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Impact of EASE Reforms on Banking

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IMPACT OF EASE REFORMS ON BANKING

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Executive Summary

In January 2018, the Government of India and Public Sector Banks (PSBs) jointly committed to and launched a common PSB Reforms Agenda for Enhanced Access & Service Excellence (EASE), comprising 30 Action Points across six reform themes. It was jointly prepared by Indian Bankers Association (IBA) and Boston Consulting Group (BCG) based on points emerging from brainstorming by the Finance Ministry, PSBs Chiefs, Executive Directors, IBA and other stakeholders. In the first round (EASE 1.0), the focus of the reforms was to ensure that PSBs set up all the internal processes and systems that would aid them in achieving higher standards in terms of CLEAN (clean credit, leveraging data, ensuring accountability, action against defaulters and NPA recovery) and SMART (Speedy, Multi-channel reach, accessible & affordable, responsive and technologically enhanced) banking. The progress of the banks on each of the themes was rigorously monitored through an objective EASE Reforms Index, comprising 140 metrics. Next version was launched as EASE 2.0 which had fewer parameters (107 metrics) and mainly emphasized on business outcomes. EASE 3.0 was a continuation of earlier versions with focus on strengthening systems and processes particularly digital enablements.

With change in banking landscape owing to amalgamation and prevailing pandemic caused by Covid-19 during Financial Year (FY) 2020- 21 and 2021-22, the reform agenda shifted gears with the launch of EASE 4.0 and 5.0. These versions of EASE focused more on digital and data driven banking to improve PSBs performance. During each version of EASE reform agenda, the quantified evaluation, benchmarking, ranking and inter-bank comparison built into the EASE Index endeavored to create competition amongst the PSBs. During each phase of implementation, leading PSBs became the pace-setters for accelerated reforms and the best practices among PSBs were available for peer learning. The present study endeavors to understand whether the transformation of the systems and processes of PSBs under EASE reform agenda has been reflected in improved business performance and customer feedback.

The prime focus of this study is to understand the impact of the EASE reform agenda on PSBs performance and subsequent impact on the banking sector. To gauge the comparative position, their performance has been compared with those of select private banks using CAMELS ratio. We have also conducted sentiment analysis using twitter data to capture customer feedback based on 8 emotions, i.e., anger, anticipation, disgust, fear, joy, sadness, surprise and trust.

The results show that capital adequacy, management quality, earning ratio, liquidity and sensitivity ratio all are important in explaining efficiency of banks. All of these ratios have seen improvement in public sector banks since the implementation of EASE reforms and consequently their efficiency has also improved significantly. Though private sector banks' performance on these parameters are better than PSBs, public sector banks have seen encouraging improvements since 2018 onwards when EASE reforms were initiated.

Natural Language Processing (NLP) based sentiment analysis results showed that public sentiment is more positive towards public sector banks than their private sector peers. This despite the fact that private sector banks' services (for example applications rating) and performance (CAMELS) are much better than public sector, shows that government ownership of these banks play a role in giving them better public opinion. Public sector banks can leverage these positive sentiments by concentrating on EASE related action points, particularly, customer service and product offerings by utilizing digital and analytical tools.

1. Introduction

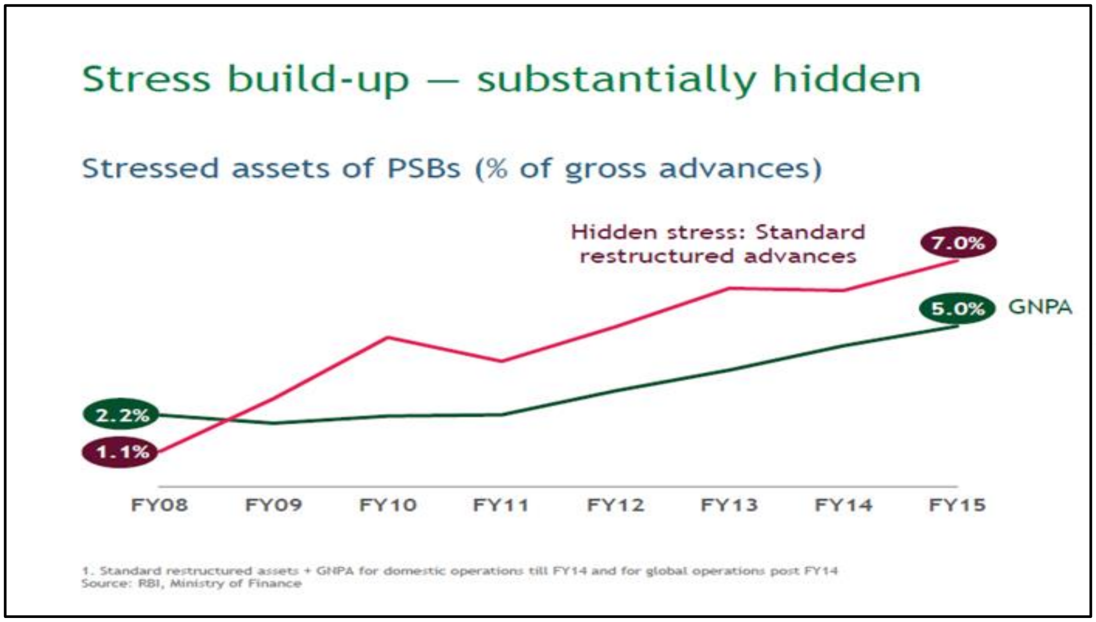
Banks perform several key functions in the economy, more so in bank dominated financial systems such as India. The banking industry worldwide is getting transformed and India is no exception to this phenomenon. Some of the global forces for change include technological innovation, changes in customer preferences, growing disintermediation and increased emphasis on shareholder value etc.

In line with global trends, the Indian banking system has moved into a market driven competition system. The dynamics of diverse markets and customer preferences are now dictating the drivers of growth in business. With ever increasing expectations of customers for best service and competitive price, the banks will have to innovate on an ongoing basis e.g., new products as well as alternative delivery channels tailored to the needs of the customers using state of the art technology. Affordable and mass banking without PSBs would be fallacy because they are having a major share in banking sector space; they garner deposits from many sources including far flung areas and channelize the same primarily towards credit creation in the economy. The credit creation by the public sector banks thus spur economic growth. PSBs and PSB-sponsored Regional Rural Banks (RRBs) have dominant market share and constitute over 75 percent of the bank network of Scheduled Commercial Banks (SCBs). The state-owned banks inspire confidence in depositors more so during turbulent economic conditions, thereby encouraging financial savings and making bank-runs less likely. PSBs have the reach and competence to meet varied banking requirements of diverse customer base especially underserved segments and sectors. During difficult times like demonetisation and Covid-19 etc, they have risen to the occasion to walk extra miles and serve the common man. They are also key providers of long-term credit (more than 5-year term) with a share of over 70 percent of outstanding credit. Therefore, they can become catalysts of economic development and catapult India into a USD 5 trillion economy. It is recognized by the Government of India (GoI) and other stakeholders that the reform process can make them perform better and ultimately transform the financial sector as well.

Gradually, PSBs are losing their share in deposits and advances predominantly due to rising competition from private sector peers and fintechs. In the 1990s, before the Reserve Bank of India (RBI) gave licenses to the first set of private banks, the PSBs held 90 per cent share of the banking assets. In 2000, their share was a little over 80 per cent. By 2014, they held around three-fourths of the market share in deposits, advances and total assets. As per RBI data, PSBs had a 75.74 per cent share of advances of the banking industry in 2014 which dropped to 61 per cent by 2019. The PSBs' share in incremental advances is falling even at a sharper pace. It was 73.45 per cent in 2014 and dropped to 23.75 per cent in 2019. The December 2019 report on Trend and Progress of Banking in India, an annual RBI publication, says public sector banks have attracted a meager 23 per cent of the incremental term deposits in the financial year 2018–19. The reasons for drop in business can be attributed to rising competition from private banks/fintechs. Apart from competition, RBI asset quality review brought bad loans to fore and necessitated higher capital provisioning thus restraining PSBs balance sheet growth.

If quantitative data pertaining to the banking sector is analyzed, operational efficiency of the PSBs is characterized by low profitability, high NPA ratio, low capital base and high cost to income ratio due to internal and/or external factors. One of the major concern areas has been GNPA, which shot up from 1.1% in FY08 to 5% in FY15 while hidden stress (standard restructured advances) shot up from 2.2% to 7% in the same period, creating a strong case for immediate action (Figure 1).

Figure 1: Stress assets of PSBs



It has also been observed that Covid-19 has severely impacted banking physical operations, collections and affected credit quality.

Analysis of RBI Financial Stability Reports reflects that RoA and ROE of PSBs has been consistently lower than their private sector peers. In 2015–16, both RoA and RoE for most PSBs were negative, indicating losses to most of the public sector banks and causing concern to the government of India.

If we walk down the memory lane, there have been slew of measures undertaken by the Government and the RBI to reform the banking sector particularly PSBs. The RBI led financial sector reforms covered deregulation of policies, prescription of prudential norms based on internationally accepted practices in respect of capital adequacy, income recognition, asset classification and provisioning for impaired assets and introduction of competition in the banking sector. Several measures towards strengthening supervision over banks were also introduced simultaneously. The prudential norms were adopted in a phased manner from 1992-93 to make the transition less painful. Introduction of Basel norms to improve risk management in banking, has been one important initiative by the RBI.

The government led reforms were largely adopted from Narasimham Committee recommendations in two reports. The recommendations covered wide ranges from improving productivity, efficiency and profitability of the banking system on the one hand and providing greater operational flexibility and functional autonomy in the decision making on the other.

Consolidation of PSBs has been another feature in the reform process. Pre amalgamation, there were 27 PSBs with varying sizes. State Bank of India, the largest bank, had a balance sheet size of approximately 17 times the size of the smallest public sector bank. Most PSBs follow roughly similar business models and many of them are also competing with each other in most market segments they are active in. Further, PSBs have broadly similar organizational structure and human resource policies. It has been argued that India has too many PSBs with similar characteristics and a consolidation among PSBs can result in reaping rich benefits of economies of scale and scope.

The imperative for PSBs consolidation emanates from the fact that although India is the fifth largest economy in the world in terms of nominal GDP, there is no Indian bank in the list of 50 largest banks in terms of asset size. Evidence suggests that large banks reap certain advantages in terms of efficiency, risk diversification and capacity to finance large projects. The efficiency gains resulting from lower cost of services and higher quality of services is too attractive to ignore.

Although PSBs have continued to pursue reforms over the years, the need of aggressive reform was felt at this juncture due to persistent stressed assets, big ticket frauds and competition from new and old age private banks. To address this persistent issue and other PSBs systemic, governance and process related issues, the regulator emphasized on recognition of stress assets and government implemented comprehensive **4R strategy** in March 2015, which inter alia included 4 broad parameters as under:

A. **R**ecognize NPA transparently
B. **R**esolution and recovery
C. **R**ecapitalization of PSBs
D. **R**eforms to drive CLEAN & SMART banking

The first three R's are expected to strengthen the balance sheets of PSBs, whereas last R deals with improvements in systems and processes viz technology driven checks & controls, risk management, prudent lending, PSBs governance, leverage of technology in banking functions, customer service enhancement, employee development and in the last but not the least transparency and accountability. In this study, we would endeavor to delve deeper into "CLEAN & SMART banking", which become the central theme in formulation of EASE Reform Agenda.

Alongwith 4R strategy the government/regulator also undertook other important structural reform initiatives for PSBs. Most important of those initiatives are tabulated in Table 1.

Table 1: Public sector banks/banking reform measures since 2015

FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
PMJDY launched	Mudra Yojna	IBC	**EASE Reform Agenda (EASE 1.0)**	**EASE 2.0**	PSBs amalgamation UBI- Corp and Andhra Bank, Canara and Syndicate Bank, PNB-OBC and United Bank	DICGC coverage enhanced to Rs. 5 lakh	NARCL
JAM Trinity	Asset Quality Review by RBI	Bank Board Bureau (Now FSIB)	UdyamiMitra	PSBloansin59 mins		Capital infusion of Rs. 3.5 Lakh	IDRCL
Social security scheme - PMJJBY, PMSBY, APY	Indradhanush	UPI - Bhim	Costly AT-1 bonds recalled	BoB-Vijaya-Dena Amalgamation		Covid resolution framework	DFI
			Crackdown on shell Companies	Fugitive Offenders Act	**EASE 3.0**	ECLGS	Capital infusion Rs. 20k Crs
			Recap of 2.11 lakh crore	NFRA		**EASE 4.0**	**EASE 5.0**
			TReDS	e-Bक्रय			

2. The Background of EASE Reform Agenda

"EASE" is a new word which has found its way into the banking lexicon in the past couple of years. To demystify, EASE is an acronym for 'Enhanced Access & Service Excellence' and it is a subject of intense discussions in the PSBs Boardrooms and premier leadership.

EASE is a set of reforms initiated by the Department of Financial Services (DFS), Govt of India (GoI) in January 2018 for PSBs and comprises Action Points (APs) covered in specific themes. It was launched based on the recommendations made by the PSBs whole time directors (WTDs) and senior executives in PSB Manthan in November 2017. These reforms address key areas in PSBs, such as, governance, prudential lending, risk management, technology driven checks and controls as well as transparency and accountability in the wider financial ecosystem. Termed EASE 1.0 when it started in 2018 covering the period FY 2018-19, it has traversed its journey through EASE 2.0 for FY 2019-20, EASE 3.0 for FY 2020-21 EASE 4.0 for FY 2021-22 and EASE 5.0 for FY 2022-23.

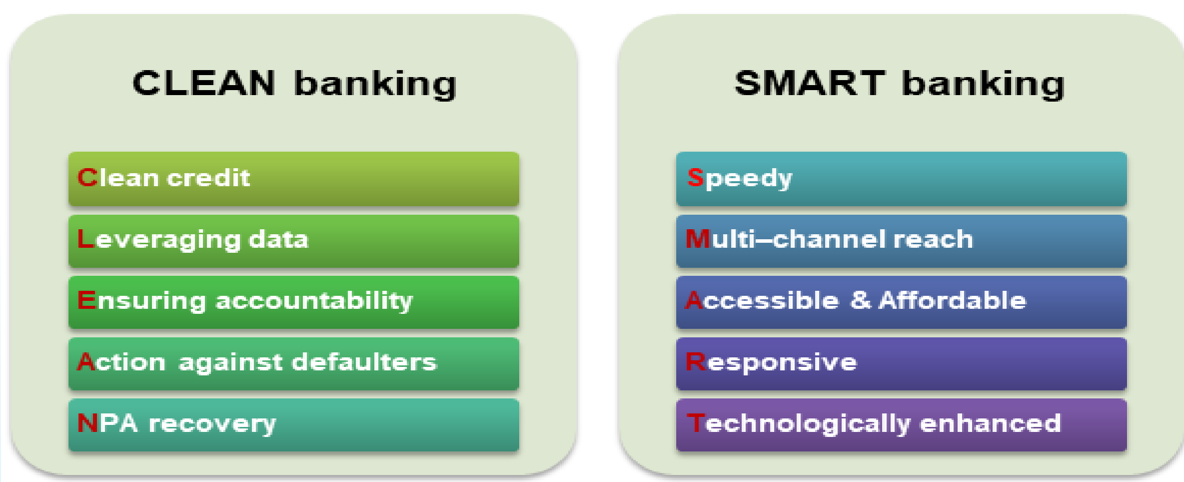
The first edition of the EASE program pertaining to FY 2018-2019 aimed at laying the foundation of responsible and responsive banking by prioritizing customer service related actions covered in various themes.

While EASE 1.0 and 2.0 laid a firm foundation of robust banking and institutionalized systems, EASE 3.0 aimed to transform PSBs into digital and data-driven NextGen banks. EASE 3.0 revolved around five themes which were Smart Lending for Aspiring India, Tech-Enabled EASE of Banking, Institutionalising Prudent Banking, Governance & Outcome Centric HR and Deepening Financial Inclusion and Customer Protection.

During last FY 2021-22, EASE 4.0 aimed to further the agenda of customer-centric digital transformation and deeply embed digital and data into PSBs' ways of working. Apart from existing themes of EASE 3.0, two new themes were introduced to deliver on objectives outlined as CLEAN & SMART Banking. The tagline of this installment of EASE was '***Technology-Enabled Collaborative & Simplified Banking'***. The EASE 4.0 was in continuation of EASE 3.0 where most of the themes and action points were either retained or enhanced in view of non-achievement due to prevailing pandemic. The essence of EASE 4.0 is covered in its 6 themes, which is further broken-down into implementable Action Points. In the latest edition EASE 5.0 focuses on long-term reforms to be achieved over a three-year period, with a focus on enhancing digital experience and strengthening data-driven, integrated, and inclusive banking. EASE 5.0 has been envisioned to continue driving successful reform initiatives from previous iterations of EASE with a new focus on supporting India's small businesses and agriculture sector.

In nutshell, as shown in Figure 2, PSBs reform agenda aims to drive CLEAN & SMART banking in PSBs to transform them radically to cater changing India and to maintain competitive edge:

Figure 2: CLEAN and SMART banking



The EASE reform process is quite comprehensive in nature and requires significant efforts & investment by implementing public sector banks. The EASE reform is not passive affairs and the progress of PSBs is being tracked through the quarterly EASE Reforms Index published by Indian Banks Association (IBA). The EASE Index is based on the implementation of the Action Points (APs) covering various themes and measures PSBs performance against respective benchmarks.

The EASE Reforms Index enabled objective assessment of progress on all key areas in PSBs operations — viz., governance, prudential lending, risk management, technology & data-driven banking and outcome-centric HR — as well as enhanced transparency and accountability. The EASE Reform Index measures the performances of each PSB on various metrics across themes (currently 5 themes in EASE 5.0). It endeavors to provide all PSBs a comparative evaluation showing banks standing based on the benchmarks and performance under various metrics. Basically, EASE Reform Index is multidimensional as it uses varied data sources including data from PSBs, external sources, GoI and customer research to arrive at ranking of PSBs. Indian Banks Association (IBA) in assistance from BCG group, has been measuring the performances of PSBs under EASE reforms index during each version of the reform agenda.

This reform process may have an impact on the way PSBs operate and deliver financial services to a large number of customers for their various needs. Since, this reform process requires PSBs to invest considerable amounts of capital, man-hours and time to meet the ambitious expectations envisaged in action points of each installment of the reform agenda, it is imperative to gauge its impact on implementing banks' efficiency and performance.

a. The Concept of EASE Reform Index

It is created to measure and monitor the performance of PSBs under various themes and action points (APs) of EASE reform agenda set for a particular period, mostly one year. The benchmarks are based on PSBs/Private sector peers best practices, which are adopted for the purpose of developing action points for other PSBs. Therefore, the marks obtained by PSBs are relative to that of top performing PSBs. EASE reform index is quite multidimensional, as it collects data sets from different independent sources, surveys to arrive at EASE reforms ranking of PSBs.

