Interim Report

NPL Watch Asia 2026 Edition

Regional surveillance · Machine-learning forecasting · Resolution frameworks · Trading platform

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THE HEADLINE

Three messages to take away

01	**Stable — but diverging**	Regional NPL ratios held near 1.6%, yet the gap between subregions is widening.
02	**Seeing risk early**	NPL ratios lag, so we use machine learning to flag credit risk before it surfaces.
03	**Resolving in time**	Effective resolution depends on legal, institutional and market infrastructure.

AGENDA

How this session is structured

1	**The landscape**	Where Asia's asset quality stands in 2025
2	**Seeing risk early**	Machine-learning forecasting — Pillar 1
3	**Resolving in time**	Structural frameworks & the trading platform — Pillar 2
4	**The road ahead**	The final report & the Korea case study

A regional monitoring & knowledge portal for IPAF

1

Monitor

NPL ratios, asset-quality and financial-stability metrics across Asian banking systems.

2

Compare

Economies placed side by side to surface regional trends and emerging risks.

3

Share

A common analytical baseline for policymakers, AMCs and stakeholders.

2026 EDITION — WIDER REACH

23

economies now analysed

23

economies in the forecasting set

Up from the first edition — **20 economies analysed and just 8 modelled.**

Plus deeper analysis of provisioning, capital buffers and market infrastructure.

ANALYTICAL FRAMEWORK

Two pillars: anticipate, then resolve

PILLAR 1 · EX-ANTE

Anticipate

Forward-looking monitoring

- Forecast NPL ratios from macro-financial drivers
- Machine-learning models across 23 economies
- Strengthens the Early-Warning System

PILLAR 2 · EX-POST

Resolve

Timely resolution of distressed assets

- Legal, regulatory & institutional frameworks
- Structural determinants of resolution
- Online NPL trading platform

See risk coming — and have the mechanisms ready to resolve it.

A resilient but more complex 2025

~4.8%	~4.5%	Eased	Elevated
Developing Asia growth (ADB)	Asia-Pacific growth (IMF)	Inflation across the region	Borrowing costs vs pre-pandemic

Lagged credit-quality pressure

- Higher-for-longer rates strain leveraged households, SMEs & refinancers
- NPL ratios respond to macro conditions with a lag

Geopolitical & geoeconomic risk

- Trade fragmentation & tariffs weigh on export sectors
- Commodity swings expose resource economies (Mongolia, Kazakhstan)

Stable ratios, rising volumes

$821 bn

Total NPL volume 2025 (+11.5% YoY)

