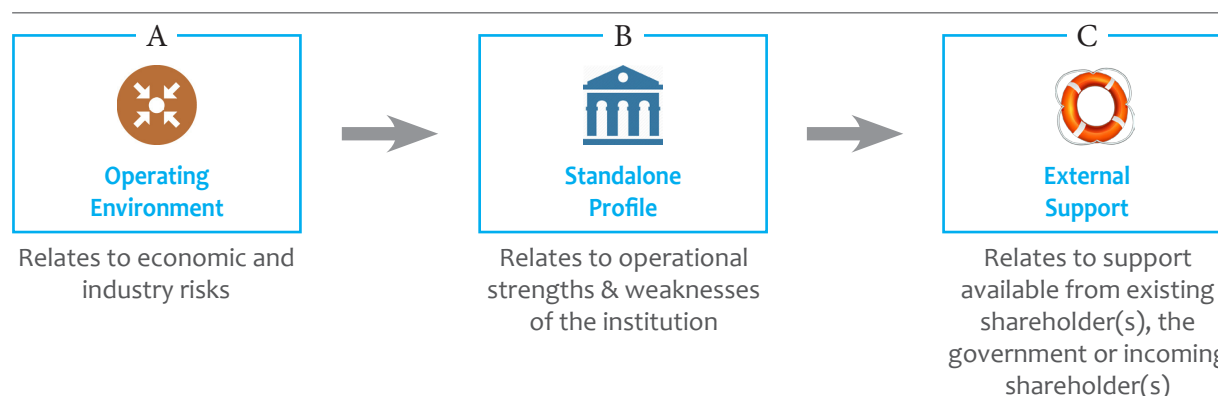


JCR-VIS RATING METHODOLOGY

Commercial Banks

JCR-VIS's rating methodology for commercial banks is composed of three broad analytical frameworks. The assessment begins with system-wide external factors that may impact risk profile of commercial banks followed by standalone operating profile of commercial banks in addition to an assessment of external support that may be available to the institution.

Exhibit I: ANALYTICAL FRAMEWORK



A. Operating Environment of Commercial Banks relate to the economic and industry risks to which commercial banks are exposed to or may face over the rating horizon.

In the assessment of economic risk it is important to understand the current and forecasted structure of the economy, flexibility of the economic policy to projected socio-political structure, current and potential economic imbalances and the major credit risk sectors. In economic risk analysis the banking system's capacity to adjust to national level economic changes on sectoral and individual bank level are also assessed. The degree of economic resilience here mitigates the economic risk particularly for the larger dominating banks whereas it provides enabling environment to trailing mid tier or smaller banks.

For the industry risk assessment, the depth of coverage of the regulatory environment for banks and its monitoring effectiveness by the regulator is taken into account. Ratings are also influenced by the ability of the regulators to ascertain the soundness of banks in the system and their capacity and willingness to intervene to prevent institutional failures. The transparency in the system as inculcated by the regulatory framework is also given due weight as well as the efficiency of the overall legal system in case of foreclosure events for customers' security repossession.



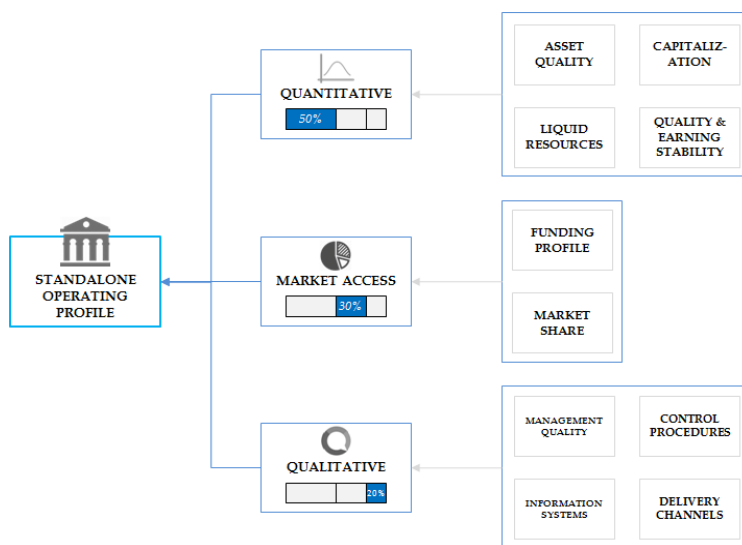
B. Standalone Operating Profile of Commercial Bank:

