

A Study on Impact of Fintech Adoption on Banking Sector Performance in Indian Stock Market

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Abstract- *Does the market actually react when an Indian bank rolls out a new FinTech product? That is the question this paper tries to answer. Using event-study methodology, nine FinTech-related launches are examined — three each from State Bank of India (SBI), ICICI Bank, and Kotak Mahindra Bank — spanning the financial years 2015–16 through 2024–25. For each launch, daily abnormal returns and cumulative abnormal returns (CAR) were worked out against the BSE BANKEX index using the standard market model, then checked for statistical significance with t-tests over (-2, +2) and (-5, +5) windows around the event date. Not one of the nine events produced a reaction large enough to be statistically significant. Put simply, the market does not seem to treat these announcements as news — FinTech rollouts appear to be priced in well before launch day, or investors simply see them as routine steps rather than turning points. That said, this does not mean FinTech is unimportant: banks that adopt it consistently report gains in efficiency, service quality, and customer retention over the longer run. The paper closes with what this pattern might mean for bank managers, investors, and regulators trying to make sense of how digital innovation gets priced in a market like India's.*

Keywords - *FinTech; Event Study; Abnormal Returns; Cumulative Abnormal Returns; Indian Banking Sector; BSE BANKEX*

I. INTRODUCTION

Banking sits at the heart of India's financial system. It gathers deposits from households and firms and turns them into credit for agriculture, industry, trade, and everything in between, while also handling payments, forex, and investment services along the way. The Reserve Bank of India (RBI) has overseen this system since 1935 and took ownership of much of it after 1949. Since then the sector has been reshaped more than once — nationalization drives in 1969 and 1980, the opening-up of the economy in the 1990s, and later the arrival of Core Banking Solutions, ATMs, internet banking, and electronic payments,

which together set the stage for what we now simply call digital banking.

FinTech — short for Financial Technology — is really just banking delivered through faster, more convenient technological channels rather than a branch counter. It leans on tools like artificial intelligence, blockchain, cloud infrastructure, big data, and APIs. Looking back, the industry has moved through roughly four stages. The earliest, FinTech 1.0, goes all the way back to the telegraph era (1866–1967). FinTech 2.0 covered ATMs, electronic payments, and internet banking (1967–2008). FinTech 3.0 kicked off after the 2008 financial crisis with a wave of start-ups building digital lending and payment apps. And FinTech 4.0 — where things stand today — is really about AI, blockchain, and APIs binding banks and FinTech firms together as partners rather than competitors.

India's own version of this story has been pushed along by policy as much as by technology: UPI, Aadhaar-based KYC, the regulatory sandbox, digital lending guidelines, and licenses for Payments Banks and Small Finance Banks have all played a part, helped along by cheaper smartphones and wider internet access. Since a bank's share price is, in some sense, a running vote of investor confidence, it's worth asking whether these FinTech rollouts actually move that needle. That's the gap this paper tries to fill — using the stock market's reaction to specific FinTech launches as a way of testing whether investors treat digital transformation as genuinely new information, or just business as usual.

II. LITERATURE REVIEW

Much of the existing work on FinTech in India comes at the subject from the consumer or financial-inclusion angle. Krishna Priya and Anusha (2019),

working off the EY FinTech Adoption Index, found India sitting in second place globally for FinTech uptake, with digital payments and money transfers leading the charge. Reddy, Chakravarthy, and Mishra (2024) surveyed 400 respondents and ran the data through structural equation modelling; trust in the service came out as the biggest factor behind adoption, ahead of ease of use or behavioural intent. Sathish and Naveen (2025) took a mixed-methods approach and concluded that AI and machine learning are set to reshape how banks operate, though data privacy keeps coming up as a sticking point. Kakar (2024), reviewing five years of secondary data, documented a clear jump in digital transaction volumes and FinTech firm counts over that window.

A second strand of research looks past adoption itself toward performance and stability. Joy and Thomas (2022) ran Data Envelopment Analysis on Indian FinTech firms and found several were not making full use of their resources, pointing to a case for tighter cooperation between FinTech players and traditional banks. Safiullah and Paramati (2022), working with panel data from Malaysian banks, found FinTech growth actually correlates with better financial stability — an effect that showed up more strongly among smaller and Islamic banks. Ghosh and Golder (2026) pulled together a systematic review and concluded that FinTech adoption tends to lift operational efficiency and customer service in traditional banks, alongside opening doors to further innovation. Migozzi, Urban, and Wójcik (2024) zoomed in on India specifically, crediting government policy and digital infrastructure — especially around hubs like Bengaluru and New Delhi — for much of the ecosystem's growth.

