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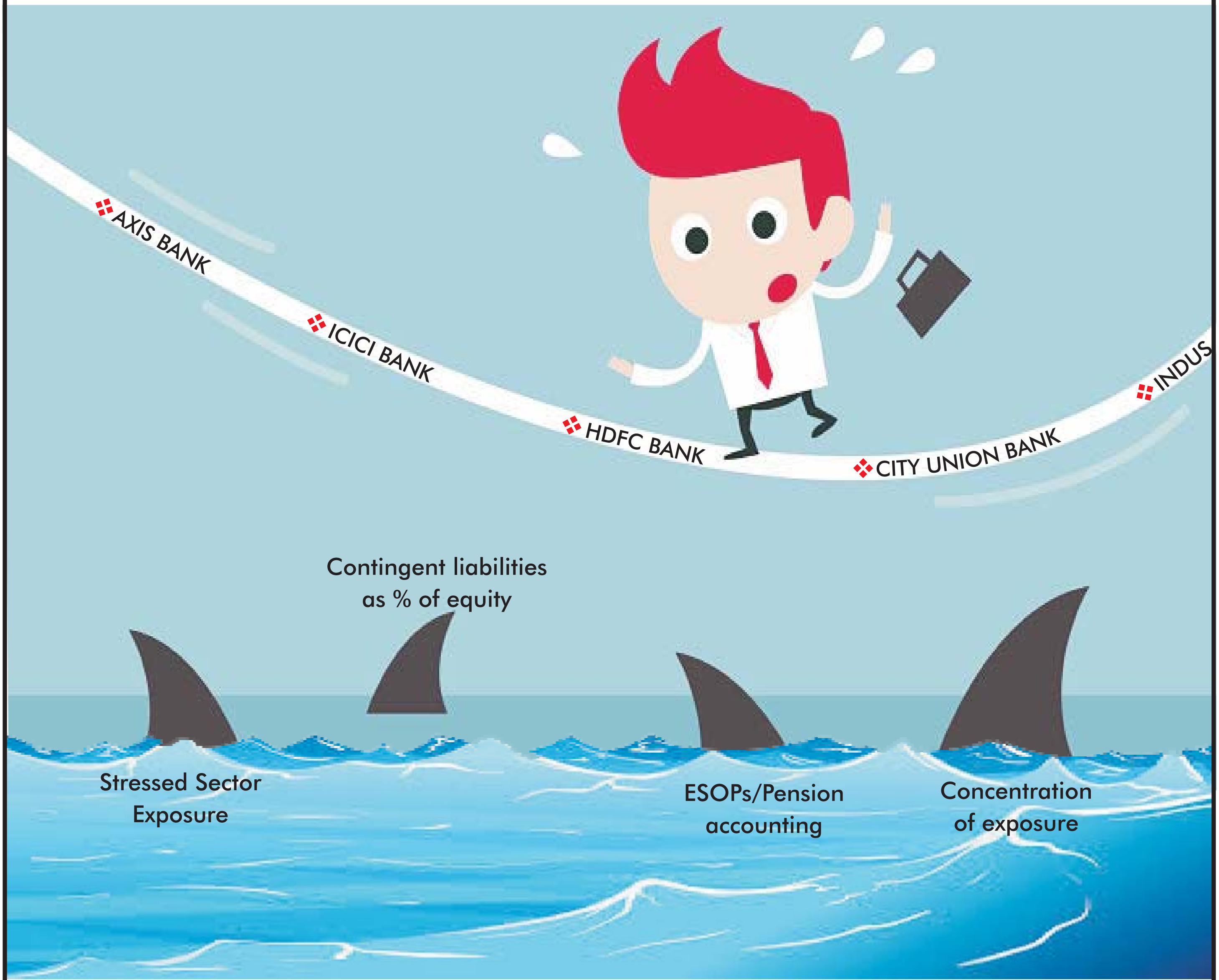

Banking Sector Report Card

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Banking sector report card

Accounting quality has a significant bearing on investment returns and we have reiterated this for the last six years in our annual accounting analysis of BSE500 (ex-financials) firms. We have now fashioned a framework to assess the top 25 Indian banks based on accounting quality and riskiness of their balance sheets. SBI, IndusInd Bank, ICICI Bank, IOB, IDBI Bank and Yes Bank feature in the bottom quartile of our framework. Kotak Mahindra Bank, Allahabad Bank and City Union Bank score well. In addition to the fundamental investment cases on these banks, the framework helps identify further checks on accounting quality and balance sheet risks.

Our traditional forensic checks do not apply to banks

Accounting quality has a significant bearing on investment returns - a point we have reiterated over the last six years (click here for our 16 Dec 2016 note, Beware of the 'Zone of Darkness'!). Given the extent of scrutiny and the distinct nature of business of banks, our traditional forensic checks do not apply to them. Thus, in this note we use 7 ratios across two categories of checks - accounting quality and balance sheet risk - to analyse the top 25 Indian banks.

PSU banks fare better than private sector banks on accounting

We use three factors to gauge accounting quality – proportion of interest accrued to interest income, ESOPs accounting, and pension assumptions. Overall, PSU banks fare better on these checks as most private sector banks get a low score on ESOP accounting. Within private sector banks, the older banks fare better than their newer counterparts.

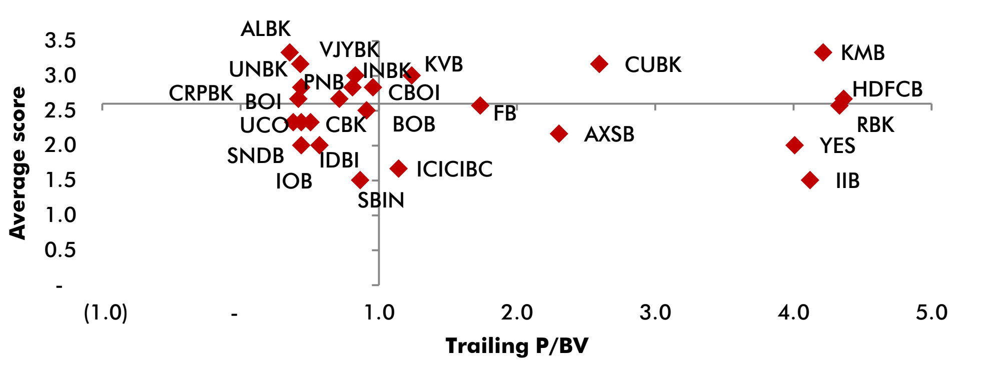
But private banks have lower balance sheet risk

Extent of contingent liabilities, real estate exposure, concentration of exposure, and stressed sector exposure are the four factors we use to measure the extent of balance sheet risk. Private sector banks (especially the older ones) face lower balance sheet risk than PSU banks due to lower contingent liabilities and lower exposure to stressed sectors like Metals, Power and Infrastructure.

KMB and CUBK are among the top scorers on our framework

Kotak Mahindra Bank (KMB), Allahabad Bank and City Union Bank (CUBK) are amongst banks that fare well on our framework. SBI, IndusInd Bank, ICICI Bank, IOB, IDBI Bank and Yes Bank are in the bottom quartile. In addition to the fundamental investment cases on these banks, the framework helps identify further checks on accounting quality and balance sheet risks. Currently, we are SELLers on all banks.

Overall scores vs trailing P/B valuations for the 25 banks under analysis



Source: Bloomberg, Ambit Capital research. Note: This is trailing reported standalone book value as of Sept '16 (except for KMB, which is on a consolidated basis.

Report card for the 25 banks analysed

Name	Ticker	Overall bucket
Kotak Mah. Bank	KMB IN	Bucket 'A'
Allahabad Bank	ALBK IN	Bucket 'A'
City Union Bank	CUBK IN	Bucket 'A'
Union Bank (I)	UNBK IN	Bucket 'A'
Vijaya Bank	VJYBK IN	Bucket 'A'
Karur Vysya Bank	KVB IN	Bucket 'A'
Corporation Bank	CRPBK IN	Bucket 'B'
Indian Bank	INBK IN	Bucket 'B'
Central Bank	CBOI IN	Bucket 'B'
HDFC Bank	HDFCB IN	Bucket 'B'
Punjab Natl.Bank	PNB IN	Bucket 'B'
Bank of India	BOI IN	Bucket 'B'
Federal Bank	FB IN	Bucket 'C'
RBL Bank	RBK IN	Bucket 'C'
Bank of Baroda	BOB IN	Bucket 'C'
Syndicate Bank	SNDB IN	Bucket 'C'
Canara Bank	CBK IN	Bucket 'C'
UCO Bank	UCO IN	Bucket 'C'
Axis Bank	AXSB IN	Bucket 'C'
Yes Bank	YES IN	Bucket 'D'
IDBI Bank	IDBI IN	Bucket 'D'
I O B	IOB IN	Bucket 'D'
ICICI Bank	ICICIBC IN	Bucket 'D'
IndusInd Bank	IIB IN	Bucket 'D'
St Bk of India	SBIN IN	Bucket 'D'

Source: Ambit Capital research. Note: To arrive at these buckets we first assign scores to all the 25 banks on each of the 7 parameters used in our framework Next we take a blended average of these scores and basis this blended average score we categorize these banks into buckets with Bucket 'A' indicating the best and Bucket 'D' indicating the worst.

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The importance of accounting quality

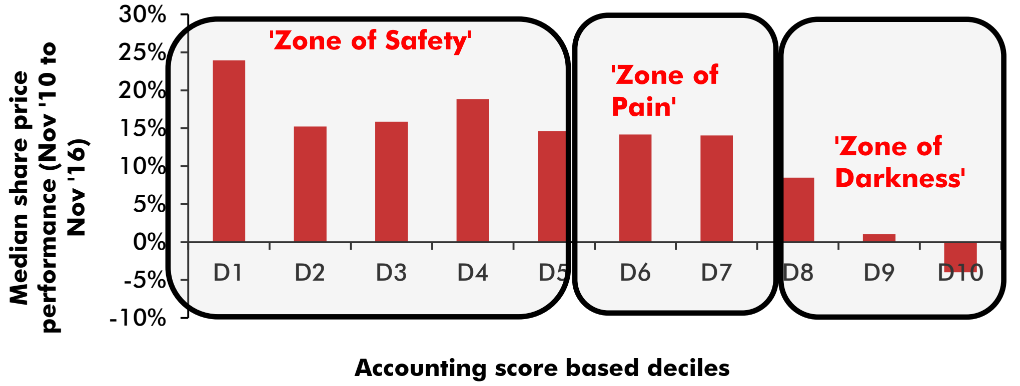
Accounting quality has a significant bearing on investment returns. This has been the central theme of our annual accounting analysis of BSE500 firms. To recap from our 16 December 2016 accounting thematic: *"Beware of the Zone of Darkness"*, analysis of long-term (i.e. six-year) share price performance of deciles constructed on the basis of accounting quality (quantified using our accounting framework) suggests:

Analysis of deciles constructed on the basis of accounting quality suggests accounting quality has a significant bearing on investment returns

- The top 5 deciles on accounting do not seem to be materially different from each other on investment performance (we label these deciles the 'Zone of Safety');
- The next two deciles - D6 and D7 - have been slight underperformers (hence we categorise them as the 'Zone of Pain');
- **But the key thing to note is that** the bottom three deciles have been massive underperformers (hence we categorise this as the 'Zone of Darkness').

Please see exhibit 1 below for performance of these deciles over long periods of time:

Exhibit 1: Performance of accounting deciles over long periods of time



Source: Ace Equity, Capitaline, Bloomberg, Ambit Capital research; Note: Accounting score is based on annual financials over FY11-FY16; stock price performance is from November 2010 to November 2016. Shaded areas denote the three zones on accounting quality. Universe for this exhibit is BSE500 (ex-financials).

In exhibit 2 below we discuss some of the biggest accounting and financial malpractices in India over the past two decades. Note the sharp underperformance for most of these firms once the announcements or the discovery was made public:

Exhibit 2: Key accounting and financial malpractices in India over the past two decades

Name of company	Year and month	Brief description	Stock price reaction
Global Trust Bank	2004	At the core of Global Trust Bank appears to be the issue of 'inappropriate' exposure to capital market activities, which resulted in huge NPAs, which in turn were significantly under-provisioned for by the bank. As a result, the bank's reported net worth of Rs4,004mn (as on 31 March 2002) eventually turned out to be negative when inspected by the RBI.	Since its Nov '00 peak, the stock crashed by ~**99%** until Aug '04 (when it got taken over by Oriental Bank of Commerce)
Satyam Computers	Jan-09	Ramalinga Raju, Chairman of Satyam Computers, confessed to manipulating the books of accounts of the company to the tune of more than Rs70bn.	Satyam's stock price corrected by ~**87%** in the two days following the date of announcement.
Ricoh India	May-16	KPMG, who was appointed as the statutory auditors of Ricoh India in Sep '15, identified several accounting irregularities in its books; said it is difficult to form an opinion.	Ricoh India's stock price corrected by ~**34%** over the subsequent one and a half months following the date of announcement.
Arshiya	Aug-09	In August 2009 (FY10), based on the company filings, PriceWaterhouseCoopers (PwC) expressed their unwillingness to be reappointed as the auditors of Arshiya. Consequently, Arshiya changed its auditor in FY10 (August 2009) from PwC to MGB & Co. Further, in Jan 2013, certain employees of the company alleged financial irregularities in the company and non-payment of salaries to the staff since Sep 2014.	Arshiya's stock price corrected by ~**70%** in less than a month following the allegations made by the employees of the company.
Financial Technologies (now 63 Moons Technologies)	Sep-13	In Sep '13, Deloitte took the unprecedented step to 'withdraw' its audit report on Financial Technologies for the year ending 31 March 2013, stating that the company's standalone and consolidated results are not to be relied upon. Earlier in July '13, NSEL, a company promoted by Financial Technologies, failed to honour obligations worth Rs56bn to its investors in commodity pair contracts. On discovery it was found that NSEL neither had the money nor the stock to pay its investors back.	Financial Technologies' stock price corrected by ~**73%** in the two days following the NSEL scam.

