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DIGITAL PAYMENTS AND BANKING RESILIENCE IN IRAQ: EVIDENCE FROM FINANCIAL INDICATORS AND INSTITUTIONAL DISCLOSURES (2020–2025)

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ABSTRACT

Purpose: This paper investigates the growth of digital payments in Iraq in relation to banking-risk indicators and institutional disclosures, with the aim of identifying an evidence base that can support the assessment of banking resilience.

Methods: The study is a documentary analysis based on official payment statistics, bank financial reports for 2020–2025 and institutional disclosures. National payment developments are analysed from the consistently reported Iraqi Retail Payment System Infrastructure (IRPSI) series for 2022–2024 in the Central Bank of Iraq (CBI) Financial Stability Report 2024. Changes in transaction volume and value are calculated, while the financial comparison of banks and the evaluation of institutional disclosures are structured in two separate frameworks: the three-bank accounting comparison and the two-bank disclosure-coding exercise.

Results: IRPSI transaction volume up almost 5X from about 11.59M in 2022 to 58.42M by 2024 and settlement value had mopped from 8.22 trillion IQD to 21.11 trillion. Since volume outpaced it is value an average recorded value per transaction dropped from about IQD 709,000 to IQD 361,000. The prudential profiles of the three major banks was noticeably different. National Bank of Iraq customer deposits fell to 67.31% of its assets as against 26.70% at Credit Bank of Iraq and 19.71% at Commercial Islamic Bank of Iraq. Institutional disclosures addressed both a presence of security and business: continuity mechanisms, but the evidence given was not enough to evaluate either service availability, incident recovery, or control effectiveness.

Conclusion: The changing face of digital payment infrastructure is dos not happen in a vacuum with no measurable operating performance and was almost the result of different banking norms inherent to Iraq. The supervisory assessment allots an account to the results and was set with a descriptive baseline since more than the set of financial ratios are needed to gauge robust banking institutions.

Keywords: Iraq; Electronic Payments; Banking System Stability; Financial Indicators; Financial Stability

1 INTRODUCTION

Digital finance landscape was constantly evolving and was changing the way banks and customers interact as well as a nature of intermediation, settlements infrastructure and supervisory practice. While the digital services and payments lower transaction costs, they bring common cybersecurity risks to include risks of third parties, business continuity, fraud, customer trust and data governance. Therefore, financial resilience includes not only the capacity to withstand liquidity and credit shocks but also the capacity to maintain the critical functions of digital finance in the event of disruption [1–3].

Iraq is a useful example of a country in which payment modernisation proceeds alongside banking-sector reform. The CBI describes RTGS, electronic cheque clearing, inter-bank clearing, central securities depository services and retail payments infrastructure as parts of the national payment system, and the RTGS platform became available 24/7 in June 2024 [4]. The national infrastructure for banks' digitalisation is developing, but it should not be confused with the successful implementation of artificial-intelligence-based credit systems or a central bank digital currency (CBDC). Comparative analyses of Iraq's financial-system infrastructure show that formal payment rails alone cannot deliver efficient intermediation: the governance of legacy banks, limited information on credit, trust and the access of users restrict the scope of new digital channels. World Bank diagnostics concerning Iraq point to weak development of the financial sector and underuse of payment infrastructure [5, 6].

Progress in financial inclusion has been uneven. The World Bank Global Findex series estimates that the share of Iraqi adults with an account was 11% in 2014, 23% in 2017, 19% in 2021 and 30.16% in 2024 [7–9]. These numbers are survey reference values, not a continuous administrative time series, and progress in account ownership during 2021–2024 varied by gender [9]. The 2025 Global Findex survey, which covers the 2024 observation year, measures the use of and access to financial accounts, not bank profitability or cybersecurity capacity. The country profile of Iraq should therefore be read together with central-bank data on the development of the banking industry, and not as a bank-level survey of performance [10, 11]. At the same time, the IMF Article IV assessment of 2025 discusses the restructuring of state-owned banks, the management of nonperforming loans and capital requirements, the improvement of banks' governance and digital infrastructure, the strengthening of cybersecurity and the role of private banks [12]. It would thus be incorrect to treat growth in the level of digital operations and in the number of accounts as an indicator of financial stability. The key question is whether digital expansion rests on safeguards that can protect the banking system as a whole.

1.1 Research gap and contribution

The literature on the Iraqi banking system has focused on surveys and bank-level panel studies of the market issues of digitalisation, bank profitability, financial inclusion and payment methods[13.] However, little operational resilience evidence, especially around digital-service continuity, cyber incidents and independently verified AI deployment and governance, ties into these research strands[14]. This study explores this evidence gap through structured documentary analysis of Iraq's digital payment infrastructure, financial inclusion, selected banks' financial conditions and disclosed operational controls[15]. The analysis: National trends in account ownership and payment activity, selected banks' funding structures and prudential indicators and what public disclosures say about operational safeguards and if they work. It also examines the current evidence on FinTech/AI and bank outcomes and what reporting requirements are required for future digital banking resilience assessments[16]. Thus, study delivers an integrated assessment of national statistics, bank financial statements and institutional disclosures, each of which preserve it is distinct reporting levels, measurement definitions and evidential limits. The proposed Iraq Digital Banking Resilience Architecture (IDBRA) classifies disclosed controls under its umbrella and outlines the independent operational evidence necessary to evaluate their effectiveness[17]. The applicability of this to a selected two banks illustrates documentary coding feasibility and verification gaps; measurement reliability and operational effectiveness are left for future research[18]. These findings make a case for a stepwise supervisory reporting agenda based on existing digital payment infrastructure in Iraq, with a CBDC as a potential policy distinct from its baseline [19].

2 LITERATURE REVIEW AND ANALYTICAL FRAMEWORK

2.1 Financial innovation, resilience and banking stability

Financial resilience manifests itself on multiple fronts: financial and prudential stability, operations, cyber resilience, inclusion and trust. FinTech could bring banking services to households and microenterprises that have not had access to conventional banking services, but dependence on a limited number of vendors, inconsistent interoperability, poor identity verification, or unsecured lending can magnify disruption. Third-party exposure, cyber risk, network and model governance are all of relevance to botging the connection between third party involvement, cyber risk, market correlations and model governance, identified CSF[3]. How digitisation can help financial inclusion - for the first time in an Iraq context, this study makes use of an analysis of the existing literature as background for identifying gaps in the

global literature relevant to the Iraqi commercial banking sector. A recent report on Iraq examines the monetary-stability links of payment cards, points of sale, and automated teller machines, and does not treat digital adoption as a sufficient precondition for stability [14]. Using an empirically validated multivariate FinTech adoption index, more recent Iraqi panel research looked at 12 listed banks from 2016-2024; its published findings are recognized as an external literature review and are not observations that came from this research study itself [15].

2.1.1 Mechanisms and distinctions

Financial inclusion indicates the potential to access financial services and to do so in practice; operational resilience defined operational continuity of crucial banking operations via disruption and prudential soundness deals with issues of capital, liquidity, asset quality and reporting. Interrelated concepts that can not be using as proxies. These constructs may reinforce one another but can not be treated as proxies. Improved account penetration is an access outcome which did not, without a bank-level analysis, infer enhanced capital buffers or lower allowance for loan loss [12, 20]. This is the conditional path hypothesis: formal participation can gain from interoperability payments and responsible digital onboarding but the safeguards to prevent operational fragility by channel expansion across system were continuity planning (which depends on legacy applications), secure design (strong authentication), independent management (outsourcing oversight) and risk-based supervision. This cannot be measured using aggregated survey waves.

2.2 AI as a conditional supervisory capability

In the realm of Iraqi banking, AI was applied in up to fraud detection, abnormal transaction awareness, risk-base customer checks, early warning credit models creation, document processing, and supervisory analytics. But more appropriately these industries to be early adopters of the application. These tools must harness High-quality data, be rigorously tested, human-savvy, their escalation procedures explicit, higher-order mechanism for decisions transparent, have privacy controls harden, and their independent model validation In contrast, ill-designed or one-size-fits-all models may pose a contrary of these, risking increasing risk with measures I designed to mitigate them. With respect to risk management and operations, a potential risks of using the machine learning model discussed in more detail in a Financial Stability Board report from 2017. New 2024 update of the findings underscore issues such as reliance on third-party tech providers, cyber risk, dependability of models and the possibility of market movement being connected . In response to this, a suggested governance strategies now revolve around comprehensive logs, independent reviews and keeping humans in the loop raising issues rather than surveys of the types of AI that Iraqi banks are implementing.

2.2.1 Evidence on bank competition, adoption and supervisory technology

Vives [22] culminating on how digital banking was reshape the competitive arena and the position of traditional banks and that with influence regulatory frameworks can create a new wave of issues in market concentration and consumer protection. Frost [23] surveys international data that indicates various factors influence the introduction of fintech solution, including unmet needs, economic conditions, population characteristics, and regulatory support. Although neither of these uses Iraqi banks, they both illustrate why one cannot make cross national comparisons without considering the local context. Reynolds, Barberis, and Buckley [24] say RegTech was about rethinking. In the context of Iraq, this means putting in place clear data tracking systems, coordination among financial institutions, comprehensive model records, and processes for accountability before implementing predictive oversight as a critical control measure.