The assessment of standalone financial risk profile of an institution has three dimensions. The first dimension has a 50% weight and includes analyzing different quantitative factors including capitalization, asset quality, earning quality & stability and liquid assets carried on balance sheet. The second dimension includes an assessment of market access which is reflected in market share of the institution, funding profile, depositor concentration, diversity in types of sources for funding and capital market access for raising equity. This dimension has a 30% weight while qualitative factors contribute 20% to JCR-VIS's overall score. Qualitative factors here include management profile, risk management, technology infrastructure and delivery channels. Peer group identification and comparison is an important ingredient of standalone analysis to appropriately stack the performance levels.

While sustainable earnings (profits before all extraordinary items, provisions and taxes) and risk profile of the institution are given due coverage in the analysis, JCR-VIS is of the opinion that the bank's franchise value and the ability of the management to enhance and capitalize on this value, determines its financial strength over the long term. Therefore, it is entirely possible for commercial banks with weaker financial ratios to have higher ratings based on management quality, support factors and franchise; ratings are consequently not entirely driven by the financial silhouette of an institution.

JCR-VIS has developed benchmarks for key quantitative areas including capitalization, asset quality, liquidity and profitability. Some of these have been laid down in the below sections of the methodology. Compliance/violation of no single benchmark is a guarantee for a rating associated with the benchmark.

Exhibit II: COMPONENTS OF STANDALONE PROFILE



QUANTITATIVE

Capitalization

Strength of capitalization of a bank is reflected in its unimpaired capital base compared to its risk weighted assets. Generally known as Capital Adequacy Ratio (CAR), it is denominated in percentage terms. CAR is one of the most important tool of risk assessment of a bank and is hence regulated through mandatory minimum limits. CAR at regulatory prescribed minimum is considered adequate and able to withstand normal business losses. CAR at levels higher than the regulatory limit are able to absorb greater than normal business losses and such banks are expected to survive longer periods of economic downturns or business adversities. A lower than prescribed CAR, weakens bank's ability to absorb losses and it may become exposed to regulatory reviews. CAR in its standalone position, provides a fair assessment of the bank's ability to absorb losses, dovetailing it with earning potential, gives a clearer picture of a banks' loss or risk absorption capacity over a time horizon. CAR is also reviewed along with asset quality of the bank; higher the risk of losses from performing portfolio, more the capital would be required to maintain capitalization levels. Besides CAR, equity in relation to total assets is also tracked in order to have an un-weighted view of capitalization indicators. The continued adequacy of capital as reflected in the growth in equity in relation to the growth in assets is of critical significance to ratings as a reflection of risk.

Absolute size of equity base and cushion over regulatory minimum capital requirement (MCR) is also considered important. Equity size is critical as banks may at times be compelled to take the loss from non-performing loans all at once, rather than being able to spread the loss over years by way of provisions. As such, capital base serves as the buffer against sudden deterioration in asset quality or acute dips in earnings in any particular year.

With the introduction of Basel-3, JCR-VIS will continue to place more emphasis on quality of capital carried on the bank's balance sheet. In this regard, greater consideration is given to core capital which has a higher ability to absorb losses. Resultantly, items such as intangibles and goodwill are also excluded from calculation of core capital. Moreover, deferred tax asset whose reliability depends on future earnings, will also be adjusted to assess the impact on capitalization indicators.