The first ever index was published along with the report titled 'EASE reforms for PSBs' in February 2019 based on data as of December 2018. It is now being published on a quarterly basis by Indian Banks' Association (IBA).

The creation of EASE Reforms Index involved four major steps across design and implementation. To assess performance, objective measurement metrics were defined to track and analyze progress across action points prescribed in various themes of the reforms agenda. Of these 250 metrics, 140 have been incorporated in the EASE 1.0 Reforms Index. In the future, based on evolving priorities, the index will keep changing to include new metrics as well as metrics that are currently tracked but not included.

Three types of scoring methodologies, as mentioned below, are defined to track and compare performance of PSBs. Each metric is scored using relevant methodology.

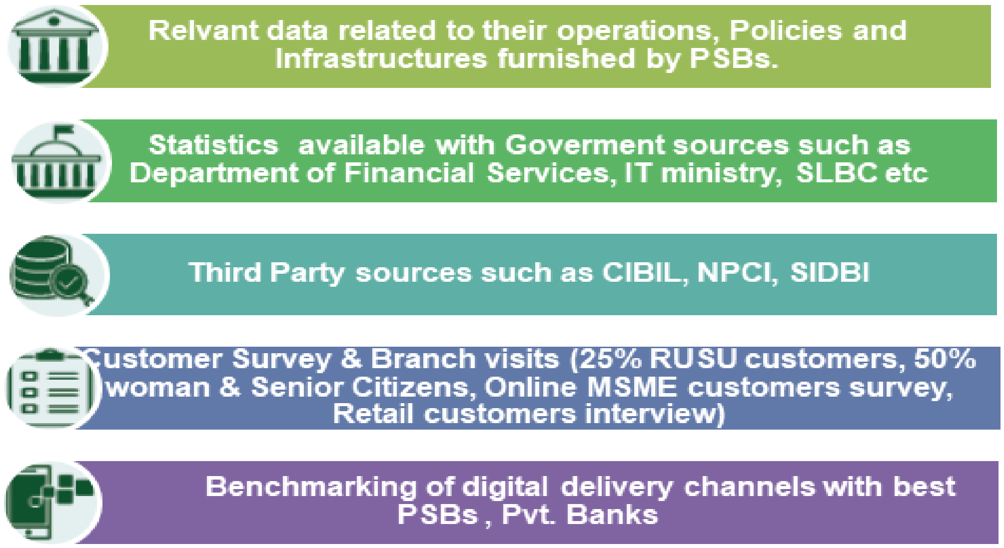
- First method is measuring performance against the target assigned. For example, percentage of operative current and savings accounts seeded with mobile number. Under this methodology performance is measured based on % achievement of the target assigned.

- Second methodology is benchmarking performance of each PSBs against best performing PSBs in the particular metric. Here, bank performances are relative. For example, the bank's growth in transactions through digital channels as compared to growth of the fifth best PSB.
- Third method is binary scoring based on absolute performance. For example, whether PSB is registered on TReDS platform (full score if registered, 0 otherwise)

Table 2: Composition of EASE Reform Index

1.	**Themes** (Further divided into Action Points)	Themes cover aspects of customer service, deployment of robust IT & analytics engine, process automation, asset quality management, forecasting stressed assets, FI and HR practices etc.
2.	**Action Points** (Further divided into metrics)	Systems/ Processes/ Infrastructure related actionable points to achieve objectives outlined in EASE themes
3.	**Metrics**	Scoring based on data points covering qualitative and quantitative parameters measuring: • **Improvement in systems/ procedures/ processes** • **Improvement in business figures**

Figure 3: Data Sources for ascertaining PSBs ranking in EASE reforms index:



3. The Journey and Salient Features of EASE Reform Agenda

The Journey of EASE reforms started in 2018 and continuing till date. So far five installments of the EASE reform agenda have been announced. It essentially outlines the duties and responsibilities of public sector banks for their healthy growth. It has set action points to be implemented during a particular year and PSBs progress is being monitored against each action point. There have been distinctive features of the EASE reform agenda, which differentiate it from earlier reform initiatives by government/RBI constituted committee led reform processes. We have observed following factors which is part of its integral design:

- **Institutionalized Tracking mechanism**: Each action point is broken into quantitative/qualitative metrics, against which scoring is being assigned to PSBs. The EASE index acts as a catalyst to fast-track implementation of key initiatives. The EASE Reforms Index measures PSB performance on metrics against respective benchmarks and offers a mechanism for continuous improvement to prepare the banks for the future.

- **Leadership Driven**: This reform agenda assigns overall accountability to whole time Executive Directors (EDs) of the implementing banks, so it has a top-down approach. Even EDs performance appraisal is linked to it.
- **Peer Learning:** This reform process emphasizes collaboration among PSBs for transfer of best practices among one another so that they can develop a competitive edge.
- **Quantitative and Qualitative improvements:** It recognizes that banking is intrinsically human-centric despite the increasing invasion of analytics and machines. Therefore, it covers qualitative improvement areas related to HR etc.
- The agenda identifies best practices/ systems & procedures in the banking sector for implementation across all PSBs.

Now we shall chronologically study details of all installments of EASE Reform Agenda to develop understanding into the subject.

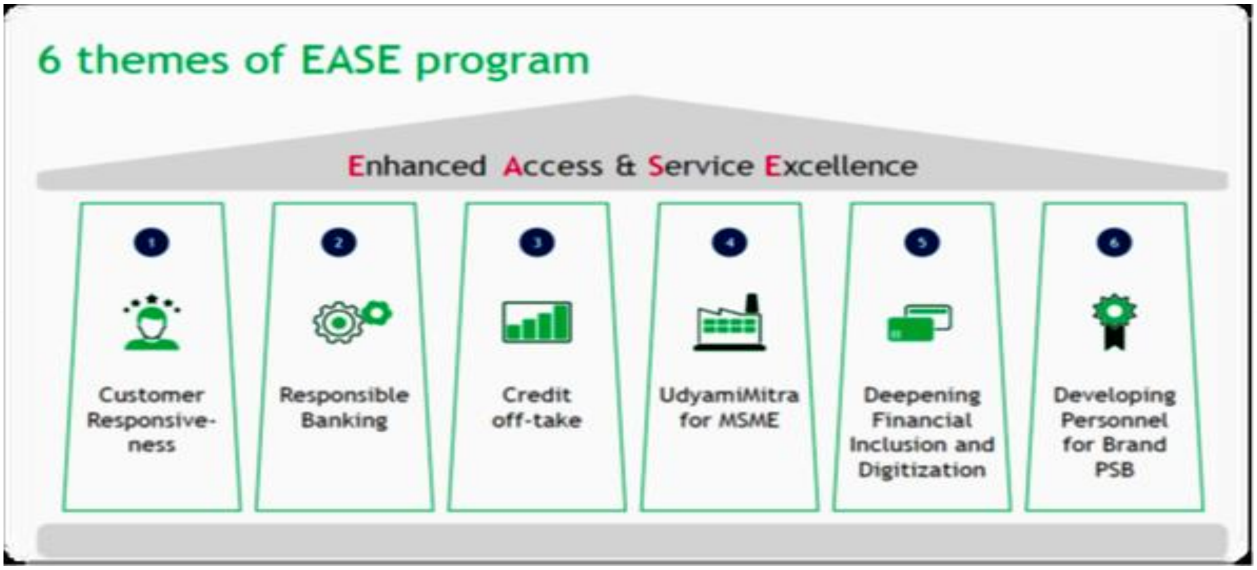
a. EASE 1.0 (For Implementation in FY 2018-19)

Theme - CLEAN & SMART Banking for Aspiring India

Objective - Building the foundation

The recommendations made in PSB Manthan, organized in November 2017, by around 250 WTDs and senior executives of PSBs formed the basis for a common PSB Reforms Agenda also known as EASE Reform agenda, some of the important reform initiatives were prioritized in EASE 1.0, they are covered in six broad themes depicted below in Figure 4:

Figure 4: Six themes of EASE 1.0 Program



The recommendations comprised 30 Action Points and 60 Sub-Action Points across the six themes.

We will analyze the impact of Action Points (as per A1) further to develop insight into the subject.

b. EASE 2.0 (For Implementation in FY 2019-20)

Theme - CLEAN & SMART Banking for Aspiring India

Objective - Building on the foundation of EASE 1.0 to make reforms journey irreversible, strengthen processes & systems and drive outcomes

The second edition of the EASE program known as EASE 2.0 was launched for FY20 to further build on the foundation of EASE 1.0. The second round of EASE Reforms for FY 20 is drawn out from 250 metrics identified by the steering committee comprising select WTDs of PSBs. EASE 2.0 also contains the same 6 themes as EASE 1.0 and it shifted the focus on outcome/impact of initiatives undertaken in EASE 1.0.

It proposed to systematically address root causes of weaknesses in PSBs effected through hard-wiring of sound IT systems and processes. It persuaded PSBs to set up comprehensive Loan Management Systems (LMS) for faster processing and tracking, introduced Early Warning Signals (EWS) systems and specialized monitoring for time bound action in respect of stress, put in place focused recovery arrangements, and established outcome-centric HR systems. Among prominent action plans, it recommended banking from home and mobile through an expanded bouquet of services, including enhanced regional languages availability.

It is pertinent to mention here that it was also the last installment of the EASE reform agenda which was not affected by Covid-19 pandemic. By this time, the government had already informed PSBs to carry-out an internal assessment for shortlisting ideal candidates for possible mergers or acquisitions. Since, government was appearing quite resolute on solving NPA issue and tackle asset quality therefore; the new performance parameters that was introduced through the EASE 2.0 included more stringent early warning signals (EWS) to tackle stressed assets, effective coordination in large value loans and bringing in new financial technology players to deepen financial inclusion and digitalisation. This time EASE reform index evaluated 107 metrics within 31 Action Points across six themes, albeit some metrics were assigned higher weightage compared to others (Table 3) due to their higher impact on business & priority for implementation.

Table 3: EASE 2.0 action points and metrics

Themes	No. of Action Points	No. of Metrics
Responsible Banking	13	47
Customer Responsiveness	5	30

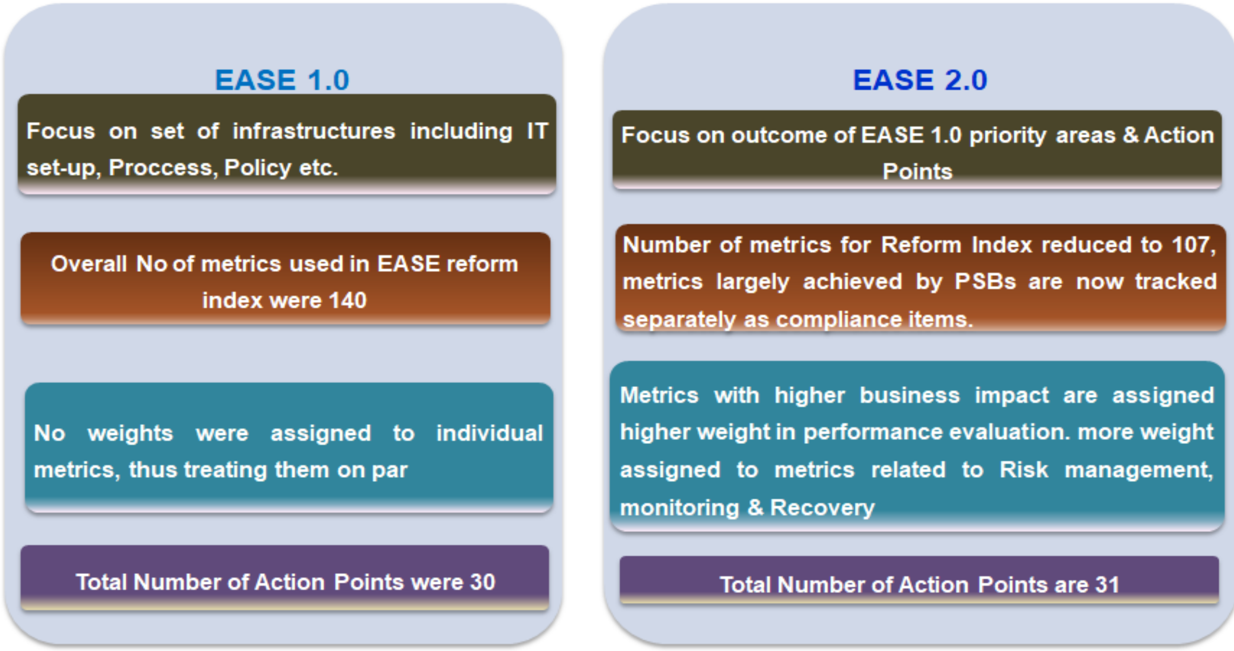
Credit Offtake	2	4
UdyamiMitra for MSMEs	2	4
Deepening Financial Inclusion	4	10
Developing Personnel for brand PSBs	5	12

As we observe that more weightage is assigned to action points in the first two themes namely ‘Responsible Banking’ and ‘Customer Responsiveness’.

Focus Areas of EASE 2.0

- Strengthen credit risk management in credit appraisal & monitoring and ensure risk based pricing
- Credit risk monitoring, NPA recovery, Stress reduction & IT enabled Early warning system
- Capital enhancement through non-core assets selling and capital raising through non-government sources
- EASE for Retail & MSME customers and facilitate banking from home and mobile
- Focus on improving HR practices by facilitating self-paced e-learning, Specialization and talent management
- Build robust risk management practice

Figure 5: Shift in focus from EASE 1.0 to EASE 2.0



Details of Action Points recommended in EASE 2.0 Reform Agenda is as per A2 under para Tables & Graphs.

c. EASE 3.0 (For implementation during FY 2020-21)

Theme - Institutionalising Smart, Tech-enabled Banking for Aspiring India

Objective - *Building on the foundation of EASE 1.0 & 2.0 to make reforms journey irreversible, strengthen processes & systems and drive outcomes. Focused more on digital enablements.*

EASE 3.0 sought to enhance ease of banking in customer experiences, using technology, alternate data and analytics. It was felt by many that there was scope for further improvement especially in digital & data driven banking services. The reform agenda took a shift toward digital transformation in PSBs as most of the action points were related to services/processes improvement through digital interventions.

As far as the banking sector was concerned, The financial year was severely affected due to the prevailing pandemic. Therefore, action points related to digital lending and services were prioritized. Although there were 27 action points across 5 themes, progress under these action points were evaluated through 38. For the purpose of analysis, We have elucidated action points as per A3 in Annexure, and also summarized main action points of EASE 3.0 reform agenda as under in Table 4:

Table 4: Main action points under EASE 3.0

Smart Lending for aspiring India	Tech-Enabled Ease of Banking	Institutionalising Prudent Banking	Governance & Outcome Centric HR	Deepening FI & Customer Protection
• System enabled mechanism for applying loan through app & other electronic means • Analytics based & Technology enabled retail and MSME loan • End to end digitised lending to Retail & MSME by large PSBs • STP (Straight Through Processing) based personal loans offering	• Reduction in transaction time through digitisation of customer services • End-to-end digitised delivery of bancassurance products in regional languages • On the spot banking viz STP based personal loan at Frequently visited places	• Prudent & validated internal rating system for risk based pricing • Integrating risk rating system with CBS, LAS • Internal risk rating review within 13 months from previous review • SOP based, timely resolution triggered by EWS systems • SOP based Past dues recovery in Retail & MSME loans.	• Board approved succession planning for higher management • Business outcome focussed performance appraisal • Operational requirement based HR deployment • Revamped PMS	• Increase accidental and life micro insurance products • Customer protection to be enhanced against cyber frauds

Details of few important action points has been elaborated as under:

In the backdrop of covid-19 pandemic, this action point known as *Dial-a-loan for doorstep facilitation* was newly introduced, here customers would be on-boarded with various digital means viz SMS banking, missed call, mobile banking, internet banking etc. for retail and MSME loan requirements.

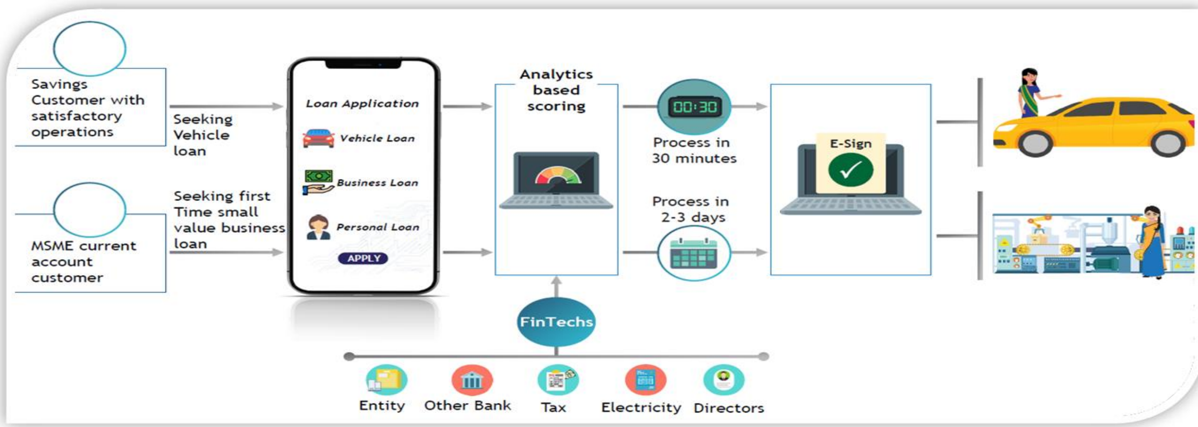
Once the lead was generated it was assigned to mapped marketing officers for further follow-up at the customer's location. He was entrusted with further digitally facilitating document and KYC requirements etc and finally transferring to the mapped loan processing hubs for disposal. At each level customers were provided with an auto tracking/SMS facility for checking the progress.

Figure 6: Dial a Loan graphics

(Source: BCG Presentation)

The action point *'Credit@click'* is quite similar to modalities of '*PSB 59 MINUTES*' loan portal. Under this action point, an existing saving or current account customer was applying digitally for retail or MSME loan based on auto populated details, which was processed in analytics-based package with help of Fintechs having various metadata like, tax, statutory, utility bills, mobile data, geo-tagged location and analytical reports. Further, it was disposed of within the turnaround time (TAT) and the proposal was ready to be e-signed and e-stamped digitally. Here an important point is that the TAT was measured End-to End i.e. from onboarding to disbursements rather than till sanction only. Graphical representation of processes in action point *'Credit@click'* is narrated as under in Figure 7**:**

Figure 7: Credit@click graphics



(Source: BCG Presentation)

In sum, EASE 3.0 sought to enhance ease of banking in all customer experiences, using technology, alternate data and analytics. *Dial-a-loan* for doorstep loan facilitation, *Credit@click* for end-to end digitized lending, on the spot EASE banking outlets at well frequented places like malls, stations, palm banking, digitized branch experience analytics based instant credit loans, cash flow based MSME credit and tech enabled agriculture lending were key highlights of EASE 3.0 action points.