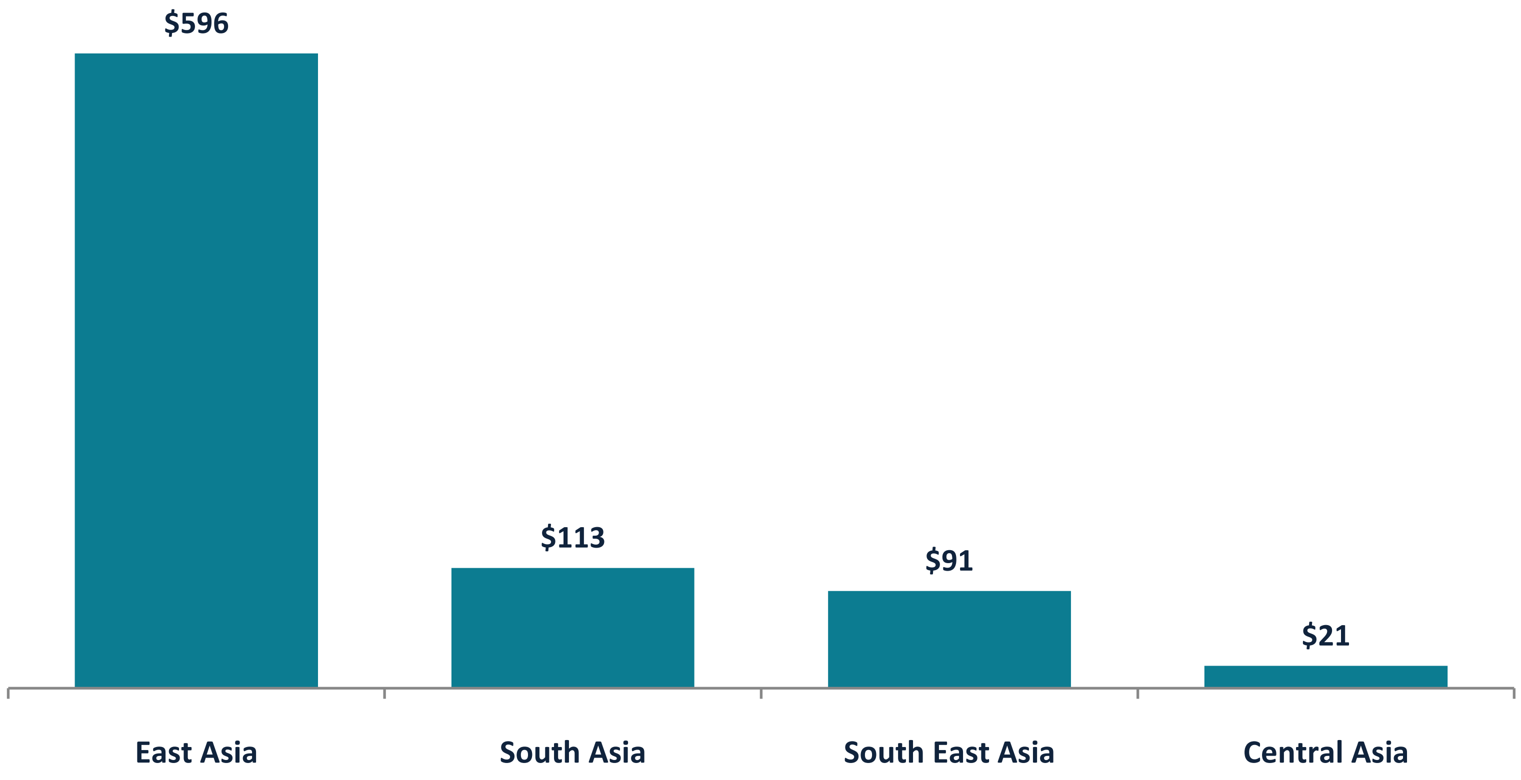
1.63%

Regional NPL ratio (1.60% → 1.63%)

> 70%

of the region's NPL stock is in East Asia

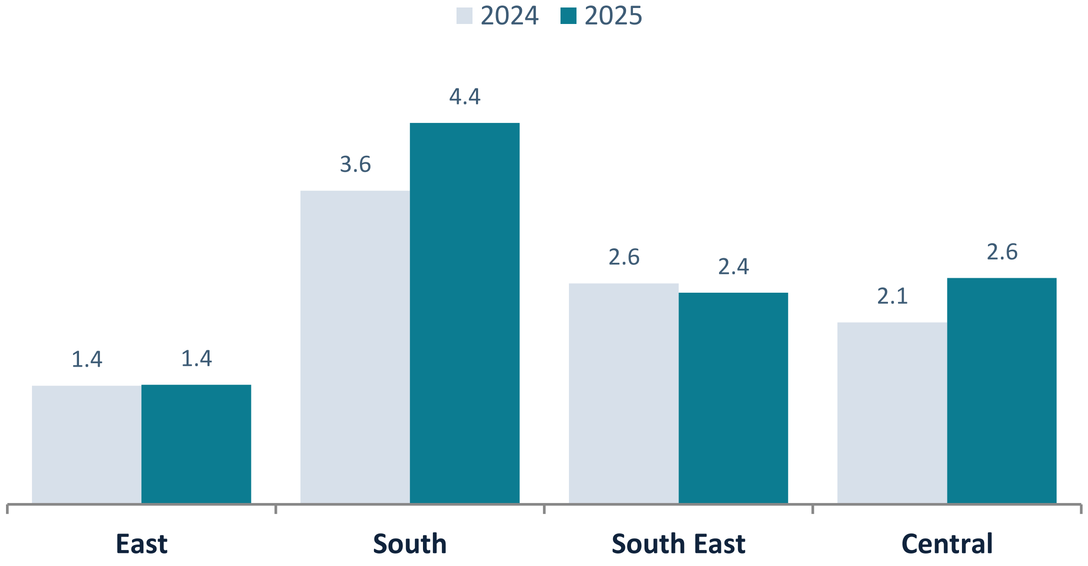
NPL volume by subregion, 2025 ($ bn)



The tension: stability hides divergence

East Asia ↑ vol · flat		Credit expansion
South Asia ↑↑ both		Deterioration - Bangladesh >30%, Sri Lanka >12%
South East Asia ↑ vol · ↓ ratio		Normalizing - Cambodia still >7%
Central Asia ↑↑ volatile		Large swings off a small base

