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Impact of Business Strategies on Bank Profitability

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14.1. Introduction

In the current context, profitability of banks has been a major challenge owing to increasing competition, rising Non-Performing Assets (NPAs) and the impact of unforeseen factors. This has resulted in the increased focus on business strategies that have an impact on bank profitability. One of the major factors behind the erosion of profits is the unmitigated risk appetite of banks. Suitable business models that ensure profitability needs to be adopted by banks. The importance of appropriate strategic decisions has been summed up eloquently by Shri Shaktikanta Das, Governor, Reserve Bank of India as follows:

"Business models and business strategies of individual entities should be conscious choices that are adopted following a robust strategic discussion in the Board, after considering all relevant aspects. Businesses should avoid aggressive short-term reward seeking culture, without regard for the build-up of excessive risks in the balance sheet. The common characteristics of some inappropriate business models or strategies that are observed include:

- Inappropriate funding structure;
- Building asset liability mismatches which are highly risky and not sustainable;
- Unrealistic strategic assumptions, particularly excessive optimism about capabilities, growth opportunities and market trends which may lead to poor strategic decisions that imperil business model viability; and
- Over-focus on business considerations with neglect of risk, control and compliance systems." (Das, S., 2022).

The major aim of this chapter is to guide the banking industry to articulate appropriate business strategies to enhance profitability in the given changing macroeconomic and business conditions. It captures the key points from the Speeches of RBI/Literature, regulatory changes on priority sector developments, MSME, agri businesses, BC models, which could be explored to strengthen lines of businesses that could be tapped to enhance profitability. There is a need to galvanize the strengths of evolving technology tools like Artificial Intelligence, machine learning, next gen tools have been referred as future guiding tools to better the operating ecosystem.

14.2. Macroeconomic Trends and Impact on Bank Strategies

What is an effective business strategy? According to Michael Porter, mere operational performance may not lead to a great strategy. The goal of strategy is to deliver greater value to customers at a lower cost which will lead to superior profitability. The logic cited by Porter is about providing greater value whereby a firm can charge premium prices while better operational efficiency results in reduced costs. Interestingly, the role of purpose in strategy has been well acknowledged by researchers (Malnight et al., 2019). Firms have long been encouraged to build purpose into what they do. Instead of

aggressively fighting for market share through price competition, the best firms use a sense of purpose to redefine the playing field. A purpose driven approach enables firms to rethink their business models, respond to current trends by creating more holistic value propositions, and imbibe purpose across the various departments of the firm. A comparison in the practices of the most profitable banks reveals several interesting approaches in their business strategies.

The recent pandemic crisis caused by Covid 19 has prompted firms (and banks) to be in a state of urgency for quickly deploying innovative solutions to solve emerging issues and challenges. The profitable banks have leveraged dynamic capabilities to create innovative products, collaborate with partners to build better business models and adopt latest technological tools to get ahead of the competition. Dynamic capabilities and strategy have a symbiotic relationship. This has been explained as: "a good strategy has (1) a diagnosis, (2) a guiding policy, and (3) coherent action. It is clear that this taxonomy interacts with the three clusters of dynamic capabilities: sensing, seizing and transforming. Sensing contains a strong element of diagnosis which is important to strategy. Seizing needs to be connected to both a guiding policy and coherent action. Transforming that protects and enhances value requires a guiding policy and coherent action" (Teece, 2014; p. 341). Banks have realized that they need to proactively manage their balance sheets with respect to profitability in order to ensure their competitiveness. Accordingly, the best performing banks have taken immense efforts in order to sense, seize and transform to ensure sustained profits during volatile and uncertain market conditions. These banks have not taken digitalization as a threat but developed and implemented suitable business strategies to capitalize on digitalization as an opportunity for the bank. This chapter is an attempt to understand the type of tactics adopted by banks of different ownership types to manage risks as well maintain solvency and higher profitability. This will enable us to link strategy with profitability on a risk- return axis. Accordingly, we have examined the changing business environment faced by Indian commercial banks due to digitalization, path of transformation towards higher profitability, effective management of risk through adoption of risk culture, and importance of key decision variables to enhance risk adjusted profitability.

