

# **Investor reaction to Bank consolidation in India**

*(Under the sub-topic: Operation of Financial Sector and Issues in measurement)*

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## **Abstract**

The objective of our research is to analyze the response of investors to bank consolidation announcements. This research paper tries to analyze the variation in financial market abnormal reaction to the bank merger news and tests if this variation depends on the bank's characteristics, including bank's performance, bank's size, bank's NPA's, etc.

The research design follows an event study methodology to find the cumulative abnormal returns specific to the event of the announcement of bank consolidation.

The results suggest that PSU Bank Index's cumulative abnormal returns were (-ve) 15% showing, on average, a negative reaction of the investors to the merger news announcement. However, the paper finds that there exists a variation in the response of investors to bank consolidation news.

The paper finds that investors infer an improvement in efficiency and gains from economies of scale for poor-performing smaller banks on consolidation. The results suggest that investors of larger banks have a negative reaction to the consolidation announcement with better-performing larger banks experiencing a significant negative reaction to the merger announcement. PSBs that are smaller in size and which had a good performance in the past have no significant positive or negative returns during the short run event window suggesting a balanced inference on the consolidation announcement.

## **I. Introduction**

Indian Banking industry has recently witnessed a set of reforms aimed at strengthening the Public Sector Banks (PSBs). One of the major reforms was the Government of India's approval to PSU Bank consolidation. Two committees in the past suggested policies for the

improvement of the banking sector. One was the Narasimham<sup>1</sup> committee report in the year 1991, which advised to merge the PSU banks to make them stronger and efficient. The other was the P. J. Nayak<sup>2</sup> panel, which suggested that the government either merge or privatize state-owned banks to achieve economies of scale and improve operational efficiency.

In line with the recommendations of previous panels, the government of India had announced the approval for the merger proposal of five of the State Bank of India (SBI) subsidiaries along with Bharatiya Mahila Bank with State Bank of India (SBI) in May 2016.

The successful merger of SBI with its' subsidiaries led to the in-principle approval of other PSU Bank mergers by the Government of India.

The Indian banking system consists of 27 public sector banks, 26 private sector banks, 46 foreign banks, 56 regional rural banks, 1,574 urban cooperative banks, and 93,913 rural cooperative banks, in addition to cooperative credit institutions.<sup>3</sup> Public-sector banks control more than 70 percent of the banking system assets. There is a need for large banks that will ensure investments and help India improve GDP growth.

The Indian government initiated the current wave of mergers in the banking sector in the financial year 2017-18. More recently, on 30<sup>th</sup> August 2019, the Finance Minister announced a big consolidation of public sector banks (PSBs): consolidating ten public sector banks into four. Consequently, in place of 27 PSBs in 2017, now there will be 12 PSBs after the latest round of consolidation of PSBs.<sup>4</sup> The Indian banking sector is also grappling with bad loans (NPAs). Recapitalization, along with consolidation, may help increase capital efficiency and further increase the ability of the banks to recover bad loans. The mergers will also help create synergies among the banks and improve the international presence of Indian banks.

Furthermore, given the recent slowdown in the Indian economy, the move can potentially boost credit in the economy (Patnaik, 2019). Others have criticized this radical step by the government since such mega-mergers reduces time left for addressing more pressing issues

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<sup>1</sup> M. Narasimham was the thirteenth governor of the Reserve Bank of India (RBI).

<sup>2</sup> P.J. Nayak was the Former Chairman and CEO, Axis Bank, and Former Country Head, Morgan Stanley. India, Mumbai.

<sup>3</sup> <https://www.ibef.org/industry/banking-india.aspx>

<sup>4</sup> <https://www.livemint.com/news/india/pnb-obc-and-united-bank-to-be-merged-nirmala-sitharaman-1567158678718.html>

like dealing with high levels of non-performing assets and slow pace of credit generation in an already slowing economy<sup>5</sup>.

The arguments not in favor of bank consolidation also suggest further erosion of the performance of banks if they merge with smaller non-performing banks. Some<sup>6</sup> suggested regional mergers as compared to the idea of creating four to five large banks for better capital allocation in banks. Others expressed their concern about implementation challenges, handling labor unrest, and dealing with the possible rise in bad loan ratios following consolidation.<sup>7</sup>

In this paper, we measure the expected gains (or losses) by looking at the stock market performance of merging banks. The paper examines the share prices and calculates the abnormal returns around the announcement of bank mergers. The paper suggests that even though the PSB index had, on average, a negative reaction on the bank consolidation announcement (Figure 1), there can be meaningful results obtained by categorizing PSBs based on size and past performance parameters.

