India Banks

Asset Quality: Testing the Stress

- **Where will NPL's go? It's a tough one** — a) We say 4% (2.3% currently); b) Analyst estimates range from 3-6%; c) Banks don't have a fix on numbers – but all suggest a meaningful escalation; and d) Historical peak is 25%. We don't believe anyone has the answers – but we pose questions, and try to answer them.

- **When will book values erode? At 9% NPLs** — The sector breaks even at 8.7% NPL levels – to reach this level NPLs will have to rise 4.5x current levels. We believe this scenario is still far off and therefore unlikely to play out. However, NPL range for individual break-evens is quite wide (between 6-27%).

- **How much do earnings get impacted? 20% for every 1% rise in NPLs** — With every 1% rise in NPLs: a) Earnings are hit about 20%; b) Assuming 50% loss rate, charge-offs rise 100bps; c) ROEs decline by 2.5ppt; and d) Book values are pulled down by 2.5%. We currently factor an avg 130bps of credit charges.

- **What happens if NPLs rise to 7%?** — 7% is above the highest end of current street estimates and can be seen as a potential stress case. At 7%, NPLs will rise to 3.5x of current levels and will result in: a) Sector earnings declining 73%; b) Banks still make some returns, albeit a low 4%; c) Book values are still 6% higher than current levels; and d) Loan losses rise to 310bps (2.5x current levels).

- **What about restructuring loans?** — It does complicate reporting and makes it harder to gauge the underlying health of assets; leads to an understatement of reported NPLs (will likely be lower than our estimates). In our 4% sector NPL estimates, we implicitly assume 20-30% of restructured assets turn into NPLs.

- **Who are the most exposed? Government banks, ICBK, Axis** — Government banks in general are more vulnerable to rising NPLs: a) Will erode book earlier (8% NPLs vs 11% for private); and b) Have more earnings impact for each 1% rise in NPLs (21% vs 17%). CBI and Canara are the most vulnerable; SBI the least (most earnings cushion). ICICI is more exposed from an earnings perspective. It "only" needs a trebling of NPLs before earnings are wiped out but has a much larger capital cushion – a 1% rise in NPLs impact book value by 1.5% (2.5% avg). After ICBK the largest impact on earnings is felt on Axis (among private banks).

- **Concerns might be overdone; remain overweight** — We expect NPLs to rise meaningfully and remain an overhang. However, we believe concerns might be overdone and possibly factored into stock prices. Maintain overweight on banks.

Aditya Narain, CFA[1]
+91-22-6631-9879
aditya.narain@citi.com

Manish Chowdhary, CFA[1]
+91-22-6631-9853
manish.chowdhary@citi.com

Naveenan Ramachandran[1]
naveenan.ramachandran@citi.com

See Appendix A-1 for Analyst Certification and important disclosures.

[1]Citigroup Global Markets India Private Limited

Stress Testing Asset Quality

NPLs headed up; tough to say where they will settle

Banks have started showing stress on asset quality, while reported NPLs have not risen substantially so far – it is only a matter of time. Rapid deterioration in the environment has continued and most banks have seen a huge increase in restructuring proposals. Keeping nomenclature aside (reported NPLs / restructuring) we do see stress levels rising – and estimate NPLs to rise to 4% from current 2.3%.

However, we see little consensus between banks and analysts (most analysts are more bearish than banks) and amongst analysts themselves (NPL estimates range from 3-6%). We believe the situation is continuously evolving and the picture will be clearer in a few quarters, when banks have reported most of the stress. Meanwhile to deal with the uncertainty, we analyse banks at various stress levels, and ascertain the impact on earnings, returns and capital levels.

When do NPLs start eroding book value?

This starts to happen when loan loss provisions are equal / greater than pre-provisioning profits. We calculate the book value neutral point for all banks and add it up for the sector, assuming – a) All the NPLs comes through in FY10E; b) Loss levels of 50% on new NPLs; and c) All provisions are made in the same year.

Key inferences – a) Sector is book value neural at 8.7% NPLs; b) Individual banks' break-even points exhibit a wide range (6-27% NPLs); c) Government banks will start eroding book value earlier than private banks; d) Most vulnerable stocks: CBI, ICBK, Canara, and Yes; e) Least vulnerable: IDFC, and Kotak.