Source: Various press articles, Bloomberg, Ace Equity, Ambit Capital research

Given how stark the underperformance for firms with accounting irregularities has been, for an investor contemplating whether or not to invest funds in India, it only becomes imperative to gauge the accounting quality of any company before investing.

Our annual forensic model does not apply to banks and financial services

Against that backdrop, over the past few years we have built our proprietary forensic accounting model to help investors navigate through camouflaged accounts (click *here* for the latest iteration of our annual accounting thematic published on 16 December 2016). Please note, however, that as the financial reporting structure for banks and financial services is materially different from that of other businesses, our annual forensic accounting model does not include banks and financial services.

With this report, we discuss a framework to assess Indian banks based on accounting quality and balance sheet risk

In our endeavour to assist investors in identifying the better quality stocks within the banking space, with this report we discuss a framework to assess the top 25 Indian banks (based on market cap) on the basis of their accounting quality and the riskiness of their balance sheets.

Our traditional forensic checks do not apply to banks

The banking sector is much more heavily regulated than any other sector

It is widely known that unlike other manufacturing or service companies, the banking business is heavily regulated. Banks in India are regulated by the Reserve Bank of India (RBI). The objective of the RBI is to protect the interest of the depositors and maintain the safety and soundness of the banking and financial system of the country. Hence, the RBI heavily regulates banks in terms of ownership structure, appointment of board of directors, appointment of auditors, regular annual inspection of accounts, detailed and regular disclosures from banks on various aspects of their business, limiting management compensation, capping exposures to certain sectors, monitoring the provisioning norms, setting up capital limits and so on.

Thus our traditional forensic checks do not apply to banks

These heavy regulations mean that traditional corporate governance/accounting ratios we use for forensic/corporate governance on non-bank companies do not apply on banks.

In exhibit 3 below, we summarise some of our key forensic checks that are used in our annual accounting model (click *here* for the latest note published on 16 December 2016) and why most of these ratios do not apply to banks:

Exhibit 3: Key forensic checks not applicable to banks

Ratios	Rationale	Why is this not applicable to banks?
Cum. CFO/cum. EBITDA	Check on a firm's revenue recognition policy; a low ratio may be indicative of aggressive revenue recognition practices	We substitute this ratio with interest accrued as a proportion of interest income given that is more relevant for banks.
Volatility in depreciation rate	Penalise firms where volatility in depreciation rate is unusually high	Depreciation expenses are less than 5% of the total operating expenses for banks (hence immaterial).
Cash yield	A low cash yield may either imply balance sheet misstatement or that the cash is not being used in the best interests of the firm	Given their distinct nature of operations (where banks have to mandatorily maintain CRR with RBI and also maintain cash balances at their branches), this ratio is not applicable to banks.
Contingent liability as a proportion of net worth	Indicative of the extent of off-balance-sheet risk	We have considered this ratio in our framework.
CWIP to Gross Block	A high CWIP to Gross Block ratio could either indicate unsubstantiated capex or delay in commissioning	CWIP forms a significant proportion of total assets for manufacturing concerns vis-à-vis service companies such as banks.
Cumulative CFO plus CFI to median revenues	Check on whether the firm has historically been able to generate positive cash flows after investing activities	Not applicable to banks given differing accounting practices vis-à-vis manufacturing concerns.
CAGR in auditors remuneration to CAGR in consolidated revenues	Check on the audit quality; ideally growth in auditors remuneration should be consistent with growth in consolidated revenues	Banks have to take approval from RBI for appointment of auditors. Moreover there is mandatory rotation of auditors every three years.

Source: Ambit Capital research

Further, the RBI supervises the business of banks and, if deemed necessary or in public interest, can also order a banking company to change its Managing Director along with other Directors or shut down its business or amalgamate with other bank apart from imposing a fine on any contravention of any provisions/regulations laid down by it. Hence, the banking sector is indeed more heavily regulated than any other sector. Thus, to that extent, it becomes far more difficult for a bank to manipulate its accounts versus say a manufacturing concern.

However, banks do manipulate their accounts and non-recognition of impaired loans as non-performing loans is the most often used accounting trickery by banks to inflate their profits and shareholders' equity. However, it is very difficult to spot this based on the reported financials as banks can hide such loans by continuously refinancing such loans for a long period of time, which cannot be spotted looking at reported cash flow statements. In general, cash flow based ratios (CFO/EBITDA etc.), which are the cornerstone of our forensic research on non-bank companies, do not throw much light on the accounting quality of the banks given cash being the raw material for banks.

Framework to assess banks on accounting quality and balance sheet risk

From our discussions above, it is clear that given the extent of scrutiny and given the nature of business, the banking sector is much more heavily regulated than any other sector in India. To that extent, it becomes far more difficult for a bank to misrepresent its accounts versus a manufacturing concern.

We analyse banks across two categories of checks: accounting and balance sheet risk

Hence, in this note we **do not** restrict our analysis to only the quality of financial reporting but also extend our analysis to incorporate a discussion on the riskiness of the bank's balance sheet.

Note that the objective of this note is to highlight banks that are exposed to a higher risk on their balance sheets and/or are using accounting policies/assumptions that appear to be more aggressive vis-à-vis other banks. Thus, a low score on our framework does not necessarily imply any mala fide intention on the part of the bank in question as it could very well be justified by the bank's business model.

We use seven quantifiable ratios to rank the top 25 banks (on the basis of their market cap-see Table 1 on the right, we restrict our analysis to the top 25 banks given these banks comprise ~95% of the total market cap for all listed Indian banks; we exclude IDFC Bank from the scope of this analysis given limited data availability) based on their accounting quality and the level of balance sheet stress. These ratios can be broadly categorised into two key categories of checks as shown in Exhibit 4 below:

Exhibit 4: Key categories of checks for the Top 25 Indian banks

Category	Ratios	Rationale
Accounting checks	Ratio of interest accrued to interest income	Penalise banks with a higher proportion of interest income accrued (but not realised) as part of interest income as on the balance sheet date as this may imply that the bank could be recognising interest income even in cases (e.g. stressed but standard) where the borrower is unlikely to pay interest as per the loan agreement and the bank may have to reverse the recognised interest later on
	ESOPs accounting	Penalise banks where the use of fair value method to account for cost of ESOPs would have resulted in a material impact on reported profits over the last three years
	Pension accounting	Penalise banks that have historically used relatively aggressive pension assumptions vis-à-vis other banks
Balance sheet risk	Contingent liabilities as a % of equity	Indicative of the extent of off-balance sheet risk
	Real estate exposure	The government's crackdown on informal economy and unaccounted income is expected to put pressure on real estate prices which will likely increase both the probability of default and loss given default of the borrowers
	Concentration of exposure	Penalise banks with a higher concentration of credit risk
	Exposure to stressed sectors	Penalise banks with highest exposure to stressed sectors, i.e. Metals, Construction, Textiles, Mining, Infrastructure (including Power) and Engineering

Source: Bloomberg, Ambit Capital research

Table 1: List of banks covered in our analysis

Name	Ticker
HDFC Bank	HDFCB IN
St Bk of India	SBIN IN
ICICI Bank	ICICIBC IN
Kotak Mah. Bank	KMB IN
Axis Bank	AXSB IN
IndusInd Bank	IIB IN
Yes Bank	YES IN
Bank of Baroda	BOB IN
Punjab Natl.Bank	PNB IN
Central Bank	CBOI IN
Canara Bank	CBK IN
IDBI Bank	IDBI IN
RBL Bank	RBK IN
Federal Bank	FB IN
Bank of India	BOI IN
Indian Bank	INBK IN
Union Bank (I)	UNBK IN
City Union Bank	CUBK IN
I O B	IOB IN
Syndicate Bank	SNDB IN
Vijaya Bank	VJYBK IN
UCO Bank	UCO IN
Corporation Bank	CRPBK IN
Allahabad Bank	ALBK IN
Karur Vysya Bank	KVB IN

Source: Ambit Capital research

For the purpose of this analysis, we study the reported standalone financials for all the 25 banks under the scope of our analysis (except for exposure to stressed sectors, which is based on the latest available quarterly filings).

Cumulating scores: We first assign scores to all the 25 banks covered in the analysis (see Table 1 on the right) on each of the seven parameters discussed above (Note: we assign equal weightages to these seven parameters). Next, we take an average of the scores across the seven parameters to arrive at the final blended average score for each bank. Using this average score, we categorise these banks into four buckets 'A' to 'D', with Bucket 'A' indicating banks with the least level of balance sheet stress and more conservative accounting practices and Bucket 'D' indicating banks with higher stress on the balance sheet and/or banks where the accounting practices historically have been relatively aggressive.

In exhibit 5 below, we have summarised the results from our analysis.

Exhibit 5: Report card for the 25 banks under analysis

Name	Ticker	Mcap (US$mn)	Stance*	Accounting checks			Balance sheet risk				Overall score	Overall Bucket
				Interest accrued as a % of interest income	ESOPs accounting	Pension accounting	Contingent liabilities as a % of equity	Real estate exposure	Concentration of exposure	Stressed sector exposure		
Kotak Mah. Bank	KMB IN	22,544	SELL	3.0	3.0	N/A	4.0	3.0	3.0	4.0	3.3	Bucket 'A'
Allahabad Bank	ALBK IN	773	NR	4.0	N/A	4.0	3.0	4.0	4.0	1.0	3.3	Bucket 'A'
City Union Bank	CUBK IN	1,275	SELL	2.0	3.0	N/A	4.0	4.0	4.0	2.0	3.2	Bucket 'A'
Union Bank (I)	UNBK IN	1,532	SELL	4.0	N/A	2.0	2.0	4.0	4.0	3.0	3.2	Bucket 'A'
Vijaya Bank	VJYBK IN	971	NR	4.0	N/A	3.0	4.0	1.0	3.0	3.0	3.0	Bucket 'A'
Karur Vysya Bank	KVB IN	895	SELL	3.0	N/A	1.0	4.0	3.0	4.0	3.0	3.0	Bucket 'A'
Corporation Bank	CRPBK IN	814	NR	4.0	N/A	3.0	2.0	2.0	2.0	4.0	2.8	Bucket 'B'
Indian Bank	INBK IN	2,042	NR	2.0	N/A	2.0	4.0	2.0	3.0	4.0	2.8	Bucket 'B'
Central Bank	CBOI IN	2,612	NR	2.0	N/A	2.0	3.0	3.0	4.0	3.0	2.8	Bucket 'B'
HDFC Bank	HDFCB IN	53,223	SELL	2.0	1.0	N/A	4.0	3.0	3.0	3.0	2.7	Bucket 'B'
Punjab Natl.Bank	PNB IN	4,516	SELL	4.0	N/A	3.0	3.0	2.0	2.0	2.0	2.7	Bucket 'B'
Bank of India	BOI IN	2,003	SELL	2.0	N/A	3.0	2.0	4.0	2.0	3.0	2.7	Bucket 'B'
Federal Bank	FB IN	2,186	SELL	4.0	1.0	3.0	4.0	1.0	1.0	4.0	2.6	Bucket 'C'
RBL Bank	RBK IN	2,631	NR	1.0	1.0	4.0	3.0	4.0	1.0	4.0	2.6	Bucket 'C'
Bank of Baroda	BOB IN	5,539	SELL	1.0	N/A	4.0	2.0	2.0	3.0	3.0	2.5	Bucket 'C'
Syndicate Bank	SNDB IN	913	NR	3.0	N/A	1.0	1.0	3.0	4.0	2.0	2.3	Bucket 'C'
Canara Bank	CBK IN	2,359	NR	3.0	N/A	2.0	2.0	3.0	3.0	1.0	2.3	Bucket 'C'
UCO Bank	UCO IN	853	NR	3.0	N/A	2.0	3.0	2.0	2.0	2.0	2.3	Bucket 'C'
Axis Bank	AXSB IN	18,364	SELL	3.0	3.0	N/A	1.0	1.0	2.0	3.0	2.2	Bucket 'C'
Yes Bank	YES IN	9,195	NR	1.0	2.0	N/A	1.0	4.0	3.0	1.0	2.0	Bucket 'D'
IDBI Bank	IDBI IN	2,396	NR	2.0	N/A	4.0	1.0	3.0	1.0	1.0	2.0	Bucket 'D'
I O B	IOB IN	987	NR	4.0	N/A	1.0	1.0	1.0	1.0	4.0	2.0	Bucket 'D'
ICICI Bank	ICICIBC IN	24,102	SELL	1.0	2.0	N/A	3.0	1.0	1.0	2.0	1.7	Bucket 'D'
IndusInd Bank	IIB IN	11,936	SELL	1.0	2.0	N/A	1.0	1.0	1.0	3.0	1.5	Bucket 'D'
St Bk of India	SBIN IN	32,024	SELL	1.0	N/A	1.0	2.0	2.0	2.0	1.0	1.5	Bucket 'D'

*Source: Company filings, Ambit Capital research. Note: *NR indicates Not Rated. To arrive at these buckets we first assign scores to all the 25 banks on each of the 7 parameters used in our framework Next we take a blended average of these scores and basis this blended average score we categorize these banks into buckets with Bucket 'A' indicating the best and Bucket 'D' indicating the worst. N/A indicates the bank has not been rated on that particular measure on our framework.*

In the subsequent sections, we have discussed each of the measures used to quantify the scores for the 25 banks (see exhibit 5 above) in more details.

Accounting checks

From our previous discussions we note that it is far more difficult for a bank to misrepresent its accounts versus say a manufacturing concern. That said a few ad-hoc accounting practices do allow banks do misrepresent their reported accounts. We thus use the following ratios to penalize banks where the accounting policies adopted for recognition of income or expense appear to be relatively aggressive:

A] Revenue recognition

Recognising accrued (but not realised) interest income and/or an accounting policy that entails upfront fee income recognition instead of amortising the same over the tenor of the contract, etc. are some of the common ways through which some banks have historically tinkered around with their reported profitability. Note, however, that aggressive income recognition policy in one period would mean a lower top-line in the subsequent periods.