The paper has a review of the literature in the next section, followed by research objectives and hypotheses section. Next, we have the research design and methodology section, followed by the Results and Conclusion of our study.

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<sup>5</sup> <https://thewire.in/banking/with-new-round-of-bank-mergers-is-the-govt-ignoring-lessons-from-the-past>

<sup>6</sup> Abhishek Bhattacharya, director at India Ratings & Research, expressed the view that regional mergers make more sense as compared to the idea of creating four or five large banks. That will help in better capital allocation and rationalising credit to same clients. He mentioned that unless the individual banks are sustainable on a standalone basis, the merger would only create a bigger headache for the government.

<sup>7</sup> KC Chakrabarty, former deputy governor of the Reserve Bank of India also said that a merger will only be successful if it succeeds in reducing costs. DK Mittal, former Banking Secretary, Government of India is of the view that consolidation may do nothing to reduce the amount of capital that the government needs to infuse into public sector lenders in the short term, while in the long term there will be considerable savings.

**Figure 1: Cumulative Abnormal returns of the NIFTY PSU Bank Index on the merger announcement**

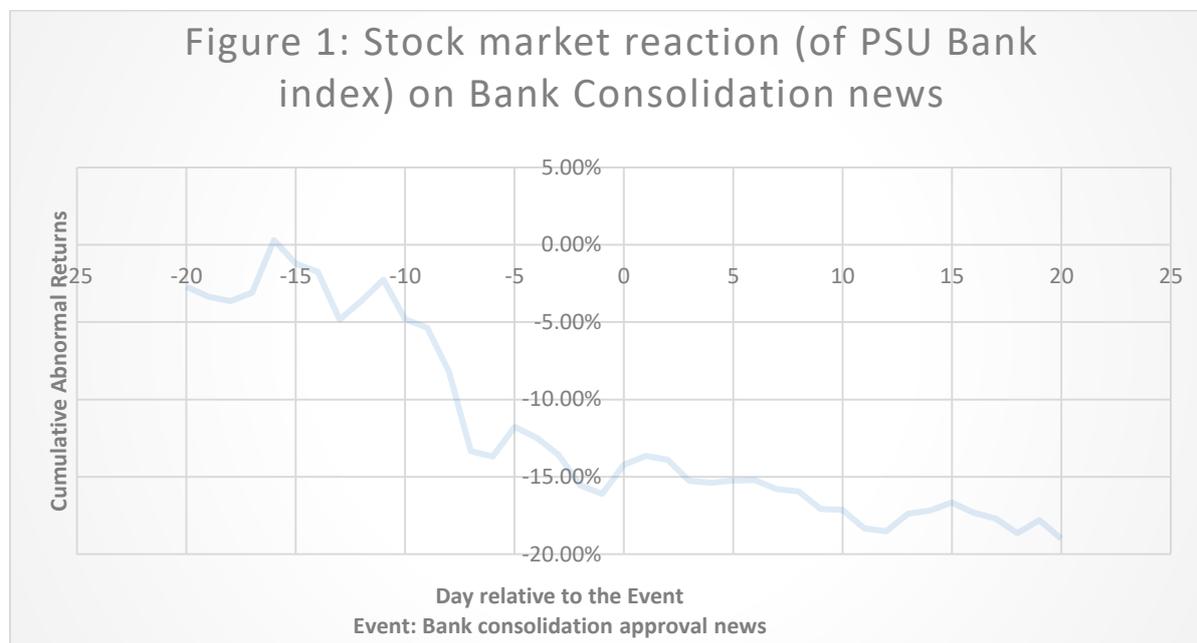


Figure 1 above shows that, on average, the PSU Banks' cumulative abnormal returns were (-ve) 15% showing the negative reaction of the investors to the news announcement.

## II. Literature review

Extant literature in the field of bank consolidation has looked at the reasons leading to the merging of banks. One of the papers which reviews the literature in depth is the work by Mohan (2005).

