JCR-VIS

RATING METHODOLOGY

Toll Roads Rating

The 'Toll Roads Rating' methodology encompasses the financial strength and debt servicing ability of a company/ **Special Purpose Vehicle** (SPV) that generates revenue through toll road operations. While determining entity ratings for such companies, JCR-VIS Credit Rating Company Ltd. (JCR-VIS) takes into account several risk factors across the project life which includes construction, operation and maintenance. Such projects are usually initiated by either private third parties or local / federal public institutions on a **Design, Build, Finance, Operate & Transfer** (DBFOT) basis; local/ federal public institutions however do not require a 'transfer' of the project. In the context of Pakistan an emerging concept is the public private partnership in the development of infrastructure projects, including toll roads. The toll roads here are generally undertaken under a concession agreement with the National Highway Authority or relevant provincial authority.

The credit strength of the project is largely impacted by the quality of agreements in place with government bodies/ ministries. The primary agreement remains the **Concession Agreement** which provides a systematic layout covering responsibilities of all involved parties with the project. This includes financing arrangement, construction timeline and operational & maintenance responsibilities. Furthermore, the agreement lays out the **concession period**; during this period the SPV has operational rights to the toll road after which the same has to be transferred to the provincial/ local or federal government. Further important agreements include **Engineering, Procurement and Construction** (EPC), **Senior Facility** and others impacting debt obligation. It is of importance to note that parties involved in the agreements differ based on whether the project is purely public or a **Public-Private Partnership** (PPP). The credit profile of the project is enhanced with the inclusion of local/ provincial government (ministry/ body) for regional toll facility and federal government (ministry/ body) for national highway network. From a credit rating point-of-view, public ownership (local or federal) needs to be shown through quantifiable support.

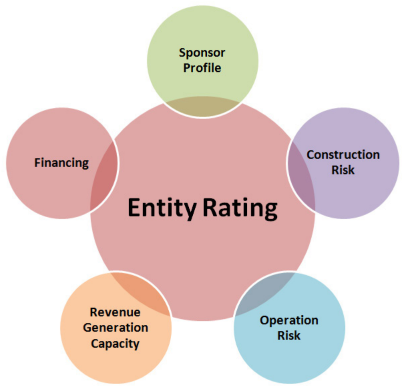
The presence of these agreements removes the uncertainty that usually lies with matters related to the public office. As these projects require a significant period for construction with expertise essential with regards to initial operational period, the agreements can act as a guarantee to ensure that the project is protected from a change in overall policy or those holding relevant public offices.

JCR-VIS reviews expert reports and historical data when analyzing both the constructor and choice of road for the project. It is essential to note the importance of the company having the expertise available to adequately complete the construction of the project, keeping in consideration both the quality of the work and the construction timeline. Historical traffic data flow is analyzed for the following cases: 1) a new road or 2) the rebuilding of an existing stretch of the road. Considering that the entity rating denotes the financial ability to meet debt obligations, it is vital to ascertain the need for the construction / rebuilding and how much traffic volume it will generate. Analysis of historical data for traffic flow on an existing road (or movement in the nearby regions with regards to a new road) also plays an integral part of the analysis.

Two key material pieces of information are the **Feasibility Report** and **Financial Model** for the toll road project. The former, built using historical traffic flow data and cost estimations for the construction of the project allow senior lenders (primarily banks) to determine the practicality of the project in line with amount of financing required, the overall project layout and potential upside to lenders. The latter takes into account several key assumptions such as inflation, discount rate, assumed toll, periodical toll increase, traffic flow data amongst others. Using these, the financial model determines potential revenue in the coming medium to long term, costs incurred and potential profit. These in turn ascertain the payback period and net present value of the project. The financial model holds greater significance owing to the fact that debt servicing is built into the model and that certain revenue targets are required to be met to ensure compliance with debt obligations.

RATING FACTORS:

In assessment of the risk profile of the toll road projects the following would be the major areas of coverage:



Sponsors Profile:

The selection of the sponsors is of foremost importance in the toll road projects. Where a public private partnership is being undertaken, while the sponsors financial soundness would be matched with the magnitude of the capital expenditure required for the project, experience in infrastructure projects and particularly road building would be an added strength. Sponsors profile of projects sponsored by para state organizations would need to be assessed both on their own financial strength and the level of support they can get from the State. Soundness of sponsors is particularly important from the perspective of soundness of their technical skill and the adequacy of their financial strength to meet contingencies in implementation and operation of the project.