It aimed to drive transformation in the mass banking landscape by way of adopting digital driven services offerings backed by robust IT support systems in marketing, loan underwriting, monitoring, dynamic rating. Like earlier versions of the EASE reform agenda, EASE 3.0 emphasized highly on governance and HR strengthening among others.

d. EASE 4.0 (For implementation in FY 2021-22)

Theme - Technology-enabled, simplified and collaborative banking

Objective - To accelerate agenda set in EASE 3.0 through tech-enabled simplification of banking which Covid-19 had severely impacted two themes were retained in EASE 4.0 and 14 out of 26 action points were carried-forward with some enhancements. Since, the financial services industry has seen unprecedented disruption over the last few years such as pandemic and demonetisation etc. consumer behaviors are changing rapidly, driven by experiences offered by technology giants, and accentuated by the COVID-19 pandemic. Keeping these exogenous changes in mind, digital driven banking and automation were assigned high priority in EASE 4.0. Two new themes were also added in EASE 4.0 namely new age 24*7 Banking with resilient technology and collaborating for synergistic outcomes. We have tabulated the action points under EASE 4.0 in A4.

In sum, EASE 4.0 aimed to further the agenda of customer-centric digital transformation and deeply embed digital and data into PSBs' ways of working. Two new themes, along with other key initiatives, had been introduced to deliver on these objectives. This version of EASE reform necessitated heavy investment in technology and fintech collaboration. It required creation of vast digital infrastructure for supporting customer onboarding in a digital way.

e. EASE 5.0 (For implementation in FY 2022-23)

Theme - Enhanced digital experience; data-driven, integrated, and inclusive banking

Objective - To initiate long term reforms with focus on long term target

EASE 5.0 (A5) focuses on long-term reforms to be achieved over a three-year period, with a focus on enhancing digital experience and strengthening data-driven, integrated, and inclusive banking. EASE 5.0 was envisioned to continue driving reform initiatives from previous iterations of EASE with a new focus on supporting India's small businesses and agriculture sector.

In order to consolidate and further the significant gains made from successive iterations of the EASE program, a day-long workshop – PSB Manthan 2022 – was organized to create a forum for collaborative brainstorming and interaction across the leadership of public-sector banks. In particular, the discussion focused on six key themes:

• Collaboration among PSBs

• Future-ready PSBs

• Emerging trends and strategic roadmaps

• Big data and analytics

• Employee development and analytics

• Digitally enabled customer offerings & modern tech capabilities

The deliberations on these themes resulted in the PSB leadership coming together to form a three-pronged action agenda:

- **Continuation of the common reform agenda** into its 5th year i.e EASE 5.0, with initiatives consisting of a mix of those to be continued from previous years as well as new themes were included.
- **Bank-specific 3-year roadmaps**: Creation of bank-specific three-year strategic roadmaps, contextualized to each bank's starting position and business priorities.
- **Collaboration:** Identifying areas for joint capability building across public-sector banks as an outcome banking leaders identified EASE 5.0 and the creation of bank-specific 3-year roadmaps are immediate action items, collectively branded as 'EASENext'

f. EASENext

EASENext lays down a common reform agenda for banks to achieve in FY23. Three-year strategic roadmap: Banks will set up their own bank specific 3-year strategic roadmaps to focus on transformation reforms beyond the EASE 5.0 agenda Introducing EASENext. The broad themes of EASENext is as under:

Table 5: EASENext themes and focus areas

SI No.	Themes	Focus Areas
1.	Digitally enabled customer offerings	PSBs to develop comprehensive digital banking solutions for MSMEs and Agri value chains
2.	Big data & analytics	To strengthen big data capabilities and inculcate a culture of data-driven decision making
3.	Modern technology capabilities	Focus on strengthening banks' technology capabilities to improve overall customer experience
4.	Collaborative banking	It is a theme carried forward from previous editions of EASE i.e. EASE 4.0. This theme focuses on broadening and deepening partnerships and collaborations.
5.	Employee development & governance	To develop digital and data-driven processes to assess, groom and develop employees

Action Points along with their respective timelines have been analyzed in A5 in Annexure.

4. **EASE Reform Index Results** (Top 3 Banks: Theme-wise)

We have tabulated below performance of top 3 banks in each theme under all versions of EASE reform agenda implemented so far.

Table-6: Performance of top-3 PSBs under various themes

FY	EASE Reforms	Themes	Rank-1	Rank-2	Rank-3
2019	**EASE 1.0**				
	Theme-1	Customer Responsiveness	SBI	PNB	Not Available
	Theme-2	Responsible banking	OBC	BoB	
	Theme-3	Credit Off-take	PNB	SBI	
	Theme-4	UdyamiMitra for MSMEs	OBC	UBI	
	Theme-5	Deepening FI & Digitalisation	PNB	IOB	
	Theme-6	Developing Personnel for Brand PSBs	SBI	PNB	
2020	**EASE 2.0**				
	Theme-1	Responsible banking	BoB	BoB	UBI
	Theme-2	Customer Responsiveness	SBI	BoB	Canara Bank
	Theme-3	Credit Off-take	OBC	UBI	SBI
	Theme-4	UdyamiMitra for MSMEs	OBC	SBI	UBI
	Theme-5	Deepening FI & Digitalisation	Canara Bank	BoB	PNB

FY	EASE Reforms	Themes	Rank-1	Rank-2	Rank-3
	Theme-6	Governance and HR	SBI	BoB	OBC
2021	**EASE 3.0**				
	Theme-1	Smart Lending for aspiring India	BoB	SBI	UBI
	Theme-2	Tech enabled ease of banking	SBI	BoB	UBI
	Theme-3	Institutionalizing Prudent banking	BoB	PNB	Canara Bank
	Theme-4	Governance and outcome centric HR	UBI	PNB	SBI
	Theme-5	Deepening FI and customer protection	UBI	SBI	BoB
2022	**EASE 4.0**				
	Theme-1	Smart Lending for Aspiring India	BoB	SBI	BoM
	Theme-2	New Age 24x7 Banking with Resilient Technology	BoB	SBI	UBI
	Theme-3	Collaborating for Synergistic Outcomes	UCO Bank	Punjab & Sindh Bank	UBI

FY	EASE Reforms	Themes	Rank-1	Rank-2	Rank-3
	Theme-4	Tech enabled ease of banking	SBI	PNB	BoB
	Theme-5	Institutionalising Prudent Banking	Canara Bank	SBI	BoB
	Theme-6	Governance and outcome centric HR	UBI	PNB	BoB
2023	**EASE 5.0 (Q1)**				
	Theme-1	Digitally enabled customer offerings	SBI	BoB	UBI
	Theme-2	Big data and analytics	Canara Bank	BoB	SBI
	Theme-3	Modern technology capabilities	UBI	SBI	PNB
	Theme-4	Collaborative and development-focused banking	UCO Bank	CBI	SBI
	Theme-5	Employee development and governance	UBI	SBI	BoM

FY	EASE Reforms	Themes	Rank-1	Rank-2	Rank-3
2023	**EASE 5.0 (Q2)**				
	Theme-1	Digitally enabled customer offerings	BoB	SBI	UBI
	Theme-2	Big data and analytics	UBI	BoB	SBI
	Theme-3	Modern technology capabilities	UBI	SBI	BoB
	Theme-4	Collaborative and development-focused banking	UCO Bank	CBI	Punjab & Sindh Bank
	Theme-5	Employee development and governance	BoB	UBI	SBI
2023	**EASE 5.0 (Q3)***				
	Theme-1	Digitally enabled customer offerings	UBI	BoB	SBI
	Theme-2	Big data and analytics	UBI	SBI	Canara Bank
	Theme-3	Modern technology capabilities	UBI	SBI	BoB
	Theme-4	Collaborative and development-focused banking	SBI	BoM	UCO
	Theme-5	Employee development and governance	UBI	BoB	Canara Bank

(Abbreviations: UBI - Union Bank of India, BoB - Bank of Baroda, SBI - State Bank of India, CBI - Central Bank of India, PNB - Punjab National Bank, BoM - Bank of Maharashtra, OBC - Oriental Bank of Commerce)

* So Far, EASE Reform Index as of December quarter of FY 2023 has been declared. The March quarter result is awaited.

5. Review of Empirical Studies

Below is a review of relevant literature related to banking reforms and their impact on the performance of banking sector.

Atkinson and Stiglitz (1980) suggest that state-owned enterprises (SOEs) are created to address market failures, and often their social benefits exceed the social costs. According to this view, government-owned banks contribute to economic development and improve general economic welfare (Stiglitz, 1993).

Banerjee et al (2004) suggested that there are substantial differences between public and private sector banks. Most notable is the consistent failure of private sector banks to meet the agricultural lending sub-target. It also suggests that privatization will make it harder for the government to get the private banks to meet its goals. The study also suggested that one potential disadvantage of privatization comes from the risk of bank failure. In the past there have been cases where the owner of the private bank stripped its assets and declared it unable to honor its deposit. The study also evaluates various alternatives available to reform banking. One such reform step suggested by the study is to set-up a proper mechanism to alleviate fear of investigation, vigilance when loans provided by officers go bad.

Gupta and Panagaria (2022) have analyzed Banks frauds, which include misappropriation, fraudulent encashment, unauthorized credit, and fraudulent foreign-exchange transactions; they have found an uptick in recent years not only in absolute terms but even relative to assets. They also argued that fraud amount as percentage of assets peaked in FY 2019-20 and subsequently started falling down, although amount-wise frauds in PSBs are higher than that of private sector banks. In recent years, there have been some high-profile cases of fraud contributing to large amounts.

Acharya and Rajan (Sept 2020) suggest a combination of reforms including regulatory, market, governance and ownership. Most of the suggestions have already been implemented by GoI/Regulator barring few sweeping suggestions viz closing down Department of Financial Services, reimbursing cost of operating in remote/unviable areas, management incentives, indexing of National Small Saving Fund (NSSF) rates to average deposit rates, development of Wholesale Banks etc.

Authors quote that '*There are strong interests against change, which is why many would-be reformers are cynical, and either have given up, or recommend revolutionary change that has little chance of being implemented. We are more optimistic that a middle road is achievable, given that the greatest stumbling block has been the government, the bureaucracy, and the interests within it.*'

P. J. Nayak committee (2014) opined that There are several external constraints imposed upon public sector banks which are inapplicable to their private sector competitors. These constraints encompass dual regulation (by the Finance Ministry, and by the RBI, which goes substantially beyond the discharge of a principal shareholder function); the manner of appointment of directors to boards; the short average tenures of Chairmen and Executive Directors; compensation constraints; external vigilance enforcement; and applicability of the Right to Information Act. Each of these constraints disadvantages these banks in their ability to compete with their private sector competitors. The Government and RBI need to move to rapidly eliminate or significantly reduce these constraints, in the absence of which managements of public sector banks will continue to face an erosion of competitiveness. Further, it is only after these external constraints have been addressed would it be practicable for public sector banks to address a host of internal weaknesses which affect their competitiveness.

Bank Board Bureau's (Now FSIB) compendium of recommendations (March 2018) suggests that while the government retains its majority shareholding, it is very much possible for the public sector to reach the same levels of efficiency, as the private sector, provided governance regulations, supervision and the developmental agenda are allowed to be ownership neutral.

Tamal Bandyopadhyay (Book - Pandemonium: The Great Indian Banking Tragedy) quoted that 'In the literature on economic reforms, there are two models. One is the blitzkrieg reform model which says that you cannot cross a chasm in two leaps; you have to take one big leap to the other end. That is what the government did in 1991. The other is the gradualist model – crossing the river by feeling the stones.'

For government stake reduction from PSBs, the author thinks the latter model is more advisable since there are many stakeholders. Author thinks a ten-year plan with all PSBs privatized by 2030 will be optimal.

CAG Report (2017 Performance Audit of PSBs) concludes that PSBs with lower capital infusion have been performing better than those PSBs wherein capital infusion has been comparatively higher. It was also noted that GOI, as the majority shareholder, has infused capital of Rs. 1,18,724 crore from 2008-09 to 2016-17 in the PSBs for meeting their capital adequacy requirements based on their performance. CAG also noticed that the estimation of the parameters based on which capital was infused altered from year to year and often within different tranches of the same year.

Reddy (2005) noted an important feature of the reform of the Indian financial system has been the intent of the authorities to align the regulatory framework with international best practices keeping in view the developmental needs of the country and domestic factors. He also noted capacity building in banking a serious concern in the wake of advanced approaches and technologies.

Bhaumik et al. (2017) argued in their study that greater competition, greater autonomy with respect to loan disbursal and pricing of loans, subjecting banks to prudential norms, and establishing mechanisms for contract enforcement are all reforms worth exploring. They have also concluded that banking sector reforms alone are clearly not sufficient to mitigate credit market frictions that give some kinds of firms (such as those affiliated to business groups or the state) an advantage over others, an advantage that can lead to misallocation of credit. To overcome challenges on the way of banking reforms, governments may have to supplement banking sector reforms with wider reforms with respect to bankruptcy laws and corporate governance, thereby avoiding the silo-based approach to banking sector reforms.

Bhaumik et al., (2018) observed that the financial sector reforms do not have significant impact on profitability of sample banks. The analysis also concluded that structural measures and improvement in standards of disclosure and levels of transparency to align the Indian standards with best global practices does not have any favorable impact on the profitability and productivity of the banking sector. So the study concluded that there is no impact seen in the profitability of the banking sector after the implementation of recommendations made by Narasimham committee II.

There is a dearth of empirical studies related to evaluation of 4R's and EASE related reforms measures. Hence, this study would endeavor to expand the knowledge on this topic as part of study.

6. Research Design and Methodology

a. Statement of the problem and research objectives

Any research project revolves around a set of research questions which needs thorough empirical analysis to be answered. The central theme of this research project is the empirical study of the impact of Enhanced Access & Service Excellence (EASE) reforms on the public sector banks (PSBs) efficiency and performance.

EASE reforms kicked in from 2018-19 financial years with EASE 1.0 and now we are in EASE 5.0 phase. All these reform measures intended to make public sector banks agile, robust, competitive and digital ready. The impact of reforms on public sector banks can be evaluated with the help of six components of a bank's performance namely, Capital adequacy, asset quality, management quality, earning ratios, liquidity and sensitivity, popularly known as CAMELS.

Table 7: Mapping of EASE themes with CAMELS ratios

S. No.	Ratios	Mapping with EASE themes/key Action Points	Mapping Rationale
1	Capital Adequacy	Responsible banking (Tier-1 capital mobilization from non-government sources), institutionalizing prudent banking (Adherence to RAROC thresholds)	Effective Risk management framework through capital augmentation. Tracked through financial Performance
2	Asset quality	Responsible banking (strengthening credit risk monitoring), institutionalizing prudent banking (Recalibrate internal credit rating system), Big Data & Analytics, EWS and Collections Systems	Proper NPA management, Loans Monitoring and their collections. Tracked through Business Performance such as Advances, NPA, Slippages
3	Management quality	Responsible banking (Rationalizing overseas operations), developing personnel for digital banking, smart	Utilisation of digital and non-digital delivery of banking services, Adoption of technology in operations, talent

		lending, technology enabled ease of banking, Employee Development & Governance (Diversity Equity & Inclusion, growth in learning hours, Leadership development)	management and employees productivity Tracked through Operational Performance
4	Earning ratios	Credit off take, smart lending, institutionalizing prudent banking, Big Data & Analytics, Dial-a-loan facility, Credit@Click facility	Profit and Loss from business and operations Tracked through RoA & RoE etc
5	Liquidity	Credit off take, responsible banking (strengthening market and liquidity related risk management),	Effective management of CASA and deposits. It is part of business and operational performance. Tracked through CASA deposits per branch, CD Ratio etc
6	Sensitivity	Responsible banking (Implementation of effective consortium coordination mechanism) and institutionalizing prudent banking (Comprehensive monitoring of large-value loans)	Tracked through business performance under Co-lending with NBFCs, fintech partnerships

(compiled by the researchers)

Keeping these parameters of performance in mind the study's objective is to understand the impact of various initiatives under EASE reforms (capital enhancement, asset quality, governance, earning, liquidity and bank merger etc) on the efficiency of public sector banks (PSBs).

Hypothesis

The hypotheses have been formulated keeping the above-mentioned objectives in mind. The purpose of the hypotheses formulations is to select empirical tests, data requirements and research validation for the realization of objectives of this study.

Hypotheses are formulated and presented in pairs, i.e., null (H_0) and alternate hypothesis (H_1). Conventionally H_0 is not expected to be supported by empirical analysis, whereas, H_1 is expected to be supported by empirical analysis. These two hypotheses are contradictory to each other.

The following hypotheses have been formulated for testing

1. H_0: Capital adequacy ratio related initiatives do not impact PSBs efficiency

   H_1 : Capital adequacy ratio related initiatives impact PSBs efficiency
2. H_0: Asset quality ratio related initiatives do not impact PSBs efficiency

   H_1 : Asset quality ratio related measures impact PSBs efficiency
3. H_0: Management quality ratio related initiatives do not impact PSBs efficiency

   H_1 : Management quality ratio related measures impact PSBs efficiency
4. H_0: Earning ratio related initiatives do not impact PSBs efficiency

   H_1 : Earning ratio related measures impact PSBs efficiency
5. H_0: Liquidity ratio related initiatives do not impact PSBs efficiency

   H_1 : Liquidity ratio related measures impact PSBs efficiency
6. H_0: Sensitivity ratio related initiatives do not impact PSBs efficiency

   H_1 : Sensitivity ratio related measures impact PSBs efficiency

b. Method of Analysis

i. Variables for CAMELS

Capital Adequacy (C) is one of the most important financial indicators of banks. This capital adequacy ratio (CAR) measures a bank's ability to withstand all types of risks according to their nature arising out of the balance sheet. It also indicates the ability of bank management to identify, allocate and control risk originating from their regular business activities. For banks, a higher ratio will ensure stability. Under the Basel III norms Indian scheduled commercial banks are required to maintain a CAR of 9%, In addition, the RBI requires banks to have 2.5 per cent capital conservation buffer – mandatory capital that they need to hold in addition to other minimum capital requirements. In simpler terms, Banks are required to hold Rs. 11.5 (Rs. 9 + Rs. 2.5) against Rs. 100 worth risk-weighted assets. In India, RBI prescribes risk weights for different assets and sectoral/individual industry exposures. For instance, the risk weight on a central government bond/loan is zero, but for commercial real estate, it is over 100 per cent. In sum, Basel III emphasizes capital adequacy to protect shareholders' and customers' risks and set norms for conserving capital by segregating it into Tier I and Tier II capital. From a bank perspective, Tier-I capital possesses more quality than Tier-II capital. For the purpose of capital adequacy, tier-I and tier-II capital are considered.