2.3 Digital payments and the relevance of CBDC

Instant-payment and retail-settlement systems are separate things from CBDCs. Project Garuda in Indonesia is an example of an exploratory CBDC design, but not an evidence of an operational Iraqi CBDC is provided here. Accordingly, this paper examines frameworks of payment systems available in Iraq and has a CBDC is simply mentioned as potentially a subject in the future, once the decision-makers of the Central bank of Iraq are certain, also taking into consideration the political, legal, technical and financial intermediation aspects [1, 4]. The design of Brazil's Pix highlights the fact that the presence of offline access and low-cost payment services is one of the potential benefits of CBDC, but notes that no money on its own can overcome onboarding challenges. Global payment infrastructure improvement and interoperability is vital according to the experience of Pix in Brazil, but it cannot automatically be copied to Iraq because of regulatory and user differences [25]. The ability to see real-life use cases and cheaper payments with a certain degree of incentive is crucial in boosting financial inclusion when dealing with a CBDC, as noted in IMF work on CBDC and financial inclusion, according to the IMF, a CBDC alone cannot bridge access gaps [26].

2.4 Comparative experiences

There are two key differences between these financial systems. They point to mechanisms that could be deployed in Iraq and indicate which is and isn't relevant: The Jordan Payments and Clearing Company (JoPACC) in Jordan, which is relatively geographically similar: CliQ did c.83.95 million transactions worth JOD 12.1 billion in 2024, among a mix of systems including bank and wallet participation [27]. The fact that interaction and uptake of system within Jordanian

governance and not the stability of Iraqi banks themes These figures illustrate system uptake and interoperability across lower-of-jordanian systems These measures affect the veracity of this can provide insights into what works in this type of environment and with what outcome: bank – wallet connectivity, standardised operating rules, payment-failure handling and consumer redress can be tracked with consistent denominators. The fact matters to Iraq. With reference to payments performance, the Central Bank of Egypt included financial inclusion, payment and settlement infrastructure, banking sector conditions, and financial stability in its financial stability report [28]. This can serve as a model reporting system this is not a perfect fit. In the Gulf, the Saudi Central Bank Cyber Security Framework also applies to regulated banks and payment providers embedding governance, risk controls, maturity assessment, periodic re-evaluation and other common controls mandates [29]. Its principal implication for the IDBRA is the importance of cyber-security documentation tied to verifiable control evidence and not equated with transaction growth The Jordanian, Egyptian and Saudi frameworks are nonequivalent in terms of market structure, ownership, payment definitions and supervisory capacity; their activity volumes and compliance status are separate from the Iraq-related field notes. Raast (in Pakistan) and Pix (Brazil) likewise underscore a role of interoperability, public payment infrastructure, and common payment standards. All of these cases, collectively, are circumscribed analytically in the same way: (i) The activity of adopting and implementing it, versus (ii) governance arrangements and operational controls, and (iii) independently observed risk or continuity outcomes. This paper evaluates these dimensions in turn and only uses foreign examples as a comparison of institutional design.

2.5 Iraq-specific conceptual architecture

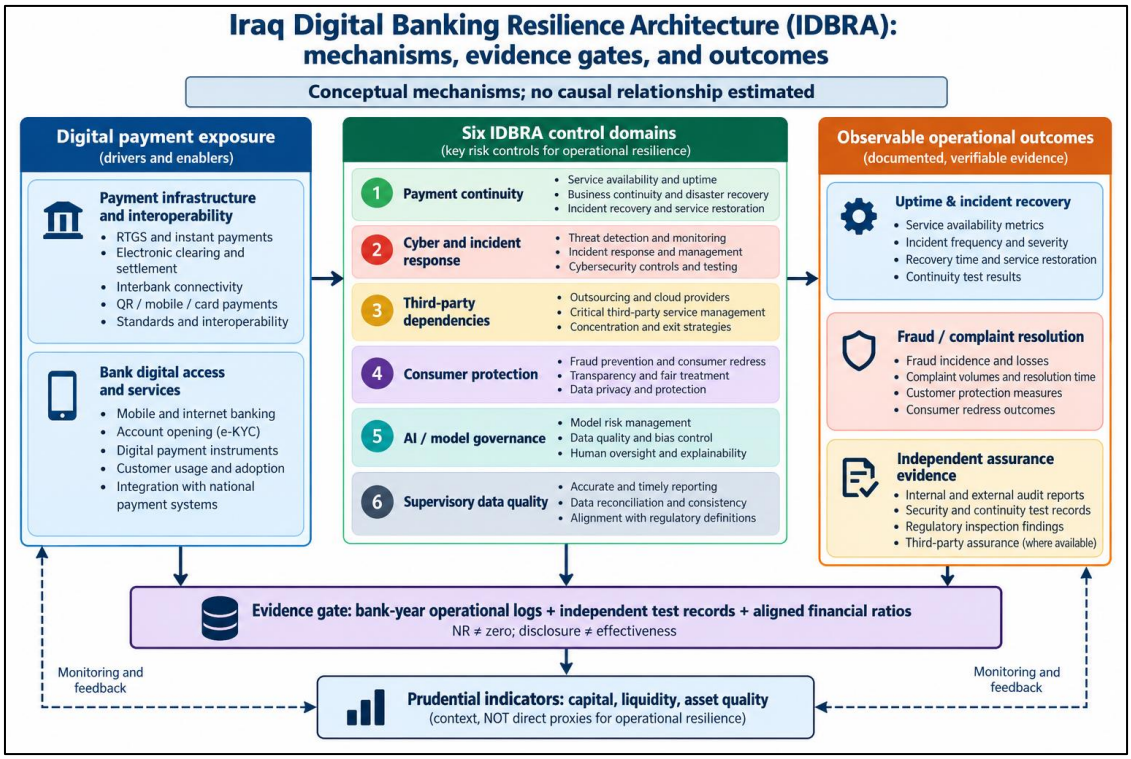


Figure 1: Expanded conceptual IDBRA pathway: digital-payment exposure, six control domains, documentary and independent-evidence gates, outcome measures and feedback loops (author-developed synthesis; not a validated causal model).

We propose an Iraq Digital Banking Resilience Architecture (IDBRA) comprised of: (1) resilient payment rails and interoperable bank systems; (2) secure identification, data and consumer facing services; (3) business-continuity, third-party and cyber controls; (4) model-risk governance around any AI deployment; (5) adaptive CBI supervision and information sharing; and (6) inclusion and complaint-resolution feedback. The framework is deliberately noncausal: it describes policy-action enablers and potential implementation pathways but does not provide quantitative benefits to stability. Figure 1 depicts a simple, but non-causal, workflow in which: (1) digitally diversified business models increase exposure, (2) there are safeguards in place in the supervisory (at a level in which the regulator issues an exam or a directive with time bound follow up) and bank domains, (3) dates of disclosures evidence their (meaning them provisional) implementation and (4) independent logs or assurance tests are therefore required to establish benefits are real. Total protection against loss of service, incident recovery and losses to consumers are not generated by prudential context criteria (capital adequacy, liquidity and asset quality). Evidence gate is a mitigative measure, which ensures a bank cannot simply publish Systems or Certifications and achieve a full resilience score. It sets out what is now happening (in a refined payments-system modernization agenda) versus what might happen in a future common

bank digital currency (CBDC). For early years of ICBM, the IMF research callouts: "Focus early on intermediaries and public incentives [31], we recommend the evaluation of fast payments against CBDCs before any investment [32], the use of privacy-by-design principles and doc rules governing data access [33], tools for end-to-end cyber-resilience [34] are design drivers but no evidence that an Iraqi CBDC has yet been introduced.

2.6 Regulatory benchmark: IDBRA in relation to BCBS, DORA and Gulf supervisory practice

Basel Committee's Principles for Operational Resilience (2021) are a broad set of principles that focus on identifying critical operations, defining disruption tolerances, mapping dependencies, scenario testing and recovery capability [20]. Risk data, BCBS 239 requires governance on information – the data provided is reliable, accurate, complete, reconcilable, and available even during stress tests [35]. In essence these are governance exams testing management against a defined tolerance and not just a board approved internal policy or a technical control that is evidenced in reports (this difference is inherent in the proposed IDBRA evidence gate). The European Union's Digital Operational Resilience Act (DORA), enforceable after 17 January 2025, seeks to create an all-ieccc framework for ICT risk management, incident reporting, resilience testing, ICT third-party dependencies and information sharing [36]. DORA does not apply to Iraq, and we do not rely on the compliance of any bank in Iraq. The same applies to the Saudi Cyber Security Framework, which roughly illustrates governance, defensive controls and maturity assessment, but has no legal binding force in Iraq [29]. The distinctive proposed use of IDBRA is not from the previous undetermined cybersecurity requirements: it is a combination of national payment-system context, bank-specific operational assurance, consumer access and supervisory data provenance with an Iraq-focused documentary coding architecture. To our knowledge (i.e. in this paper), a domain is only declared as exposed, instead of a mere indication of existence, if an attributed source (institution paper) a known activity can be corroborated (even if unverified) by the logs, audit tests or outcomes. If such records do not exist, the outcome will remain NR (not reliably observed), never zero or a failure. These are construct-validity safeguards that they not yet have any evidence that the instrument is already psychometrically or predictive validated.

3 RESEARCH METHODS

3.1 Research design, time boundaries and scope

The institution document assessment is the review of other sources for years of observation between 2020 and 2025 that will be available by 23 October 2026. It sets out three reporting layers: (i) national retail-payment activity, for which key internally comparable descriptive presentation is the 2022–2024 values from the CBI Financial Stability Report 2024 [37]; (ii) bank financial accounts and annual institutional disclosures, which include historical windows flagged by the language bank where available; and (iii) an explicitly interim contextual update for 2026 which is not annualized. Earlier CBI publications, which present 2020–2021 data are used as static documentary context and not used to form a single five-observation series for the purpose of statistical inference [38]. The three-bank financial comparison is purposive and does not represent the Iraqi banking population.