14.3. Digitalization – A Need for New Business Models

Digitalization has been transforming industries and banking has also undergone its impact. The impact of digitalization has resulted in a shift in the business model from a branch-based approach to an omni-channel based approach. Digital lending has been touted as a trillion dollar opportunity by Boston Consulting Group (BCG, 2018). Profitable banks have taken intense efforts at sensing the opportunity presented by increased digitalization and launched innovative digital products to enhance profits. This warrants better market sensing and customer tracking processes that permit them to collect greater and better information about customer requirements, competitor activities, and market movements and opportunities through increased market knowledge and the understanding of underserved customer groups (Arunachalam et al., 2020). Banks have leveraged sensing capabilities for identifying more value-maximizing new product opportunities and thus allocation of resources to the development of appropriate new products. In order to improve profitability, banks are using data analytics to build more intricate customer profiles which helps them to customise need based financial products and services as per the customer's context. The use of digitalisation for seamless delivery of services is helping create customer delight (e.g. pre-approved personal loans available on a single click through online banking platforms). The portfolio analysis of profitable banks shows that the emphasis has shifted from corporate lending to focus on retail and MSME clients.

In order to promote digital products that are delivered with quick turnaround times (e.g. housing loans, vehicle loans, business loans, etc.), banks have been engaged in creating suitable ecosystems. Banks are generating better profits through pioneering competency in Analytics, Artificial Intelligence and Machine

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Learning. These advanced technologies are being deployed for better service outcomes and relationship management, real time risk analysis and mitigation and make a positive impact on the bank's strategy. Banks are partnering with a host of firms to gain access to suitable resources. This calls for suitable changes in the routines and rituals to ensure more effective resource allocation processes whereby all ecosystem partners can be served well (Linde et al., 2021).

The rise of frauds in the banking sector in India has been denting the profits of banks and despite stringent measures in terms of audits, the problems have been mounting for banks (RBI, 2016). Therefore, in order to ensure better profitability, the banks have built more effective early warning systems with regard to cybersecurity threats and ensure compliance with the RBI Cyber Security Framework. These banks have taken several measures to build robust fraud detection systems and also roped in their employees in order to step up vigilance measures. Further, these banks have initiated robust routines for off-site monitoring of the transactions that cover all banking transactions for ascertaining any suspicious or dubious transactions. The modus operandi of frauds are studied, and these are documented and stored in an online database for the benefit of the bank's employees to enhance preventive vigilance. Technology has been extensively used in the bank's operations with specific tasks being performed on suitably designed technology platforms. Technology based initiatives have helped profitable banks undertake more effective monitoring of the cases in stressed accounts for ensuring better loan recovery.

The Reserve Bank of India (RBI) regulations lay emphasis on priority sector lending (RBI, 2020). The profitable banks have adopted appropriate business strategies to ensure compliance with the regulations related to priority sector lending keeping in focus the imperative of profitability. In order to target economically disadvantaged customers prudently (with regard to the credit risk), profitable banks have focused on gold loans for secured lending at reasonably attractive interest rates. To ensure good outreach with the communities, banks have built dependable teams of business correspondents and set up customer service points in areas where branches are not viable. The regional language based mobile apps have ensured easy access for rural MSME customers and farmers. Specialized products for dairy farmers, agri-gold loans, advisory services, and online market places for agricultural products have helped to make the right impact in agricultural segment.

14.4. Business Strategy, Digitalization and Profitability Framework

Digitalization has resulted in customers being offered more choices and take more informed decisions while choosing a bank's products which has meant that the traditional transactional customer value propositions are being redefined with multidimensional value propositions. Therefore, banks may need to undergo strategic renewal through digital transformation of business models and undertake a wider range of processes (Warner and Wager, 2019). It needs to be noted that digital transformation is fundamentally not about technology, but about strategy, meaning that senior leadership in the banks needs to focus on business model innovations, structures and processes that optimize customer needs and experiences (Rogers, 2016). The role played by leaders assumes immense importance in order to ensure effective transformation of the bank. Leaders need to adopt a future-oriented approach by explaining the significance of the digital business model's goals, processes, rituals, and metrics that will be important in a digital world (Schoemaker et al., 2018).

