

Background

Ratios are used to make a holistic assessment of financial performance of the entity, and also help evaluating the entity's performance vis-à-vis its peers within the industry. Ratios are not an 'end' by themselves but a 'means' to understanding the fundamentals of an entity. CareEdge Africa (CRAF) follows a standard set of ratios for evaluating entities in the financial sector. The critical ratios that are assessed by CRAF are presented below; however, some of these ratios may be applicable to specific institutions such as banks, NBFIs / HFCs or Non-lending Financial Institutions. These can be divided into 5 categories:

- Growth Ratios
- Capital Adequacy and Leverage Ratios
- Asset Quality Ratios
- Profitability Ratios
- Liquidity ratios

These are given in detail below:

A. Growth Ratios

Trend in the growth rates of an entity vis-à-vis the industry reflects the entity's ability to sustain its market share, profitability and operating efficiency. In this regard, focus is drawn to growth in interest income, Profit After tax (PAT), and loan portfolio/Assets under management (AUM). The growth ratios considered CRAF include the following ('t' refers to the current period, while t-1' refers to the same period of previous year):

Ratio	Formula	Significance in Analysis
Growth in Interest Income	$\frac{\text{Interest Income}_{(t)} - \text{Interest Income}_{(t-1)}}{\text{Interest Income}_{(t-1)}} * 100$	Interest income growth will be driven by growth in loan portfolio as well as changes in portfolio yield.
Growth in PAT	$\frac{\text{PAT}_{(t)} - \text{PAT}_{(t-1)}}{\text{PAT}_{(t-1)}} * 100$	PAT is the measure of ultimate profitability of a lending institution and its growth is a culmination of all factors impacting the income as well as expenses including taxes.

Growth in Loan Portfolio/AUM	$\frac{AUM_{(t)} - AUM_{(t-1)}}{AUM_{(t-1)}} * 100$	Growth in AUM reflects the ability of the company to grow its business and gain market share. The same is looked at on an absolute basis as well as compared to its industry peers.
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Asset Under Management (AUM): AUM includes on-balance sheet loan portfolio as well as off-balance sheet portfolio which includes securitized / assigned portfolio and portfolio co-originated under business correspondence operations.

B. Capital Adequacy and Leverage Ratios

Capital Adequacy Ratio (CAR) is a measure of the degree to which the company's capital is available to absorb unexpected losses; High CAR indicates the ability of the company to undertake additional business. Debt equity ratio is also measure of leverage of the institution. CRAF examines the conformity of the entity to the regulatory guidelines on capital adequacy norms and further examines the capital adequacy on basis of expected erosion of capital arising as a result of additional provisioning for NPAs etc.

These ratios are further detailed below.

Ratio	Formula	Significance in Analysis
Overall Capital Adequacy Ratio (CAR)	As reported to the regulator [Tier-I Capital + Tier-II Capital] / Risk Weighted Assets	High CAR indicates the ability of the lending institution to undertake additional business and high capacity to absorb unexpected losses. Lower CAR indicates lower loss absorption capabilities. CAR is also viewed from the standpoint of regulatory norms for each line of business in the financial services space.
Tier-I CAR	As reported to the regulator Tier-I Capital / Risk Weighted Assets	
Common Equity Tier 1 (CET 1)	As reported to the regulator CET 1 Capital / Risk Weighted Assets	It is the primary source of funds for a bank and highest quality of regulatory capital which indicates extent of support available to banks to absorb losses so that regular business functions are not affected. High CET 1 ratio indicates greater capital cushion to survive economic downturns.
Overall Gearing Ratio	Total Debt / Tangible Network	This ratio indicates the extent of financial leverage in an entity and is a measure of financial risk. Though higher leverage would indicate higher returns to equity shareholders, the degree of risk increases for debt holders in case of uncertainty or volatility of asset quality & earnings.
CASA	(Demand deposits + Savings deposits)/ Total deposits	High CASA usually means large proportion of bank's deposits is from low cost current and savings account, rather than term deposits. It reflects bank's ability to raise funds at low costs and therefore contributes to higher NIM which determines bank's profitability.
Credit / Deposit	Total advances/ Total deposits	Credit-deposit ratio is analysed in conjunction with balance sheet patterns, operational and other financial parameters to understand any underlying issues in the entity.