Capital requirements have also become more stringent with the introduction of Basel 3. JCR-VIS will continue to track bank's ability to comply with current and future regulatory requirements in the backdrop of future growth plans of individual banks. State Bank of Pakistan (SBP) has also enhanced total CAR requirements (including capital conservation buffer) to 12.5% by end-2019 from 10% at end-2014 while tier-1 capital requirement will increase

from 7% to 10% (including capital conservation buffer). JCR-VIS has defined benchmarks for Tier-1 and overall CAR for different rating bands. Banks in the investment grade rating must be compliant with Tier-1 and overall CAR while the highest rated banks are expected to have a cushion of at-least 3% over Tier-1 and overall CAR regulatory requirements.

Asset Quality

Key asset risk considerations include rapid loan growth, impairment in current loan portfolio, and provisioning & collateral coverage along with risk from concentration of asset profile (counterparty, sector and geographic concentration).

Rapid loan growth when accompanied with lower underwriting standards may result in asset quality pressures for banks which are more visible in economic downturns. Growth is also monitored within various financing segments in order to track whether growth has been manifested in high risk segments which are also a potential source of credit risk.

Quality of loans & advances portfolio is assessed through measurement of credit risk, concentration risk and interest rate risk present in the portfolio. Judgment for credit risk is arrived at by examining the risk classification of the impaired portfolio under prudential regulations adjusted for specific exposures identified by internal or external auditors. The classification of non-performing loans & advances portfolio under the categories stipulated by the prudential regulations reveals the risk spectrum of the portfolio. The absolute quantum of non-performing loans as well as their ratio to the total advances and to the unimpaired equity is important from the earning potential and business extension prospects of the bank. Asset risk arising from current performing exposures is also monitored in order to gauge future provisioning requirements. The extent of provision coverage on overall non-performing portfolio is important to assess the extent of uncovered exposure being carried on the books. When provisioning & collateral coverage exceed impaired loans by a sizeable margin, JCR-VIS will positively adjust the bank's asset risk score. JCR-VIS has defined benchmarks of net infection for various rating bands with banks in the 'AAA' rated category expected to have net infection of around 2% or less.

The quality of credit portfolio is also dependent on the counterparty and sectoral risk in the portfolio. A sizeable and granular lending portfolio in terms of number of relationships may result in lower asset quality pressures as compared to a lending portfolio which features concentration and may result in quality strain in case of impairment in large financings. Concentration in single or few sectors may lead to abnormal credit and earning loss in situations where these sectors may come under economic or business cycle stress.

The distribution level of the loans & advances portfolio between variable and fixed return terms would indicate the interest rate risk on the portfolio.

Quality and Earning Stability

The level of basic earnings and its sustainability is the focal point in assessing profitability as an entity's integral strength. Basic earnings of an institution exclude the effect of any one time gains, provisions and taxation. Profitability determines an institution's ability to build reserves and be able to provide for unrealized losses, without affecting the bank's existing capital base. The sustained earning potential of an institution is a key determinant of franchise value and effective management and allows a bank to continually invest in new products and technology. Sizable growth in earnings level in a particular year will not contribute towards the ratings, if achieved through sources believed to be volatile.

Business position and earning potential is a function of the concentration or diversification in the business services offered, the franchise value enjoyed by the bank and the distribution of its earning streams. The variety of funded and non-funded services available to the customers of the bank and the efficacy of their delivery leads to the development of franchise value which when done effectively over a period of time becomes intertwined in supporting each other. It is to be noted here that while franchise value takes a considerable time to accumulate, its loss may occur much faster with fewer lapses. Majority of bank's earning emanate from loans & advances and investments (fixed income and market based) followed by trade related activities and one-off gains. Among these,

the income from loans & advances constitute the most stable and bulk of earning in normal times followed closely by investment and trade related income.

A review period and time series analysis of net interest margin to total revenue as well as fee and commissions to total revenue individually and for peer group would indicate the relative risk position of a bank in its own time series and among its peer group. The trend and contribution of one-off gains/losses to total revenue would reveal the business strategy and stability of income stream of a bank.