The recognition of interest income is on an accrual basis and as mandated by the RBI. Thus, whilst the interest on performing assets is recognised on an accrual basis, interest income on non-performing assets is booked on a realisation basis. However, there are some categories of loans which are not essentially standard loans but because of some regulatory relaxation are not recognised as NPAs either. Banks continue to book income on such loans, which could be eventually reversed if these loans become NPAs.

Whilst interest income has to be recognised on an accrual basis…

For example, some banks were booking interest income on loans restructured under SDR (strategic debt restructuring) route (but not NPAs) until 2QFY17. However, a change in income recognition policy on such loans by the RBI in November 2016 (asking banks to not accrue income if not serviced within 90 days; https://goo.gl/6tQ3Ks) meant that many banks had to reverse income booked on such loans in 3QFY17.

The revenue recognition policy with respect to fee/commission income, however, is arbitrary, i.e. it can either be recognised upfront or amortised over the tenor of the contract.

…fee income can be recognised upfront or amortised over the tenor of the contract

For instance, a study of ICICI Bank's (where we have the luxury of comparing the bank's IGAAP accounts with its corresponding US GAAP accounts) annual accounts suggests the reported PAT would have been lower by 6-8% had the bank chosen to amortise the fee income over the life of the loan instead of recognising it upfront (see exhibit 6 below):

Exhibit 6: ICICI Bank - impact of amortisation of loan processing fee income (i.e. spreading fee income over life of the loan) on consolidated PAT

Particulars (Rs mn unless stated)	**FY14**	**FY15**	**FY16**
Reported profits as per IGAAP	110,414	122,469	101,800
Reported profits as per US GAAP	101,421	116,913	73,037
Impact arising due to amortisation of fees and costs	6,870	10,186	7,892
% impact on reported consolidated PAT	**-6%**	**-8%**	**-8%**

Source: Company filings, Ambit Capital research

Thus, given the sheer magnitude of the impact on ICICI Bank's reported profitability **(6-8% in recent years)** it is only worthwhile to investigate the revenue recognition practices adopted by the various Indian banks.

Note that fees and commission income includes income from both fund-based and non-fund based exposures (for example, it includes commission on guarantees, letter of credit, foreign exchange, locker rent, third-party distribution income and so on). We, thus, analyse the fee/commission income recognition policies adopted by the various banks.

A few observations from our analysis of the fee/commission income recognition policies of the 25 banks under consideration have been summarised in exhibit 7 below:

Exhibit 7: Differing accounting practices adopted by various banks w.r.t non-interest income recognition

	Relatively conservative accounting practices	Relatively aggressive accounting practices
Guarantee commission	**Amortised over period of contract:** HDFC Bank; ICICI Bank; Kotak Mah. Bank; Axis Bank; Yes Bank; Bank of Baroda; IDBI Bank; Federal Bank; Bank of India	**Upfront/Cash:** St Bk of India*; IndusInd Bank*; Punjab National Bank; Canara Bank; RBL Bank (below Rs0.1mn); Indian Bank; Union Bank of India; City Union Bank; Vijaya Bank; Corporation Bank; Karur Vysya Bank
Letter of credit	**Amortised over period of contract:** HDFC Bank; Kotak Mah. Bank; Bank of Baroda; IDBI Bank; Federal Bank; Bank of India	**Upfront:** St Bk of India; Axis Bank; IndusInd Bank; Yes Bank; Punjab Natl.Bank; Canara Bank; RBL Bank; Indian Bank; Union Bank of India; City Union Bank; Vijaya Bank; Corporation Bank; Karur Vysya Bank
Dividend Income	Bank of Baroda (w.r.t. subsidiaries, associates and JVs); Punjab Natl.Bank; Indian Bank; I O B book dividend income **on realization basis**	Other banks book dividend income on **accrual basis**

*Source: Company filings, Ambit Capital research. Note: *except guarantee commission on deferred payment guarantees*

As is evident from exhibit 7 above, the income recognition policies (w.r.t commission from guarantees and letter of credit) adopted by a few banks such as Union Bank, Vijaya Bank, Corporation Bank, Punjab National Bank and few others appear to be more aggressive than that of most other banks.

That said given the amount of income generated from such activities is not publicly available (as most banks do not separately disclose the break-up of fee income) and given the subjectivity involved in quantifying the impact, we do not assign any scores to the banks under consideration on this parameter.

We, however, use the following ratio to penalise banks on their revenue recognition practices:

1. Ratio of interest accrued to interest income

Rationale: The rationale is to penalise banks with a higher proportion of interest income accrued (but not realised) as part of interest income as on the balance sheet date. This may imply that the bank could be recognising interest income even in cases (e.g. stressed but standard) where the borrower is unlikely to pay interest as per the loan agreement and the bank may have to reverse the recognised interest later on.

We penalise firms with high proportion of interest accrued to interest income

Methodology: We calculate the proportion of interest accrued to interest income for each of the last three years. We then take an average of the three years and sort the list on the basis of average ratio of interest accrued to interest income. We divide the universe of banks into four quartiles based on average proportion of interest accrued to interest income. Banks with the highest proportion of interest accrued to interest income get penalised the most whilst banks with the lowest proportion of interest accrued to interest income get rewarded the most.

Results: Exhibit 8 below highlights the interest accrued as a proportion of interest income (for the last three years) for the top 25 banks analysed on our framework.

Exhibit 8: Interest accrued as a % of interest income for banks under analysis

Name	Ticker	Interest accrued as a % of interest income			
		FY14	FY15	FY16	Average
St Bk of India	SBIN IN	12%	13%	15%	**13.4%**
Bank of Baroda	BOB IN	10%	11%	9%	**9.8%**
Yes Bank	YES IN	9%	11%	10%	**9.7%**
RBL Bank	RBK IN	10%	10%	8%	**9.4%**
ICICI Bank	ICICIBC IN	9%	8%	6%	**7.7%**
IndusInd Bank	IIB IN	6%	7%	7%	**6.7%**
IDBI Bank	IDBI IN	7%	7%	6%	**6.7%**
City Union Bank	CUBK IN	4%	8%	8%	**6.6%**
Central Bank	CBOI IN	7%	6%	6%	**6.2%**
HDFC Bank	HDFCB IN	6%	6%	6%	**6.2%**
Indian Bank	INBK IN	6%	6%	5%	**5.6%**
Bank of India	BOI IN	5%	6%	5%	**5.5%**
Syndicate Bank	SNDB IN	5%	5%	6%	**5.4%**
Kotak Mah. Bank	KMB IN	5%	6%	5%	**5.3%**
Axis Bank	AXSB IN	4%	6%	6%	**5.3%**
UCO Bank	UCO IN	5%	5%	4%	**4.6%**
Karur Vysya Bank	KVB IN	4%	4%	4%	**4.1%**
Canara Bank	CBK IN	4%	4%	4%	**4.0%**
Corporation Bank	CRPBK IN	4%	4%	4%	**3.8%**
Union Bank (I)	UNBK IN	3%	3%	3%	**3.0%**
Punjab Natl.Bank	PNB IN	3%	3%	3%	**2.9%**
Allahabad Bank	ALBK IN	3%	3%	3%	**2.9%**
Federal Bank	FB IN	2%	3%	3%	**2.8%**
Vijaya Bank	VJYBK IN	3%	2%	1%	**2.3%**
I O B	IOB IN	3%	3%	1%	**2.0%**

Source: Company filings, Ambit Capital research

Conclusions

SBI, BOB and Yes Bank get penalised the most

- **Banks that get penalized the most-** State Bank of India, Bank of Baroda and Yes Bank are the top three banks with the highest proportion of interest accrued (as a proportion of interest income) followed by RBL Bank, ICICI Bank and IndusInd Bank.
- **Banks that get rewarded the most-** Indian Overseas Bank, Vijaya Bank, Federal Bank, Allahabad Bank, Punjab National Bank, Union Bank of India and Corporation Bank

B] Expense manipulation

Whilst aggressive revenue recognition (w.r.t fee/commission income) is one of the ways through which banks could flatter their reported profits, under-reporting of expenses is yet another manner in which several banks have historically given a misleading picture of their reported profitability.

For instance, using aggressive pension assumptions, the choice of accounting policy adopted to account for cost of ESOPs, and under-provisioning are some of the common tactics that several banks have historically used to report better profits than the underlying reality.

We thus seek to penalise such banks in our model using the following ratios:

1. ESOPs accounting

Private sector banks extensively use ESOPs to incentivise their employees…

Rationale: Relative to most other sectors, Indian banks (and more specifically within Indian banks the private sector banks) are heavy issuers of employee stock options to the senior management.

Further, not only are Indian banks heavy issuers of employee stock options, in several of these instances the cost of such ESOPs is not accounted for using a proper valuation methodology.

…while most banks follow the intrinsic value method to account for the cost of ESOPs

For instance, whilst the current Indian accounting standards permit the use of fair value method, our analysis of the accounting policy adopted by the top 25 banks suggests nearly all the banks (that extensively use ESOPs as a way of incentivising their senior management) follow the intrinsic value method to account for the cost of these ESOPs. Further, in case a bank chooses to follow the intrinsic value method, it has to disclose the impact on its profits and EPS if the fair value method had been followed.

Our analysis suggests that if the nine private sector banks that issue ESOPs to their employees had used the fair value method to account for the cost of these ESOPs in FY16, the reported profits would have been lower by 1-9%. In case of some banks the reported RoA would have been adversely impacted by up to 20bps if the cost of ESOPs had been accounted for using the fair value method (see exhibit 9 below):

Exhibit 9: Impact on reported RoA due to fair value accounting for ESOPs

Name	Ticker	FY16 reported RoA	FY16 adjusted RoA*	Impact on reported RoA (bps)
HDFC Bank	HDFCB IN	1.9%	1.7%	(19)
RBL Bank	RBK IN	0.9%	0.8%	(7)
ICICI Bank	ICICIBC IN	1.4%	1.4%	(5)
Kotak Mah. Bank	KMB IN	1.4%	1.4%	(4)
IndusInd Bank	IIB IN	1.8%	1.8%	(4)
Yes Bank	YES IN	1.7%	1.7%	(3)
Federal Bank	FB IN	0.5%	0.5%	(2)
Axis Bank	AXSB IN	1.7%	1.6%	(2)
City Union Bank	CUBK IN	1.5%	1.5%	(0)

*Source: Company filings, Ambit Capital research. Note: *Adjusted RoA indicates the RoA that would have been reported had the cost of the ESOPs been accounted for using the fair value method (keeping the denominator unchanged).*

It is important to note that RBI has issued guidelines for banks to adopt Ind AS, i.e. the Indian accounting standards that have been substantially converged with global IFRS standards, starting FY19. Ind AS does not permit the use of intrinsic value method for accounting of ESOPs. This would mean that the reported profits of several banks would likely be adversely impacted under Ind AS due to use of the fair value method for accounting of ESOPs.

We penalise firms where the cost of ESOPs is accounted for on an intrinsic value basis and where impact on reported profits would have been substantial had the fair value method been used

Methodology: We calculate the three-year average impact on reported profits had the fair value method been followed and penalise banks where the use of fair value method would have resulted in a material impact on the reported profits. Banks in whose cases the use of fair value method would have resulted in a relatively lower impact on the reported profits get rewarded (albeit to a lesser extent) on our framework.

Note that the use of ESOPs as a way of incentivising senior management of the bank is more prevalent in private sector banks vis-à-vis public sector banks. As a result, we do not assign any scores to banks that do not issue ESOPs to their employees (these banks, instead, get ranked on the basis of their choice of pension assumptions).

Results: In exhibit 10 below, we discuss the impact on reported profits for the top nine private sector banks that have issued ESOPs to their employees over the last three years.

Exhibit 10: Impact on reported profitability for banks that have issued ESOPs

Name	Ticker	Impact on reported PAT			
		FY14	FY15	FY16	Average
HDFC Bank	HDFCB IN	-7%	-9%	-10%	**-9%**
RBL Bank	RBK IN	-4%	-5%	-5%	**-5%**
Federal Bank	FB IN	-2%	-3%	-4%	**-3%**
ICICI Bank	ICICIBC IN	-2%	-3%	-4%	**-3%**
IndusInd Bank	IIB IN	-2%	-2%	-2%	**-2%**
Yes Bank	YES IN	-2%	-2%	-2%	**-2%**
Kotak Mah. Bank	KMB IN	-1%	-1%	-3%	**-2%**
Axis Bank	AXSB IN	-2%	-1%	-1%	**-1%**
City Union Bank	CUBK IN	0%	-1%	0%	**-1%**

Source: Company filings, Ambit Capital research

HDFC Bank, RBL Bank and Federal Bank get penalised the most on accounting for ESOPs

Conclusion: HDFC Bank, RBL Bank and Federal Bank are the top three banks with maximum impact on their reported profits had the cost of these stock options been accounted for using the fair value method. In contrast, City Union Bank, Axis Bank and Kotak Mahindra Bank are the three private sector banks with the least impact on their reported profits.

We, thus, assign the lowest scores to the three banks with the highest impact on their reported profits whilst assigning a higher score to banks with minimal impact on their reported profits.

We do not assign any scores to the 16 other banks that do not issue ESOPs to their employees. (This however does not have any impact on the overall score for a bank given that to arrive at the final rankings we take a blended average of all the parameters.)

2. Pension accounting

Most PSU banks have huge pension obligations

Rationale: Whilst ESOPs are used as a way of incentivising the senior management by various private sector banks, most PSU banks (and a few private sector banks) use pension as a way to incentivise their employees.

Discount rate, expected returns, and rate of salary escalation are three key assumptions for determining the pension expense for a period

Note that various actuarial assumptions are involved while determining the pension expense for a period. These include both demographic assumptions (about future characteristics of the current and former employees) as well as financial assumptions (as regards the discount rate, the expected return on assets and the rate of salary increase). A number of assumptions are involved in determining the pension expense and liability for a period and mostly banks attribute the chosen assumptions on the appointed actuaries of the banks. However, as you will see in exhibit 12 below there is significant divergence in these assumptions across banks, which indicates a common approach is not being used and some banks are using more aggressive approaches than others, which affects reported earnings as well.