Interest Coverage*	PBILDT / (Total interest and finance charges – Amortization of premium on Debentures – Interest capitalized)	It indicates extent of cover available to meet interest payments. It is a simple indicator of debt coverage and cushion available to secured creditors.
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*Specific to Non-lending Financial Institutions

Total Debt

In total debt, CRAF considers all forms of short-term and long-term debt, including redeemable preference share capital, optionally convertible debentures, foreign currency loans, fixed deposits, unsecured loans, commercial paper, inter-corporate borrowings, borrowings from promoters, associates and other group companies. Any guarantees extended by the entity (including corporate guarantee given for securitizations) are also added in total debt of the company.

- **Treatment of Hybrid Instruments:** Hybrid instruments are those which have the characteristics of both debt and equity. Examples include preference shares, compulsorily convertible instruments, optionally convertible instruments, including perpetual debt, subordinated debt, Additional Tier I (AT1) bonds, Upper Tier II and Lower tier II bonds - these instruments are eligible to be treated as part of Tier I and Tier II capital as per regulatory guidelines. These instruments normally carry a fixed rate of coupon/dividend. At times the coupon/dividend may be deferrable, thus giving the issuer the flexibility to conserve cash in times of stress. However, CRAF treats all these hybrid instruments, except for compulsorily convertible instruments, as debt.

Redeemable Preference Shares	These have a fixed tenure at the end of which they are to be redeemed by the issuer. Further, they also carry a fixed rate of dividend. Hence, preference share capital has the characteristics of debt and is treated as such by CRAF in its analysis.
Compulsorily Convertible Instruments	Such instruments are compulsorily convertible into equity at the end of a longer time frame, typically 5-7 years. Hence, the company does not have to redeem the instrument at the end of the tenure and as such there is no credit risk. In all such cases where the terms of the preference shares/debentures give it equity like characteristics, CRAF treats such instruments as quasi equity and considers it as a part of the networth of the company.
Optionally Convertible Instruments	In case of Optionally convertible instruments (typically Optionally Convertible Preference Shares (OCPS)/ Optionally Convertible Debentures (OCDs)), the investor has the option to convert the instrument into equity shares at the end of a certain time frame at a pre-determined price. In this case, the alternative of redemption of the instrument cannot be ruled out till it is actually converted into equity. The instrument thus has debt like characteristics till the time it is actually converted into equity. Thus, CRAF treats such instruments as debt in its analysis.
Tier II Bonds	Banks/HFC/NBFCs all issue Tier II Bonds which are considered as part of Tier II capital. CRAF considers them as part of debt for the purpose of calculating overall gearing. In case of Bank's as per Basel III guidelines, Tier II bonds also have a clause wherein, upon declaration of Point of Non Viability by Regulator it can be written down. However, the same is a remote possibility in a going concern and hence they are treated at par with Lower Tier II bonds under Basel II which did not have any such clauses.
Basel III AT1 Bonds	Under Basel III norms, banks can issue additional tier I bonds which are perpetual in nature and are part of Tier I capital. These bonds have loss absorbing features with key features being coupon discretion at all times, non-payment of coupon in the event of breach of minimum CAR, and principal write-down. Further, in case of losses reported by a bank in any financial year, the coupon can be paid out only in the event of availability

	of credit balance in reserves representing appropriation of net profits. These are treated as debt from analytical perspective.
Upper Tier II Bonds/Innovative Perpetual Debt Instrument under Basel II issued by Banks	These instruments were issued under the Basel II guidelines by the banks and while these are part of capital adequacy of a bank, CRAF treats the same as debt for the purpose of leverage.

