AI Driven Disruption on Credit Portfolio of FI

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Backdrop (1/2)

- AI is not only just improving banking—it is also **fundamentally reshaping (and potentially disrupting) credit portfolios in India**. The disruption happens across **who gets credit, how risk is assessed, and how portfolios behave under stress**.

- The impact of AI-driven disruption on Indian banks' credit portfolios mirrors global trends but has unique Indian characteristics due to rapid digital adoption, RBI's regulatory push (e.g., the 2025 FREE-AI Framework for responsible AI), heavy exposure to retail/SME lending, and vulnerability in certain sectors like IT services.

- In India (as of 2026), AI is accelerating credit portfolio improvements through better risk tools, while simultaneously creating disruption risks—especially via job/economic pressures in white-collar sectors and AI adoption reshaping borrower viability.

- AI is disrupting labor-intensive sectors, threatening borrower cash flows, repayment capacity, and increasing default risks for banks with exposures there.

- IT/BPO Sector Disruption — India's $280B+ IT services industry (major employer in cities like Bengaluru, Hyderabad, Pune) faces structural threats from AI automation of coding, back-office tasks, and outsourcing. Global clients increasingly use in-house AI, reducing demand for traditional services. This has led to slower revenue growth, margin pressure, and stock underperformance (e.g., Nifty IT index down sharply in early 2026).

Backdrop (2/2)

- Credit Portfolio Impact — Banks hold significant corporate/SME loans to IT firms and employees. Job losses or salary stagnation in tech corridors reduce housing loans, car/credit card demand, and MSME cash flows (many vendors/suppliers to IT firms). Rising uncertainty could elevate NPAs in retail credit and tech-linked corporate exposures.

- Economic Survey 2025–26 warned of AI risks to white-collar jobs (potentially worse than 2008 crisis impacts), with ripple effects on banking via financial stress.

- Other Vulnerable Sectors — AI disrupts BPO/call centers, certain professional services, and parts of retail/manufacturing via automation. Borrowers (especially leveraged SMEs) face earnings pressure, higher defaults, and refinancing issues.

- In private credit/NBFC lending (often bank-funded), similar concerns emerge for AI-exposed firms.

- Systemic Risks — Overreliance on AI models could introduce "black box" issues, bias, or failures in downturns. RBI's framework addresses this with model risk management, but rapid scaling (e.g., in unsecured lending) amplifies tail risks if models correlate failures.

Flow Chart of AI Driven Disruption on Credit Flow

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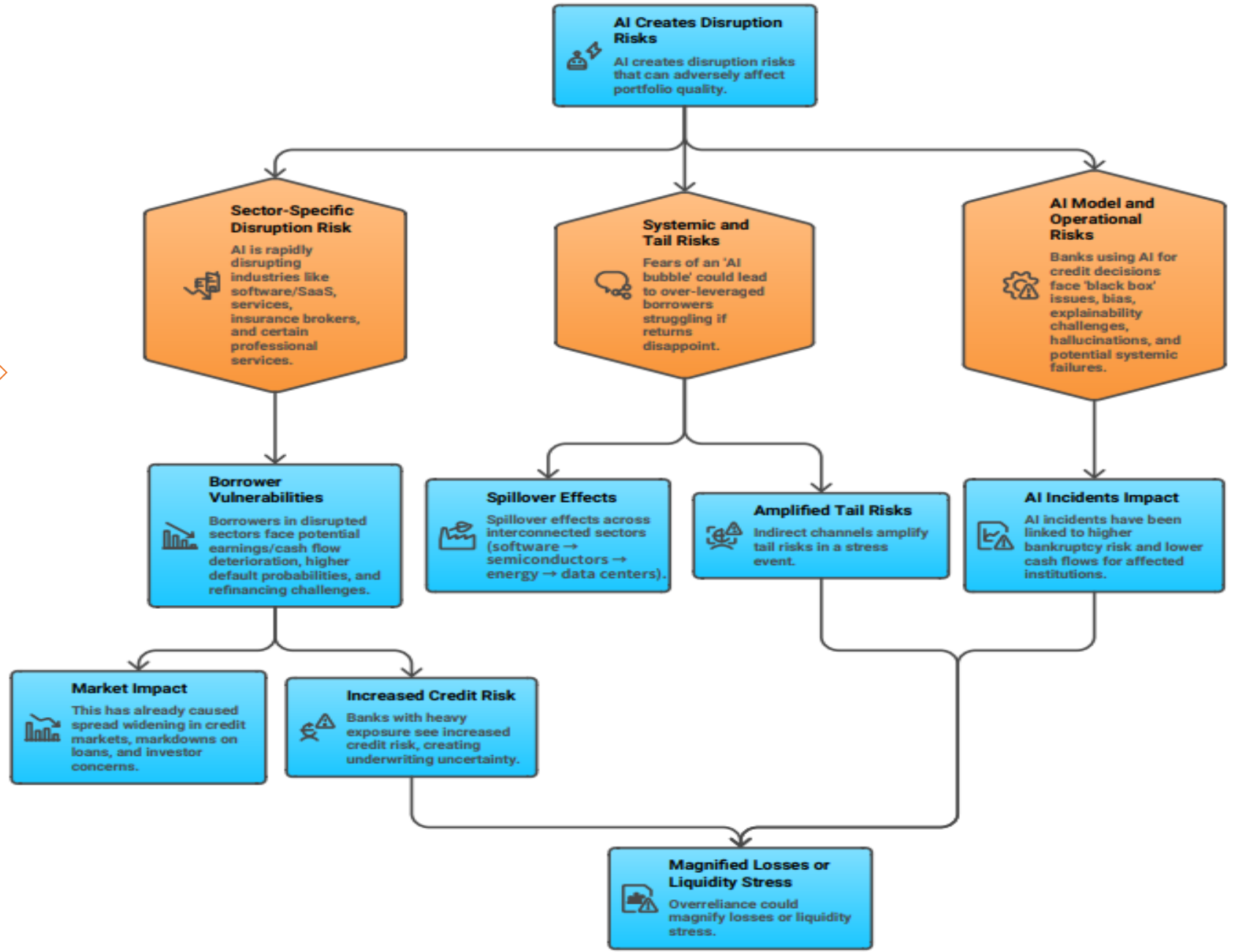
A Government of India Undertaking
सिंडिकेट Syndicate