Asset Quality (A) ratio is another important financial indicator denoting a bank's earning capacity. This ratio also indicates a bank's credit risk arising out of its loans and investments.

The quality of assets are measured by net non-performing assets to total advances ratio. Net non-performing assets takes into account provision for bad loans. Lower asset quality ratio is considered to be good for a bank's performance.

Management Soundness (M) of a bank significantly impacts its performance. This ratio indicates the ability of a bank to meet its operational expenses from its assets and revenues. It is the ratio between operating expenses to total assets. Lower management ratio positively impacts a bank's performance (Roman and Sargu, 2013).

Earning and profitability (E) is important for any commercial organization. Profit is added to the capital base whereas losses result in depletion of capital. This indicator is measured either by return on assets (RoA) or return on equity (RoE). RoA is net profit after tax to total assets ratio whereas, RoE is net profit after tax to total equity ratio. Higher ratio ensures greater returns earned on assets deployed by banks. The RoA indicates how profitable a bank is, relative to its total assets; it measures how efficiently the bank is generating profits out of its assets. A higher RoA indicates a better-managed, more efficient bank. The profit can be plowed back to add to capital, and this also improves a bank's ability to tap the capital markets for additional funds it can use for lending. The RoE, on the other hand, shows how efficiently a bank uses shareholders' funds by measuring net income as a percentage of equity plus reserves. A higher RoE adds to the capital of the bank by pumping up reserves and surpluses. A low or negative RoE reduces the ability of the bank to tap the capital markets to raise additional funds to meet regulatory capital needs.

Liquidity (L) is the capacity of a bank to transform its assets into cash rapidly or availability of funds to pay off liabilities when they become due. This measure takes into account the adequacy of the bank's current and potential sources of liquid assets.

The liquidity risk of a bank is generally measured using advances to deposit ratio. Higher values of this ratio indicates liquidity problems with a bank. Although this ratio alone is not sufficient to gauge the inherent liquidity risk in the bank, therefore Basel III prescribes additional ratios namely LCR & NSFR, so that banks don't indulge into excessive risk taking and ALM mismatches, but panel data related to them are not publicly available. Strategically, a bank needs to maintain a fine balance between investments and advances so that it may take advantage of interest rate movements appropriately.

Sensitivity (S) to market risk calculates the extent to which fluctuations in asset markets like bond, commodity, equity and foreign exchange affect a bank's safety and soundness. Some studies (Sarker, 2006; Roman and Sargu 2013; Kumari 2017) have considered asset size of a bank to total banking sector asset ratio as an indicator of its sensitivity to market risk. Higher values of this ratio will indicate higher sensitivity risk.

Ratios of CAMELS measuring framework

(1) Capital adequacy ratio = Equity Capital & Reserves/Total Assets
(2) Asset quality ratio = Net Non-Performing Assets/Total Loans
(3) Management soundness = Operating (non-markup) Expenses/Total Assets
(4) Earning and profitability ratio = Net Profit/Total Assets
(5) Liquidity ratio= Credit/Deposit
(6) Sensitivity to market risk = Bank Assets/total assets of the banking sector.

ii. Background literature on CAMELS

CAMELS rating system was initially adopted by the Federal Financial Institutions Examination Council (FFIEC) in 1979 and revised in 1996. It was initiated in the United States as a Uniform Financial Institutions Rating System (UFIRS) and later on adopted by the other countries to assign a uniform composite rating to measure safety and soundness of the banking sector. The CAMELS rating system is based on the following components: Capital adequacy ratio (C); Asset Quality (A); Management (M); Earnings (E); Liquidity (L); and Sensitivity (S) to Market risk. The RBI defines S as 'system and controls' but we have considered S for sensitivity because it can be objectively measured. Evaluation of components consider the bank's size and sophistication, the nature and complexity of its activities, and its risk profile. The primary purpose of the CAMELS ratio is not to identify future bank failures but to provide an assessment of a bank's overall condition.

Previous research has examined the information content, or predictive power, of CAMELS ratio/rating for a variety of bank specific market, performance, and regulatory variables, including stock returns, bond prices, ROA, future CAMELS ratings, and bank failure. Here we discuss the empirical evidence from a representative sample of the extensive literature.

There is a large body of literature dealing with factors that affect the performance of banks using CAMELS. Cole and Gungher (1995) findings suggested that if a bank had not been evaluated for more than two quarters, off-site monitoring systems usually provided a more accurate measure of safety and soundness than CAMELS measure. Barth, Beaver, and Landman (1999) provided evidence that a shift in investors' focus from earning information to book values was noticeable for firms' weakening in financial health.

Naceur (2003) while studying Tunisian banks found that high net interest margin (NIM) and profitability were caused by high amounts of capital. Similarly, Goddard, Molyneux and Wilson (2004) also found a net positive relationship between capital and interest margin in European banks.

Athanasoglou, Brissimis, and Delis (2006) using data from South-East Europe for the period 1998-2002 and using unbalanced panel models found that except liquidity all the other measures of CAMELS were significant in determining bank profitability. Interestingly, they also did not find any significant relationship between bank reform and bank profitability. Said and Tumin (2012) using CAMELS ratio and performance ratio for Chinese and Malaysian banks found that all of these ratios except capital and credit ratios had significant impact on bank performance.

However, Aftab, Samad, and Hussain (2015) for Pakistan banks found that private banks' profit was determined significantly by management and asset quality, whereas, in case of public sector banks, capital adequacy ratio was significant in determining their profitability. Rauf (2016) in the case of Sri Lankan banks established that capital, asset and earnings ratios were significantly impacting bank performance whereas management efficiency and liquidity ratios were not significant.

Islam and Rana (2017) emphasized that non-performing loans and operating expenses were significantly impacting bank profitability whereas, liquidity ratios were not significant.

Saeed, Shahid, and Tirmizi (2019) using CAMELS for Pakistani and Sri Lankan banks found that except market risk all the other variables like capital adequacy, asset, market efficiency, earnings and liquidity ratios were significant in explaining banking sectors' efficiency.

iii. Econometric Specification

In this study, we are measuring the efficiency of the banking sector which is checked by formulating a regression equation. This study is different in terms of variables and methodology selected. In this study we are taking efficiency ratio which is a popular proxy used by bank's financial analysts. The efficiency ratio measures how well the financial institution controls expenses relative to producing revenue and how productive in terms of generating income, managing assets and holding costs (Hay, De Lungio and Gilbert, 2009; Demireli, Basci and Karaca 2013).

Regression equation of the study

$ER_{it} = \alpha_0 +$

$\beta_1\,(Capital\ adequacy\ ratio)_{it} + \beta_2\ (Asset\ Quality\ ratio)_{it} + \beta_3\,(Management\ quality\ ratio)_{it} +$

$\beta_4(Earnings\ and\ profitability\ ratio)_{it} + \beta_5(Liquidity\ ratio)_{it} + \beta_6(Sensitivity\ ratio)_{it} + \varepsilon_{it}$

$\varepsilon_{it} = v_i + u_{it}$

Where ER_{it}= efficiency ratio of bank i at time t

α_0= intercept of relationship in the model/constant

β_1- β_6= coefficients of each independent or explanatory variable

ε_{it}= error term or disturbance term of bank i at time t

v_i= capturing the unobserved bank effect

u_{it}= the idiosyncratic error

Efficiency Ratio is commonly used to measure the financial performance that is the ratio of non-interest expenses to total operating income. To determine the efficiency of a bank, overhead expenses are divided by revenues.

iv. Econometric Model

The study uses panel data regression to estimate the above regression equation. Since panel data relate to individuals, firms, states, countries, etc., over time, there is bound to be heterogeneity in these units. The techniques of panel data estimation can take such heterogeneity explicitly into account by allowing for subject-specific variables. Here the subject term is used in a generic sense to include microunits such as individuals, firms, states, and countries.

By combining time series of cross section observations, panel data gives “more informative data, more variability, less collinearity among variables, more degrees of freedom and more efficiency. Similarly, by studying the repeated cross section of observations, panel data are better suited to study the dynamics of change. In other words, panel data can better detect and measure effects that simply cannot be observed in pure cross section or pure time series data.

There are two types of panel: balanced and unbalanced. In a balanced panel each subject (in our case banks) will have the same number of observations. If each entity has a different number of observations, then we have an unbalanced panel. In case of panel regression we have the following options:

1. Pooled OLS model- We can simply pool all the observations and estimate a “grand” regression, neglecting the cross-section and time series nature of our data. The major problem with this model is that it does not distinguish between the various banks or does it tell us whether the response of bank efficiency to the explanatory variables over time is the same for all the banks. In other words, by lumping together different banks at different times we camouflage the heterogeneity that may exist among the banks. As a result, it is quite possible that the error term may be correlated with some of the regressors included in the model. If that is the case, the estimated coefficients may be biased as well as inconsistent.
2. The Fixed Effect Least Squares Dummy Variable (LSDV) Model - This model allows for heterogeneity among subjects by allowing each entity to have its own intercept value. The term “fixed effects” is due to the fact that, although the intercept may differ across subjects (here the sixteen banks), each bank’s intercept does not vary over time, that is, it is time-invariant. There

are various things to consider when using LSDV models. First, if we introduce too many dummy variables, we may run up against the degree of freedom problem. Second, with many dummy variables in the model, both individual and interactive or multiplicative, there is always the possibility of multicollinearity, which might make precise estimation of one or more parameters difficult. Third, in some situations the LSDV model may not be able to identify the impact of time invariant variables. For example, in our case since we want to estimate the efficiency function for a group of Indian banks using panel data. Besides CAMELS ratios we may decide to add the private/public sector as additional variables in the model. Since these variables will not change over time for an individual bank, the LSDV approach may not be able to identify the impact of such time invariant variables on bank efficiency.

3. The Fixed-Effect within Group (WG) Estimator- One way to estimate a pooled regression is to eliminate the fixed effect by expressing the values of the dependent and independent variables for each bank as deviation from their respective means. Thus, we will obtain the sample mean values for each variable and subtract them from the individual values of these variables. The resulting values are called “de-meaned” or “mean corrected” values. It should be noted that while pooled regression simply ignores the heterogeneity among the sixteen banks, WG estimator takes it into account, not by the dummy variable method, but by eliminating it by differentiating sample observations around their sample means.

It can be shown that the WG estimator produces consistent estimates of the slope coefficients, whereas the ordinary pooled regression may not. It should be noted, however, that WG estimators, although consistent, are inefficient (i.e., have larger variances) compared to the ordinary pooled regression results. Another disadvantage of the WG estimator is that it may distort the parameter values and can certainly remove any long run effects.

4. Random Effect Model (REM)- If the dummy variables do in fact represent a lack of knowledge about the (true) model, why not express this ignorance through the disturbance term? This is precisely the approach suggested by the proponents of the random effects model (REM). In FEM each cross-sectional unit has its own (fixed) intercept value, in all N such values for N cross-sectional units. In REM, on the other hand, the (common) intercept represents the mean value of all the (cross sectional) intercepts and the error component represents the (random) deviation of individual intercept from its mean value.

   If we compare the results of the fixed effect and random effect regressions, we will see that there are substantial differences between the two. The important question now is: Which results are reliable? Or, to put it differently, which should be the choice between the two models? We will apply the Hausman Test to shed light on this question.

   The null hypothesis underlying the Hausman test is that the FEM and REM estimators do not differ substantially. If the null hypothesis is rejected, the conclusion is that the REM is not appropriate because the random effects are probably correlated with one or more regressors. In this case, FEM is preferred to REM.

v. Sentiment Analysis Method

In the social media space, consumers are proactively exercising their powers, also classified as customer-initiated behaviors such as interacting with brands, fellow consumers or potential consumers (Maslowska et al., 2016). Doorn et al. 2010, calls them customer engagement behaviors. These behaviors can be written reviews of product and services, generating e-word of mouth (e-wom) or posting a comment. Such behaviors assist the market in understanding viewer's reaction to the brands initiatives and content. One of the central themes of all the versions of EASE reforms has been to make public sector banks more 'customer centric'. This customer centricity should lead to better e-wom for public sector banks on social media space. So to measure the perception of the public towards PSBs we have extracted more than 10,000 tweets related to public and private banks and performed a Natural Language Processing (NLP) to parse different emotions in those tweets.

To quantify the comments, text analytics tools have been used. Text analytics approach uses natural language processing (NLP) and text mining to mine sentiment, emotions and opinions toward the brands, services and products. Online posts were collected using a data mining tool called web crawling software that was used for acquiring the data from hashtags of Banks on Twitter by creating a Twitter Application Programming Interface (API).

After collecting the posts, in the first step, data was cleaned to reduce the chances of ambiguity and repetitions. Cleaning the non-ASCII words is a necessary step, to remove all the non-English words. The data is further processed for a spell correction algorithm. Thereafter, using the Stanford Part speech (POS) tagger module, all the words in comments were tagged by their corresponding POS. This process is also called stemming. Stemming is used to reduce modulated words to their root or base.

Stop words like is, as, an, a, the etc are filtered out before processing the comments for analysis. It is followed by tokenization. Tokenization breaks text content like terms, words, symbols or some other meaningful elements into tokens.

The study uses National Research Council (NRC) predefined lexicon in R software for classifying the text corpus (comments) into eight distinct emotions This lexicon comprises 14,182 unigrams (words) which have 25,000 senses (contextual meanings). The NRC emolex helps in categorizing the words used in comments according to the emotions they represent. This lexical analysis of the corpus categorizes emotions embedded in twitter posts into eight emotional bands. They are ‘*anger*’, ‘*anticipation*’, ‘*disgust*’, ‘*fear*’, ‘*joy*’, ‘*sadness*’, ‘*surprise*’ and ‘*trust*’ (Mohammad & Turney, 2010). To quantify emotions in each post, a simple count of words related to a particular emotion divided by total emotional words in the corpus has been carried out. For example, if in a post words related to joy have come 3 times and the total number of emotional words in that corpus is 100 then, the researchers have simply given the joy score of that particular post as 3%.Similarly, all the posts have been quantified and clubbed together in either public or private sector banks according to all eight emotions.

c. Source of Data

CAMELS ratios have been applied on the data extracted from the database of the Reserve Bank of India. The research is a panel data study that included 16 banks (12 public sector and 4 private sector banks) and 9 years data (from 2013-14 to 2021-22). Each of the ratios related to CAMELS were calculated for these banks over the years under consideration. The data has both cross sectional and time series properties. A panel data regression model has been used to account for both time and space.

7. Data and its Analysis

Table 7 and 8 list all the weighted average performance measure ratios for public and private sector banks respectively. These ratios have been calculated using assets as weight for different banks. For example if hypothetically in a banking sector there are only two banks A and B with asset base of Rs.

40 Cr. and Rs. 60 Cr, then in assigning their weight in performance ratios A will be assigned 0.40 and B 0.60. The data is from 2013-14 to 2021-22. We have selected 2013-14 as the starting year because mainly the banking sector started facing severe non-performing assets problems since then.

In case of public sector banks, we have considered all the twelve banks, State Bank of India, Bank of Baroda, Bank of India, Bank of Maharashtra, Canara Bank, Central Bank of India, Indian Bank, Indian Overseas Bank, Punjab and Sind Bank, Punjab National Bank, UCO Bank and Union Bank of India from 2013-14 to 2021-22. We have not taken the PSBs who have been merged in these banks in 2020-21.

In the private sector we have considered a sample of four banks, namely, HDFC Bank, ICICI Bank, AXIS bank and Kotak Mahindra Bank. These banks (PSBs and private sector banks) account for approximately 60% of the total private sector bank assets in India.

The descriptive statistics related to public and private sector banks have been discussed with the help of graphs in subsequent paragraphs.

Table 8: Public Sector Banks performance ratios from 2013-14 to 2021-22

Year	Efficiency Ratio	Capital Adequacy Ratio	Asset Ratio	Management Efficiency	Earning Ratio	Liquidity Ratio	Sensitivity Ratio
2014	82.07	11.56	2.42	1.56	0.54	107.09	51.41
2015	81.32	11.60	2.90	1.56	0.49	104.46	51.47
2016	84.06	12.02	5.89	1.61	0	105.42	49.93
2017	80.6	12.36	6	1.56	0.10	102.36	49.87
2018	85.5	11.8	7.52	1.65	-0.66	103.32	52.2
2019	83.87	12.22	4.71	1.70	-0.41	102.12	50.7

Year	Efficiency Ratio	Capital Adequacy Ratio	Asset Ratio	Management Efficiency	Earning Ratio	Liquidity Ratio	Sensitivity Ratio
2014	82.07	11.56	2.42	1.56	0.54	107.09	51.41
2015	81.32	11.60	2.90	1.56	0.49	104.46	51.47
2016	84.06	12.02	5.89	1.61	0	105.42	49.93
2017	80.6	12.36	6	1.56	0.10	102.36	49.87
2018	85.5	11.8	7.52	1.65	-0.66	103.32	52.2
2020	82.5	13.11	3.64	1.72	-0.03	101.27	51.64
2021	80.6	14.18	3.11	1.73	0.28	98.60	59.90
2022	80.5	14.67	2.21	1.73	0.55	99.45	58.64

Table 9: Private sector Banks performance ratios from 2013-14 to 2021-22

Year	Efficiency Ratio	Capital Adequacy Ratio	Asset Ratio	Management Efficiency Ratio	Earning Ratio	Liquidity Ratio	Sensitivity Ratio
2014	69.98	16.84	0.62	2.10	1.85	133.36	14.18
2015	68.91	16.46	0.83	2.10	1.91	130.66	15
2016	68.46	15.91	1.35	2.06	1.66	130.33	16.70
2017	67.46	15.73	2.49	2.13	1.40	122.08	17.30
2018	68.27	16.63	2.75	2.02	1.14	122.85	19.00
2019	69.27	16.77	1.41	2.03	1.14	121.43	20.01
2020	68.19	17.55	1.02	2	1.24	117.00	21.67
2021	63.66	19.26	0.86	1.86	1.52	115.94	22.20
2022	63	19.20	0.56	1.94	1.80	115.82	23.47