Ability of a bank to absorb provisioning expenses, over a business cycle, from profitability of that year reflects positively on asset quality of the bank. In any given year during a business cycle (10 years or a period of one economic downturn), if provisioning charges do not exceed half of net profits of the year over a business cycle, than bank's earnings (before provisioning and taxes) are expected to have the capacity to absorb future provisioning charges. This has generally been the case for large banks which absorbed the impact of higher provisioning charges during economic slowdown from profitability of the year. JCR-VIS has defined benchmarks for pre-tax economic ROAA (excluding non-recurring income) for various rating bands. Average provisions will be used for the purpose of calculating economic ROAA to account for volatility in provisioning charges during a particular year. Banks rated in the investment grade are expected to have a positive pre-tax economic ROAA.

Liquid Resources

Liquid assets carried on balance sheet provide cushion to the bank for meeting liabilities which may arise unexpectedly. JCR-VIS has defined benchmarks for liquid assets in relation to deposit & borrowings and only account for high quality liquid assets in its calculation. Non-performing/weak credit quality assets as well as encumbered assets are not incorporated in this calculation. Liquid assets to short term liabilities and liquid assets to total borrowings are other common ratios for determination of liquidity profile on standalone and for peer group comparison. For smaller banks, minimum liquidity for qualifying to higher rating bands is relatively higher than that for larger banks, due to a lower risk appetite of smaller banks.

MARKET ACCESS

Market position of a bank is mainly determined in terms of the deposits mobilized by the bank in comparison to total deposits mobilized by the overall banking industry. Banks having a sizeable market share benefit from economies of scale and may also have greater pricing power. Moreover banks after having achieved a certain market share, gain systemic importance in the domestic context. Market share has a sizeable weight within JCR-VIS's overall score for market access and for higher rating bands it may become a differentiating factor. For a 'AAA' rated bank, market share is expected to be around 10% or higher.

Total market based funding of the bank in relation to total liabilities and assets are tracked by JCR-VIS in order to monitor reliance of the bank to credit sensitive counterparties. Market base funding is considered less stable by JCR-VIS as compared to funds raised through deposits.

Within deposits mobilized by a bank, analysis would focus on types (core vs. non-core deposits and retail vs. corporate deposits) and composition of deposits. The granularity level in deposits measured through concentration profile in CASA (current account/saving account) along with the accumulation level in top twenty to top hundred depositors would provide an insight into the stability of liquidity at the bank. A higher market share in deposits with granularity and significant CASA would be considered a strength to the risk profile and would generally be accompanied with a larger, geographically diversified branch network.

Assessment of liquidity risk is undertaken to determine the extent a bank would be able to withstand adverse market and economic conditions without resorting to significant support from the central bank. It is important here to study the maturity mismatches between assets and liabilities on the maturity bucket timeline. JCR-VIS will also monitor

funding gaps through Net Stability Funding Ratio introduced by Basel-3. A ratio over 100% is indicative of the bank being able to meet its liabilities as its assets mature. The stress testing undertaken by risk management serves as a useful tool in liquidity management if done with pragmatic assumptions. The extension of stress testing to contingent liabilities and their size also has a direct bearing on the liquidity profile of the bank.

QUALITATIVE FACTORS

The control procedures implemented at the bank and the future of the entity as envisioned by the top management is a significant rating factor. The trickle down of the top management's vision and the clarity of the strategy identified, are factored into the ratings. The stability of the management as indicated through succession plans and employee turnover ratios affect the continuity of the management's long-term plans, and instability in management will discount the assessment of the strategy. Control measures undertaken by the management including contingency plans and the degree of centralization are separately analyzed. Factors such as effectiveness of credit appraisal and monitoring procedures are also given due weight.