External Vulnerability Explained



Negative/Disruptive Impacts: New Risks to the Credit Portfolio : An Explanation

❑ Sector-Specific Disruption Risk —

- ✓ AI is rapidly disrupting industries like software/SaaS, services, insurance brokers, and certain professional services by automating workflows or commoditizing offerings.
- ✓ Borrowers in these sectors (especially highly leveraged or smaller ones) face potential earnings/cash flow deterioration, higher default probabilities, and refinancing challenges.
- ✓ This has already caused spread widening in credit markets, markdowns on loans (e.g., JPMorgan marking down private credit exposures to software firms), and investor concerns in private credit ($3T+ market).
- ✓ Banks with heavy exposure here see increased credit risk, even if current performance remains strong—creating underwriting uncertainty for the next 1–2 years.

❑ Systemic and Tail Risks —

- ✓ Fears of an "AI bubble" (heavy spending on AI infrastructure, data centers, etc.) could lead to over-leveraged borrowers struggling if returns disappoint, with spillover effects across interconnected sectors (software → semiconductors → energy → data centers).
- ✓ While direct bank exposure to AI-adjacent lending is relatively modest (0.8% of assets on average, though higher for large banks at 13% of C&I commitments), indirect channels (via nonbank lenders) amplify tail risks in a stress event.

❑ AI Model and Operational Risks —

- ✓ Banks using AI for credit decisions face "black box" issues, bias, explain ability challenges, hallucinations (in gen AI), and potential systemic failures if models amplify risks during downturns.
- ✓ AI incidents have been linked to higher bankruptcy risk and lower cash flows

Sectoral Analysis: Causes and Effects of AI Disruption in Credit Portfolio

Sector	Cause of Disruption	Effect on Credit Portfolio
Retail & Personal	Automation of routine cognitive tasks (Junior Legal, Support, Data Entry).	Income Shock: Spike in delinquencies for mortgages/personal loans due to "White-Collar Displacement."
Technology (IT/BPO)	Transition from labour-intensive "headcount" billing to AI-native output.	Concentration Risk: Significant headcount reductions in tech hubs lead to localized property price corrections.
Manufacturing	Shift toward "Lights-Out" factories driven by AI-robotics.	Asset Obsolescence: Older, labour-heavy firms become "Zombie Borrowers," unable to compete or repay principal.
Commercial Real Estate	Smaller, AI-efficient workforces requiring less physical office space.	LTV Erosion: Devaluation of commercial collateral as occupancy rates and rental yields decline.

Implications of AI Driven Credit Growth in Financial Institutions

SHIFT FROM TRADITIONAL TO DATA-DRIVEN CREDIT…

❑ **What changes**

- Move from **CIBIL + financial statements → real-time data (GST, bank flows, UPI, mobile data)**
- AI underwriting uses:
  - ✓ cash-flow analytics
  - ✓ transaction behavior
  - ✓ alternative data (utility, digital footprint)

❑ **Result:**

- ✓ Credit expands to **MSMEs, gig workers, thin-file borrowers**

❑ **Insight:**

- ✓ AI enables lending where traditional models fail due to lack of formal credit history

Disruption to Banks

- ❖ Banks lose monopoly over credit access
- ❖ Fintech/NBFCs can originate faster + cheaper loans