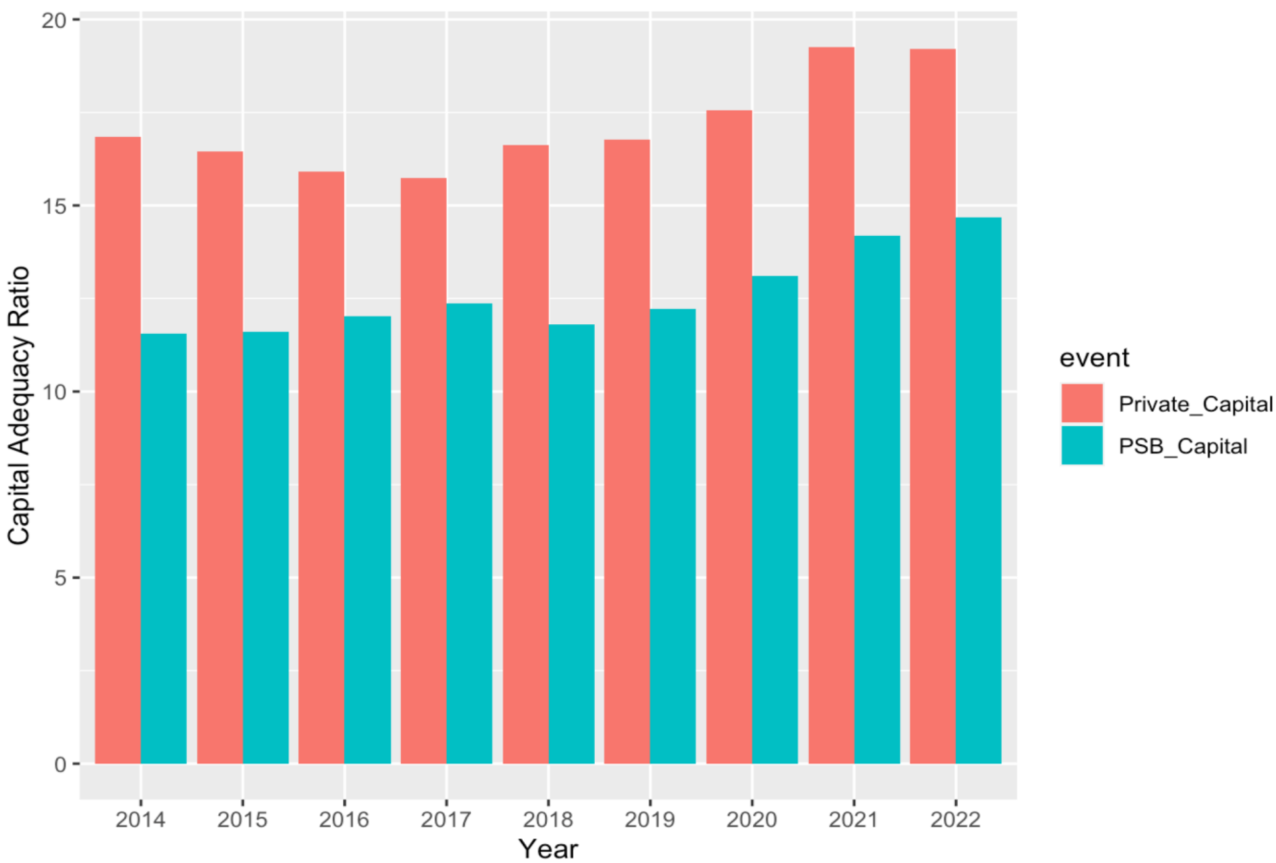
Before applying the panel econometric model, we graphically illustrate raw data from Table 7 and 8 of chosen public and private sector data on a consolidated basis. The visualization of data in Figure 8 is the efficiency ratio of public and private sector banks. As it has been described earlier that efficiency ratio is defined as the operating cost/revenue ratio, which means that lower the number more efficiently the bank is run. From figure 1 it is clear that private sector banks are more efficient than public sector banks. At the sametime it can be seen that since 2018-19 efficiency of both public and private sector banks have improved. It means that EASE reforms for public sector banks may have some impact on improving their efficiency, but at the same time private sector efficiency has also increased which indicates that improved efficiency after 2018-19 may be a banking sector wide phenomenon.

Figure 8: Efficiency Ratio (Operating Expenses/Total Revenue) of Public and Private Banks from Financial Year 2013-14 to 2021-22

Figure 9 represents Capital adequacy ratio (CAR) for public and private sector banks. Private sector banks CAR has always been higher than public sector banks in the time frame we have studied. But one thing which is noticeable is that public sector banks' capital position has clearly improved a lot since

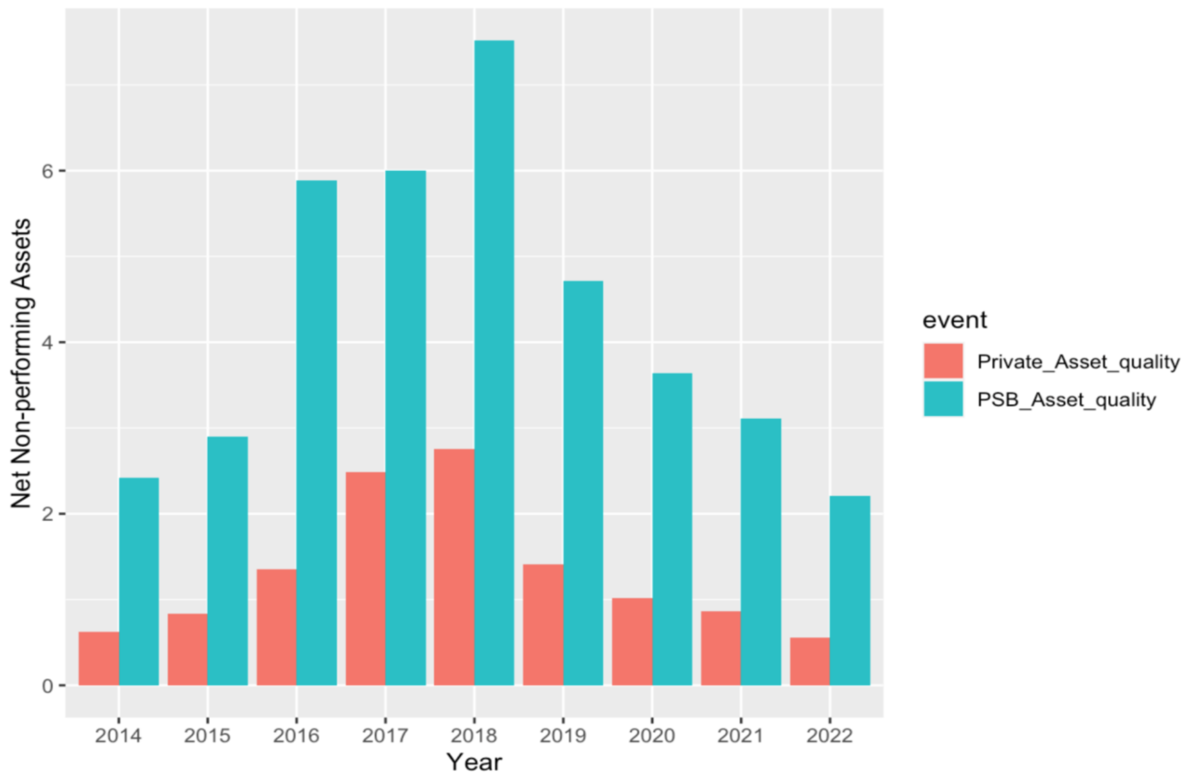
2018-19 onwards. This may have been achieved due to focus on 4R's (Recognize, resolve, recapitalize and reform) and EASE reforms.

Figure 9: Capital adequacy ratio of Public and Private Banks from Financial Year 2013-14 to 2021-22



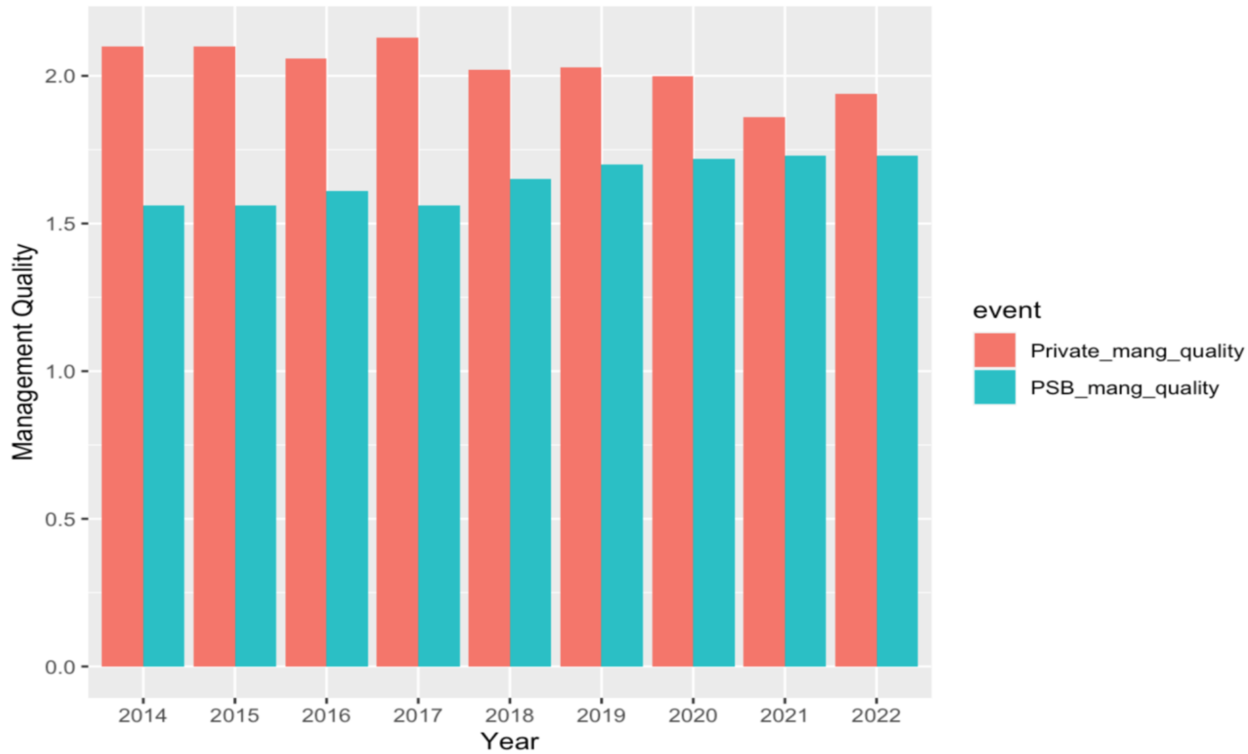
In Figure 10 we have visualized the net non-performing assets (NPA) of public and private banks. We have considered net NPA for our analysis because while gross NPA affects equity price and reputation of a bank it is net NPA which directly affects performance and profitability of banks. From the figure it can be seen that net NPA has been way higher for public sector banks than private ones, but there is a clear-cut downward trend in it after 2018-19. Again, this improvement in asset quality coincides with 4-R's and EASE related reforms in PSBs.

Figure 10: Asset quality ratio (Net non-performing assets) of public and private sector banks from Financial Year 2013-14 to 2021-22



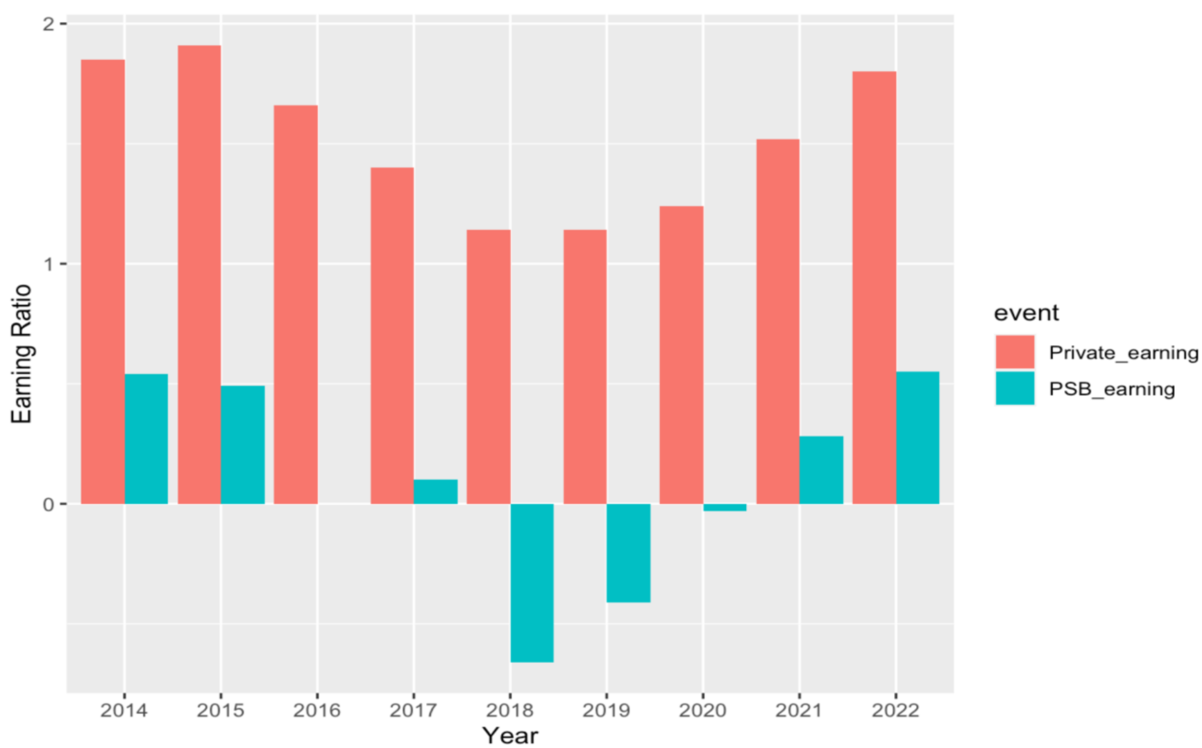
Management quality is an important measure to understand a bank's performance. It is arrived at by dividing operating expenses by total assets. From the nature of the ratio it is clear that lower this number betters the bank's performance. From Figure 11 it is clear that again private sector banks are performing better on this indicator as well, but their management efficiency is decreasing over the years (particularly since 2017 onwards whereas, public sector banks' management quality is improving since 2019 onwards.

Figure 11: Management Quality Ratio (Operating Expenses/Total assets) of public and private sector banks from Financial Year 2013-14 to 2021-22



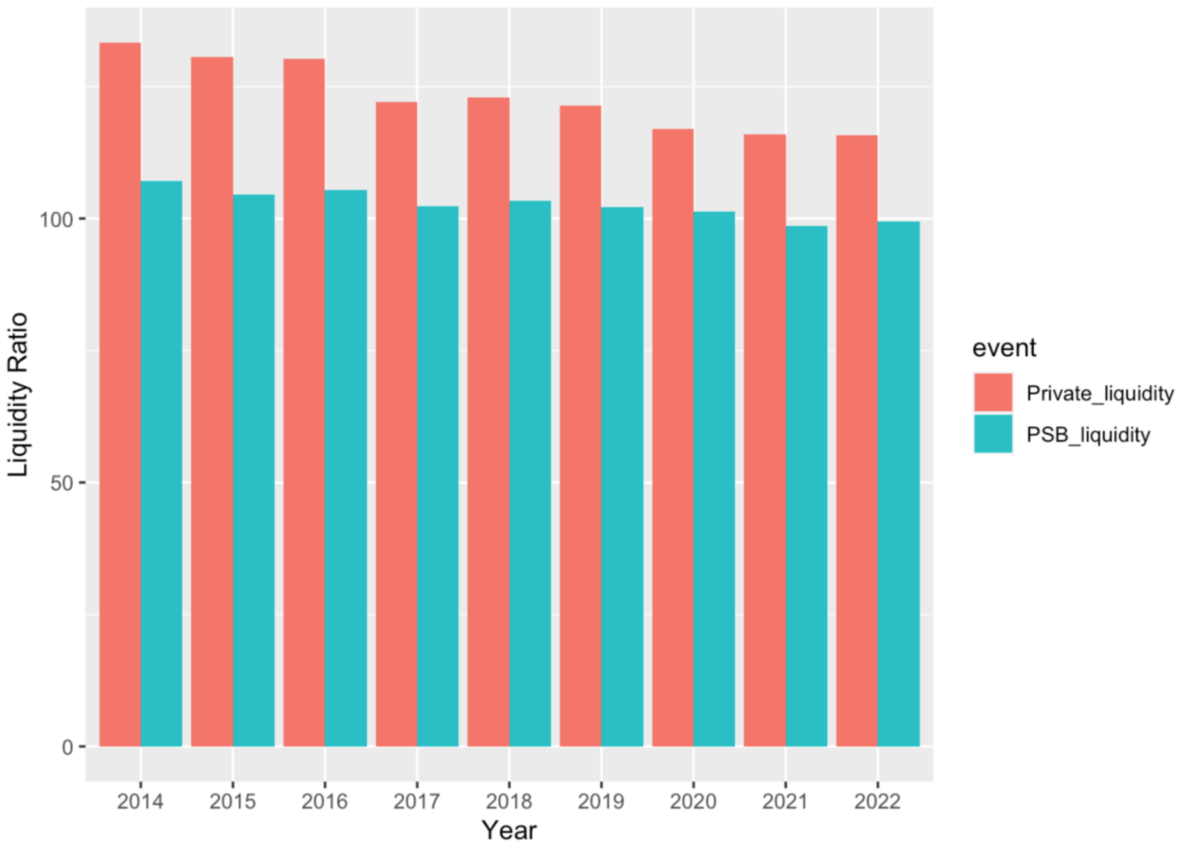
Return on assets (RoA) is an earning ratio which measures profitability of banks. In Figure 12 we have visualized the RoA of public and private sector banks. Higher the measure better the performance of a bank. From the figure it can be seen that private sector banks' RoA has been much higher than public sector banks. In fact, the period under consideration (2014-2022) has been one of the toughest for the public sector banks. They have faced unprecedented balance sheet and profitability issues, like high NPA, low capital adequacy ratio (CAR), low or negative profits and decreasing market share (in terms of asset size). The genesis of the problem can be traced to the Indian economic boom of 2004-2008 and subsequent fiscal policy stimulus in wake of the global financial crisis of 2008-09. During this period banks, particularly public sector ones indulged in irrational exuberance and provided loans to many infrastructure and telecom projects which later on became bad due either to policy related issues (for example lack of environmental clearance and 2G and coal scam etc) or frauds. From the figure it is clear that private sector banks have been very prudent in their credit risk and loan appraisal issues. In the case of public sector banks, it can be seen that their RoA has started improving since 2019 onwards when 4-R's and EASE reforms were implemented.