Figure 1. Indian Banks – Book Value Break-Even Points for Individual Banks

	Base Case (FY10E)			At Break – Even Point (FY10E)			
	Loan Loss Charges (%)	NPL Ratio (%)	ROAE (%)	Reqd Rise in Provisions (%)	Loan Loss Charges (%)	NPL Ratio (%)	Reqd Rise in NPLs (%)
Private Banks	**2.0%**	**4.7%**	**10.6%**	**169%**	**5.4%**	**10.7%**	**372%**
HDFC Bank	2.1%	2.7%	17.5%	172%	5.7%	8.5%	537%
ICICI Bank	2.1%	7.5%	6.9%	103%	4.3%	11.7%	207%
AXIS Bank	2.0%	2.4%	14.8%	151%	5.1%	7.5%	803%
Kotak Mahindra Bank	1.6%	3.8%	9.1%	804%	14.2%	27.2%	1459%
IDFC	0.4%	0.6%	15.4%	1616%	6.6%	11.4%	6927%
Yes Bank	0.7%	1.2%	18.1%	482%	4.3%	6.5%	2309%
Federal Bank	3.3%	4.7%	9.7%	91%	6.2%	9.7%	317%
Government Banks	**1.0%**	**3.6%**	**15.4%**	**269%**	**3.5%**	**8.0%**	**336%**
State Bank of India	0.9%	3.9%	15.7%	331%	4.0%	9.1%	305%
Punjab National Bank	1.1%	4.5%	17.0%	246%	3.7%	8.9%	396%
Bank of Baroda	1.0%	3.1%	13.9%	217%	3.2%	6.9%	453%
Canara Bank	1.2%	3.1%	14.5%	157%	3.2%	6.4%	304%
Union Bank Of India	1.3%	2.1%	16.2%	185%	3.8%	6.3%	344%
Oriental Bank of Commerce	0.4%	3.6%	15.8%	682%	3.0%	8.1%	449%
Corporation Bank	0.8%	3.0%	16.3%	350%	3.7%	8.0%	675%
Andhra Bank	0.9%	2.1%	18.4%	319%	3.7%	7.0%	770%
Central Bank Of India	0.6%	4.0%	7.9%	181%	1.7%	6.0%	156%
All Banks	**1.3%**	**3.9%**	**13.4%**	**223%**	**4.1%**	**8.7%**	**348%**

Source: Citi Investment Research and Analysis estimates

What is the impact of rising NPLs on earnings?

We analyse the impact of rising NPLs / credit costs on banks. We assume: a) no change in other operating parameters (e.g. growth, margins); b) 50% loss levels on NPLs i.e. every 100bps increase in loan loss charges implies a 200bps increase in NPLs; and c) all the pain to come through in FY10E.

Key inferences – a) Sector earnings decline 40% for every 100bps increase in loan loss charges (20% of each 1% rise in NPLs); b) book values get hit by 5.5% for every 1% increase in NPLs; c) Government banks are slightly more impacted than private banks (however they do have earnings offsets from 1) possibly lower reported NPLs and provisioning levels and 2) potential mark to market gains on if rates tread lower); d) Most vulnerable stocks: CBI, ICBK, Canara and BOB; interestingly even a 100bps increase in loan loss charges will reduce ICBK's book values; and e) Least vulnerable: IDFC, Kotak and HDFC Bank.

Figure 2. Indian Banks – Impact of Rising Loan Loss charges on Banks EPS, BVPS and ROE

	Loan Loss Charges, (%)	EPS, (% change from Base case)				Book Value Per Share (% change from Current)				ROAE (%)			
	Base Case	Base Case	+100bps	+300bps	+500bps	Current	+100bps	+300bps	+500bps	Base Case	+100bps	+300bps	+500bps
Private Banks	**2.0%**		**-34%**	**-103%**	**-172%**		**5.2%**	**-2.5%**	**-10.2%**	**10.6%**	**7.1%**	**-0.4%**	**-8.5%**
HDFC Bank	2.1%	65.8	-28.0%	-83.9%	-139.9%	144,497	15.4%	4.3%	-6.7%	17.5%	12.9%	3.0%	-8.0%
ICICI Bank	2.1%	30.3	-46.9%	-140.6%	-234.3%	494,843	-0.8%	-7.3%	-13.7%	6.9%	3.7%	-2.9%	-10.0%
AXIS Bank	2.0%	44.0	-34.7%	-104.0%	-173.4%	96,457	13.2%	1.7%	-9.8%	14.8%	9.9%	-0.6%	-12.5%
Kotak Mahindra Bank	1.6%	17.5	-28.0%	-84.0%	-140.0%	62,749	7.7%	2.3%	-3.1%	9.1%	6.6%	1.5%	-3.9%
IDFC	0.4%	7.9	-15.4%	-46.2%	-76.9%	62,366	10.9%	5.9%	0.8%	15.4%	13.2%	8.6%	3.8%
Yes Bank	0.7%	10.5	-29.8%	-89.5%	-149.1%	15,441	15.2%	3.2%	-8.7%	18.1%	13.0%	2.1%	-10.3%
Federal Bank	3.3%	25.6	-36.3%	-108.9%	-181.5%	43,057	5.6%	-1.8%	-9.2%	9.7%	6.3%	-0.9%	-8.6%
Government Banks	**1.0%**		**-43%**	**-129%**	**-215%**		**15.5%**	**0.2%**	**-15.2%**	**15.4%**	**9.0%**	**-5.0%**	**-21.2%**
State Bank of India	0.9%	150.4	-37.3%	-111.9%	-186.5%	554,116	9.7%	-3.1%	-15.9%	15.7%	10.2%	-2.1%	-15.9%
Punjab National Bank	1.1%	83.6	-40.5%	-121.6%	-202.6%	130,080	19.2%	2.7%	-13.7%	17.0%	10.5%	-4.1%	-21.1%
Bank of Baroda	1.0%	50.1	-50.5%	-151.5%	-252.4%	110,015	18.4%	1.6%	-15.2%	13.9%	7.1%	-8.0%	-25.6%
Canara Bank	1.2%	44.3	-52.1%	-156.2%	-260.3%	96,492	27.4%	7.8%	-11.8%	14.5%	7.2%	-9.2%	-28.6%
Union Bank Of India	1.3%	29.9	-43.8%	-131.3%	-218.8%	68,848	35.3%	16.1%	-3.1%	16.2%	9.4%	-5.7%	-23.3%
Oriental Bank of Commerce	0.4%	43.9	-40.6%	-121.8%	-202.9%	64,855	8.2%	-5.6%	-19.4%	15.8%	9.7%	-3.8%	-19.3%
Corporation Bank	0.8%	59.6	-38.2%	-114.5%	-190.9%	48,613	8.2%	-5.2%	-18.7%	16.3%	10.4%	-2.6%	-17.5%
Andhra Bank	0.9%	14.4	-40.4%	-121.3%	-202.1%	37,011	0.9%	-14.3%	-29.5%	18.4%	11.4%	-4.4%	-23.0%
Central Bank Of India	0.6%	11.5	-128.1%	-384.4%	-640.6%	36,128	52.7%	19.6%	-13.4%	7.9%	-2.3%	-26.5%	-57.2%
All Banks	**1.3%**		**-40%**	**-121%**	**-201%**		**10.9%**	**-1.0%**	**-12.9%**	**13.4%**	**8.2%**	**-3.0%**	**-15.6%**