NPL ratio by subregion (%)



LOSS ABSORPTION

Banks can absorb it: provisioning coverage is broadly adequate and capital buffers are solid — but a headline ratio is a **lagging indicator.**

Designing advanced NPL forecasting models

DATA & METHOD

23 economies

Country, global & IMF-FSI indicators (CEIC, Bloomberg)

Elastic Net — sparse

Lasso + Ridge; ≤ 7 exogenous drivers per country

Sequential splitting

No look-ahead — eliminates data leakage

SHAP explainability

Quantifies each driver's contribution

ENSEMBLE OF 4 DEEP-LEARNING ARCHITECTURES

MLP
Multi-Layer Perceptron

LSTM
Long Short-Term Memory

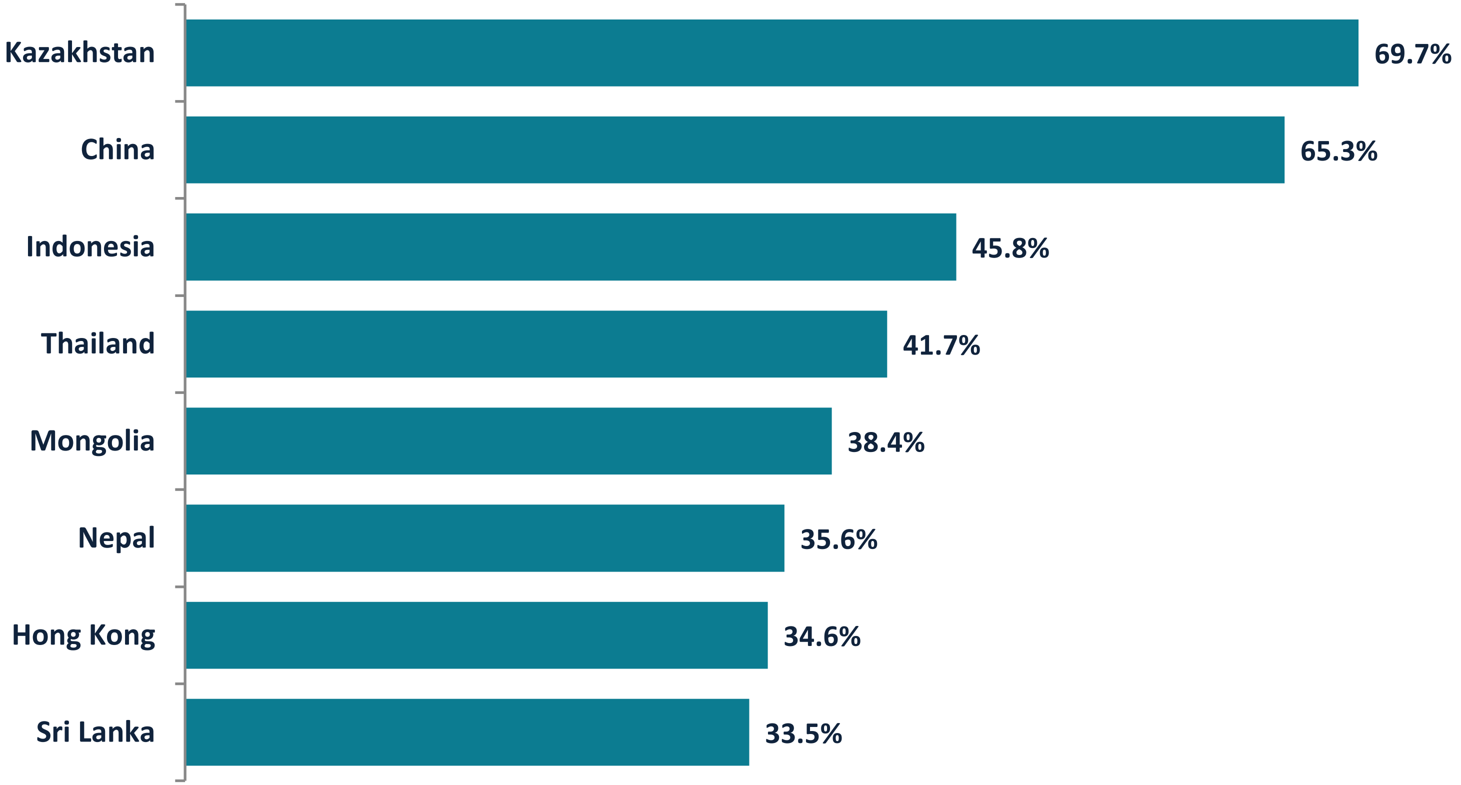
GRU
Gated Recurrent Unit

CNN
Convolutional Net

STEP 1 Model tournament (by MAE) → **STEP 2** Bayesian tuning → **STEP 3** Forecast + 95% CI

Tuning sharply cut forecasting error

Reduction in Mean Absolute Error after tuning (%)



No universal winner

Tournament picks CNN for Japan, LSTM for Korea — distinct temporal dynamics.