3.2 Data sources and extraction rules

In this paper, primary public data sources were prioritized: CBI payment-infrastructure documents, strategies and guidance [4, 39–41]; World Bank Findex and World Bank Development Indicators [7, 10]; the IMF 2025 Article IV reports [12, 42]; FSB artificial intelligence reviews [3]; and yearly reports and investor disclosures from the analyzed banks. The numeric series in this paper were specified by a reference year tag, units, the universe and source of the data. Survey and regulatory documents are not considered wholly statistical. In order for the tabular contents to be included at all, the existence of the remains of the publication alongside the definition of the indicators needed to be confirmed. Eligibility was limited to institutional issuers that could be identified, institutions whose publications had years listed, financial and payment indicators immediately at issue and research papers with linkable bibliographic metadata. Policy existence is found by institutional announcements, whereas numeric observations come form data releases. This includes promotional commitments, no proof estimates, and counts of bank technology adoption where there is no audit trail and these were not listed in the quantified tables. The documentary extraction matrix offers the following information: institution issuing, publications it was part of, policy vs. statistical content, variable definition, area, measurement year, and inference limitation. These institutions were singled out as being institution design and not just control institutions for matched economies. These are (i) access, (ii) payments infrastructure, (iii) prudential governance, (iv) operational continuity, (v) third-party risk and (vi) consumer protection. Publications that vary are not averaged, but source definition and period prevails. NR (not reported) information indicates that there is no measure or an estimate that cannot be extracted reliably; it is effectively not available but not missing or zero. NA in our datasets signifies the item isn't applicable of the particular banking model or reporting unit. Figures enter the same quantitative comparison only if the reporting year, perimeter, accounting definition, currency and source page are all aligned. An elusive past-year amount eliminates a growth-rate calculation, though a qualitatively reported figure for the current

year may be sourced from another source. Data gaps are not filled in. When a source discrepancy exists these are noted and not averaged; values that don't agree are left out of pooled comparisons until clarified.

3.3 Indicator definitions and analytical procedure

Account ownership (%) here refers to adult population aged 15+ who hold an account at a financial institution or mobile-money-service provider in the respective Findex wave. The percentage-point (pp) change is the more recent rate than the earlier rate, and not the education growth rate. For a value X in year t, the annual percentage change is 100 × (Xt / Xt−1 − 1), provided Xt−1 > 0. The implied mean transfer value of a system is the aggregate IQD value in the same system divided by the recorded number of transactions in the same system and period. The figures shown in the tables produce every derived rate, and published values have limited precision, so derived changes are descriptive approximations. Under proposal to use this for monitoring, service uptime would be the available production minutes divided by scheduled production minutes × 100; fraud-loss rate would be verified losses divided by the value of relevant digital transactions × 100; incident restoration time is the median amount of time required to recover a distributed critical service; and complaint resolution rate is the number of resolved admissible complaints divided by the total admissible complaints × 100. These were the suggested operation definitions of these metrics and therefore no measurements are available to fill them with.

3.4 Analytical strategy and case selection

This is an observational documentary project, not an experiment, an intervention evaluation, or a representative survey. It does not fit bank-level regressions necessarily because matched bank-year digital-exposure and outcome series are not available. These conclusions are multiple cross-checked across separately published regulatory statistics, audited financial disclosures and dated institutional governance statements. These sources allow descriptive comparison and an assessment of documentary coding feasibility, but not estimates of the causal effect of digitalisation on financial resilience. This has two components: (a) institution policy function; (b) descriptive display of independently verifiable inclusion counts; (c) qualitative result-match control; and (d) comparative design benchmarking. The main weaknesses of the work are the lack of publicly available bank-by-bank operational statistics, the lack of an annual bank-level AI-adoption series, and that it is impossible to identify what contributed to the overall inclusion shift. System-wide IRPSI movements do not represent changes in the digital-adoption level of individual banks, Findex waves are not yearly administrative observations and the companies that own published bank accounts are not operational-resilience tests. This was an intentional decision between the three private banks (National Bank of Iraq, NBI; Credit Bank of Iraq; and Commercial Islamic Bank of Iraq, CIBIQ) to narrow the scope of the financial comparison to just those financial institutions whose FY2024 statements provide the exact measures used in Tables 4–6. The two-bank IDBRA documentary comparison uses NBI and CIBIQ as their dated reports provide statements that can be classified according to a six-domain codebook. Such information-rich purposive sampling is suitable for testing document-coding plausibility, not estimating population parameters. Therefore, there are two distinctly-different denominators inherent in the way the study was designed: one for the three-bank accounting comparison, and one for the two bank disclosure-coding exercise. These eligibility criteria are biased toward banks with more readily available disclosures and could introduce disclosure-selection bias; any inference about the prevalence or effectiveness of controls among all Iraqi banks is not made.

To curb ownership-selection bias, studies of Rafidain and Rasheed, the state owned banks screened against earlier for public documentation in a separate pool of qualitative evidence, are not considered private-bank controls. 44 Rafidain branches have core-banking functionality, which is highlighted in the 2024 achievements of the Ministry of Finance's core-banking win statistics[43], while one systems-status page (undated) reports 81 of 84 Rafidain branches and 100 of all 121 branch network to be on board [44]. These are administrative statements with an unspecified measurement cut-off, not validated annual uptime or risk statistics, and the different counts are not conflated. Schedule 1 comprises quarterly financial statements underpinning the download of Rasheed Bank's 2023 & 2024 balance sheet data that is publicly available on the internet [45]. In this report, it is not tied to private bank accounting categories, consolidation boundaries, thus they provide no Rasheed assets, deposits, capital ratios, or growth estimates.

3.5 Evidence-quality rules and statistical inference limits

Evidence is categorized into one of five categories prior to analysis: audited annual accounts, regulator statistics, population surveys, institutional disclosures with dates and secondary empirical studies that have undergone academic peer-review. The extraction ledger holds the issuer, period, population, definition, unit, original page and any revisions. Fiscal year stocks that match each other can be assessed however, interim flows must have an equivalent interim period to match. National payment volumes, survey percentages, business bank accounting figures keep their original observation units, and conventional versus Islamic finance splits are resolved through disaggregation, not pooling. Varied response times of used n variables These are not the same thing. Five-year national observations make up a finite, time-ordered administrative record, not independent random draws. Spearman rho, exact permutation p values and difference-based Spearman correlations are not expected to solve serial dependence, shared time trends, coverage

changes, unobserved macroeconomic confounders, or the ecological difference between national payments and bank level risks; for these reasons these statistics are not calculated or reported. The descriptive growth rates that are available are arithmetic sums of the years and definitions actually seen, but come with no sampling-based surprise or causal claim. S index, the CBI's Stocks on its financial-stability matrix scores are not treated as regular NPL or capital ratio metrics and there's no payment activity in an association table. No synthetic bank-year records were created, the annual figures for 2026 were not extrapolated, and no resilience outcomes are unobserved. Rules for documentary coding and assurance. Document analysis follows the fixed six area codebook and records: D: an institution-worthy institution-between control area; NR: required finding which can not be sourced out of the reviewed source; independently audited operation tested effectiveness, which calls for present audit and what followed. A right to disclose is no evidence that the control was in fact working; NR is never reported as zero or failure. All choices of coding preserve the original verbatim, issuer, document edition, reporting year and page reference. The present two-case application is a clear single-coder activity, and is not an inter-rater reliability study; independent duplicate coding with Kappa statistics is required prior to further testing.

4 RESULTS AND DISCUSSION

4.1 Documented trends in access to financial accounts

Table 1: Adult financial account ownership in Iraq, selected Findex survey years

Survey year	Ownership (% adults 15+)	Change versus prior observed wave (pp)	Interpretive note
2014	11.00	—	Published rounded estimate
2017	23.00	+12.00	Published rounded estimate
2021	19.00	−4.00	Published rounded estimate
2024	30.16	+11.16	WDI Findex value

Source: World Bank Findex and Iraq Economic Monitor [7–9]. Historical 2014–2021 values are rounded as published; the 2024 value is the WDI value. A decline between sampled waves is not necessarily a continuous trend.

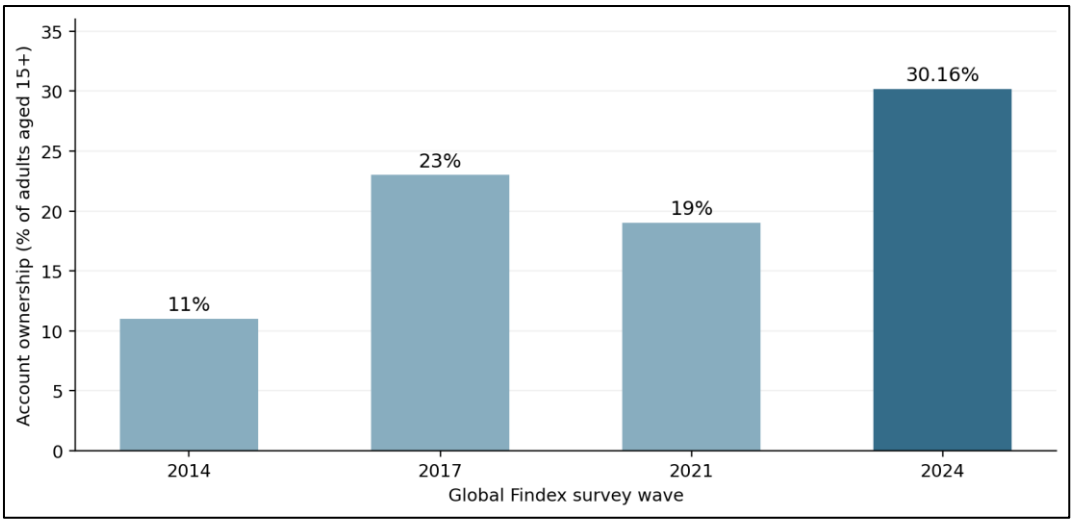


Figure 2: Financial account ownership in Iraq, selected survey waves (% adults aged 15+). Sources: [7–9].

