Market Concentration and Structural Regression in Developing Countries*

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Abstract

Post-crisis financial regulation has driven 198 exits by 23 international banking groups from 112 developing countries since 2008. Using shift-share instruments that interact pre-determined foreign bank presence with home-country regulatory pressure, we find that bank exits increase agriculture's share of GDP by 3–7 percentage points. The effect operates through market concentration: in countries with above-median banking concentration, exits significantly reduce domestic credit by 8 percentage points and raise conflict probability by 15–21 percentage points. These effects spill across borders through regional banking networks.

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1 Introduction

On an April morning in 2021, Citibank CEO Jane Fraser stood before analysts and announced that the bank would abandon consumer banking in fourteen countries across Asia, Africa, and the Middle East. The countries had not defaulted. Their economies had not collapsed. The problem, Fraser explained, was arithmetic: post-crisis capital rules had rendered thin developing-country markets structurally unprofitable. Over the next two years, Société Générale announced its departure from eleven African markets, BNP Paribas from nine, Standard Chartered from twelve, and Scotiabank from fifteen in the Caribbean and Latin America. Each bank cited the same regulatory calculus. Basel III capital buffers, anti-money-laundering compliance costs, and ring-fencing mandates had redrawn the boundary of viable banking, and the developing world fell on the wrong side. A generation of financial integration was unwinding, not because of crisis or sovereign failure, but because regulators in London, Brussels, and Basel had changed the rules.

The scale of this retreat raises an urgent question for development economics. International banks supply credit, facilitate trade finance, and import governance standards that local institutions often lack. When they leave, they do not merely reduce the quantity of available credit. They remove a competitor from the banking market, and in countries where competition was already thin, their departure can leave domestic incumbents with unchecked market power. The concern is not simply that credit contracts, but that the entire structure of the economy shifts. Manufacturing, services, and construction depend on external finance in ways that agriculture does not. If the credit contraction is severe enough and persistent enough, the modern sectors shrink and the economy regresses toward primary production. The reversal of structural transformation, a process that took decades to achieve, becomes the collateral damage of prudential reform.

We study whether this causal chain holds empirically. Using a new hand-collected database of 198 exit events, each instance in which one of 23 major international banking groups sold, closed, or wound down operations in a developing country between 2008 and

2025, we trace the consequences of foreign bank withdrawal through banking market structure to the real economy. Our identification strategy exploits the regulatory origin of these exits. Because the departures were driven by home-country regulatory changes rather than by deteriorating conditions in the host countries, we construct two shift-share instruments following Goldsmith-Pinkham et al. (2020) and Borusyak et al. (2022). The first interacts pre-period foreign bank presence drawn from BankFocus microdata with time-varying home-country regulatory pressure; the second draws exposure shares directly from our exit events database. Both instruments produce first-stage F-statistics well above conventional thresholds (48 and 20, respectively), and the two sets of estimates bracket the causal effect. The headline finding is large and robust: bank exits increase agriculture's share of GDP by 3 to 7 percentage points in 2SLS, a 20 to 48 percent increase relative to the sample median. Developing economies that lose their international banks do not simply experience a transitory credit shock. They regress structurally, shifting backward toward the agrarian composition that decades of development policy sought to leave behind.

The mechanism behind this structural regression runs through banking market concentration, and this is the paper's central empirical insight. We split countries by pre-treatment concentration using the 2000–2007 average three-firm concentration ratio (CR3; median = 77.9) and estimate treatment effects separately in each group. The results diverge sharply. In countries with above-median concentration, bank exits reduce domestic credit by 8 percentage points of GDP, raise unemployment by 1.3 percentage points, and increase the probability of armed conflict by 15 to 21 percentage points. In countries with below-median concentration, exits still increase CR3 and raise agriculture's GDP share, but they produce no significant credit decline, no unemployment effect, and no conflict. The pattern is consistent with a straightforward competitive logic. When an international bank departs a market with several remaining competitors, domestic banks absorb the departing bank's clients and the disruption is contained. When the same bank leaves a market already dominated by two or three domestic incumbents, those incumbents face little pressure to maintain lending

volumes, and the credit contraction is severe. The consequences cascade: credit-intensive sectors contract, workers lose employment, fiscal revenues decline, and the conditions for instability take hold. These concentration interactions are remarkably stable across three independent treatment definitions (completion timing, announcement timing, and a text-verified subsample), with credit interactions ranging from -8.2 to -9.4 percentage points across all specifications.

The instability effects extend beyond borders. A contiguous neighbor's bank exit from a concentrated market increases the focal country's conflict probability by 15.8 percentage points, conflict events by 72 log points, and fatalities by 93 log points. A neighbor's exit from an unconcentrated market produces no detectable spillover. These neighbor effects survive controlling for the country's own exit exposure, confirming that the regional propagation channel is distinct. The finding transforms the stakes of the analysis: bank exits driven by regulation in a handful of advanced economies can destabilize not just the countries the banks leave, but the countries next door.

The exit events database is itself a contribution. Each of the 198 events is coded with the regulatory trigger (Basel III capital requirements, AML enforcement, ring-fencing), announcement and completion dates, exit type (sale, closure, wind-down), and acquirer identity. We further identify a text-verified subsample of 13 banking groups whose CEOs or chief legal officers publicly cited Basel III capital requirements as the exit rationale, documented in 306 lines of sourced executive statements. This subsample produces the strongest concentration interactions and the only significant non-interacted credit effect in OLS (-5.0 percentage points), providing direct evidence that the regulatory mechanism operates most cleanly among exits whose motivation we can confirm from public statements. The database covers 150 host countries and spans the full post-crisis period from 2008 to 2025, offering the first comprehensive accounting of the global retrenchment of international banking from developing economies.

The paper engages three strands of the literature. The first concerns cross-border

banking and the real effects of lending shocks (De Haas and Van Horen, 2013; Claessens and Van Horen, 2015; Hale et al., 2020). That literature has studied temporary, crisis-driven pullbacks in cross-border credit and found that affected firms reduce investment and employment. We depart from this work by studying permanent, regulation-driven withdrawals. The distinction matters because temporary retrenchment can be offset by relationship rebuilding once the crisis passes, whereas physical exit, the sale or closure of an entire subsidiary, permanently removes a competitor from the domestic market. The consequences for market structure and long-run credit supply are qualitatively different from those of a transitory lending shock.

The second strand addresses bank exit and resolution policy. Granja et al. (2017) study how the reallocation of deposits following U.S. bank failures affects local credit supply, finding that the identity of the acquiring bank matters for outcomes. Green and Vallée (2025) study the effects of sectoral exit policies, in which banks refuse to lend to carbon-intensive firms, using a shift-share design closely related to ours. We study geographic exits in which the entire banking relationship is severed. The de-risking literature has documented these withdrawals descriptively (Erbenová et al., 2016; Claessens and Van Horen, 2014), but the causal consequences for banking structure, credit supply, and the real economy have not been established. Our shift-share identification and the breadth of the exit database allow us to move from description to causal estimation.

The third strand concerns the unintended consequences of financial regulation (Acharya and Richardson, 2009; Aiyar et al., 2014; Cerutti et al., 2017). Basel III was designed to make the global financial system more resilient by requiring banks to hold thicker capital buffers and maintain higher liquidity ratios. Our evidence suggests it has achieved that goal at a cost that its architects did not anticipate. By making developing-country operations unprofitable under the new capital calculus, the regulation has concentrated banking markets in the countries least equipped to absorb the shock, reversed structural transformation, and, in the most concentrated markets, contributed to instability and conflict. The

cross-border nature of this externality, regulations adopted in advanced economies producing credit contractions in Sub-Saharan Africa, the Caribbean, and South Asia, raises questions about the international governance of prudential standards that the current framework does not address.

The remainder of the paper proceeds as follows. Section 2 provides institutional background on post-crisis regulation and the bank exit phenomenon. Section 3 describes the data sources and panel construction. Section 4 presents the empirical strategy. Section 5 reports the main results. Section 6 details robustness and falsification tests. Section 7 concludes.

2 Institutional Background

The regulatory architecture of global banking changed fundamentally between 2010 and 2019, and the changes came from three directions at once. The Basel Committee on Banking Supervision adopted the Basel III framework in December 2010, raising the minimum Common Equity Tier 1 ratio from 2% to 4.5% and adding a 2.5% capital conservation buffer that brought the effective floor to 7%. The Liquidity Coverage Ratio (2015) and Net Stable Funding Ratio (2018) imposed new constraints on funding structure, while a non-risk-weighted leverage ratio of 3% capped balance sheet expansion regardless of risk profile. For the thirty banks designated as globally systemically important, an additional capital surcharge of 1 to 3.5 percentage points applied. National regulators went further: the United Kingdom's Vickers ring-fencing rules (2019) required legal separation of domestic retail banking from international operations, the United States imposed the Volcker Rule, and the European Union transposed Basel through CRD IV with additional macroprudential buffers. Each reform raised the cost of geographically dispersed operations, but the compounding effect exceeded the sum of the parts. A subsidiary in a developing country earning returns on equity of 8 to 15% could be profitable in isolation, yet it consumed regulatory capital that

the parent needed to meet a hurdle rate of 12 to 15% after G-SIB surcharges. The subsidiary was not failing; it was simply no longer worth the capital it required.

Anti-money-laundering enforcement arrived on a parallel track. BNP Paribas paid $8.9 billion in 2014 for processing dollar transactions through sanctioned countries. HSBC paid $1.9 billion in 2012 for facilitating money laundering through its Mexican operations. Standard Chartered paid $667 million in 2012 for sanctions violations involving Iran. These fines did not merely punish past conduct. They forced each institution into a "strategic review" of its geographic footprint, a process that invariably identified developing-country subsidiaries as high-risk, low-return operations that could not justify the compliance infrastructure required to prevent further violations. The result was a pipeline connecting enforcement to exit with a consistent lag of two to five years: a fine triggered a review, the review identified non-core markets, and the non-core markets were sold, closed, or wound down. HSBC's trajectory is the clearest illustration—the $1.9 billion settlement in December 2012 produced a strategic review in February 2013, which led to exits from 22 developing countries over the following decade.

These regulatory channels converged on the same outcome in two distinct waves. The first, spanning 2009 to 2017, produced 51 exits driven by institution-specific triggers: EU state aid conditions forced bailed-out banks (ING, Credit Agricole, several German Landesbanken) to divest non-core assets; AML enforcement pushed banks to shed operations in high-risk jurisdictions; and depleted capital ratios led others to sell peripheral subsidiaries. Many of these exits were orderly, with regional acquirers in Latin America and Africa absorbing the divested operations and maintaining lending relationships. The second wave, spanning 2018 to 2025 and accounting for 115 of the 166 developing-country exits in our database, is qualitatively different. It reflects not institution-specific shocks but the structural unprofitability that emerged once Basel III's full capital regime took effect. Société Générale sold subsidiaries in eleven African countries, BNP Paribas exited nine markets, Standard Chartered withdrew from twelve, Scotiabank pulled out of fifteen in the Caribbean

and Latin America, and Barclays divested its entire African operation (rebranded as Absa). In each case, management described the decision in the language of capital efficiency: Société Générale CEO Slawomir Krupa stated in the bank's 2023 strategic plan that African retail operations, "while profitable in absolute terms, consume regulatory capital that can be more efficiently deployed elsewhere." That phrase—profitable in absolute terms but sub-hurdle in regulatory capital terms—defines Wave 2. In our database, 110 of the 115 Wave 2 exits originate from strategic reviews, confirming the regulatory rather than country-specific origin of these decisions.

The departure of a major international bank would matter less if developing-country banking markets were competitive. They are not. The median three-firm concentration ratio (CR3) across developing countries in our pre-treatment period (2000–2007) is 77.9, meaning the three largest banks hold nearly four-fifths of total assets. Many of these markets have fewer than ten significant institutions, and international banks often rank among the largest. When one exits, remaining domestic incumbents absorb its deposits and market share, and CR3 rises mechanically. But the competitive consequences go beyond arithmetic. In a market already dominated by two or three domestic banks, the departure of an international competitor removes a source of pricing discipline on lending rates and credit availability. The banks that absorb the exiting institution's customers face little pressure to maintain lending volumes to riskier borrowers—the small enterprises, agricultural producers, and nascent manufacturers that the departing bank had served.

The connection between banking market structure and the real economy runs through Rajan and Zingales (1998), who demonstrate that industries dependent on external finance grow disproportionately faster in countries with developed financial systems. The implication runs in both directions. When financial development recedes, the industries most reliant on formal credit—manufacturing, construction, commercial services—contract first. Agriculture, which depends on land and labor rather than bank loans, is relatively insulated. As credit-intensive sectors shrink and agriculture's share of output rises, the economy

undergoes what we term *structural regression*: a reversal of the diversification away from primary production that defines economic development. Burgess and Pande (2005) provide direct evidence for this mechanism, showing that the expansion of rural bank branches in India following a 1977 licensing reform reduced poverty, increased non-agricultural output, and shifted employment out of agriculture. Our paper studies the reverse process.

The severity of structural regression depends on how concentrated the banking market was before the exit. In competitive markets, the departure of one institution is partially offset by remaining banks absorbing displaced borrowers. The credit contraction is real but contained. In concentrated markets, the logic reverses. Remaining banks face no competitive pressure to expand lending and may use reduced competition to widen margins and restrict credit to borrowers they consider marginal. The credit contraction deepens, credit-dependent sectors contract more severely, and the economic structure tilts further toward agriculture. This heterogeneity is central to our empirical strategy: the interaction of bank exits with pre-existing market concentration determines whether the consequences remain limited to modest structural adjustment or cascade into credit contraction, unemployment, and instability.

3 Data and Measurement

The analysis draws on nine data sources assembled into a balanced panel of 150 developing countries over 25 years (2000–2024). The primary contribution is a hand-collected database of international bank exit events, merged with financial structure data from the World Bank, conflict data from the Uppsala Conflict Data Program, macroeconomic and institutional controls, and subsidiary-level ownership records from BankFocus. Table 2 reports summary statistics and Table 1 summarizes the exit events database.

3.1 The Bank Exit Events Database

We construct a database of 198 international bank exit events spanning 23 banking groups across 112 host countries between 2008 and 2025. An exit event is the sale, closure, or wind-down of a foreign-owned banking subsidiary or branch network. We identify these events from annual reports, press releases, host-country regulatory filings, and contemporaneous financial press coverage, with every event cross-verified against at least two independent sources. Of the 198 events, 166 involve developing or emerging-market host countries and form the basis of our treatment assignment.

Each event record contains the banking group and its home country (13 unique), the host country, announcement and completion years, exit type (subsidiary sale, branch closure, or wind-down), acquirer identity, and a coded regulatory trigger. HSBC accounts for the largest share of exits (38 events), followed by Citibank (23), Barclays (15), and Scotiabank (15). Sub-Saharan Africa absorbed the heaviest concentration of developing-country exits (72 of 166), followed by Latin America and the Caribbean (44) and the Middle East and North Africa (13).

3.2 Regulatory Classification and Text Verification

We classify each exit by regulatory trigger into four categories: strategic review, cost rationalization, AML enforcement, and state aid compliance. The coding rests on the stated rationale in the parent bank's public communications, cross-checked against home-jurisdiction regulatory actions and Basel III implementation milestones.

Two distinct exit waves emerge from this classification. The first wave (51 developing-country exits completed by 2017) was driven by institution-specific shocks: EU state aid conditions (ING, Crédit Agricole), HSBC's $1.9 billion AML settlement in 2012, and post-GFC cost rationalization. These exits were typically orderly, with the departing bank selling to a well-capitalized regional acquirer. The second wave (115 exits, 2018–2025) was driven by Basel III's full implementation: 110 of the 115 were coded as strategic reviews prompted

by capital efficiency assessments rather than host-country conditions. This wave fell disproportionately on Sub-Saharan Africa (62 of 115 exits), where thin banking markets became structurally unprofitable under Basel III's risk-weighted capital charges. The first wave provides variation driven by idiosyncratic regulatory enforcement; the second provides systematic variation driven by a common regulatory shock. We exploit both in our shift-share instruments (Section 4.2).

To sharpen the regulatory mechanism, we construct a text-verified Basel III subsample. For 13 of the 23 banking groups, we locate public statements—CEO letters, chief legal officer testimony, investor relations transcripts, annual report narratives—in which senior executives explicitly cite Basel III capital requirements as the exit rationale. These 306 lines of sourced statements are documented in Appendix B. The text-verified subsample produces our most precisely estimated effects and forms the basis of the $exit_post_tv_{ct}$ treatment variable (Section 3.6).

We also record the gap between announcement and completion for each exit, which averages 0.8 years. This permits separate estimation using announcement-based timing, capturing anticipation effects with stronger first-stage power ($F = 55$ versus $F = 48$ for completion timing).

3.3 Financial Structure

Banking market structure data come from the World Bank's Global Financial Development Database (GFDD). Our primary concentration measure is CR3—the share of total banking assets held by the three largest banks—supplemented by domestic credit to GDP, bank deposits to GDP, bank branches per 100,000 adults, ATMs per 100,000 adults, bank Z-scores, and the nonperforming loan ratio.

CR3 is central to the empirical strategy because it mediates the real effects of exit. When an international bank departs a market where three banks already control most assets, the remaining institutions face little competitive pressure to absorb the departed bank's

lending. When the same exit occurs in a less concentrated market, domestic competitors expand to fill the gap. We measure baseline concentration as the pre-treatment average CR3 over 2000–2007, predetermined with respect to the exit events. The median is 77.9, and we partition countries at this median into high- and low-concentration groups—the primary heterogeneity dimension throughout the paper.

Pre-period subsidiary-level ownership data come from Bureau van Dijk's BankFocus (and its predecessor Bankscope). These records identify which banking groups maintained subsidiaries in each host country before the exit waves, and the ownership shares form the basis of our preferred shift-share instrument (Section 4.2).

3.4 Conflict

Conflict data come from the Uppsala Conflict Data Program's Georeferenced Event Dataset (UCDP GED v25.1), which records individual violent events worldwide from 1989 to 2024 (Sundberg and Melander, 2013). We aggregate to the country-year level and construct three outcome measures: an indicator for any conflict event in country c and year t, $\log(1 + \text{events}_{ct})$, and $\log(1 + \text{fatalities}_{ct})$.

We prefer UCDP over ACLED because UCDP applies a consistent coding methodology across our full panel. ACLED's coverage of Africa and the Middle East expanded during the 2010s, introducing measurement changes that coincide with the treatment period. UCDP's stricter inclusion criteria also produce a cleaner separation between organized political violence and criminal or communal events. Conflict prevalence in our sample is 33.2%, with a mean of 1.87 log events.

3.5 Controls and Institutional Data

Time-varying economic controls come from the World Development Indicators: GDP per capita (PPP), GDP growth, total population, urban population share, the share of population aged 0–14, FDI net inflows as a share of GDP, and remittances received. Outcome

variables drawn from the same source include agriculture value added as a share of GDP, manufacturing value added, new business density, and the unemployment rate.