Information systems in place are assessed for their adequacy as an integral element of internal controls in terms of their ability to generate and transfer data and ensure its timely availability to management for decision making. From an IT perspective, it is important to assess the ease of flow of information between functions, diverse report generating capability and the service efficiency of the internal and external sources in maintenance and development of the IT system. The IT security policies and disaster recovery plans are critical for system reliability and sustenance and would grow in importance as more branchless platforms are inducted into the banking field. The capacity of the existing or planned IT platform to develop or assimilate such technology based products is assuming greater importance going ahead. By the same token, the effectiveness of internal audits, their frequency and their usage by the management is also counted towards the strength of systems and procedures. Risk management function is assessed for its ability to track overall risk profile of the assets & liabilities of a commercial bank. Risk assessment of credit, market and interest rate risk in the portfolio and the asset/liability maturity mismatch is also taken into account.

The delivery channels of commercial banks are dependent upon its business strategy and model. Delivery channels also have to be aligned with the type of asset and/or liability business which the commercial bank plans to push through a particular channel. To assess the suitability of the delivery channel, the trends in growth of the branches are compared to growth of deposits and further analyzed to changes in granularity and CASA composition internally and to the total borrowings.



C. External Support Available to the Bank

The external support to a commercial bank may be available from its existing major shareholder(s), the government or an identified incoming major shareholder.

A commercial bank's ability to honor its financial commitments is also affected by the degree of external support. Creditworthiness of financially weak commercial banks may be enhanced, if backed by a strong third party. The strength of sponsors, shareholders, group, sovereign or even the peers, is a positive influence on the ratings. By the same token, the financial viability of associated concerns is also taken into account and translated into any strength/stress that may impact the risk profile of the entity being rated.

Support mechanisms are counted towards credit enhancements provided a viable mechanism is in place for the timeliness of the support. The timeliness of discharging financial obligations is crucial in the rating definition, highlighting the fact that it is not the eventual repayment capacity that the ratings drive to establish rather the timeliness of that repayment, which is to be benchmarked.

Third party support is at its most effective in the form of sovereign support. Though the presence of implicit support from the sovereign prevents economy-wide repercussions of a failed bank and may result in a higher credit rating, strong predictability of state support often hinders the development of the local banking system.

RATING BANK CAPITAL INSTRUMENTS

The issue specific rating takes into account the relative priority of claim of a particular class of debt/vis-à-vis the other outstanding obligations of that particular entity/financial institution. This means that issue specific rating takes into account both the probability of default on an entity level basis and the recovery prospects associated with a particular debt issue. As a general rule, the set of creditors that will be settled first in a bankruptcy scenario will be assigned the highest ratings, whereas hybrid capital classes, having lower priority claim on a company's assets, attain correspondingly lower ratings. This essentially means that JCR-VIS will first arrive at the issuer rating, which is also the rating applicable to senior unsecured creditors or in other terms the depositors and then the ratings of individual debt issues may be determined based on their specific features.

Tier-2 Instruments

Barring issue specific, external credit enhancements (as has been outlined in JCR-VIS methodology - Rating the Issue published in June'2016) JCR-VIS has rated sub-ordinated debt (eligible as Tier-2 instruments under Basel 2) issued by commercial banks, a notch below its entity rating given that these ranked below the banks' unsecured, senior debt (depositors) in priority.

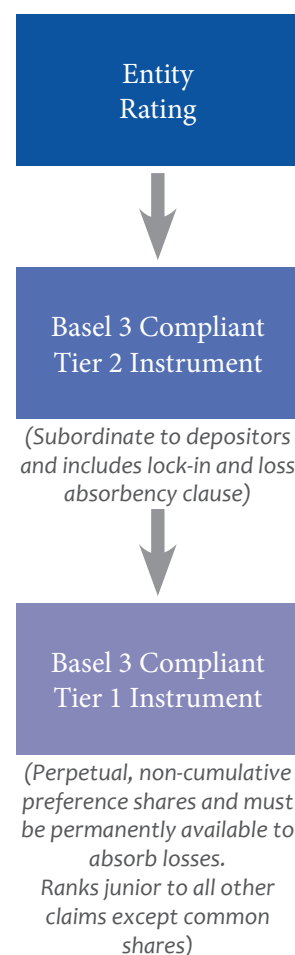
Under SBP's revised guidelines for capital eligibility under Basel 3, issued in August 2013, Tier 2 instruments are ranked below all other obligations of the bank including depositors, however, senior to instruments eligible for inclusion in Tier-1 instruments. Moreover, a Tier-2 eligible instrument should also have the following features:

- A lock-in-clause which restricts principal and interest payment which may result in shortfall in MCR or CAR or increase any existing shortfall.
- Loss absorbency clause through either a conversion into common stock or write-down feature at the point of non viability (PONV). As per local regulations, PONV is determined by the regulator.