Figure 12: Earning Ratio (net profit/ total assets) of public and private sector banks from Financial Year 2013-14 to 2021-22



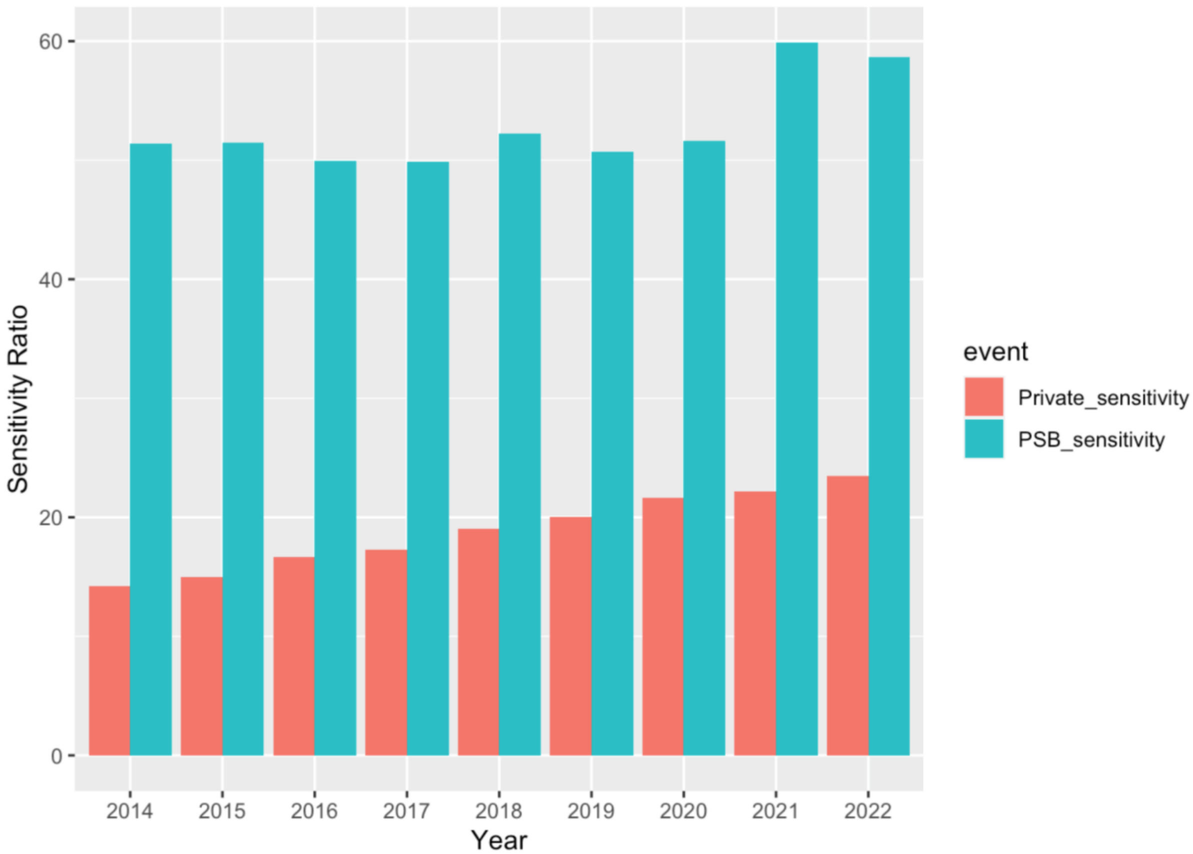
Liquidity ratio that we have considered in this study is 'credit to deposit ratio (C/D)'. It is simply a stress measure to understand the bank's capacity to withstand a liquidity crisis like a bank run. From the definition it is clear that lower this ratio better the bank's position in handling liquidity related banking stress. Figure 13 shows the liquidity ratio for public and private banks. From the figure it can be seen that in terms of liquidity, private sector banks are more stressed than public sector ones, though the ratio has come down over the years.

Figure 13: Liquidity ratio (Credit/Deposit ratio) of public and private sector banks from Financial Year 2013-14 to 2021-22



Sensitivity ratio which is simply the ratio of a bank's assets to total banking sector assets is a new addition to CAMEL. It is a systematic measure of risk, i.e., the importance of the bank in the overall banking sector of a country. Figure 14 visualizes the sensitivity of public and private banks. From the figure it can be seen that there is a secular increase in the asset size of private sector banks. Public sector banks have seen a sudden jump in their asset size in 2021 due to merger of PSBs.

Figure 14: Sensitivity ratio (Bank asset/ total scheduled commercial banks assets) of public and private sector banks from Financial Year 2013-14 to 2021-22



Econometric Model: Hausman test and Random effect model test results

As discussed in the methodology section to select out of fixed and random effect panel models we need to perform a Hausman test. Random effect model is preferred under the Hausman test due to its high efficiency. Whereas alternative hypotheses prefer fixed effect models. If the p-value is less than 0.05 then we reject the null hypothesis and perform a fixed effect panel model, whereas if p value is more than 0.05 we accept the null hypothesis and perform a random effect panel model. From Table 9 it can be seen that p value is equal to 0.56 so we accept the null hypothesis and conclude that the random effect panel model is appropriate for our data set. The results of the random effects model are presented in Table 11.

According to the results, it can be seen that all of the explanatory variables are significant at 0.05 level of significance except asset ratio (net non-performing assets ratio).

In case of capital adequacy if it increases by 1%, it will cause the efficiency ratio (dependent variable) to decline by -1.29%. In other words, if CAR increases then a bank's operating expenses/total revenue (efficiency) ratio declines and the bank is able to generate more revenue with less operating expenses. This can be corroborated from Figure 8 and 9 as well. In Figure 8 it can be seen that efficiency of PSBs are increasing (decreasing efficiency ratio indicates higher efficiency) at the same time Figure 9 shows that CAR for PSBs are increasing. An important point to note is that these trends of decreasing efficiency ratio (increasing efficiency) and increasing CAR are particularly notable after 2018-19 when 4-Rs and EASE reforms were kicked off in the public sector banks. In other words, EASE reforms have helped the public sector banks in becoming more efficient.

Table 10: Correlated random-effects- Hausman Test

H_0= Random effect is preferred

H_1= Fixed effect is preferred

Correlated Random Effects- Hausman Test

Test Summary	Chi-square Statistic	Chi-sq df	P value
	4.85	6	0.56

Decision: As according to the null hypothesis the p-value= 0.56 suggests that we accept the null hypothesis and consequently say that the Random Effect Model is more suitable as compared to Fixed Effect Model. So, the Random Effect Model is interpreted in detail

On the other hand, if the management quality ratio (operating expenses/total assets) increases by 1%, the bank's efficiency ratio (operating expenses/total revenue) increases by 2.37%. It is important to note here that increasing management quality and efficiency ratio is a negative performance indicator for banks. So it can be concluded that deteriorating management quality (increase in the ratio) leads to inefficiency in the banks (increase in efficiency ratio). Again from Figure 8 and Figure 11 it can be seen that the data visualization corroborates with the econometrics results, where decreasing efficiency ratio (improvement in efficiency) in Figure 8 is matched with decreasing management quality ratio (increase in management efficiency) in Figure 11, particularly after EASE reform period, i.e., since 2018-19.

Table 11: Panel Random Effect Model analysis results

Formula= E~C+ A + M + Earning + L + S, index= C("FY","Bank")

Where,

E = Efficiency Ratio

C= Capital Ratio

A= Asset Ratio

M= Management Quality Ratio

Earning= Earning Ratio

L= Liquidity Ratio

S= Sensitivity Ratio

Balance Panel: n= 9, T=16, N=14

Variable	**Coefficient**	**p-value**
Capital Ratio	-1.29	< 2.2e-16 ***
Asset Ratio	0.05	0.78

Management Ratio	2.37	0.033
Earning Ratio	-2.76	6.076e-06 ***
Liquidity Ratio	-0.16	2.148e-05 ***
Sensitivity Ratio	-0.13	0.021
Adjusted R- Square = 0.78		

Earning ratio which is net profit/ total assets is also known as return on assets (RoA). From Table 10. It is clear that if the earning ratio increases by 1%, the efficiency ratio (operating expenses/total revenue) decreases by -2.76%. In other words, if the earning ratio increases, the efficiency of banks increases (decrease in efficiency ratio). This can be again validated by looking at Figure 8 and 12, where decreasing efficiency ratio (increase in bank efficiency) for PSBs' after EASE reform initiative (2018-19) is marched with increasing earning ratios.

Liquidity (credit to deposit) and sensitivity (bank asset/total banking system assets) ratio have significant (p value less than 0.05) but small impact on efficiency ratio of banks. When the liquidity ratio (credit to deposit) increases by 1%, efficiency ratio decreases (efficiency increase) by -0.16%. Similarly, if the sensitivity ratio (asset size of the bank compared to total banking assets) increases by 1%, bank efficiency ratio decreases (efficiency increases) by -0.13%. The results and the hypotheses tests have been summarized in below table.

Table 12: Summary of panel econometric model results (and Hypotheses results from Table 10)

S. No.	**Independent Variable**	**Hypotheses results**	**Impact on efficiency (dependent variable)**

1	Capital ratio	Accept alternative hypothesis	Increase in capital positively affects the efficiency of a bank (decrease in efficiency ratio)
2	Asset Ratio	Accept null hypothesis	No significant impact on efficiency of a bank
3	Management Ratio	Accept alternative hypothesis	Increase management efficiency, negatively impacts efficiency of a bank (increase in efficiency ratio)
4	Earning Ratio	Accept alternative hypothesis	Increase in earning ratio positively affects the efficiency of a bank (decrease in efficiency ratio)
5	Liquidity Ratio	Accept alternative hypothesis	Increase in liquidity ratio positively affects the efficiency of a bank (decrease in efficiency ratio)
6	Sensitivity Ratio	Accept alternative hypothesis	Increase in sensitivity ratio positively affects the efficiency of a bank (decrease in efficiency ratio)

Table 13: Bank wise Mobile Application average rating and downloads

Bank (Mobile Banking App)	**Public/ Private**	**No of downloads**	**Android Average Rating (1-Poor 5-Best)**	**No. of ratings**
Bank of Baroda	Public	Over 1 Crs	4.3	9,31,216
Bank of India	Public	Over 1 Crs	3.5	1,07,282
Bank of Maharashtra	Public	Approx 50 Lakh	2.8	47,173
Canara Bank	Public	Over 1 Crs	4.1	4,13,973
Central Bank of India	Public	Over 1 Crs	3.7	1,12,136

Indian Bank	Public	Over 1 Crs	4.3	7,63,111
Indian Overseas Bank	Public	Approx 10 Lakh	4.3	33,266
Punjab and Sindh Bank	Public	Approx 5 Lakh	4.1	7,782
Punjab National Bank	Public	Over 1 Crs	4.3	5,81,528
SBI (YONO)	Public	Over 1 Crs	4.1	15,23,103
UCO Bank	Public	Approx. 10 Lakh	4.6	1,91,397
Union Bank of India (VYOM)	Public	Over 1 Crs	3.7	6,65,728
Axis Bank	Private	Over 1 Crs	4.8	19,66,980
HDFC Bank	Private	Over 1 Crs	4.3	9,97,790
ICICI Bank	Private	Over 1 Crs	4.6	43,11,311
Kotak Mahindra Bank	Private	Over 5 Crs	4.3	11,88,139

Table 12 summarizes different banks mobile application download and rating data on Android platform. It can be seen from the table that, except Bank of Maharashtra, all the other public sector banks ratings were decent. Best rated mobile banking applications in PSBs are for UCO Bank, followed by Bank of Baroda, Indian Overseas Bank, Indian Bank and Punjab National Bank etc. But if we compare PSBs and private banks as a group then private banks mobile application ratings are much higher than PSBs. In our sample of 16 banks, the best rated mobile banking application is Axis Bank followed by ICICI Bank. This analysis throws light on the impact of EASE reforms where one of the most important aspects was digital and mobile banking. Before EASE reforms mobile banking initiative was not very competitive to their private sector peers but over the years the services offered, responsiveness of the application and downloads have increased manifold. This can be counted as one of the successes of the EASE reforms.

One of the central themes of all the versions of EASE reforms has been to make public sector banks more 'customer responsive'. So to gauge the perception of the public towards PSBs we have extracted more than 10,000 tweets related to public and private banks and performed a Natural Language Processing (NLP) to parse different emotions in those tweets. The results of these sentiment analysis are displayed in Figure 15 and 16. From the figures it can be seen that *anger, disgust, fear and sadness* which are all negative sentiments are significantly higher in private than public sector banks. On the contrary, *joy and trust* which are positive sentiments are higher in the case of public sector banks. From these graphs it can be inferred that public sentiment is more positive towards public sector banks. This despite the fact that private sector banks' services (for example applications rating) and performance (CAMELS) are better than public sector shows that government ownership of these banks play a role in giving them better public opinion.

Figure 15: Social Media Sentiments: Public Sector Banks

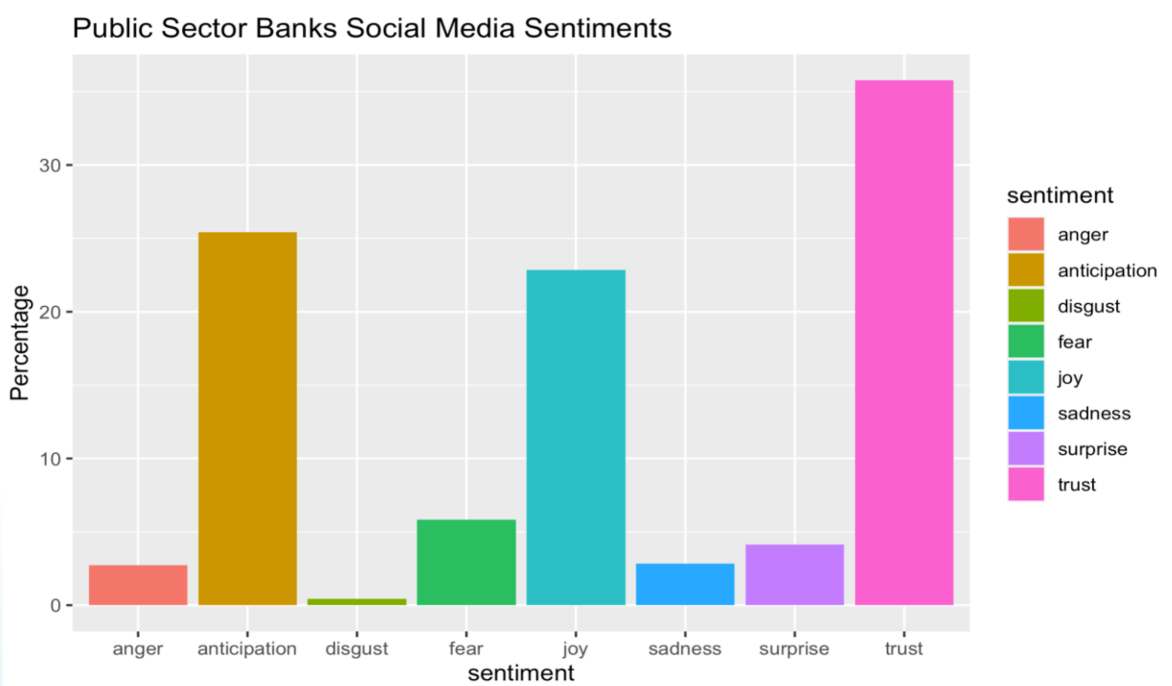
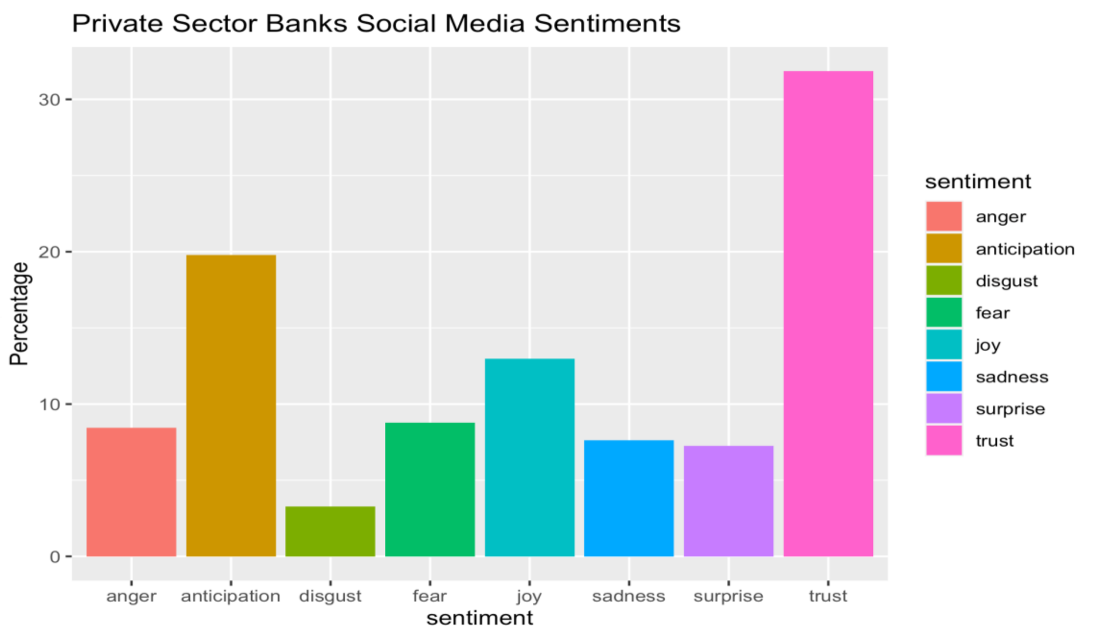


Figure 16: Social Media Sentiments: Private Sector Banks



8. Conclusion

At present, when the financial sector is witnessing transformational and revolutionary changes owing to increased competition and dynamic banking scenario, lending practices and risk management of PSBs need to be ready for next generation banking. Since PSBs face many internal and external challenges, it becomes imperative that they are well governed, efficient and financially prudent. EASE - the public sector banking reforms started in 2018, has given most needed impetus to PSBs functions and performance. *Human resource development*, *technology*, *collaboration and customer service* are the four pillars of the banking system of the future and the reform agenda has covered important elements of these four pillars. This study has been initiated with the intention to fulfill the research objective: 'to evaluate the impact of EASE reforms on performance of PSB banks in terms of efficiency by using empirical methods'. We have taken CAMELS ratio as a measure of bank performance on various parameters. CAMELS framework is an internal supervisory rating and ranking system used for the examination of the banks. To calculate CAMELS ratio secondary data were collected from the database of the Reserve Bank of India (RBI). The ratios were calculated by the researchers using these datasets from the RBI. The RBI defines S as 'system and controls' but researchers have considered S for sensitivity because it can be objectively measured.

Once the CAMELS ratios were calculated, Panel regression analysis was performed on these ratios. The Hausman test suggested using a random-effects panel regression model. The results show that capital adequacy, management quality, earning ratio, liquidity and sensitivity ratio all are important in explaining efficiency of banks. All of these ratios have seen improvement in public sector banks since the implementation of EASE reforms and consequently their efficiency has also improved significantly. Though private sector banks' performance on these parameters are better than PSBs, public sector banks have seen very encouraging improvements since 2018 onwards when EASE reforms were initiated.

Further, to understand the perception and sentiment regarding public and private sector banks on social media we collected around 10.000 tweets regarding these banks from Twitter (a social media platform) and performed Natural Language Processing (NLP) based sentiment analysis on them. The results showed that public sentiment is more positive towards public sector banks than their private sector peers. This despite the fact that private sector banks' services (for example applications rating) and performance (CAMELS) are much better than public sector, shows that government ownership of these banks play a role in giving them a better public image. Public sector banks can leverage these positive sentiments by concentrating on EASE related action points, particularly, customer service and product offerings by utilizing digital and analytical tools.