The three key assumptions while determining the pension obligations for a period have been discussed in exhibit 11 below:

Exhibit 11: Key assumptions for determining pension obligations for a period

Assumption	Comments
Discount rate assumption	Ideally, the discount rate should be chosen with reference to the market yield on long duration Government bonds. A higher discount rate assumption thus would result in a lower pension obligation.
Expected return on plan assets assumption:	The expected return on plan assets assumption should ideally be made based on the basis of yield on Government bonds. A higher expected return assumption would lead to a higher expected return on assets, resulting in a lower pension expense recognised for the year. Also, a higher assumption would result in a higher present value of plan assets, thus lowering the funded status of an underfunded plan.
Rate of salary increase:	Given that the pension benefits would generally be based on the level of the employee's salary at the time of retirement, a higher salary would result in a higher pension obligation. Hence, a bank might use an aggressive approach (by using a significantly lower rate of salary increase, resulting in a lower pension obligation).

Source: Ambit Capital research

We penalise banks whose pension assumptions historically appear overly aggressive

Methodology: We evaluate the actuarial assumptions adopted by banks (where pension obligations form a huge proportion of the employee expense) and penalise the banks where the pension assumptions appear to be overly aggressive, i.e. a higher discount rate assumption, a higher expected return on plan assets assumption, and a lower rate of salary increase.

Note that several private sector banks do not have any pension obligations or the pension obligations for these banks are not material. In such cases, we do not assign any scores to these banks on this measure.

Results: In exhibit 12 below, we plot the actuarial assumptions adopted by the various banks.

Exhibit 12: Actuarial assumptions adopted by various Indian banks

Name	Ticker	Discount rate assumption				Expected return on plan assets assumption				Salary escalation rate assumption			
		FY14	FY15	FY16	Average	FY14	FY15	FY16	Average	FY14	FY15	FY16	Average
I O B	IOB IN	8.8%	8.8%	7.8%	**8.4%**	9.0%	9.0%	9.0%	**9.0%**	5.0%	5.0%	5.0%	**5.0%**
St Bk of India	SBIN IN	9.3%	8.2%	8.1%	**8.5%**	8.7%	8.7%	8.1%	**8.5%**	5.0%	5.0%	5.0%	**5.0%**
Syndicate Bank	SNDB IN	8.5%	8.5%	8.4%	**8.5%**	8.5%	8.5%	8.4%	**8.5%**	5.0%	5.0%	5.0%	**5.0%**
Karur Vysya Bank	KVB IN	9.5%	8.0%	7.8%	**8.4%**	9.5%	9.9%	9.5%	**9.6%**	5.0%	5.5%	5.5%	**5.3%**
Central Bank	CBOI IN	9.3%	8.0%	8.1%	**8.4%**	8.7%	8.7%	8.1%	**8.5%**	5.0%	5.0%	5.0%	**5.0%**
Union Bank (I)	UNBK IN	9.3%	8.0%	8.1%	**8.4%**	8.7%	8.7%	8.1%	**8.5%**	5.0%	5.0%	5.0%	**5.0%**
Canara Bank	CBK IN	9.3%	8.0%	8.0%	**8.4%**	9.2%	9.2%	9.3%	**9.2%**	5.5%	5.5%	5.5%	**5.5%**
Indian Bank	INBK IN	9.3%	8.0%	8.0%	**8.5%**	9.0%	9.0%	9.0%	**9.0%**	5.5%	6.0%	6.0%	**5.8%**
UCO Bank	UCO IN	8.5%	8.0%	8.0%	**8.2%**	9.4%	9.4%	9.0%	**9.2%**	NA	NA	NA	**DNA**
Punjab Natl.Bank	PNB IN	9.1%	8.0%	8.2%	**8.4%**	8.6%	8.6%	8.6%	**8.6%**	5.5%	5.5%	5.8%	**5.6%**
Federal Bank	FB IN	8.8%	8.0%	8.0%	**8.3%**	8.6%	8.9%	8.7%	**8.8%**	5.1%	5.1%	5.0%	**5.1%**
Bank of India	BOI IN	9.3%	8.0%	8.1%	**8.4%**	8.4%	8.6%	8.9%	**8.7%**	6.0%	5.5%	5.5%	**5.7%**
Vijaya Bank	VJYBK IN	8.5%	8.0%	8.0%	**8.2%**	9.5%	9.0%	9.0%	**9.2%**	5.5%	5.5%	5.5%	**5.5%**
Corporation Bank	CRPBK IN	8.8%	7.9%	8.0%	**8.2%**	9.0%	9.0%	8.9%	**9.0%**	5.5%	5.5%	5.0%	**5.3%**
IDBI Bank	IDBI IN	9.3%	8.0%	8.1%	**8.4%**	8.7%	8.7%	8.1%	**8.5%**	5.8%	5.8%	5.8%	**5.8%**
RBL Bank	RBK IN	9.3%	7.9%	8.0%	**8.4%**	8.8%	7.9%	8.0%	**8.2%**	5.6%	6.0%	6.0%	**5.9%**
Allahabad Bank	ALBK IN	8.8%	8.0%	7.5%	**8.1%**	8.0%	8.0%	7.5%	**7.8%**	5.5%	5.5%	5.5%	**5.5%**
Bank of Baroda	BOB IN	8.5%	8.0%	8.0%	**8.2%**	8.7%	8.0%	8.0%	**8.2%**	6.0%	6.0%	6.0%	**6.0%**

Source: Company filings, Ambit Capital research

Conclusion: Indian Overseas Bank, State Bank of India, Syndicate Bank and Karur Vysya Bank are amongst the top banks whose actuarial assumptions appear to be overly aggressive vis-à-vis the remaining banks (see exhibit 13 below):

IOB, SBI, Syndicate Bank and KVB get penalised the most on their pension assumptions

Exhibit 13: The top four banks that get penalised on their pension assumptions

Name	Reason why the bank gets penalised
Indian Overseas Bank	Higher discount rate and expected return on plan assets assumption (and a lower rate of salary escalation assumption).
State Bank of India	Higher discount rate assumption and a lower rate of salary escalation assumption.
Syndicate Bank	Higher discount rate assumption and lower salary escalation rate assumption.
Karur Vysya Bank	Higher expected return on plan assets assumption.

Source: Company filings, Ambit Capital research

Extent of balance sheet risk

In this category of checks, we evaluate the extent of on-balance sheet risk and the off-balance-sheet risk that the bank stands exposed to.

1. Contingent liabilities as a percentage of equity

We penalise banks with high levels of contingent liabilities historically

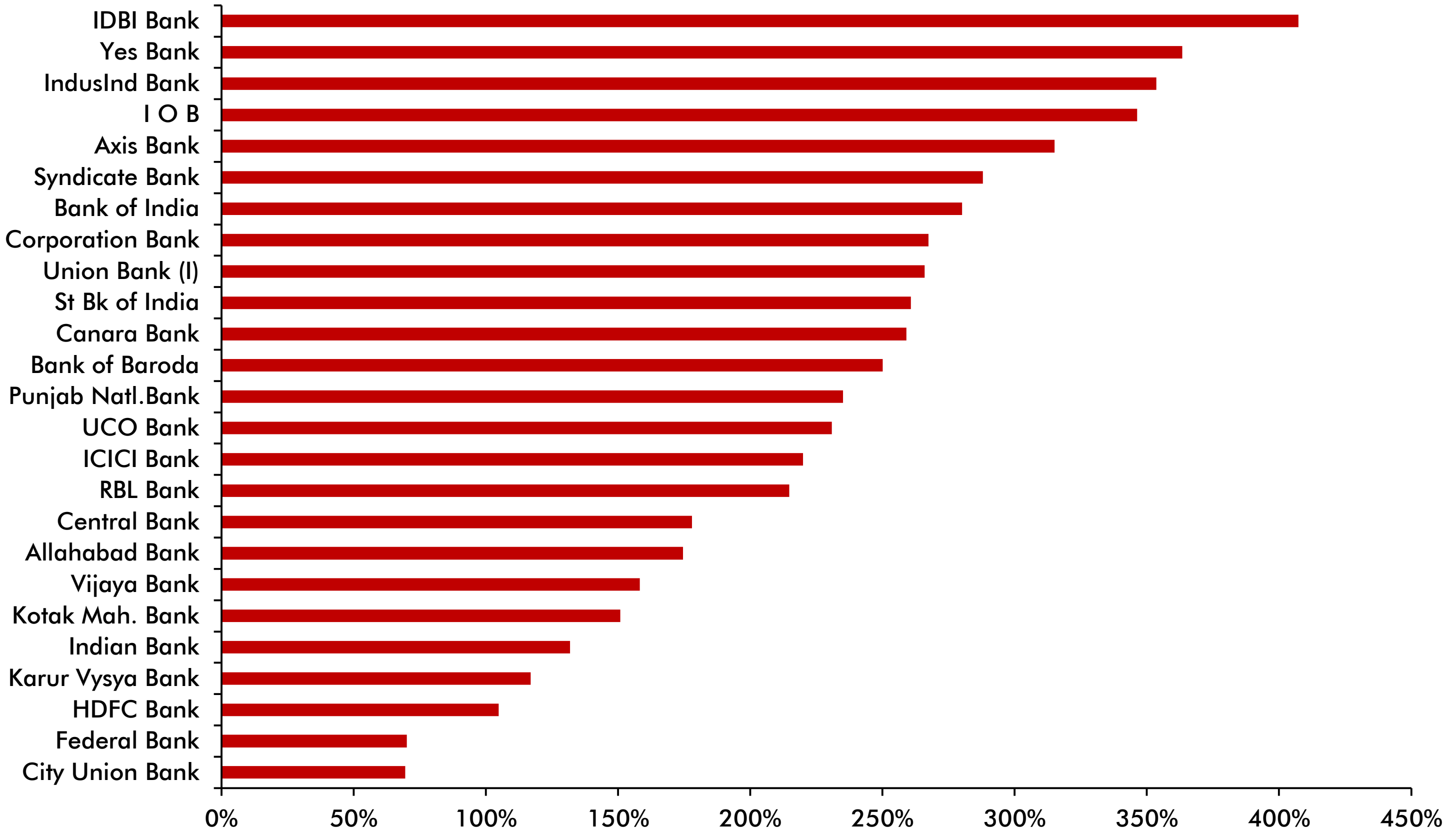
Rationale: This is indicative of the extent of off-balance-sheet risk. A high ratio raises concerns regarding the strength of the bank's balance sheet in the event that these contingent liabilities materialise.

Not that in case of several banks, contingent liability also includes the liability on account of outstanding forward exchange and derivative contracts. Whilst one could argue that such liabilities should also be considered whilst determining the extent of the off-balance-sheet risk that a bank is exposed to (given that in several instances the bank would continue to remain liable in case the counter-party defaults), for the purpose of our analysis we do not include such liabilities arising on account of these derivative contracts. Instead, we have only considered the bank's credit exposure to these derivative contracts.

Methodology: To evaluate all the top banks on this metric, we first compute the contingent liabilities as a proportion of the bank's reported equity (excluding revaluation reserve) for each of the last three years. We then sort the list on the basis of the average proportion of contingent liabilities to equity over the last three years and distribute the banks into four quartiles based on this proportion. We penalise firms with a very high proportion of contingent liabilities. On the other hand, we assign the highest score to banks where contingent liabilities have historically averaged a lower proportion of reported equity over the last three years.

Results: In exhibit 14 below, we plot the average proportion of contingent liabilities as a percentage of equity (excluding revaluation reserve) for the 25 banks under analysis:

Exhibit 14: Average contingent liabilities as a percentage of equity for the banks under analysis



Source: Company filings, Ambit Capital research

Conclusion:

- **Banks that get penalized the most-** IDBI Bank, Yes Bank and IndusInd Bank (contingent liabilities have averaged in excess of 3.5x the reported equity for all the three banks) followed by Indian Overseas Bank, Axis Bank and Syndicate Bank.
- **Banks that get rewarded the most-** City Union Bank and Federal Bank (contingent liabilities have averaged ~0.7x the reported equity over the last three years) followed by HDFC Bank, Karur Vysya Bank, Indian Bank, Kotak Mahindra Bank and Vijaya Bank.

IDBI Bank, Yes Bank and IIB get penalised the most on this measure

2. Real estate exposure

Rationale: While real estate segment has reported lower asset quality stress over the past decade, the Government's crackdown on informal economy and unaccounted income is expected to put pressure on real estate prices. This will increase both the probability of default and loss given default of the borrowers.

Government's crackdown on the informal economy should result in higher asset quality stress in the real estate sector…

Globally, too, banks' real estate sector exposures are considered as a most significant proxy to direct linkages to cyclicality in the economy. Hence, banks' exposures to the sector (direct and indirect) are closely monitored to assess risk from movement in real estate prices.

Hence, we have used this as one parameter to determine the on-balance-sheet risk and the off-balance-sheet risk that different banks are exposed to. Real estate exposure of the banks includes direct exposure to residential mortgage, commercial real estate, investments in Mortgage Backed Securities, and indirect exposure to housing finance companies.