The profitable banks have transformed themselves to capitalize on the opportunity presented by digitalization. Some banks have launched smaller, sales-oriented and digital branches (also called e-lobby); Business Banking Branches for catering to MSME advances; and a more cohesive BC Model. Further, profitable banks have transformed in order to enable digitization of the customer journey across asset and liability products segment. The profitable banks have created a meaningful presence on social media. This involves the bank

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making its official presence felt on all major social media platforms viz. Facebook, Twitter, Instagram, YouTube and LinkedIn. The visitors on these sites may get engaged with the bank's offerings through a digitally assisted dialogue, and participate in online contests, events, etc. The banks can leverage this opportunity to interpret the brand perception among customers and gain competitive intelligence to increase business prospects through social media. Further, profitable banks are assessing the consumer's sentiment with regard to the existing or new products and analysing the expectations of customers in banking products and services. These banks have been engaged in launching targeted digital marketing campaigns on social media handles and for maximum reach on products / services / offers and sign up new customers along with improved search engine visibility and enhanced website traffic. In order to facilitate higher share of the customer's wallet, profitable banks have made e-commerce business tie-ups across hospitality, entertainment and health sectors with key market players. Profitable banks have established internal processes to create 'Customer Service Index' for classifying branches based on the quality of customer service. Technology-enabled approach for opening new accounts in most customer categories quickly and efficiently have been made feasible using image-based processing tools along with Video KYC norms. In order to ensure competitiveness vis-à-vis fintechs, profitable banks are investing in a collaborative approach to create innovative business models, open applications, agile processes and differentiated products to attract, connect, and engage with customers. The term fintech refers to the integration of technology into delivery of financial services to improve the delivery and reach of such products and services.

Digital HR tools have been implemented to make it easy for employees to play their respective roles in transformation of the bank. While traditionally target setting for employees was based on a top-down approach, it is now being done with the help of digital tools using a scientific approach and algorithmic validations. This helps in combining the top-down and bottom-up target setting mechanism thereby ensuring involvement and feedback from all stakeholders in the target setting process. This is illustrated in Figure 1.

Banks must identify data that can enhance or elevate their key performance indicators (KPIs) through machine learning. Banks can analyse the identified data streams and build artificial intelligence systems for better decision making by the leaders. A comprehensive data management plan needs to be put in place to ensure that data is managed as an asset (Kiron and Schrage, 2019). For example, one of the transformations that profitable banks have undertaken successfully is the document management system to facilitate digitalization. Document Management Systems (DMS) have become a part and parcel of banking operations. DMS includes - digitalization of documents for e-office operations, appropriate storage and retrieval systems. The key benefits of DMSs are digitalized document systems with easy management and access for employees as well as greater security and reduced physical storage space. Profitable banks have invested in designing and implementing a digitised process for back office operations which currently employ large manpower for doing routine jobs, so as to release the manpower and to improve the operational efficiency in terms of cost, TAT (Turnaround Time), tracking capabilities and contain operational risk. The monitoring through technology has been extended to Business Correspondents (BCs) as well by profitable banks. A tech-based BC monitoring mobile app is being used for paperless inspection of BCs, geotagging, social audit, real-time MIS of the audit coverage, risk categorization, preventive vigilance and early warning signal generation in case of irregularities at BC points. In order to ensure real time tracking and monitoring of operations, profitable banks have instituted online self-audit by branches and vetting by controllers. Banks like SBI as part of Risk Focused Internal Audit (RFIA), the internal audit department conducts various audits, viz. "Credit Audit, Information Systems Audit, Cyber Security Audit, Home Office Audit / Audit of foreign offices), Concurrent Audit, Foreign Exchange Management Act (FEMA) Audit, Audit of Outsourced Activities of the bank, Expenditure Audit and Compliance Audit" (Source: sbi.co.in).