The 2024 figure is an increase of 11.16 percentage points from the reported 2021 level and 19.16 points above 2014, although non-monotonic movement is evident in the intermediate 2017 value. About 69.84% of adults indicated not owning accounts in 2024 under this measure. While access expansion will continue to be a major policy aim, success is judged on the availability of regular, disaggregated survey evidence, not on platform registrations alone [7-9]

4.2 Inclusion, gender and distributional resilience

Table 2: Gender-disaggregated financial account ownership and digital-payment use in Iraq (Global Findex survey waves)

Indicator	Earlier observation	Later observation	Caution
Male account ownership	22% (2021)	41% (2024)	+19 percentage points; published rounded Findex waves
Female account ownership	15% (2021)	19% (2024)	+4 percentage points; published rounded Findex waves
Account-ownership gender gap	7 pp (2021)	22 pp (2024)	Male minus female; widened by 15 pp
Used digital payments — men	Not comparably extracted	34% (2024)	Share of men aged 15+; not a bank-use metric
Used digital payments — women	Not comparably extracted	16% (2024)	Share of women aged 15+; not a bank-use metric
Digital-payment gender gap	Not calculated	18 pp (2024)	Men minus women; distinct from account ownership

Source: World Bank Global Findex and Iraq digital-finance dashboard [10, 11], and the World Bank assessment of 2021–2024 gender changes [9]. Historical waves are survey snapshots, not a continuous annual panel; 2021 digital-use values are not imputed.

Accounts do not have to equitable to gadget with growth in account ownership. Digital government-to-person Disbursement also increased in 2021–2024 but men account ownership rose by about 19 points and women only 4[9]. Table 2 in this study shows that the ownership gap in 2024 was 22 for points, while the median jump in digital use only made up 18 points [11]. These are population survey outputs, not bank-level channel performance. This disjunction uses accessible onboarding, rural connectivity, functional literacy, and dispute resolution as an example; it does not itself isolate a causal explanation. Documentary triangulation rather than interview-based results identified three implementation constraints. Firstly, for payment uptime, authentication, and point-of-sale continuity, the supply downtime and connectivity outages are the edge cases this study involves; it is impossible to quantify the risks to service-specific electricity without the relevant logs from the facility, telecom and bank networking. Secondly, why accounts will be used after opening is a matter of financial and digital literacy. Thirdly, consistent usage over the channel is heavily influenced by trust and consumer protection, particularly in cases of fraudulent inquiry and failed payments without transparent complaint handling. These propositions influence the choice of control in IDBRA whose incident rates are not recorded. This study was conducted on this report, no interviews or field observations were conducted.

4.3 Iraqi payment infrastructure and regulatory foundations

The national-level RTGS, clearing and retail-payment infrastructure provides a technical starting point through horizontal interoperability in service layer but its efficacy in reducing system disruptions relies on making sure there are systems in place to avoid outages, practiced recovery procedures, liquidity and network access security controls for fraud. The Central Bank of India has developed a set of requirements around cyber resilience for financial and banking sector, and also for electronic banking websites, applications, and payment services, both of which are outside the scope of this paper [4, 39, 40]. The national inclusion strategy needs to be understood in the context of the 2025–2029 policy text and its promises that were introduced under this policy, versus what has already been achieved at bank level [41]. CBI's administrative reports would help to catalog key implementation metrics such as payment success rates, complaints and outage duration.

4.4 National payment activity

The national IRPSI series has only a minor role: it merely measures system load and provides a reproducible baseline to monitor payment systems and potentially determine what bank-level information can be gathered to explore the resilience of the system. It cannot be used to explain variations in capital, non-performing loans, liquidity or cyber-service continuity. The interpretation of the numbers is limited to the IRPSI values for 2022–2024 of the CBI Financial Stability Report 2024 [37], see Table 3. The earlier observations for 2020–2021 come from a different download with different level of detail estimate [38] and are therefore not auto-concerned with the main table or used to compute a five-year single compound growth rate. It is an IRPSI activity, not customers of individual banks, retail purchases, incidents or successful recovery events.

Table 3: Reproducible IRPSI activity changes and implied average transaction value, 2022–2024

Year	Count (million)	Value (IQD trillion)	Count YoY (%)	Value YoY (%)	Implied IQD per transaction
2022	11.59	8.22	—	—	709,232
2023	18.65	9.63	+60.91	+17.15	516,354
2024	58.42	21.11	+213.24	+119.21	361,349

Source: CBI Financial Stability Report 2024, payment-system series [37]. Growth rates and averages are computed from the rounded values shown. The average value is the value divided by the count; it is not an average retail purchase value and may reflect the underlying payment mix.

The reported IRPSI transaction count rose from 11.59 million in 2022 to 58.42 million in 2024, a cumulative increase of as much as 404.1% during the two observed intervals, and the nominal value went up from IQD 8.22 trillion to IQD 21.11 trillion, around 156%.8% of value growth was in 2023 and 119.21% in 2024. This displays how massive the growth in recorded payments can be in all quantity and in what swing and note that they are for no sustained growth law and are not forecasts of future volume or gauge of real growth, on account of their being nominal IQD and they have not been adjusted for inflation. The average recorded value per IRPSI transaction slipped from roughly IQD 709,232 in 2022 to IQD 361,349 in 2024, a change of 30.02% between 2023 and 2024. This ratio is mechanically reported as the reported value divided by the reported movement count. It is consistent with rising transaction frequency and a change in aggregate ticket size, but it gives no indication of what drove changes in household adoption, transaction purpose, consumer welfare, fraud exposure or outage resilience. Payment mix, reporting population, transaction-routing arrangements and macroeconomic conditions may all contribute, and no attempt is made to attribute the change to a particular banking or technological intervention. What could be told apart as RTGS evidence. CBI Annual Economic Report 2024 states that summary of RTGS transfers denominated in IQD in 2023 are 69,386 and 109,286 in 2024 (+57.5%); however, the linked settlement value has spiked up from IQD 276.5 Trillions to around IQD 374.1 Trillions (approx +35%). Both the source numbers for these wholesale interbank figures were drawn from IRPSI retail activity and they cannot be treated as a single comparable transaction pool. Why no association or significance tests are conducted. Crucially, to treat a finite administrative series as a sample population could lead to changeless inference. Even five yearly records would be just the baseline to start to establish if there is a payment-smaller effect qualitative link, and the two growth intervals of the combined-release 2022-2024 profile. Macro-financial annual observations do not meet the assumptions of exact permutation procedures such as exchangeability, and first differencing does not eliminate serial dependence, omitted-variable bias or mismatched observation levels between system and bank data. Consequently, the financial side evidence is examined separately (Section 4.5). This saysir recorded the rise in IRPSI activity indicates a higher use of payment infrastructure; not whether any improvement has been made in prudential-solid banks, information security performance among Iraqi banks, operations recovery or digital service uptime. This assessment has primarily found this has persisted since records of comparable bank-specific operational outcome metrics are not available, a small-sample statistical test cannot replace. Longer definition-consistent series, explicit modeling of temporal dependence, matched bank-year exposures and outcomes, capacity to handle macroeconomic and institutional confounding would allow us to evaluate resilience effects in the statistical sense.

4.5 Banking-sector conditions shaping digital resilience

Understanding how critical these risks are relative to others, and assessing them separately, is a focus of the IMF assessment. The IMF concluded that technology policy can be tightly coupled to the capital structure of a bank, how it is governed, its credit underwriting practices, correspondent banking and anti-money laundering barriers. A digital bank may provide efficient digital customer channels but can still be vulnerable to credit losses or poor capitalization; likewise, proper settlement tech can not replace debit balance / loan balance sheet monitoring to best effect [12, 42]. Operational resilience as defined by the Basel Committee is the delivery of core banking functions in the midst of disruption, which is a very good tuning fork for the theoretical model: future bank reporting should identify its critical operations, mapped dependencies, disruption tolerances, scenario tests and board accountability rather than simply from having payments systems available [20].

4.5.1 Selected banks: financial condition and funding structure

This study explored published 2024 financial-statement indicators on three Iraqi banks—NBI, Credit Bank of Iraq and CIBIQ—this claim is further supported by the fact, based on national policy evidence, that the real money is stored in the bank's own treasury. The sample is purposive based on publicly available annual reporting, not a representative sample of Iraqi banks. All figures are reported in IQD Billion and when end-of-year consolidated amounts are disclosed, they represent the figures for that year. This study looks at operational and AI-adoption indicators [47–49] to compare with actual performance on financial robustness, revealing actual bank-level outcomes.

Table 4: Bank-level balance-sheet indicators and derived structure ratios, fiscal year 2024 (IQD billion)

Bank	Total assets	Customer deposits	Total equity	Net credit / financing	Deposits / assets (%)	Equity / assets (%)	Net credit / assets (%)
National Bank of Iraq	5,144.233	3,462.694	697.505	1,781.307	67.31	13.56	34.63
Credit Bank of Iraq	537.268	143.474	365.612	NR	26.70	68.05	NR
Commercial Islamic Bank of Iraq	533.894	105.215	356.016	7.427 (financing receivables)	19.71	66.68	1.39

Sources: NBI annual report [47]; Credit Bank audited consolidated statements [48]; CIBIQ published investor KPIs [49]. Amounts are converted from the issuing banks' displayed units to IQD billions. NBI credit was direct credit facilities, net; CIBIQ reports net financing receivables under an Islamic banking model, so the two were not mechanically equivalent credit-risk exposures. NBI deposits exclude separately presented margin accounts (IQD 656.147 billion). Credit Bank data are from its consolidated balance sheet. Ratios use each bank's own total assets as the denominator, which avoids ranking by absolute size; NR = not reported or not reliably extractable.