Mohan (2005) discusses the issues and evidence related to bank consolidation. He summarizes that bank consolidation takes place to increase shareholder value by maximizing efficiency by having economies of scale, gaining market power, a lower requirement of economic capital, increasing the size, and becoming "too big to fail."

On the other hand, he also emphasizes that the pursuit of self-interests of bank managers by building an empire through mergers may motivate mergers.

Bank consolidation may also be driven by governments trying to address distressed financial institutions. Environmental forces such as deregulation (BIS (2001)), technology (Berger and

Mester (1997)), globalization, and financial distress (BIS (2001)) propels consolidation in the banking industry.

Literature also looks into the relationship between the performance and size of banks. Research by Berger et al. (1999) suggests that there is a quadratic relationship between bank size and efficiency, with performance increasing with bank size beyond a level of size. The performance parameters such as costs as a proportion of total gross income decrease as size increases and reach their lowest level at the optimal size and then increases again (a U shaped relationship). Extant literature also finds that return on equity does not increase uniformly with size.

Berger and Mester (1997) find that environmental context such as technological progress, deregulation, etc. drive the relationship between size and performance.

Hughes et al. (1996) find that banks with large size reap benefits due to diversification. However, the study by Demsetz and Strahan (1997) suggest that consolidation may not help banks to lower their risk.

Extant literature has looked at the stock market performance of bank mergers. Studies (Hannan et al. (1989), Houston et al. (1994)) find no positive abnormal returns, Rhoades et al. (1997), Altunbas et al. (2008) find positive abnormal returns from bank consolidation for acquirers.

Havrylchyk (2004) conducts an event study to measure the stock market reaction to the consolidation of banks in Poland and find a positive abnormal reaction. Hankir et al. (2011) analyze the capital market reactions to international bank M&As and find that investors perceive gains from bank mergers through the creation of market power with the lessening of bank competition in the market. Some studies (Lepetit et al. (2004), Altunbas et al. (2008)) look at perceived gains from strategies like diversification, specialization, etc. from mergers.

The literature on the consolidation of bank mergers in India is still at the developing stage. We intend to develop hypotheses that relate the stock market performance of bank consolidation with the characteristics of the merged banks.

### **III. Research Objectives & Hypotheses**

The objective of our research is to analyze the response of investors to bank consolidation announcements. We want to check the stock market abnormal reaction to the bank merger news. We also would like to test if there is a variation in the stock market reaction (of PSU

banks) to the consolidation news and does this variation depends on the bank's characteristics such as bank's performance, bank's size, bank's NPA's, etc.

We would analyze the reaction on various news events on consolidation, be it general to the PSU Banking industry or specific to the PSU bank (PSB).

## **Hypothesis**

The pros of consolidation are many such as economies of scale, better capital efficiency, better lending ability, increased international presence, etc. However, the cons are related to resentment by the employee labor union, change in the type of business focus for better performing small banks, erosion of profits, etc.

*Hypothesis 1: The stock market reaction of the bank index should be positive to the consolidation news announcement.*

Poor performing smaller banks expect to benefit from the consolidation by achieving economies of scale, wider product diversity, better capital efficiency, and immense support in recovering the bad loans.

*Hypothesis 2: The stock market reaction of the poor performing smaller banks would be positive to the consolidation news announcement.*

Poor performing larger banks might erode their profits more due to mergers with smaller banks.

*Hypothesis 3: The stock market reaction of the poor performing larger banks would be negative to the consolidation news announcement.*

Good performing smaller banks once merged with the larger banks may have to change business focus. However, gains through economies of scale can compensate for the loss in gains due to the previous strategy.

*Hypothesis 4: The stock market reaction of the good performing smaller banks would be insignificant to the consolidation news announcement.*

The better performing larger banks may benefit by consolidation by improving their asset size, improving their global presence, etc.

Hypothesis 5: *The stock market reaction of the good performing larger banks would be positive to the consolidation news announcement.*

Figure 2 tries to summarize the Hypotheses developed.

