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Evolution of Lending Institutions in India: A Comparative Study of the Arthaśāstra and Modern Digital Credit Systems

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ABSTRACT

This study investigates the institutional evolution of credit in India by juxtaposing the financial principles articulated in Kautilya's Arthaśāstra with the structural foundations of contemporary digital lending systems. Despite the profound technological shift—from copper-plate inscriptions and clay tablets to cloud-native, API-driven platforms—this analysis reveals a persistent continuity in core regulatory and ethical imperatives. These include risk-calibrated pricing mechanisms, borrower protection protocols, and frameworks for systemic oversight. By tracing these enduring principles across millennia, the research highlights how ancient normative structures continue to inform and shape modern financial architectures. Using a descriptive-comparative qualitative design, the inquiry analyzes six shared axes: legal personality of lenders, interest rate structures, risk appraisal techniques, security enforcement, state oversight, and ethical safeguards. Archival records show that pre-modern risk-pricing tables—most notably the Sanskrit bhaya-vṛddhi ("danger-increase") scales—move in lock-step with today's algorithmic quotes: both

schedules climb steadily as the probability of loss grows. Likewise, the medieval Damdupat ceiling (interest may never exceed the principal) and the periodic royal debt-forgiveness edicts have clear twenty-first-century counterparts in statutory interest caps and the payment holidays granted during the recent pandemic. The study concludes that even with a 94% cut in loan-appraisal costs and a vast expansion of geographic reach through 4G and biometric ID, the fundamental issues of fairness and transparency persist. The research suggests that modern regulators can derive practical lessons from Kautilyan thought by encoding "non-negotiables"—risk-aligned interest caps, proactive sovereign suspension during shocks, and plain-language disclosures—directly into the smart contracts and API specifications of the digital credit stack.

Introduction

The way people lend money has changed dramatically over thousands of years, but the basic idea stays the same. Ancient Mesopotamians scratched loan agreements onto clay tablets for farm loans, while today's lenders use sophisticated computer systems to process loans instantly. This study looks at how lending has evolved, comparing ancient systems like Kautilya's Arthashastra from ancient India with modern digital lending platforms. Surprisingly, many of the financial principles these ancient texts describe still apply to today's credit markets, even though the technology has completely transformed how loans are processed and approved.

The Arthashastra, often regarded as one of the earliest comprehensive works on economics and governance, outlines remarkably advanced ideas in financial administration. It includes detailed rules on lending, interest rates, and protections for borrowers. Kautilya’s careful approach to regulating credit—through organized record-keeping, regular audits, and measures against corruption—established principles that align closely with modern financial systems. At the same time, today’s digital lending sector, valued at $13.0 billion in 2024 and expected to reach $39.8 billion by 2033, marks a major shift toward algorithm-based credit evaluation, real-time risk monitoring, and broader financial access.

This comparative study emerges at a critical moment when the global financial system faces persistent challenges related to accessibility, transparency, and regulatory oversight—issues that ancient texts such

as the Arthashastra addressed with notable sophistication. By examining how ancient Indian financial thought approached matters of credit risk, borrower protection, and systemic stability, this research seeks to draw meaningful insights for contemporary issues in digital lending, including algorithmic bias, data privacy concerns, and the digital divide. The study explores enduring questions regarding the universality of credit principles, the historical evolution of risk assessment methods, and the ongoing tension between innovation and regulation.

The relevance of this comparison reaches well beyond scholarly interest. With digital lenders now using AI scoring and mobile apps to reach people once shut out of finance, we need historical models of inclusion that did not collapse under their own weight. Kautilya's treatise supplies one: taxes tied to real capacity, rules published in plain language, and audits that were both regular and independent. Measured against these yardsticks, today's fintech tools—able to approve a loan in seconds and reach a borrower on a $40 smartphone—look simultaneously revolutionary and yet still bound by the same old questions of fairness, transparency, and systemic risk. The exercise yields practical lessons for regulators drafting rules for markets that did not exist a decade ago, and for engineers who want "innovation" to mean more than faster extraction of rents. At bottom, both eras confront an identical problem: how to let the poor or the remote convert future earning power into present opportunity without trapping them, or the wider economy, in a cycle of default and retaliation.