9. Recommendations and Limitations

A. Recommendations

- **Digital dashboard for tracking performance under EASE reform agenda**: Since one of the present study's author is connected with corporate training in one of large PSB, his discussion with field functionaries of PSBs on awareness about EASE reform agenda and its impact on their daily working reflects that there is less awareness among the frontline staff members, who are important stakeholders in the implementation. Therefore, we suggest that a relevant digital dashboard for high impact roles such as BHs/Regional Heads/Zonal (Circle) Heads etc may be designed and provided for capturing their progress against assigned action points pertaining to their respective area of operation.
- **Talent Acquisition/development strategy** - we suggest that strategy can be formulated by PSBs other than SBI to developed platform based Gig workforce like SBOSS (State Bank Operations support subsidiary) for lowering cost to income ratio and reducing operating expenditure (refer Figure-8) so that PSBs can compete with private peers on 'cost efficiency'.

  As there has been a shift in customer preference toward self-banking and digital banking. These PSBs have been finding it difficult to attract Gen Y & Z customers to their fold as their aspirations are not served adequately by PSBs workforce. Therefore, PSBs also need to overhaul their recruitment strategy for generalist and specialist roles as banking is becoming knowledge and technology intensive so the jack of all trades kind of employees may not be suitable for specialized roles in risk management, treasury, digitisation and analytics-based services in banking etc. It has been the author's experience that post recruitment training to Probationary Officers is quite expensive and return on such a massive investment is to be ascertained.

PSBs can also plan senior leaders (Scale V - VIII) talent pools having domain knowledge, who can share intelligence and coach lagging banks. These pools can become breeding grounds for leadership development as PSBs face challenges in developing competent, knowledgeable leaders.

Merely investing in technology may not yield desirable results especially if continuous improvement is not brought upon. Even employees need extensive training and push for adopting 'digital mindset' so that they may serve/guide customers confidently and resolve their complaints.

- **Integrate customer real time feedback with banking services**: digital enabled real time customer feedback can be a good option to improve further customer sentiments and PSBs service orientation. This responsible and responsive banking is at the core of EASE reforms and the banks need to invest in digital infrastructure to make the feedback and grievance redressal system more robust and responsive. Presently, most of the PSBs are capturing customer feedback through various channels i.e. inbound call center, outbound call center, mobile application, however Branch where customers directly interact with PSBs staff members, is one of the important channels to capture customer feedback. Therefore, PSBs may think of QR code /sms link based customer feedback systems on branch services/staff/products/channels.
- **Use of analytics in decision making**: Although large PSBs have made good investments in this area in recent years, still they need to catch-up their private peers to harness their gigantic data for customer acquisition and product formulation etc. This will help banks to improve their efficiency and earning ratios.

- **Amalgamation and/or synergy among PSBs:** There is fair duplication in tasks performed by the PSBs in various areas of operations. In many places they are competing with each other and eating into one another's business. Our econometric model also suggests that bigger banks (sensitivity ratio) are more efficient so *the GoI may consider merging these banks together to create fewer but bigger banks in terms of asset size*.

  These bigger banks may collaborate by sharing inputs related to technology, operations and HR for mutual benefits. e.g. training infrastructure of one large PSBs can train small PSBs on compensation basis, risk management practices and data can be shared for safeguarding against external frauds etc. These measures will help banks to optimize their resources and reducing their operating expenses.

- **ESG Framework**: PSBs are undertaking many initiatives relating to ESG framework but they have not been marketing/reporting for their advantage as the large private banks are quite serious about green banking/ESG reporting. The EASE Reform agenda needs to incorporate action points related to green banking, climate risk management in banking operation and credit dispensation.
- **Cash Operations**: It is pertinent to highlight that cash is still an important component of the payment system in India despite increased digital penetration. Currency chest operations in PSBs play a big role in implementation of cash management guidelines of the RBI. Yet currency chest in PSBs are often neglected, which has bearing upon cash operations and customer services in the branches ultimately adversely affecting PSBs efficiency Ratio (figure-12). We have analyzed the efficiency Ratio of PSBs and found wide variations between PSBs and private peers largely owing to NPA provision and rising overhead expenditures. Therefore, they may look

upon rationalising their expenditures, one such area is cash operations including currency chests. Apart from that, inefficient cash management also results in violation of the RBI guidelines and internal fraud resulting in the RBI penalty and reputational losses. Prima facie, currency chest operations appears to be not among priority areas but they can be converted into profitable business segments provided due attention is accorded by PSBs. EASE Reform may also look into this segment and suggest some Action Points for improving efficiency of PSBs.

B. Limitations

Banking business is cyclical in nature and is predominantly dependent on the domestic and international macroeconomic business cycles. India witnessed a downturn in the banking cycle from 2012-13 to 2018-19, but after 2018-19 the banks, particularly public sector banks, have started reporting positive business results. This phase (since 2019-20) may be the trend reversal (up cycle) of the banking business. Due the business cycle, the econometric model of the 'effect of EASE reforms on the PSBs performance' may suffer from the problem of endogeneity and econometric results may not be interpreted as causality, i.e., EASE reforms causing improvement in PSBs performance. Though to overcome this problem we have taken both public and private sector banks in our sample but a comprehensive study at a later stage may provide us with input on the impact of EASE on a specific bank's business model and banking sector at large. Since, EASE reform agenda has provided some of the Action Points, which are having a long-term strategic perspective, therefore, we need to assess the impact of those Action Points after a lag of time period (say 3-5 years). We have also analysed EASE Reform Index and it was observed that due to unavailability of theme-wise, action points data/score pertaining to individual banks, So Bank specific empirical Research may not be feasible at this juncture.

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Source of EASE Reform Agenda Documents

SI	Date	Title	Source
01	06-01-2023	EASE 5.0 Q2 FY23 Index	
02	10-09-2022	EASE 5.0 Q1FY23 Index	
03	27-09-2022	EASE 4.0 Annual Report	

SI	Date	Title	Source
04	21-09-2022	EASE Presentation, EASE Index FY21-22	IBA Website
05	22-06-2022	EASE 5.0 Agenda	
06	25-03-2022	EASE Reforms Index for the third quarter of FY22	
07	27-12-2021	EASE Reforms Index for the second quarter of FY22	
08	15-11-2021	EASE Reforms Index for the First Quarter of FY22	
09	08-03-2021	EASE Reforms Index for the Third Quarter of FY21	
10	22-12-2020	EASE Reforms Index for the Second Quarter of FY21	
11	24-11-2020	EASE Reforms Index for the First Quarter of FY21	
12	09-09-2020	Launch of DSB and Declaration of EASE 2.0 Index Results · Doorstep Banking · EASE Presentation	
13	09-09-2020	EASE Reforms Index for FY20	
14	03-03-2020	EASE 3.0 Smart, Tech-Enabled Banking for Aspiring India - Presentation	
15	27-02-2020	Tech-initiatives by PSBs showcased at EASE 3.0 launch	

SI	Date	Title	Source
16	27-02-2020	EASE 3.0 SMART, TECH-ENABLED BANKING FOR ASPIRING INDIA	
17	27-02-2020	EASE 2.0 Annual Report FY 2019-20	
18	11-12-2019	EASE Reforms Index for the Second Quarter of FY20	
19	16-10-2019	EASE 2.0 Reforms for Public Sector Banks	
20	12-10-2019	EASE Reforms Index for the First Quarter of FY20	
21	12-09-2019	EASE Reforms 2.0 on Banking for Customer Convenience Cash POS	
22	22-05-2019	EASE Reforms Index update for the fourth quarter of FY19	
23	01-03-2019	EASE - Enhanced Access and Service Excellence ● Reforms Journey for EASE in PSBs. First EASE Reforms Index ● Summary scores across 30 Action Points (AP) of the PSB Reforms EASE Agenda ● List of 140 metrics included in the EASE Reforms Index, December 2018 ● EASE Report 2019	

Annexure

A1: Action Points of EASE 1.0

SI	Theme	Action Points Proposed	Aspiration
1.	Customer Responsiveness	• EASE of banking from the comfort of home • EASE in grievance redressal • EASE for senior citizens and the differently abled • EASE through pleasing ambience • EASE through forms simplification	To enhance customer comfort
2.	Responsible Banking	• Creation of a Stressed Asset Management Vertical (SAMV) • Corporate lending through rigorous due diligence • Tie-up with Agencies for Specialised Monitoring (ASMs) for clean & effective post-sanction follow-up in loans above Rs. 250 crore • Institute efficient practices for large consortium loans, minimum 10% exposure • Strict segregation of pre- and post-sanction roles & responsibilities • Ring fence cash flows • Differentiated Banking Strategy • EASE through transparent and robust OTS • Check aggressive and imprudent lending • Monetise realisable non-core assets • Rationalise overseas operations	Strengthening credit quality and monitoring mechanism, Improving governance structure of PSBs

SI	Theme	Action Points Proposed	Aspiration
		• Board-approved strategic vision and business focus • Boards to evaluate performance of Banks' Whole Time Directors • Strengthening and empowerment of Boards	
3.	Credit Off-take	• EASE for the borrower through digitalisation and rationalisation • Proactive reach-out to borrowers • Strategy plans for key industry-based market segments	Proactive Delivery of Credit
4.	PSBs as Udyami Mitra for MSME	• EASE of bill realisation for MSMEs • EASE of financing for MSMEs • Single-point MSME Relationship Officers • Revival Framework for stressed MSMEs	
5.	Deepening Financial Inclusion and Digitalisation	• EASE through near-home banking • Social security through microinsurance • EASE through digital payments • Customer protection against cyber frauds	To ensure near home banking, microinsurance and digitalisation
6.	Developing Personnel for Brand PSB	• Reward select top-performers through a Performance Management System • Specialisation through job families • Mandate annual role-based e-learning programme for all officers, and a fellowship & training programme for senior executives	To develop HR capabilities and capacity for next gen banking experience

A2: Action Points of EASE 2.0

SI	Themes	Action Points	Important Measures to be undertaken
1	**Responsible Banking**	Strengthening credit risk underwriting	• Personal Loans segment, wherein CIBIL score of less than 650 will lead to performance deterioration. • Unqualified CPA observations. • Avoid recommending concessions in less profitable loans above Rs. 5.00 Crs
		Implementation of effective consortium coordination mechanism	To improve effectivness of consortium, so that loopholes can be plugged.
		Building Robust EWS Systems	Comprehensive, IT-based early warning signal system having 26 signals out of 45 signal RBI list and additional 57 signals, auto escalation to monitoring supervising officials mapped to accounts
		Strengthening and codification of	• Monitoring of

SI	Themes	Action Points	Important Measures to be undertaken
		monitoring systems	Financials/Financial ratio against projections. • Cross verification with CRILC & other public information registries.
		Ensuring prompt recovery actions	• Slippages to be contained • Apart from recoveries, credit underwriting should be done in an effective manner.
		Building robust One-Time Settlement (OTS) mechanism	• % of OTS/compromise proposals captured/ monitored through OTS online platform. • Share % of haircut in OTS proposal.
		Building Robust Risk Management Practices	• Timely reconciliation of Nostro Accounts transactions.

SI	Themes	Action Points	Important Measures to be undertaken
		Customer protection against cyber-frauds	• Vulnerability assessment and Penetration testing, SIEM and other IS assessment by Internal/External Auditors • Desirable specialized measures for cyber-security • Cyber security related certifications
		Strengthening Market & Liquidity related risk Management	• Scoring Comprehensive monitoring of treasury risk • Stop loss management
		Mobilizing Capital & building investor Relations	• Realisation from Non-core Assets. • Tier-I capital mobilisation from Non-Govt. Resources • Equity Analyst/Investor feedback on quality of investor communication
		Rationalising overseas operations	• Scoring Rationalisation of identified overseas branches or subsidiaries

SI	Themes	Action Points	Important Measures to be undertaken
			• Maintaining profitable international operations
		Integration of EASE in senior management evaluation	• Performance on EASE Index reforms is incorporated in KRAs in APAR of employees up to two levels below WTD (whole time Director)
2	**Customer Responsiveness**	Promotion of banking from 'Home & Mobile'	• Mobile App should contain 41 identified services mostly offered at branch outlets, UPI should have 8 features related to transactions. • No. of services/lead generation covered in Internet banking, Call Centres, SMS banking.
		EASE of Customer Service	• User friendly App, Internet Banking, Call center • Surveys to judge customer satisfaction, priority services to senior Citizen &

SI	Themes	Action Points	Important Measures to be undertaken
			differently abled, branch ambiance and amenities. • Availability of regional languages in digital channels
		Suite of financial services for one-stop access to customers	Cross selling of Insurance, mutual funds etc
		EASE in grievance redressal	IT driven fully automated mechanism, having capability to sort complaints category/sub-category wise with features such as auto escalation to supervisors, real time tracking for customers, integrated feedback system.
		EASE for senior citizens and differently abled customers	Doorstep banking, branches and ATMs with ramp access.
3	**Credit Off-take**	Improvement in proactive reach-out to borrowers	• Leveraging external dedicated sales channels. • Increase/utilise tie-ups with builders, vehicle dealers, DSA, dedicated sales officers etc.

SI	Themes	Action Points	Important Measures to be undertaken
		EASE for the borrower	• Retail loan LMS, end to end IT based solution having tracking status etc. • Fully automated processing in the personal loan segment. (STP based) • TAT improvement in the retail loan segment.
4	**Udyami Mitra for MSMEs**	EASE of financing for MSMEs	• Reduce TAT for disbursal of < ₹25 lakh MSME loans. • MSME loan LMS, end to end IT based solution having tracking status etc.
		Providing single-point MSME relationship officers	• Productivity of dedicated RMs in MSME branches
5	**Deepening Financial Inclusion**	EASE through near-home banking	• Utilisation of services of bank mitra • Rupay card activation in operative BSBD accounts
		Increasing social security through micro insurance	• Increasing Penetration of micro insurances (PMSBY & PMJJBY)

SI	Themes	Action Points	Important Measures to be undertaken
		EASE through inclusive lending	• OD facility and Mudra loan performance can be improved.
		Promoting inclusion through digital channels	• Mobile number, Aadhaar seeding in operative CASA.
6	**Developing Personnel for Brand PSB**	Rewarding select top-performers identified through a Performance Management System (PMS)	Digitised PMS system in which data is auto-populated through system, quantitative parameters based appraisal system.
		Implementation of job families	% of positions fulfilled as per job families (actual vs. plan), Dedicated marketing staff for Retail & MSMEs segment
		Implementation of objective postings process	Rotation of sensitive posting, adherence to the job family system, minimizing transfer beyond the first Quarter.
		Managing specialization /diversification needs of senior employees	Creation of individual development plans covering strength, developmental needs, succession planning roles, Training requirement, Job

SI	Themes	Action Points	Important Measures to be undertaken
			experience
		Expansion of annual role-based e-learning programme for all officers & training to Senior Executives	PMS score to give weightage to staffs for completing role based E-learning modules, External training to top executives from reputed institutes

A3: Action Points of EASE 3.0

SI	Themes	Action Points	Important Measures to be undertaken
1	**Smart Lending for Aspiring India**	**Dial-a-loan**: Digitally-enabled doorstep facilitation for initiation of retail and MSME loans on a Lead Management System	• Onboarding of retail and MSME customers through SMS / missed call / Internet banking / mobile banking / call center. • A lead management system to be developed having Dashboard, escalation, auto tracking features etc

SI	Themes	Action Points	Important Measures to be undertaken
		Analytics-based and technology-enabled retail and MSME credit outreach	• Retail & MSME Customer Credit Need Fulfilment such as Holidays Fees, School Fees, Consumer durables, Home Loan, WC, LAP based on Analytics, this will cater to new emerging needs by various segment of our customers e.g. for EMI on expenses like holidays/school-fees/jewellery/consumer durables, home loan takeovers, loan-against-property post home loan closure, working capital enhancement based on sales jump
		Credit@click: End-to-end digitalised, time-bound retail and MSME lending by larger PSBs, leveraging Account Aggregators, FinTechs and PSBloansin59minutes.com	Existing saving or current account customer will apply digitally for retail or MSME loan based on auto populated details, which will be processed in Analytics-based package with help of Fintechs having various Tax data, Statutory data, Alternate data, such as utility bills, mobile data and geo-tagged location, and analytical reports. Further, it will be disposed of within the TAT and the proposal will be ready for E-signed and e-

SI	Themes	Action Points	Important Measures to be undertaken
			stamped digital documentation. Here TAT will be measured End-to End i.e. from onboarding to Disbursements rather than till sanction only. Therefore facilitating the customer for expediting the proposal will be important apart from proper channelization of Marketing Officers for onboarding of customers.
		Cash-flow-based MSME credit by larger PSBs, using FinTech, Account Aggregator and other third-party data and transactions-based underwriting models	Leverage bank, FinTech, Account Aggregator and other third-party data for underwriting
		Integrated banking for large corporates with corporate-specific product and service packages (Applicable For larger PSBs only)	Offering bouquet of customised services such as trade and value chain finance, forex, cash management and deposit products, and fee-based services to large corporates having exposures of Rs. 100 Crs
		Online access and centralised processing hubs in larger PSBs for	Export trade finance solution/Platform for ease and

SI	Themes	Action Points	Important Measures to be undertaken
		time bound export Credit (Applicable For larger PSBs only)	convenience
		Tech-enabled agricultural lending (Applicable For larger PSBs only)	App-based loan application and offers for KCC and gold loans
		Technology-driven improvements for quicker, time-efficient customer service in transaction-intensive branches	• Reduce waiting Time by way of Centralised Tracking of waiting time & transaction time of services from improvement • Single Window Operations to facilitate especially pensioners, Senior Citizens and womens • Near Full digitalization of Passbook-printing and cash withdrawal/deposit in self-service mode • Mobile & Tab based service offering such as fund transfers, term deposits, SB/NPS/PPF account opening, customer Details update • More numbers of services availability through Mobile Banking/Call Centre/ Internet Banking in local languages
		Palm banking: End-to-end digitalised delivery of full bouquet of financial services in regional languages	As the penetration of smartphones and economical internet is on the rise, this action point mandates '**palm banking**' means End-to-end digitalised delivery of full bouquet of

SI	Themes	Action Points	Important Measures to be undertaken
2	**Tech-enabled ease of Banking**		financial services like loans, investments, Insurance products, shopping, Cards, remittances and various branch based services in regional languages and with industry-best service quality.
		EASE Banking Outlets: On-the-spot banking at frequently visited places	On-the-spot banking at frequently visited places like Malls, Railway stations, Airport, Office complexes, Campuses, bus terminals, large hospitals, tourist spots etc. it basically requires to initiate following actions: (i) Paperless, digitally enabled stop by retail banking outlets/kiosks (ii) Equipped with self-service machines for cash transactions (iii) Offering common account-related services, straight-through processed personal loans and other financial products, and initiation for other products and services
		Expanded near-home access	