Figure 2: Stock Market Reaction on Bank Consolidation News announcement

		SMALL	LARGE SIZE
P E R F O R M A N C E	G O O D	-	+
	P O O R	+	-

#### IV. Research Design & Methodology

We follow the event study methodology to determine the stock market reaction to the event of bank consolidation news. We find the abnormal returns, which is the difference between actual returns and expected returns. The expected returns will be calculated based on asset pricing models, such as the one-factor market model. Equation 1 provides the market model where  $R(i)$  is the daily returns of the security for the estimation period,  $R(m)$  is the daily returns of the market index for the estimation period of the event study.

$$R(it) = \alpha(i) + \beta(i)R(mt) + e(i) \dots \dots \dots (1)$$

We perform robust checks by calculating the expected returns using various other asset pricing models, such as the Fama-French 3 factor model and CAPM model<sup>8</sup>. The various bank consolidation news will be our events. For events specific to the bank merger, we will be running the event study for the banks which have announced their expected merger.

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<sup>8</sup> The results of the robust checks can be provided by the author on request

The particular event for our analysis is the Bank consolidation news announced by the Finance Minister of India on August 30th, 2019. The announcement suggested the consolidation of ten PSBs into four big banks.<sup>9</sup>

The announcement was to amalgamate Indian bank with Allahabad Bank, Punjab National Bank with Oriental Bank of Commerce and United bank of India, Syndicate bank with Canara Bank, Andhra bank with Corporation Bank and Union Bank of India.

We study the reaction of outside investors of these banks to the announcement of bank mergers. We run a short-run event study with an event window of -20 to +20 days relative to the event. We use an estimation window of -220 to -21 days relative to the event for the estimation of market model coefficients. Table I shows the estimated coefficients of the market model for the examined banks. Beta coefficients are found statistically significant in all cases.

We categorize the banks based on size and performance. The variable Return on Equity (ROE) for March 2019 measures the past performance of PSBs. We categorize the banks as poor performance if they have a negative ROE and good performance if they have a positive ROE. The categorization based on size is a relative measure of Enterprise value for March 2019. Banks that are larger as compared to the merging banks are taken as large and vice versa. Table III provides the categories for PSBs based on size and performance parameters.

We calculate the expected returns as per equation 2, with the estimated values of  $\alpha$  and  $\beta$  coefficients.

$$E(R_{it}) = \tilde{\alpha}_i + \tilde{\beta}_i R_{mt} \dots \dots \dots (2)$$

## V. Results

Table II provides the investors' abnormal returns (ARs) for the short-run event window (-20 to +20 days relative to the event). We find that the abnormal returns were significantly positive on the event day for the United Bank, Oriental Bank of Commerce, Syndicate Bank, Canara Bank, Corporation Bank, and Andhra bank. We calculate the ARs as the excess returns over the expected return. Figure 3 shows the abnormal returns during the event window for one of the banks examined. Figure 3 shows the abnormal returns for two of the PSBs for the event

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<sup>9</sup> <https://economictimes.indiatimes.com/news/economy/policy/nirmala-sitharaman-announces-fresh-reforms-special-agencies-to-monitor-loans-above-rs-250-crore-to-avert-another-nirav-modi-like-situation/articleshow/70909169.cms?from=mdr>

window showing one of the banks (United Bank; small and poor-performing) showing a positive AR on the event day and another bank (Canara bank; larger and better-performing) showing a negative AR on the event day.

$$AR_t = R_{it} - E(R_{it}) \dots \dots \dots (3)$$

The Cumulative abnormal returns (CARs) are calculated for four event windows, as described in Table III. We calculate the CARs as per equation (4).

$$CAR(t_1, t_2) = \sum_{t_1}^{t_2} AR_t \dots \dots \dots (4)$$

Table III provides the CARs for four event windows. We find that there exists a variation in the Cumulative abnormal returns obtained by the investors with the variation more pronounced for a three-day event window of -1 to +1 days relative to the event.

Figure 4 depicts the cumulative abnormal returns over the 40-day event window for 2 of the PSBs having contrasting signs (United Bank and Canara Bank).