Tangible Network

Tangible Network of the entity includes the equity share capital, all reserves and surplus (excluding revaluation reserve and reserve for bad and doubtful debt), equity share warrants, share application money, ESOPs outstanding, minority interest (in case of consolidated financials) and compulsorily convertible instruments (preference shares and debentures).

- **Miscellaneous expenditure not written off and Accumulated Losses:** Both of these items are deducted from the above to arrive at the tangible network.
- **Revaluation Reserves:** Revaluation reserves arise out of revaluation of fixed assets and are excluded while arriving at the tangible network of an entity.
- **Treatment of intangible assets:** An intangible asset is an asset which is not physical in nature. Examples of intangible assets include computer software, patents, copyrights, licenses, intellectual property, trademark, goodwill etc. The treatment of intangibles is similar to what CRAF follows for the non-financial sector.
- **Treatment of Deferred Tax Liability (DTL) / Deferred Tax Assets (DTA) (Net):** DTA arises due to timing difference between the accounting profit and profit as per income tax act. CRAF subtracts DTA (net of DTL) from the net-worth of the company while calculating tangible net-worth.

C. Asset Quality Ratios

Asset quality of a bank/NBFC is the cornerstone of its operational efficiency and a direct reflection of its risk management practices and credit appraisal mechanism. Further, asset quality of a bank/NBFC is also impacted by the state of the economy as a whole. Evaluating asset quality is a significant aspect of analyzing banks/NBFCs, as deterioration in the credit quality of the asset book has dual impact on the profitability of the entity on account of (i) weakening of the income profile and (ii) increase in the credit costs. Considerable weakening of the asset quality would also result in higher capital requirements for the entity to support growth and provide stability. CRAF examines following key ratios to determine the asset quality.

Ratio	Formula	Significance in Analysis
Gross NPA Ratio	Gross NPA / Gross Advances (As per regulatory Classification)	Gross NPA % denotes the percentage of advances which have turned into NPA as against the total outstanding loan book
Net NPA Ratio	Net NPA / Net Advances (As per regulatory Classification)	Net NPA% denotes the proportion of advances which turned into NPA after adjusting for the provisions already made for NPA by the bank/financial institution
Net NPA / Networth	Net NPA / Tangible Network	The ratio denotes the coverage available as % of Networth against the NPAs net of provisions. The ratio gives an indication of

		the potential erosion of network due to Net NPAs.
Provision Coverage Ratio	Provisions for NPA / Gross NPA	It indicates extent of provisioning already done on the existing NPAs, thereby indicating the future provisioning requirement in the event of no recovery from the stock of NPAs

D. Earnings Ratio

Net Interest Margin	$\frac{\text{Net Interest Income}}{\text{Avg. Total Assets}}$ $\text{Net Interest Income} = \text{Interest Income} - \text{Interest Expense}$	This ratio is very similar to the Interest Spread and would tend to move in tandem with it. The focus here is on the overall spread earned on the total assets of the entity.
Cost to Income	$\frac{\text{Operating Expenses}}{(\text{Total Income} - \text{Interest Expense})}$	The adequacy of banks/financial institution's total income net of interest expenses in covering the operational expenses is indicated by this ratio. Alternatively can be looked at as the cost involved in generating a unit of revenue.
Operating Cost / Avg. Total Assets	$\frac{\text{Operating Expenses}}{\text{Avg. Total Assets}}$	This ratio shows the level of operating expenses, mainly comprising employee and administrative cost, in relation to the assets
Other Income / Avg. Total Assets	$\frac{\text{Other Income}}{\text{Avg. Total Assets}}$	The ratio usually indicates diversification of revenue stream. It strengthens the earnings profile and contributes to the profitability of the entity. However, high ratio indicates greater reliance on fee based or non-interest income.
Credit Cost	$\frac{\text{Provisions \& Write-offs}}{\text{Avg. Total Assets}}$	This ratio indicates the credit cost on the average assets of the entity. This cost is expected to be built in to the pricing of loans and is the expected credit cost of the overall loan portfolio.
Yield On Advances	$\frac{\text{Interest Income}}{\text{Avg. Advances}}$	The ratio gives the average lending rate of the portfolio. High yield on advances is an indication that the entity is into financing riskier assets and may see asset quality issues. It also indicates whether the pricing of the loan is in line with underlying risk.
Cost of Borrowing	$\frac{\text{Interest Expenses}}{\text{Avg. Borrowings}}$	It highlights cost of borrowed funds for the entity. Cost of funds gives a competitive advantage to the financial institution in terms of its ability to grow, apart from profitability, asset quality, customer base etc.