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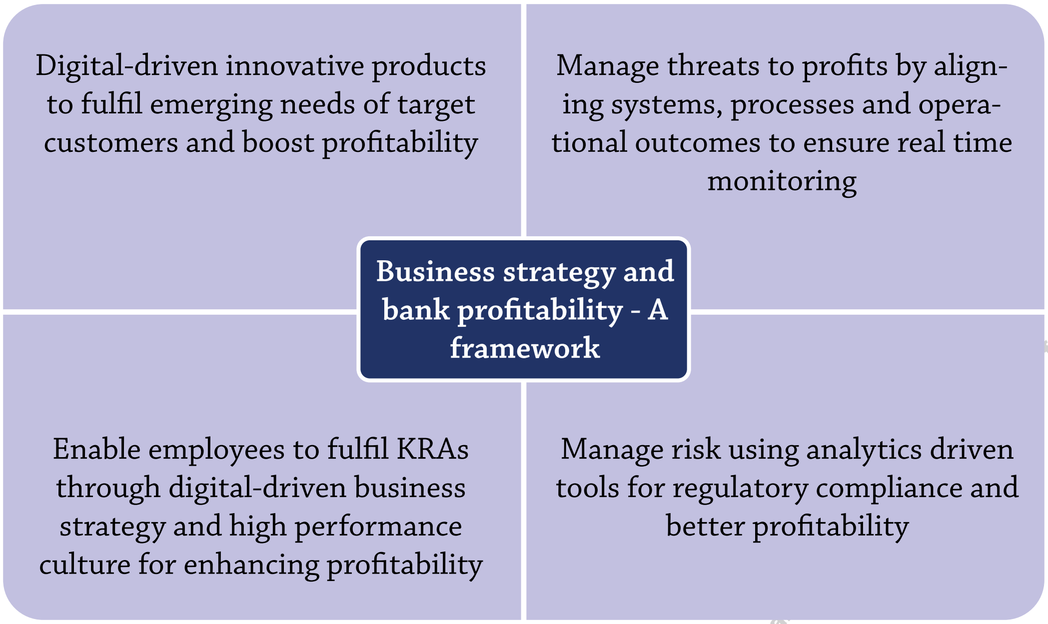
FIGURE 14.1
Business Strategy and Profitability – A Framework



Source: Authors own illustrations

Digital and technology-based tools help to identify Related Party Transactions and detect diversion of funds. The Cost-to-Income Ratio tool helps manage branch-level changes in product mix and expenditures to maximise profits. The Early Warning System (EWS) is integrated with the centres making outbound calls thus reducing stress in loan accounts. Banks today need to build suitable data through a governance framework with global standards to ensure readiness for imminent laws / regulations. Fairness, Ethics, Accountability & Transparency (FEAT) document and Explainable AI are being adopted to ensure ethical model building. Profitable banks have adopted next-gen capabilities such as Deep Learning, Cloud-Based Services, Prescriptive Analytics, and Real-Time Analytics in order to create models combining risk, activation and spend analysis into a single, holistic model.

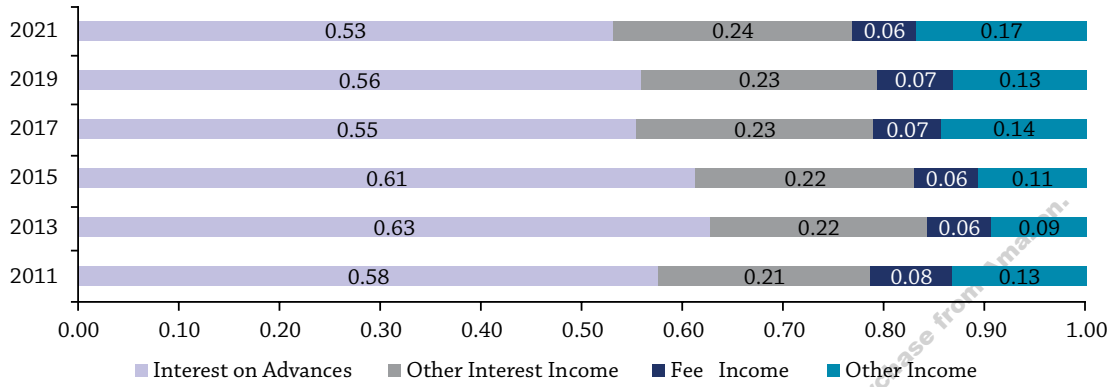
A strategic framework like one presented in the Figure 14.1 enables to structure business thinking and guide businesses as they grow and accomplish their mission. It is equally important to address both risks as well as opportunities to ensure sustainable business.

