Summary of Macro-Research Report, (2021-2022)

Linkages between competitive structure and financial stability: An empirical analysis of Indian Banks

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- The scope of the study has two main dimensions (1) structure and (2) strength. In the first objective, the study aims to analyse in current era, in what type of environment Indian banking sector is operating. Are they operating in a competitive environment ensuring a fair price and optimum productivity or the sector is monopoly under the shed of regulation and Government? Secondly, within the market structure what is their financial stability, what are the determinants of their financial stability, what extent the determinants of market structure are responsible to maintain financial stability are some of the questions that needs to be answered.
- Although, earlier studies try to answer whether deregulation induced competition should lead to efficiency and better performance in banking industry. But there is no indemnity that efficiency and comitative structure can assure financial stability. The potential of asset liquidity is the root cause of the financial turmoil and failure of banking structure across the globe (DeYoung and Jang, 2016). Although, we have encountered some international experience integrating liquidity risk and credit risk with financial stress of the banks but integrating the structure of banking sector with respect to consolidation of market power with financial stability through liquidity risk and credit risk management has hardly been addressed. Hence, in the second objective, the study aims to analyse how financial stability of banks is explained by liquidity risk, credit risk and key factors that determines consolidation of market power of Indian banking sector.
- The present study is expected to contribute the existing literature in several ways. Firstly, it tries to empirically investigate the structure of Indian banking sector and the factors that helps in achieving consolidation of market power in Indian banking sector. Secondly, the attempt to integrate the degree of banking structure consolidation with financial stability is a huge research gap that the study has attempted to answer. Thirdly, the use of advanced econometrics models on latest data adds to the credibility of the study and robustness to its estimates.
- The study uses annual data of Indian commercial banks over from 2009 to 2022 and the data is collected from subscribed sources of Centre for Monitoring Indian Economy (CMIE), the handbook of statistics on Indian economy.
- The data is divided into 4 samples. Sample 1 contains 12 Public Sector Banks, Sample 2 contains 21 Private Sector Banks, Sample 3 contains 33 both Public Sector and Private Sector banks and finally, Sample 4 contains 115 banks including Public Sector, Private Sector and some other banks whose data are available in CMIE database.
- Since the data of Indian banks are highly heterogeneous, the study has used Generalised

Least Square (GLS) estimates to fit the model. Since the implications of the study are model based, we have taken enough precaution for selection of appropriate econometric model and required amount of pre-estimation and post estimation test has been undertaken. To ensure robust estimates, the GLS estimates are compared with estimates of Panel Correlated Standard Error (PCSE) model.

- The study conclude that price of capital measured as ratio of bank's capital asset over total fixed asset is negatively impacting revenue of public sector banks, private sector banks as well as combining both public and private sector banks. On the contrary, it is positively impacting revenue at sector level. By decoding this variable, it is understood that increase in bank's net worth over total asset may decrease bank revenue.
- Employee cost is positively impacting revenue of banks at all levels. We may imply that Indian banking sector can absorb an increased employee expense without impacting revenue. Hence, banks may look of more investment to increase employee productivity through training and capacity development.
- Price of fund is negatively impacting revenue of public sector banks, but it is weakly significant. However, in case of private sector banks as well as for both public sector and private sector banks, it has positive impact on revenue. Hence, an increase in interest expense over total loanable fund can boost revenue of Indian public sector and private sector banks. But as a sector (by considering all banks), increase in interest expense has adverse effect on revenue. Here, policy makers and bankers may note that public sector and private sector banks may afford an increase in interest expense.
- Among the bank specific variables, risk asset is positively impacting bank revenue for private sector banks and combination of public and private sector banks. Provision has a positive impact on generating revenue. Interestingly, it is negatively impacting revenue of public sector banks. Since provisions are scaled with total asset base, policy makers may note that differential asset base may dilute the impact of provisions over revenue.
- Branch concentration is considered to be another parameter where bank's decision to increase number of branches. The study observed that except public sector banks, branch concentration is positively impacting revenue of private sector banks, combining private and public sector banks as well as for the sector itself.
- Credit risk is impacting the revenue positively across all the category of banks. Hence, increasing interest income is all time positive indicator for banking sector. All the banks must focus on maximising interest income to boost their revenue.
- The impact of liquidity risk is negative on revenue of public sector and in most of the cases it is observed as insignificant as well as with very minimal impact. Hence, the public sector banks should focus more on total loan component as compared to other banks.
- With respect to market structure, the public sector banks represent characteristics of monopolistic competition, the private sector banks exclusively as an entity operates in monopolistic competition. Since it is closer to unit, we may say it as closer to perfect competition and finally, the market structure of all banks including public, private and all the other banks is closer to monopoly.
- Further, the study finds that the market structure of both private and public sector banks closer to monopolistic competition. Since it is closer to unit, we may say it as closer to perfect competition also.