As per SBP instructions, all instruments issued after January 1, 2013 have to be compliant with Basel 3 criteria (including the loss absorbency clause requirements) to qualify as regulatory capital.

Given the features enabling Tier-2 instruments as eligible capital, JCR-VIS has extended its approach to rating Basel 3 compliant Tier-2 instruments one to two notches lower from an issuer's entity rating. This is particularly relevant in the local context, where the capital buffer available to banks (either in the form of MCR or CAR) over regulatory requirements remains low, and in the backdrop of enhanced capital requirements till December '2019, increasing the probability of a lock-in clause being effected by regulatory directive. JCR-VIS will exercise its judgement in notching by one or alternatively two notches based on the extent of non-performance risk in addition to the risk stemming from lower priority of the Tier-2 issuances, (common to all such instruments). Non performance risk in turn is assessed as a function of the proportion of liabilities senior to Tier-2 instruments as well as the balance sheet health which is evaluated based on asset quality, profitability and capital buffers excluding the planned tier 2 instrument.

In line with JCR-VIS's criteria of convergence of instrument and entity ratings for 'AAA' rated banks, JCR-VIS has generally equated Basel 3 Tier-2 instruments with entity ratings. This equation primarily hold for those 'AAA' rated banks which are significantly important financial institutions (SIFI) and where capital buffers are comfortably over JCR-VIS's benchmark for the assigned ratings and anticipated to remain so throughout the rating horizon, under



reasonable conditions. In cases where an instrument (issued only for liquidity purposes) is outstanding and compares favorably in either priority or non-performance risk vis-à-vis Basel 3 Tier-2 instrument, than nothing between the entity and Tier 2 instrument will take place even for 'AAA' rated banks.

Tier-1 Instrument

Basel 3 Tier-1 instrument, as allowed by SBP, must be perpetual, non-cumulative preference shares and must permanently be available to absorb losses. Additional features for Basel 3 Tier-1 instruments include full discretion to the issuer over the amount and timing of dividend/ coupon payment i.e. failure to pay should not constitute event of default. Moreover, dividend coupon should only be paid from earnings of the year. Also, Basel 3 Tier-1 instrument needs to include a conversion option at a pre-specified trigger event.

JCR-VIS approach to rating Basel 3 compliant Tier-1 instruments may be rated two to four notches below the issuer's entity ratings given their low priority in settlement of claims and higher non-performance risk. Here also, as in case of determining the appropriate notch down for Tier-2 instruments, the extent of notching of Tier-1 capital is determined by the confluence of the proportion of obligations above Tier-1 issuances as well as the general health of the bank, as indicated by its financial position. JCR-VIS will place particular emphasis on quantum, veracity, stability and diversity of a bank's income streams and asset quality of performing portfolio while assigning ratings to Tier-1 instruments.

For Tier-1 instruments issued by 'AAA' rated Banks, notching difference may be limited to one notch in case entity and Tier-2 instrument are equated. A minimum differential of one notch below Tier-2 will be maintained under all circumstances to signify the difference in priority of both the instruments, implying that a notch down of Tier-2 instruments will cause an automatic downward revision of the issuer's Tier 1 capital.

While the regulatory framework may not consider a missed coupon payment as a default; the credit rating methodology employed by JCR-VIS would treat such missed payments as a default like situation given the investors' need for focus on the certainty of full and timely payments. For Tier-1 and Tier-2 instrument, the ratings will be placed on selective default (SD) in case the instrument becomes non-performing. Once the instrument becomes performing again, JCR-VIS will reassess the instrument based on issuer's future repayment ability.

