

REGTECH FOR INDIA'S GROWTH: TRANSFORMING REGULATORY COMPLIANCE

R. Raghavendra Rao¹

Abstract

The Indian economy holds significant relevance for research, particularly in the financial sector, due to its unique challenges such as a large unbanked population, rapid digital expansion, and a complex regulatory environment. The notable growth of the fintech sector necessitates strong regulatory compliance mechanisms to ensure stability, efficiency, and consumer protection. Financial regulations in India are governed by multiple apex bodies, including SEBI, RBI, and IRDAI, making compliance a demanding and resource-intensive task for fintech companies. Regulatory Technology (RegTech) has emerged as a transformative solution to simplify these complexities by offering automated, technology-driven compliance support. Leveraging tools such as Artificial Intelligence, Machine Learning, Automation, and Data Analytics, RegTech solutions help institutions meet the requirements of regulatory frameworks, including sandbox guidelines. In India, the RegTech ecosystem is rapidly evolving, with an increasing number of startups and established players entering the digital compliance space. Globally, the RegTech market is projected to grow at a compound annual growth rate of 20.30% between 2023 and 2028. This study adopts a qualitative, conceptual and review-based methodology grounded entirely in secondary data, drawing from journal articles, regulatory reports, policy documents, and market analyses. The paper examines the structure and evolution of the RegTech ecosystem in India and evaluates its contribution to economic growth. It further analyses successful case examples, identifies existing challenges, and outlines future directions for strengthening regulatory technology solutions in the Indian context.

JEL Classification Codes: G20, G21, L86

Keywords: Artificial Intelligence, Financial Services, Fintech, Machine Learning, Reg tech, Regulatory Compliances

INTRODUCTION

In the last two decades, there was a robust development and change in the financial sector in India which was witnessed by vast usage of digital footprints and technological advancements. On the other hand, the compliance landscape has also grown compounding and companies find difficult to comply with these regulations. It has become a challenging task for most of the companies to meet the regulatory body regulations due to the structural guidelines and procedures.

To ease the problems of compliance and making it easy for the businesses by adopting the advanced technologies, REGTECH has come to the front. Regtech is combining technology to meet the regulatory requirements.

Rapid advancements in technology like Artificial Intelligence (AI), Machine Learning (ML), Data Analytics (DA) are making it possible to address these issues to address the compliance challenges in financial services sector. The period of 2017 to 2025 implies a significant transformation in the adoption of regulatory compliances, fraud prevention and risk management by Indian Financial Sector entities. The status of fastest growing major economy

¹ Senior Assistant Professor & Head, Indian Institute of Management and Commerce (IIMC)

by India at global level throws several challenges and opportunities for the regulatory compliance system by the Regulatory bodies. Regtech solutions emerge as essential tools to navigate the issues while fostering innovation and growth. According to a study, the global Regtech Market is expected to grow at a CAGR (Compounded Annual Growth Rate) of 20.3% from 2023 to 2028.

Most of the studies were not done in this area as the landscape is very new and in the initial phases of development. Hence, the current research is undertaken to explore the role of Regtech in India's economic growth by leveraging technological advancements.

EVOLUTION OF REGTECH AND ADVANCEMENT PHASES IN INDIA

The adoption of Regtech in India was started in 2017 and experimented with large financial institutions. The advancement of Regtech was done in several phases, viz., Regtech 1.0 (2017-2019), Regtech 2.0 (2020-2022) & Regtech 3.0 (2023- Present) which are shown below.

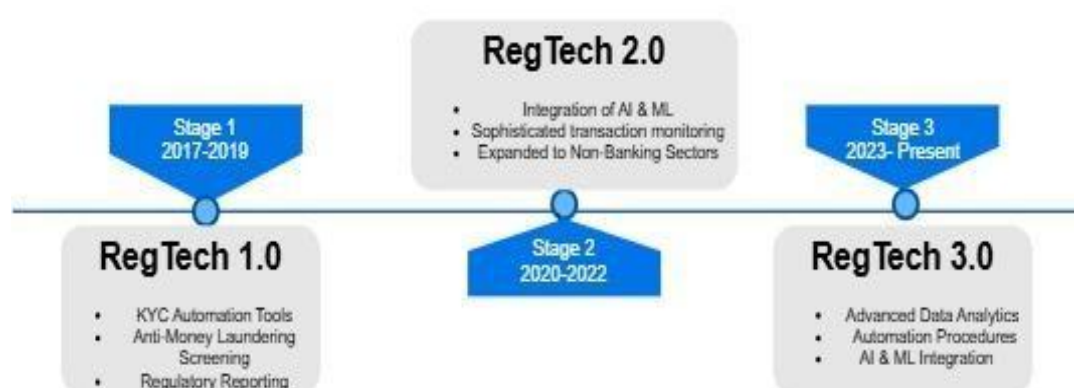


Figure1: Regtech Evolution Phases in India(2017–Present)