1,000 Monte-Carlo runs

Gains verified probabilistically; enables tail-risk assessment.

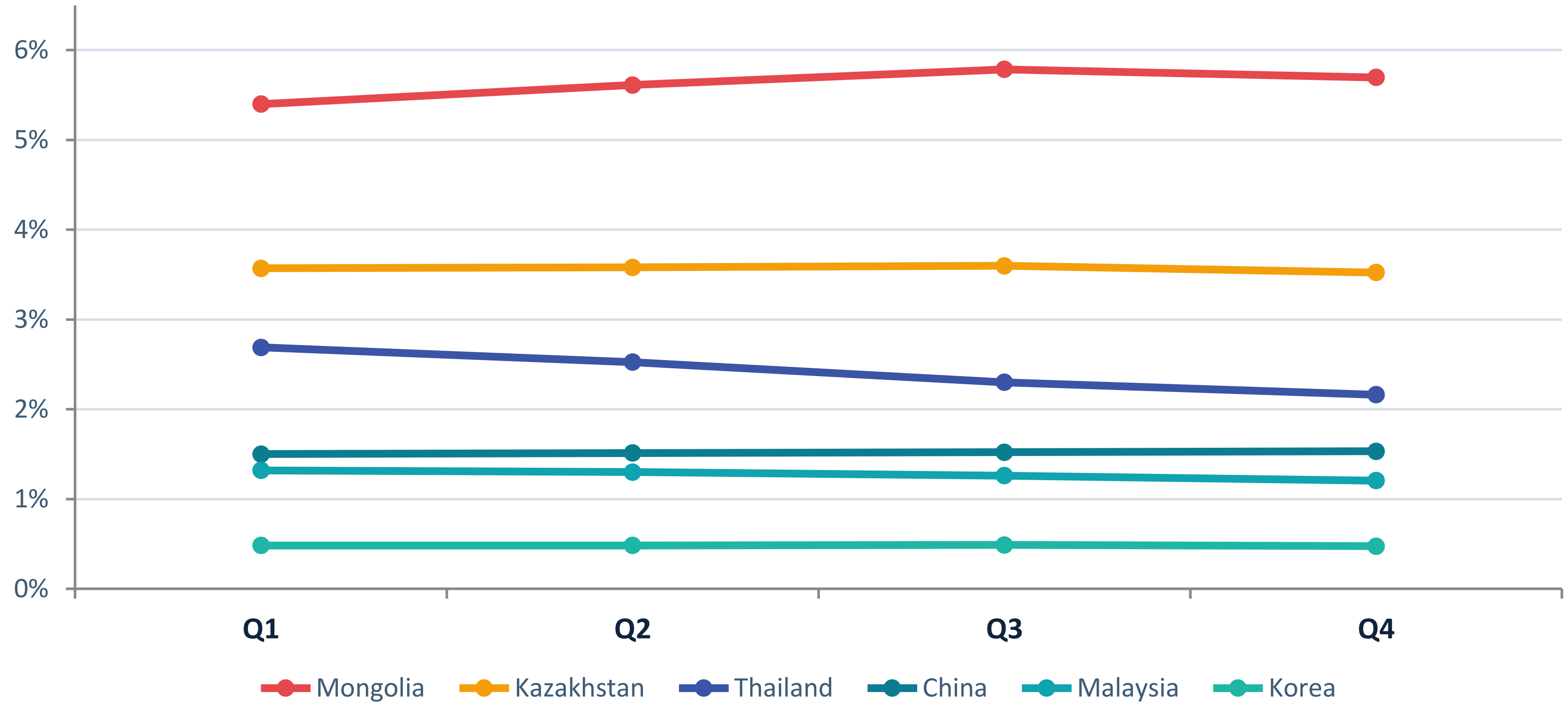
Best-in-class accuracy

China and Korea reach very low error after tuning.