Table V provides the CARs for the PSBs by categorizing banks into four subsets based on Size (Large and Small) and Performance (Good and Poor). We find that PSBs, which are smaller in size and had a poor performance in the past, had a superior investor reaction in the market, with CAR being 7.55% positive (10% significance) for a 3-day event window (Refer Table V). We also find that the CAR for PSBs, which are larger and had a poor performance, experienced a -7.55% returns (10% significance) cumulatively. We also find that PSBs, which are larger and had a good performance in the experience, a negative (-8.36%) cumulative abnormal return over the 3-day event window related to bank consolidation. Results suggest that the markets expect an improvement in efficiency and gains from economies of scale for poor-performing smaller banks after the consolidation. Results also confirm the hypothesis that the poor performing larger banks might erode their profits more due to mergers with smaller banks. Markets also penalize the consolidation announcement of good performing larger banks with poor performing smaller banks. The results do not provide any significant CARs for better-performing smaller banks.

## VI. Conclusion

The study shows a variation in the investors' reaction to the bank consolidation announcement. The variability in the reaction is due to the size and past performance of PSBs. The gains from

consolidation, as interpreted by the investors' reaction, is realized more by the banks, which are smaller in size and had been performing poorly. The loss from consolidation is more to the larger and better-performing merged banks. The result shows a balanced reaction from the investors for better-performing smaller banks suggesting a nullification of expected gains from mergers with the losses from losing out its' uniqueness. We do not find any significant difference in the reaction to bank consolidation news based on % Gross NPAs of the banks.

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**Table I: Coefficients of the Market model for the consolidated banks**

Table I provides the coefficients of the market model performed with bank stock returns as the dependent variable and market returns as the independent variable. The OLS estimates are calculated for the estimation period from -220 days to -21 days relative to the event day of the announcement of bank mergers.

Coefficients	Indian		United					Andhra	Allahabad	
	Bank	PNB	Bank	Oriental	Syndicate	Canara	Union	Corporation	bank	bank
$\alpha$	-0.002	-0.0002	-0.0007	0.0001	-0.0002	-0.0004	-0.0007	-0.0006	-0.0016	0.0002
	(0.0018)	(0.0016)	(0.0015)	(0.0017)	(0.0016)	(0.0016)	(0.0018)	(0.0017)	(0.0014)	(0.0021)
$\beta$	1.82***	1.51***	0.79***	1.58***	1.71***	1.70***	1.83***	0.79***	1.03***	1.37***
	(0.214)	(0.178)	(0.174)	(0.202)	(0.186)	(0.179)	(0.208)	(0.191)	(0.162)	(0.246)
R <sup>2</sup>	27.1%	26.7%	9.7%	23.9%	30.2%	31.6%	28.3%	8.1%	17.1%	13.5%
Adj R <sup>2</sup>	26.7%	26.3%	9.2%	23.5%	29.8%	31.2%	27.9%	7.6%	16.7%	13.1%

Note: \*\*\* is 1% significance level, \*\* is 5% significance level and \* is 10% significant level. Values in parentheses are standard errors of the coefficients.

**Table II: Abnormal returns for short-run event window (-20 days to +20 days relative to the event)**

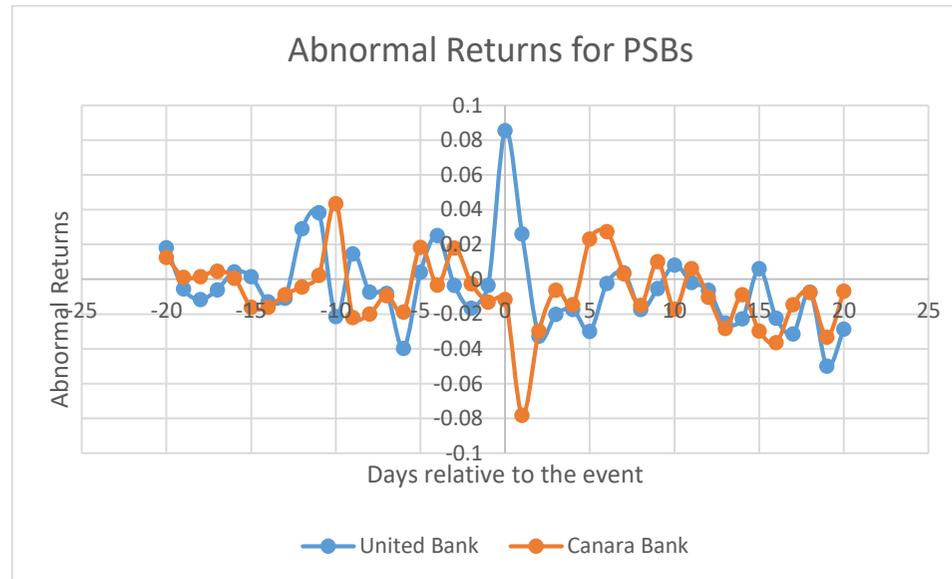
We calculate abnormal returns as per equation (3).