Source: Citi Investment Research and Analysis

How earnings and book values appear at various NPL levels

Finally we analyse the impact on earnings, book values and returns at different NPL levels (5%, 7% and 10%) and compare them with the current data. The assumptions are once again the same as the ones used earlier. We use 7% NPLs as the stress case assumption currently (above the highest end of analyst NPL estimates) and observe the following.

Key inferences – a) Sector earnings are reduced to one-fourth of current levels; b) book values estimates will however, needs to be adjusted down only 10%; c) Government banks are once again more vulnerable on earnings – this may be due to their lower provisioning coverage loan loss charges currently; d) Most vulnerable stocks: CBI (need it be mentioned), Union and Canara (Govt banks) and Yes (private banks); and e) Least vulnerable: ICBK (it factors in the most NPL deterioration on current estimates), Kotak and PNB.

Figure 3. Indian Banks – Loan Loss Charges, Earnings, Book Values and Returns for Banks at Various NPL Levels (Current, 5%, 7% and 10%)

	3Q09 NPLs, Rsm / Change from Current (%)				EPS, Rs / Change from Base Case (%)				BVPS, Rs / Change from Base Case (%)				ROAE (%)			
	Current	5%	7%	10%	Base Case	5%	7%	10%	Base Case	5%	7%	10%	Base Case	5%	7%	10%
Private Banks	**2.8%**	**122%**	**210%**	**343%**		**-7%**	**-46%**	**-104%**		**-1%**	**-5%**	**-11%**	**10.6**	**9.9**	**5.9**	**(0.5)**
HDFC Bank	1.9%	274%	424%	648%	65.8	-40%	-75%	-128%	419	-6%	-12%	-21%	17.5	10.9	4.7	(5.5)
ICICI Bank	4.2%	31%	84%	162%	30.3	61%	13%	-60%	452	4%	1%	-4%	6.9	10.8	7.7	2.8
AXIS Bank	1.0%	500%	741%	1101%	44.0	-55%	-96%	-158%	321	-8%	-13%	-22%	14.8	7.0	0.6	(9.8)
Kotak Mahindra Bank	1.9%	187%	302%	474%	17.5	-18%	-49%	-94%	201	-2%	-4%	-8%	9.1	7.5	4.8	0.6
IDFC	0.2%	2970%	4198%	6040%	7.9	-39%	-56%	-83%	55	-6%	-8%	-12%	15.4	9.7	7.0	2.8
Yes Bank	0.4%	1748%	2487%	3595%	10.5	-76%	-116%	-177%	63	-13%	-19%	-29%	18.1	4.6	(3.3)	(16.6)
Federal Bank	2.9%	114%	199%	328%	25.6	-6%	-49%	-113%	275	-1%	-5%	-10%	9.7	9.1	5.1	(1.3)
Government Banks	**2.2%**	**174%**	**283%**	**447%**		**-36%**	**-87%**	**-162%**		**-5%**	**-13%**	**-23%**	**15.4**	**10.1**	**2.2**	**(10.9)**
State Bank of India	2.6%	123%	212%	346%	150.4	-25%	-69%	-134%	1,018	-4%	-10%	-20%	15.7	12.1	5.2	(6.0)
Punjab National Bank	2.3%	178%	290%	457%	83.6	-11%	-59%	-132%	477	-2%	-9%	-21%	17.0	15.2	7.3	(6.1)
Bank of Baroda	1.5%	299%	458%	697%	50.1	-56%	-114%	-202%	340	-7%	-15%	-27%	13.9	6.4	(2.1)	(16.4)
Canara Bank	2.0%	217%	344%	534%	44.3	-59%	-120%	-212%	269	-8%	-17%	-29%	14.5	6.2	(3.2)	(19.2)
Union Bank Of India	1.7%	253%	395%	607%	29.9	-74%	-125%	-202%	163	-11%	-19%	-31%	16.2	4.5	(4.5)	(19.7)
Oriental Bank of Commerce	1.7%	237%	372%	574%	43.9	-33%	-80%	-150%	298	-5%	-12%	-22%	15.8	10.8	3.4	(8.9)
Corporation Bank	1.2%	387%	582%	874%	59.6	-45%	-89%	-156%	389	-7%	-14%	-24%	16.3	9.4	1.9	(10.5)
Andhra Bank	0.9%	525%	776%	1151%	14.4	-69%	-116%	-186%	83	-12%	-20%	-32%	18.4	6.1	(3.2)	(19.0)
Central Bank Of India	2.8%	115%	200%	329%	11.5	-72%	-219%	-440%	101	-5%	-17%	-34%	7.9	2.3	(10.3)	(32.5)
All Banks	**2.3%**	**157%**	**259%**	**414%**		**-26%**	**-73%**	**-143%**		**-3%**	**-9%**	**-18%**	**13.4**	**10.0**	**3.8**	**(6.4)**