These facts reflect materially different structures of the balance sheets. NBI was significantly larger in absolute more in absolute assets and customer deposits than the other two sampled banks. NBI used customer deposits to fund 67.31% of its assets, compared with 26.70% at Credit Bank of Iraq and 19.71% at CIBIQ, whereas equity made up 13.56% of NBI's assets compared to 68.05% and 66.68% at the other two banks. CIBIQ had a relatively small financing-receivables balance (1.39%). These ratios measure funding and accounting structure, not outage resilience, and they relate to the adoption of different business models, and, in the case of CIBIQ, Islamic financing definitions; they can not be generalized to state-owned banks.

Table 5: Observed changes in selected bank balances, 2023–2024

Bank and measure	2023 (IQD bn)	2024 (IQD bn)	Change
NBI total assets	3,982.985	5,144.233	+29.16%
NBI customer deposits	2,926.569	3,462.694	+18.32%
NBI net direct credit	1,309.948	1,781.307	+35.98%
NBI deposits / assets (%)	73.48	67.31	−6.16 pp
Credit Bank total assets	507.729	537.268	+5.82%
Credit Bank customer deposits	150.658	143.474	−4.77%
Credit Bank deposits / assets (%)	29.67	26.70	−2.97 pp

Sources: banks' 2024 annual financial statements and comparative 2023 columns [47, 48]. Percentage changes are recalculated as (2024 value / 2023 value − 1) × 100 from the displayed figures. CIBIQ is not included because an aligned 2023 series was not confirmed in the cited extracts, and missing prior-period values are not estimated. The deposit-to-assets ratio is a funding-structure indicator, not a validated measure of deposit stability during shocks.

The two banks with identical transaction figures (i.e. units) differ, however, in the type of deposit funding pattern. While NBI's assets rose by 29.16% and its deposits by 18.32% Credit Bank's assets increased by 5.82% but its customer deposits (CD) declined by 4.77%; so the deposit-to-assets for both banks fell (Table 5). These movements are reflected in the accounting principles, not in fintech, AI or payment technology, and nor one outcomes are driven by digitalization. Separate assessments of profitability, risk, and service continuity outcomes are suggested using harmonized bank-year disclosures [47, 48].

4.5.2 Prudential ratios and source reconciliation

Table 6: Disclosed prudential and efficiency ratios, selected banks, 2023–2024

Bank	Indicator	2023	2024	Change (pp)
NBI	Return on assets (net profit / average assets)	5.94	5.53	−0.41
NBI	NPL ratio (after interest in suspense)	2.20	4.05	+1.85
NBI	Basel III capital adequacy ratio	21.16	25.52	+4.36
NBI	Liquidity coverage ratio (LCR)	152.00	150.80	−1.20
CIBIQ	Basel III capital adequacy ratio	NR	179.1	—
CIBIQ	Liquidity coverage ratio (LCR)	NR	540 (539 on KPI web page)	—
CIBIQ	Net stable funding ratio (NSFR)	NR	629	—
CIBIQ	Cost-to-income ratio	NR	32.81	—
CIBIQ	Return on average assets	NR	7.97	—
Credit Bank of Iraq	Capital adequacy ratio	NR	81	—
Credit Bank of Iraq	Liquid assets / total assets	NR	32	—

Sources: NBI [47]; CIBIQ [49, 50]; Credit Bank [48]. All values are percentages as published by the issuing bank, with institution-specific definitions; they are not harmonised across banks and do not measure cyber resilience, uptime or digital effects. NR = not extracted for 2023.

CIBIQ reported a Basel III capital adequacy ratio of 179.1%, an LCR of 540% (539% reported on the KPI section of the website) and the 2024 NSFR of 629% and a cost-to-income ratio of 32.81% and a return on average assets of 7.97% Credit Bank reported capital to be adequate at 81% and liquid assets equivalent to 32 per cent of assets. Yet these metrics are based on different balance sheets, modelling assumptions and supervisory calculations, and may only hold with consideration of the bank's specific business models, audited notes and regulatory requirements, and should not be read as a simple cross-bank ranking. Since both CIBIQ displays include an explicit as-of date and a report version, the analysis uses the fixed annual-report value as of 2024 (as opposed to the 395% figure used to correct credit bank numbers [49,50]). Those are enough to paint a within-Bank illustration on NBI: reported ROA stood at 5.53% in 2024 against 5.94% in 2023, NPL ratio climbed to 4.05% on a rise from 2.20% and the Basel III capital adequacy ratio rose to 25.52% from 21.16% in the 2024 annual report [47]. How, within a single bank, to evaluate technology governance, profitability, asset quality and capitalisation separately. An annual report does not provide a matched annual series of the bank total digital transactions, which would be necessary to estimate a fintech slope. No common, validated bank-level service-uptime, cyber-incident, AI-use or transaction-fraud series is disclosed for the sample; the data therefore strengthen the prudential baseline but cannot establish an empirical link between digital maturity and financial stability.

4.5.3 Sector-level asset quality

Table 7: Banking-system asset-quality ratios, 2023–2024 (sector-level observations)

CBI-reported measure	2023 (%)	2024 (%)	Change (pp)
Total non-performing credit / total cash credit	6.26	7.14	+0.88
Private-sector non-performing credit / private-sector credit	10.80	11.77	+0.97
Household non-performing credit / household credit	7.02	8.41	+1.39

Source: CBI Financial Stability Report 2024 [37]; changes are calculated as the later minus the earlier observation. Two observations cannot support a time-series regression, and these series operate at a different analytical level from the IRPSI payment series.

The CBI Financial Stability Report 2024 indicates a fall in its banking sector sub-indicator to 0.182 from 0.301 in 2023. It is an indicator applied within the CBI stability framework - and is not a bank-level probability of failure. It follows a different construction and population of the three-bank ratios, and does not combine with them arithmetically. It

highlights higher risk of some capital adequacy and liquidity ratios inside its stability matrix, reinforcing the need to assess prudential structure alongside the expansion of digital payments [37].

At the national reporting level, CBI figures show the recent expansion of retail-payment activity (Table 3) and that the reported non-performing share of cash credit actually increased, not decreased, from 2023 to 2024 (Table 7). This is not evidence that payments caused a fall in the quality of credit: it can be explained through bank balance sheet composition, credit classification and (macro) economic developments. As a check designed for falsification purposes, it does illustrate that a rapidly grown payment-system use does not have to result in a higher credit risk and why an alleged negative fintech-NPL coefficient should not be claimed without matched bank-year records and controls.

4.6 Technology-governance disclosures and evidence gaps

Public disclosures make it possible to document selected operational controls for the same banks checked in Section 4.5. Evidence is written by what was stated, not by that service is dependable. In its annual report 2024, National Bank of Iraq details its ISO 27001:2022 certification, its operational security operations centre as well as its incident management platform [47]. The Credit Bank of Iraq only supplies an update to its mobile banking application and fraud-updates but no comparable 2024 channel-utilisation or downtime data [51]. On the 2024 audited financials of CIBIQ, the audited information is also ambiguous enough not to verify the intensity of AI-deployment (by bank-year) or have a service outage count [49, 50]. In 2024 annual report of Iraqi Islamic Bank for Investment and Development, the Bank details contract spending and systems acquisition, including a POS-terminals supplier agreement, effective 22 May 2024, an ATM maintenance agreement, starting in September 2024 (IQD 18 million) and a renewal of the expected credit loss system (a USD 83,000 contract signed in 2023) and the sanctions-list screening service with updates every 12 hours (IQD 1.25 million per month from October 2024)[52]. These are technology-governance inputs on a bank level, rather than evidence of service uptime from AI-deployment or improved NPL performance, but they extend the scope beyond a generic national payments-time-series. Statements: Cyber certifying, System procurement or A.I. Applications document institutional initiatives not proven performance. These Iraqi bank reports examined failed to provide comparable year-specific AI model validation, transaction fraud losses, and critical service downtime. Consequently, these identified evidence gaps and not estimated operational outcomes. We determined a homeostatic problem — end-of-the-year national digital-payment counts have no bearing on bank-level resource resilience and performance risk outcomes. These empirical findings are evidence gaps and not estimates of operational outcomes. It was found reporting problem: national digital-payment counts are not matched with bank-level service reliability and risk outcomes. An abundant baseline set of data for use by future independent tests would capture, for each reporting period, the number of transactions attempted and failed, system-wide incidents, service uptime and recovery time, as well as Bank-specific assessments of Atypical Assets, Capital and Liquidity. No pre-specified metric is shown here as an observed value or as an existing CBI requirement. with immediate recommendation: Revealed the standardised disclosure of critical banking-service interruptions and independently verified recovery tests and defined banking-risk metrics. Published thresholds or composite ratings should not precede, but rather accompany, an independently reviewed operational dataset. Missing observations alone in the present documentary comparison lead to the implications below, not from an extensively field-tested policy measure.

4.7 Triangulation with independent Iraqi empirical studies

Observational evidence presented through independent published studies provides new insight complementary to the national descriptive series used in this article. This includes for example the dataset from Al-Bakhit et al.[15] that comprises a balanced panel of 12 commercial banks listed on the Iraq Stock Exchange between 2016 and 2024 (108 bank-year observations). Their FinTech adoption index is built up from five served service domains: mobile banking, internet banking, digital payments and wallets, cards and POS networks, advanced financial services, and focuses on ROA, ROE, and market value. It is a bank-level evidence also externally valid, but we do not re-estimate the observation-level index and finance public data; hence its coefficients are not from the present study.