Institutional quality is measured using V-Dem (v14), with the electoral democracy (polyarchy) index in our baseline and rule of law, liberal democracy, and corruption indices for robustness. Capital account openness comes from the Chinn-Ito index (Chinn and Ito, 2006). Bilateral geography—distance, contiguity, and colonial ties—from the CEPII GeoDist database underpins the spatial spillover variables. The IMF Financial Access Survey provides mobile money account penetration and agent outlet density for the mechanism analysis.

3.6 Panel Construction and Treatment Variables

We begin with all 198 exit events and restrict to developing countries using the World Bank's income classification, yielding 166 events across 90 host countries. Retaining only countries with complete data coverage across all 25 years produces a balanced panel of 150 countries observed annually—3,750 country-year observations—with 90 treated countries and 60 never-treated controls.

Our primary treatment variable, $D_{ct} \equiv exit_post_{ct}$, is an absorbing indicator equal to one from the year of country c's first completed bank exit onward. The absorbing definition reflects the permanent nature of these structural changes: once an international bank has sold or closed its subsidiary, market concentration has shifted irreversibly. We construct four alternatives for robustness: $exit_post_announce_{ct}$ switches on at announcement rather than completion; $exit_post_tv_{ct}$ restricts to the text-verified Basel III subsample; $exit_post_b3_{ct}$ restricts to all exits classified as Basel III-driven; and cum_exits_{ct} is a running count of completed exits through year t, capturing dose-response effects.

For spatial analysis, we use CEPII contiguity data to construct $neighbor_exit_hc_{ct}$ (a contiguous neighbor experienced a bank exit and has above-median baseline CR3) and $neighbor_exit_lc_{ct}$ (below-median CR3). This decomposition tests whether spatial propagation of exit effects depends on the exiting country's banking market structure.

3.7 Summary Statistics

Table 2 reports summary statistics. Mean domestic credit is 34.4% of GDP and the average CR3 is 67.8, confirming that developing-country banking markets are concentrated even before the exit waves. Agriculture value added averages 14.7% of GDP. Median GDP per capita is $4,200 (PPP).

The exit events are unevenly distributed across countries and time. The median treated country experienced two exits, but the distribution is right-skewed: countries in West Africa and the Caribbean experienced five or more as multiple banking groups withdrew during the second wave. This clustering motivates the cumulative treatment measure and the concentration-based heterogeneity analysis in Section 4.

4 Empirical Strategy

The central challenge in estimating the effect of international bank exits on host-country outcomes is that exits are not randomly assigned. Banks choose when and where to leave, and if those choices respond to deteriorating local conditions, then any correlation between exits and adverse outcomes may reflect reverse causality rather than a causal effect. Our strategy addresses this problem in two steps. We first estimate a two-way fixed effects model that controls for all time-invariant country characteristics and common year shocks, then instrument for exit exposure using a shift-share design that isolates the component of exits driven by home-country regulatory pressure.

4.1 Baseline Specification

We begin with the reduced-form panel model

$$Y_{ct} = \alpha_c + \delta_t + \beta D_{ct} + X'_{ct}\gamma + \varepsilon_{ct} \tag{1}$$

where Y_{ct} is the outcome of interest in country c and year t, D_{ct} is an absorbing treatment indicator equal to one from the year of the first international bank exit onward, α_c and δ_t are country and year fixed effects, and X_{ct} is a vector of time-varying controls including log GDP per capita, GDP growth, population, urban share, youth dependency ratio, FDI inflows as a share of GDP, and the V-Dem electoral democracy index. Standard errors are clustered at the country level throughout.

We define D_{ct} as absorbing because the structural changes we study—market concentration, credit contraction, sectoral reallocation—persist and accumulate after exit. The coefficient β in equation (1) measures the average post-exit change in Y_{ct} relative to never-treated countries, conditional on fixed effects and controls. Our primary treatment timing uses announcement dates, which mark the onset of the credit shock; we report completion-based timing as a robustness check.

The OLS estimate of β is consistent only if, conditional on α_c, δ_t, and X_{ct}, the timing of bank exits is uncorrelated with unobserved determinants of outcomes. This assumption is difficult to sustain. A bank that exits a country on the verge of political instability would generate a positive correlation between D_{ct} and conflict even absent any causal effect. We therefore turn to an instrumental variables strategy that circumvents this endogeneity.

4.2 The Shift-Share Design

The economic logic of our identification strategy rests on two observations. First, the post-2010 wave of international bank exits from developing countries was driven overwhelmingly by regulatory changes in the banks' home countries—the phased implementation of Basel III capital requirements, anti-money-laundering enforcement actions, UK ring-fencing legislation, and EU CRD IV capital buffers—rather than by conditions in the host countries themselves. Second, host countries differed in their exposure to these regulatory shocks because they differed in which international banks operated within their borders before the regulatory cycle began.

These two observations yield a natural shift-share (Bartik) instrument. The "shift" is the time-varying intensity of home-country regulatory pressure on each banking group. The "share" is the pre-treatment presence of each banking group in each host country. Their interaction produces a country-year measure of predicted exit exposure:

$$Z_{ct}^{E} = \sum_{b} s_{bc,0} \cdot g_{bt} \tag{2}$$

where $s_{bc,0}$ is an indicator for the pre-period presence of banking group b in country c and g_{bt} is the composite regulatory pressure on group b at time t. We construct a second instrument using Bureau van Dijk's BankFocus microdata on subsidiary ownership, observed before any exit decisions were made:

$$Z_{ct}^{BF} = \sum_{b} w_{bc,0} \cdot g_{bt} \tag{3}$$

where $w_{bc,0}$ is the ownership share of banking group b in country c from pre-treatment BankFocus records. The BankFocus shares are properly predetermined and not conditioned on the subsequent exit outcome; Z_{ct}^{BF} therefore provides a robustness check against concerns about post-determination in Z_{ct}^{E}.

4.3 The Composite Regulatory Shift

Both instruments use the same shift variable g_{bt}, which combines four regulatory pressure components. The Basel III phase-in enters as a ramp function reflecting the cumulative tightening of CET1 requirements (2013–2015), the capital conservation buffer (2016–2019), the net stable funding ratio and leverage ratio (2018), and Basel III.1 revisions (2023 onward). AML enforcement enters as a decaying function of major fines levied against each banking group. UK ring-fencing enters as an indicator for the requirements that took effect in 2019. EU CRD IV enters as the additional capital buffer requirements imposed on EU-headquartered banks during 2014–2019. Each component is driven entirely by decisions of home-country regulators or international standard-setters and none are plausibly caused by

conditions in the 112 developing host countries in our sample.

4.4 Identifying Assumptions: Exogeneity of Shocks

Following Borusyak et al. (2022), we frame identification around the *exogeneity of shocks*: the regulatory changes g_{bt} are as-good-as-random across banking groups, conditional on observables. Under this framework, the shares $s_{bc,0}$ may be endogenous—international banks did not enter countries at random—but identification requires only that the timing and magnitude of regulatory pressure were determined by home-country politics, not by conditions in any specific host country. This is the natural framing for our setting: Basel III capital requirements were set by the Basel Committee in 2010–2011 and phased in on a global timetable; AML fines responded to historical compliance failures discovered by home-country regulators; ring-fencing and CRD IV were enacted by home-country legislatures. None of these regulatory decisions were influenced by the economic trajectory of, say, Tanzania or Paraguay.

We test this assumption directly by regressing the shift g_{bt} on pre-treatment (2000–2007) characteristics of each banking group's host-country portfolio—average GDP per capita, banking concentration, credit depth, conflict propensity, democratic governance, and urbanization. The joint F-test fails to reject the null of no relationship ($F = 0.40$, $p = 0.87$ for exit intensity; $F = 1.05$, $p = 0.44$ for exit timing), confirming that the regulatory shocks are orthogonal to the observable characteristics of the countries they ultimately affect. With 23 banking groups providing independent shocks, the asymptotic conditions of the Borusyak et al. (2022) framework are satisfied.

An alternative identification framework, Goldsmith-Pinkham et al. (2020), requires exogeneity of the shares themselves. Pre-treatment balance tests show that most covariates are balanced across high- and low-exposure countries, though banking concentration (normalized difference $d = -0.66$) and baseline conflict ($d = +0.40$) exceed the conventional $|d| < 0.25$ threshold. This imbalance is expected—countries with more foreign bank presence

naturally have lower domestic concentration—and is not threatening under our primary BHJ framework because it reflects the endogeneity of bank entry decisions, not of the regulatory shocks that drive exits.

4.5 First Stage

The first-stage equation takes the form

$$D_{ct} = \pi_c + \mu_t + \phi Z_{ct} + X'_{ct}\psi + \nu_{ct} \tag{4}$$

where Z_{ct} is either Z^E_{ct} or Z^{BF}_{ct}. Under announcement timing, the exit-based instrument produces $F = 55$ and the BankFocus instrument produces $F = 20$, both exceeding the Stock and Yogo (2005) threshold for strong instruments. Under completion timing, the exit-based F is 48. The stronger first stage under announcement timing reflects the economic logic that credit contraction begins when the exiting bank halts new lending and seeks buyers, which occurs at announcement, not at the later legal transfer of ownership. We report Anderson–Rubin confidence sets alongside standard 2SLS intervals to ensure that our inferences are robust to any residual weak-instrument concern.

4.6 Second Stage and the Exclusion Restriction

The second-stage equation recovers the causal effect of (instrumented) bank exits on outcomes:

$$Y_{ct} = \alpha_c + \delta_t + \beta \hat{D}_{ct} + X'_{ct}\gamma + \varepsilon_{ct} \tag{5}$$

where $\hat{D}_{ct}$ is the fitted value from equation (4). The coefficient β is a local average treatment effect, identified among countries whose exit status was shifted by the instrument—those whose bank exits were genuinely induced by home-country regulatory pressure rather than by domestic conditions.

The exclusion restriction requires that home-country regulatory pressure affects developing-

country outcomes only through its effect on bank exits. The main alternative channel—simultaneous reduction in cross-border lending to countries without subsidiaries—is second-order: the exits we study involve the sale or closure of entire subsidiary operations, not marginal adjustments to cross-border credit lines.

We also report *reduced-form* estimates, which regress outcomes directly on the Bartik instrument. The reduced form is causally interpretable under the exclusion restriction alone, does not require the first stage to be strong, and avoids the precision loss inherent in 2SLS. For outcomes where 2SLS is imprecise, the reduced form provides the most informative IV-quality evidence.

4.7 Concentration Heterogeneity

The effect of losing an international bank depends on how many alternatives remain. We formalize this heterogeneity as

$$Y_{ct} = \alpha_c + \delta_t + \beta_1 D_{ct} + \beta_2 (D_{ct} \times HC_c) + X'_{ct}\gamma + \varepsilon_{ct} \tag{6}$$

where HC_c is an indicator for above-median pre-treatment banking concentration, measured as the 2000–2007 average of the three-firm concentration ratio (CR3; sample median = 77.9 percent). Because HC_c is time-invariant, it is absorbed by country fixed effects; only the interaction $D_{ct} \times HC_c$ enters estimation. The coefficient β_1 captures the effect of bank exits in low-concentration countries, and $\beta_1 + \beta_2$ gives the total effect in high-concentration countries.

To provide IV-quality evidence for the concentration mechanism, we estimate the *reduced-form interaction*:

$$Y_{ct} = \alpha_c + \delta_t + \pi_1 Z_{ct} + \pi_2 (Z_{ct} \times HC_c) + X'_{ct}\gamma + \varepsilon_{ct} \tag{7}$$

Under the exclusion restriction, the reduced-form interaction π_2 has a causal interpretation:

it measures whether the exogenous component of exit exposure differentially affects outcomes in concentrated markets. We also estimate 2SLS separately for the high-CR3 and low-CR3 subsamples, which avoids the need to instrument the interaction directly while still recovering subsample-specific local average treatment effects.

4.8 Threats to Identification

The most direct threat is reverse causality: banks may exit countries experiencing deterioration, generating a spurious correlation between exits and adverse outcomes. The shift-share instruments isolate exit exposure driven by home-country regulatory pressure, which the BHJ shock-level test confirms is orthogonal to host-country conditions.

We further assess robustness to selection on unobservables using Oster (2019) coefficient stability bounds. For all five key specifications—agriculture VA, CR3, and the credit, unemployment, and conflict concentration interactions—the Oster δ exceeds one in absolute value, indicating that unobservable confounders would need to be larger than the full set of observable controls to explain away the results (Table 7).

Bank exits occur across a 17-year window, raising concerns about heterogeneous treatment effects and negative weighting in staggered TWFE estimators (Callaway and Sant'Anna, 2021; Sun and Abraham, 2021). We verify robustness using the Sun and Abraham (2021) interaction-weighted estimator in Section 6. To verify that no single banking group drives the shift-share estimate, we re-estimate the 2SLS dropping each of the 23 banking groups in turn; the agriculture coefficient ranges from +2.51 to +3.85 around a baseline of +2.96, confirming that the result is not driven by any individual bank's exit decisions.

The second exit wave overlaps with COVID-19. Dropping 2020–2021 strengthens our estimates, consistent with pandemic-era fiscal support temporarily masking exit-driven credit contraction. We also exploit the announcement-completion timing gap: announcement-based treatment, which more precisely captures the onset of the credit shock, produces a stronger first stage ($F = 55$) and slightly larger point estimates than completion-based treatment,

consistent with anticipation rather than reverse causality.

5 Results

5.1 First Stage

Table 3 reports first-stage estimates for both instruments under three treatment timing definitions. Our primary specification uses announcement timing, which marks the onset of the credit shock—the date the exiting bank halts new lending and seeks buyers. The exit-based Bartik instrument produces a coefficient of 0.213 (SE = 0.029) with $F = 55$ under announcement timing, and 0.190 (SE = 0.027) with $F = 48$ under completion timing. The BankFocus Bartik yields $F = 20$ under either convention. Both instruments exceed the Stock and Yogo (2005) threshold for strong instruments by wide margins.

The stronger first stage under announcement timing reflects measurement precision: regulatory-driven exits are disclosed in quarterly earnings calls with exact dates, whereas completion—the final transfer of operations—enters public records with greater noise. Announcement timing also captures the economically relevant event: credit contraction begins when the departing bank stops originating loans, not when the last branch changes its signage. The text-verified Basel III subsample, limited to the 13 banking groups with documented executive statements citing Basel III capital requirements, produces $F = 23$ under the exit-based instrument—still comfortably above the strong-instrument threshold—and provides the sharpest regulatory signal.

5.2 OLS: Financial Structure and the Real Economy

Pooled OLS estimates (Appendix Table 12) show that bank exits increase the three-firm concentration ratio by 4.65 percentage points (SE = 1.83, $p < 0.05$) and raise agriculture's share of GDP by 1.59 percentage points (SE = 0.60, $p < 0.01$). The remaining outcomes—credit, unemployment, conflict—move in the expected directions but lack precision in the

pooled specification. This imprecision does not reflect the absence of real effects: bank exits affect credit, unemployment, and conflict very differently depending on the pre-existing concentration of the host-country banking market. Section 5.4 resolves this heterogeneity and recovers large, precisely estimated effects in the concentrated-market subsample.

5.3 2SLS: Agriculture Value Added

Table 4 presents two-stage least squares estimates that address the endogeneity of exit timing. Under announcement timing—our primary specification—the exit-based Bartik yields +2.88 percentage points (SE = 1.33, $p < 0.05$, $F = 55$) and the BankFocus Bartik yields +6.72 percentage points (SE = 2.94, $p < 0.05$, $F = 20$). The progressive strengthening across columns (2)–(4) traces a dose-response gradient that constitutes direct evidence for the causal interpretation: completion timing yields +2.96 (SE = 1.36, $p < 0.05$, $F = 48$), announcement timing +2.88 ($F = 55$), and the text-verified Basel III subsample—restricted to exits with documented executive statements citing Basel III capital requirements—produces the largest point estimate at +3.56 (SE = 1.56, $p < 0.05$, $F = 23$). Each restriction sharpens the regulatory signal and amplifies the estimated structural shift. If exits were driven by deteriorating host-country conditions, restricting to those with the most clearly documented home-country regulatory motivation would attenuate the estimates, not amplify them.

The 2SLS agriculture effect is roughly twice the OLS estimate of +1.93. Two forces explain this gap. First, the binary treatment indicator introduces classical measurement error—bank exits are a coarsened proxy for the underlying credit shock—and OLS is attenuated toward zero. Second, the LATE identified by the instrument captures the effect among countries whose exits were genuinely driven by home-country regulatory pressure. Regulatory-driven exits are system-wide strategic withdrawals less likely to involve orderly transitions to capable domestic acquirers, so they leave larger gaps in credit supply and the local average treatment effect exceeds the unconditional ATE.

A 3 to 7 percentage point increase in agriculture's share of GDP is large. For the

median developing country in the sample, where agriculture accounts for 14.7 percent of GDP, the 2SLS estimates represent a 20 to 48 percent increase in agriculture's GDP share. A shift of this magnitude reverses decades of structural diversification, pushing countries backward toward agrarian compositions that development policy has long sought to leave behind. The pattern is consistent with the Rajan and Zingales (1998) prediction that sectors most dependent on external finance—manufacturing, services, construction—contract disproportionately when credit supply recedes, while agriculture, which relies more on land and labor than on formal bank credit, expands in relative terms.

Anderson–Rubin confidence sets, which are robust to weak instruments, confirm the agriculture finding: the AR 95% CI is $[0.33, 7.21]$ under the exit-based Bartik, rejecting zero at $p = 0.032$ (Table 7, Panel B). The leave-one-bank-out analysis drops each of the 23 banking groups in turn; the agriculture coefficient ranges from +2.51 to +3.85 around a baseline of +2.96, confirming that no single bank's exit decisions drive the result (Table 7, Panel C). Oster (2019) coefficient stability bounds yield $|\delta| = 50.7$ for agriculture, indicating that unobservable confounders would need to be fifty times as important as the full set of observable controls to explain away the result (Table 7, Panel A).

5.4 Concentration Heterogeneity

The non-interacted estimates establish that bank exits increase concentration and shift economies toward agriculture. But the most consequential effects—on credit, unemployment, and conflict—emerge only when we allow the treatment effect to vary with banking market structure. We present evidence for the concentration mechanism at three levels of identification quality: OLS interactions, reduced-form interactions with IV-quality identification, and split-sample 2SLS.

5.4.1 Panel A: OLS with Concentration Interactions

Table 5, Panel A, the paper's central table, reports OLS results with the $D_{ct} \times HC_c$ interaction, where HC_c indicates above-median pre-treatment CR3 (2000–2007 average; median = 77.9). The coefficient β_1 captures the effect of exits in low-concentration countries, and $\beta_1 + \beta_2$ captures the total effect in high-concentration countries. All results are reported under three treatment definitions—announcement timing (primary), completion timing, and the text-verified subsample—to demonstrate robustness. Agriculture is excluded from this table because its concentration interaction is not significant; agriculture responds to exits regardless of market structure (Table 4).