Source: Citi Investment Research and Analysis

Figure 4. Indian Banks – CIR Valuation Table

	RIC Code	Price (Rs) 27-Mar	TP (Rs)	Rating	P/E (x) 2010	P/B (x) 2010	ROE (%) 2010	ROA (%) 2010	Div. Yld 2010	M-Cap USD Mn	EPS Abs. 2010	EPS Grth. 2010	EPS Abs. 2011	EPS Grth. 2011	BVPS Abs. 2010	BVPS Grth. 2010	BVPS Abs. 2011	BVPS Grth. 2011
Private Sector Banks																		
ICICI Bank	ICBK.BO	377.7	489	1H	12.5	0.8	6.9%	0.9%	2.9%	8,339	30.3	-3%	38.8	28%	452	4%	477	6%
HDFC Bank	HDBK.BO	998.3	1100	1L	15.2	2.4	17.5%	1.3%	0.9%	8,422	65.8	15%	87.8	34%	419	16%	500	19%
AXIS Bank	AXBK.BO	422.4	470	1M	9.6	1.3	14.8%	1.1%	1.5%	3,008	44.0	3%	44.5	1%	321	14%	359	12%
Kotak Mahindra Bank	KTKM.BO	294.2	282	3H	16.8	1.5	9.1%	1.3%	0.3%	2,017	17.5	8%	19.2	9%	201	9%	219	9%
IDFC	IDFC.BO	57.6	58	3M	7.3	1.1	15.4%	2.9%	2.3%	1,480	7.9	22%	9.2	16%	55	13%	62	14%
Yes Bank	YESB.BO	54.8	75	3H	5.2	0.9	18.1%	1.2%	0.0%	322	10.5	28%	13.3	27%	63	20%	77	21%
Federal Bank	FED.BO	141.0	215	1M	5.5	0.5	9.7%	1.1%	3.2%	478	25.6	-16%	27.4	7%	275	8%	297	8%
PSU Banks																		
State Bank of India	SBI.BO	1110.1	1453	1L	7.4	1.1	15.7%	1.0%	2.0%	13,978	150.4	5%	169	12%	1018	14%	1160	14%
Punjab National Bank	PNBK.BO	425.0	420	3M	5.1	0.8	17.0%	1.0%	3.5%	2,657	83.6	-2%	88.2	5%	526	14%	595	13%
Bank of Baroda	BOB.BO	243.0	315	1M	4.9	0.6	13.9%	0.8%	3.7%	1,756	50.1	2%	52.8	5%	382	12%	423	11%
Canara Bank	CNBK.BO	167.4	165	3M	3.8	0.5	14.5%	0.8%	5.4%	1,361	44.3	4%	51.0	15%	323	12%	362	12%
Union Bank Of India	UNBK.BO	149.0	165	1L	5.0	0.8	16.2%	0.9%	3.0%	1,492	29.9	-6%	31.8	6%	198	14%	224	14%
Oriental Bank	ORBC.BO	116.5	175	3H	2.6	0.4	15.8%	1.0%	4.3%	579	43.9	27%	48.2	10%	298	15%	340	14%
Corporation Bank	CRBK.BO	174.0	175	3H	2.9	0.4	16.3%	1.1%	7.2%	495	59.6	1%	60.3	1%	389	14%	436	12%
Andhra Bank	ADBK.BO	46.3	76	1M	3.2	0.6	18.4%	1.0%	9.5%	445	14.4	25%	17.3	20%	83	13%	95	14%
Central Bank Of India	CBI.BO	34.3	34	3M	3.0	0.2	7.9%	0.3%	2.9%	275	11.5	-22%	12.2	6%	151	7%	162	7%

Source: Citi Investment Research and Analysis

Appendix A-1

Analyst Certification

Each research analyst(s) principally responsible for the preparation and content of all or any identified portion of this research report hereby certifies that, with respect to each issuer or security or any identified portion of the report with respect to an issuer or security that the research analyst covers in this research report, all of the views expressed in this research report accurately reflect their personal views about those issuer(s) or securities. Each research analyst(s) also certify that no part of their compensation was, is, or will be, directly or indirectly, related to the specific recommendation(s) or view(s) expressed by that research analyst in this research report.

IMPORTANT DISCLOSURES

Customers of the Firm in the United States can receive independent third-party research on the company or companies covered in this report, at no cost to them, where such research is available. Customers can access this independent research at http://www.smithbarney.com (for retail clients) or http://www.citigroupgeo.com (for institutional clients) or can call (866) 836-9542 to request a copy of this research.

Citigroup Global Markets Inc. or its affiliates beneficially owns 1% or more of any class of common equity securities of AXIS Bank, Federal Bank, ICICI Bank, Infrastructure Development Finance, Kotak Mahindra Bank. This position reflects information available as of the prior business day.

Within the past 12 months, Citigroup Global Markets Inc. or its affiliates has acted as manager or co-manager of an offering of securities of Bank of Baroda, Central Bank Of India, Canara Bank, Corporation Bank, Infrastructure Development Finance, Oriental Bank of Commerce, Punjab National Bank, State Bank of India, Union Bank Of India.