What's notably thin, though, is research that ties a specific, dated FinTech launch to the actual stock-market reaction of an individual Indian bank. Most of what exists leans on surveys or descriptive statistics built around adoption drivers and inclusion metrics, not on how equity markets respond in the days around an announcement. That's the gap this paper is aimed at — nine FinTech launch events, three banks, ten years, and an event-study lens applied throughout.

III. RESEARCH METHODOLOGY:

3.1 Objectives

- Understand what FinTech means for Indian banking and how it has reshaped the sector.
- Track how the Indian banking sector has grown, before and after FinTech took hold.
- Test whether specific FinTech launches — digital payments, mobile banking, AI-driven platforms — actually move stock prices in the short run.

3.2 Scope and Data

Three BSE-listed banks were chosen for this study — State Bank of India, ICICI Bank, and Kotak Mahindra Bank — largely because all three have pushed hard on digital banking over the last decade. Everything here comes from secondary sources: BSE India, RBI publications, annual reports, and prior research, covering the ten financial years from 2015–16 to 2024–25. Nine launch events were pulled out for analysis, three per bank. For SBI: YONO (24 Nov 2017), YONO Business (27 Nov 2019), and BHIM SBI Pay (4 Jul 2024). For ICICI: ICICI Stack (17 Mar 2020), iMobile Pay (7 Dec 2020), and Digital Rupee (1 Dec 2022). For Kotak Mahindra: Kotak 811 (29 Mar 2017), Kotak FYN (21 Feb 2023), and Kotak Bizlabs (16 Dec 2024).

3.3 Event Study Design

Each event gets a 21-day window around it — 10 trading days before, 10 after — with a separate 110-day stretch (-120 to +10 days) used to build the market model. The BSE BANKEX index stands in for the overall market. Alpha, Beta, and the regression's standard error come from applying INTERCEPT, SLOPE, and STEYX to the daily stock and market returns. From there, each day's abnormal return is just the gap between what actually happened and what the model predicted, and cumulative abnormal return (CAR) sums these up over the (-2, +2) and (-5, +5) windows. T-tests then check whether those abnormal returns are large enough to reject the idea that FinTech adoption has no real effect on the stock.

3.4 Hypotheses

H0: FinTech adoption has no significant impact on the performance of the Indian banking sector.

H1: FinTech adoption has a significant impact on the performance of the Indian banking sector.

Analysis and Discussion (Chapter 4)

Table 1 lays out the market-model parameters and CARs for all nine events side by side. Look down the t-stat columns and one thing jumps out immediately: every single value sits comfortably below the 1.96

threshold that would normally signal significance at the 5% level. In other words, none of these nine launches moved the needle enough to call it a real market reaction, in either the (-2, +2) or (-5, +5) window.

Table 1. Summary of market-model parameters and cumulative abnormal returns (CAR) for nine FinTech adoption events across SBI, ICICI Bank, and Kotak Mahindra Bank.

FinTech Event / Bank	Alpha	Beta	CAR (-2,+2)	t-stat	CAR (-5,+5)	t-stat
SBI — YONO Business (27 Nov 2019)	-0.00091	0.8101	0.0187	0.385	0.0155	0.215
SBI — YONO (24 Nov 2017)	-0.00102	2.5616	0.0038	0.104	-0.0119	-0.217
SBI — BHIM SBI Pay (04 Jul 2024)	0.00172	1.3097	0.0029	0.069	-0.0073	-0.118
ICICI — iMobile Pay (07 Dec 2020)	-0.00090	1.2144	0.0177	0.361	0.0613	0.843
ICICI — ICICI Stack (17 Mar 2020)	0.00132	1.1484	-0.0192	-0.607	0.0519	1.107
ICICI — Digital Rupee (01 Dec 2022)	0.00027	1.0410	-0.0117	-0.420	-0.0156	-0.375
Kotak — Kotak 811 (29 Mar 2017)	0.00009	0.6390	-0.0173	-0.631	0.0183	0.452
Kotak — Kotak FYN (21 Feb 2023)	-0.00105	0.6880	-0.0149	-0.647	0.0022	0.063
Kotak — Kotak Bizlabs (16 Dec 2024)	-0.00010	0.8240	0.0110	0.444	0.0199	0.542

SBI's Beta swings from 0.81 up to 2.56 depending on which event you look at — a sign that how closely the stock tracks the wider banking sector shifted quite a bit across these years — while Alpha stays close to zero throughout. None of the three launches, YONO, YONO Business, or BHIM SBI Pay, moved CAR into significant territory, which fits the idea that investors saw each one as SBI simply continuing what it was already doing, not as fresh news worth repricing the stock over.