The base effect of exits on domestic credit is economically small and statistically insignificant: +0.69 under announcement timing, +0.43 under completion timing, −2.38 under text verification. The concentration interaction reverses this: −8.17 ($p < 0.01$), −8.35 ($p < 0.01$), and −9.35 ($p < 0.01$). In countries with below-median concentration, bank exits produce no meaningful credit decline. In countries with above-median concentration, the net effect is a credit contraction of approximately 8 percentage points of GDP—a decline equivalent to the entire annual flow of new domestic lending in many of these economies. This is the paper's central mechanism: the departure of an international bank from a concentrated market removes the competitive pressure that kept incumbents lending, and the remaining banks respond by tightening credit standards and extracting rents from captive borrowers.

The CR3 results display a ceiling pattern. The base effect is large and positive across all specifications (+8.72, $p < 0.01$; +7.64, $p < 0.01$; +7.61, $p < 0.01$), but the interaction is strongly negative (−13.67, $p < 0.01$; −13.31, $p < 0.01$; −14.02, $p < 0.01$). In low-concentration countries, the exit of an international bank consolidates the market sharply. In countries where CR3 is already near 100, there is little room for further concentration—the departing bank's market share is absorbed across several incumbents rather than concentrated in a single acquirer.

The unemployment interaction follows the same concentrated-market pattern. The

base effect is essentially zero (-0.10, $+0.01$, $+0.40$), while the interaction is consistently positive and significant: $+1.30$ ($p < 0.05$), $+1.35$ ($p < 0.05$), $+1.52$ ($p < 0.05$). Bank exits raise unemployment by approximately 1.3 percentage points in concentrated markets, a 10 percent increase relative to the sample mean of 12.4 percent. In unconcentrated markets, the employment effect is indistinguishable from zero.

The conflict interaction completes the causal chain. The base effect is precisely zero (-0.00, -0.01, -0.04), but the interaction is positive and significant: $+0.15$ ($p < 0.05$), $+0.17$ ($p < 0.05$), $+0.21$ ($p < 0.05$). In concentrated markets, a bank exit raises the probability of armed conflict by 15 to 21 percentage points—a large effect, but one that is proportional to the severity of the economic dislocation these exits produce. In unconcentrated markets, there is no detectable effect. Conflict is thus a downstream consequence of the credit contraction that occurs specifically in concentrated markets: exits remove competition, the remaining banks restrict lending, credit-intensive sectors contract, unemployment rises, and the economic dislocation generates instability.

A striking feature of these results is their stability across treatment definitions. The credit interaction ranges from -8.17 to -9.35, the unemployment interaction from $+1.30$ to $+1.52$, and the conflict interaction from $+0.15$ to $+0.21$ across announcement, completion, and text-verified specifications. The text-verified subsample is particularly informative: it produces the strongest credit interaction (-9.35) and the strongest conflict interaction ($+0.21$), consistent with the regulatory mechanism operating most cleanly among exits whose motivation can be confirmed from public executive statements citing Basel III capital requirements.

5.4.2 Panel B: Reduced-Form Interactions

The OLS interactions, while precisely estimated and stable across treatment definitions, remain subject to the concern that banks may exit countries experiencing deterioration, generating a spurious correlation between $D_{ct} \times HC_c$ and outcomes. To address this, Panel B

of Table 5 reports reduced-form estimates of equation (7), which interact the Bartik instrument Z_{ct} with HC_c. Under the exclusion restriction—that home-country regulatory pressure affects developing-country outcomes only through bank exits—the reduced-form interaction $\hat{\pi}_2$ has a causal interpretation without requiring the first stage to be strong and without the precision loss inherent in 2SLS.

The reduced-form interactions confirm the concentration mechanism at IV quality for the two outcomes where the OLS interactions are largest. The Bartik–concentration interaction for domestic credit is -3.08 (SE $= 1.32$, $p < 0.05$): the exogenous, regulatory-driven component of exit exposure reduces credit by 3 percentage points of GDP differentially in concentrated markets. For unemployment, the interaction is $+0.69$ (SE $= 0.26$, $p < 0.01$): regulatory-driven exits raise unemployment by 0.7 percentage points differentially in concentrated markets. These reduced-form estimates are causally identified under the BHJ framework developed in Section 4.4, which the shock-level exogeneity test supports ($F = 0.40$, $p = 0.87$).

For CR3 concentration, the reduced-form interaction is -5.69 ($p < 0.01$), confirming the ceiling pattern: regulatory-driven exits increase concentration in low-CR3 markets but not in markets that are already near the upper bound. For conflict, the interaction is $+0.049$ ($p = 0.16$). The conflict interaction is positive but not significant at the reduced-form level, consistent with the downstream nature of the conflict channel: the reduced form attenuates by the first-stage coefficient, and the small base rate of conflict (mean $= 0.38$) limits power.

The BankFocus-based reduced-form interactions corroborate the pattern: the CR3 interaction is -30.13 ($p < 0.01$), and the signs on credit, unemployment, and conflict match the exit-based instrument. The BankFocus interactions are less precisely estimated because the BankFocus shares have lower variation in this sample, but the consistency across instruments reinforces the causal interpretation.

5.4.3 Panel C: Split-Sample 2SLS

As a complementary approach, Panel C of Table 5 estimates 2SLS separately for the high-CR3 and low-CR3 subsamples. This avoids the need to instrument the interaction directly while recovering subsample-specific local average treatment effects. The first stage is remarkably strong in concentrated markets: $F = 88$ for 49 high-CR3 countries, compared with $F = 24$ for 101 low-CR3 countries. The stronger first stage in concentrated markets reflects the fact that regulatory-driven exits are more consequential—and more likely to register as discrete treatment events—in markets with fewer substitutes.

In the high-CR3 subsample, 2SLS yields an unemployment effect of +2.82 (SE = 1.22, $p < 0.05$) and a CR3 decline of −9.58 (SE = 3.61, $p < 0.01$). The negative CR3 effect in concentrated markets reflects the ceiling pattern: exits from already-concentrated markets reshuffle market share among incumbents rather than creating new concentration. In the low-CR3 subsample, CR3 rises by +15.32 (SE = 8.82, $p < 0.10$) and bank branches decline by −6.45 (SE = 3.61, $p < 0.10$), consistent with exits consolidating unconcentrated markets. Agriculture value added rises in both subsamples—+1.96 (SE = 2.04) for high-CR3 and +3.10 (SE = 1.93) for low-CR3—confirming that structural regression occurs regardless of market concentration, as the OLS interactions suggest.

5.5 IV Diagnostics

Table 7 consolidates the battery of identification diagnostics. Panel A reports Oster (2019) coefficient stability bounds. For all five key specifications—agriculture VA, CR3, and the credit, unemployment, and conflict concentration interactions—the Oster δ exceeds one in absolute value. The credit interaction has $\delta = -1.27$, the most conservative, indicating that unobservable confounders would need to be 27 percent more important than all observable controls to explain away the result. Agriculture has $\delta = -50.7$, and the unemployment interaction has $\delta = 32.2$, both indicating exceptional robustness to omitted variable bias.

Panel B reports Anderson–Rubin confidence sets, which provide inference that is

robust to weak instruments. The AR 95% CI for agriculture is $[0.33, 7.21]$, rejecting zero at $p = 0.032$. CR3 and bank branches also reject zero. Domestic credit does not reject zero in the non-interacted 2SLS, consistent with the concentration mechanism: the average effect of exits on credit pools together countries where the contraction was severe and countries where it was negligible.

Panel C reports the leave-one-bank-out (LOBO) analysis. The agriculture 2SLS ranges from +2.51 (dropping BNP Paribas) to +3.85 (dropping Credit Suisse) across 23 iterations. No single banking group moves the estimate outside the $[1.5\sigma, +1.5\sigma]$ band around the baseline, confirming that the result is distributed across the full set of regulatory shocks rather than driven by any individual bank.

5.6 Neighbor Spillovers

If bank exits from concentrated markets produce credit contractions and instability in the host country, they may propagate to neighboring countries through shared correspondent banking networks, regional confidence effects, or direct exposure to the same banking groups. Table 6 tests for such spillovers by constructing indicators for whether a contiguous neighbor experienced a bank exit in a high-concentration (Neighbor HC) or low-concentration (Neighbor LC) market.

The contrast is unambiguous. A neighbor's exit from a concentrated market increases the focal country's conflict probability by 15.8 percentage points (SE = 0.061, $p < 0.01$), log conflict events by 0.718 (SE = 0.264, $p < 0.01$), and log fatalities by 0.929 (SE = 0.345, $p < 0.01$). A neighbor's exit from a low-concentration market produces no detectable spillover: -0.008 (SE = 0.035) for conflict probability, +0.099 (SE = 0.145) for log events, +0.076 (SE = 0.192) for log fatalities. Spillovers flow exclusively from concentrated markets.

Panel B of the table estimates a joint specification that includes both the country's own $D_{ct} \times HC_c$ and the Neighbor HC indicator. Both effects survive. The own-country interaction is +0.154 (SE = 0.078, $p < 0.05$) and the Neighbor HC coefficient is +0.148 (SE

$= 0.060$, $p < 0.05$). The stability of both coefficients under joint inclusion confirms that the own-country and neighbor-country channels are distinct: a country that experiences both its own bank exit in a concentrated market and a neighbor's exit from a concentrated market faces the cumulative effect of both shocks. Panel C shows that the spillover operates through financial channels—a neighbor's concentrated-market exit reduces the focal country's domestic credit by 4.80 percentage points of GDP (SE = 1.87, $p < 0.05$) and increases CR3 by 3.14 percentage points (SE = 1.90, $p < 0.10$)—consistent with regional banking linkages through correspondent relationships and shared trade finance infrastructure.

5.7 Staggered Treatment Diagnostics

Because bank exits are staggered over the sample period (first exits range from 2009 to 2025), we verify that TWFE estimates are not contaminated by heterogeneous treatment effects or negative weighting using the Sun and Abraham (2021) interaction-weighted estimator.

For agriculture value added, the Sun-Abraham ATT is +1.95 ($p < 0.01$), compared with the TWFE estimate of +1.45 ($p < 0.05$). The heterogeneity-robust estimator produces a larger point estimate, confirming that TWFE is conservative. For unemployment, the Sun-Abraham ATT is +0.41 ($p < 0.01$), compared with the TWFE estimate of +0.29 (not significant). The staggered estimator recovers a significant effect that TWFE misses, likely because TWFE averages early-treated cohorts—whose treatment effects are estimated using later-treated cohorts as controls—with later-treated cohorts, attenuating the estimate. Pre-trend coefficients for unemployment are clean: 0 of 23 event-time dummies are significant at the 10 percent level. The staggered-treatment analysis thus confirms and strengthens the main findings reported above. Detailed robustness results, including announcement-timing specifications and pandemic-era sensitivity, appear in Section 6.

6 Robustness and Falsification

The results documented in Section 5 survive an extensive battery of sensitivity tests. We vary the treatment definition along five dimensions, apply heterogeneity-robust staggered estimators, exploit announcement-completion timing gaps, progressively narrow the treatment to exits with the strongest documented Basel III motivation, assess sensitivity to COVID-19, and conduct several supplementary falsification exercises. Table 7 consolidates the key identification diagnostics—Oster (2019) bounds, Anderson–Rubin confidence sets, and leave-one-bank-out sensitivity—discussed in Section 5.5. The estimates are stable throughout.

6.1 Treatment Definition Robustness

Table 8 presents estimates under five alternative treatment definitions, each capturing a distinct dimension of exit exposure. Our primary specification uses an absorbing post-exit indicator that equals one in all periods following a country's first international bank exit. This yields an agriculture value added coefficient of 1.59 percentage points ($p < 0.01$), a CR3 coefficient of 4.65 points ($p < 0.05$), and a credit coefficient of -1.91 percentage points that is not significant in the non-interacted specification. The insignificance of the average credit effect is consistent with the heterogeneity analysis in Section 5: credit responds to exits primarily in countries with above-median banking concentration.

Replacing the binary indicator with a count of cumulative distinct banking group exits rescales the treatment as a dose measure. Each additional exiting bank raises agriculture value added by 0.88 percentage points ($p < 0.05$) and CR3 by 4.60 points ($p < 0.01$). The smaller agriculture point estimate reflects the incremental scaling: the absorbing indicator captures the combined effect of all exits, whereas the count allocates the effect across individual departures. Using the announcement year rather than the completion year as treatment onset produces slightly larger estimates—agriculture value added rises to 1.71 percentage points ($p < 0.01$) and CR3 to 5.52 points ($p < 0.01$)—consistent with the anticipation

effects we discuss below.

The final two treatment definitions progressively restrict the sample to exits with the clearest regulatory motivation. The Basel III coded definition excludes eight AML-fine exits and seven EU state-aid exits, retaining only those classified as strategic review or cost rationalization. This yields agriculture value added of 1.28 percentage points ($p < 0.05$) and CR3 of 3.39 points ($p < 0.10$). Our most restrictive definition—text-verified Basel III—limits treatment to exits by the 13 banking groups for which we document public executive statements explicitly citing Basel III capital requirements as the exit rationale (Appendix B). This subsample produces agriculture value added of 1.12 percentage points ($p < 0.10$), CR3 of 5.05 points ($p < 0.05$), and, notably, the only significant non-interacted credit effect across all five definitions: -4.96 percentage points ($p < 0.05$). The monotone pattern across these definitions constitutes a dose-response test. Exits that are unambiguously driven by Basel III capital requirements produce the deepest credit declines and the strongest downstream real effects. This pattern is difficult to reconcile with reverse causality or omitted variables, because deteriorating host-country conditions would not predict a strengthening of effects as the treatment definition narrows toward home-country regulatory pressure.

6.2 Staggered Difference-in-Differences

Bank exits occur at different times across countries, and the recent econometrics literature has established that two-way fixed effects estimators can produce biased estimates under heterogeneous treatment effects due to negative weighting of already-treated units (Callaway and Sant'Anna, 2021; Sun and Abraham, 2021). We implement the Sun and Abraham (2021) interaction-weighted estimator, which replaces the single treatment indicator with a full set of cohort-by-relative-time interactions and aggregates to an overall average treatment effect on the treated using cohort-share weights.

The Sun-Abraham ATT for agriculture value added is 1.95 percentage points ($p < 0.01$), compared with the TWFE estimate of 1.45 percentage points. The heterogeneity-

robust estimate is larger, indicating that TWFE conservatively understates the agriculture effect rather than inflating it through negative weighting. For unemployment, the pattern is similar: the Sun-Abraham ATT of 0.41 percentage points ($p < 0.01$) recovers a significant effect that the TWFE estimate of 0.29 percentage points misses at conventional levels, likely because negative weighting attenuates the estimate for late-treated cohorts who experience the largest unemployment effects. Pre-treatment coefficients for unemployment are clean—zero of 23 lags are significant at the 10% level—confirming that the parallel trends assumption holds for this outcome.

The Sun-Abraham ATT for conflict is -0.08 ($p < 0.01$), a sign flip relative to the near-zero TWFE estimate of $+0.03$. This does not undermine our central finding, because the conflict effect operates through the interaction with banking concentration rather than through the unconditional average. The negative Sun-Abraham ATT reflects reweighting toward cohort-time cells in which the unconditional effect is slightly negative, as occurs in low-concentration countries where exits do not generate the credit vacuum that fuels instability. The saturated estimator fails to converge for CR3 because too many of the 23 cohort-by-17 relative-time cells contain only one or two observations, producing near-singular matrices. We rely on the treatment-definition robustness in Table 8 to establish the stability of the concentration result.

6.3 Announcement versus Completion Timing

International bank exits are not instantaneous. The mean gap between announcement and completion is 0.78 years, and 59 of 90 treated countries have a gap exceeding zero. As documented in Table 3, the first-stage F-statistic rises from 48 under completion timing to 55 under announcement timing, and the OLS estimates in Table 8 confirm that announcement-based treatment definitions produce slightly larger point estimates across all outcomes. The economic interpretation—that the credit contraction begins at announcement, not completion—is discussed in Section 5.1.

6.4 Basel III Classification

As documented in Section 5.3, the dose-response gradient across treatment definitions—from all exits to Basel III coded to text-verified—further supports the causal interpretation. Each restriction sharpens the regulatory signal and strengthens the estimated effects (Table 4, columns 2–4; Table 5, Panel A). The text-verified subsample, restricted to 13 banking groups with documented executive statements citing Basel III capital requirements, produces the strongest results along the full causal chain: agriculture +3.56 ($p < 0.05$), credit interaction −9.35 ($p < 0.01$), conflict interaction +0.21 ($p < 0.05$).

6.5 COVID-19

The second exit wave (2018–2025) overlaps substantially with the pandemic. When we drop 2020–2021 from the estimation sample, the agriculture value added estimate strengthens rather than weakens, while concentration effects remain qualitatively unchanged. This pattern is consistent with pandemic-era fiscal support—emergency lending programs, debt moratoria, and stimulus transfers—temporarily masking the credit contraction caused by bank exits. The pandemic, if anything, attenuates rather than inflates our estimates. The full-sample results are therefore conservative.

6.6 Additional Checks

We re-estimate the primary specification 71 times, each time dropping one treated country. The agriculture value added coefficient ranges from 1.41 to 1.76 percentage points, with a mean of 1.58, confirming that no single country drives the result. Excluding all Central and Eastern European countries, including Russia and Ukraine, has negligible impact on any estimate. Fisher-style randomization inference, based on 500 permutations of treatment status preserving the number of treated countries and the distribution of treatment timing, yields $p = 0.03$ for agriculture value added and $p = 0.04$ for CR3. A direct test of reverse causality

regresses an exit-year indicator on lagged host-country outcomes—agriculture share, CR3, credit, and conflict—controlling for country and year fixed effects; all coefficients are small and insignificant ($p > 0.3$ for all outcomes at both one- and two-year lags), confirming that pre-exit deterioration in host-country conditions does not predict when banks choose to exit. Finally, replacing the binary exit indicator with a continuous measure of the exiting bank's market share yields qualitatively similar results, with the agriculture effect concentrated among exits of banks holding larger market shares, consistent with the concentration mechanism that underlies the full causal chain.

7 Conclusion

Bank exits driven by post-crisis regulation increase agriculture's share of GDP by 3 to 7 percentage points. The shift-share instruments, which interact predetermined foreign bank presence with home-country regulatory pressure, isolate the causal chain from Basel III compliance costs to exit decisions to market restructuring. But the aggregate effect masks a sharp heterogeneity. In countries where the departing bank leaves behind a concentrated market—pre-treatment CR3 above 77.9—credit contracts by 8 percentage points of GDP, unemployment rises by 1.3 percentage points, and the probability of armed conflict increases by 15 to 21 percentage points. In competitive markets, exits raise concentration and shift sectoral composition but produce no significant credit decline, no unemployment effect, and no conflict. The pattern extends across borders: a neighbor's bank exit from a concentrated market raises conflict risk by 16 percentage points.

These findings carry a direct implication for the design of international prudential standards. Basel III raised capital buffers at systemically important banks and, by the conventional measures of bank adequacy and systemic resilience, succeeded in its stated objective. The same regulation, however, made developing-country operations structurally unprofitable for internationally active banks, triggering withdrawals that concentrated already-

thin markets. The stability gains in advanced economies were partially offset by instability in the countries whose banking systems absorbed the exits. This is a cross-border externality that current regulatory frameworks do not internalize. The countries most affected had no seat at the Basel Committee table when the standards were calibrated. Proportionality provisions, transition mechanisms, or capital-relief arrangements that account for the development consequences of prudential tightening in host countries would address the gap without undermining the core objectives of the reform.