- After clustering public and private sector banks from lower quantile to higher quantiles of distribution of revenue, the H statistics is ascending from lower quantile to higher quantiles. High revenue of public and private sector banks i.e. banks with 90% and above quantile of revenue are operated in competitive market with H coefficient 0.995 (closer to one), followed by banks with 75% quantile of revenue.
- Public and private sector banks with revenue from median to bottom 10% quantile are having H coefficient around 0.6, hence, considered to be operating in monopolistic competitive environment.
- The study also cluster banks from lower quantile to higher quantiles of distribution of revenue, the H statistics is descending from lower quantile to higher quantiles. The top 10% banks i.e. banks with 90% quantile of revenue are having the H coefficient of 0.265, followed H coefficients of 0.269, 0.363, 0.450 and 0.527 by banks with 75%, 50%, 25% and 10% quantile of revenue.
- Among the banking parameters, price of capital and employee cost (i.e. price of labour) is positively and significantly impacting revenue of banks from all the quantiles of profitability. Price of fund, branch concentration and liquidity risk is having insignificant and quite minimal impact on bank revenue. Risky asset is also appearing insignificant in the findings of quantile regression.
- Secondly, the present study attempted to explore how financial stability of banks is being explained by liquidity risk, credit risk and by key factors that determines consolidation of market power. The study observed that except public sector banks, increasing price of capital is positively impacting banks financial stability. That means, public sector banks should not focus more on accumulating capital assets further. Increasing employee cost is also hampering financial stability of both public sector and private sector banks. However, it does not have any implication at sector level.
- Price of capital is negatively impacting both revenue and financial stability of public sector banks. Hence, policy makers should notice that further increase of capital asset is not going to boost either revenue or stability of public sector banks. However, price of capital is negatively impacting revenue of private sector banks and combining all private and public sector banks but impacting negatively to financial stability. Hence, bankers from private sector banks can take a note that although capital asset contributes to enhance revenue but hampers financial stability. However, at sector level, it carries a positive impact.
- Similarly, the study finds a mixed response of Price of labour i.e. employee cost on revenue and financial stability of banks. The study finds positive impact of increase in employee cost on revenue, whereas, negative impact on financial stability. Although at sector level, it has a positive impact, but public and private sector banker should notice that although increase in employee cost increases revenue but carries an inverse impact on financial stability.
- Price of fund, it is negatively impacting both revenue and stability of public sector banks, but for private sector banks, like employee cost, it is impacting revenue positively, but financial stability negatively. Among firm specific variables, risk asset is negatively impacting both revenue and stability of public sector banks, whereas, private sector banks are boosting their revenue and stability. Policy makers and bankers should notice that increasing provision over total asset is creating value for private sector banks by boosting revenue and stability.
- Interestingly, except public sector banks, branch

concentration is increasing value by increasing revenue and stability. Bankers should note that private sector banks should focus more on increased number of branches for more value creation.

- The study concluded that credit risk has a significant positive impact on both revenue and financial stability of banks of all categories. Bankers should note that increase in interest income is all time good indicator to increase banks revenue and stability for both public and private sector banks. On the contrary, banks experience mixed response for the impact of liquidity risk. Liquidity risk impacts public sector banks revenue negatively, whereas, financial stability positively. However, for private sector banks, although liquidity risk impacts revenue positively, but it impacts their stability adversely. Hence, the bankers of private sector banks should monitor it accordingly.

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