Days relative to the event	Indian Bank	PNB	United Bank	OrientalBC	Syndicate	Canara	Union bank	Corporation	Andhra bank	Allahabad bank
-20	0.24%	2.94%	1.82%	-3.00%	-4.62% **	1.27%	0.35%	-1.98%	-8.47% ***	-3.26%
-19	2.55%	-0.60%	-0.54%	-1.00%	0.41%	0.12%	-0.72%	-1.24%	1.03%	0.78%
-18	-2.01%	-0.02%	-1.16%	-0.86%	1.14%	0.16%	-1.67%	-2.18%	1.12%	0.05%
-17	5.30% **	0.30%	-0.59%	-0.74%	0.22%	0.47%	2.64%	-1.82%	3.04%	-0.87%
-16	3.91%	0.82%	0.43%	1.60%	0.70%	0.07%	-0.52%	-1.58%	0.44%	0.14%
-15	0.98%	-4.62% **	0.15%	2.18%	0.52%	-1.59%	-1.54%	0.91%	-2.39%	-0.19%
-14	-5.06% *	1.53%	-1.29%	-1.51%	-1.67%	-1.60%	-1.71%	-3.21%	0.36%	-1.67%
-13	-0.53%	-1.20%	-1.08%	0.59%	-0.57%	-0.88%	-0.66%	-0.55%	-1.22%	-0.95%
-12	-2.81%	0.70%	2.90%	-0.71%	0.98%	-0.43%	0.24%	-1.64%	-2.66%	1.05%
-11	-2.51%	-1.12%	3.83% *	-0.66%	-1.30%	0.23%	-1.41%	-1.76%	-0.45%	-1.70%
-10	-0.11%	3.56%	-2.14%	0.48%	-1.39%	4.36% **	1.58%	-2.44%	-0.17%	-0.64%
-9	-0.29%	-1.27%	1.47%	0.51%	0.06%	-2.19%	-0.41%	-1.35%	0.20%	-1.75%
-8	-1.59%	-2.05%	-0.74%	-2.17%	-1.19%	-2.00%	-3.20%	-0.79%	-0.97%	-1.53%
-7	-1.71%	-1.04%	-0.81%	-3.01%	-0.75%	-0.92%	-0.82%	-1.43%	-2.03%	-7.31% **
-6	-0.74%	-1.67%	-3.95% *	-1.55%	0.97%	-1.87%	0.14%	-1.73%	-2.20%	-1.91%
-5	-1.97%	2.20%	0.42%	0.19%	-1.23%	1.85%	-0.05%	-2.91%	-1.41%	0.98%
-4	5.97% **	0.17%	2.52%	1.56%	-0.43%	-0.33%	-0.43%	-1.95%	2.31%	4.82%
-3	4.00%	1.46%	-0.34%	7.17% ***	1.52%	1.81%	1.15%	2.48%	3.30% *	3.75%
-2	2.88%	-1.45%	-1.65%	-1.41%	-1.50%	-0.25%	-2.84%	-1.54%	-1.30%	-0.69%
-1	-0.96%	0.43%	-0.34%	1.11%	0.21%	-1.30%	0.54%	-1.59%	-1.25%	-1.84%
0	3.15%	-1.26%	8.55% ***	7.13% ***	5.23% **	-1.16%	-2.60%	8.62% ***	6.67% ***	3.41%
1	-8.65% ***	-5.73% **	-2.61%	-5.46% **	2.44%	-7.8% ***	-5.56% **	-1.32%	3.14%	-3.31%
2	-6.59% **	0.18%	-3.26%	-2.18%	-0.11%	-2.97%	-0.60%	-4.53% *	-2.48%	-0.14%
3	-0.20%	1.94%	-2.01%	-2.25%	-1.46%	-0.62%	1.52%	-1.75%	-1.32%	-0.04%
4	-2.86%	-1.04%	-1.73%	-1.58%	-2.33%	-1.46%	-0.65%	-1.88%	-2.76%	-2.29%