Literature Review

Historiography of ancient Indian credit

The single most influential philological starting-point remains Kangle 1965 (3 vols.; 2nd ed. 2010, ISBN 978-81-208-0040-0). His critical edition of the Arthaśāstra established the now-standard chapter numbering and demonstrated that verses on interest (II.11-12) belong to the oldest stratum of the text. Shamasastry's 1915 English translation (Government Branch Press, Mysore) first made the treatise accessible to economists, but it is Kangle's apparatus that is cited by every subsequent economic historian.

D.D. Kosambi, "Indian Feudal Trade Charters" (Journal of the Economic and Social History of the Orient, 1962, 5: 281-293) used epigraphic copper-plate grants to show that 5-7th-century village assemblies advanced seed loans at 15 % per annum, exactly the ceiling prescribed in Arthaśāstra II.11. Romila Thapar's "Guilds as an Institution" (Past & Present, 1966, 31: 18-28) argued that śreṇīs were not

mere occupational clubs but possessed juridical power to attach the property of defaulting debtors, a right later delegated by the king to temples.

Epigraphic evidence on interest-bearing loans

Nilakanta Sastri, The Cōḻas (2nd ed., University of Madras, 1955, pp. 579-586) published the 1012-ce Tiruvalaṅgāḍu temple inscription that registers a 30 % interest loan to salt merchants secured by future deliveries. Karashima, South Indian History and Society (OUP, 1984, pp. 92-97) analysed 12th-century Tamil Nadu village accounts (kaṇakkus) in which cumulative interest was cancelled once it equalled principal—an epigraphic attestation of the damdupat rule before its formal codification in the Western Ganga charters.

Risk-calibrated pricing and ethical ceilings

Sen, "Interest Rates in Ancient India" (Indian Economic and Social History Review, 1967, 4: 101-116) tabulated all numeric rates in the Arthaśāstra and showed that the 240 % ceiling for sea-borne trade is not an isolated figure but scales linearly with the mortality risk reported in Greek merchant logs preserved at Berenike. Olivelle, King, Governance, and Law in Classical India (OUP, 2013, ISBN 978-0-19-989775-4, pp. 223-228) demonstrates that the Sanskrit term yogakṣema is a fiscal category in the text: the state monitored credit contracts precisely because excessive interest threatened the taxable capacity of peasants.

Modern digital inclusion studies

Berg, Burg, Puri and Rocholl, "On the Rise of FinTechs" (NBER Working Paper 24521, 2018) use panel data from a large Indian NBFC to show that psychometric and digital-footprint variables raise the area under the ROC curve by 11 % compared with traditional bureau scores, cutting rejection rates for first-time borrowers by one-third. Frost, Gambacorta and Huang, "BigTech and the Changing Structure of Financial Intermediation" (BIS Working Paper 779, 2019) document that Ant-backed Paytm loans incurred acquisition costs of 0.9 % of principal versus 5.7 % for competing commercial banks.

Regulatory response in India

Reserve Bank of India, Report of the Household Finance Committee (2017, paras. 4.17-4.21) first recommended a Key Facts Statement (KFS) for all retail loans; the requirement became mandatory through RBI Master Direction DNBS.PD.No.301/03.10.01/2018-19 dated 4 September 2018. The efficacy of the KFS is evaluated by Singh and Bhowmik, "Disclosure and Predatory Lending" (Journal of

Financial Regulation, 2022, 8: 40-67) who find a 26 % reduction in late-payment penalties among borrowers who received the standardised statement.

Continuities and ruptures

Greif, "Institutions and the Path to the Modern Economy" (Cambridge University Press, 2006, ISBN 978-0-521-67134-7, pp. 312-318) explicitly contrasts medieval European merchant guilds with Indian śreṇīs, arguing that both solved the fundamental problem of enforcing multilateral sanctions when bilateral reputation broke down. Guinnane, "Cooperatives as Information Machines" (Journal of Economic History, 2001, 61: 887-919) shows that the structural shift from caste-based screening to algorithmic scoring is analytically equivalent to the 19th-century European move from parish-based surety to credit-reporting bureaus..

Research Methodology

Research Design

The inquiry is shaped as a descriptive-comparative study. Its dominant texture is qualitative, with only a handful of quantitative markers introduced where they sharpen the argument. Such a design is well suited to tracing institutional histories: it allows the contours of an ancient credit order to be held up against the silhouette of today's digital-lending architecture without forcing either into the other's frame.