14.5. Risk Adjustment in Business Strategy-Data Analysis and Profitability Roadmap

Risk adjustment is key for setting good business strategy. This has been recognized by institutions that follow best practices along with a good risk management culture. Business growth strategies need to be linked with risk as banks require to proactively remain responsive to the market expectations to ensure continuous supply of equity capital from shareholders. In a recent speech, the Reserve Bank India Governor, Shri. Shaktikanta Das has urged the Indian commercial banks to remain "watchful of the evolving macroeconomic situation, including global spill overs and take mitigating measures proactively so that the potential impact on their balance sheets is minimized and financial stability risks are contained." (The Week, 2022). It is expected that banks with a more diversified loan book and income stream, and equipped with more advanced digital strategy will be able to keep a positive business outlook. The following section of the chapter investigates the relationship between the changing

FIGURE 14.2

Income Diversification Pattern of Indian Banks



Source: Chart prepared by the authors based on panel dataset of 31 public and private sector banks over the time period of 2011 -2021. The audited financial data was obtained from Ace Equity Database.

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patterns of the banks' income sources and their risk adjusted profitability.

The current business strategies of the banks reflect a constant shift in income structure. Interest income is still the most important revenue source in the industry's income structure, but it has been declining in recent years. As can be seen from Figure 14.2, the revenue share of interest on advances has fallen from being 63% in 2013 to 53% in 2021. This demonstrates that non-traditional activity remains a viable option for Indian commercial banks. The subset period analysis is based on a panel dataset of 31 Indian commercial banks (12 public sector, 10 new private and 9 old private banks) over twelve years (2010 to 2021). We have a balanced panel dataset, consisting of 347 observations which are divided into public, new private and old private banks.

Markowitz (1952) first introduced the benefits of diversification in portfolio selection. Later, this was applied to the banking sector. Doumpos (2016) found a positive relation between income diversification and the stability of banks across countries and concluded that banks in less developed economies benefit more from diversification activities than banks in advanced economies. Chiorazzo (2008) observed that income diversification increases risk-adjusted returns (which reduces instability). Hidayat et al (2012) found product diversification increases financial stability for small banks but reduces stability for large banks. In a McKinsey & Co. report, Ganguly et al. (2017) have highlighted the significant benefits of digitalization in banks with respect to customer experience, revenue and cost. The authors argue that a risk function with the support of technology provides better monitoring and control, and facilitates more active regulatory compliance.

The share of non-interest revenue in overall bank revenue is increasing as the banking sector's deregulation and growth into other type of enterprises continues. Following the global financial crisis, research has increasingly focused on the benefits and drawbacks of universal banks' involvement in proprietary trading and other securities market activity. Sanya and Wolfe (2011) study revealed that income diversification assists banks to increase profits and reduce business risks. Rossi et al. (2009) and Lee et al. (2014) also found evidence that bank risks were reduced through revenue diversification and through betterment of bank performance.