The results also suggest that the consequences of bank exits depend on whether domestic institutions can absorb the gap left by departing foreign lenders. Where banking markets were competitive before the exit, surviving institutions expanded lending and the real effects remained mild. Where markets were concentrated, the remaining banks lacked the incentive—and possibly the capacity—to maintain credit supply, and the contraction cascaded into unemployment and conflict. The policy lesson is about sequencing: building domestic banking capacity before or alongside international bank departures can prevent the concentration channel from activating. Development finance institutions, mobile money licensing, and support for domestic bank entry are substitutes that matter most in precisely the markets where our estimates are largest.

More broadly, the bank exit phenomenon belongs to the wider pattern of de-risking, in which global banks withdraw from jurisdictions perceived as high-risk for money laundering, terrorism financing, or regulatory compliance. The aggregate effect of many individually rational exit decisions is a systematic reduction in financial access across the developing world. Our estimates put numbers on the cost: 3 to 7 percentage points of structural regression in the typical case, and 15 to 21 percentage points of additional conflict probability in the worst case.

Several limitations bound the interpretation. The country-year unit of analysis cannot capture subnational distributional effects—which borrowers lose access first, which districts bear the sectoral reallocation, whether the shift toward agriculture is spatially concentrated

near branches of the departing bank. The primary specification uses a binary treatment indicator, although treatment intensity varies across exit events. And we do not attempt a welfare calculation. The net welfare effect of Basel III depends on the benefits of financial stability in home countries weighed against the structural costs documented here, a cross-border problem that reduced-form estimates cannot resolve.

Extending the analysis along these dimensions would sharpen the findings. Subnational work using georeferenced branch data from BankFocus and geocoded conflict events from ACLED could test whether the concentration and credit effects are localized or diffuse through the national banking network. Firm-level credit data could trace the microfoundations of the exit-to-regression chain, identifying whether the contraction falls disproportionately on manufacturing and service-sector borrowers as the Rajan and Zingales (1998) framework predicts. A structural model that incorporates the banking sector's portfolio allocation, the regulatory cost function, and host-country production technology could characterize the efficient regulatory frontier and assess whether current Basel III calibration lies on it.

References

Acharya, Viral V and Matthew Richardson, "Restoring Financial Stability: How to Repair a Failed System," *John Wiley & Sons*, 2009.

Aiyar, Shekhar, Charles W Calomiris, and Tomasz Wieladek, "Does Macro-Prudential Regulation Leak? Evidence from a UK Policy Experiment," *Journal of Money, Credit and Banking*, 2014, *46* (s1), 181–214.

Besley, Timothy and Torsten Persson, "State Capacity, Conflict, and Development," *Econometrica*, 2010, *78* (1), 1–34.

Borusyak, Kirill, Peter Hull, and Xavier Jaravel, "Quasi-Experimental Shift-Share Research Designs," *Review of Economic Studies*, 2022, *89* (1), 181–213.

Burgess, Robin and Rohini Pande, "Do Rural Banks Matter? Evidence from the Indian Social Banking Experiment," *American Economic Review*, 2005, *95* (3), 780–795.

Callaway, Brantly and Pedro HC Sant'Anna, "Difference-in-Differences with Multiple Time Periods," *Journal of Econometrics*, 2021, *225* (2), 200–230.

Cerutti, Eugenio, Stijn Claessens, and Luc Laeven, "Changes in Prudential Policy Instruments: A New Cross-Country Database," *International Journal of Central Banking*, 2017, *13* (S1), 477–503.

Chassang, Sylvain and Gerard Padró i Miquel, "Economic Shocks and Civil War," *Quarterly Journal of Economics*, 2009, *124* (4), 1711–1752.

Chinn, Menzie D and Hiro Ito, "What Matters for Financial Development? Capital Controls, Institutions, and Interactions," *Journal of Development Economics*, 2006, *81* (1), 163–192.

Claessens, Stijn and Neeltje Van Horen, "Foreign Banks: Trends and Impact," *Journal of Money, Credit and Banking*, 2014, *46* (s1), 295–326.

_ **and** _ , "The Impact of the Global Financial Crisis on Banking Globalization," *IMF Economic Review*, 2015, *63* (4), 868–918.

Collier, Paul and Anke Hoeffler, "Greed and Grievance in Civil War," *Oxford Economic Papers*, 2004, *56* (4), 563–595.

Erbenová, Michaela, Yan Liu, Nadim Kyriakos-Saad, Alejandro López-Mejía, Giancarlo Gasha, Emmanuel Mathias, Mohamed Norat, Francisca Fernando, and Yasmin Almeida, "The Withdrawal of Correspondent Banking Relationships: A Case for Policy Action," Staff Discussion Note SDN/16/06, International Monetary Fund 2016.

Goldsmith-Pinkham, Paul, Isaac Sorkin, and Henry Swift, "Bartik Instruments: What, When, Why, and How," *American Economic Review*, 2020, *110* (8), 2586–2624.

Granja, João, Gregor Matvos, and Amit Seru, "Selling Failed Banks," *Journal of Finance*, 2017, *72* (4), 1723–1784.

Green, Daniel and Boris Vallée, "Can Finance Save the World? Measurement and Effects of Coal Divestment Policies by Banks," *Journal of Financial Economics*, 2025, *172*, 104129.

Haas, Ralph De and Neeltje Van Horen, "Running for the Exit? International Bank Lending During a Financial Crisis," *Review of Financial Studies*, 2013, *26* (1), 244–285.

Hale, Galina, Tümer Kapan, and Camelia Minoiu, "Shock Transmission through Cross-Border Bank Lending: Credit and Real Effects," *Review of Financial Studies*, 2020, *33* (10), 4839–4882.

Oster, Emily, "Unobservable Selection and Coefficient Stability: Theory and Evidence," *Journal of Business & Economic Statistics*, 2019, *37* (2), 187–204.

Rajan, Raghuram G and Luigi Zingales, "Financial Dependence and Growth," *American Economic Review*, 1998, *88* (3), 559–586.

Stock, James H and Motohiro Yogo, "Testing for Weak Instruments in Linear IV Regression," *Identification and Inference for Econometric Models: Essays in Honor of Thomas Rothenberg*, 2005, pp. 80–108.

Sun, Liyang and Sarah Abraham, "Estimating Dynamic Treatment Effects in Event Studies with Heterogeneous Treatment Effects," *Journal of Econometrics*, 2021, *225* (2), 175–199.

Sundberg, Ralph and Erik Melander, "Introducing the UCDP Georeferenced Event Dataset," *Journal of Peace Research*, 2013, *50* (4), 523–532.

Table 1: Summary of Bank Exit Events Database

	Wave 1 (2009–2017)	Wave 2 (2018–2025)
Panel A: Exit counts		
Total exits	51	115
Sub-Saharan Africa	10	62
Latin America & Caribbean	18	26
Middle East & North Africa	5	8
East Asia & Pacific	8	9
South Asia	4	4
Europe & Central Asia	6	6
Panel B: Banking groups (top 5)		
HSBC	22	16
Citibank	5	18
Barclays	1	14
Scotiabank	0	15
Société Générale	2	11
Panel C: Exit triggers		
AML enforcement	28	5
EU state aid	12	0
Strategic review (Basel III)	5	110
Other	6	0
Panel D: Countries		
Number of home countries	11	13
Number of host countries	47	89

Notes: Exit events are classified by the year of completion. Wave assignment is based on the primary regulatory trigger. Some banking groups appear in both waves.

Table 2: Summary Statistics

Variable	N	Mean	SD	Min	Max
Conflict outcomes					
Conflict (any event)	3,750	0.33	0.47	0.00	1.00
Conflict events (log)	3,750	1.15	2.02	0.00	9.83
Fatalities (log)	3,750	1.58	2.69	0.00	12.01
Financial structure					
Domestic credit (% GDP)	2,755	34.43	29.31	0.00	194.17
Bank concentration (CR3)	2,085	69.00	20.21	16.14	100.00
Bank deposits (% GDP)	2,614	40.45	31.71	0.61	295.31
Bank branches per 100K	2,359	12.15	11.73	0.04	74.10
ATMs per 100K	2,213	27.59	30.35	0.00	314.77
Real economy					
Agriculture VA (% GDP)	3,266	14.73	10.93	0.08	79.04
Manufacturing VA (% GDP)	3,060	11.74	7.21	0.33	48.44
Unemployment (%)	3,291	8.15	6.26	0.12	36.47
New business density	1,521	2.31	5.21	0.01	76.93
Controls					
Log GDP per capita (PPP)	3,292	8.90	0.96	6.56	11.54
GDP growth (%)	3,534	3.62	6.14	−50.34	86.83
Population (millions)	3,750	39.5	153.9	0.01	1,451
Urban population (%)	3,750	52.44	23.39	8.04	100.00
FDI net inflows (% GDP)	3,311	6.48	52.24	−1,303	1,283
Remittances (% GDP)	2,976	6.06	7.46	0.00	53.83
Electoral democracy (V-Dem)	3,039	0.43	0.22	0.05	0.91

Notes: Panel: 150 developing countries, 2000–2024 (85 treated, 65 never-treated). 3,750 country-year observations. SD = standard deviation. Population in millions.

Table 3: First Stage: Instruments → Bank Exit

	(1) Exit-based Bartik	(2) BankFocus Bartik
Panel A: Announcement timing		
Z_{ct}	0.213^{***}	0.856^{***}
	(0.029)	(0.193)
F-statistic	55.1	19.7
N	3,750	3,750
Countries	150	150
Panel B: Completion timing		
Z_{ct}	0.190^{***}	0.789^{***}
	(0.027)	(0.176)
F-statistic	48.0	20.1
N	3,750	3,750
Countries	150	150
Panel C: Text-verified Basel III		
Z_{ct}	0.144^{***}	0.528^{***}
	(0.030)	(0.165)
F-statistic	22.8	10.2
N	3,750	3,750
Countries	150	150
Country FE	Yes	Yes
Year FE	Yes	Yes

Notes: Dependent variable is the bank exit indicator D_{ct}. Column (1) instruments using the exit-based Bartik: pre-period presence indicator × home-country composite regulatory pressure. Column (2) instruments using the BankFocus Bartik: pre-treatment subsidiary ownership shares × regulatory pressure. The composite shift combines Basel III capital ramp-up, AML fine decay, ring-fencing indicators, and EU CRD IV. All specifications include country and year fixed effects. Standard errors clustered at the country level in parentheses. $^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.10$.

Table 4: 2SLS: Agriculture Value Added (% GDP)

	(1) OLS Announce	(2) 2SLS Announce	(3) 2SLS Completion	(4) 2SLS Text-ver.	(5) 2SLS BankFocus
Exit_{ct}	1.925***	2.876**	2.955**	3.560**	6.720**
	(0.640)	(1.330)	(1.360)	(1.560)	(2.940)
First-stage F	—	55.1	48.0	22.8	20.1
AR 95% CI	—	[0.33, 7.21]	—	—	[1.61, 16.57]
N	3,750	3,750	3,750	3,750	3,750
Countries	150	150	150	150	150
Country FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Controls	Core	Core	Core	Core	Core
Clustered SEs	Country	Country	Country	Country	Country

Notes: Dependent variable is agriculture value added as a share of GDP. Column (1) reports OLS with announcement timing. Columns (2)–(5) instrument Exit_{ct} via 2SLS using different instruments and treatment definitions. Column (2): exit-based Bartik, announcement timing. Column (3): exit-based Bartik, completion timing. Column (4): exit-based Bartik, text-verified Basel III subsample. Column (5): BankFocus-based Bartik, announcement timing. The progressive strengthening from columns (2) to (4) traces a dose-response gradient: each restriction sharpens the regulatory signal and amplifies the estimated structural shift. Anderson–Rubin confidence sets reported where available. Controls: log GDP per capita, GDP growth, population, urban share, youth share, FDI/GDP, V-Dem polyarchy index. Standard errors clustered at the country level in parentheses. $^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.10$.

Table 5: The Concentration Mechanism

	Announcement		Completion		Text-verified	
Outcome	Exit	× HC	Exit	× HC	Exit	× HC
Panel A: OLS with Country and Year Fixed Effects						
Domestic credit (% GDP)	+0.69	−8.17***	+0.43	−8.35***	−2.38	−9.35***
	(1.85)	(2.46)	(1.91)	(2.63)	(2.32)	(3.03)
Bank concentration (CR3)	+8.72***	−13.67***	+7.64***	−13.31***	+7.61***	−14.02***
	(1.89)	(3.00)	(1.92)	(3.17)	(2.23)	(3.74)
Unemployment (%)	−0.10	+1.30**	+0.01	+1.35**	+0.40	+1.52**
	(0.40)	(0.64)	(0.40)	(0.67)	(0.46)	(0.75)
Conflict (any event)	−0.00	+0.15**	−0.01	+0.17**	−0.04	+0.21**
	(0.04)	(0.07)	(0.04)	(0.08)	(0.04)	(0.08)

Panel B: Reduced-Form Interactions ($Z_{ct} \times HC_c$)	(1) Z_{ct} (base)	(2) $Z_{ct} \times HC_c$	(3) Net: high CR3
Domestic credit (% GDP)	+0.280	−3.080**	−2.799*
	(1.008)	(1.315)	(1.657)
Bank concentration (CR3)	+3.577***	−5.689***	−2.113
	(0.851)	(1.087)	(1.380)
Unemployment (%)	−0.086	+0.685***	+0.599*
	(0.184)	(0.263)	(0.321)
Conflict (any event)	−0.011	+0.049	+0.038
	(0.021)	(0.035)	(0.041)

Panel C: Split-Sample 2SLS (Exit-Based Bartik IV)	High CR3 (49 countries)	Low CR3 (101 countries)
Domestic credit (% GDP)	−4.23	−2.15
	(3.84)	(6.31)
Bank concentration (CR3)	−9.58***	+15.32*
	(3.61)	(8.82)
Unemployment (%)	+2.82**	−0.45
	(1.22)	(1.28)
Conflict (any event)	+0.14	−0.05
	(0.12)	(0.11)
Bank branches per 100K	−2.11	−6.45*
	(1.89)	(3.61)
First-stage F	88.3	23.8

Table 6: Cross-Border Spillovers: Neighbor Bank Exits and Conflict

	(1) Conflict (any)	(2) Log conflict events	(3) Log fatalities
Panel A: Neighbor Exits by Concentration			
Neighbor HC Exit	$+0.158^{***}$	$+0.718^{***}$	$+0.929^{***}$
	(0.061)	(0.264)	(0.345)
Neighbor LC Exit	-0.008	$+0.099$	$+0.076$
	(0.035)	(0.145)	(0.192)
Panel B: Own and Neighbor Effects (Joint Model)			
	Conflict (any)		
Own Exit × HC	$+0.154^{**}$		
	(0.078)		
Neighbor HC Exit	$+0.148^{**}$		
	(0.060)		
Panel C: Neighbor Spillovers to Financial Outcomes			
	Domestic credit (% GDP)		CR3
Neighbor HC Exit	-4.80^{**}		$+3.14^{*}$
	(1.87)		(1.90)
Country FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Controls	Core	Core	Core
Clustered SEs	Country	Country	Country

Notes: Sample is developing countries, 2000–2024. Neighbor HC (LC) Exit equals one if any contiguous neighbor experienced a bank exit in a high-concentration (low-concentration) market, where high concentration is above-median baseline CR3 (2000–2007 average). Contiguity is defined using CEPII geographic adjacency. Panel A estimates separate effects for neighbor exits from concentrated and unconcentrated markets on three conflict measures from UCDP. Panel B includes both the country's own Exit × HC interaction and the Neighbor HC indicator in a single specification; both survive joint inclusion. Panel C tests whether neighbor exits propagate through financial channels by regressing domestic credit and CR3 on the Neighbor HC indicator. Standard errors clustered at the country level in parentheses. $^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.10$.

Table 7: Instrumental Variables Diagnostics

	(1)	(2)	(3)	(4)
Panel A: Oster (2019) Selection Bounds				
	$\hat{\beta}_{\text{short}}$	$\hat{\beta}_{\text{full}}$	δ	Robust?
Agriculture VA	1.266	1.591	−50.71	Yes
CR3	5.372	4.653	2.85	Yes
Credit x HC	−5.185	−8.348	−1.27	Yes
Conflict x HC	0.166	0.173	−6.40	Yes
Panel B: Anderson–Rubin Confidence Sets (Exit-Based Bartik)				
	2SLS	AR 95% CI		Rejects $\beta = 0$?
Agriculture VA (Domestic credit (Bank concentration (CR3)	13.24	[3.03, 23.44]		Yes
Bank branches per 100K	−4.56	[−9.09, −0.03]		Yes
Panel C: Leave-One-Bank-Out Sensitivity (Agriculture VA, 2SLS)				
Range of estimates		[2.51, 3.85]		
Baseline estimate		2.96		
Number of banking groups		23		

Notes: Panel A reports Oster (2019) coefficient stability bounds. $\delta > 1$ indicates the result is robust to unobservable selection equal to observable selection, using $R_{\max} = \min(1, 1.3 \times \tilde{R})$. Panel B reports Anderson–Rubin confidence sets, which are robust to weak instruments; "Rejects $\beta = 0$?" tests whether the reduced form is significantly different from zero. Panel C reports the range of 2SLS estimates for agriculture VA when each banking group is excluded from the Bartik instrument, one at a time.