5	-0.22%	1.32%	-2.98%	-0.51%	-1.68%	2.33%	1.21%	-1.59%	-0.53%	-0.25%
6	0.51%	3.08%	-0.24%	2.48%	2.03%	2.75%	5.32%**	1.53%	3.08%	0.65%
7	0.25%	0.26%	0.38%	0.46%	0.04%	0.33%	-0.05%	-0.79%	-0.79%	0.81%
8	-2.20%	-0.74%	-1.72%	-3.60%	-2.71%	-1.49%	-1.21%	-1.26%	-0.87%	-1.45%
9	0.50%	0.45%	-0.54%	-0.66%	-1.14%	1.02%	0.86%	0.82%	0.93%	0.60%
10	0.26%	-0.81%	0.82%	-0.23%	2.26%	-1.71%	-1.91%	-0.74%	-0.07%	-0.10%
11	-0.58%	0.56%	-0.17%	-0.98%	-1.19%	0.61%	0.58%	-0.17%	-2.89%	-3.09%
12	-1.32%	0.31%	-0.61%	-1.28%	-1.21%	-1.02%	-0.01%	-0.52%	0.21%	-2.47%
13	-8.45%***	-1.96%	-2.51%	-0.43%	-6.31%***	-2.8%	-2.53%	-1.39%	-3.44%*	-5.94%*
14	-7.15%***	-2.58%	-2.22%	-3.7%	-2.56%	-0.88%	-2.65%	-4.07%*	-1.60%	-1.48%
15	-2.48%	-0.90%	0.62%	-1.69%	-1.80%	-2.97%	-1.71%	0.69%	-0.96%	-1.14%
16	-1.65%	-2.46%	-2.22%	-0.97%	-0.50%	-3.64%	-3.76%	-1.74%	-0.84%	-2.02%
17	-4.82%*	-2.52%	-3.13%	-1.64%	-1.26%	-1.44%	-1.73%	0.33%	-0.90%	-0.39%
18	-2.64%	0.85%	-0.72%	-0.08%	-1.88%	-0.76%	-0.22%	-4.63%*	-0.02%	-1.48%
19	-5.74%**	-0.94%	-4.99%**	-1.85%	-6.3%***	-3.31%	-5.1%**	-2.35%	-5.88%***	-2.64%
20	-4.00%	-3.87%*	-2.86%	-0.76%	-1.13%	-0.68%	-1.83%	-2.23%	-1.63%	-1.81%

Note: \*\*\* is 1% significance level, \*\* is 5% significance level and \* is 10% significant level.

**Figure 3: Abnormal returns for PSB bank Investors**



**Table III: Cumulative abnormal returns for short-run event windows**

The market model calculates the expected return. The abnormal returns are calculated as the difference between actual returns and expected returns.