The impact of non-interest revenue on the performance of banks, particularly the stability of their overall revenues and profitability,

TABLE 14.1

Risk, Capital and Business Performance Position of Selected Scheduled Commercial Banks in India (Per cent)

Bank	*Year*	*Group*	*Credit Density*	*Credit Growth*	*CD Ratio*	*GNPA*	*NNPA*	*Tier 1*	*ROA*	*ROE*	*RORWA*
Axis	2018	New Pvt	99.18	18.02	98.72	7.38	3.69	13.11	0.07	0.77	0.10
Axis	2019	New Pvt	94.10	12.63	91.99	5.70	2.23	12.70	0.67	7.65	1.06
Axis	2020	New Pvt	91.48	15.06	90.78	5.07	1.63	14.60	0.22	2.44	0.35
Axis	2021	New Pvt	88.93	8.94	89.75	3.94	1.14	16.60	0.75	7.64	1.28
BOB	2018	PSB	99.71	11.65	72.09	12.10	5.40	10.46	-0.26	-4.3	-0.4
BOB	2019	PSB	90.11	10.57	72.75	9.74	3.40	11.55	0.14	2.25	0.2
BOB	2020	PSB	90.08	45.91	72.60	9.49	3.17	10.71	0.09	1.49	0.1
BOB	2021	PSB	88.53	2.36	72.62	8.83	3.08	13.47	0.12	1.98	0.2
Canara	2018	PSB	94.66	11.61	72.80	11.88	7.48	10.30	-0.67	-13.7	-1.13
Canara	2019	PSB	85.10	12.05	71.46	8.83	5.37	9.04	0.08	1.78	0.15
Canara	2020	PSB	87.51	1.00	69.14	8.24	4.23	10.12	-0.28	-6.1	-0.53
Canara	2021	PSB	86.53	47.84	69.14	8.94	3.82	10.18	0.28	6.07	0.49
Federal	2018	Old Pvt	65.84	25.39	83.07	3.00	1.69	14.18	0.71	8.58	1.45
Federal	2019	Old Pvt	62.40	19.86	82.69	2.92	1.48	13.38	0.86	9.96	1.81
Federal	2020	Old Pvt	60.25	13.27	82.00	2.84	1.31	13.29	0.90	10.97	2.05
Federal	2021	Old Pvt	59.70	8.54	78.70	3.41	1.19	14.20	0.85	10.52	2.04
HDFC	2018	New Pvt	122.10	19.57	88.79	1.32	0.43	13.22	1.86	18.43	2.17
HDFC	2019	New Pvt	118.14	24.17	94.22	1.39	0.44	15.78	1.87	17.05	2.17
HDFC	2020	New Pvt	104.38	20.07	91.05	1.43	0.50	17.02	1.90	16.54	2.50
HDFC	2021	New Pvt	99.81	13.57	88.87	1.53	0.58	17.33	1.88	16.50	2.69
IDBI	2018	PSB	127.15	-10.0	69.31	27.95	16.69	7.73	-2.29	-47.0	-3.72
IDBI	2019	PSB	100.68	-14.5	64.61	27.47	10.11	9.13	-4.47	-61.9	-10.14
IDBI	2020	PSB	100.81	-11.5	58.43	27.53	4.19	10.57	-4.13	-42.9	-9.81
IDBI	2021	PSB	100.61	-1.30	55.55	22.37	1.97	13.23	0.48	4.85	1.12
SBI	2018	PSB	76.54	3.33	72.01	10.85	5.69	10.53	-0.12	-2.2	-0.28
SBI	2019	PSB	71.50	13.61	75.73	7.43	2.97	10.78	0.08	1.48	0.19
SBI	2020	PSB	74.27	6.62	72.52	6.07	2.20	11.24	0.45	8.32	1.03
SBI	2021	PSB	73.87	5.32	67.30	4.95	1.48	11.70	0.54	10.13	1.31

Source: Authors' own calculation based on Audited Financial Reports and Basel 3 disclosure of the banks.

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has become an emerging topic of interest for researchers in recent years. In this section, we will examine if there is a link between the percentage of non-interest revenue in a bank's overall income and the volatility of its profitability. The goal is to see if the percentage of non-interest revenue in a bank's overall income has a direct impact on its profitability. This way, it may be assessed indirectly if commercial banks' involvement in the investment banking market provides diversification benefits or increases risk for the banks.