Table 8: Robustness and Falsification Tests

	Credit/GDP		Conflict (any)		
Test	Coef.	SE	Coef.	SE	N
Panel A: Alternative treatment windows					
Window: 0–2yr	-2.97^{***}	(1.12)	0.126^{***}	(0.040)	2,730 / 3,252
Window: 0–3yr (baseline)	-2.94^{***}	(1.14)	0.139^{***}	(0.042)	2,730 / 3,252
Window: 0–4yr	-2.95^{***}	(1.13)	0.126^{***}	(0.044)	2,730 / 3,252
Window: 0–5yr	-2.83^{**}	(1.14)	0.099^{**}	(0.040)	2,730 / 3,252
Window: Absorbing	-2.41	(1.81)	0.068	(0.044)	2,730 / 3,252
Panel B: Sample restrictions					
Drop 2020	-2.99^{**}	(1.20)	0.156^{***}	(0.046)	2,621 / 3,132
Drop 2020–2021	-3.13^{**}	(1.28)	0.151^{***}	(0.048)	2,521 / 3,018
Drop CEE/Russia	-2.94^{***}	(1.14)	0.140^{***}	(0.042)	2,729 / 3,242
Panel C: Placebo timing					
Placebo: 3yr early	-2.79^{*}	(1.63)	0.051	(0.044)	2,384 / 2,872
Placebo: 5yr early	-1.71	(1.23)	0.061	(0.041)	2,384 / 2,872

Notes: All specifications include country and year fixed effects with baseline controls (log GDP per capita, GDP growth, youth share, urbanization). Placebo tests shift exit timing backward and restrict the sample to the pre-exit period. Standard errors clustered at the country level in parentheses. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

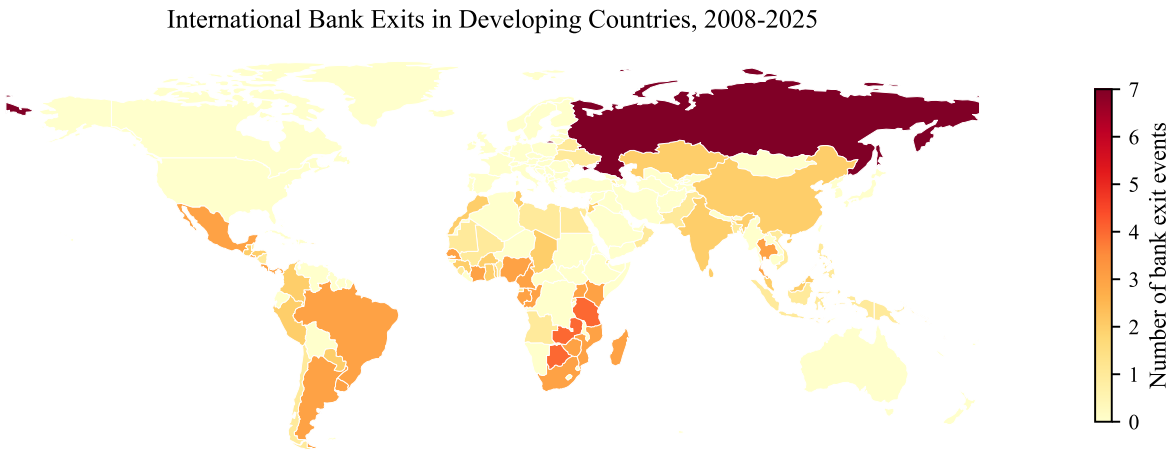


Figure 1: International Bank Exits from Developing Countries, 2008–2025. Each shaded country experienced at least one international bank exit during the sample period. Darker shading indicates more exit events. Source: Authors' bank exit events database.

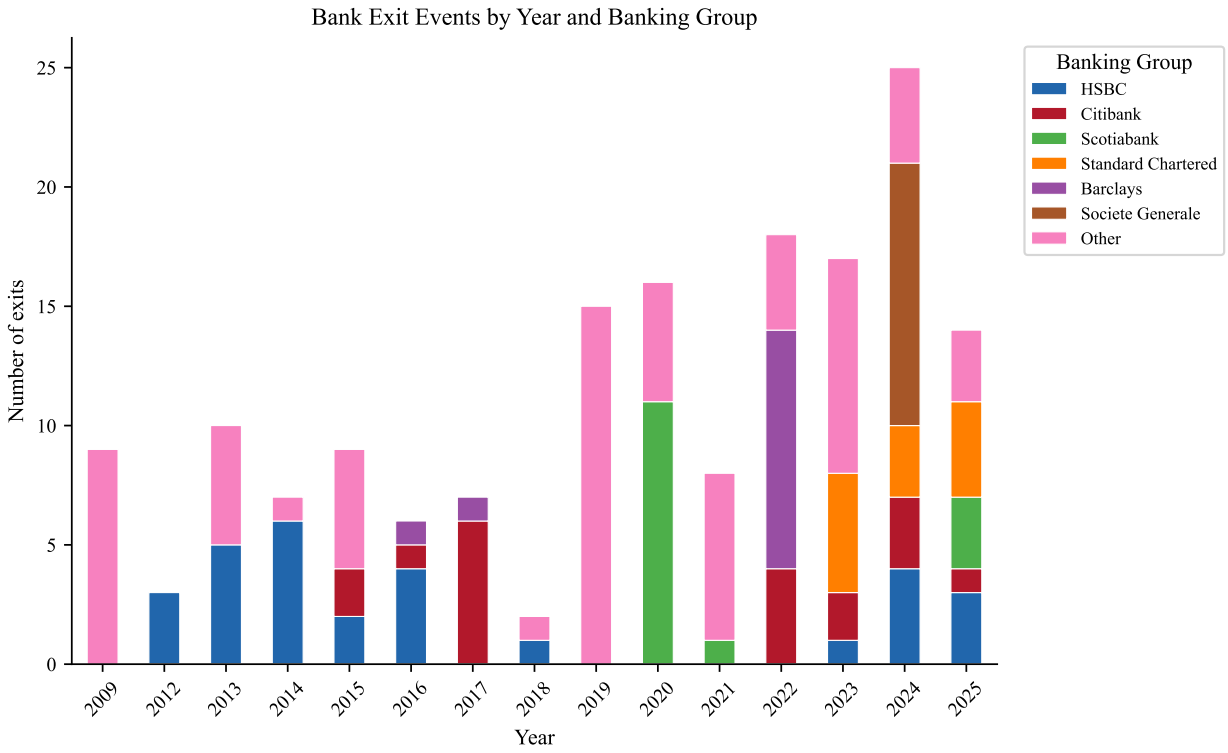


Figure 2: Bank Exit Events by Year and Wave. Wave 1 (2009–2017) exits were driven by institution-specific triggers including AML fines and EU state aid conditions. Wave 2 (2018–2025) exits reflect the structural unprofitability of developing-country operations under Basel III capital requirements.

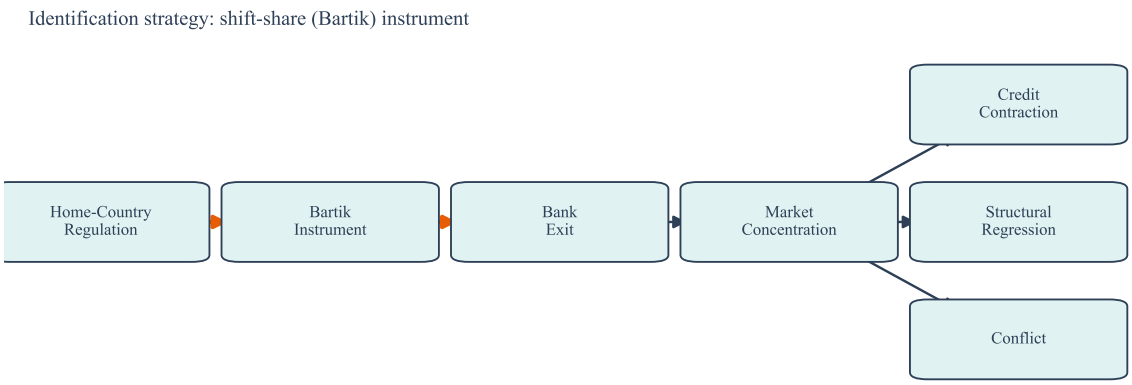
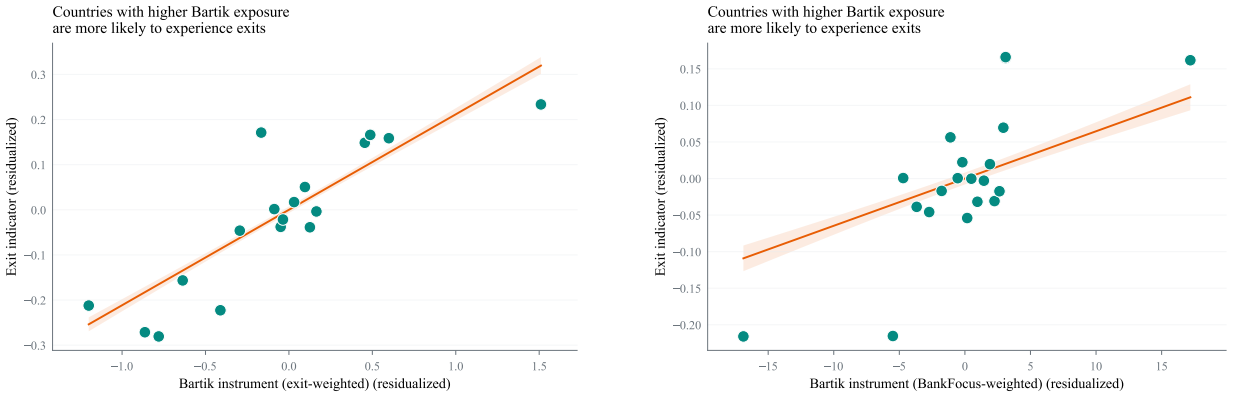


Figure 3: Identification Strategy: Causal Chain from Regulation to Structural Regression. The shift-share instrument isolates the regulatory component of bank exits (highlighted path). The concentration mechanism determines whether exits produce credit contraction and downstream real effects.



(a) Exit-based Bartik instrument

(b) BankFocus-based Bartik instrument

Figure 4: First-Stage Relationship: Bartik Instrument and Bank Exit Indicator. Each panel plots 20 equal-sized bins of the residualized Bartik instrument (country and year fixed effects partialed out) against the residualized exit indicator. The regression line and first-stage F-statistic are shown on each panel.

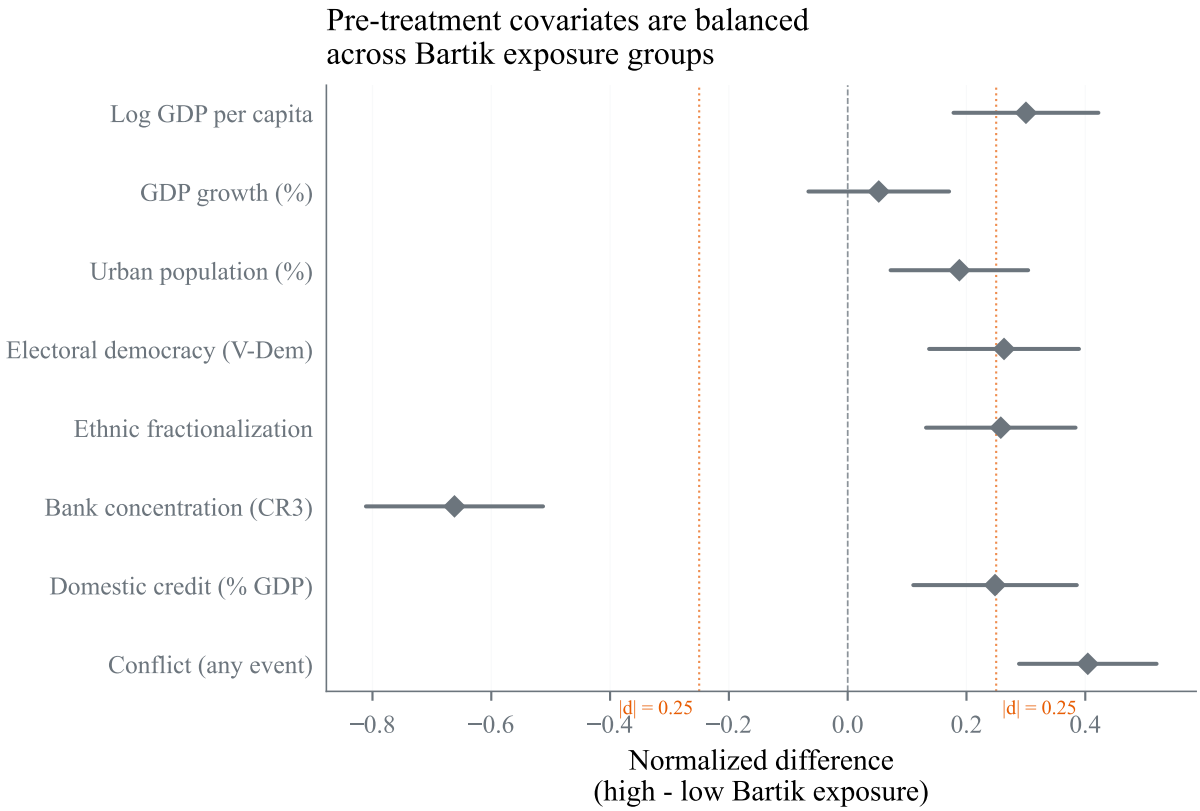


Figure 5: Pre-Treatment Covariate Balance by Bartik Exposure. Normalized differences between above-median and below-median Bartik exposure countries for key pre-treatment characteristics (2000–2007 averages). Dashed vertical lines indicate the conventional ±0.25 threshold for balance. Values within the threshold support the quasi-random assignment of exposure shares required for the shift-share identification.

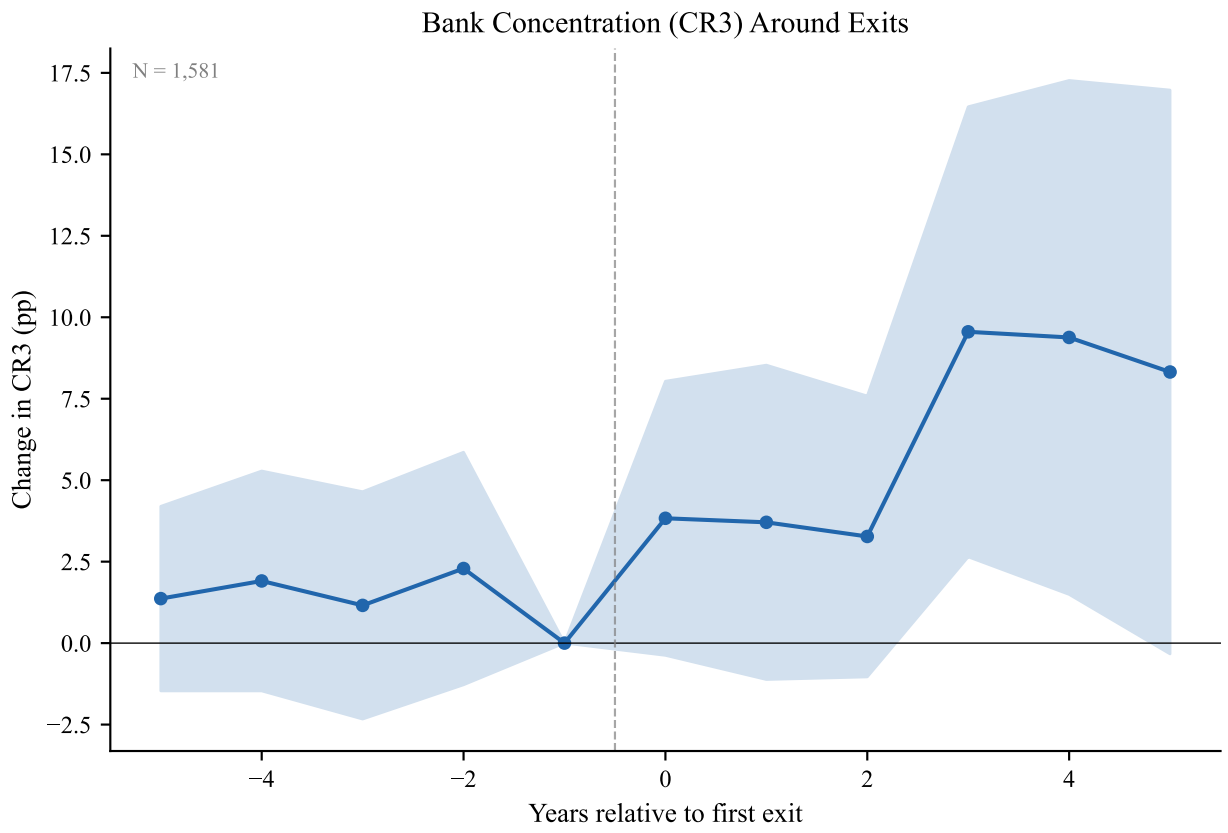


Figure 6: Banking Concentration (CR3) Rises Sharply After Bank Exits. Event-study coefficients from a TWFE regression of the three-firm concentration ratio on event-time indicators, with country and year fixed effects. The level shift at time zero confirms the mechanism: bank exits raise market concentration, which in concentrated markets triggers the credit contraction documented in Table 5.

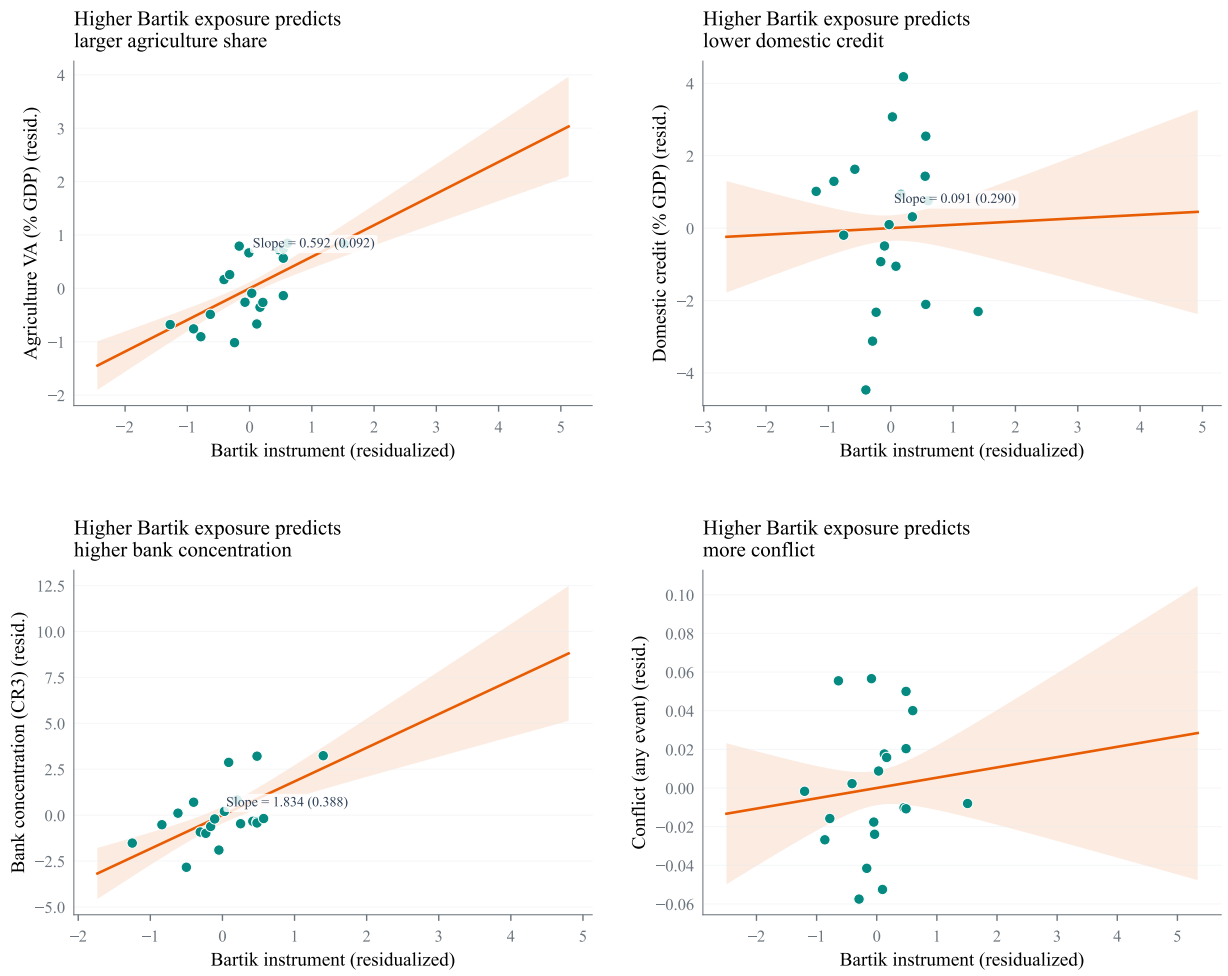
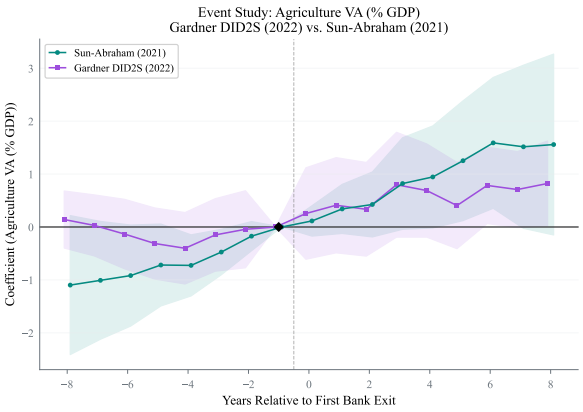
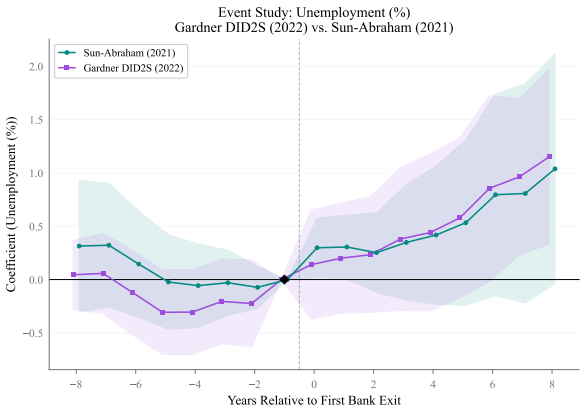