Citigroup Global Markets Inc. or its affiliates has received compensation for investment banking services provided within the past 12 months from Andhra Bank, AXIS Bank, Bank of Baroda, Central Bank Of India, Canara Bank, Corporation Bank, ICICI Bank, Infrastructure Development Finance, Kotak Mahindra Bank, Oriental Bank of Commerce, Punjab National Bank, State Bank of India, Union Bank Of India.

Citigroup Global Markets Inc. or an affiliate received compensation for products and services other than investment banking services from Andhra Bank, AXIS Bank, Bank of Baroda, Central Bank Of India, Canara Bank, Corporation Bank, Federal Bank, HDFC Bank, ICICI Bank, Infrastructure Development Finance, Kotak Mahindra Bank, Oriental Bank of Commerce, Punjab National Bank, State Bank of India, Union Bank Of India, Yes Bank in the past 12 months.

Citigroup Global Markets Inc. currently has, or had within the past 12 months, the following as investment banking client(s): Andhra Bank, AXIS Bank, Bank of Baroda, Central Bank Of India, Canara Bank, Corporation Bank, ICICI Bank, Infrastructure Development Finance, Kotak Mahindra Bank, Oriental Bank of Commerce, Punjab National Bank, State Bank of India, Union Bank Of India.

Citigroup Global Markets Inc. currently has, or had within the past 12 months, the following as clients, and the services provided were non-investment-banking, securities-related: Andhra Bank, AXIS Bank, Bank of Baroda, Central Bank Of India, Canara Bank, Corporation Bank, Federal Bank, HDFC Bank, ICICI Bank, Infrastructure Development Finance, Kotak Mahindra Bank, Oriental Bank of Commerce, Punjab National Bank, State Bank of India, Union Bank Of India, Yes Bank.

Citigroup Global Markets Inc. currently has, or had within the past 12 months, the following as clients, and the services provided were non-investment-banking, non-securities-related: Andhra Bank, AXIS Bank, Bank of Baroda, Central Bank Of India, Canara Bank, Corporation Bank, Federal Bank, HDFC Bank, ICICI Bank, Infrastructure Development Finance, Kotak Mahindra Bank, Oriental Bank of Commerce, Punjab National Bank, State Bank of India, Union Bank Of India, Yes Bank.

Analysts' compensation is determined based upon activities and services intended to benefit the investor clients of Citigroup Global Markets Inc. and its affiliates ("the Firm"). Like all Firm employees, analysts receive compensation that is impacted by overall firm profitability, which includes revenues from, among other business units, the Private Client Division, Institutional Sales and Trading, and Investment Banking.

For important disclosures (including copies of historical disclosures) regarding the companies that are the subject of this Citi Investment Research product ("the Product"), please contact Citi Investment Research, 388 Greenwich Street, 29th Floor, New York, NY, 10013, Attention: Legal/Compliance. In addition, the same important disclosures, with the exception of the Valuation and Risk assessments and historical disclosures, are contained on the Firm's disclosure website at www.citigroupgeo.com. Private Client Division clients should refer to www.smithbarney.com/research. Valuation and Risk assessments can be found in the text of the most recent research note/report regarding the subject company. Historical disclosures (for up to the past three years) will be provided upon request.

Citi Investment Research Ratings Distribution

Data current as of 31 Dec 2008	**Buy**	**Hold**	**Sell**
Citi Investment Research Global Fundamental Coverage	46%	37%	17%
% of companies in each rating category that are investment banking clients	48%	43%	38%

Guide to Fundamental Research Investment Ratings:
Citi Investment Research's stock recommendations include a risk rating and an investment rating.
Risk ratings, which take into account both price volatility and fundamental criteria, are: Low (L), Medium (M), High (H), and Speculative (S).
Investment ratings are a function of Citi Investment Research's expectation of total return (forecast price appreciation and dividend yield within the next 12 months) and risk rating.

For securities in emerging markets (Asia Pacific, Emerging Europe/Middle East/Africa, and Latin America), investment ratings are:Buy (1) (expected total return of 15% or more for Low-Risk stocks, 20% or more for Medium-Risk stocks, 30% or more for High-Risk stocks, and 40% or more for Speculative stocks); Hold (2) (5%-15% for Low-Risk stocks, 10%-20% for Medium-Risk stocks, 15%-30% for High-Risk stocks, and 20%-40% for Speculative stocks); and Sell (3) (5% or less for Low-Risk stocks, 10% or less for Medium-Risk stocks, 15% or less for High-Risk stocks, and 20% or less for Speculative stocks).

Investment ratings are determined by the ranges described above at the time of initiation of coverage, a change in investment and/or risk rating, or a change in target price (subject to limited management discretion). At other times, the expected total returns may fall outside of these ranges because of market price movements and/or other short-term volatility or trading patterns. Such interim deviations from specified ranges will be permitted but will become subject to review by Research Management. Your decision to buy or sell a security should be based upon your personal investment objectives and should be made only after evaluating the stock's expected performance and risk.
Guide to Corporate Bond Research Credit Opinions and Investment Ratings: Citi Investment Research's corporate bond research issuer publications include a fundamental