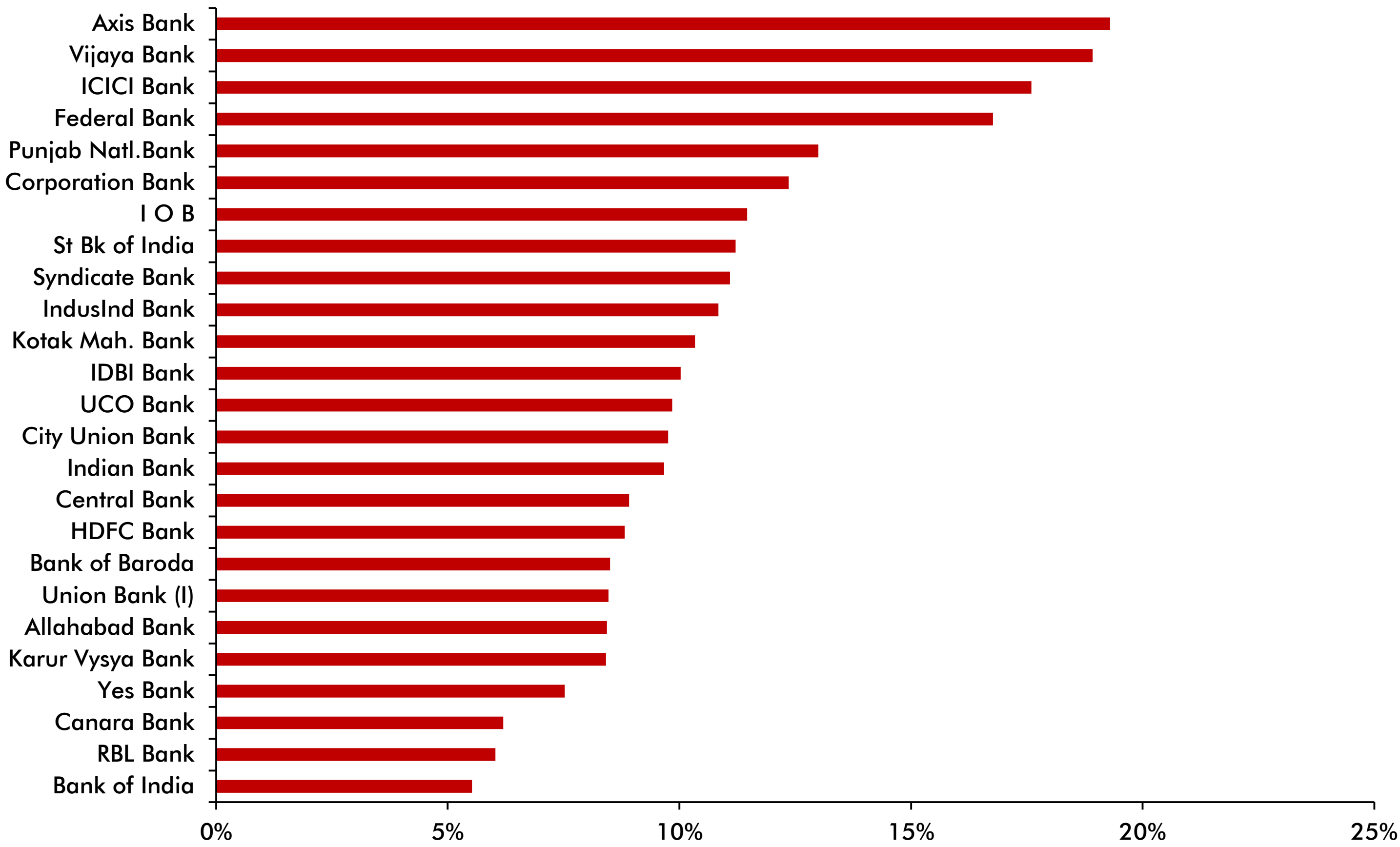
…so we penalise banks with high exposure to the real estate sector

Methodology: We penalise banks based on their exposure to the real estate sector in the following manner:

- We assign scores to the banks based on their absolute real estate exposure in FY16.
- We also assign scores to these banks on the basis of the change in the exposure to the sector (in FY16 vs in FY14).
- We then take an average of the scores arrived at using points (a) and (b) above.
- Based on the average score calculated in step (c) above, we distribute the banks into four quartiles. The rationale is to penalise banks with a high exposure to the real estate sector (on an absolute basis) and/or where the exposure to the sector has increased the most. On the other hand, banks with a relatively lower exposure to the real estate sector and/or where the exposure to the sector has declined over the last two years get rewarded the most.

Results: Exhibit 15 below shows the FY16 exposure to real estate sector for the banks under analysis.

Exhibit 15: Real estate exposure for the top 25 banks under analysis (FY16)



Source: Company filings, Ambit Capital research

Conclusion:

- **Banks that get penalised the most-** Federal Bank, ICICI Bank and Vijaya Bank (due to high exposure to real estate sector on an absolute basis and increase in their real estate exposure in FY16 vs FY14).
- **Banks that get rewarded the most-** RBL Bank, Union Bank, Allahabad Bank and City Union Bank (due to lower exposure to the real estate sector- <10% of overall exposure for these banks in FY16; and reduction in exposure to the real estate sector in FY16 vs FY14).

Federal Bank, ICICI Bank and Vijaya Bank get penalised the most due to high exposure to the real estate sector

3. Concentration of exposure

Rationale: As a prudential measure aimed at better risk management and avoidance of concentration of credit risks, the RBI has advised banks to fix limits on their exposure to specific industry or sectors and has prescribed regulatory limits on banks' exposure to single and group borrowers in India. Hence, we identify banks which have taken higher concentration risk and penalise banks with high concentration of exposure.

We penalise banks with a high concentration of exposure to their top 20 clients

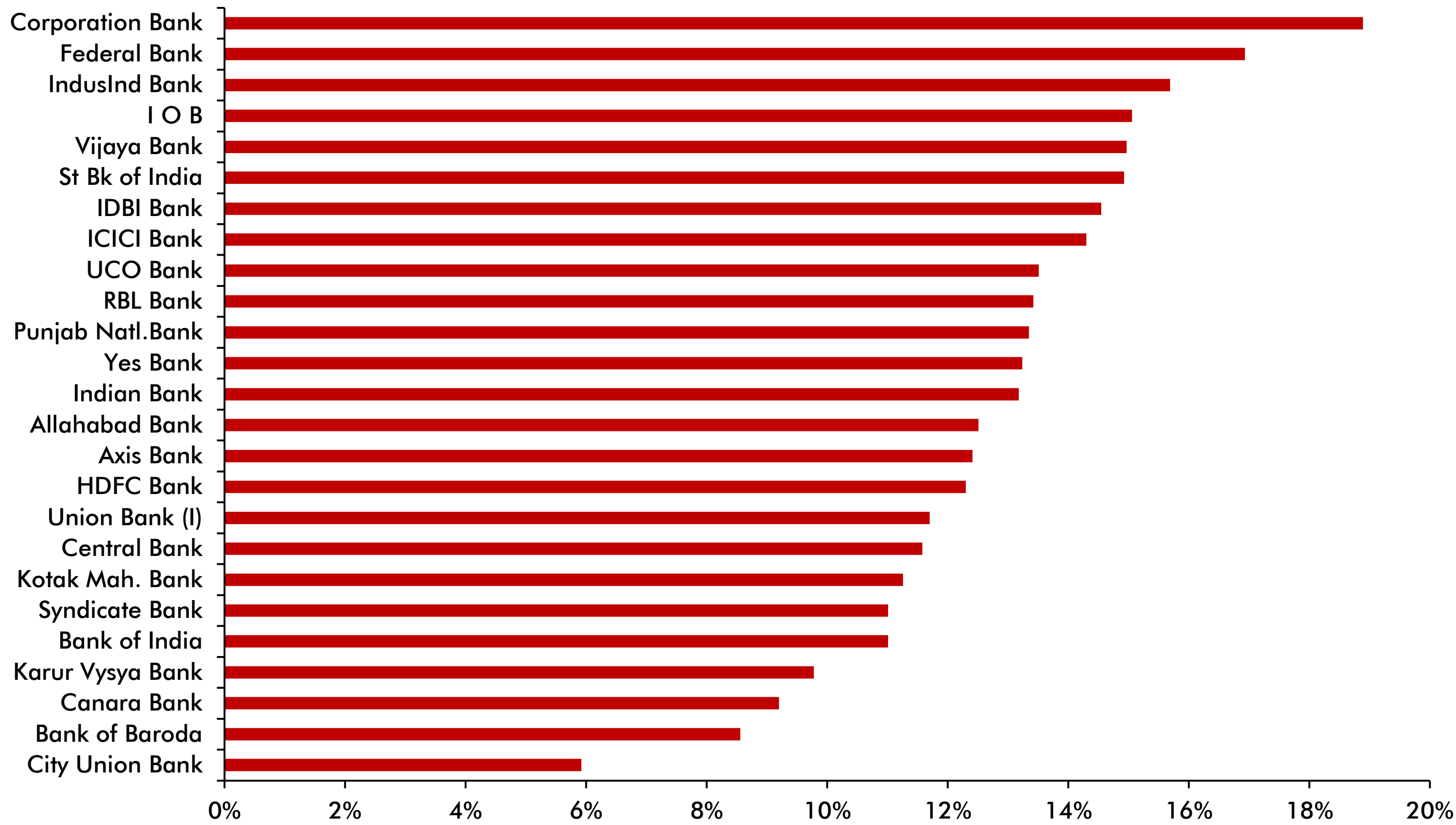
Methodology:

- We assign scores to the banks based on their concentration of exposure with the top 20 clients in FY16.
- We also assign scores to these banks on the basis of the <u>change in the concentration of exposure</u> with the top 20 clients (in FY16 vs in FY14).
- We then take an average of the scores arrived at using points (a) and (b) above.

- Based on the average score calculated in step (c) above, we distribute the banks into four quartiles. The rationale is to penalise banks with a high proportion of exposure to the top 20 clients and/or where the proportion of exposure to the top 20 clients has increased the most. On the contrary, banks with a lower proportion of exposure to the top 20 clients and/or where this exposure has been declining over the last two years get rewarded the most.

Results: In Exhibit 16 below, we plot the FY16 concentration of exposure (with the top 20 clients) for the banks under analysis.

Exhibit 16: Concentration of exposure with top 20 clients for the top 25 banks under analysis (FY16)



Source: Company filings, Ambit Capital research

Conclusion: Corporation Bank, Federal Bank, IndusInd Bank and Indian Overseas Bank are the top four banks with the maximum concentration of exposure with the top 20 clients in FY16. Of these, only Corporation Bank has managed to reduce its concentration of exposure in FY16 (vs in FY14). Thus Federal Bank, IndusInd Bank and Indian Overseas Bank are amongst banks that get penalised the most given the high proportion of concentration of exposure and the increasing trend.

Federal Bank, IIB and IOB are amongst banks with very high concentration of exposure

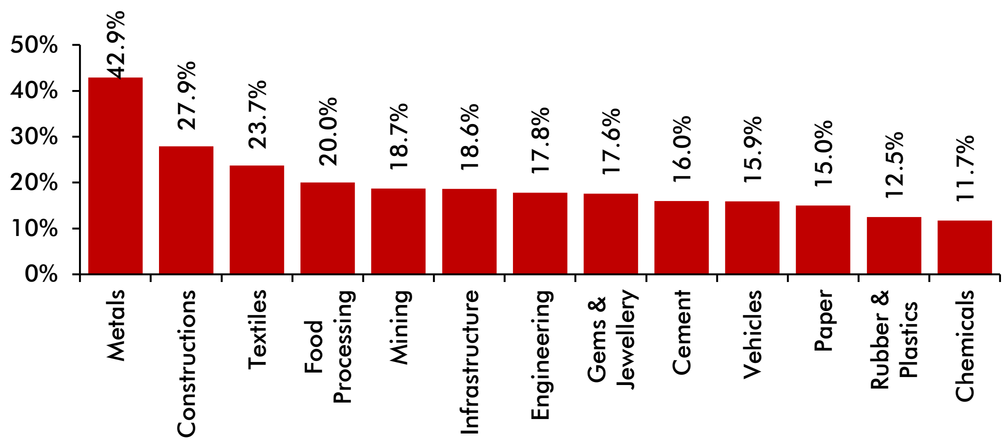
In contrast, City Union Bank stands out as the bank with the lowest proportion of concentration of exposure followed by Bank of Baroda, Canara Bank and Karur Vysya Bank. Of these, City Union Bank and Karur Vysya Bank have also been able to materially reduce their concentration of exposure (in FY16 vs in FY14) and hence get rewarded the most on our framework.

4. Exposure to the stressed sectors

Rationale: As per the latest RBI Financial Stability Report (dated December 2016), 22.3% of credit given to industry is either classified as NPAs or is restructured. Industry accounts for 40% of the total bank credit. As can be seen from following exhibit, Metals, Construction, Textiles, Mining, Infrastructure (including Power) and Engineering are the top sectors that contribute to total stressed assets. Majority of the NPAs recognised in FY16-9MFY17 were from these sectors.