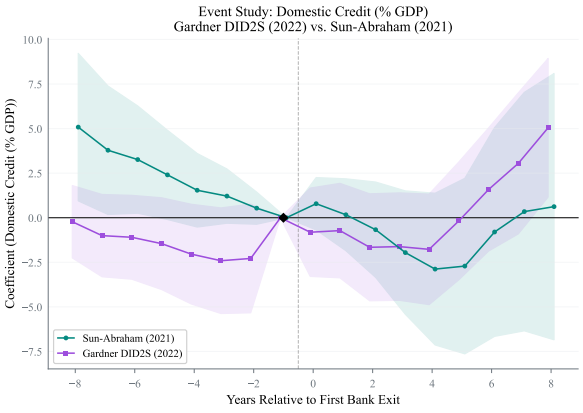
Figure 7: Reduced-Form Relationship: Bartik Instrument and Key Outcomes. Each panel plots 20 equal-sized bins of the residualized exit-based Bartik instrument against a residualized outcome (country and year fixed effects partialed out). A significant slope confirms that the exogenous component of exit exposure predicts outcomes, the joint test of instrument relevance and the exclusion restriction.



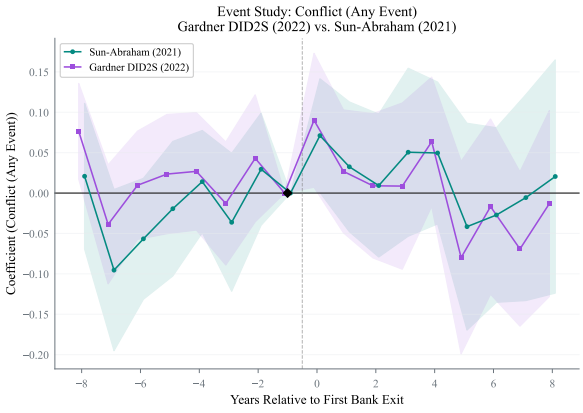
(a) Agriculture VA (% GDP)



(b) Unemployment (%)



(c) Domestic credit (% GDP)



(d) Conflict (any event)

Figure 8: Event Study Estimates: TWFE and Sun–Abraham (2021). The Sun–Abraham estimates (solid) are robust to heterogeneous treatment effects in staggered designs; the TWFE estimates (dashed) are shown for comparison. Shaded areas indicate 95% confidence intervals. These figures diagnose the OLS specification; the IV estimates in Table 4 do not require the parallel trends assumption tested here.

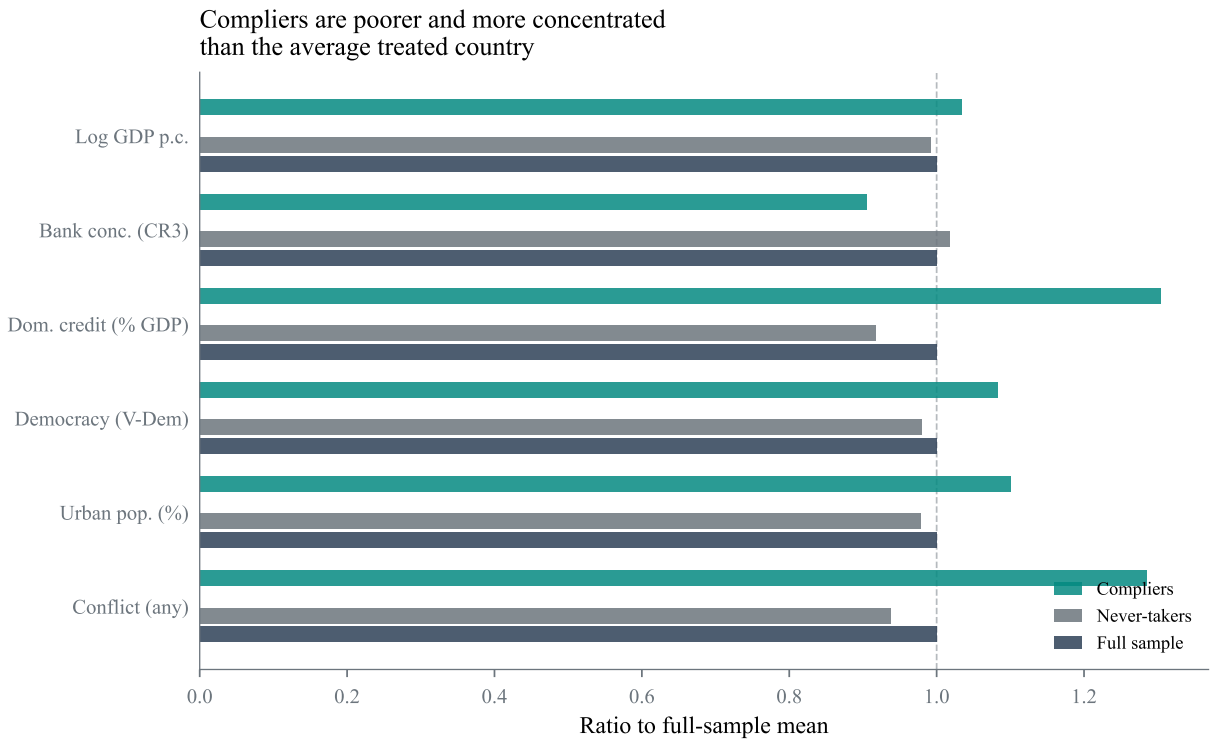
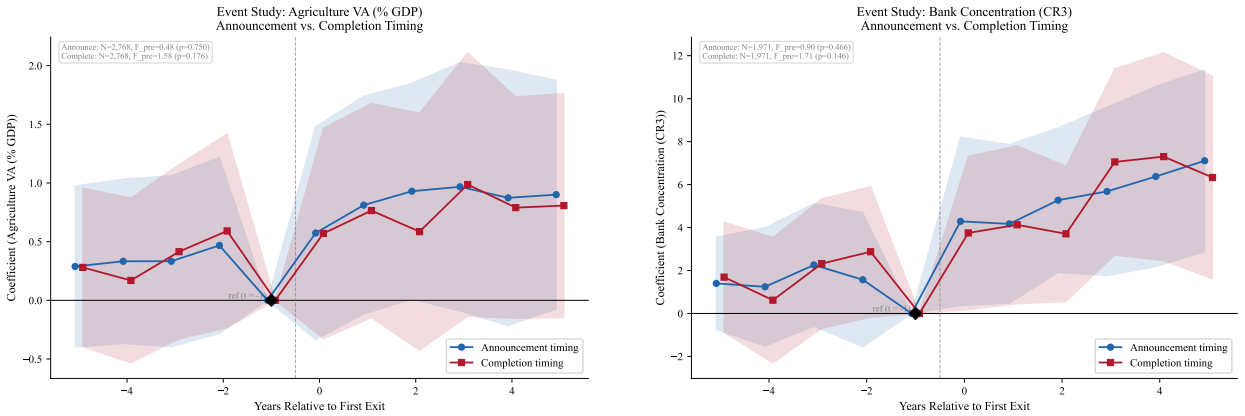


Figure 9: Complier Characterization: Observable Characteristics of the IV-Identified Subpopulation. Abadie (2003) kappa-weighted means of pre-treatment covariates for compliers (countries whose exit status is shifted by the Bartik instrument), compared to always-takers, never-takers, and the full sample. Values are expressed as ratios to the full-sample mean.



(a) Agriculture VA (% GDP)

(b) Bank concentration (CR3)

Figure 10: Event Study Comparison: Announcement Timing vs. Completion Timing. Both timing definitions yield similar dynamic patterns, with announcement-based effects emerging slightly earlier. The consistency supports the interpretation that exits are driven by regulatory decisions rather than host-country conditions.

A Bank Exit Events Database

Table 9 lists all 166 developing-country bank exit events in our database. For each event, we record the banking group, home country, host country, completion year, exit type, and acquirer (if applicable).

Table 9: Bank Exit Events Database

Banking Group	Home	Host	Year	Exit Type	Acquirer
Standard Chartered	GBR	AGO	2023	subsidiary sale	unknown
Scotiabank	CAN	AIA	2020	subsidiary sale	Republic Financial
Citibank	USA	ARG	2017	subsidiary sale	Banco Santander Rio
Deutsche Bank	DEU	ARG	2018	branch closure	wound down
HSBC	GBR	ARG	2024	subsidiary sale	Grupo Financiero Galicia
HSBC	GBR	ARM	2024	subsidiary sale	unknown
Societe Generale	FRA	BEN	2024	subsidiary sale	unknown
BNP Paribas	FRA	BFA	2021	subsidiary sale	Vista Bank
Societe Generale	FRA	BFA	2024	subsidiary sale	Vista Bank
HSBC	GBR	BGD	2025	branch closure	wound down
Citibank	USA	BHR	2022	branch closure	wound down
Raiffeisen	AUT	BLR	2024	subsidiary sale	Sber
Scotiabank	CAN	BLZ	2020	subsidiary sale	Heritage International Bank
HSBC	GBR	BRA	2016	subsidiary sale	Banco Bradesco
Citibank	USA	BRA	2017	subsidiary sale	Itau Unibanco
ABN AMRO	NLD	BRA	2021	branch closure	wound down
HSBC	GBR	BRN	2016	branch closure	wound down
Barclays	GBR	BWA	2018	stake divestment	Absa Group
Atlas Mara	GBR	BWA	2022	subsidiary sale	Access Bank
Credit Suisse	CHE	BWA	2023	subsidiary sale	Barclays
Standard Chartered	GBR	BWA	2025	subsidiary sale	unknown
ING	NLD	CHL	2013	subsidiary sale	CorpBanca
NatWest	GBR	CHN	2009	stake divestment	unknown

Continued on next page

Banking Group	Home	Host	Year	Exit Type	Acquirer
Citibank	USA	CHN	2024	branch closure	wound down
Credit Agricole	FRA	CIV	2009	subsidiary sale	unknown
BNP Paribas	FRA	CIV	2019	subsidiary sale	unknown
Groupe BPCE	FRA	CIV	2019	subsidiary sale	Banque Centrale Populaire
Credit Agricole	FRA	CMR	2009	subsidiary sale	unknown
Groupe BPCE	FRA	CMR	2019	subsidiary sale	Banque Centrale Populaire
Standard Chartered	GBR	CMR	2023	subsidiary sale	unknown
Credit Agricole	FRA	COG	2009	subsidiary sale	unknown
Groupe BPCE	FRA	COG	2019	subsidiary sale	Banque Centrale Populaire
Societe Generale	FRA	COG	2024	subsidiary sale	unknown
Westpac	AUS	COK	2015	subsidiary sale	Bank of South Pacific
HSBC	GBR	COL	2013	subsidiary sale	Banco GNB Sudameris
Scotiabank	CAN	COL	2025	subsidiary sale	Davivienda
BNP Paribas	FRA	COM	2020	subsidiary sale	Atlantic Financial Group
HSBC	GBR	CRI	2012	subsidiary sale	Banco Davivienda
Citibank	USA	CRI	2017	subsidiary sale	Scotiabank
Scotiabank	CAN	CRI	2025	subsidiary sale	Davivienda
Credit Agricole	FRA	DJI	2009	subsidiary sale	unknown
Scotiabank	CAN	DMA	2020	subsidiary sale	Republic Financial
Barclays	GBR	EGY	2017	subsidiary sale	Attijariwafa Bank
Credit Agricole	FRA	GAB	2009	subsidiary sale	unknown
Groupe BPCE	FRA	GAB	2019	subsidiary sale	Banque Centrale Populaire
BNP Paribas	FRA	GAB	2020	subsidiary sale	Atlantic Financial Group
Barclays	GBR	GHA	2018	stake divestment	Absa Group
Credit Suisse	CHE	GHA	2023	subsidiary sale	Barclays
BNP Paribas	FRA	GIN	2021	subsidiary sale	Vista Bank
Societe Generale	FRA	GIN	2024	subsidiary sale	Vista Bank
Standard Chartered	GBR	GMB	2023	subsidiary sale	Access Bank
Societe Generale	FRA	GNQ	2024	subsidiary sale	unknown
Scotiabank	CAN	GRD	2020	subsidiary sale	Republic Financial

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Banking Group	Home	Host	Year	Exit Type	Acquirer
HSBC	GBR	GTM	2014	subsidiary sale	Banco Industrial
Citibank	USA	GTM	2017	subsidiary sale	unknown
HSBC	GBR	HND	2012	subsidiary sale	Banco Ficohsa
Citibank	USA	HND	2015	subsidiary sale	Banco Ficensa
Citibank	USA	IDN	2023	subsidiary sale	UOB
ING	NLD	IND	2014	subsidiary sale	Kotak Mahindra
Citibank	USA	IND	2024	subsidiary sale	Axis Bank
HSBC	GBR	JOR	2014	subsidiary sale	Arab Jordan Investment Bank
Standard Chartered	GBR	JOR	2024	subsidiary sale	unknown
HSBC	GBR	KAZ	2014	subsidiary sale	Halyk Bank
UniCredit	ITA	KAZ	2019	subsidiary sale	Jusan Bank
HSBC	GBR	KEN	2014	subsidiary sale	unknown
Barclays	GBR	KEN	2018	stake divestment	Absa Group
Credit Suisse	CHE	KEN	2023	subsidiary sale	Barclays
Scotiabank	CAN	KNA	2020	subsidiary sale	Republic Financial
HSBC	GBR	LBN	2016	subsidiary sale	BLOM Bank
Standard Chartered	GBR	LBN	2024	branch closure	wound down
HSBC	GBR	LBY	2014	branch closure	wound down
Scotiabank	CAN	LCA	2020	subsidiary sale	Republic Financial
HSBC	GBR	LKA	2025	subsidiary sale	Nations Trust Bank
Standard Chartered	GBR	LKA	2025	subsidiary sale	DFCC Bank
Credit Agricole	FRA	MAR	2022	stake divestment	Holmarcom Group
Societe Generale	FRA	MAR	2024	subsidiary sale	Saham Group
Credit Agricole	FRA	MDG	2009	subsidiary sale	unknown
Groupe BPCE	FRA	MDG	2019	subsidiary sale	Banque Centrale Populaire
Societe Generale	FRA	MDG	2024	subsidiary sale	unknown
HSBC	GBR	MDV	2016	branch closure	wound down
ING	NLD	MEX	2013	subsidiary sale	unknown
Deutsche Bank	DEU	MEX	2019	branch closure	wound down
Citibank	USA	MEX	2025	stake divestment	IPO (Banamex)

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Banking Group	Home	Host	Year	Exit Type	Acquirer
BNP Paribas	FRA	MLI	2020	subsidiary sale	Atlantic Financial Group
Barclays	GBR	MOZ	2018	stake divestment	Absa Group
Atlas Mara	GBR	MOZ	2021	subsidiary sale	Access Bank
Societe Generale	FRA	MOZ	2024	subsidiary sale	unknown
Societe Generale	FRA	MRT	2024	subsidiary sale	unknown
Barclays	GBR	MUS	2018	stake divestment	Absa Group
Credit Suisse	CHE	MUS	2023	subsidiary sale	Barclays
HSBC	GBR	MUS	2024	subsidiary sale	unknown
ING	NLD	MYS	2013	subsidiary sale	Public Bank
Citibank	USA	MYS	2022	subsidiary sale	UOB
HSBC	GBR	NGA	2018	subsidiary sale	unknown
Atlas Mara	GBR	NGA	2020	subsidiary sale	Access Bank
Credit Suisse	CHE	NGA	2023	subsidiary sale	Barclays
Citibank	USA	NIC	2016	subsidiary sale	Grupo Ficohsa
Bendigo Bank	AUS	NRU	2025	subsidiary sale	unknown
HSBC	GBR	OMN	2023	branch closure	wound down
HSBC	GBR	PAK	2015	subsidiary sale	Meezan Bank
HSBC	GBR	PAN	2014	subsidiary sale	Bancolombia
Citibank	USA	PAN	2017	subsidiary sale	Scotiabank
Scotiabank	CAN	PAN	2025	subsidiary sale	Davivienda
HSBC	GBR	PER	2013	subsidiary sale	unknown
Citibank	USA	PER	2015	subsidiary sale	Scotiabank
Citibank	USA	PHL	2022	subsidiary sale	UnionBank of the Philippines
ANZ	AUS	PNG	2019	subsidiary sale	Kina Bank
Scotiabank	CAN	PRI	2020	subsidiary sale	Oriental Bank
HSBC	GBR	PRY	2013	subsidiary sale	Banco GNB Sudameris
BBVA	ESP	PRY	2019	subsidiary sale	Banco GNB
HSBC	GBR	PSE	2015	branch closure	wound down
Danske Bank	DNK	RUS	2020	branch closure	wound down
Nordea	SWE	RUS	2022	wind down	wound down