Al Saman et al. [16] used questionnaire responses from 119 participants across five banks to study banking digital transformation using Pearson correlation and simple regression. The data examined in their research is drawn from surveyed perceptions and evaluated performance and therefore does not contain the magnitude of an objective, bank-year measured digitalisation effect. 211 Raheef and Ibraheem [17] recognized forty employees in three private banks and found a statistically significant positive connection between digital banking capabilities and smart financial management, but the small, perception-based sample limits generalizations to the entire Iraqi banking system. 777 questionnaire responses, financial observations combined (2020–2025 Iraqi banking study) and sensory report of whatever darker dimensions of effective digital-transformation measure to financial-performance dimensions were used by Abd Ali et al. [18]; but only survey based evidence as evidence to enhance AI caused asset quality improvement; not a controlled experiment. Hussein and Neama [19] list another report of the extent of digital transformation in private Iraqi banks. The studied ones differ through their units of observation — bank-year vs. respondent; how they measure digital exposure disclosure-coded FinTech index vs. questionnaire; and what they think market value or perceptions of financial management were outcomes, period, and statistical controls. Their coefficients, sample sizes

and p values cannot be combined without consistent effect-size definitions and uncertainty estimates. More adds a smidge less to notice, however, ROA and ROE are not metrics of resilience to economic shocks after a cyber attack and liquidity stress, or stressed assets. Finally, these studies could raise the spectre that digital capabilities might be associated with overall organisational performance, but they were not able to provide evidence showing that it is a global factor that leads to finance and financial performance improvements. This literature theoretically provides plausibility, and empirical triangulation of the data provided which in turn, offers a theoretical ground for a practice supported by this article through payment statistics independently verified, carefully chosen prudential comparisons and fee IBRA architecture for supervisory measurement.

4.8 Synthesis across national indicators, bank accounts and disclosure evidence

Linkages between bank disclosures and payment statistics help identify what and who went public, rather than why managers chose a certain technology or how disruption affected customers. It is not possible to isolate multiple rationalizations (regulatory change, bank size, ownership, demand for payments, infrastructure constraints, and reporting incentives) to identify the patterns without interviews, internal audit records and operational logs. In present study, suggests four findings. First, national retail-payment activity has grown, because there has been an overall increase in digital payments, however activity volumes have not reflected the ongoing operation of payment activities. Second, the banks chosen show different characteristics in terms of assets, deposits, and capital to asset, and asset-quality profiles, so a single national payment-growth indicator cannot be used as a stand-alone measure of the stability of the banking system. Third, the policy basis for cybersecurity, consumer protection and payment interoperability is included in regulatory documents that have been approved by end users, but there are too few empirical data on the operation of these controls because of the lack of comparable incident records, uptime or AI-model inventories; IDBRA framework provides a testable supervisory specification, not an estimated causal effect. Fourth, empirical studies have been published that have detected associations between digitalisation and dimensions of banking performance [15–18] from Iraq, but with different study designs, measures and sampling frames and there is no evidence of causal effects on credit risk or operational resilience. This triangulation reinforces the need for comparable supervisory indicators and independent replication. A fifth qualification is ownership-sensitive documentary triangulation. Core-banking modernisation is very clearly involved, as is confirmed by Ministry of Finance disclosures confirming, among others State-owned banks, and the Rasheed Bank public FY2023 and FY2024 financial files [43–45]. However, there is a clear possible distinction between rollout coverage, published financial files, prudential outcomes and audited service continuity. A national state-bank will improve the power of the country side, yet will not add to either of the small, three-bank accounting analysis or of the two-bank IDBRA pilot. A new five-bank qualitative evidence screen with five banks is no more operational-resilience index with five banks.

4.9 Documentary assessment of digital resilience: evidence classification and two-bank comparison

IDBRA is a conceptual evidence-classification framework—is not a calibrated index; The six domains and tenets of the design proposed for IDBRA are normative and we did not assess the reliability of the use of these domains, lack of criterion validity, predictive performance, or operational effectiveness. Two bank cases for FY2024 were examined to assess whether disclosures of the same nature might be coded in the same categories. No composite score or cross-bank operational-resilience ranking was produced.

Table 8: IDBRA documentary coding domains and proposed independent-evidence requirements

Domain	Weight (/100)	Four controls, each graded 0–3 only with audit evidence
Payment continuity	25	Critical-service inventory; uptime logs; disruption-tolerance tests; demonstrated recovery
Cyber and incident response	20	Threat-monitoring records; incident register; response exercises; remediation verification
Third-party dependencies	15	Critical vendor mapping; concentration review; exit/continuity plan; vendor stress test
Consumer trust and protection	15	Fraud-loss reconciliation; complaints register; resolution testing; access/inclusion checks
AI/model governance	10	Approved model inventory; independent validation; drift monitoring; named human escalation
Supervisory governance/data	15	Board oversight; standardised reporting; quality audit; evidence retention

Source: author-developed control mapping drawing on CBI and FSB guidance [3, 39, 40]; these are proposed use cases.

4.9.1 Two-bank documentary feasibility assessment: NBI and CIBIQ (2024)

Comparative case analysis can also be seen as an audit against the negative evidence that no public report, independently tested, is able to prove that the two banks show identical operational resilience. It also came to be free from any kind of independent clinical or site-visit component, and there is no evidence from bank statements to treat as stakeholder interviews or independently observed practice. These two banks were not chosen to represent all banks but because they disclosed relevant security and technology governance in 2024. This is evidence from a control bank-2024 disclosure, not an independently observed outcome of operations. The bank claimed in its 2024 annual report that it is ISO 27001:2022 certified and operates a security operations centre (SOC), a platform to track electronic incidents, PCI DSS compliance activity and security awareness activities [47]. Describing the implementation of fixed technology projects in 2024, CIBIQ reported that a disaster-recovery-centre project had matured fully, as well as PCI DSS v4, ISO 27001 and ISO 22301 updates and renewals, NIST CSF-related implementation and privileged-access-management system (PAM) [50]. These statements were identified as bank-reported activities based on the bank getting out to the public, but no service effectiveness assessment was independent.

Table 9: Matched documentary evidence comparison for two Iraqi banks (FY2024; six illustrative IDBRA control areas)

Illustrative control	NBI 2024 annual report	CIBIQ 2024 annual report	Effectiveness gate / minimum missing evidence
Information-security governance	D: ISO 27001:2022 certification reported	D: ISO 27001 compliance update and NIST CSF implementation reported	Current assurance scope, report date, audit findings, corrective-action evidence
Detection / privileged access	D: SOC activation and electronic incident-tracking platform reported	D: privileged-access-management (PAM) system implementation reported	Timestamped logs, incident-response test results, monitoring coverage, independent challenge
Payment-card security	D: PCI DSS renewal/compliance activity reported	D: PCI DSS v4 compliance-certificate update reported	Certificate/attestation validity, assessed service scope, exceptions, test results
Consumer safeguards	D: customer and staff security-awareness activity reported	NR: comparable outcome-specific awareness or redress evidence not verified in the reviewed text	Verified fraud-loss incidence, complaint denominators, resolution outcomes
Critical-service continuity	NR: verified 2024 uptime/recovery outcomes not identified	D: disaster-recovery-centre project completion and ISO 22301 compliance/renewal reported; effectiveness NR	Critical-service uptime, RTO/RPO, independently witnessed recovery exercise, outage logs
AI/model governance	NR: complete production-model register and independent validation not verified	NR: complete production-model register and independent validation not verified	Approved model inventory (or explicit no-use statement), testing, drift review, accountable owner

Sources: NBI Annual Report 2024 [47]; CIBIQ Annual Report 2024 [50]. D = dated, bank-reported statement concerning the control; NR = comparable evidence not verified in the reviewed public document. A "completed" project, a compliance "update" or a certification claim is not independently tested operational effectiveness. Evidence cells are not scores, nothing is imputed, and no rating or percentage of resilience can be assigned to either bank from these cells.

The documentary from CIBIQ has the concerns of its disaster recovery infrastructure, standards problems as well as privileged-access management vs. the explicit presentation of an SOC and incident platform from NBI. Since the feasibility tests are performed on the coding rules themselves, not just changed to report it another way. Will a bank be any more resilient than the other? If you completed one, you might think you completed all. We see this two banks are allowed no IDBRA points, no reliability metric, errors in ranking or relationship with financial outcome resources. The same four out of the six control domains for the banks provide reported evidence but this is not the measure of how many controls are working or a resilience score. Future requirement for data acquisition: matched FY2024 (or later) uptime and incident registers, independently observed recovery-test reports, attestation scopes and model-governance inventories for both banks. The same six control definitions, observation period, evidence hierarchy and missing-data rule apply to both institutions, and the level of detail in a disclosure cannot be an order of relative robustness. For each domain d, four testable controls are listed, and each control's evidence quality q is set to 0 (no evidence), 1 (approved documented policy), 2 (evidence of implementation plus dated logs) or 3 (independently tested operational

effectiveness across the observation period). The domain score is (weightd / 12) × Σq over the four controls. If documents are not found in the evidence repository, the control is marked NA and not quietly set to zero. A composite score can only be reported if at least 75% of weighted controls have verified evidence and all mandatory critical-service and incident-response controls are observed; if this condition is not met, the result is reported as "Insufficient verified coverage". The sum of documented points and weighted evidence-coverage percentage are separately post to the report for documented partial coverage; partial observations are not extrapolated to the 100-point scale. As there were no independently reviewed outage, recovery and incident records, composite scoring is impossible, and thus no robustness score is attributed to either bank. A formal validation of the weights would only be possible through independent coders, a preuded extraction manual, page level quotations, document-version hashes and adjudication records; inter-rater reliability is not claimed in this absence of those elements.