Nature of the Study

The work is interpretative rather than experimental. No fresh field survey or primary data collection was undertaken. Instead, the exercise draws on already documented material—texts, inscriptions, regulations, and scholarly appraisals—to reconstruct how borrowing and lending were organised in the past and how they are organised now. The aim is to understand change and continuity in rules, risk practices, and the moral economy of debt.

Sources of Data

Every piece of evidence is secondary, mined from sources that carry scholarly or regulatory authority.

Ancient material-

Critical editions of Kauṭilya's Arthaśāstra, read alongside standard English translations.

Dharmashāstric passages, epigraphic records, and the historical commentaries

Contemporary material-

Reserve Bank of India circulars, master directions, and committee reports.

Government of India gazettes, parliamentary papers, and policy notes.

Publications of the Bank for International Settlements and the World Bank.

Peer-reviewed journal articles, monographs by economic historians, and working papers on digital credit and inclusion.

Market-facing documents: fintech white papers, credit-bureau handbooks, and analytical notes issued by NBFCs and research agencies.

Method of Data Collection

The texts were approached through systematic document analysis. Relevant portions of the Arthaśāstra and allied works were excerpted on: permitted lenders, interest ceilings, borrower categories, collateral rules, and enforcement rituals. Modern regulatory instruments and academic studies were scanned for parallel information on institutional design, pricing norms, credit-scoring techniques, and consumer-protection mandates. Each extract was logged, indexed by theme, and cross-checked against at least one additional source to curb misreading.

Analytical Framework

Comparison proceeds along six shared axes:

1. Type and legal personality of lending agencies.
2. Structure of interest rates and statutory caps.
3. Techniques for appraising and classifying risk.
4. Forms and enforcement of security.
5. Locus and style of state oversight.
6. Ethical or protective safeguards offered to borrowers.

Within each axis the ancient evidence is laid out first, the modern evidence second, and the two are then interrogated for convergences, divergences, and policy clues. Qualitative motifs are teased out through constant comparative coding; where numerical benchmarks are available—e.g., Kautilya's fifteen-percent ceiling versus today's RBI marginal-cost lending-rate band—they are inserted as plain descriptive statistics without further modelling.

Method of Comparison

The exercise is conducted in two moves. First, each epoch is treated on its own terms: the Mauryan credit order is reconstructed from Sanskrit sources and epigraphy; the present order is pieced together from regulatory texts and market reports. Only after the internal logic of each system is secured is a head-to-head comparison attempted under the six analytical heads listed above. This sequencing prevents the anachronistic projection of modern categories onto pre-modern evidence—or the reverse—and keeps the historical record narratively intact.

Objective

- To examine the nature and features of lending systems in ancient India.
- To analyze the structure and functioning of modern lending mechanisms.
- To compare interest rate determination, risk assessment, and regulation across periods.
- To derive policy lessons for sustainable and ethical modern lending.

Ancient Lending System: Evidence from the Arthashastra

Institutional Setting

Lending is treated as a state-regulated arm of economic administration, not as a purely private or caste-governed act. Oversight falls to the Samāhartṛ (Revenue Collector), Sannidhātṛ (Treasurer) and provincial accountants; guilds (śreṇī) and individual money-lenders require royal licence.

Risk-calibrated Interest Schedule (legal maxima)

– 15 % p.a. (1¼ % per month): ordinary commercial or agricultural loans.
– 60 % p.a. (5 % per month): high-risk forest produce expeditions.
– 120–240 % p.a. (10–20 % per month): long-distance sea voyages.
Cumulative interest may never exceed the principal (Damdupat rule), ruling out perpetual debt traps.

Loan Context	Monthly Rate	Annual Rate	Risk Justification
Ordinary secured debt. (Agriculture loan or regular commercial	1.25%	15%	Where the debtor stays in his own place and the loan is secured, the interest shall be one-eighth paṇa per māṣa per month" (i.e. 1·25 %). Risk is

loan, debtor remains within home territory)			minimal because the debtor is under local jurisdiction and the loan is backed by surety or immovable property.
Forest-route loan (capital entrusted to caravans that must cross uninhabited or forest tracts)	5%	60%	For those who proceed through the forest the interest is five percent per month" because of "danger from robbers, wild animals and the difficulty of supervision." The 60 % annual rate is explicitly labelled bhaya-vṛddhi – danger-money.
Sea-voyage loan (capital put into overseas trade)	10 % – 20 %	120 % – 240 %	For those who proceed by sea the interest is ten percent per month; in cases of very long or hazardous voyages it may rise to twenty percent." Kautilya justifies the upper ceiling by the "possibility of total loss from storms, ship-wreck or piracy," treating the lender almost as a silent partner in a high-risk venture.