Basel 3 regulation stipulates that the performance of banks should be adjusted for risk for a fair assessment. In this context, we have looked at business growth strategies, leverage, asset quality, and credit risk and capital position of selected commercial banks in India. Their key performance parameters are summarized in Table 14.1. It is quite evident that Gross Non-Performing Assets (GNPA) and Net Not Preforming Assets (NNPA) as well as Credit Density (credit risk weighted assets to gross advances) that reflect the embedded credit risk

positions can significantly affect the level of return on equity and return on assets.

Credit Deposit Ratio (CD) represents how much a bank lends out of the deposits it has mobilized. A higher ratio indicates greater liquidity and more dynamic banking activity. The banks' level of risk taking is reflected in GNPA, NNPA and Credit Density Ratio. Higher these ratios, greater is its exposure to credit risk. Moreover, there is an interconnectedness between CD ratio, credit growth, credit density and bank performance strategies. It is prominent from the below table that these business strategies and awareness about business risks varies across banking groups.

Some banks are consciously managing their portfolio risk, leverage and growth targets, and are thus able to successfully maintain positive and stable performance (in terms of ROA and ROE). However, there are banks who have failed to control the risk in their loan portfolios and ultimately end up with higher credit density, lower credit growth (or even negative), higher NPAs, greater loss provisions and hence lower returns. We have also estimated risk adjusted return in terms of Return on Basel 3 Risk Weighted Assets (RORWA) that gives us a better view of their performance on a risk adjusted basis. As evident from the numbers, the risk culture characteristics and the bank's 'attitude' towards the risk culture may differ. Consistent with regulatory expectations, a good risk culture in banks is reflected in higher profitability ratios, bank stability, solvency, low default risk and good governance (Bianchi et al., 2016; Agarwal et al., 2019). The metric return on risk weighted assets (RORWA) is a powerful risk measurement tool that assists banks and financial institutions to evaluate and compare business performance in risk return axis. Accordingly, a bank can evaluate actual performance of its various business segments and ultimately trace the contribution of each segment on the basis of Return on Risk Weighted Assets.

We have further extended this work to investigate bank level performance to identify and assess key strategic variables. For this, we have also assessed how banks' financial performance is influenced by sources of income, and has been captured via the Dynamic Panel GMM estimation method. We have adopted two step difference GMM approach introduced by Arellano and Bond (1991). The functional specification of the model has been given below.

$$\Delta y_{i,t} = \alpha_1 \Delta_{yi,t-1} + \alpha_2 \Delta x_{ki,t} + \Delta\vartheta_{it}$$

Equation 14.1

Where y_{it} represents the dependent variables defined as return on risk weighted assets (RORWA) and x_{it} captures the k regression factors that includes earnings diversification, costs, liquidity and asset quality. The error term is represented by symbol ϑ_{it}. The lagged dependents have been used as instruments. The differenced GMM not only takes care of panel endogeneity but also tackles heterogeneity and autocorrelation issues.

TABLE 14.2

Summary Statistics

Variable	*Observations*	*Mean*	*Standard Deviation*	*Minimum*	*Maximum*
RORWA	344	0.0082	0.02114	-0.10141	0.06337
CASHTA	344	0.0784	0.03196	0.02791	0.24358
LNBUSS	344	14.556	1.41036	10.2234	17.9452
COSTINCR	344	0.5286	0.13928	0.29126	1.4122
NONINT_INTINC	344	0.1852	0.15113	0.04992	1.0476
GNPAR	347	0.0553	0.05562	0.0015	0.2795

Note: RORWA=Return on Risk Weighted Assets (Net Profit/RWA); CAHSTA=Cash to total assets (proxy liquidity position); LNBUSS=Natural log of total business (deposits & advances); CONSTINCR=total cost to total income ratio (reflects management of cost efficiency); NONINT_INTINC=Non interest to interest income (captures income diversification); GNPAR=Gross Non Performing Assets to Gross Advances (captures asset quality or credit risk in business).

Source: Authors' calculation.

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Table 14.2 provides summary statistics of key variables used in the multivariate analysis. The multivariate bank performance analysis is based on panel dataset of 21 Indian commercial banks (12 public sector, 10 new private and 9 old private banks) over 12 years (2010 to 2021).