Metals, Construction, Textiles, Mining, Infra (incl. Power) and Engineering are the sectors that contribute the most to total stressed assets

Exhibit 17: Percentage of total stressed assets sector-wise (as at Sept-16)



Source: RBI, Ambit Capital research

We thus penalise banks with high exposure to these sectors

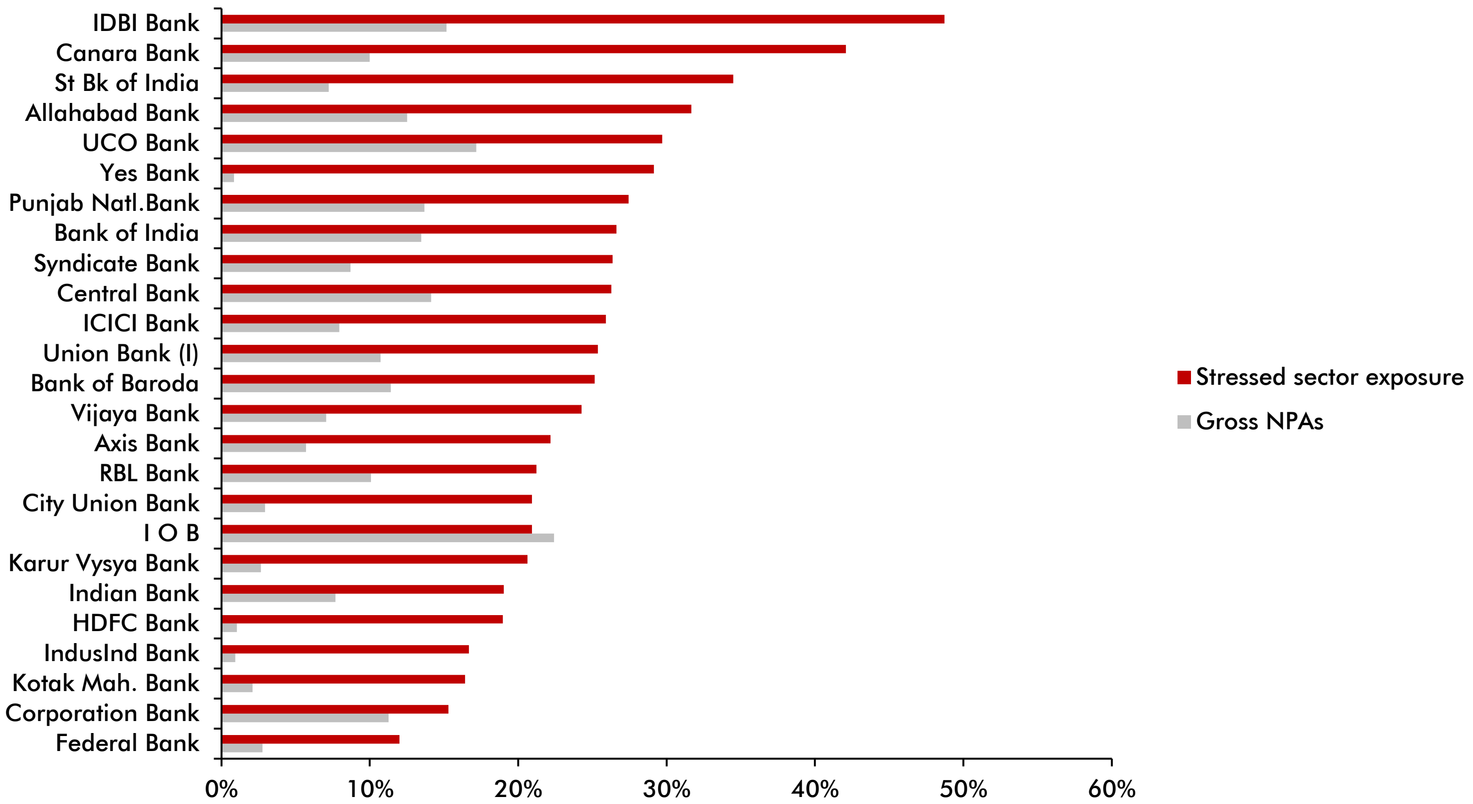
Thus, given the amount of stress prevalent in these sectors, we penalise banks with high exposure to the stressed sector as per the latest available quarterly filings (which are mandatorily reported under Basel III norms).

Methodology:

- We assign scores to banks on the basis of exposure to these stressed sectors in the latest quarter.
- We also contrast this exposure with the percentage of bad loans on their books (i.e. the latest reported gross NPAs) and assign scores based on the divergence between exposure to stressed sectors and gross NPAs.
- We then take an average of the scores arrived at using points (a) and (b) above.
- Based on the average score calculated in step (c) above, we distribute the banks into four quartiles. The rationale is to penalise banks with a high exposure to the stressed sector (on an absolute basis) and/or where there is a huge divergence between the exposure to the stressed sector and the gross NPAs.

Results: The exposure of all these banks (based on the latest quarterly filings available) to the stressed sectors (i.e. Metals, Construction, Textiles, Mining, Infrastructure (including Power) and Engineering) has been plotted in exhibit 18 below.

Exhibit 18: Stressed sector exposure for the 25 banks under analysis (based on latest quarterly filings)



Source: Company filings, Ambit Capital research. Note: Data for Bank of India, Union Bank of India and Vijaya Bank is for the September 2016 quarter as the latest quarterly filings, i.e. for the December 2016 quarter are not available for these banks. Note that data for Federal Bank is not perfectly comparable with other banks, as sectoral exposures are given only for the part of exposure and not for the total exposure.

IDBI Bank, Canara Bank and SBI are the banks with maximum exposure to the stressed sectors and get penalised the most

Conclusion: With nearly 49% exposure to the stressed sector, IDBI Bank stands out as the bank with the maximum exposure to the stressed sector (as per the latest available quarterly filings) followed by Canara Bank (~42% exposure) and State Bank of India (~34% exposure). Allahabad Bank, UCO Bank and Yes Bank are the other banks with a high proportion of exposure (in excess of 25% of the overall exposure) to the stressed sector.

Further, barring UCO Bank, all the banks mentioned above also have a huge divergence between the reported exposure to stressed sector and the percentage of bad loans on their books. Thus, we penalise these banks the most on our framework.

In contrast, Federal Bank followed by Corporation Bank and Kotak Mahindra Bank are the three banks with the least exposure to stressed sectors (and also a lower divergence between the reported stressed sector exposure and the percentage of bad loans on their books). These banks thus get rewarded the most on our framework (in addition to Indian Overseas Bank, Indian Bank and RBL Bank).

The 'A-listers' of Indian banking universe

The overall scores for the 25 banks analysed have been summarised in exhibit 19 below:

Exhibit 19: Overall results from the analysis of the 25 banks

Name	Ticker	Mcap (US$mn)	Stance*	Accounting checks: Interest accrued as a % of interest income	Accounting checks: ESOPs accounting	Accounting checks: Pension accounting	Balance sheet risk: Contingent liabilities as a % of equity	Balance sheet risk: Real estate exposure	Balance sheet risk: Concentration of exposure	Balance sheet risk: Stressed sector exposure	Overall score	Overall Bucket
Kotak Mah. Bank	KMB IN	22,544	SELL	3.0	3.0	N/A	4.0	3.0	3.0	4.0	3.3	Bucket 'A'
Allahabad Bank	ALBK IN	773	NR	4.0	N/A	4.0	3.0	4.0	4.0	1.0	3.3	Bucket 'A'
City Union Bank	CUBK IN	1,275	SELL	2.0	3.0	N/A	4.0	4.0	4.0	2.0	3.2	Bucket 'A'
Union Bank (I)	UNBK IN	1,532	SELL	4.0	N/A	2.0	2.0	4.0	4.0	3.0	3.2	Bucket 'A'
Vijaya Bank	VJYBK IN	971	NR	4.0	N/A	3.0	4.0	1.0	3.0	3.0	3.0	Bucket 'A'
Karur Vysya Bank	KVB IN	895	SELL	3.0	N/A	1.0	4.0	3.0	4.0	3.0	3.0	Bucket 'A'
Corporation Bank	CRPBK IN	814	NR	4.0	N/A	3.0	2.0	2.0	2.0	4.0	2.8	Bucket 'B'
Indian Bank	INBK IN	2,042	NR	2.0	N/A	2.0	4.0	2.0	3.0	4.0	2.8	Bucket 'B'
Central Bank	CBOI IN	2,612	NR	2.0	N/A	2.0	3.0	3.0	4.0	3.0	2.8	Bucket 'B'
HDFC Bank	HDFCB IN	53,223	SELL	2.0	1.0	N/A	4.0	3.0	3.0	3.0	2.7	Bucket 'B'
Punjab Natl.Bank	PNB IN	4,516	SELL	4.0	N/A	3.0	3.0	2.0	2.0	2.0	2.7	Bucket 'B'
Bank of India	BOI IN	2,003	SELL	2.0	N/A	3.0	2.0	4.0	2.0	3.0	2.7	Bucket 'B'
Federal Bank	FB IN	2,186	SELL	4.0	1.0	3.0	4.0	1.0	1.0	4.0	2.6	Bucket 'C'
RBL Bank	RBK IN	2,631	NR	1.0	1.0	4.0	3.0	4.0	1.0	4.0	2.6	Bucket 'C'
Bank of Baroda	BOB IN	5,539	SELL	1.0	N/A	4.0	2.0	2.0	3.0	3.0	2.5	Bucket 'C'
Syndicate Bank	SNDB IN	913	NR	3.0	N/A	1.0	1.0	3.0	4.0	2.0	2.3	Bucket 'C'
Canara Bank	CBK IN	2,359	NR	3.0	N/A	2.0	2.0	3.0	3.0	1.0	2.3	Bucket 'C'
UCO Bank	UCO IN	853	NR	3.0	N/A	2.0	3.0	2.0	2.0	2.0	2.3	Bucket 'C'
Axis Bank	AXSB IN	18,364	SELL	3.0	3.0	N/A	1.0	1.0	2.0	3.0	2.2	Bucket 'C'
Yes Bank	YES IN	9,195	NR	1.0	2.0	N/A	1.0	4.0	3.0	1.0	2.0	Bucket 'D'
IDBI Bank	IDBI IN	2,396	NR	2.0	N/A	4.0	1.0	3.0	1.0	1.0	2.0	Bucket 'D'
I O B	IOB IN	987	NR	4.0	N/A	1.0	1.0	1.0	1.0	4.0	2.0	Bucket 'D'
ICICI Bank	ICICIBC IN	24,102	SELL	1.0	2.0	N/A	3.0	1.0	1.0	2.0	1.7	Bucket 'D'
IndusInd Bank	IIB IN	11,936	SELL	1.0	2.0	N/A	1.0	1.0	1.0	3.0	1.5	Bucket 'D'
St Bk of India	SBIN IN	32,024	SELL	1.0	N/A	1.0	2.0	2.0	2.0	1.0	1.5	Bucket 'D'

*Source: Company filings, Ambit Capital research. Note: *NR indicates Not Rated. To arrive at these buckets we first assign scores to all the 25 banks on each of the 7 parameters used in our framework Next we take a blended average of these scores and basis this blended average score we categorize these banks into buckets with Bucket 'A' indicating the best and Bucket 'D' indicating the worst. N/A indicates the bank has not been rated on that particular measure on our framework.*

From Exhibit 19 above, we make the following observations:

Whilst PSU banks fare well on the accounting checks…

- **PSU banks fare better than their private sector counterparts on accounting checks**

  PSU banks get a higher score than their private sector counterparts. The lower scores for private banks could be attributed to their low scores on ESOP accounting (and also a low score on proportion of interest accrued to interest income). As discussed earlier, all the private sector banks that use ESOPs as a way to incentivise their employees follow the intrinsic value method to account for the cost of these ESOPs.

- **Private sector banks however are exposed to much lesser balance sheet risk than PSU banks**

  The extent of balance sheet risk that the private sector banks are currently exposed to is much lower than that of PSU banks. High levels of contingent liabilities and greater exposure to stressed sectors are two key reasons why PSU banks get a lower score on this category of checks versus their private peers.

…private sector banks are less exposed to balance sheet risk

- **Within private sector banks, older banks get a much higher score**

  Within the private sector banks, the older banks (i.e. City Union Bank, Karur Vysya Bank, Federal Bank and RBL Bank) get a much higher score. Lower level of balance sheet stress is one of the key reasons behind the superior scores for older private sector banks.

Within private sector banks older banks fare much better than their newer counterparts

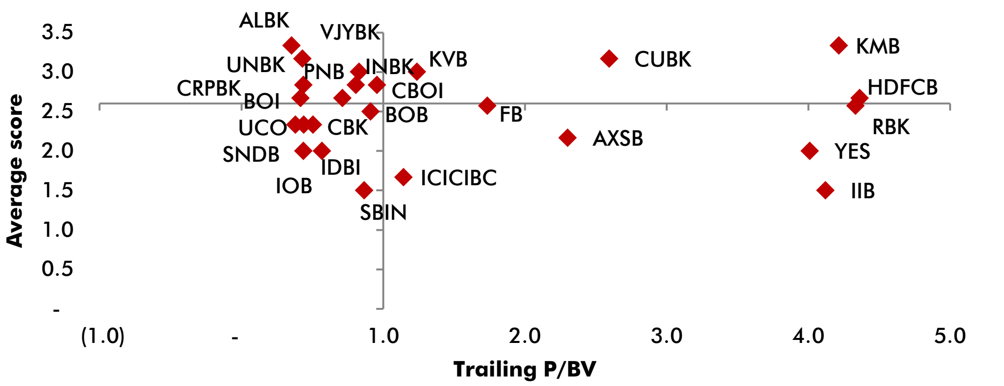
- **KMB and CUBK are amongst banks with highest scores**
  Overall, Kotak Mahindra Bank, Allahabad Bank and City Union Bank have the highest scores on our framework followed by Union Bank, Vijaya Bank and Karur Vysya Bank. However, State Bank of India and IndusInd Bank are amongst those with relatively sub-par scores on our framework followed by ICICI Bank, Indian Overseas Bank, IDBI Bank and Yes Bank.

Overall KMB and CUBK are amongst banks that do very well on the framework

Mapping the scores with the trailing valuations

In exhibit 20 below, we map the overall scores for these banks with their trailing valuations.

Exhibit 20: Overall scores vs trailing P/B for the 25 banks under analysis



Source: Bloomberg, Ambit Capital research. Note: This is trailing reported standalone book value as of Sep '16 (except for KMB which is on a consolidated basis).

Exhibit 20 above suggests that most PSU banks currently trade at cheaper valuation multiples strictly on a trailing price-to-book basis; this could be explained by very high level of stressed assets and low provisioning against those bad loans for these banks.

However, the valuation multiples for most private sector banks are much higher. Whilst these premium valuations for private sector banks versus PSU banks could partly be explained by the better quality of disclosures and lower levels of balance sheet stress (for private sector banks versus PSU banks), the key thing to note is that within the private sector banks there appears to be a wide level of disparity.

For example, whilst Kotak Mahindra Bank and HDFC Bank (that currently trade at valuation multiples north of 4x Sept '16 P/B) and City Union Bank (that currently trades at 2.6x Sept '16 P/B) do well on our framework, **IndusInd Bank** (4.1x Sept '16 P/B) and **Yes Bank** (4.0x Sept '16 P/B) are two banks whose current valuation multiples do not appear to reflect the extent of exposure to stressed sectors that these banks have on their balance sheet. Of these, we have a bottom-up SELL on IndusInd Bank (TP: Rs 1,140, 14% downside).