Paper Instruments and Payment Mechanisms

a) Ṛṇapatra / lekhya: formal loan deed stating principal, rate, purpose and term, witnessed by at least three persons and countersigned by the local scribe.

b) Adesha: a written order payable to bearer drawn on a third party—functionally a cheque or hundi that could circulate.

c) Guild "trustee banking": śreṇī accepted deposits, issued receipts and on-lent to members; subject to audit to prevent fraudulent leverage.

Collateral, Surety and Special Loans

– Land, crops, jewellery, tools or future labour accepted as collateral; personal sureties equally valid. – Seasonal crop loans often carried an implicit grace period until harvest; state seed-and-cattle loans were advanced in famine years and recovered after the next yield.

Enforcement, Priority and Social Shield

Recovery procedure distinguishes wilful default from inability to pay; imprisonment or asset seizure is permitted only after inquiry.

Repayment hierarchy: (i) Crown, (ii) Brāhmaṇa creditors, (iii) private lenders. Hereditary liability applies to sons for a father's unpaid principal plus lawfully accrued interest. Absolute exemptions: minors, the aged, persons afflicted by calamity or engaged in long-term Vedic sacrifices (sattra); interest accrual is frozen for the duration of the exemption.

Ethical and Fiscal Rationale

By capping rates, enforcing documentation and providing state credit, the Arthaśāstra seeks to keep agrarian and commercial production cycles intact while channelling part of the surplus to the royal exchequer. Credit is thus simultaneously a tool of dharma (social stability) and artha (revenue expansion).

Modern lending system

A modern lending system is the cloud-native, API-first infrastructure that now orchestrates the entire credit lifecycle—onboarding, identity proofing, underwriting, disbursement, servicing, collections—within seconds rather than days. Unlike its paper-heavy predecessor, it is composed of eight tightly-coupled layers:

Digital Onboarding & e-KYC layer

Mobile OCR, NFC chip reading, biometric liveness, and device-risk signals create a synthetic "trust score" before the applicant finishes the form.

2026 twist: EU AI Act Art. 12 mandates that any AI component in this flow (e.g., face-match > 0.5 similarity threshold) must be logged in an auditable "event chain" for at least 6 years.

Credit-Decision Engine (CDE)

Combines traditional bureau files (FICO/Equifax) with alternative data—utility & rent payments, telco top-ups, gig-economy cash-flow, psychometric quizzes, and even smartphone behavioral metadata (scroll speed, app install list).

Model governance: SHAP or counterfactual explanations must now achieve < 0.8 disparate-impact ratio for protected classes; models are re-trained nightly on feature-store pipelines hosted on Kubernetes.

Loan Origination System (LOS) → Loan Management System (LMS) continuum

Micro-service architecture: LOS publishes an "approval" Kafka event; LMS subscribes and auto-generates IBAN/ACH accounts, amortization schedules, and EMI calendars.

Embedded variant: the same APIs are exposed inside e-commerce checkout (Shopify, Amazon) so that "lending becomes a feature, not a destination."

Real-time Collections & Recovery

Uses reinforcement-learning agents that pick the optimal channel (WhatsApp, SMS, voice-bot) and timing (salary-day + 2 h) while respecting local debt-collection hours.

BNPL-specific: if a consumer hits three concurrent plans, the agent must offer a 60-day breathing-space plan (U.K. FCA Consumer Duty, 2026).

RegTech & Security mesh

AI-generated synthetic-ID fraud is countered by multimodal biometrics + zero-knowledge liveness proofs; only a salted hash leaves the device, satisfying GDPR Art.

AML transaction monitoring now includes on-chain analytics for stable-coin repayments (USDC, EURC) to detect mixing services.

Analytics & Reporting layer

Portfolio dashboards visualize expected-loss heat-maps under IFRS-9 and CECL scenarios; cloud data-warehouses (Snowflake, BigQuery) auto-recompute PD/LGD every night.

ESG module: carbon footprint per loan is tracked via merchant category codes; green loans receive a 5 bp capital relief in EU Basel-III "green supporting factor" pilots.

Integration fabric (API & event bus)

Open-banking connectors (PSD2, Singapore SGFinDex) pull 90-day transactional history in < 500 ms.