The regression results are presented in Table 14.3. The reported Arellano-Bond Generalized Methods of Moment (GMM) results are two step differenced estimates with one period lag of the dependent variable.

TABLE 14.3

Arellano-Bond Dynamic Panel Data Estimation

Factors	*Dependent: RORWAt*
RORWAt-1	0.1635***
	(5.20)
LNBUSS	-0.006**
	(-3.37)
CASHTA	0.1135***
	(6.01)
COSTINCR	-0.065***
	(-9.13)
NONINT_INTINC	0.0394***
	(15.67)
GNPAR	-0.3270***
	(-30.38)
Constant	0.0010***
	(3.06)
No. of Observations	280
Wald Chi-square (d.f., p-value)	6071.62 (6, 0.00)
AR1 (p-value)	-1.95 (0.05)**
AR2 (p-value)	-0.08 (0.93)
Sargan J-test Chi-square (d.f., p-value)	28.30 (54, 0.998)

Source: The authors' own calculations based on panel data of public and private sector banks in India.

The figures in the parentheses are the estimated z-values. The symbols *** indicate statistical significance at 1 percent or more; ** Represents significance at 1-5 percent.

The variable LNBUSS is the natural log of total business of banks (credit and deposits) and it is a proxy for the bank size factor. In our study, ratio of non-interest income to interest income (NONINT_INTINC) has been used to measure the extent of income diversification in banks. Banks in India are now focusing on non-interest income streams to complement their earnings from traditional interest income activities. The move to digital innovation and new income streams are prominent for new generation private sector banks as well as for some leading public sector banks. It is quite evident from Table 14.3 panel GMM regression results that a greater income diversification through non interest sources can significantly improve banks' risk adjusted profitability. The return on risk weighted assets measures the banks' risk adjusted profitability. However, it is important to mention that core income generating activity of a bank is through lending and hence interest income has direct influence on bank performance. As expected, the higher credit risk of assets represented by GNPA ratio has significant negative impact on the risk adjusted profitability ratio. The higher credit risk increases loss provisions as well as credit risk weighted assets and thereby decreases the banks' risk adjusted profitability. The better liquidity and cost positions as captured by higher cash to assets ratio (CASHTA) and lower cost to income ratio (COSTINCR) positively enhances banks' risk adjusted profitability. The Sargan test confirms the exogeneity and validity of the instruments. The high Wald Chi-Square with a low p-value confirms the good fitness of the model.

14.6. Concluding Observations

The banking sector in India is going through a rapid transformation due to changing business environment as well as technology innovation. Digitalization has become deeply embedded in banking business and strategy. It has become imperative for Indian commercial banks to take a holistic view of the risk factors impacting future performance of the business. It is quite evident that banks can significantly improve their performance through income diversification, better cost management through technology innovation, improving credit risk management framework for better asset management and better liquidity management. Customer Service Index, digital market tools used by some banks is an important highlight for many

to emulate them to steer internal Customer Relationship Management (CRM) operations. Banks need to manage customer information as well as develop strategies for acquiring and retaining the customers. Our panel GMM regression results highlight that greater income diversification and focus on non-interest income can significantly improve the risk adjusted return of the banks. This can be a valuable input for the banks to work out their future strategies. This will also enable banks to manage its business risk effectively and gain market confidence.

Digitalization can be well leveraged for enhancing revenue streams while keeping the proper control over risk. It not only strengthens banks core income generation but also facilities other income (non-interest income) generating activities as well. Digital tools may be suitably designed to offer real-time credit monitoring and enable banks to reduce the unwanted exposures to delinquent borrowers. Further, digitalization can help banks to cross-sell various non-traditional products through third-party tie-ups and thereby augment revenue and profits. In this way, banks can foster better customer loyalty. It is worthwhile to mention that Non-lending activities should not substitute the core function of the bank. Internal Ratings Based models can significantly reduce margining requirements thereby boosting loanable funds and hence possible increase in profits. It is expected that the path of digital innovation will enable the banks to reach out to customers in a better manner, relieve cost pressure, improve regulatory compliance and sharpen risk management techniques.

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