Construction Risk:

The importance of the terms of the EPC agreement cannot be downplayed while analyzing the construction schedule; gauging the same through accomplishment of major milestones over timelines agreed. It is vital to mitigate risks associated with construction that can stem from delays, performance levels and cost overruns. The adequacy of the performance guarantees obtained from the third party contractors in various fields or the main EPC contractor is important alongwith the extent of liquidated damages the sponsors can recover from their contractors in case of specification variation and time delays.

JCR-VIS reviews the operational history of the construction team brought on to the project and whether they hold the capacity to complete a project of such scale. An adept design team can help tackle a complex road project that is built on tough terrain or one which further includes bridges / crossovers / tunnels etc. Any prior existing relationships that the DBFOT company / SPV has with designers specializing in such work can both improve their bid and reduce risk levels associated with the construction phase. Leeway in the construction budget and ability to absorb costs overruns will be judged under completion risk. The use of a single contractor can be advantageous from the construction point of view, rather than multiple contractors. It allows for improved efficiency levels, especially if the contractor has a history of completing such projects. JCR-VIS notes the ability to replace contractors in case of under-performance as road construction can be relatively straightforward and results in availability of several EPC contractors.

Operational Risk:

Operational expertise of the toll road can be managed directly by the DBFOT Company / SPV or can be licensed out to a third party on a contract basis. Overall, operational requirements are limited as the use of labour is mostly minimal in nature. A limited workforce is required for managing the toll stations, security and emergency services. In most cases, the latter two are contracted out. The use of automated toll systems along with tracking software allows a system to monitor traffic flow conducting relevant data analysis and using time variances to determine if any delays are present along the route. The system also improves revenue tracking with automated token printing.

JCR-VIS tracks the operational arrangements in place with regards to the project. If the same is contracted to a third party, tenure of the same is further gauged. Over a due period of time, the operations can achieve significant efficiency levels resulting in reducing costs. As such, contracts should be medium term in nature (2-5 years) with suitable clauses in place with regards to non-compliance of duties by the contracted party.

An additional element that is noted is the road scheduled maintenance that is determined in advance. The wear and tear that roads receive through the traffic and overweight heavy vehicles traveled eventually can result in depressions and potholes. As such, the project company should schedule a complete overhaul of the road after a certain amount of time (approximately 5 years post start of commercial operations) to ensure quality of travel and frequency of customers is maintained. Furthermore, how the company intends to finance the overhaul is also key with regards to the operational feasibility of the project.

Revenue Generation Capacity:

The primary risk factor facing the project company is revenue generation, a combination of volume and price. This refers to both the volume of traffic traveling the toll road and the company's ability to revise toll rates over a certain period of time. The goal of all projects remains to generate adequate revenue to be able to service debt obligations. The same are predetermined based on historical data, as per both the feasibility report and the financial model, with the company having to achieve these targets. Alongside core revenue generated through traffic, secondary sources of revenue through **Weighbridge** and **Right of Way** exist which can potentially help boost the company's bottom line.

Volume

Prior to the construction of the project, a detailed feasibility report is developed based on historical traffic trends on the road. This includes seasonal movement, demographic concentration in the adjoining areas and availability of alternate routes. In cases of **Greenfield projects**, the data has to be assumed from similar projects built in the near region while greater emphasis is paid on demographic concentration and the saving of travel time the toll road will provide.

Traffic data analysis for all projects further contains type-of-vehicle traffic to capture the proportion of commercial heavy vehicles traveling the road. The greater potential use of the road for commercial activity leads revenue risk open to business cycles (seasonal with regards to agriculture) and economic downturns. The company establishes its financial model based on historical traffic data analysis noting any variance in the same when actual numbers are realized. Volume assumptions are vital as they drive revenue generation in the financial model and significant negative variance can impact the payback period and net present value of the project.

From a rating point-of-view, variance in volume directly affects revenue generation and the company's ability to meet debt servicing obligations. Thus it needs to be determined whether traffic volume assumptions placed in the model are realistic as well as their comparison with realized figures at the start of commercial activity. It will be a positive element for the company to sensitize volume assumptions for the initial years of commercial activity and establish the financial model on the same. Early periods of commercial activity can comprise resistance from daily road travelers who are hesitant at paying the toll with a portion insisting on finding alternative routes. It is only after a certain period when travelers realize the benefits of the toll road do volume numbers rise to assumed figures, if not higher.