On trailing valuations, YES and IIB are two banks whose current valuations do not appear to reflect the extent of stressed sector exposure that these banks have on their balance sheet

IndusInd Bank (US$11.9bn, IIB IN, SELL, TP-Rs1140, 14% downside)

While the bank continues to deliver strong loan growth (25% YoY as at 9MFY17-end), underlying trends in many of the industries it is exposed to are weak. In sectors such as real estate (14% of total loans), vehicle finance (32%) and microfinance (3%), trends (real estate prices/transactions, vehicle sales and MFI defaults/disbursements) have worsened in recent months. Thus, we expect loan growth to slow. We expect earnings CAGR of ~19% (FY18-19E) as against consensus expectations of ~25% CAGR. Thus, valuation at 4.0x FY17E BV and 23.7x FY18E EPS are expensive. We are SELLers with target price of Rs1140 (December 2017), valuing the bank at 3.0x FY18E BVPS.

Axis Bank and ICICI Bank are two other banks with relatively sub-par scores on our framework and yet these banks currently trade at higher multiples vis-à-vis most other banks. We are also SELLERs on both these banks.

Axis Bank (US$18.4bn, AXSB IN, SELL, TP-Rs504, 2% downside)

Axis Bank has seen a sharp deterioration in asset quality in 9MFY17, with gross NPA increasing to 5.7% from 1.8% at FY16-end). While total stressed loans including watch-list accounts have been flat YTD, at 8.7% of loans, slippages from both watch-list and outside watch-list have been higher than levels anticipated at the beginning of the year. While the bank's strengths on retail liabilities, SME banking and other businesses (e.g. DCM) are well-recognised, RoA/RoE will be severely impacted in the near term due to asset quality stress. We expect RoE of 11% in FY18 before recovering to 17% in FY19. We are SELLers with a target price of Rs504 (December 2017), valuing the bank at 2.0x FY18E BVPS.

ICICI Bank (US$24.1bn, ICICIBC IN, SELL, TP-Rs238, 14% downside)

The bank's corporate asset quality has been a persistent issue, leading to an increase in stressed assets and associated credit costs. The visibility of a recovery is also poor with a large "watch-list aka drill-down portfolio", at 6% of loans. Even if there are some large ticket-resolutions, the additions of NPAs and credit costs would stay elevated; we expect average credit cost of 185bps in FY18-19E (vs 440bps in FY17E and 183bps in FY16). Further, an underwhelming track-record on operating profitability and capital allocation (PPOP to RWA is the lowest among peers) implies RoE recovery to >15% is unlikely in the near to medium term. We are SELLers with a target price of Rs238 (December 2017), valuing the consolidated entity at 1.3x FY18E BVPS.

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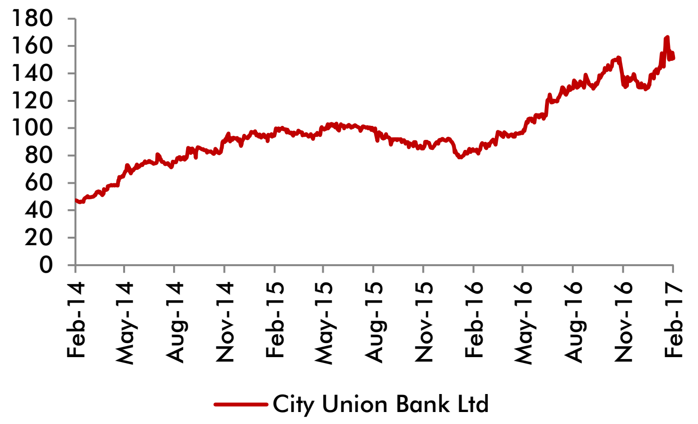
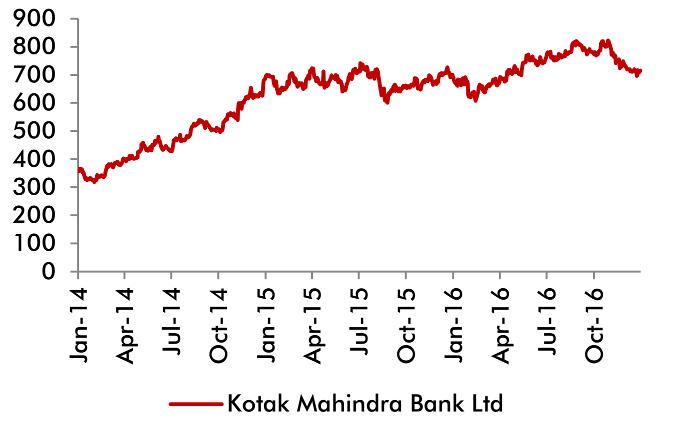
City Union Bank Ltd (CUBK IN, BUY)



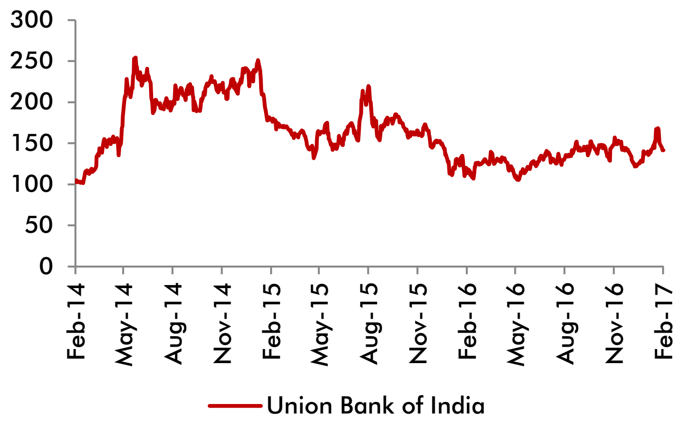
Source: Bloomberg, Ambit Capital research

Kotak Mahindra Bank Ltd (KMB IN, SELL)



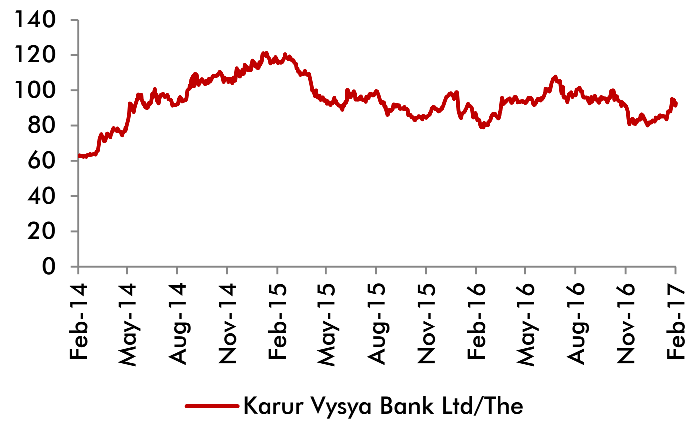
Source: Bloomberg, Ambit Capital research

Union Bank Of India (UNBK IN, SELL)



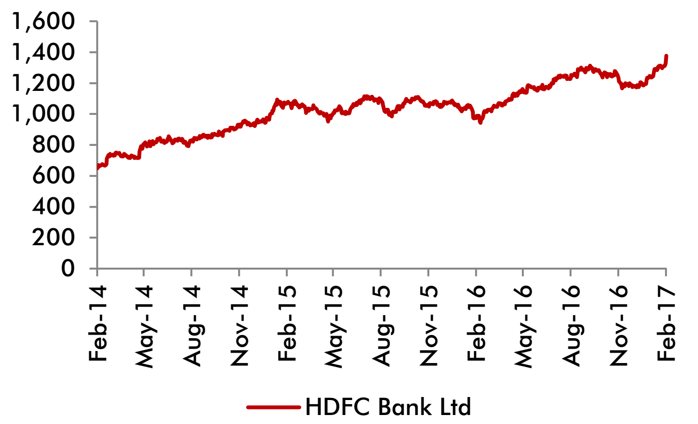
Source: Bloomberg, Ambit Capital research

Karur Vysya Bank Ltd (KVB IN, SELL)



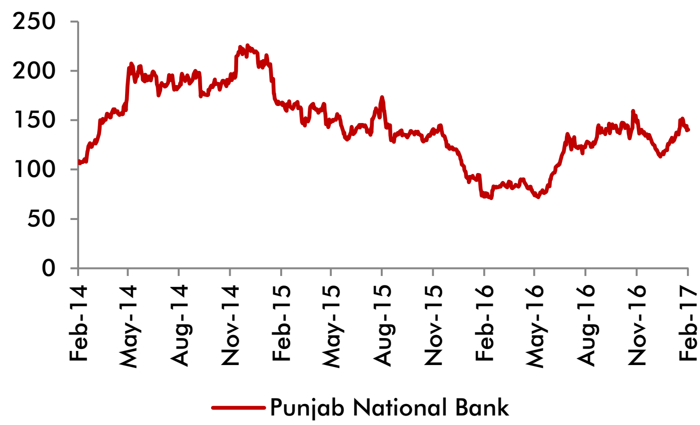
Source: Bloomberg, Ambit Capital research

HDFC Bank Ltd (HDFCB IN, SELL)



Source: Bloomberg, Ambit Capital research

Punjab National Bank (PNB IN, SELL)

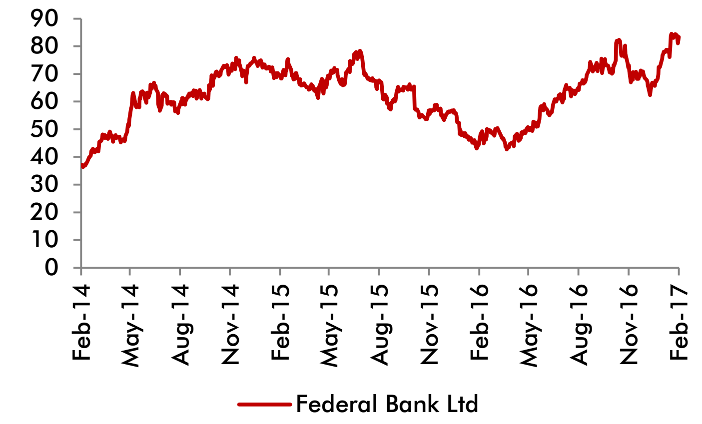


Source: Bloomberg, Ambit Capital research

Bank of India (BOI IN, SELL)

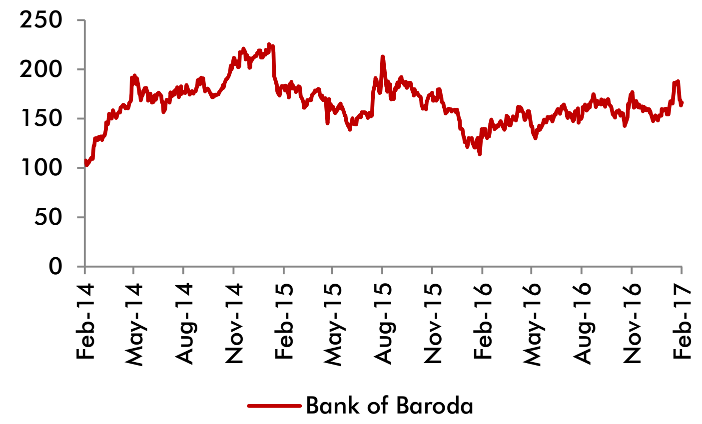
Source: Bloomberg, Ambit Capital research

Federal Bank Ltd (FB IN, SELL)



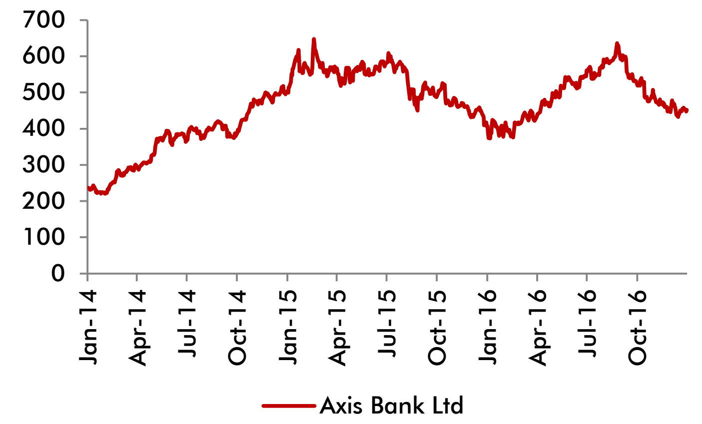
Source: Bloomberg, Ambit Capital research

Bank Of Baroda (BOB IN, BUY)



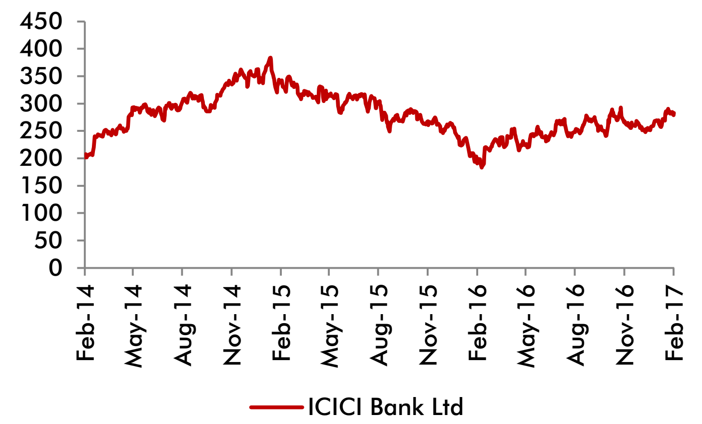
Source: Bloomberg, Ambit Capital research

Axis Bank Ltd (AXSB IN, SELL)



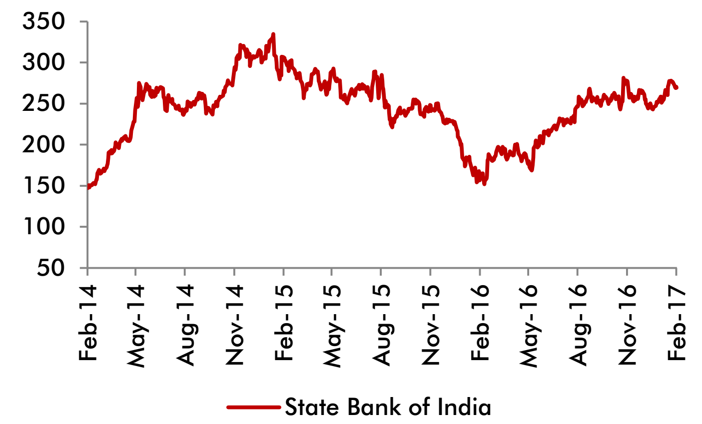
Source: Bloomberg, Ambit Capital research