EXPLAINING THE RATING SCALE

A credit rating is an independent third party opinion of the capability and willingness of an entity to repay its obligation in a timely and complete manner. JCR-VIS assigns both long and short term rating opinions to entities, where long term indicates a period of up to 3 years while short term signifies a period of up to one year. The long-term rating scale is spread across 20 notches from 'AAA' to 'D'; 'AAA' ratings denote highest credit quality and lowest probability of default while a 'D' rating denotes a defaulted obligation. Any rating below the 'BBB' rating band is considered a non-investment grade rating. The short-term rating comments on the liquidity profile and near-term vulnerability of default of the rated entity. Short-term rating scale is spread across 6 notches from 'A-1+' to 'C' with 'A-1+' denoting the highest certainty of timely payments while a 'C' rating denoting doubtful capacity of timely payment of obligations. JCR-VIS rating scale can be accessed through the following link (<http://jcrvis.com.pk/docs/ratingscale.pdf>). Relationship between short and long-term ratings has also been developed by JCR-VIS and can be accessed through the following link (<http://jcrvis.com.pk/docs/Correlation.pdf>).

JCR-VIS assigns ratings of debt instruments on the same rating scale as used for entity ratings of commercial banks. However, no short term rating is assigned to debt instruments as JCR-VIS comments on the overall repayment ability over the term of the particular instrument.

Commercial Banks Ratios & Definitions

Asset Quality

Gross infection	Non performing loans / gross advances
Net infection	NPL - provision for NPL / net advances
Provisioning Coverage	Provisions / NPLs

Profitability

Return on Markup bearing assets	Interest income on assets / Average markup bearing assets (based on 5 point)
Average cost of deposits	Deposit Financial expenses / Average deposits (based on 5 point)
Average cost of borrowing	Financial expenses / Average borrowings (based on 5 point)
Spreads	Return on Markup bearing Assets - Average cost of borrowing
Net Mark-up Margin	Net Finance Income / Markup Bearing Earning Assets
Core Earnings	Net Interest Income + Fee Commission Income + Income from Forex + Dividend Income - Admin Expenses
Efficiency	Admin Expenses / Net Interest Income + Fee Commission Income + Income from Forex + Dividend Income
Basic ROAA	Core Earnings / Average total assets
Basic ROAE	Core Earnings / Average Net Worth
Overheads	Admin Exp / Avg total assets
Pre-tax economic ROAA	(Core Earnings - Average Provisions)/Average Assets

Capitalization

Total equity to Total Assets	Net worth / Total Assets
Tier 1 Capital Adequacy Ratio (CAR)	Tier 1 Capital / Risk weighted Assets
Capital Adequacy Ratio (CAR)	Tier 1 Capital + eligible Tier 2 capital / Risk Weighted Assets
Net NPLs in relations to Tier 1 Equity	(Gross NPLs - Provisions)/ Tier 1 Equity

Funding/Liquidity

Advances to Deposits Ratio	Total loans / total deposits (Adjusted for Export Refinance Scheme)
Liquid Assets to Deposits and Borrowing	High Quality Liquid Assets/ Total Borrowings and Deposits



Faheem Ahmad

*President & CEO, JCR-VIS Credit Rating Company Limited
Founder, VIS Group
Chairman, Association of Credit Rating Agencies in Asia*

Mr. Ahmad possesses 30+ years experience in financial risk assessment with focus on Islamic finance, venture capital and general management. He has top level management experience at international level in the fields of credit ratings, Islamic and conventional financial risk assessment modeling, industrial management and construction engineering. Mr. Ahmad is an active participant at international forums on Credit Ratings. He obtained his B.S in Civil Engineering from NED University of Engineering and Technology, Karachi. He also has Masters Degrees in Engineering and Business Administration from USA. He could be contacted at faheem@jcrvis.com.pk