A further element which needs to be analyzed is the price elasticity of traffic flow. The change in volume is directly affected by the competitive position of the toll road along with its travel time benefits, service areas along the road and macroeconomic conditions at the time of change. In such cases, a project company will have to find a balance between revenue generation through price and volumes.

Price

Based on the initial financial model, a certain base price is assumed as the starting point for toll of different vehicle classes (classes are segregated based on the number of axels). Regulatory approval is required on the same from either a provincial / local or federal body.. A company's ability to alter toll road prices and the process to achieve the same is also factored into the analysis.

Under the terms of the Concession Agreement, the project company determines fair toll road pricing (based on rates for vehicles classes on similar projects) taking into account revenue generation targets and the need to meet debt obligation requirements. Furthermore, the process for revaluation of rates is further predetermined and approved by all signing parties. This will include proposed rate of growth and the interval period after which rates may be revised. Adjusting toll prices to annual inflation is taken positively during analysis as it ensures that steady revenues are not absorbed by increasing costs on account of inflation but are instead passed on to the consumer.

Other elements that add to revenue generation are weighbridge operations and right of way. These revenues are supplementary in nature and help boost revenue generation as development along the toll road occurs. Weighbridge revenue is viewed as a penalty for overload on commercial vehicles. Based on the number of axels and design, every heavy vehicle has an optimal weight limit. This weight limit refers to the amount that the vehicles body can safely absorb and not pass through to the road in the form of excessive wear and tear. Knowing these weights, when commercial vehicles such as fuel tankers, 18-wheelers, cargo transports, commercial busses etc. are traveling the toll road, their weight is recorded at the weighbridge, located usually at toll entrances. Violation of the weight limit results in a fine / penalty charged on the vehicle. In some cases, project companies can contribute these penalties to the amount required for the complete overhaul of the road, as required after excessive wear and tear.

Right of Way is generated through infrastructure development along the road. The development can come in the form of petrol stations, rest houses, diners / restaurants amongst others. During the concession period operators of these establishments must pay rent to the project company. Further restrictions can be made such as first-right-of-refusal with regards to the construction of these establishments.

These sources of revenue have no inherent risk but instead provide a boost to total revenue generation. With significant development over a period of time, these can accumulate to a substantial sum.

Financing:

JCR-VIS pays close attention to the agreements encompassing the arrangement between the senior lenders (primarily composing of banks) and the project company for the financing of the project. This includes the protections provided to senior lenders through financial covenants, funding support from third parties, impact on the agreement from changes in interest rate and other financing details.

The debt structure of the project is important in these discussions as the greater the proportion of equity involved in the project, the greater risk the project company has assumed. Larger stakes in equity result in the company placing greater effort to ensure stable operations and sustained revenue generation. Financing tenor is reviewed noting that longer timelines carry with it greater risks. Furthermore, in the case of Greenfield projects, flexibility should be available for forecasting risk. Negative variances on realized revenue figures can impact the periodical debt servicing ability of the company. As such the rating agency monitors the **debt service coverage ratio** and **FFO/ long term debt** to determine the debt servicing ability of the company.

RATING SCALE & DEFINITIONS: ISSUES / ISSUERS

Medium to Long-Term

AAA
Highest credit quality; the risk factors are negligible, being only slightly more than for risk-free Government of Pakistan's debt.

AA+, AA, AA-
High credit quality; Protection factors are strong. Risk is modest but may vary slightly from time to time because of economic conditions.

A+, A, A-
Good credit quality; Protection factors are adequate. Risk factors may vary with possible changes in the economy.

BBB+, BBB, BBB-
Adequate credit quality; Protection factors are reasonable and sufficient. Risk factors are considered variable if changes occur in the economy.

BB+, BB, BB-
Obligations deemed likely to be met. Protection factors are capable of weakening if changes occur in the economy. Overall quality may move up or down frequently within this category.

B+, B, B-
Obligations deemed less likely to be met. Protection factors are capable of fluctuating widely if changes occur in the economy. Overall quality may move up or down frequently within this category or into higher or lower rating grade.

CCC
Considerable uncertainty exists towards meeting the obligations. Protection factors are scarce and risk may be substantial.