Source: Author's Own Compilation

Sector Specific Applications of Regtech

The Regtech solutions are widely used in the financial services sector, as there are lot of regulatory compliances to be met. In the initial phases, it is limited to the banking sector only, but now it has expanded to other non-banking sectors like insurance, capital markets, and non-banking financial companies (NBFCs), also due to the regulatory compliances within the industry. Every sector is now using Regtech to automate their procedures and thereby reducing compliance costs and increasing productivity. The solutions offered by Regtech in every sector will ease their compliance burden and enhance greater efficiency and diversification of products and services. The sector-specific applications of Regtech are given below with the help of a chart.

LITERATURE REVIEW

As Regtech is an emerging concept across the globe and in India, much of the research work has not yet been carried out, and now they are on their track. Most of the research works are done in FinTech, which is a superset of Regtech. However, the following articles were reviewed for the purpose of study, and the literature insights were presented below.

Annappoorna Naik (2023)—The study explains how Regtech solutions enhance compliance, reduce operational risks, and streamline regulatory processes in India's financial sector. By fostering a more efficient regulatory environment, they contribute to economic development

by promoting financial inclusion, attracting investments, and supporting the growth of fintech startups.



Figure2: Sector Specific Applications of Regtech/ Source: Author's Own Compilation

Anubha Anubha (2024)—The study highlights Regtech's potential to enhance compliance efficiency and risk management across various sectors, which could indirectly benefit economic growth in India. Regtech enhances compliance through automation and AI technologies. It addresses regulatory challenges across various sectors efficiently.

Chintamani Bagwe (2024)-This study explores the indirect influence of regulatory technology (Regtech) on India's economic development, emphasizing its role in digitalization and financial technology for rural advancement. Key insights reveal that Regtech can enhance regulatory compliance and risk management, potentially driving economic growth

by lowering operational costs and promoting financial inclusion. Furthermore, initiatives like Digital India significantly contribute to creating a digitally empowered economy, supporting sustainable economic development in India.

Mithilesh Kishor Gidage, Shilpa Bhide (2024) —Regtech solutions enhance financial development in India by improving compliance, reducing risks, and streamlining regulatory processes. This fosters a more stable financial environment, encouraging fintech growth and ultimately contributing to broader economic development in the industry 4.0 landscape.

Mitzi Bolton, Michael Mintrom (2023)—In their study, the potential impacts of regulatory technology (Regtech) solutions on Indian economic development were highlighted, showing that while Regtech's direct effects on the economy are not specifically detailed, its capabilities in enhancing compliance efficiency, reducing operational risks, and fostering innovation can significantly benefit the financial sector. It also underscores the broader positive influences of digitalization initiatives like Digital India on rural development, as well as Regtech's role in achieving regulatory compliance and improved data management, which can indirectly support economic growth.

Padma Iyengar (2024) – The research highlights Regtech's potential for enhancing organizational performance and driving sustainable growth, which could indirectly benefit economies, including India's, through improved compliance and efficiency. It also explores economic implications of Regtech compliance in Industry 4.0. and highlights benefits, costs, and regulatory uncertainties of Regtech adoption.

OBJECTIVES OF THE STUDY

The present paper has set twin objectives to attain–

- a) To understand the RegTech ecosystem in India
- b) To discuss the impact of RegTech on Indian economic growth and challenges faced by the RegTech sector.

RESEARCH METHODOLOGY

The present paper follows a qualitative, conceptual, and review-based research design grounded entirely in secondary data. Since Reg-Tech is an emerging field with evolving regulatory disclosure and limited empirical datasets, a review-oriented approach is most appropriate to interpret current developments in the Indian financial ecosystem.

The study uses documentary evidence drawn from published journal articles, regulatory circulars of RBI, SEBI, and IRDAI, policy papers, market research reports, and credible online databases. Selection of material was based on relevance to RegTech adoption and authenticity, ensuring that sources reflect regulatory evolution, technological integration, investment trends, and economic implications. .

The analytical technique employed is content-based thematic analysis, involving interpretation, comparison, and synthesis of trends rather than hypothesis testing. Tables, figures and projections presented in the study are author-generated illustrations based on trend extrapolation from secondary information. The study emphasizes descriptive explanation of Reg-Tech phases, key drivers, adoption dynamics, and economic outcomes in terms of cost efficiency, fraud prevention and inclusion.