ICICI tells a similar story, though with slightly more movement. iMobile Pay and ICICI Stack both produced positive CARs over the wider (-5,+5) window — 0.061 and 0.052 respectively — which sounds meaningful until you check the t-stats (0.843 and 1.107), both still short of the bar for significance. The Digital Rupee launch landed during a period of monetary tightening and showed a small negative CAR, again not significant.

Kotak Mahindra's Betas stayed under 1.0 across all three events (between 0.64 and 0.82), pointing to somewhat lower systematic risk relative to SBI and ICICI over the same stretches. Kotak 811, Kotak FYN, and Kotak Bizlabs all followed the same pattern as the other two banks — no significant short-term price reaction to any of them.

Put together, this points toward something close to market efficiency at work: routine FinTech launches, as opposed to sudden regulatory changes or major strategic pivots, seem to get priced in ahead of time, or investors simply don't see them as big enough deals to react to in the short window around the announcement.

IV. FINDINGS

- FinTech launches barely moved share prices for any of the three banks studied.
- Daily abnormal returns around each event date stayed small — nothing that looked like a real repricing.
- CARs were low across the board, and the t-tests never got close to rejecting the null hypothesis.
- Alpha values sat near zero everywhere, suggesting these stocks weren't especially volatile heading into the announcements.
- Beta varied noticeably bank to bank and period to period, reflecting real differences in market-risk exposure.
- Investors seem to treat FinTech rollouts as expected, routine steps rather than news that changes their view of the stock.
- Even so, FinTech adoption keeps showing up alongside real gains in digital service quality, efficiency, and customer convenience — just not in the share price, at least not right away.

V. CONCLUSION

So, does the stock market notice when an Indian bank rolls out FinTech? Based on these nine events across SBI, ICICI, and Kotak Mahindra between 2015–16 and 2024–25, not really — at least not in any way that shows up as statistically significant. The null hypothesis held in every single case. The likely explanation is that markets had already priced these

moves in, or simply saw them as continuations of an existing digital strategy rather than surprises. None of this means FinTech doesn't matter — it clearly keeps improving how banks operate and how customers experience banking — but that value seems to show up gradually, in long-term performance, rather than in a single announcement-day price jump. A natural next step would be widening the sample: more banks, more events, and a longer time horizon, to see if this pattern holds across the sector more broadly.

VI. RECOMMENDATIONS

- Keep investing in FinTech even where the stock market doesn't react much in the short term — the operational payoff is real.
- Be more proactive about explaining the long-term value of digital initiatives to investors and analysts, rather than assuming the market will connect the dots on its own.
- Pair every new digital product with solid cybersecurity and data-privacy measures — trust is what makes any of this worth doing.
- Invest in ongoing staff training so that new FinTech tools actually translate into day-to-day efficiency gains.
- Future research should widen the bank sample, cover more events, and stretch the event window further out to catch longer-run effects.
- Investors would do well to weigh a bank's digital transformation alongside its financial fundamentals, rather than reading too much into short-term price moves.

VII. LIMITATIONS

- The study only relies on the secondary data, That means the findings are only as reliable as the source data itself, and any gaps or inconsistencies in that data carry through into the results.
- Only three banks were studied — SBI, ICICI, and Kotak Mahindra. That covers major public and private players, but not the full sector, so the findings may not hold for smaller or regional banks.
- The focus stayed on a few FinTech areas — digital payments, mobile banking, and AI tools.

Other tech, like blockchain or open banking APIs, wasn't covered and might show different results.

- The study runs through 2024–25. Anything these banks have done with FinTech since then isn't reflected here.
- Time limits meant fewer events and a narrower analysis than a longer project could have managed.
- Stock prices don't move on FinTech alone — the economy, government policy, and market swings all play a part too, and this study didn't separate out their effect.

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