4.10 Separate 2025 annual bank disclosures and 2026 interim context

23 October 2026 is a documentary cut-off. Disclosures for 2025 are matched only to bank-specific comparatives, while 2026 observations are non-annual figures with interim dates and are not final. National results are reported only for 2022–2024, in line with the CBI 2024 release, and no digital-effect coefficient, national payment–stability correlation, time-series hypothesis test or causal estimate is provided. The CBI statistical archives list an Annual Statistical Bulletin for 2025 [53] at the cut-off. It is only ready for inclusion in a series of 2025 national totals once the indicator definition is matched and row-level figures are again acquired. ETF financial Security Reports are available through 2024 [54] and no 2025 or 2026 stability index ever gets put there. Credit Bank of Iraq lists its interim statements as of 31 March and 30 June 2026 [55], and the National Islamic Bank lists public data for 2025 annual and H1 2026 [56]; their existence has been checked, but we haven't transcribed any numbers without also doing statement-level reconciliation. The CBI also hosted a meeting on electronic payments and financial inclusion on 21 July 2026 [57], which is not an example of either a new policy approach or a change to existing regulation.

Table 10: National Bank of Iraq: reported digital-access measures and within-definition changes, 2024–2025

NBI indicator	2024	2025	2024–2025 movement	Measurement caution
ATM network (devices)	294	424	+130 (+44.22%)	Bank-level availability proxy, not uptime
Customers (persons, approximate)	320,000	537,000	+217,000 (+67.81%)	Total customers, not necessarily digital-active
Branches	33	44	+11 (+33.33%)	Bank footprint, not a digital proxy
Paid-up capital (IQD billion)	400	520	+120 (+30.00%)	Capital stock, not digital resilience

Source: NBI Annual Report 2025 [58]. Comparability rule: the table retains only indicators with separately reported values for both years.

NBI stated 294 ATMs, almost 320,000 customers and 33 branches for 2024 vs 424 ATMs, around 537,000 customers and 44 branches in 2025, a rise of 44.22%, 67.81% and 33.33% respectively. The 2025 report also mentions that 7049 POS terminals handled 5387 merchants and that more than 45,763 customers used its mobile lending service. These metrics are only found in the 2025 report, and no comparable verified 2024 denominators were found in the extracted quotes; hence, they are treated as standalone time-stamped information, with no YoY rates calculated. These are customer figures otherwise unrelated to the total number of active digital users. The 2026 interim balance sheets and regulatory announcements are part of the 2020–2025 documentary evidence. Until any 2026 change is known, reporting parameters have to be aligned and interim flows matched, e.g. 30 June 2025 to 30 June 2026; half-year profit, transaction counts or incidents must not be annualised by tripling. A year-end 2025 balance sheet may be a false anchor file; this comparison is not a year-on-year annual growth comparison. Bank-panel analytic causality or claims analysis would require an independently verifiable same-definition bank-year adoption measure, risk outcomes and covariates.

5 CONCLUSION AND IMPLICATIONS

5.1 Principal findings

The comparison of private banks in 2024 shows a gap in the funding structure: 67.31% of the assets of the National Bank of Iraq were secured by customer deposits, versus 26.70% at Credit Bank of Iraq and 19.71% at Commercial Islamic Bank of Iraq (recombined from the disclosed amounts). These accounting differences reflect variations in business models while these are not operational-resilience rankings.

Over the period 2022–2024, as per the data in the official IRPSI records, national payment activity is on the rise; transaction volume increased roughly five-fold and nominal value grew by 2.6 over 2022, but these trends cannot be clearly linked to the impact of digitalisation on banking resilience; over the same period the sector-levelCash credit non-performing share rose from 6.26% to 7.14%. When commenting on statistics, bank balance-sheet variables and institutional governance disclosures are examined at their individual observation levels; of course, no payment-stability relationship is built from temporally ordered aggregate data. No evidence of service-continuity outcomes was found by the two-bank security-disclosure analysis, which considered the subject reported activities as indexed, so both banks fail the evidence gate. This study therefore provides a source traceable descriptive baseline, a set of transparent measurement and source-version rules, and a carefully specified evidence base to support operational resilience assessment in the future.

5.2 Implications for disclosure and supervision

Findings indicate first of the standardised bank-level indicators of Digital-Services Uptime, failed transactions, incident recovery and fraud loss; with reporting dates, definitions and independent assurance. They also should be communicated, bank-specific, asset-quality, capital and liquidity, and actually not be pitted into an unwarranted resilience score. The next step for IDBRA would entail validating coding agreement-and measurement validity testing on a more all-encompassing sample of state-owned and private banks. We can only create one combined measure where there are reliable business rules and independent records of operations.

5.3 Study limitations and data transparency

The Accounting Comparison focuses on three randomly selected private institutions, and the documentary coding pilot on two. Matches were also found for Ministry of Finance core-banking deployment statements and Rasheed Bank's dated balance-sheet directory with the State-bank body of work from before the merger. Numbers for the private bank quantitative tables are separate from the State-bank listings without having to reconcile. National IRPSI series is descriptive, nominal, non-causal; reported digital controls have no operational effectiveness; and the current public information is not suited to a bank-by-bank comparison of digital exposures, incident outcomes, and prudential ratios. These selection criteria overrepresent private institutions with robust disclosure practices and were coded by 1 coder. Designed benchmarks are cross-country regulatory comparisons, not regulations emerging through existing regulations by Iraqi regulations. These constraints makes it difficult to extrapolate representativeness or causality to the Iraqi banking sector, and the financial ratios of the selected institutions cannot be generalized to all Iraqi banks. One can recompute the values in the tables from the figures shown.

5.4 Further validation

Future research should make use of harmonised annual or quarterly data on digital services and financial risk, provided that this data is accessible for all banks. Future studies should also consider using complementary qualitative evidence, as and where an approval to access can be sought. An IDBRA rating should be considered only after independent verification has validated its reliability and observed incident outcomes.

REFERENCES

[1] Prihandini W, Safaria S. Digital resilience and financial stability: rethinking the strategic role of FinTech, AI, and CBDC in Indonesia and emerging economies. Journal of Business, Finance, and Banking. 2025;1(1):50–70. doi:10.56174/jbfb.v1i1.970. https://journal.perbanas.id/index.php/jbfb/article/view/970

[2] Bank for International Settlements. The organisation of digital payments in India: lessons from the Unified Payments Interface (UPI). In: Faster digital payments: global and regional perspectives. BIS Papers No. 152. Basel: BIS; 2024. https://www.bis.org/publ/bppdf/bispap152_e_rh.pdf

[3] Financial Stability Board. The financial stability implications of artificial intelligence. Basel: FSB; 2024 Nov 14. https://www.fsb.org/2024/11/the-financial-stability-implications-of-artificial-intelligence/

[4] Central Bank of Iraq. Components of the Iraqi payment system. 2025 Apr 17. https://cbi.iq/news/view/2854

[5] World Bank. Iraq Economic Monitor: Protecting Vulnerable Iraqis in the Time of a Pandemic. Washington (DC): World Bank; 2020. https://documents1.worldbank.org/curated/en/561001604675689187/pdf/Iraq-Economic-Monitor-Protecting-Vulnerable-Iraqis-in-the-Time-of-a-Pandemic-The-Case-for-Urgent-Stimulus-and-Economic-Reforms.pdf

[6] World Bank. Iraq Economic Monitor: Navigating the Perfect Storm (Redux). Washington (DC): World Bank; 2020. https://documents1.worldbank.org/curated/en/446201588465646751/pdf/Iraq-Economic-Monitor-Navigating-the-Perfect-Storm-Redux.pdf

[7] World Bank. World Development Indicators: Account ownership at a financial institution or with a mobile-money-service provider (% of population ages 15+), Iraq. 2025. https://data.worldbank.org/indicator/FX.OWN.TOTL.ZS?locations=IQ

[8] World Bank. Iraq Economic Monitor: Reemerging pressures—Iraq's recovery at risk. Washington (DC): World Bank; 2023. https://documents1.worldbank.org/curated/en/099453507282342287/pdf/IDU0b9f5dc440cf2f047f9098e202d3dab0861c7.pdf

[9] World Bank. The power of payments: what's driving women's financial inclusion. Development Talk (blog). 2026. https://blogs.worldbank.org/en/developmenttalk/the-power-of-payments--what-s-driving-women-s-financial-inclusio

[10] World Bank. The Global Findex Database 2025: Connectivity and Financial Inclusion in the Digital Economy (report, data and methodology). Washington (DC): World Bank; 2025. https://www.worldbank.org/en/publication/globalfindex/report

[11] World Bank. Digital Financial Services: Iraq country profile. 2025. https://digitalfinance.worldbank.org/country/iraq

[12] International Monetary Fund. IMF Executive Board concludes 2025 Article IV consultation with Iraq. Press release. 2025 Jul 8. https://www.imf.org/en/news/articles/2025/07/08/pr-25243-iraq-imf-executive-board-concludes-2025-article-iv-consultation

[13] Al-Husseini MG, Al-Shafeay MM. The digitalization of banking operations and its role in promoting financial inclusion (a study of a sample of commercial banks in Iraq for the period 2017–2022). Al-Ghary Journal of Economic and Administrative Sciences. 2024;20(00):2129–2159. doi:10.36325/ghjec.v20i00.17114. https://journal.uokufa.edu.iq/index.php/ghjec/article/view/17114

[14] Aboud WAN, Fayyadh IG, Mohammed AJ. Analysis of the impact of digital money on monetary stability in Iraq for the period 2015–2025. Tikrit Journal of Administrative and Economic Sciences. 2026;22(74 part 1):569–589. doi:10.25130/tjaes.22.74.1.27. https://www.tjaes.org/index.php/tjaes/article/view/3012

[15] Al-Bakhit SS, Ahmed BA, Mhameed MK. The impact of fintech adoption on the financial performance of commercial banks: an applied study on banks listed in the Iraq Stock Exchange. Tikrit Journal of Administrative and Economic Sciences. 2026;22(75 part 1):792–819. doi:10.25130/tjaes.22.75.1.41. https://www.tjaes.org/index.php/tjaes/article/view/3228