The methodological scope is limited to Indian financial and compliance domains, and findings represent interpretative insights rather than generalizable primary evidence. This kind of study is a purely observational design approach and so aligns with secondary data only. Various journal articles, RBI reports, web articles, and consultancy firm reports were referred for the purpose of this study.

KEY DRIVERS OF REGTECH ADOPTION IN INDIA: (2017 TO 2025)

The Reg-tech evolution was not done in India at overnight. The emergence of new regulations and compliances in the financial sector and increased customer base in the market has provoked the ease of regulatory compliances with the adoption of rapid changes in technology. On the other hand, Artificial Intelligence (AI) systems had started giving flexible solutions to many business problems. To reap the benefits of advanced technology by compressing the complexity of regulation procedures, Reg tech companies had slowly spread their wings in the market with the following key drivers.

- a) Increasing Regulatory Complexity
- b) Rising Cyber fraud Concerns
- c) Venture Capital Investments in the new Reg-tech Start-ups
- d) Digital Transformation Initiatives.

Table 1 explains the projection of Reg-tech influence in the upcoming year. The adoption rate will be increased by 20% and the block chain compliance solutions would be double in use. Large number of enterprises will use the integrated compliance platforms more by 2025. Reg-tech will emerge as one of the core business models in the future times of usage.

Table 1: Growth Projections of Reg-tech (2024-2025) Source: Author's Own Compilation

Trend	2024 Status	2025 Projection
AI-Powered Compliances	45% Adoption Rate	65% Adoption Rate
Block Chain Compliance Solutions	15% Market Penetration	30% Market Penetration
Integrated Compliance Platforms	35% of Large enterprises	55% of Large Enterprises
Reg tech-As-A-Service	Emerging Business Model	Main stream Adoption

In Table 2, the investment trends of Reg-tech are given with a projection for 2025. When Reg-tech started in India in 2017, a total amount of Rs 120 million were estimated in the entire sector with basic compliance automation as the key areas of funding. By 2019, the amount was more than double and reached to Rs 280 million with investments in KYC and AML solutions which are very important for regulatory compliances in the financial sector. During the year 2021, the investment estimations reached to Rs 580 million, focusing more on AI powered compliance tools. This year is very important and crucial as the world has experienced COVID-19 tragedy and the businesses would like to cut the compliance costs by adopting new technologies. The estimated investment was reached to Rs 850 million in 2023 and is now projected to Rs 1.2 billion by 2025 for investment in latest models of technology like blockchain, Machine Learning and Advanced data analytics.

IMPACT OF REGTECH ON INDIAN ECONOMIC GROWTH

Financial Inclusion and Credit gap in MSMEs:

MSMEs have been suffering from credit accessing due to various reasons. One of the main reasons is lack of proper financial history. Besides that, complex documentation also poses a problem to get credit. Reg-tech, being an interface to connect MSMEs with banks through Fintech helps to take more reliable credit disbursement decisions. This will surely improve the creditworthiness of MSMEs, reducing the automation process reduces the time for loan processing and also the cost. The combo of Fintech & Reg-tech will drive the simplification of credit obtaining.

Table 2: Investment Trends in Reg-tech (2017-2025) Source: Author's Own Compilation

Year	Estimated Reg-tech Investment	Key Investment Areas	Notable Deals
2017	Rs 120 million	Basic Compliance Automation	Early-Stage Seed Funding
2019	Rs 280 million	KYC and AML Solutions	Series A Funding
2021	Rs 520 million	AI-Powered Compliance Tools	Strategic Corporate Investments
2023	Rs 850 million	Integrated Compliance platforms	Late-Stage funding and Acquisitions
2025 (Projection)	Rs 1.2 billion	Block Chain based compliance and AI	M&A, International Expansion

Transparency & Efficiency in Financial Services:

Automation enables to reduce the burden of administrative costs of financial services entities. This will ease the companies to concentrate on operational efficiencies. Usage of advanced financial Analytics permit the financial Institutions to understand Customer behaviour, designing tailored products & services, applying risk management practices etc. Regtech solutions facilitate the increased transparency of financial services that aid the trust & confidence of customers. Services like Aadhar card authentication, mobile & IMPS, digital payments have accelerated the efficiency of financial services through Regtech.

Risk mitigation through Suptech:

The paradigm shift in financial services industry had brought more struggle to regulatory bodies for proper supervision & monitoring. Regtech solutions offer the best solution to detect abnormal transactions, thereby preventing financial crimes such as money laundering & frauds. Advanced analytics & automation drives to process the data very fast and also identify the potential risks with anomalies. Real-time monitoring will enable them to quickly identify the emerging risks & take preventive actions.