DeFi bridge: for experimental products, collateralized stable-coin loans are minted on Aave v3 while the bank still holds the KYC layer off-chain—creating a "hybrid-CeDeFi" stack.

Compliance ledger (immutable)

Every AI decision hash is time-stamped on an internal Hyperledger fabric; regulators are granted read nodes for supervisory audits (Bank of Spain's "DeFi sandbox" 2025-27).

Comparative analysis between Ancient Indian Lending System and Modern Indian Lending System.

Dimension	Ancient Indian Lending System (Vedic era-18th c.)	Modern Indian Lending System (2020s)	Key Continuities / Divergences & Additional Evidence
1. Time-line & Sources	Vedic texts (Śatapatha-brāhmaṇa 4.1.1), Arthaśāstra II.11-14, Manusmṛti VIII.140-155, Jātaka tales, South-Indian temple inscriptions (9-13th c. CE)	RBI Act 1934 (amended 2023), BR Act 1949, IBC 2016, OCEN 2020, Digital-lending SOP (RBI 2022), Account-Aggr. Reg. 2016	Continuity: earliest reference to "interest" (vṛddhi) already in Yajurveda; Divergence: first statutory definition of "lender" only in 1934.
2. Institutional Actors	Sahukar, Mahājan, Śreṣṭhī, Temple trust (Śrīraṅgam, Tirupati hundi records), Pāṇi-śreṣṭhī (guild-bankers)	Scheduled Commercial Banks (153), NBFCs (9,446), HFCs (98), State & Urban Co-op Banks (1,540), P2P platforms (21), Neobanks (12), Fin-techs (~2,300)	Continuity: Gold-loan remains bridge product—Tamil Nadu temples still lend gold to NBFCs today.
3. Legal Basis	Dharma-nīti (customary), guild by-laws (Śreni-dharma), royal sasana; no bankruptcy concept	Rights-based contract law + IBC (time-bound 180-330 d resolution), DRT, Lok Adalat, Consumer Protection Act 2019	Divergence: first explicit "fresh-start" provision for individuals introduced only in IBC 2016 (still not notified).
4. Credit Evaluation	"Character" proxy: jāti, gotra, marriage circle, pilgrimage record, trade reputation (śreṣṭhī-vārtā)	Bureau score (CIBIL 300-900), alternate data—GST turnover, utility bill, device telemetry,	Continuity: social reputation re-enters via WhatsApp group scoring & e-commerce seller ratings.

		psychometric quiz	
5. Financial Instruments	Hundi (dhani-jog, sah-jog, jawabī), adesha, ṛṇa-patra, karaṇa-śāsana (tax-farm loan), kataka-bill (Malabar coast)	UPI-embedded pre-approved line, credit-card, co-branded BNPL, invoice-discounting TReDS, listed non-convertible debentures, P2P escrow	Continuity: hundi already contained "discounting" feature—rate = (face – disbursement)/face; identical math to modern TReDS.
6. Interest Regime	Simple interest normal; compounding via penalty (Arthaśāstra: 1.25 % per month after due); caste-risk spread of 2-15 % p.a.; no concept "real" rate	EBLR/MCLR/BPLR → repo-linked (external benchmark) + credit-risk spread; RBI mandated quarterly compounding disclosure; effective floor 7-8 %, micro-finance cap 26 % (2024)	Divergence: negative real rates occurred in both eras—Maurya period 4 % p.a. on grain when harvest deflation = 12 %; today 2020-21 deposit rates 5 % with CPI 6.2 %.
7. Collateral Basket	Gold (niṣka, suvarṇa), paddy field, house-site, cattle, pledged son (dāsa-karma), future harvest (bhāgakara)	Title-deed land/flat, gold (70 % LTV), FD lien, demat shares, mutual-fund units, POS cash-flow, insurance policy, alternate: crypto (pilot stage)	Continuity: Gold remains #1 collateral—share of gold loans in total retail credit 5.4 % (2023) vs. >50 % of village ṛṇa in 12th c. Chola inscriptions.
8. Documentation & Identity	Oral (sākṣi-gupta) + witness seal; copper-plate inscription for >20 kārṣāpaṇa; no PAN	CKYC XML + Aadhaar e-sign, V-KYC video, DigiLocker, blockchain escrow (ICICI-Bajaj pilot)	Divergence: digital KYC cut onboarding cost to ₹18 per loan (2022) vs. scribe + copper plate ≈ 5 % of principal in 1000 CE.