credit opinion of Improving, Stable or Deteriorating and a complementary risk rating of Low (L), Medium (M), High (H) or Speculative (S) regarding the credit risk of the company featured in the report. The fundamental credit opinion reflects the CIR analyst's opinion of the direction of credit fundamentals of the issuer without respect to securities market vagaries. The fundamental credit opinion is not geared to, but should be viewed in the context of debt ratings issued by major public debt ratings companies such as Moody's Investors Service, Standard and Poor's, and Fitch Ratings. CBR risk ratings are approximately equivalent to the following matrix: Low Risk Triple A to Low Double A; Low to Medium Risk High Single A through High Triple B; Medium to High Risk Mid Triple B through High Double B; High to Speculative Risk Mid Double B and Below. The risk rating element illustrates the analyst's opinion of the relative likelihood of loss of principal when a fixed income security issued by a company is held to maturity, based upon both fundamental and market risk factors. Certain reports published by Citi Investment Research will also include investment ratings on specific issues of companies under coverage which have been assigned fundamental credit opinions and risk ratings. Investment ratings are a function of Citi Investment Research's expectations for total return, relative return (to publicly available Citigroup bond indices performance), and risk rating. These investment ratings are: Buy/Overweight the bond is expected to outperform the relevant Citigroup bond market sector index (Broad Investment Grade, High Yield Market or Emerging Market), performances of which are updated monthly and can be viewed at http://sd.ny.ssmb.com/ using the "Indexes" tab; Hold/Neutral Weight the bond is expected to perform in line with the relevant Citigroup bond market sector index; or Sell/Underweight the bond is expected to underperform the relevant sector of the Citigroup indexes.

OTHER DISCLOSURES

Citigroup Global Markets Inc. and/or its affiliates has a significant financial interest in relation to Bank of Baroda, HDFC Bank, ICICI Bank, Infrastructure Development Finance, State Bank of India, Union Bank Of India, Yes Bank. (For an explanation of the determination of significant financial interest, please refer to the policy for managing conflicts of interest which can be found at www.citigroupgeo.com.)

Citigroup Global Markets Inc. or its affiliates beneficially owns 2% or more of any class of common equity securities of AXIS Bank, Federal Bank, Infrastructure Development Finance.

For securities recommended in the Product in which the Firm is not a market maker, the Firm is a liquidity provider in the issuers' financial instruments and may act as principal in connection with such transactions. The Firm is a regular issuer of traded financial instruments linked to securities that may have been recommended in the Product. The Firm regularly trades in the securities of the issuer(s) discussed in the Product. The Firm may engage in securities transactions in a manner inconsistent with the Product and, with respect to securities covered by the Product, will buy or sell from customers on a principal basis.

Securities recommended, offered, or sold by the Firm: (i) are not insured by the Federal Deposit Insurance Corporation; (ii) are not deposits or other obligations of any insured depository institution (including Citibank); and (iii) are subject to investment risks, including the possible loss of the principal amount invested. Although information has been obtained from and is based upon sources that the Firm believes to be reliable, we do not guarantee its accuracy and it may be incomplete and condensed. Note, however, that the Firm has taken all reasonable steps to determine the accuracy and completeness of the disclosures made in the Important Disclosures section of the Product. The Firm's research department has received assistance from the subject company(ies) referred to in this Product including, but not limited to, discussions with management of the subject company(ies). Firm policy prohibits research analysts from sending draft research to subject companies. However, it should be presumed that the author of the Product has had discussions with the subject company to ensure factual accuracy prior to publication. All opinions, projections and estimates constitute the judgment of the author as of the date of the Product and these, plus any other information contained in the Product, are subject to change without notice. Prices and availability of financial instruments also are subject to change without notice. Notwithstanding other departments within the Firm advising the companies discussed in this Product, information obtained in such role is not used in the preparation of the Product. Although Citi Investment Research does not set a predetermined frequency for publication, if the Product is a fundamental research report, it is the intention of Citi Investment Research to provide research coverage of the/those issuer(s) mentioned therein, including in response to news affecting this issuer, subject to applicable quiet periods and capacity constraints. The Product is for informational purposes only and is not intended as an offer or solicitation for the purchase or sale of a security. Any decision to purchase securities mentioned in the Product must take into account existing public information on such security or any registered prospectus.

Investing in non-U.S. securities, including ADRs, may entail certain risks. The securities of non-U.S. issuers may not be registered with, nor be subject to the reporting requirements of the U.S. Securities and Exchange Commission. There may be limited information available on foreign securities. Foreign companies are generally not subject to uniform audit and reporting standards, practices and requirements comparable to those in the U.S. Securities of some foreign companies may be less liquid and their prices more volatile than securities of comparable U.S. companies. In addition, exchange rate movements may have an adverse effect on the value of an investment in a foreign stock and its corresponding dividend payment for U.S. investors. Net dividends to ADR investors are estimated, using withholding tax rates conventions, deemed accurate, but investors are urged to consult their tax advisor for exact dividend computations. Investors who have received the Product from the Firm may be prohibited in certain states or other jurisdictions from purchasing securities mentioned in the Product from the Firm. Please ask your Financial Consultant for additional details. Citigroup Global Markets Inc. takes responsibility for the Product in the United States. Any orders by US investors resulting from the information contained in the Product may be placed only through Citigroup Global Markets Inc.