Cyber Security Management:

Emergence of digital technologies has also contributed for the emergence of cyber threats. The attacks by cyber hackers not only cause financial attacks by cyber hackers but also for data breaches, reputational damage. The cyber frauds estimated to cost Indians over 0.7% of GDP. Regtech enables the usage of AI & ML models efficiently to give counter attack on cyber threats. Besides this, improved Govt. regulations also helpful to curb the number of cases involved in cyber threats. The usage of Regtech is essential for building the resilience against cyber threats.

DRIVING ECONOMIC GROWTH THROUGH PRODUCTIVITY

There is a regulatory burden on new players to enter into finance industry earlier. Reg-tech lowers the burden by automating compliance tasks & providing more efficient tools. Emergence of new firms and their entry will foster more competition. Increased competition enables diversified products & services that leads to innovation. Innovative approach of firms reduces the costs of products & services. Collaborative advancements within the industry evidences the impact of Reg-tech on greater efficiency.

Reduction in compliance burden and improvement in data management capacities lead to savings in costs and operational improvements for the businesses. This will free-up the resources that can be used for investments, expansions and innovations. Digital legislation can reduce the compliance costs by 30%. With improved data analytics, Regtech offers a better solution driven thinking, thereby increasing the productivity of businesses. The adoption of advanced technology in monitoring and supervision will have a positive impact on the economic growth of a country. The economic impact by Regtech is summarized in the following table.

Table 3: Economic Impact Metrics (2023-2025)
Source: Compiled by Author from Secondary Sources

Impact Area	2023	2024	2025 (Projected)
Compliance Cost Savings	Rs 85 billion	Rs 110 billion	Rs 145 billion
Fraud Prevention Value	Rs 850 billion	Rs 1000 billions	Rs 1200 billions
Regulatory Efficiency Improvement	22%	28%	35%
GDP Impact	0.4%	0.6%	0.8%

CHALLENGES FACED BY REGTECH

Standardization Issues: Reg-tech Solutions are relatively new and lack of standard terms in technology, data & regulations will make it hard for firms to choose the right Reg-tech solution.

Data Privacy & Security Issues - While Reg-tech offers several benefits for easy compliance of businesses, there is always a risk of data leakage. Usage of automation procedures and personal data raises the question of safety of information. Balancing the problem of security of data has posed a big question for the cybercrime world. To address these issues, certain standards are to be established and the Reg-tech solutions to be used responsibly & ethically. Proper customer education and awareness can manage the risk of theft of data & ensure privacy.

Regulatory Framework & Co-ordination - Proper establishment of regulatory framework is needed to run the Reg-tech solutions. Uncertainty of regulatory provisions can hinder the benefits of innovation and investments. Legal and regulatory framework should be well defined and provides clarity to businesses and investors, which fosters confidence among them. To implement smooth compliance through Reg-tech solutions, proper coordination among different regulatory bodies is very much essential to avoid the inconsistencies. This is possible by collaboration and information sharing. A unique approach that is established to suit all types of business entities with clear guidelines and standards will mitigate the risk management issues also.

Skills Gaps and Talent Shortages: The implementation and operation of sophisticated Reg-tech solutions required specialized skills that are often in short supply. This will create more demand for financial techies in the future. As the solutions are mainly offered on financial sector, more knowledge on this sector and updating with current trends is also one of the key challenges estimated in near times. The integration of human intelligence with Artificial intelligence is required ensuring a productive collaboration and addressing of many issues in the regulatory processes. Also, the awareness and education on these technologies should be widely spread among the college students enabling them to learn the relevant courses and acquiring skills required.

Integration& Infrastructure Issues: Many firms are operating through outdated systems and adoption of new technologies with higher cost would be a challenging issue for them and so they may not like to go for integration of existing with the Reg tech operations. Apart from that lack of sufficient digital infrastructure in some regions can hinder the implementation of Regulatory Technologies.

FUTURE DIRECTIONS

Invention of AI & ML: The central role of AI and ML are very important for the development of Reg-tech Solutions in India. The adoption of these technologies can detect frauds, automate the processes, and personalize the financial services to the customers.

Implementation of Blockchain Technology: The blockchain technology has lot of potential to transmit compliance and regulatory reporting by providing a secure, safe and transparent platform for the sharing of data.

Cloud Computing: Cloud computing can enable financial institutions to access Reg-tech solutions more easily and affordably.

Collaboration: Collaboration between regulators, financial institutions, and technology providers is essential for fostering Reg-tech innovation and adoption.