NPL ratio forecasts for 2026

Projected NPL ratio path, four forecast quarters (%)

each ± 95% CI



READING THE FORECASTS

- Korea & Malaysia stay low and stable — mature, path-dependent systems
- Thailand trends down through 2026 as portfolios adjust
- Mongolia & Kazakhstan stay elevated on commodity exposure

Upside risk: forecasts predate recent energy shocks — outcomes may skew upward.

Forecast horizon varies by country (e.g. Mongolia '26 Q2–'27 Q1); quarters aligned Q1–Q4 for comparison.

Why NPLs move — and why it differs by country

Path dependency

Korea
past NPL ratio

Malaysia
past NPL ratio

Mongolia
past NPL ratio

Debt burden

China
corporate debt

Türkiye
corporate debt

Thailand
household mortgage

Macro & external

Japan
global GDP growth

Indonesia
market capitalization

Kazakhstan
business confidence

SHAP quantifies each variable's contribution to the predicted NPL ratio — the same divergence, now explained.

Four structural drivers of resolution

1 Legal & regulatory

Elements: Insolvency regime, creditor rights, collateral enforcement

Constraint: Slow courts & weak enforcement delay recovery

2 Market infrastructure

Elements: Secondary NPL markets & investor participation

Constraint: Shallow markets reduce liquidity

3 Institutional capacity

Elements: Public AMCs, servicing & restructuring expertise

Constraint: Capacity gaps prolong resolution

4 Data transparency

Elements: Loan-level data & standardised valuation

Constraint: Poor data raises valuation uncertainty

From principles to practice: what countries are doing

Policy programs

Thailand
"Clear Debt, Move Forward" — AMCs restructure small household debt

Indonesia
Write-offs of post-pandemic MSME bad debt - Facilitates credit recovery and supports MSME balance-sheet repair

Legal & regulatory

Vietnam
Law 96/2025 strengthens collateral enforcement & recovery

Malaysia
Frameworks for impaired-loan disposal & purchase

Public AMCs & oversight

Korea
KAMCO acquires & resolves distressed assets

China
National & regional AMCs restructure NPLs

Kazakhstan
FPL centralises bank distressed assets

Mongolia
Tighter supervision — preventive

In the final report: the resolution chapter will be expanded
— detailed country case studies and conclusions on what works, at year-end.

Progress on a regional online NPL platform

PROGRESS TO DATE

1. **ADB roadmap**

   Staged path: transparency & data standardization first

2. **Operational study**

   Workflow: listing, secure data room, bidding, settlement

3. **Nov 2025 workshop**

   Clear interest in strengthening cross-border cooperation

KEY CHALLENGES

- Legal & regulatory divergence across jurisdictions
- Confidentiality limits on sharing loan-level data
- Lack of standardized cross-country data templates

STRATEGIC DIRECTION

- Non-transactional pilot: test data templates & workflows
- Regional NPL data repository / mock-up platform
- IPAF website as gateway to members' disposal platforms

This is an interim report — the final follows year-end

YOU ARE HERE

Interim Report — 2026

Regional trends, forecasting, resolution & platform.

YEAR-END 2026

Final Report

Executive summary, conclusions & country case studies.

COUNTRY CASE STUDIES TO BE ADDED

Republic of Korea

Mature, market-driven NPL ecosystem — household & corporate credit risk

Mongolia

Household-debt pressures in a commodity-dependent economy

Thailand

Evolving public-AMC framework & foreign-investment channels

Korea case study: three analytical methodologies

Research focus: trends in **household credit risk** and **corporate credit risk** — then compare three methodologies.

1 Statistical approach

CHARACTERISTICS

Transparent, interpretable, regression-based estimation

APPLICATION CONDITIONS

Needs stable relationships & clean time-series

2 Machine learning

CHARACTERISTICS

Captures non-linear patterns; strong accuracy

APPLICATION CONDITIONS

Data-intensive; must guard against overfitting

3 Artificial intelligence

CHARACTERISTICS

Big-data AI for continuity / default probabilities

APPLICATION CONDITIONS

Highest data & infra demands; explainability key

DELIVERABLES

1. **Methodology comparison** characteristics & conditions
2. **Practical implications** for NPL-management practice
3. **Future research agenda** priorities & next steps

THANK YOU

To recap —

- **Stable, but diverging** — asset quality holds while subregional gaps widen
- **Sharper foresight** — ML forecasting anticipates risk before ratios react
- **Resolution advancing** — frameworks and the trading platform progress
- **More to come** — final report with case studies at year-end