The Citigroup legal entity that takes responsibility for the production of the Product is the legal entity which the first named author is employed by. The Product is made available in Australia to wholesale clients through Citigroup Global Markets Australia Pty Ltd. (ABN 64 003 114 832 and AFSL No. 240992) and to retail clients through Citi Smith Barney Pty Ltd. (ABN 19 009 145 555 and AFSL No. 240813), Participants of the ASX Group and regulated by the Australian Securities & Investments Commission. Citigroup Centre, 2 Park Street, Sydney, NSW 2000. The Product is made available in Australia to Private Banking wholesale clients through Citigroup Pty Limited (ABN 88 004 325 080 and AFSL 238098). Citigroup Pty Limited provides all financial product advice to Australian Private Banking wholesale clients through bankers and relationship managers. If there is any doubt about the suitability of investments held in Citigroup Private Bank accounts, investors should contact the Citigroup Private Bank in Australia. Citigroup companies may compensate affiliates and their representatives for providing products and services to clients. The Product is made available in Brazil by Citigroup Global Markets Brasil - CCTVM SA, which is regulated by CVM - Comissão de Valores Mobiliários, BACEN - Brazilian Central Bank, APIMEC - Associação Associação dos Analistas e Profissionais de Investimento do Mercado de Capitais and ANBID - Associação Nacional dos Bancos de Investimento. Av. Paulista, 1111 - 11º andar - CEP. 01311920 - São Paulo - SP. If the Product is being made available in certain provinces of Canada by Citigroup Global Markets (Canada) Inc. ("CGM Canada"), CGM Canada has approved the Product. Citigroup Place, 123 Front Street West, Suite 1100, Toronto, Ontario M5J 2M3. The Product is made available in France by Citigroup Global Markets Limited, which is authorised and regulated by Financial Services Authority. 1-5 Rue Paul Cézanne, 8ème, Paris, France. The Product may not be distributed to private clients in Germany. The Product is distributed in Germany by Citigroup Global Markets Deutschland AG & Co. KGaA, which is regulated by Bundesanstalt fuer Finanzdienstleistungsaufsicht (BaFin). Frankfurt am Main, Reuterweg 16, 60323 Frankfurt am Main. If the Product is made available in Hong Kong by, or on behalf of, Citigroup Global Markets Asia Ltd., it is attributable to Citigroup Global Markets Asia Ltd., Citibank Tower, Citibank Plaza, 3 Garden Road, Hong Kong. Citigroup Global Markets Asia Ltd. is regulated by Hong Kong Securities and Futures Commission. If the Product is made available in Hong Kong by The Citigroup Private Bank to its clients, it is attributable to Citibank N.A., Citibank Tower, Citibank Plaza, 3 Garden Road, Hong Kong. The Citigroup Private Bank and Citibank N.A. is regulated by the Hong Kong Monetary Authority. The Product is made available in India by Citigroup Global Markets India Private Limited, which is regulated by Securities and