SPEED DISRUPTION: FROM DAYS → MINUTES

- **Traditional model**
  - ✓ Manual underwriting: 3–10 days
- **AI model**
  - ✓ **Straight-through processing (STP)**
  - ✓ Instant approvals for small loans
- **Reality:**
  - ✓ AI-driven lending engines are already transforming credit delivery and efficiency
  - ✓ Small-ticket loans are becoming fully automated

Portfolio impact

- ❖ Explosion in: unsecured retail loans + BNPL / micro-credit
- ❖ Risk: Rapid credit growth → hidden asset quality issues

RISK MODEL DISRUPTION (GOOD + BAD)

POSITIVE DISRUPTION

1.Improves:

- Early warning signals (EWS)
- Default prediction
- Sectoral stress detection

2.Example:

AI detects stress before it shows in financial statements

3. **Result:**

- **Better portfolio monitoring**
- **Dynamic pricing of loans**

NEGATIVE DISRUPTION (CRITICAL)

1. Model Risk (Black Box Problem)

- AI decisions are not explainable
- Hard for: Regulators, auditor ,credit committees
- RBI concern: Lack of transparency limits accountability

2. Bias Risk

- AI trained on biased data → wrong credit decisions
- Impact:
  - ✓ Over-lending to risky segments
  - ✓ Under-lending to underserved groups
  - ✓ Mispricing of risk

3. Procyclicality Risk

- ✓ AI reacts fast → amplifies cycles
- In downturn:
  - ✓ Models tighten instantly → credit freeze
- In boom:
  - ✓ Models over-lend → asset bubble

AI vs Traditional Credit Portfolio – Comparison

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Variable	Traditional (Avg. Value)	AI-Driven (Avg .Value)	Data Evidence / Range	Interpretation / Derivation	Primary Source(s)
Loan Growth	10%	25%	○ Bank credit growth: 11-14%; ○ Digital lending: 30-40% CAGR	○ 10% = system trend; ○ 25% = AI/digital acceleration	Reserve Bank of India, NITI Aayog
Yield	9%	14%	○ Secured loans: 8-11%; ○ Unsecured: 12-18%	○ 9% = secured mix; ○ 14% = unsecured/AI pricing	Reserve Bank of India, CRISIL
Cost of Funds	5%	5%	Bank funding cost: 4-6%	Stable across both portfolios	Reserve Bank of India
Operating Cost	2%	1.2%	○ Cost-to-assets: 1.5-2.5%; ○ AI reduces cost by 20-40%	AI reduces manual processing & branch costs	McKinsey & Company, Reserve Bank of India
GNPA Ratio	3 %	6.5%	○ System GNPA: 2-3%; ○ Unsecured higher: 5-8%	○ 4% = stress-adjusted; ○ 6.5% = unsecured-heavy AI portfolio	Reserve Bank of India, CRISIL, TransUnion CIBIL
Credit Cost	2%	3.8%	○ LGD: Secured 30-50%; ○ Unsecured 50-75%	Derived using GNPA × LGD	Moody's, Fitch Ratings

Risk Mitigation: Enhanced Collateral & Monitoring

Enhanced Collateral Requirements

- **AI-Exposure Adjusted LTV:**
  For borrowers in "High Automation" categories, mandate a lower Loan-to-Value ratio (e.g., 60% vs. the standard 80%) to create a larger equity buffer.
- **Intangible & Digital Liens:**
  For corporate lending, include Intellectual Property (IP) or Proprietary Data as supplementary collateral. This ensures the bank has a claim on the AI technology that replaced the labour.
- **Escrow of Efficiency Gains:**
  Require corporate borrowers undergoing AI-restructuring to divert a percentage of "labour cost savings" into a debt-service reserve account.

Strengthened Monitoring Mechanisms

- **Real-Time Cash Flow Analytics**: Utilize Account Aggregator (AA) frameworks to monitor salary inflows. Any shift from a "Corporate Salary" marker to "Gig/Freelance" markers should trigger an immediate Early Warning Signal (EWS).
- **Sectoral "Heat Maps":** Maintain a live dashboard of AI adoption rates by industry. If a sector hits a "tipping point" of automation, the bank should automatically cap total exposure to that industry.
- **Employer-Level Risk Linkage:** If a major corporate borrower announces mass layoffs, the system must automatically flag all retail loans (mortgages, car loans) held by that company's employees for proactive restructuring.

STRATEGIC INTERPRETATION

Without AI

- Stable NPAs
- Low ROA
- Loss of market share

With AI (uncontrolled)

- High ROA
- Sharp NPA spikes
- Systemic risk

Optimal Strategy

- Controlled AI adoption
- Cap unsecured exposure
- Hybrid underwriting
- AI + human oversight

Key Takeaway

AI-driven portfolios show 2x higher growth and ROA potential, but with 1.5x-2x higher credit risk, based on RBI, CRISIL, and global rating benchmarks.

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