CC
A high default risk

C
A very high default risk

D
Defaulted obligations

Short-Term

A-1+
Highest certainty of timely payment; Short-term liquidity, including internal operating factors and /or access to alternative sources of funds, is outstanding and safety is just below risk free Government of Pakistan's short-term obligations.

A-1
High certainty of timely payment; Liquidity factors are excellent and supported by good fundamental protection factors. Risk factors are minor.

A-2
Good certainty of timely payment. Liquidity factors and company fundamentals are sound. Access to capital markets is good. Risk factors are small.

A-3
Satisfactory liquidity and other protection factors qualify entities / issues as to investment grade. Risk factors are larger and subject to more variation. Nevertheless, timely payment is expected.

B
Speculative investment characteristics; Liquidity may not be sufficient to ensure timely payment of obligations.

C
Capacity for timely payment of obligations is doubtful.

Rating Watch: JCR-VIS places entities and issues on 'Rating Watch' when it deems that there are conditions present that necessitate re-evaluation of the assigned rating(s). Refer to our 'Criteria for Rating Watch' for details. www.jcrvis.com.pk/images/criteria_watch.pdf

Rating Outlooks: The three outlooks 'Positive', 'Stable' and 'Negative' qualify the potential direction of the assigned rating(s). An outlook is not necessarily a precursor of a rating change. Refer to our 'Criteria for Rating Outlook' for details.www.jcrvis.com.pk/images/criteria_outlook.pdf

(SO) Rating: A suffix (SO) is added to the ratings of 'structured' securities where the servicing of debt and related obligations is backed by some sort of financial assets and/or credit support from a third party to the transaction. The suffix (SO), abbreviated for 'structured obligation', denotes that the rating has been achieved on grounds of the structure backing the transaction that enhanced the credit quality of the securities and not on the basis of the credit quality of the issuing entity alone.

(blr) Rating: A suffix (blr) is added to the ratings of a particular banking facility obtained by the borrower from a financial institution. The suffix (blr), abbreviated for 'bank loan rating' denotes that the rating is based on the credit quality of the entity and security structure of the facility.

'p' Rating: A 'p' rating is assigned to entities, where the management has not requested a rating, however, agrees to provide informational support. A 'p' rating is shown with a 'p' subscript and is publicly disclosed. It is not modified by a plus (+) or a minus (-) sign which indicates relative standing within a rating category. Outlook is not assigned to these ratings. Refer to our 'Policy for Private Ratings' for details. www.jcrvis.com.pk/images/policy_ratings.pdf

'SD' Rating: An 'SD' rating is assigned when JCR-VIS believes that the ratee has selectively defaulted on a specific issue or obligation but it will continue to meet its payment obligations on other issues or obligations in a timely manner.

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

Javed A. Callea

Advisor

Mr. Callea is a professional in the financial sector with over 35 years of experience mostly in the financial institutions with certain exposure to service and infrastructure sectors in Pakistan. He has held the position of Chief Executive of a leasing company for 10 years. His core areas of expertise cover leasing, development financing, project management, investment & merchant banking, strategic investment management and real estate.

Major financial institutions he worked for include Pakistan Industrial Credit and Investment Corporation, State Life Insurance Corporation, Bankers Equity, Crescent Leasing Corporation and Saudi Pak Ind. & Agri. Inv. Company. He has also served as Member Finance of Water & Power Development Authority of Pakistan and as member of the Inquiry committee on stock exchange crises in 2000 commissioned by the SECP. He earned his MBA degree from the Institute of Business Administration in 1974.

Moiz Badshah

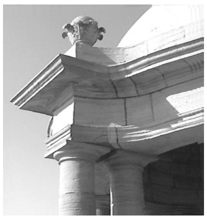
Assistant Manager

Moiz Badshah is involved in the credit analysis of various industrial companies and financial institutions. He has been associated with JCR-VIS since 2014 and his overall experience in ratings includes corporates, commercial banks and manufacturing sectors. He holds a B.Sc. in Economics and Finance from the University of London. He is currently a registered candidate for CFA Level II.

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 genrosity 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

Information herein was obtained from sources believed to be accurate and reliable; however, JCR-VIS does not guarantee the accuracy, adequacy or completeness of any information and is not responsible for any errors or omissions or for the results obtained from the use of such information. Rating is an opinion on credit quality only and is not a recommendation to buy or sell any securities. Copyright 2016 JCR-VIS Credit Rating Company Limited. All rights reserved. Contents may be used by news media with credit to JCR-VIS.