Exchange Board of India. Bakhtawar, Nariman Point, Mumbai 400-021. The Product is made available in Indonesia through PT Citigroup Securities Indonesia. 5/F, Citibank Tower, Bapindo Plaza, Jl. Jend. Sudirman Kav. 54-55, Jakarta 12190. Neither this Product nor any copy hereof may be distributed in Indonesia or to any Indonesian citizens wherever they are domiciled or to Indonesian residents except in compliance with applicable capital market laws and regulations. This Product is not an offer of securities in Indonesia. The securities referred to in this Product have not been registered with the Capital Market and Financial Institutions Supervisory Agency (BAPEPAM-LK) pursuant to relevant capital market laws and regulations, and may not be offered or sold within the territory of the Republic of Indonesia or to Indonesian citizens through a public offering or in circumstances which constitute an offer within the meaning of the Indonesian capital market laws and regulations. The Product is made available in Italy by Citigroup Global Markets Limited, which is authorised and regulated by Financial Services Authority. Foro Buonaparte 16, Milan, 20121, Italy. If the Product was prepared by Citi Investment Research and distributed in Japan by Nikko Citigroup Limited ("NCL"), it is being so distributed under license. If the Product was prepared by NCL and distributed by Nikko Cordial Securities Inc. or Citigroup Global Markets Inc. it is being so distributed under license. NCL is regulated by Financial Services Agency, Securities and Exchange Surveillance Commission, Japan Securities Dealers Association, Tokyo Stock Exchange and Osaka Securities Exchange. Shin-Marunouchi Building, 1-5-1 Marunouchi, Chiyoda-ku, Tokyo 100-6520 Japan. In the event that an error is found in an NCL research report, a revised version will be posted on Citi Investment Research's Global Equities Online (GEO) website. If you have questions regarding GEO, please call (81 3) 6270-3019 for help. The Product is made available in Korea by Citigroup Global Markets Korea Securities Ltd., which is regulated by Financial Supervisory Commission and the Financial Supervisory Service. Hungkuk Life Insurance Building, 226 Shinmunno 1-GA, Jongno-Gu, Seoul, 110-061. The Product is made available in Malaysia by Citigroup Global Markets Malaysia Sdn Bhd, which is regulated by Malaysia Securities Commission. Menara Citibank, 165 Jalan Ampang, Kuala Lumpur, 50450. The Product is made available in Mexico by Acciones y Valores Banamex, S.A. De C. V., Casa de Bolsa, Integrante del Grupo Financiero Banamex ("Accival") which is a wholly owned subsidiary of Citigroup Inc. and is regulated by Comision Nacional Bancaria y de Valores. Reforma 398, Col. Juarez, 06600 Mexico, D.F. In New Zealand the Product is made available through Citigroup Global Markets New Zealand Ltd. (Company Number 604457), a Participant of the New Zealand Exchange Limited and regulated by the New Zealand Securities Commission. Level 19, Mobile on the Park, 157 Lambton Quay, Wellington. The Product is made available in Pakistan by Citibank N.A. Pakistan branch, which is regulated by the State Bank of Pakistan and Securities Exchange Commission, Pakistan. AWT Plaza, 1.1. Chundrigar Road, P.O. Box 4889, Karachi-74200. The Product is made available in Poland by Dom Maklerski Banku Handlowego SA an indirect subsidiary of Citigroup Inc., which is regulated by Komisja Nadzoru Finansowego. Bank Handlowy w Warszawie S.A. ul. Senatorska 16, 00-923 Warszawa. The Product is made available in the Russian Federation through ZAO Citibank, which is licensed to carry out banking activities in the Russian Federation in accordance with the general banking license issued by the Central Bank of the Russian Federation and brokerage activities in accordance with the license issued by the Federal Service for Financial Markets. Neither the Product nor any information contained in the Product shall be considered as advertising the securities mentioned in this report within the territory of the Russian Federation or outside the Russian Federation. The Product does not constitute an appraisal within the meaning of the Federal Law of the Russian Federation of 29 July 1998 No. 135-FZ (as amended) On Appraisal Activities in the Russian Federation. 8-10 Gasheka Street, 125047 Moscow. The Product is made available in Singapore through Citigroup Global Markets Singapore Pte. Ltd., a Capital Markets Services Licence holder, and regulated by Monetary Authority of Singapore. 1 Temasek Avenue, #39-02 Millenia Tower, Singapore 039192. The Product is made available by The Citigroup Private Bank in Singapore through Citibank, N.A., Singapore branch, a licensed bank in Singapore that is regulated by Monetary Authority of Singapore. Citigroup Global Markets (Pty) Ltd. is incorporated in the Republic of South Africa (company registration number 2000/025866/07) and its registered office is at 145 West Street, Sandton, 2196, Saxonwold. Citigroup Global Markets (Pty) Ltd. is regulated by JSE Securities Exchange South Africa, South African Reserve Bank and the Financial Services Board. The investments and services contained herein are not available to private customers in South Africa. The Product is made available in Spain by Citigroup Global Markets Limited, which is authorised and regulated by Financial Services Authority. 29 Jose Ortega Y Gassef, 4th Floor, Madrid, 28006, Spain. The Product is made available in Taiwan through Citigroup Global Markets Taiwan Securities Company Ltd., which is regulated by Securities & Futures Bureau. No portion of the report may be reproduced or quoted in Taiwan by the press or any other person. No. 8 Manhattan Building, Hsin Yi Road, Section 5, Taipei 100, Taiwan. The Product is made available in Thailand through Citicorp Securities (Thailand) Ltd., which is regulated by the Securities and Exchange Commission of Thailand. 18/F, 22/F and 29/F, 82 North Sathorn Road, Silom, Bangrak, Bangkok 10500, Thailand. The Product is made available in Turkey through Citibank AS which is regulated by Capital Markets Board. Tekfen Tower, Eski Buyukdere Caddesi # 209 Kat 2B, 23294 Levent, Istanbul, Turkey. The Product is made available in U.A.E. by Citigroup Global Markets Limited, which is authorised and regulated by the Dubai Financial Services Authority. DIFC, Bldg 2, Level 7, PO Box 506560, Dubai, UAE. The Product is made available in United Kingdom by Citigroup Global Markets Limited, which is authorised and regulated by Financial Services Authority. This material may relate to investments or services of a person outside of the UK or to other matters which are not regulated by the FSA and further details as to where this may be the case are available upon request in respect of this material. Citigroup Centre, Canada Square, Canary Wharf, London, E14 5LB. The Product is made available in United States by Citigroup Global Markets Inc, which is regulated by NASD, NYSE and the US Securities and Exchange Commission. 388 Greenwich Street, New York, NY 10013. Unless specified to the contrary, within EU Member States, the Product is made available by Citigroup Global Markets Limited, which is regulated by Financial Services Authority. Many European regulators require that a firm must establish, implement and make available a policy for managing conflicts of interest arising as a result of publication or distribution of investment research. The policy applicable to Citi Investment Research's Products can be found at www.citigroupgeo.com. Compensation of equity research analysts is determined by equity research management and Citigroup's senior management and is not linked to specific transactions or recommendations. The Product may have been distributed simultaneously, in multiple formats, to the Firm's worldwide institutional and retail customers. The Product is not to be construed as providing investment services in any jurisdiction where the provision of such services would not be permitted. Subject to the nature and contents of the Product, the investments described therein are subject to fluctuations in price and/or value and investors may get back less than originally invested. Certain high-volatility investments can be subject to sudden and large falls in value that could equal or exceed the amount invested. Certain investments contained in the Product may have tax implications for private customers whereby levels and basis of taxation may be subject to change. If in doubt, investors should seek advice from a tax adviser. The Product does not purport to identify the nature of the specific market or other risks associated with a particular transaction. Advice in the Product is general and should not be construed as personal advice given it has been prepared without taking account of the objectives, financial situation or needs of any particular investor. Accordingly, investors should, before acting on the advice, consider the appropriateness of the advice, having regard to their objectives, financial situation and needs. Prior to acquiring any financial product, it is the client's responsibility to obtain the relevant offer document for the product and consider it before making a decision as to whether to purchase the product.