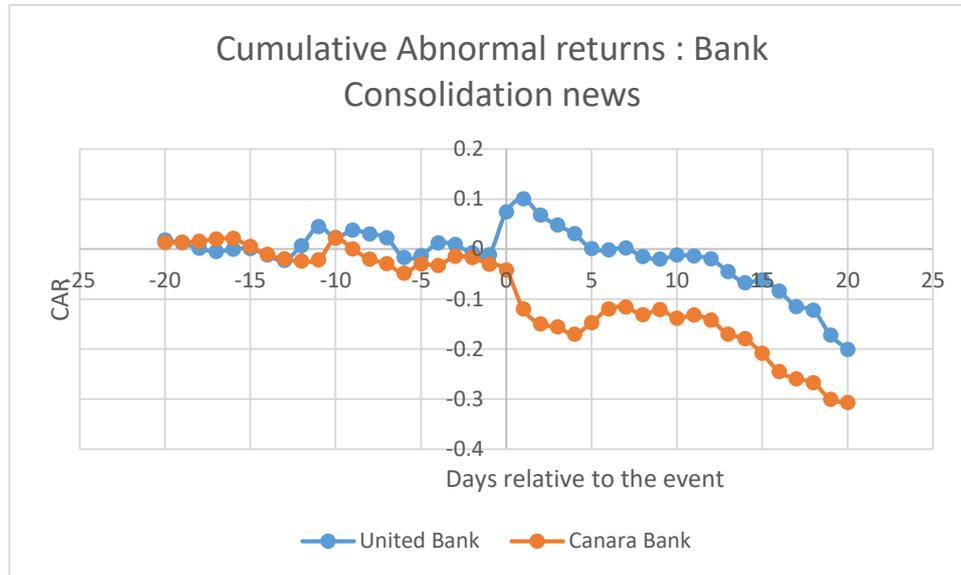
Event window	Indian Bank	PNB	United Bank	Oriental	Syndicate	Canara	Union	Corporation	Andhra bank	Allahabad bank
CAR -20 to +20	-49%***	-17%	-20%*	-21%	-30%**	-31%**	-32%**	-47%***	-26%**	-37%**
	(0.14)	(0.12)	(0.11)	(0.13)	(0.13)	(0.13)	(0.14)	(0.12)	(0.11)	(0.15)
CAR -10 to +10	-11%	-3%	-1%	-8%	-5%	-14%	-13%	-31%***	-8%	-15%
	(0.101)	(0.086)	(0.076)	(0.094)	(0.090)	(0.088)	(0.099)	(0.082)	(0.074)	(0.107)
CAR -5 to +5	0.4%	3%	5%	-16%**	-9%	-5%	4%	2%	-3%	-38%***
	(0.072)	(0.061)	(0.054)	(0.067)	(0.064)	(0.063)	(0.070)	(0.058)	(0.053)	(0.075)
CAR -1 to +1	-6.46%	-6.57%*	10.82%***	2.78%	7.88%**	-10.26%***	-7.62%*	5.71%	8.56%**	-1.74%
	(0.046)	(0.038)	(0.037)	(0.043)	(0.039)	(0.038)	(0.045)	(0.041)	(0.035)	(0.053)

*Note: \*\*\* is 1% significance level, \*\* is 5% significance level and \* is 10% significant level. Values in parentheses are standard errors of the coefficients.*

**Table IV: Performance and Size indicators for PSBs March 2019**

	Indian Bank	PNB	United Bank	Oriental	Syndicate	Canara	Union Corporation	Andhra bank	Allahabad bank	
NPA/Gross advances	7.11%	16.49%	16.48%	12.66%	11.37%	8.83%	14.98%	15.35%	16.21%	17.55%
ROA	0.11%	-1.28%	-1.52%	0.02%	-0.83%	0.04%	-0.59%	-2.96%	-1.11%	-3.35%
ROE	2%	-24.20%	-21.89%	0.31%	-17.40%	1.16%	-12.15%	-40.43%	-21.16%	-134.70%
Enterprise value (crores)	255887.00	727149.00	139233.43	251424.18	282599.05	632097.54	454819.44	200534.31	228077.75	228609.89
Size	Large	Large	Small	Small	Small	Large	Large	Small	Small	Small
Performance	Good	Poor	Poor	Good	Poor	Good	Poor	Poor	Poor	Poor

**Figure 4: Cumulative Abnormal Return (-20 to +20) for PSB investors**



Note: The author can provide the figures of CARs on other banks

**Table V: Cumulative Abnormal returns based on Size and Performance of PSBs**

	Poor performance		Good performance	
	Small Size	Large Size	Large Size	Small size
CAR (-20 to +20)	-31.97%*** (0.123)	-24.37%* (0.131)	-40.02%*** (0.134)	-21.05% (0.133)
CAR (-10 to +10)	-12.07% (0.087)	-8.14% (0.093)	-12.16% (0.095)	-7.62% (0.094)
CAR (-5 to +5)	-8.82% (0.061)	3.32% (0.066)	-2.39% (0.067)	-15.95%** (0.067)
<b>CAR (-1 to +1)</b>	<b>7.55%*</b> (0.0414)	<b>-7.09%*</b> (0.0415)	<b>-8.36%***</b> (0.0421)	<b>2.78%</b> (0.0431)
Observations	5	2	2	1
Bank names	United Bank, Syndicate Bank, Corporation Bank, Andhra Bank, Allahabad bank	Union Bank, Punjab National bank	Indian bank, Canara bank	Oriental Bank of Commerce

Note: \*\*\* is 1% significance level, \*\* is 5% significance level and \* is 10% significant level. Values in parentheses are standard errors of the coefficients.