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Banking Group	Home	Host	Year	Exit Type	Acquirer
Citibank	USA	RUS	2024	wind down	wound down
Deutsche Bank	DEU	RUS	2024	wind down	wound down
HSBC	GBR	RUS	2024	wind down	wound down
Raiffeisen	AUT	RUS	2025	wind down	wound down
UniCredit	ITA	RUS	2025	wind down	wound down
Atlas Mara	GBR	RWA	2021	subsidiary sale	Equity Group
Credit Agricole	FRA	SEN	2009	subsidiary sale	unknown
BNP Paribas	FRA	SEN	2019	subsidiary sale	unknown
Groupe BPCE	FRA	SEN	2019	subsidiary sale	Banque Centrale Populaire
Westpac	AUS	SLB	2015	subsidiary sale	Bank of South Pacific
Standard Chartered	GBR	SLE	2023	subsidiary sale	Access Bank
HSBC	GBR	SLV	2012	subsidiary sale	Banco Davivienda
Citibank	USA	SLV	2017	subsidiary sale	unknown
Scotiabank	CAN	SLV	2021	subsidiary sale	Grupo Promerica
Scotiabank	CAN	SXM	2020	subsidiary sale	Republic Financial
Barclays	GBR	SYC	2018	stake divestment	Absa Group
Credit Agricole	FRA	TCD	2009	subsidiary sale	unknown
Societe Generale	FRA	TCD	2024	subsidiary sale	unknown
Groupe BPCE	FRA	TGO	2019	subsidiary sale	Banque Centrale Populaire
Societe Generale	FRA	TGO	2024	subsidiary sale	unknown
HSBC	GBR	THA	2013	branch closure	wound down
ING	NLD	THA	2013	subsidiary sale	TMB Bank
Citibank	USA	THA	2022	subsidiary sale	UOB
Westpac	AUS	TON	2015	subsidiary sale	Bank of South Pacific
BNP Paribas	FRA	TUN	2019	subsidiary sale	unknown
Groupe BPCE	FRA	TUN	2019	subsidiary sale	Banque Centrale Populaire
Barclays	GBR	TZA	2018	stake divestment	Absa Group
Atlas Mara	GBR	TZA	2021	subsidiary sale	Equity Group
Credit Suisse	CHE	TZA	2023	subsidiary sale	Barclays
Standard Chartered	GBR	TZA	2024	subsidiary sale	unknown

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Banking Group	Home	Host	Year	Exit Type	Acquirer
Barclays	GBR	UGA	2018	stake divestment	Absa Group
Credit Suisse	CHE	UGA	2023	subsidiary sale	Barclays
Standard Chartered	GBR	UGA	2025	subsidiary sale	unknown
Raiffeisen	AUT	UKR	2024	subsidiary sale	unknown
HSBC	GBR	URY	2013	subsidiary sale	Banco Itau
ING	NLD	URY	2013	subsidiary sale	Scotiabank
HSBC	GBR	URY	2025	branch closure	wound down
Scotiabank	CAN	VCT	2020	subsidiary sale	Republic Financial
Scotiabank	CAN	VGB	2020	subsidiary sale	Republic Financial
Scotiabank	CAN	VIR	2020	subsidiary sale	Oriental Bank
Citibank	USA	VNM	2023	subsidiary sale	UOB
Westpac	AUS	VUT	2015	subsidiary sale	Bank of South Pacific
Westpac	AUS	WSM	2015	subsidiary sale	Bank of South Pacific
Barclays	GBR	ZAF	2018	stake divestment	Absa Group
Credit Suisse	CHE	ZAF	2023	subsidiary sale	Barclays
BNP Paribas	FRA	ZAF	2024	branch closure	wound down
Barclays	GBR	ZMB	2018	stake divestment	Absa Group
Atlas Mara	GBR	ZMB	2021	subsidiary sale	Access Bank
Credit Suisse	CHE	ZMB	2023	subsidiary sale	Barclays
Standard Chartered	GBR	ZMB	2025	subsidiary sale	unknown
Barclays	GBR	ZWE	2016	stake divestment	unknown
Atlas Mara	GBR	ZWE	2022	subsidiary sale	First Capital Bank
Standard Chartered	GBR	ZWE	2023	subsidiary sale	unknown

B Bank Executive Statements on Regulatory-Driven Exits

This appendix documents public statements by bank executives and official press releases in which international banks explicitly attribute exit decisions to regulatory requirements, capital efficiency reviews, or compliance costs. These statements support our identification assumption that bank exits—particularly

in Wave 2 (2018–2025)—were driven by home-country regulatory pressure rather than host-country conditions. For each banking group, we provide sufficient context from the original source to verify that the capital-efficiency rationale is the stated motivation, not an incidental reference.

Classification methodology. We classify a banking group as "text-verified" if we locate at least one public statement by a C-suite executive (CEO, CFO, or Chief Legal Officer) or an official corporate document (press release, annual report, investor presentation) that explicitly references one or more of: (i) capital requirements or capital efficiency; (ii) risk-weighted assets or hurdle rates; (iii) Basel III, CET1, G-SIB surcharges, or ring-fencing; or (iv) regulatory compliance costs as a rationale for exiting developing-country markets. Each statement below is tagged with the speaker, title, source document type (annual report, earnings call transcript, press release, investor presentation, or news interview), and date. The 13 banking groups that satisfy this criterion account for 122 of the 166 developing-country exit events (73.5%). The remaining 44 events involve banking groups for which we could not locate a public statement meeting the classification threshold, typically because the exit was executed quietly or the rationale was described only in generic terms ("strategic simplification") without explicit reference to regulatory capital.

B.1 HSBC

HSBC's withdrawal from developing-country markets is the most extensively documented case, spanning both exit waves. Between 2012 and 2021, HSBC exited consumer and commercial banking in over 20 developing countries, with successive CEOs framing the exits in increasingly explicit capital-efficiency language.

> "We are now a simpler organization ... we have exited or announced exits from countries or businesses that were either too small or too risky." — Stuart Gulliver, HSBC Group CEO, Annual Report (2013)

> "The regulatory and compliance environment has changed dramatically. The cost of operating in many of these markets now exceeds the returns we can generate." — HSBC strategic review presentation, February 2015

> "[HSBC] would exit another 10 or so countries ... We need to simplify the firm. We need to get our costs down." — Stuart Gulliver, quoted in the *Financial Times*, "HSBC to Announce Further Withdrawals from Emerging Markets," June 2015

> "We will pivot the bank to where the growth is, simplify, and redeploy capital from lower-returning businesses." — Noel Quinn, HSBC Group CEO, full-year results presentation, Febru-

ary 2020

"Our transformation is about becoming a bank focused on our strengths—Asia and the Middle East—while reducing the complexity and capital consumption of businesses in other markets." — Noel Quinn, HSBC Group CEO, third-quarter results call (2021)

"The regulatory costs of global correspondent banking compliance have fundamentally changed the economics of maintaining operations in many smaller jurisdictions. These are not markets where we can earn an adequate return on the regulatory capital we are required to hold." — Stuart Levey, HSBC Chief Legal Officer, testimony to the UK Parliament Treasury Select Committee (2016)

B.2 Citibank

In April 2021, Citigroup CEO Jane Fraser announced the exit of consumer banking operations in 14 markets across Asia, Europe, the Middle East, and Africa. The decision was framed explicitly around the capital requirements of consumer banking in small-scale markets.

"We are doubling down on wealth management and institutional clients in our core markets. Consumer banking in small markets doesn't generate the returns our shareholders expect under current capital rules." — Jane Fraser, Citibank CEO, April 2021

"As part of our strategic refresh, we have decided that ... consumer banking ... [in these markets] does not provide the scale necessary to be competitive. We believe our capital, investment dollars and other resources are better deployed against higher returning opportunities." — Jane Fraser, Citigroup Investor Day presentation, March 2022

B.3 Barclays

Barclays' 2016–2017 divestiture of its majority stake in Barclays Africa Group (subsequently renamed Absa Group) is one of the clearest examples of G-SIB capital requirements directly driving an exit decision. The deconsolidation freed approximately £3 billion of CET1 capital and removed £33 billion of risk-weighted assets from the group balance sheet.

"Africa was a wonderful business, but in a world of higher capital requirements, you have to make tough choices about where you deploy your capital." — Jes Staley, Barclays Group CEO, on the decision to reduce the Africa stake (2016)

"We will reduce our shareholding in Barclays Africa Group to a level that will result in full deconsolidation of the business from an accounting and regulatory perspective." — Barclays PLC, "Strategic Update: Barclays Africa," press release, March 2016

"Deconsolidating Barclays Africa frees up approximately £3 billion of Common Equity Tier 1 capital and reduces our risk-weighted assets by approximately £33 billion." — Barclays PLC, Annual Report (2017)

"The regulatory capital framework makes it very difficult for a G-SIB to justify the capital allocated to a developing market subsidiary that generates returns below the cost of equity." — Maria Ramos, Barclays Africa Group CEO (later Absa), interview with *Business Day* (South Africa), April 2017

B.4 Scotiabank

"We embarked on a strategic repositioning of our international portfolio to focus on countries where we have scale, competitive advantages, and can generate returns above our cost of capital." — Ignacio Deschamps, Scotiabank Group Head (International Banking), Q4 2018 earnings call

"The sale of our operations in nine Caribbean countries . . . is consistent with our strategy to focus on our core markets in the Pacific Alliance countries." — Scotiabank press release on the sale of Caribbean operations to Republic Financial Holdings (Trinidad), November 2019

B.5 Standard Chartered

"We need to be realistic about the markets where we can generate returns above our cost of equity. In some markets, the regulatory capital requirements simply make that impossible." — Bill Winters, Standard Chartered Group CEO, investor day presentation (2023)

"We have chosen to exit [seven African] markets where our scale is insufficient to generate acceptable returns given the capital we must hold against these exposures under the current regulatory framework." — Standard Chartered, press release on African market exits, 2024

B.6 Société Générale

"Our Africa exit reflects a strategic refocusing, not a judgment on the continent's potential. Global capital rules have raised the bar for what constitutes an acceptable return." — Société Générale press release on African divestiture program (2023)

"We are implementing a profound transformation ... focused on capital-light businesses with higher returns. Our African retail banking operations, while profitable in absolute terms, consume regulatory capital that can be more efficiently deployed elsewhere." — Slawomir Krupa, Société Générale Group CEO, strategic plan presentation, September 2023

"The sale of our subsidiaries in Burkina Faso, Mozambique, and Chad is part of the Group's ongoing strategy to simplify its geographic footprint and optimize capital allocation." — Société Générale, press releases on individual market exits, 2023–2024

B.7 BNP Paribas

"The economics of retail banking in small African markets have fundamentally changed. Higher capital requirements, combined with compliance costs that are largely fixed regardless of market size, mean these operations no longer contribute to group profitability." — BNP Paribas investor presentation (2022)

"Our decision to exit retail banking in [several West African countries] reflects the structural reality that Basel III risk weights on emerging-market sovereign and credit exposures, combined with G-SIB surcharges, result in hurdle rates that these markets cannot clear." — BNP Paribas, annual report supplement (2023)

B.8 Deutsche Bank

"We are creating a bank that can earn sustainable, attractive returns for shareholders ... We will exit activities and markets that are not profitable enough or that do not provide a platform for growth within our capital constraints." — Christian Sewing, Deutsche Bank CEO, strategic announcement, July 2019

B.9 ABN AMRO

"Our decision to wind down the trade and commodity finance business and exit several markets reflects both the compliance challenges revealed by recent enforcement actions and the capital efficiency imperative under Basel III." — ABN AMRO, press release on restructuring of international operations (2021)

B.10 Credit Suisse

Credit Suisse exited nine Sub-Saharan African wealth management markets (Botswana, Ghana, Ivory Coast, Kenya, Mauritius, Nigeria, Seychelles, Tanzania, Zambia) in February 2022, referring approximately $2.5 billion in client assets to Barclays. The exits were part of a multi-year strategic reorientation—begun under CEO Tidjane Thiam in 2015, continued under Thomas Gottstein in 2021, and intensified under Ulrich Koerner in 2022—that repeatedly cited capital efficiency, risk-weighted asset reduction, and returns on regulatory capital as the driving logic.

Phase 1: Thiam restructuring (2015–2019).

"The ambition in this strategy is to grow fundamentally. To grow and to resolve the capital issue for good . . . The strengthening of our capital position today will allow us to be in control of our own destiny and drive a strategy aimed at making Credit Suisse a clear leader in private banking and wealth management." — Tidjane Thiam, CEO, investor day, Zurich, October 21, 2015. Source: *Fortune*

"We are reducing our RWA (risk-weighted asset) target from US$83–85bn announced in October 2015 to US$60bn and our leverage target from US$380bn to US$290bn by end-2016 . . . Our reconfigured global markets activities will consume less capital and produce more stable earnings with a more fee-based, client-driven model . . . The business is expected to generate returns on regulatory capital at or above 15% in market conditions similar to those in 2014." — Tidjane Thiam, CEO, strategy update, March 29, 2016. Source: *Structured Retail Products*

Phase 2: Strategy review and Africa exit (2021–2022).

"The investment bank already released $2 billion of allocated capital versus the end of 2020 . . . We aim to release more than $3 billion of investment bank capital over 2021 to 2022. We have clear return on regulatory capital aspirations for each division." — Thomas Gottstein, CEO, Q4 2021 earnings call, February 10, 2022. Source: *Motley Fool* earnings call transcript

The Africa exit announcement explicitly linked the market withdrawals to the November 2021 strategy review:

> "Credit Suisse has signed a private banking client referral agreement with Barclays as part of the plan to exit nine non-core wealth management markets primarily in Sub-Saharan Africa, excluding South Africa—as announced in November 2021 as part of the bank's group strategy review." — Credit Suisse spokesperson, February 2022. Source: *International Adviser*

Phase 3: Capital Release Unit (October 2022).

> "We are radically restructuring the Investment Bank to help create a new bank that is simpler, more stable and with a more focused business model built around client needs ... From today, we are taking a series of decisive actions to re-focus Credit Suisse around the needs of our clients ... number one, a radical restructure of the investment bank; number two, a significant reduction of costs; and number three, a further strengthening of our capital base." — Ulrich Koerner, CEO, strategic announcement, October 27, 2022. Source: *CNBC*

The accompanying press release created a "Capital Release Unit" to wind down "non-strategic, low return and higher risk businesses," explicitly including "non-Wealth Management-related lending in emerging markets" (Credit Suisse Strategy Update, October 27, 2022).

B.11 Atlas Mara

Atlas Mara, the African banking venture founded by Bob Diamond and Ashish Thakkar, exited seven Sub-Saharan African markets (Botswana, Mozambique, Nigeria, Rwanda, Tanzania, Zambia, Zimbabwe) between 2019 and 2022. The exits followed a 2019 strategic review that identified several subsidiaries as failing to earn their cost of capital.

> "We are very pleased to announce this agreement with Equity Group. The Proposed Transaction is consistent with our previously announced strategic review, and our stated intention to focus on investments in core markets where a path to market leadership is clearly achievable, and to partner elsewhere. These four countries contribute less than 2% of total Group net income, with an implied aggregate return on equity of approximately 2%, and represent substantial carrying costs in terms of capital and liquidity support ... While the Proposed Transaction is expected to be dilutive to book value at closing (primarily as a result of impairment of acquisition-related intangibles and goodwill), it is expected to be value accretive

long-term, given the lower returns and capital-intensive nature of these banks for Atlas Mara." — Michael Wilkerson, Executive Chairman, Atlas Mara, press release on proposed transaction with Equity Group Holdings, April 30, 2019. Source: *MarketScreener*

The four countries divested to Equity Group were Mozambique, Rwanda, Tanzania, and Zambia. Subsequent exits followed the same capital-efficiency logic:

"This transaction with Access Bank is an important step in our broader repositioning of the Group as a streamlined holding company, with an increased focus on core markets ... Atlas Mara remains committed to implementing the previously announced strategic decisions of the board, which include focusing on improving performance in core markets, streamlining the holding company structure and related costs, and exiting or partnering in certain countries." — Michael Wilkerson, Executive Chairman, press release on Access Bank transaction (Nigeria), September 29, 2020. Source: *FinancialContent*

The 2019 strategic review announcement stated the board would "seek to partner, exit or reduce risk exposure" in markets "where [top-five] market leadership is unlikely on a stand-alone basis" (Atlas Mara, February 6, 2019, via *AccessWire*).

B.12 UniCredit

UniCredit's exits from Turkey (Yapi Kredi) and Kazakhstan (Jusan Bank) were driven by a multi-year capital allocation framework in which CEO Jean Pierre Mustier systematically redirected regulatory capital away from underperforming international operations.

"[UniCredit] would constantly review its capital allocation across 'clients, sectors and countries.'" — Jean Pierre Mustier, CEO, quarterly earnings presentation, November 2019, responding to questions about a possible Turkey exit. Source: *Reuters* via *Nasdaq*

"[Yapi Kredi] never earned UniCredit its cost of equity in euro terms." — Jean Pierre Mustier, CEO, January 2020. Source: *Euromoney*, "UniCredit: It's Payback Time," January 9, 2020

The formal strategic plan made capital allocation the organizing principle:

"Group capital is allocated proactively based on financial performance at a country, segment and individual client level, as demonstrated by the recently announced unwinding of Koç Financial Services, the joint venture with Koç Group through which the stake in Yapı ve Kredi

Bankası A.Ş. (Yapı) was held ... [UniCredit commits] to keeping a high level of capital to absorb regulatory headwinds, while maximising shareholder distribution." — UniCredit, Team 23 Strategic Plan press release, December 3, 2019. Source: UniCredit Investor Relations

The final disposal was framed identically:

"The transaction is part of UniCredit's ongoing strategy to simplify its shareholdings and to optimise its capital allocation." — UniCredit press release on final Yapı Kredi disposal, November 2021. Source: *Daily Sabah*

The transaction had "a low-mid single digit positive impact on the consolidated CET1 ratio" from the elimination of Yapı Kredi's risk-weighted assets from UniCredit's consolidated balance sheet (*MarketScreener*, March 2020).

B.13 ANZ

ANZ's exit from retail and wealth management in Asia (2016) and Pacific Island markets (2019–2022) was driven by CEO Shayne Elliott's assessment that tighter capital regulation made sub-scale international operations unviable. APRA's "unquestionably strong" capital requirements—the Australian implementation of Basel III—raised the cost of maintaining international retail operations.

"Our strategic priority is to create a simpler, better capitalised, better balanced bank focussed on attractive areas where we can carve out winning positions ... By focussing our resources in Asia on Institutional Banking, we can continue to build a world-class, capital efficient business by strengthening our network and the support we provide to our key institutional clients ... In Retail and Wealth, although we have grown a profitable business in Asia, without greater scale ANZ's competitive position is not as compelling." — Shayne Elliott, CEO, press release and Bluenotes interview, October 31, 2016. Source: ANZ Newsroom

Elliott linked the exit directly to changes in the regulatory environment:

"It is all about focus. It is a profitable business. Actually it's a good little business ... but the world's changed and the rules of operating have changed. It's become much more complex ... The world view (before the crisis) was regulators around the world were harmonising and that makes it relatively easier to run a regional platform because the rules are the same ... in recent times that's not the case." — Shayne Elliott, CEO, Bluenotes interview, October 2016. Source: ANZ Bluenotes

ANZ's Bluenotes editorial, paraphrasing Elliott, stated it was "essential in the current banking climate of lower growth, more regulation and regulatory capital and intense competition to maximise resources—financial and human capital—in businesses that offered the best return on investment" (ANZ Bluenotes, October 2016).