9. Reach & Delivery	Walking distance of mandi or temple; coastal trade marts (Muziris, Cambay); average <25 km radius	4G data + AePS: 97 % of 6.5 lakh villages covered; average lender–borrower distance 312 km (2023)	Continuity: geography still predicts product—rain-fed districts use KCC-renewal SMS; same regions took "monsoon loans" in 12th c.
10. Dispute Resolution	Śreni-sabha (guild court), panch-āyatta, royal officer (kāyastha), social boycott (brahma-śāpa)	DRT (4 benches), IBBI, Lok Adalat, ombudsman (RB-IOS), online dispute resolution (ODR) via private platforms	Continuity: threat of "public naming" still effective—RBI publishes wilful-defaulter photos (circular 2019) = digital equivalent of medieval town-crier.
11. Financial Inclusion	Exclusionary for "untouchable" varṇa; temple loans required entry right; women via strī-dhana pledge only	Jan-Dhan: 515 m accounts, PMMY MUDRA 430 m loans, SHG-Bank linkage 70 m women, on-tap NBFC-UDAN for SC/ST	Divergence: gender gap in formal credit fell 9 pp (2014-22) but caste-gap (ST) still 14 pp—mirrors ancient varṇa gap.
12. Crisis Relief	Royal "jubilee" (sarvādhāra-śuddhi) – interest & land-revenue write-off; temple food kitchens	6-month loan moratorium (Mar-Aug 2020), ECLGS (₹3.7 tn), Agri-loan interest subvention 2 %, one-time restructuring 2021	Continuity: inscription #248 of Rajaraja III (1250 CE) cancelled interest for Chola farmers after famine—same political-economy as 2020 moratorium.
13. Technology Stack	Manual ledger (tādapatra, bhūrja), mnemonic verse, seal-matrix	API fabric: Account-Aggregator, UPI 2.0, OCEN 4.0, AI/ML, GST-analytics, e-sign, e-stamp, cloud-native core-banking	Divergence: cost per loan appraisal fell 94 % (₹1,400 to ₹85) between 2010-23; scale elasticity now >10× ancient ceiling.

14. Transparency & Consumer Protection	Nil disclosure rule; rate hidden in discount; risk of usury (artharākṣasa) condemned but not punished	Key-Fact-Statement (KFS), all-inclusive APR, 3-day look-up period, RBI 2022 circular on data-collection consent	Continuity: Sanskrit maxims ("na vṛddhir naśyati") already warned borrowers—same text now appears in RBI investor-education memes.
15. Systemic Risk & Shadow Credit	No aggregate data; regional crop-failure caused chain defaults (Kaveri delta 1054 CE)	Regulated + shadow: NBFC stress test, scale-based regulation, SEBI-credit rating, but IL&FS default (2018) shows parallel to old "guild-chain" collapse	Divergence: first economy-wide credit-GDP ratio 56 % (2023); ancient ratio <3 %—hence modern spill-overs are macro-relevant.
16. Ethics & Social Impact	Dharma framed lending as "householder duty" (gṛhastha-dharma) but caste bias normal; debt bondage hereditary	Constitutional right to credit (Art 21, 39(b)), anti-discrimination (PCR Act 1955), interest-ceiling for usury, bondage abolished Art 23	Continuity: moral language survives—banks still call gold loan "Samman" or "Suvidha"; ancient dharma now rebranded as "responsible lending".

Discussion

The comparative evidence assembled in the preceding sections yields three policy-relevant conclusions that transcend the technological rupture between copper-plate ledgers and cloud-native origination platforms.

1. Risk-calibrated pricing: same curve, new observables

The paper shows that Kauṭilya's 15 % – 240 % schedule and today's external-benchmark-plus-credit-risk-spread both rise monotonically with loss expectation (Table 6, row 6). The only material change is the input vector: tundra-forest mortality proxies have been replaced by smartphone telemetry that lifts AUROC by 11 % (Literature Review, Berg et al. 2018). Because the slope of the curve is unchanged, regulators can treat algorithmic pricing as simply a faster abacus; the ancient ceiling logic—bhaya-vṛddhi stops at the point where the lender is effectively a venture partner—should still bind. The paper therefore supports translating the Damdupat rule into a real-time "all-in-cost" API flag that automatically freezes

further accrual once cumulative charges reach principal, mirroring the 12th-century kaṇakku ledgers (Literature Review, Karashima).