[16] Al Shammari ESR, Jammal NM. The impact of digital transformation on banking financial performance: an analytical study in the banking sector. Journal of Accounting and Financial Studies. 2024;19(69):510–523. doi:10.34093/m2jtxw88. https://jpgiafs.uobaghdad.edu.iq/index.php/JAFS/article/view/1956

[17] Raheef BH, Ibrahim LK. Digital banking capabilities and their impact on smart financial management: evidence from Iraqi commercial banks. Journal of Accounting and Financial Studies. 2026;21(74):486–497. https://jpgiafs.uobaghdad.edu.iq/index.php/JAFS/article/view/2514

[18] Abd Ali SM, Yaqoub ZA, Hashem MA. The impact of digital transformation on the financial performance of the banking sector in Iraq for the period 2020–2025. Entrepreneurship Journal for Finance and Business. 2026;7(Special 4):151–161. doi:10.56967/ejfb2026926. https://nejfb.edu.iq/ejfb/article/view/554

[19] Hussein SA, Neama NH. The extent of digital transformation in the Iraqi banking sector: applied research in a sample of Iraqi private banks. Entrepreneurship Journal for Finance and Business. 2025;6(2):100–113. doi:10.56967/ejfb2025507. https://nejfb.edu.iq/ejfb/article/view/479

[20] Basel Committee on Banking Supervision. Principles for operational resilience. Basel: Bank for International Settlements; 2021. https://www.bis.org/bcbs/publ/d516.htm

[21] Financial Stability Board. Artificial intelligence and machine learning in financial services: market developments and financial stability implications. Basel: FSB; 2017. https://www.fsb.org/2017/11/artificial-intelligence-and-machine-learning-in-financial-service/

[22] Vives X. Digital disruption in banking. Annual Review of Financial Economics. 2019;11:243–272. doi:10.1146/annurev-financial-100719-120854.

[23] Frost J. The economic forces driving fintech adoption across countries. BIS Working Papers No. 838. Basel: BIS; 2020. https://www.bis.org/publ/work838.htm

[24] Arner DW, Barberis J, Buckley RP. FinTech, RegTech, and the reconceptualization of financial regulation. Northwestern Journal of International Law & Business. 2017;37(3):371–413.

[25] Bank for International Settlements. Central banks, the monetary system and public payment infrastructures: lessons from Brazil's Pix. BIS Bulletin No. 52. Basel: BIS; 2022. https://www.bis.org/publ/bisbull52.pdf

[26] Lannquist A, Tan BJ. Central bank digital currency's role in promoting financial inclusion. IMF Fintech Note 2023/011. Washington (DC): International Monetary Fund; 2023. doi:10.5089/9798400253331.063.

[27] Jordan Payments and Clearing Company (JoPACC). JoPACC releases its 2024 Payments Systems Report. 2025 Mar 27. https://www.jopacc.com/media-center/news/jopacc-releases-its-2024-payments-systems-report

[28] Central Bank of Egypt. Financial Stability Reports, including the March 2024 and March 2025 reports. https://www.cbe.org.eg/en/financial-stability/macroprudential/financial-stability-reports

[29] Saudi Central Bank (SAMA). Cyber Security Framework, Rulebook No. 381000091275. 2017 May 24. https://rulebook.sama.gov.sa/en/cyber-security-framework-2

[30] State Bank of Pakistan. Governor's Annual Report 2024–25 (discussion of Raast). https://www.sbp.org.pk/reports/annual/Gov-AR/pdf/2025/Gov-AR.pdf; and Payment Systems Review FY2024–25. https://www.sbp.org.pk/PS/PDF/Annual-Payment-Systems-Review-FY25.pdf

[31] Koonprasert TT, Kanada S, Tsuda N, Reshidi E. Central bank digital currency adoption: inclusive strategies for intermediaries and users. IMF Fintech Note 2024/005. Washington (DC): IMF; 2024. doi:10.5089/9798400289422.063.

[32] Patel M, Kasiyanto S, Reslow A. Positioning central bank digital currency in the payments landscape. IMF Fintech Note 2024/006. Washington (DC): IMF; 2024. doi:10.5089/9798400289118.063.

[33] Murphy KP, Sun T, Zhou YS, Tsuda N, Zhang N, Budau V, et al. Central bank digital currency data use and privacy protection. IMF Fintech Note 2024/004. Washington (DC): IMF; 2024. doi:10.5089/9798400286971.063.

[34] Bharath A, Paduraru A, Gaidosch T. Cyber resilience of the central bank digital currency ecosystem. IMF Fintech Note 2024/003. Washington (DC): IMF; 2024. doi:10.5089/9798400286995.063.

[35] Basel Committee on Banking Supervision. Principles for effective risk data aggregation and risk reporting (BCBS 239). Basel Framework SRP36. https://www.bis.org/committees/bcbs/basel-framework/standard/srp/36/inforce/2019-12-15/published/2019-12-15

[36] European Securities and Markets Authority. Digital Operational Resilience Act (DORA): scope, implementation and applicability from 17 January 2025. https://www.esma.europa.eu/esmas-activities/digital-finance-and-innovation/digital-operational-resilience-act-dora; European Insurance and Occupational Pensions Authority. DORA overview. https://www.eiopa.europa.eu/digital-operational-resilience-act-dora_en

[37] Central Bank of Iraq. Financial Stability Report 2024 (payment-systems section). Baghdad: CBI; 2025. https://cbi.iq/static/uploads/up/file-176414007198056.pdf

[38] Central Bank of Iraq. Financial Stability Report 2023 (IRPSI transfers, 2020–2023). Baghdad: CBI; 2024. https://cbi.iq/static/uploads/up/file-173692818992040.pdf

[39] Central Bank of Iraq. Cyber resilience controls for the financial and banking sector in Iraq [regulatory circular]. Baghdad: CBI; 2024 Jun 26. https://cbi.iq/static/uploads/up/file-171939700326129.pdf

[40] Central Bank of Iraq. Electronic payment services regulation No. 2 of 2024. 2024 May 16. https://cbi.iq/news/view/2577

[41] Central Bank of Iraq. National financial inclusion strategy 2025–2029. Baghdad: CBI; 2025. https://cbi.iq/static/uploads/up/file-175032973296039.pdf

[42] International Monetary Fund. Iraq: 2025 Article IV consultation—Staff report. Washington (DC): IMF; 2025. https://www.elibrary.imf.org/view/journals/002/2025/183/article-A001-en.xml

[43] Ministry of Finance, Republic of Iraq. Rafidain Bank: official institutional profile and 2024 achievements (accessed 24 October 2026). https://www.mof.gov.iq/en/AL-raffidain-bank

[44] Ministry of Finance, Republic of Iraq. Comprehensive Banking System: institutional rollout status (undated web page; accessed 24 October 2026). https://www.mof.gov.iq/en/Banksystem

[45] Rasheed Bank. Financial data of the bank: annual balance-sheet download directory including FY2023 and FY2024 (accessed 24 October 2026). https://rasheedbank.gov.iq/bank-financial-data/

[46] Central Bank of Iraq. Annual Economic Report 2024, Chapter Six: Payments system development, pp. 55–60. Baghdad: CBI; 2025. https://cbi.iq/static/uploads/up/file-177269103623349.pdf

[47] National Bank of Iraq. Annual Report 2024. Financial position analysis, pp. 33–35. https://www.nbi.iq/-/media/pdfs/investor-relations/annual-reports/english/english-report-soft-copy_compressed.ashx

[48] Credit Bank of Iraq. Audited consolidated financial statements and annual report for the year ended 31 December 2024. National Bank of Kuwait investor relations. https://nbk.com/dam/jcr:fd823e32-75fe-4b85-8870-583dee68e642/annual%20report%202024%20-%20English.pdf

[49] Commercial Islamic Bank of Iraq. Key Performance Indicators Analysis: 31 December 2024. https://www.cibiq.com.iq/en/InvestorRelations/KeyPerformanceIndicatorsAnalysis/index.html

[50] Commercial Islamic Bank of Iraq. Annual Report 2024, Part 1 (accessed 23 October 2026). https://www.cibiq.com.iq/MediaManager/Media/Documents/FinancialStatements/2024/CIBIQAnnualReport2024-Part-1-ENG.pdf

[51] Credit Bank of Iraq. Updating mobile banking service application [public disclosure]. 2022 Dec 5. https://www.creditbankofiraq.com.iq/dam/jcr%3Aae2669d2-cc76-4269-9bdf-bd6bdb086536/Updating-Mobile-Banking-Service-Application-Disclosure-E.pdf

[52] Iraqi Islamic Bank for Investment and Development. Annual report and financial statements for the year 2024: contracts and notes (accessed 23 October 2026). https://aiib.iq/en/annual-report-and-financial-statements-for-the-year-2024/

[53] Central Bank of Iraq. Annual Statistical Bulletin archive (2025) (accessed 23 October 2026). https://cbi.iq/page/142

[54] Central Bank of Iraq. Financial Stability Reports archive (through 2024) (accessed 23 October 2026). https://cbi.iq/page/147

[55] Credit Bank of Iraq (NBK Iraq). Financial reports (accessed 23 October 2026). https://www.nbk.com/iraq/about/investor-relations/financial-reports.html

[56] National Islamic Bank. Financial statements (accessed 23 October 2026). https://nib.iq/ar/financial-statment

[57] Central Bank of Iraq. Electronic payments development communiqué. 2026 Jul 21 (accessed 23 October 2026). https://cbi.iq/news/view/3270

[58] National Bank of Iraq. Annual Report 2025. Hosted by Capital Bank (accessed 23 October 2026). https://www.capitalbank.jo/-/media/pdfs/investor-relations/annual-report/english/annual-report-2025---v1.ashx