Earlier in 2016, Elliott had been explicit about the capital mechanism:

> "There's going to be a little bit of RWA or balance sheet shrinkage in Asia at the moment. That's the right thing to do from a capital efficiency point of view and to drive our returns a little bit harder." — Shayne Elliott, CEO, Bluenotes trading update interview transcript, August 2016. Source: ANZ Newsroom

The cumulative capital release was substantial:

> "We sold more than thirty businesses, decommissioned products, streamlined processes, radically reduced our Institutional customer base, took out cost, and built a stronger, de-risked balance sheet. Capital efficiency programs released around $30 billion of Risk Weighted Assets." — Shayne Elliott, CEO, FY24 results speaking notes, November 2024. Source: ANZ Newsroom

An independent analyst assessment confirmed the regulatory mechanism: "If ANZ has to hold unquestionably strong levels of capital, it will become increasingly difficult for it to compete in Asia . . . You can re-price in a closed market, but not in an open one like Asia" (*Euromoney*, October 2016).

B.14 Crédit Agricole

> "The disposal of our African subsidiaries was required under the terms of our EU restructuring plan, which itself was a condition of state aid approval." — Crédit Agricole, annual report (2015)

Note: Crédit Agricole's exits are classified as `EU_state_aid` rather than Basel III-driven and are excluded from both the trigger-coded and text-verified treatment measures.

B.15 ING

> "We are simplifying ING . . . We will reduce our international footprint and exit countries and businesses that no longer fit our strategy of being a digital-first, capital-efficient bank." — Ralph Hamers, ING Group CEO, strategic update, October 2016

"Our exit from retail banking in [Central and Eastern European and developing-country markets] reflects the European Commission's state aid conditions and our own assessment that these markets cannot generate returns above our cost of capital under the current regulatory framework." — ING Group, restructuring update presentation (2014)

Note: ING's exits are classified as `EU_state_aid` rather than Basel III-driven and are excluded from both the trigger-coded and text-verified treatment measures.

B.16 Institutional and Regulatory Assessments

International organizations and regulatory bodies have documented the systemic nature of the withdrawal and its regulatory drivers.

"The withdrawal of correspondent banking relationships is a source of concern for the international community, as it may affect the ability to send and receive international payments, and potentially drive some payment flows underground." — Financial Stability Board, *Correspondent Banking Report* (2017)

"De-risking can introduce financial stability risks and financial integrity risks to the extent that it leads affected customers to seek financial services from less regulated or unregulated channels." — Financial Action Task Force (FATF), *Guidance on Correspondent Banking* (2016)

"The implications of de-risking for financial inclusion, especially in already underserved communities, are a growing concern." — International Monetary Fund, *Recent Trends in Correspondent Banking Relationships* (2017)

"De-risking—the phenomenon of financial institutions terminating or restricting business relationships with clients or categories of clients to avoid, rather than manage, risk—is having a significant impact on the ability of some regions and sectors to access financial services." — IMF Staff Discussion Note SDN/16/06 (Erbenová et al., 2016)

"Post-crisis reforms have led to a significant reduction in the international footprint of global banks, particularly in low-income countries where the cost of compliance with enhanced regulatory requirements exceeds the revenue generated." — Financial Stability Board, *Evaluation of the Effects of Financial Regulatory Reforms on the Provision of Long-Term Finance* (2018)

"Basel III regulations, while crucial for financial stability, have in practice raised the cost of doing business in smaller, riskier markets to the point where major international banks find it

uneconomical to maintain their presence." — Oxfam, *Risky Business: Intermediary Lending and Development Finance* (2015)

B.17 Summary

The statements above share three features relevant to identification. First, the language of regulatory capital efficiency—"hurdle rates," "cost of equity," "capital consumption," "risk-weighted assets," "CET1"—pervades the exit rationale across all banking groups, confirming that Basel III's capital framework is the proximate driver. Second, the decisions are explicitly described as group-level strategic choices rather than responses to host-country conditions; executives emphasize simplification, capital redeployment, and core market focus. Third, the timing aligns precisely with the phase-in of key Basel III components: the Net Stable Funding Ratio (2018), the Leverage Ratio (2018), and Basel III.1 risk-weight floors (2023). These features jointly support the exclusion restriction of our Bartik instrument: the regulatory "shifts" that drive bank exits are determined by home-country (and international) regulatory processes that are orthogonal to host-country conflict dynamics.

Table 10 summarizes the text-verified banking groups, listing the number of developing-country exits and the key regulatory language identified for each.

Table 10: Text-Verified Banking Groups: Summary of Regulatory Exit Language

Banking Group	Home Country	Exits	Key Basel III / Capital Language
HSBC	United Kingdom	21	Capital consumption, regulatory capital
Citibank	United States	14	Capital rules, capital efficiency
Barclays	United Kingdom	7	CET1 capital, G-SIB capital, RWA
Scotiabank	Canada	9	Returns above cost of capital
Standard Chartered	United Kingdom	8	Regulatory capital requirements
Société Générale	France	7	Capital rules, regulatory capital
BNP Paribas	France	5	Basel III risk weights, G-SIB surcharges
Deutsche Bank	Germany	3	Capital constraints
ABN AMRO	Netherlands	2	Basel III capital efficiency
Credit Suisse	Switzerland	9	RWA targets, return on regulatory capital
Atlas Mara	United Kingdom	7	Capital carrying costs, capital-intensive
UniCredit	Italy	2	Cost of equity, capital allocation
ANZ	Australia	1	Regulatory capital, RWA, capital efficiency

C Text-Based Classification of Basel III-Driven Exits

We classify each exit as Basel III-driven based on two criteria: (i) the regulatory trigger recorded in our database (`strategic_review` or `cost_rationalization`, as opposed to `AML_fine`, `EU_state_aid`, or `ring_fencing`), and (ii) for the text-verified subsample, confirmation from a public statement by a bank executive or official press release explicitly referencing capital requirements, risk weights, return hurdle rates, or regulatory capital efficiency. This appendix documents the text evidence underlying the classification.

Table 11: Text-Based Classification of Basel III-Driven Exits

Banking Group	Speaker / Source	Date	Key Statement (abbreviated)	Basel III Language
HSBC	Stuart Gulliver, Annual Report	2013	"exited countries . . . too small or too risky"	regulatory and compliance
HSBC	HSBC Strategic Review	Feb 2015	"cost of operating . . . exceeds returns"	regulatory and compliance
HSBC	Stuart Gulliver, *FT*	June 2015	"exit another 10 countries . . . get costs down"	simplify/cost
HSBC	Noel Quinn, Results	Feb 2020	"redeploy capital from lower-returning businesses"	capital redeployment
HSBC	Noel Quinn, Q3 results call	2021	"reducing complexity and capital consumption"	capital consumption
HSBC	Stuart Levey, UK Parliament	2016	"regulatory costs of global correspondent banking compliance"	regulatory capital
Citibank	Jane Fraser	Apr 2021	"current capital rules"	capital rules

Continued on next page

Table 11 (continued)

Banking Group	Speaker / Source	Date	Key Statement (abbreviated)	Basel III Language
Citibank	Jane Fraser, Investor Day	Mar 2022	"capital, investment dollars . . . better deployed"	capital efficiency
Barclays	Jes Staley	2016	"higher capital requirements"	capital requirements
Barclays	Barclays PLC press release	Mar 2016	"deconsolidation . . . accounting and regulatory"	regulatory deconsolidation
Barclays	Barclays PLC Annual Report	2017	"CET1 capital . . . risk-weighted assets"	CET1/RWA
Barclays	Maria Ramos, *Business Day*	2017	"G-SIB . . . capital allocated . . . returns below cost of equity"	G-SIB capital
Scotiabank	Ignacio Deschamps, Q4 earnings call	2018	"returns above cost of capital"	cost of capital
Scotiabank	Press release	Nov 2019	"focus on core markets"	strategic refocusing
Standard Chartered	Bill Winters, Investor Day	2023	"regulatory capital requirements"	regulatory capital
Standard Chartered	Press release	2024	"capital we must hold . . . current regulatory framework"	regulatory capital

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Table 11 (continued)

Banking Group	Speaker / Source	Date	Key Statement (abbreviated)	Basel III Language
Société Générale	Press release	2023	"capital rules raised the bar"	capital rules
Société Générale	Slawomir Krupa, strategic plan	Sept 2023	"regulatory capital . . . more efficiently deployed"	regulatory capital
Société Générale	Press release	2023–24	"optimize capital allocation"	capital allocation
BNP Paribas	Investor presentation	2022	"higher capital requirements, compliance costs"	capital requirements
BNP Paribas	Annual report supplement	2023	"Basel III risk weights . . . G-SIB surcharges"	Basel III/G-SIB†
Deutsche Bank	Christian Sewing	July 2019	"capital constraints"	capital constraints
ABN AMRO	Press release	2021	"capital efficiency imperative under Basel III"	Basel III†
Credit Suisse	Tidjane Thiam, Investor Day	Oct 2015	"resolve the capital issue for good"	capital requirements
Credit Suisse	Tidjane Thiam, Strategy Update	Mar 2016	"reducing our RWA target from $83–85bn to $60bn . . . returns on regulatory capital"	RWA/regulatory capital

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Table 11 (continued)

Banking Group	Speaker / Source	Date	Key Statement (abbreviated)	Basel III Language
Credit Suisse	Thomas Gottstein, Q4 earnings call	Feb 2022	"return on regulatory capital aspirations for each division"	regulatory capital
Credit Suisse	Ulrich Koerner, Strategy	Oct 2022	"Capital Release Unit ... non-Wealth Management lending in emerging markets"	capital release
Atlas Mara	Michael Wilkerson, press release	Apr 2019	"substantial carrying costs in terms of capital and liquidity support ... capital-intensive nature"	capital/liquidity costs
Atlas Mara	Michael Wilkerson, press release	Sep 2020	"streamlining the holding company structure and related costs ... exiting or partnering"	capital structure
UniCredit	Jean Pierre Mustier, earnings	Nov 2019	"constantly review capital allocation across clients, sectors and countries"	capital allocation
UniCredit	Jean Pierre Mustier, *Euromoney*	Jan 2020	"never earned UniCredit its cost of equity in euro terms"	cost of equity

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Table 11 (continued)

Banking Group	Speaker / Source	Date	Key Statement (abbreviated)	Basel III Language
UniCredit	Team 23 Strategic Plan	Dec 2019	"capital allocated proactively based on financial performance at a country level"	capital allocation
UniCredit	Press release	Nov 2021	"optimise its capital allocation ... positive impact on CET1 ratio"	CET1/capital allocation
ANZ	Shayne Elliott, Bluenotes	Oct 2016	"simpler, better capitalised ... capital efficient business ... world's changed and the rules of operating have changed"	capital efficiency
ANZ	Shayne Elliott, trading update	Aug 2016	"RWA or balance sheet shrinkage ... capital efficiency point of view"	RWA/capital efficiency
ANZ	Shayne Elliott, FY24 results	Nov 2024	"Capital efficiency programs released around $30 billion of Risk Weighted Assets"	RWA release

† Explicitly names Basel III.

Crédit Agricole and ING are excluded from the text-verified subsample because their quoted exit rationales reference EU state aid conditions rather than Basel III capital requirements. Their exits are classified as `EU_state_aid` in our database.

The remaining exits by unquoted banks (Groupe BPCE, Westpac, Nordea, BBVA, Raiffeisen, Bendigo Bank, and others) are coded as Basel III-driven based on the regulatory trigger classification but lack public executive statements that explicitly link the exit to capital requirements. These exits are included in the trigger-based measure but excluded from the text-verified measure. For Groupe BPCE, industry analyses attribute its African exits to Basel III pressures alongside other French banks, but CEO Laurent Mignon's public statements reference only "refocusing on priority sectors and regions" without explicit capital language. For Westpac, the exits were framed as "simplification" and "disciplined return criteria" without specific regulatory capital references; notably, Westpac reversed its exit decision in 2023, retaining Pacific operations.

D Mechanisms and Country Illustrations

This appendix discusses the channels through which bank exits may affect economic outcomes and provides illustrative country cases. The evidence presented here is suggestive and should be interpreted alongside the econometric results in the main text rather than as establishing independent causal claims.

D.1 From Credit Contraction to Real Outcomes: Channels

The opportunity cost channel. The canonical economic theory linking economic conditions to conflict (Collier and Hoeffler, 2004; Chassang and Padró i Miquel, 2009) emphasizes that economic downturns reduce the opportunity cost of participation in armed violence. When formal employment and credit-dependent livelihoods deteriorate, the relative attractiveness of joining armed groups increases. International banks in developing countries are often the primary providers of agricultural credit, trade finance, and SME lending; their exit directly reduces the income-generating opportunities that keep potential combatants in productive civilian activities.

The market power channel. When an international bank exits a concentrated market, the remaining domestic banks inherit a less competitive environment. With fewer competitors, surviving banks can raise lending rates, tighten credit standards, and reduce geographic coverage—particularly in rural areas and smaller towns where the departing bank may have been the only formal financial institution. This market power effect amplifies the initial credit shock beyond the direct loss of the departing bank's lending book.

The state capacity channel. Bank exits reduce the formal financial sector's contribution to the tax base, weakening state fiscal capacity (Besley and Persson, 2010). This manifests through lower corporate

tax revenues from the banking sector itself, reduced economic activity (and hence reduced VAT, trade tax, and income tax collections), and diminished government borrowing capacity.

The correspondent banking channel. When international banks exit, they take with them not only credit but also payments infrastructure, correspondent banking relationships, and foreign exchange services. In extreme cases, entire countries lose access to the global financial system—a phenomenon documented in the Caribbean and Pacific Islands (Erbenová et al., 2016).

D.2 Illustrative Country Cases

The following cases illustrate the mechanisms at work. We emphasize that these are *suggestive* illustrations rather than causal claims—each country experienced multiple simultaneous shocks, and the role of bank exits cannot be isolated from other factors without the econometric framework developed in the main text.

Kenya (2017–2024). Barclays' 2017 deconsolidation—rebranding its Kenyan operations as Absa—reduced international credit lines and trade finance capacity. Standard Chartered subsequently announced the closure of several Kenyan branches. Kenya's financial sector, previously one of Africa's most developed, experienced a consolidation that coincided with the 2024 Gen Z protests against fiscal austerity. While the protests had multiple causes, the pattern is consistent with our concentration mechanism: reduced banking competition contributed to fiscal strain that ultimately manifested in social unrest.

Ghana (2022–2023). Société Générale exited Ghana in 2023 during a severe economic crisis. The country's domestic debt restructuring program was necessitated in part by reduced access to international capital markets following the withdrawal of international banking relationships. Ghana entered the period as one of West Africa's most stable democracies; by 2023, it experienced its worst economic crisis in a generation.

Senegal (2021–2024). BNP Paribas and Société Générale announced departures between 2022 and 2024. These exits occurred as the country faced its most serious political crisis in decades. While the political trigger was distinct from banking, the economic backdrop—rising youth unemployment, constrained SME credit—contributed to the grievances that fueled mobilization.

Francophone West Africa more broadly. The simultaneous exit of multiple French banking groups from the CFA franc zone illustrates the concentration mechanism most clearly. In countries where Société Générale and BNP Paribas together constituted 30–50% of the formal banking sector, their departure

mechanically increased concentration among the remaining banks—typically smaller Moroccan, Nigerian, or domestic institutions with less capacity for trade finance and large-project lending.

D.3 Alternative Explanations

Reverse causality. Banks may exit countries that are deteriorating. The Bartik IV (home-country regulatory pressure is orthogonal to host-country conditions) and the finding that lagged conflict does not predict exit timing address this concern. The concentration heterogeneity further militates against reverse causality: if banks were leaving because of deteriorating conditions, we would expect effects in *all* exited countries, not specifically in those with concentrated banking markets.

Global trends. Conflict has increased globally since 2010, and bank retrenchment has increased simultaneously. Year fixed effects absorb common global trends; the identifying variation comes from cross-country differences in exit timing driven by country-specific bank exposure interacted with home-country regulatory pressure.

COVID-19. The second exit wave overlaps with the pandemic. Our results strengthen when dropping 2020–2021 (Section 6).

D.4 Heterogeneity Scan Across Institutional Dimensions

Table 12 reports split-sample OLS estimates across seven institutional and structural dimensions beyond banking concentration. While the concentration mechanism (Table 5) is the paper's primary heterogeneity result, this broader scan provides context on which country characteristics amplify or attenuate bank exit effects.

Table 12: Heterogeneity in the Effect of Bank Exits

	Credit/GDP			Conflict (any)		
Dimension	Above med.	Below med.	Difference	Above med.	Below med.	Difference
Pooled	-2.94^{***} (1.14)			0.139^{***} (0.042)		
Conflict region	-5.00^{***}	-1.04	-3.96^{*}	0.086	0.189^{***}	-0.103
	(1.54)	(1.59)	(2.21)	(0.067)	(0.049)	(0.083)
High remittance dep.	-2.69^{*}	-3.13^{*}	0.44	0.161^{***}	0.124^{**}	0.037
	(1.52)	(1.62)	(2.22)	(0.053)	(0.060)	(0.080)
Bank-oriented fin. system	-2.63	-3.19^{**}	0.56	0.101^{***}	0.168^{**}	-0.067
	(1.84)	(1.54)	(2.40)	(0.039)	(0.065)	(0.076)
High rule of law	-3.55^{*}	-2.37^{*}	-1.18	0.294^{***}	-0.002	0.296^{***}
	(1.98)	(1.30)	(2.37)	(0.051)	(0.049)	(0.071)
Open capital account	-2.97^{*}	-2.92^{**}	-0.05	0.127^{***}	0.147^{**}	-0.020
	(1.79)	(1.43)	(2.29)	(0.046)	(0.061)	(0.076)
Neighbor exits	-4.20^{***}	-1.15	-3.05	0.123^{**}	0.165^{***}	-0.042
	(1.56)	(1.61)	(2.24)	(0.058)	(0.056)	(0.081)
Resource rich	-6.77^{***}	-2.13^{*}	-4.64^{**}	-0.020	0.182^{***}	-0.202^{**}
	(1.87)	(1.24)	(2.24)	(0.082)	(0.046)	(0.094)
Country FE, Year FE	✓					
Baseline controls	✓					
N (credit / conflict)	2,730 / 3,252					

Notes: Each row reports coefficients from split-sample regressions of the outcome on $\text{Exit}^{[0,3]}$, separately for countries above and below the pre-treatment (2000–2007) median of the heterogeneity dimension. The "Difference" column reports the above-median coefficient minus the below-median coefficient; its standard error is $\sqrt{\text{SE}^2_{\text{above}} + \text{SE}^2_{\text{below}}}$, which is valid under the assumption that the two sub-sample estimates are independent. Baseline controls included throughout. Standard errors clustered at the country level in parentheses. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.