SI	Themes	Action Points	Important Measures to be undertaken
		through Bank Mitras to over 25 services	
		Prudent lending through objective, validated and IT-based systems for scoring, rating and pricing of risk	• Recalibration of internal credit rating system
3.	**Institutionalising Prudent Banking**	Comprehensive monitoring of large-value loans	Under this Action Point it is expected that near real time monitoring based Bank's account related data and third party data for quick loan related decisions like Adhoc limits, enhancements, limit reduction, loan recall . It also emphasises on Internal risk rating review of all corporate accounts in a maximum of 13 months from previous review.
		SOP-based, time-bound remedial and risk-mitigating actions triggered by Early Warning Signals (EWS) system	It prescribes that bank should leverage the technology based system for maintaining asset quality through regular

SI	Themes	Action Points	Important Measures to be undertaken
			monitoring mechanism. This action point also proposes that bank should monitor the weakness in the account based on internal and external data for SOP based time bound remedial actions such as customer visit, asking for additional collateral / equity infusion, interest rate reset, loan facility adjustment.
		SOP-based, time-bound collection actions for past-due retail and MSME loans	• Rectifying technical defaults at the stage of first installment • Monitoring resolution, roll-forward and roll-back performance
		Improved non-NCLT recovery actions	• Auction of secured assets in possession on e-Bkray platform • Strengthening OTS and negotiation settlement scheme

SI	Themes	Action Points	Important Measures to be undertaken
		Optimisation of operating expenditure through cloud-based systems and procurement on GeM	• Procure via Government e-Marketplace (GeM) • Draw up and implement Board-approved roadmaps for cost-effective cloud-based solutions
		Increasing treasury risk while optimising risk	Improve portfolio return while managing market risk
		SOP-based, time-bound actions triggered by comprehensive Anti-Money Laundering (AML) system	• IT workflow-based tracking for time-bound SOP-based actions • Continuous monitoring on over 100 identified indicators
4	Governance and Outcome centric HR	Board oversight for alignment of structures and processes with strategic goals	• Creation of additional whole-time director (WTD) position and CGM-level, market recruitment of CRO and amalgamations • Effective utilisation of non-official directors through institutionalised

SI	Themes	Action Points	Important Measures to be undertaken
			arrangements for induction and need-based specialised training and peer-evaluation of their performance
		Building leadership pipeline through a Board-approved succession planning system	• Identification within Q1, potential Senior level successors • Strengthening of the leadership pipeline through postings and training programmes
		Business-outcome focussed performance appraisals	• Set market-share and business-goal based performance targets for the bank in April, and allocate them within Q1 • APAR to be more measurable/quantitative and auto populated quarterly performance • Closure of all performance appraisals within Q1, through auto-escalation and auto-

SI	Themes	Action Points	Important Measures to be undertaken
			closure on PMS ● Rationalise with focus on a few high-impact indicators and eliminate overlaps, lagging performance indicators
		Operational requirement-based HR deployment	● Minimisation of transfers beyond Q1 in the financial year cycle ● Optimal deployment of branch and administrative office staff ● Deployment as per the estimated requirement using IT-based HR Deployment Decision Support System
		Creation of HR for emerging banking and specialised roles through job families and specialist cadres at all relevant levels	Self explanatory Action Point
5.	Deepening Financial Inclusion and Customer Protection	Scale up coverage under financial inclusion products	● Substantially Increase personal accident micro-insurance and life micro-

SI	Themes	Action Points	Important Measures to be undertaken
			insurance cover among bank account holders • Increase penetration of overdraft facility among eligible BSBD account holders
		Enhancement customer protection against cyber frauds	Ensure credit-back against unauthorised debit in electronic transaction, within 10 working days, of notification by customer, as per mandated norms

A4: Action Points of EASE 4.0

SI	Theme	Action Points	Impact
1.	Smart Lending for Aspiring India	Enhanced Dial-a-loan	To significantly scale-up the business volumes through digital loan initiation for retail and MSME segment loans. Additionally, banks need to enable digital loan initiation for agricultural segment loans via the existing digital channels.
2.		Enhanced credit @ click	To extend the end-to-end digital lending portfolio and significantly scale-up

SI	Theme	Action Points	Impact
			business volumes disbursed through such loan products.
		Analytics based & technology driven credit off-take	To introduce more such loan offers via analytical models and significantly increase the business share via these offers. Highlights of the action point are: 1. Business conversion of retail & MSME loan leads generated through Analytics 2. Improvement in retail & MSME loan disbursements through a. Dedicated marketing officers b. Partnerships 3. For MSME lending under 'cash-flow' based model, business growth under the scheme 'Union GST Gain' is tracked for performance.
		Digital & data enabled agri-financing	Banks may enter into partnerships with Agri Tech companies to get access to the data sources, analytical tools and platforms, and support in credit assessment process to enable straight

SI	Theme	Action Points	Impact
			through processing.
		Mobile banking adoption	to increase adoption of digital channels through a host of targeted measures such as 1. Consolidation of banks mobile apps 2. Design and performance improvements of mobile apps 3. Simplify registration process for mobile apps 4. Encouraging use and download of mobile apps
		Technology resilience	It is a new action point introduced in EASE 4.0. With the increasing degree of digitization in the functioning of PSBs, there is a need for systems and processes to be technology resilient. It is to ensure the Bank's preparedness for any technological challenges and to offer un-interrupted banking services to the customers.

SI	Theme	Action Points	Impact
		Cyber resilience	This action point are: 1. Fast-track implementation of advanced cyber-security measures 2. Improved cyber resilience for customer protection 3. Cyber awareness amongst employees by taking the following measures: 4. Phishing/ wishing/ social engineering tests to be conducted 5. Conduct cyber awareness training
		Automation of manual processes	To Draw up and implement board-approved roadmaps for automation of high volume and manually intensive processes in the Bank. Explore implementation of advanced technologies such as: 1. Robotic Process Automation 2. Natural language processing 3. Machine learning 4. Optical character recognition 5. Voice recognition 6. Business process management 7. Data analytics etc

SI	Theme	Action Points	Impact
		Co-lending with NBFCs	It is a new action point introduced in EASE 4.0 to improve the flow of credit. It entails contribution of credit by both Banks as well as NBFCs. Highlights of the action point: 1. Improve credit flow to under-served markets by benefitting from low cost funds available to Banks and greater outreach of NBFCs 2. Integrate systems with partner NBFCs for real-time data sharing to enable monitoring & recovery of loans
		Doorstep Banking	Doorstep banking is introduced to increase the customer adoption of the services offered under this initiative.Highlights of the action point are: 1. Booking initiation of doorstep banking through MB, IB, call center, website, chat based & SMS 2. Increase number of customers registering & utilising the service by

SI	Theme	Action Points	Impact
			creating awareness & promoting its usage 3. Performance of the Bank will be measured against number & turn-around-time of successfully completed service requests
		Recovery through e bikray	Auctioning as a marketing activity with significant investment in publicizing the assets, outreach, and engagement with the prospective buyers.Highlights of the action point are: 1. Listing of secured assets on e-auction platforms 2. Publicizing of assets on Bank website and external platforms

SI	Theme	Action Points	Impact
		Onboarding program for new POs	This action point prescribes PSBs to Implement a 52-week program for newly inducted Probationary Officers with a focus on digitally-enabled learning, including on preventive vigilance, and continuous assessment through self-assessment tests. PSBs to Design a structured learning program with the following features: 1. Pre-joining material to new joinees, including basics of banking 2. E-lessons, in addition to the induction training 3. Lessons/booklets on bank's internal portal for future reference 4. A module on preventive vigilance 5. Continuous assessment process with a minimum of two assessments
	Tech Enabled Ease of	Outbound call center	Emphasize is given to establish and

SI	Theme	Action Points	Impact
	Banking		enhance outbound call centre-based retail and MSME customer outreach in regional languages. Highlights of the action point are: 1. The following services to be offered by the outbound call center: ○ Selling of financial products ○ Assisted application journey for digitally generated leads ○ Pre & post-default collections calling 2. Performance to be measured against: ○ Customer experience ○ Number of services provided ○ Quality lead generation ○ Availability of regional languages
		Promote digital payments in semi-urban & rural areas	Focus on improving digital penetration and promotion of digital transactions in semi-urban and rural areas. Highlights of the action point are: 1. Promoting awareness and offering UPI/ Bharat QR-based payment facility on the mobile banking app

SI	Theme	Action Points	Impact
			2. Driving adoption of low-internet connectivity-based solutions such as NFC & USSD (Unstructured Supplementary Service Data) - based payment methods 3. Business correspondents to provide on-ground assistance to customers with digital transactions and onboarding of mobile applications
		Top 5 customer complaints	Highlights of the action point are: 1. Drive systemic reduction in customer complaints through a robust system-driven grievance portal 2. Integrate IT-based grievance portal with all internal and external channels of customer complaints 3. Root-cause analysis on common complaint categories for preventive actions 4. Top 5 complaints under focus in this action point ○ Account debited and cash not dispensed ○ Debit card not received

SI	Theme	Action Points	Impact
			○ Cash deposited but account not credited ○ Account debited but not credited in merchant account (POS) ○ Account debited but not credited in merchant account
		Digital marketing & presence	Despite having a considerable large customer base, PSBs lag behind private sector banks in terms of the share of digital traffic. Ease agenda expects banks to improve presence, marketing, and social media engagement on the internet. Highlights of this action point are: 1. Strengthen online presence through strategies such as website performance improvement, search engine optimization (SEO), social media marketing and search engine marketing (SEM) 2. Performance will be measured through: ○ Bank's presence on social media ○ Number of followers on social

SI	Theme	Action Points	Impact
			media platforms ○ Engagement with followers

SI	Theme	Action Points	Impact

		Analytics based non-credit product outreach	It suggests expansion in the scope of analytics to include non-credit deposit and third party related product offers.
			
			Highlights of the action point are:
			
			• Add new customers to deposit portfolio
			  ○ FD/RD
			  ○ Public Provident Fund
			• Increase non-interest income by cross-selling:
			  ○ Life & General Insurance
			  ○ Sovereign Gold Bond
			  ○ Mutual funds

		EASE Banking Outlets	Highlights of this action point are: 1. On-the-spot banking at frequently visited places like malls, railway stations, hospitals, etc. 2. Metro, urban and semi-urban areas to be serviced 3. Onboard new customers through these outlets 4. These outlets must be equipped with self service kiosks

SI	Theme	Action Points	Impact
			5. Offer straight through processed loans and other financial products through these outlets
		Scale-up coverage under financial inclusion products	Implementing Banks shall enhance the coverage of Atal Pension Yojana (APY), PM SVANidhi, Stand Up India scheme and Sukanya Samriddhi Yojana. Performance of the bank will also be measured against issue of RuPay cards to BSBD a/c holders.
	Institutionalising Prudent Banking	Objective risk-assessment and KRAs for risk-adjusted pricing	Highlights of the action point are: 1. Recalibrate internal credit rating system to improve features & accuracy 2. Risk scoring & categorization of high value corporate & MSME loans 3. Adherence to RAROC thresholds (RAROC: Risk-adjusted return on capital is a risk-based profitability measurement framework for analyzing risk-adjusted financial performance)

SI	Theme	Action Points	Impact
		Improved effectiveness of IT-based Early warning signal (EWS) system	this action point suggests to scale up coverage and improve the effectiveness (effectiveness meaning accuracy & timeliness of alerts) of IT-based EWS system

SI	Theme	Action Points	Impact
		Digitally-enabled actions to transform collections and improve collections efficiency for past due retail and MSME customers	This action point is a continuing priority from EASE 3.0 with the focus shifting in EASE 4.0 to digitally enabled collections for past due retail and low ticket MSME customers. Highlights of the action point are: 1. Deploy analytics-based model to predict default patterns based on customer history & suggest collection follow-up methods 2. Digital enablement of on-field collections officers through a collections app with the following features: 1. Dashboard 2. Reminder alerts 3. Recording customer behaviour & response 4. Addition of supporting documents such as image of site visited, collateral, etc, 5. Geotagging, etc.

SI	Theme	Action Points	Impact
		Long-term talent/ leadership development and succession planning	Banks should focus on a longer-term/continuous view of leadership development through an intensive competency management process. Highlights of the action point are: 1. Identification & mapping of critical profiles 2. Building leadership pipeline through Board - approved succession planning system 3. Define competencies required for critical profiles & shortlisting candidates Create Individual Development Plans (IDP) to improve the effectiveness of succession planning

SI	Theme	Action Points	Impact
		Business-outcomes focussed Performance Appraisals	Under this action point, it is prescribed that Banks should adopt a rigorous Know-your-employee (KYE) approach to develop a holistic understanding of its employees. The employees should be able to share and self-assess their key competencies through an IT-enabled mechanism such as HRMS, PMS, etc to build an organizational memory of the staff's competency. Highlights of the action point are: 1. Improve effectiveness (objectively measurable parameters) of IT-based performance appraisals for officers 2. Inclusion of Quarterly performance in APAR 3. Timely completion of appraisals (within Q1) Deploy IT - based Performance Management System (PMS) for clerical staff

SI	Theme	Action Points	Impact
		Compliance monitoring	It is a new action point introduced in EASE 4.0. The reform priority on compliance monitoring is threefold 1. Role-based ownership allocation of compliance parameters 2. Exception reports for deviations from self-reported compliance; differentiated by severity 3. Linking individual compliance scorecards to performance management processes Highlights of the action point are: 1. Centrally track and monitor individual-specific compliance record 2. Timely reporting of compliance 3. Deploy IT-based compliance monitoring tool which links individual compliance scorecards to performance management process Performance will be measured on timely submission & accuracy of compliance

SI	Theme	Action Points	Impact
		Board capacity for strategic initiatives	It suggests an increase time spent on strategy and planning related discussions by the Board through optimisation of board agenda, board feedback, and rationalization of board committees. Highlights of the action point are: 1. Ensure that the board spends most of its time on strategic and planning related activities 2. Streamline number of board sub-committees apart from those prescribed by RBI/ SEBI/ MFS/ MCA 3. Seek board feedback on functioning of the board for continuous improvement of tabled agendas

A5: Action Points of EASE 5.0

SI	Themes	Action Point	Timeline
1.	**Digitally enabled customer offerings**	**AP 01 -** Comprehensive digital banking for MSMEs (End to end digitised banking services including advances, remittances etc; Introduce digital banking solutions for value chain financing)	3 Yrs

SI	Themes	Action Point	Timeline
		AP-02 - Banking solutions for Agri value chain Introduce and promote digital banking offerings across agricultural value chain Including crop advisory and predictive alerts, insurance, government benefits and schemes, short term financing for purchase of fertilizer and renting of equipment, integration with e-commerce marketplace for selling of agriculture produce, value chain finance.	2 Yrs
		AP-03 - Digital-only products and services Introduce and promote digital-only products and services for retail and MSME customers. e.g., personal loan at the point of sales, virtual debit or credit card, current and saving account opening with End-to-End digitalised process, ATM withdrawal without a card, QR code-based payment solutions.	1 Yr
		AP-04 – Digital Marketing for enhanced customer engagement Carry out targeted, personalised online marketing campaigns to reach customers active on the internet through various online channels viz Search engines, social media, dedicated digital ad networks to	2 Yrs

SI	Themes	Action Point	Timeline
		increase digital-driven sales.	
		AP-05 - Service excellence through digitally driven customer advocacy & feedback Set-up mechanisms to capture customer experience and feedback across physical and non-physical touch-points e.g. mobile app, call center, branches, ATMs, website. Also embed customer experience and feedback in performance assessment of employees with customer-facing roles and relevant management positions.	1 Yr
2.	Big Data & Analytics	**AP-06 - Setting up specialised analytics Function** Set up dedicated analytics vertical with team members from diverse backgrounds and KPIs linked with the success of analytical initiatives	2 Yrs
		AP 07 - Analytics to drive customer retention Reduce inactivation and attrition of high-value customers using data analytics* on internal database and external triggers and also increase product penetration	2 Yrs

SI	Themes	Action Point	Timeline
		AP 08 - Micro-segment strategy & stress-testing Conduct stress testing at granular micro-clusters in retail and MSME loans with an analytical derivation of the probability of default and expected credit loss. Also Incorporate insights from stress-testing into loan portfolio actions	1 Yr
		AP 09 - Digital & analytics driven collections Develop a single view of legal proceedings related to loan recovery, including integration of loan related information from internal and external data sources.	1 Yr
		AP 10 - Early detection & prevention of frauds Improve and expedite detection and mitigation of frauds using data analytics. Also Track fraud incidences with linkages to employee compliance	1 Yr
3.	**Modern Technology Capabilities**	**AP -11 Customisations in mobile banking for different segments** Improve performance and reliability of digital payment transactions e.g. Technical decline of payment transactions Initiate partnerships with third-party digital	1 Yr

SI	Themes	Action Point	Timeline
		platforms (e-commerce, travel aggregators) to integrate banking services in their customer journeys	
		AP-12 Integrated inbound & outbound contact centre with other service channels for seamless interactions	2 yrs
		AP-13 Building cross-functional teams for faster implementation Set up cross-functional teams across departments with shared employee KPIs and accountability, and common objectives and performance evaluation parameters of digital initiatives enabling faster decision making.	1 Yr
		AP-14 Open API banking for integration with new-age businesses	3 Yrs
4.	**Collaborative and Development Focused Banking**	**AP-15 Broadening & deepening co-lending partnerships** Leverage co-lending partnerships for agriculture and priority sector lending and Define SOPs for underwriting	2 Yrs
		AP-16 Collaboration for adoption of cloud	3 Yrs

SI	Themes	Action Point	Timeline
		technology Reduce banks' IT teams' involvement in infrastructure and on-premise facility management by taking advantage of cloud adoption	
		AP-17 Partnering with Account Aggregators, and enhanced data privacy Partner with Account Aggregators (AA) as Financial Information User (FIU)	2 Yrs
		AP -18 Deepening financial inclusion in rural & semi-urban areas Engage with customers to improve on digital financial adoption such as on-boarding on the mobile app, customer-initiated financial and non-financial transactions via mobile app in semi-urban and rural areas. Give micro loan offers to customers availing direct benefit transfers	1 Yr
5.	Employee Development & Governance	**AP-19 Employee-centricity with a focus on satisfaction & engagement** Know Your Employee: Build a database for core skillsets of employees assessed through technology	1 Yrs

SI	Themes	Action Point	Timeline
		driven platform and used for data-based HR decision making, including postings and transfers Conduct periodic employee engagement surveys to identify interventions for enhanced employee engagement, development, and performance	
		AP- 20 Employee development through learning excellence Enhanced employee learning with personalised learning plans linked with employee role, performance, skill gap, etc. Identify employee specific learning requirements through analytics and integrate with the Performance Management System (PMS)	1 Yr
		AP -21 Promote gender diversity Promote gender diversity, especially in senior roles, and implement employee convenience-focused initiatives viz transfer policy, flexible working hours, separate washroom facility, etc	3 Yrs