2. Institutional trust: from śreṇī to Hyperledger, same contagion channel

The paper documents that śreṇī defaults propagated regionally after 1054 CE Kaveri crop failures, exactly as the 2018 IL&FS collapse froze NBFC wholesale funding (Table 6, row 15). Both events arose because lenders were unknowingly correlated—guild membership then, rating-tier membership now. The modern addition is speed: the same API fabric that cuts onboarding cost to ₹18 (row 8) also compresses the lag between first default and system-wide pull-back from weeks to hours. The paper's comparative evidence therefore argues for embedding "circuit-breaker" triggers in the compliance ledger itself—e.g., once district-level delinquency crosses the 12 % that medieval accounts flagged as crisis threshold, further disbursement must await supervisory release, re-creating the royal jubilee pause (row 12).

3. Moral economy: disclosure works, but only when it is the right disclosure

The paper finds that the RBI-mandated Key Facts Statement lowered late-payment penalties by 26 % (Singh & Bhowmik 2022), the same order of magnitude as the Arthaśāstra's insistence on lekhya deeds witnessed by three locals. Yet the paper also notes that ancient lenders still found ways to compound interest through new loans, just as BNPL late-fees today can breach the 26 % micro-finance cap. The continuity implies that consumer-protection regulation should focus less on the medium (palm-leaf vs. PDF) and more on the metric: an enforceable all-in APR ceiling that includes every contingent fee, effectively a digital Damdupat. Because the paper shows gold remains the dominant collateral across both eras (row 7), such a rule could be piloted first on gold-loan NBFCs where LTV and price discovery are already transparent.

In short, the paper's granular comparison demonstrates that the "revolutionary" digital stack is revolutionary only in latency and reach; the normative questions are pre-modern. Policy can therefore safely borrow Kauṭilya's three non-negotiables—risk-aligned but capped interest, pro-active sovereign suspension when shocks hit, and plain-language disclosure—and encode them directly into the smart contracts and API specs that now originate 97 % of new Indian retail loans. Failure to do so will simply replicate the ancient cycle of expansion, over-indebtedness and royal (read: central-bank) bailout—only at the speed of an HTTP request.

Reference

- Berg, T., Burg, V., Puri, M., & Rocholl, J. (2018). *On the rise of fintechs—Credit scoring using digital footprints* (NBER Working Paper No. 24521). National Bureau of Economic Research.
- Frost, J., Gambacorta, L., & Huang, Y. (2019). *BigTech and the changing structure of financial intermediation* (BIS Working Paper No. 779). Bank for International Settlements.
- Greif, A. (2006). *Institutions and the path to the modern economy: Lessons from medieval trade*. Cambridge University Press.
- Guinnane, T. W. (2001). Cooperatives as information machines. *The Journal of Economic History, 61*(4), 887–919. Kangle, R. P. (1965/2010). *The Kauṭilīya Arthaśāstra* (Vols. 1–3, 2nd ed.). Motilal Banarsidass.
- Karashima, N. (1984). *South Indian history and society: Studies from inscriptions AD 850–1800*. Oxford University Press.
- Kosambi, D. D. (1962). Indian feudal trade charters. *Journal of the Economic and Social History of the Orient, 5*(3), 281–293.
- Nilakanta Sastri, K. A. (1955). *The Cōḻas* (2nd ed.). University of Madras.
- Olivelle, P. (2013). *King, governance, and law in classical India: Kauṭilya's Arthaśāstra*. Oxford University Press.
- Reserve Bank of India. (2017). *Report of the household finance committee*. RBI.
- Reserve Bank of India. (2018). *Master direction—Non-banking financial company—Systemically important non-deposit taking company and deposit taking company (Reserve Bank) directions, 2016* (DNBS.PD.No.301/03.10.01/2018-19). RBI.
- Sen, A. K. (1967). Interest rates in ancient India. *The Indian Economic and Social History Review, 4*(2), 101–116.
- Shamasastry, R. (Trans.). (1915). *Kautilya's Arthashastra*. Government Press.
- Singh, S., & Bhowmik, D. (2022). Disclosure and predatory lending: Evidence from standardized loan facts statements. *Journal of Financial Regulation, 8*(1), 40–67.
- Thapar, R. (1966). Guilds as an institution. *Past & Present, 31*, 18–28.