Explainable and easy access: The Reg-tech solutions have become more sophisticated and so it is very important to ensure that they are explainable to each and easily accessible. Reg-tech applications should be designed to provide transparent and unbiased assessments of regulatory compliance.

CONCLUSION

The rapid emergence of Reg-Tech marks a significant shift in how India's financial sector approaches compliance, risk management, and regulatory supervision. This study highlights that Reg-Tech's primary contribution lies in strengthening the efficiency, accuracy, and responsiveness of regulatory processes, enabling financial institutions to operate with reduced compliance burdens and enhanced operational resilience. By leveraging AI, ML, blockchain, and advanced analytics, Reg-Tech is reshaping the foundations of regulatory governance and contributing to a more transparent and technology-enabled financial ecosystem.

The findings reveal that Reg-Tech's influence extends beyond internal efficiencies; it indirectly supports India's broader economic growth through improved financial inclusion, reduced fraud, and lower operational costs for institutions. As compliance becomes more streamlined, financial entities—especially emerging fintech firms—gain greater scope to innovate, scale, and serve diverse customer segments. However, the long-term effectiveness of Reg-Tech depends on addressing critical challenges such as standardization gaps, cybersecurity concerns, integration barriers, and talent shortages.

Looking ahead, India stands at a pivotal point where collaborative policy frameworks, stronger regulatory coordination, and investments in digital infrastructure can accelerate Reg-Tech adoption. Efforts to build skilled talent pools and enhance awareness among financial institutions will further strengthen this transition. Overall, Reg-Tech is positioned to play a transformative role in shaping a robust, future-ready financial system. With the right enablers in place, it can significantly enhance compliance quality, improve institutional trust, and contribute to sustainable economic growth.

REFERENCES

1. Anubha,A. (2024). RegTech.Advances in Finance, Accounting, and Economics Book Series, 1–14.<https://doi.org/10.4018/979-8-3693-3322-8.ch001>
2. Bagwe, C. (2024). Streamlining compliance and risk management with RegTech solutions.International Journal of Computer Scienceand Information Technology, 16(3), 17–27. <https://doi.org/10.5121/ijcsit.2024.16302>
3. Bolton,M., &Mintrom, M. (2023).RegTech and creating public value: Opportunitiesand challenges.Policy Design and Practice, 1–17. <https://doi.org/10.1080/25741292.2023.2213059>

4. Gidage, M. K., & Bhide, S. (2024). FinTech, RegTech, and financial development in India's Industry 4.0 landscape. *Advances in Finance, Accounting, and Economics Book Series*, 49–71. <https://doi.org/10.4018/979-8-3693-3322-8.ch004>
5. Iyengar, P. (2024). Economic impact of RegTech compliance. *Advances in Finance, Accounting, and Economics Book Series*, 15–34. <https://doi.org/10.4018/979-8-3693-3322-8.ch002>
6. Naik, A. (2023). The revolutionized finance sector with reference to fintech industry in India. *International Journal of Research Publication and Reviews*, 4(2), 1595–1599. <https://doi.org/10.55248/gengpi.2023.4234>
7. Yogitha Devi, & K. M., D. N. (2024). A study on evolution and growth of fintech industries in India. *ShodhKosh: Journal of Visual and Performing Arts*, 5(6). <https://doi.org/10.29121/shodhkosh.v5.i6.2024.4067>
8. Zetzsche, D. A., Buckley, R. P., Arner, D. W., & Barberis, J. N. (2017). Regulating a revolution: From regulatory sandboxes to smart regulation. Social Science Research Network.
9. Infiniticube. (n.d.). Evolution of fintech business models: A roadmap to innovation. Retrieved from <https://infiniticube.com/blog/evolution-of-fintech-business-models-a-roadmap-to-innovation/>
10. OpenPR. (n.d.). Regulatory technology (RegTech) market 2023–2030: Investment outlook. Retrieved from <https://www.openpr.com/news/3037522/regulatory-technology-regtech-market-2023-2030-investment>
11. VCCircle. (n.d.). Outlook 2025: VC investment revival set to continue; RegTech and FinTech to be in demand. Retrieved from <https://www.vccircle.com/outlook2025-vc-investment-revival-set-to-continue-regtech-fintech-to-be-in-demand>
12. The Business Research Company. (n.d.). RegTech global market report. Retrieved from <https://www.thebusinessresearchcompany.com/report/regtech-global-market-report>
13. AppicSoftwares. (n.d.). FinTech app development cost. Retrieved from <https://appicsoftwares.com/blog/fintech-app-development-cost/>