Faryal Ahmad Faheem

Deputy CEO

Faryal Ahmad Faheem has been associated with JCR VIS Credit Rating Company since 2006. She has primarily been involved in rating assignments of financial institutions as well as corporate organizations besides her role in the general management of the company. She has worked extensively in the areas of in-depth financial and risk analysis of the banking as well as mutual fund industry with specific focus on management quality ratings and fund rankings. She has also been involved in the methodology development process at JCR-VIS. She holds a Master's degree in Business Administration from the Institute of Business Administration, Karachi (2005) and also a Risk and Corporate Management certification from Columbia University, USA.



Talha Iqbal Chhoangalia

Senior Manager

Having completed his undergraduate studies from the Institute of Business Administration (IBA) in 2010, Talha joined JCR-VIS Credit Rating Company Limited as a financial analyst. In almost five years spent at JCR-VIS and Islamic International Rating Agency (Technical collaboration with JCR-VIS), Talha has been involved in the entity, corporate governance and fiduciary ratings of numerous institutions in Pakistan and abroad. His overall experience in ratings includes commercial banks, insurance and manufacturing sectors. He has also been involved in rating a number of Sukuk issued by IFIs and Corporates. Recently, Talha has been involved in drafting a revised takaful methodology for IIRA. He has spoken at international forum hosted by JCR-VIS and IIRA and has facilitated training courses on the subjects of ratings and credit analysis.

Jahangir Kothari Parade (Lady LLOYD Pier)
Inspired by Her Excellency, The Honorable Lady Lloyd, this promenade pier and pavillion was constructed at a cost of 3 Lakhs and donated to the public of Karachi by Jahangir Kothari to whose generosity and public spirit the gift is due. Foundation stone laid on January 5, 1920. Opened by Her Excellency, The Honorable Lady Lloyd on March 21, 1921.

Dome: A roof or vault, usually hemispherical in form. Until the 19th century, domes were constructed of masonry, of wood, or of combinations of the two, frequently reinforced with iron chains around the base to counteract the outward thrust of the structure.

Origins: The dome seems to have developed as roofing for circular mud-brick huts in ancient Mesopotamia about 6000 years ago. In the 14th century B.C. the Mycenaean Greeks built tombs roofed with steep corbeled domes in the shape of pointed beehives (tholos tombs). Otherwise, the dome was not important in ancient Greek architecture. The Romans developed the masonry dome in its purest form, culminating in a temple built by the emperor Hadrian. Set on a massive circular drum the coffered dome forms a perfect hemisphere on the interior, with a large oculus (eye) in its center to admit light.



Jahangir Kothari Parade

National Excellence, International Reach

JCR-VIS Credit Rating Company Limited is committed to the protection of investors and offers a blend of local expertise and international experience to serve

the domestic financial markets. With its international reach, JCR-VIS is positioned to aim for an international mark. In this regard, the global experience of our principal, Japan Credit Rating Agency, Ltd. has been invaluable towards adding depth to our ongoing research endeavors, enriching us in ways, that enable us to deliver our responsibilities to the satisfaction of all investors.

The edifice of the Jahangir Kothari Parade has stood proudly through the years and is a symbol of our heritage. Its 'Dome' as the most stable of building structures, exemplifies architectural perfection. Committed to excellence, JCR-VIS continues its endeavor to remain an emblem of trust.

JCR-VIS Credit Rating Company Limited

Technical Partners Islamic International Rating Agency, Bahrain
JV Partner CRISL, Bangladesh
Member Association of Credit Rating Agencies in Asia

KARACHI

VIS House - 128/C, Jami Commercial Street 14
D. H. A. Phase VII, Karachi - Pakistan

LAHORE

VIS House - 431, Block Q Commercial Area
Phase II, DHA, Lahore - Pakistan

Tel: (92-21) 5311861-70 Fax: (92-21) 5311872-73

E-mail: info@jcrvis.com.pk

Website: www.jcrvis.com.pk