A bank's/Financial Institution's income profile can broadly be divided into two categories: interest income and non-interest income. Interest income is generated by lending funds while fee-based income (guarantee commission, loan processing fees, dividend income) and gains from trading/sale of assets form a part of non-interest income. The biggest expense for any bank/financial institution is the interest expended on deposits and borrowings. Operating expenses of a bank/FI primarily comprise employee cost and administration expenses. Other major

charges to the profit and loss account include provision for non-performing assets and provision for diminution in fair value of investments. While analyzing the earnings profile of a bank, following are the key ratios seen:

Ratio	Formula	Significance in Analysis
Return on Total Assets	$PAT / \text{Average Total Assets}$	ROTA is a single, ultimate indicator of the overall profitability of the bank/financial institution. Impacts of non-interest income, asset quality, fixed cost like employee cost etc. are all factored into this ratio.
Return on Network	$PAT / \text{Avg. Tangible Network}$	RONW reflects the return to equity shareholders. It is the final indicator of entity's profitability which is a function of profitability of its assets and financial leverage of the entity.
Interest Spread	$(\text{Interest Income} / \text{Avg. Interest Earning Assets}) - (\text{Interest Expense} / \text{Avg. Interest Bearing Liabilities})$	An indicator of profitability of the bank/financial institution without taking into account any operational cost. It shows the spread between the yield on entity's assets (mainly advances + investments) and cost of funds (deposits & borrowings). It also takes into account yield on investments which affects the profitability of the entity and forms a significant percentage of the assets. It is the spread the entity has to primarily depend on to cover its employee cost, provisions, tax etc.

E. Liquidity Ratios

Liquidity risk has become one of the most important elements of risk management framework in financial institutions. A financial institution's liquidity framework should maintain sufficient liquidity to withstand all kinds of stress events that will be faced. CRAF evaluates liquidity risk by examining the stated liquidity policy, the assets liabilities maturity (ALM) profile, collection efficiency and deposit renewal rates (based on empirical evidence), etc. More specifically CRAF measures following parameters:

Ratio	Formula	Significance in Analysis
Liquidity coverage ratio	$\text{High quality liquid assets} / \text{Net cash outflows for next 30 days}$	Regulator generally stipulates all scheduled commercial banks to maintain a liquidity coverage ratio (LCR) in a phased manner. The ratio indicates on-going ability to meet short term obligations. The 30 day period allows banks to have a cushion of cash in event of a run on banks during a financial crisis.
LCR for NBFIs/ HFCs	$\text{Highly liquid assets} / \text{Debt obligations for next 12 months}$	The ratio indicates the extent to which cash and liquid assets available are able to cover debt repayment obligations of NBFI over the next 12 months.

Cash flow debt coverage	(Highly liquid assets + scheduled inflows from credit assets for next 12 months) / Scheduled cash outflows for next 12 months	The ratio indicates cover available for 12 months' scheduled cash outflows (debt obligations as well as operating expenses) in the form of scheduled inflows from credit assets (adjusted for collection efficiency) over the next 12 months along with cash and liquid assets. For NBFCs running a negative ALM mismatch in 1 year bucket, such cover will typically tend to be below 100%, thus indicating a potential rollover / refinancing risk.
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CRAF has had a pivotal role to play in developing bank debt and capital market instruments including MMIs, corporate bonds and structured credit.

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