ICICI Bank Ltd (ICICI IN, SELL)



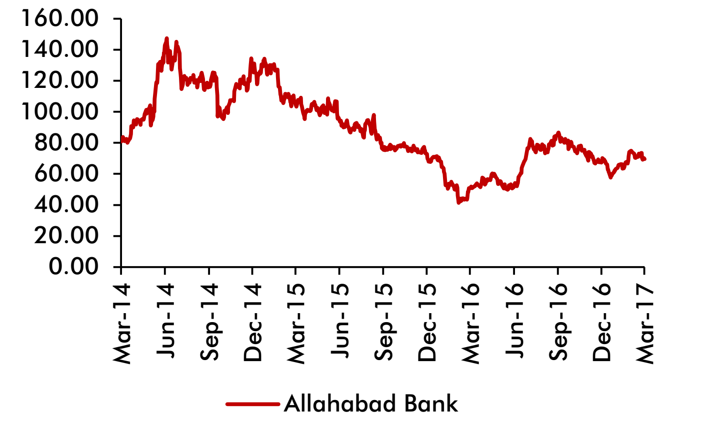
Source: Bloomberg, Ambit Capital research

State Bank Of India (SBIN IN, SELL)



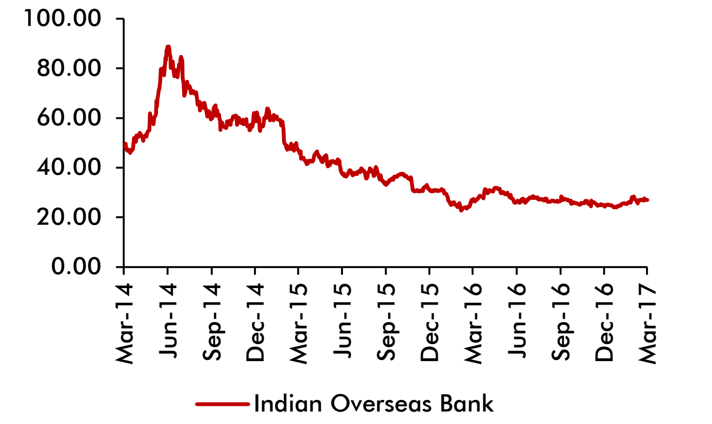
Source: Bloomberg, Ambit Capital research

Allahabad Bank (ALBK IN, NOT RATED)



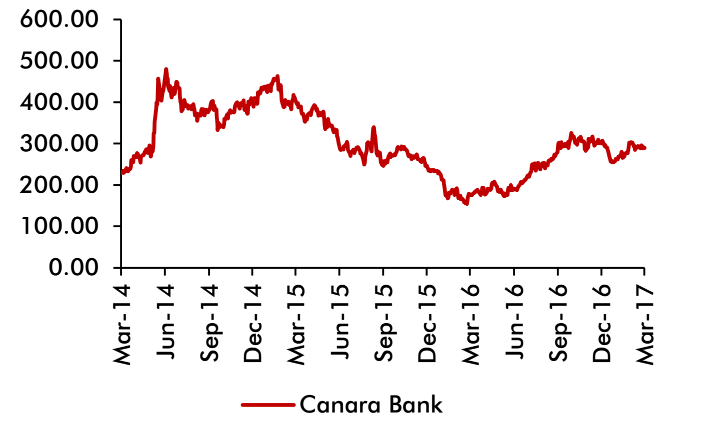
Source: Bloomberg, Ambit Capital research

IOB (IOB IN, NOT RATED)



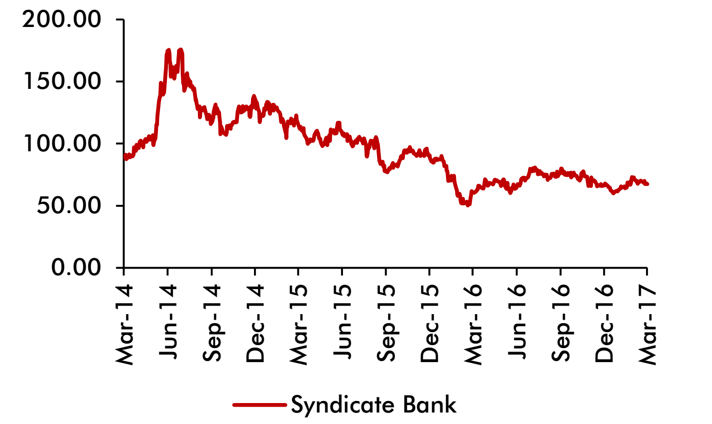
Source: Bloomberg, Ambit Capital research

Canara Bank (CBK IN, NOT RATED)



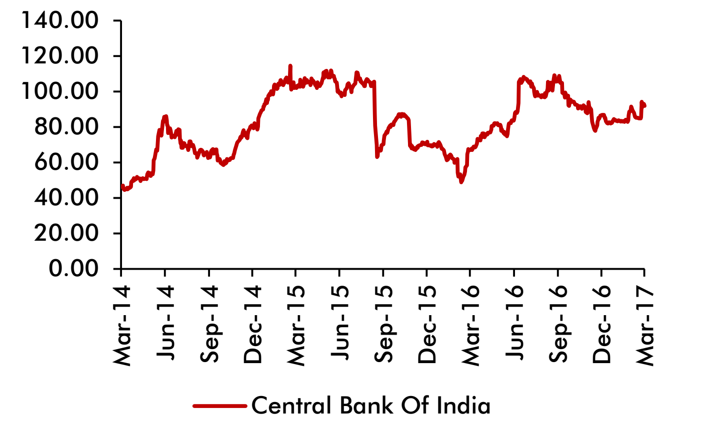
Source: Bloomberg, Ambit Capital research

Syndicate Bank (SNDB IN, NOT RATED)



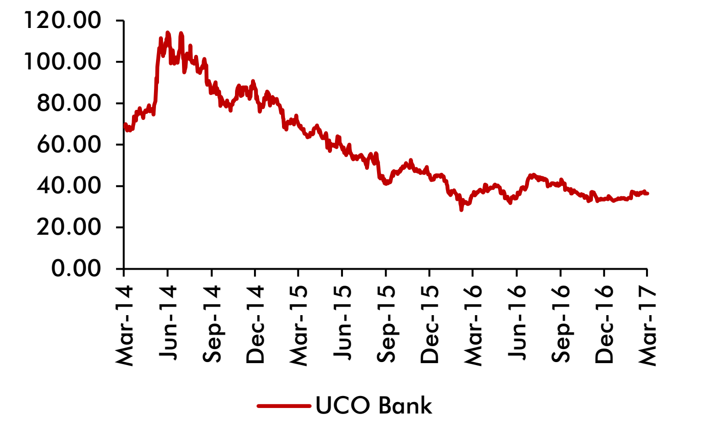
Source: Bloomberg, Ambit Capital research

Central Bank Of India (CBOI IN, NOT RATED)



Source: Bloomberg, Ambit Capital research

UCO Bank (UCO IN, NOT RATED)

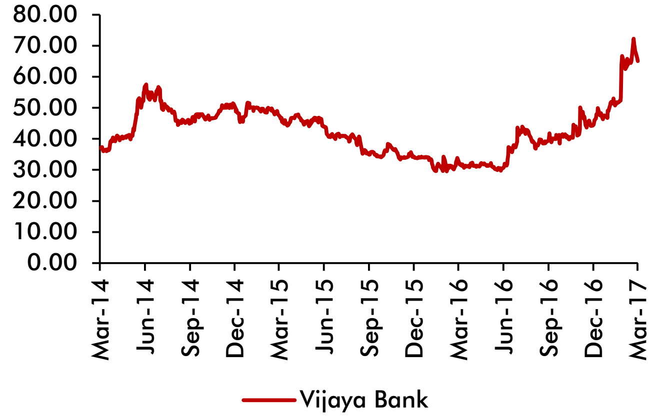


Source: Bloomberg, Ambit Capital research

Corporation Bank (CRPBK IN, NOT RATED)

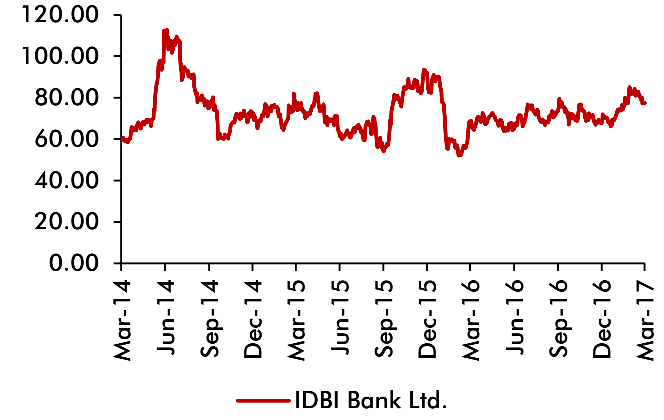
Source: Bloomberg, Ambit Capital research

Vijaya Bank (VJYBK IN, NOT RATED)



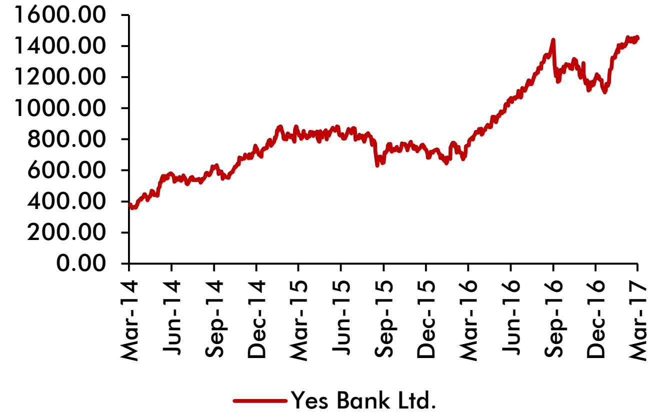
Source: Bloomberg, Ambit Capital research

IDBI Bank Ltd. (IDBI IN, NOT RATED)



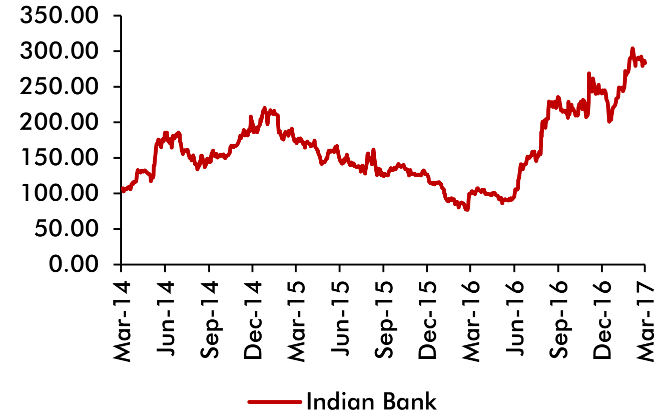
Source: Bloomberg, Ambit Capital research

Yes Bank Ltd. (YES IN, NOT RATED)



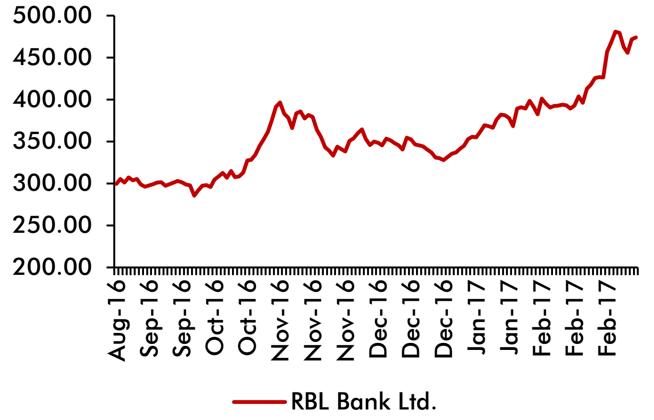
Source: Bloomberg, Ambit Capital research

Indian Bank (INBK IN, NOT RATED)



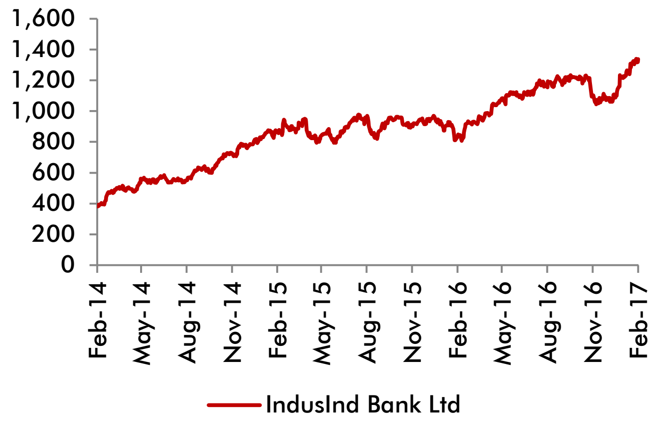
Source: Bloomberg, Ambit Capital research

RBL Bank Ltd. (RBK IN, NOT RATED)



Source: Bloomberg, Ambit Capital research

IndusInd Bank Ltd (IIB IN, BUY)



Source: Bloomberg, Ambit Capital research

Explanation of Investment Rating	
Investment Rating	**Expected return (over 12-month)**
BUY	>10%
SELL	≤10%
NO STANCE	We have forward looking estimates for the stock but we refrain from assigning valuation and recommendation
UNDER REVIEW	We will revisit our recommendation, valuation and estimates on the stock following recent events
NOT RATED	We do not have any forward looking estimates, valuation or recommendation for the stock
POSITIVE	We have a positive view on the sector and most of stocks under our coverage in the sector are BUYs
NEGATIVE	We have a negative view on the sector and most of stocks under our coverage in the sector are SELLs

Disclaimer

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