Available online at www.sciencedirect.com

ScienceDirect

International Journal of Project Management 33 (2015) 1576 – 1587

International Journal of Project Management

www.elsevier.com/locate/ijproman

Credit enhancement factors for the financing of independent power producer (IPP) projects in Asia

Abu Naser Chowdhury [a], Po-Han Chen [b,*], Robert L.K. Tiong [c]

[a] Department of Civil Engineering, University of Asia Pacific, House #8/A, Road #7, Dhanmondi, Dhaka 1205, Bangladesh
[b] Department of Civil Engineering, National Taiwan University, No. 1, Sec. 4, Roosevelt Rd., Taipei 10617, Taiwan
[c] School of Civil and Environmental Engineering, Nanyang Technological University, 50 Nanyang Avenue, Singapore 639798, Singapore

Received 26 September 2014; received in revised form 26 February 2015; accepted 23 April 2015
Available online 23 May 2015

Abstract

Public and private parties give a number of guarantees and commitments in the form of credit enhancement for successful investment and implementation of independent power producer (IPP) projects in Asia. A research is thus conducted to find the suitable credit enhancement factors for these projects. From 27 out of 28 credit enhancement factors that were validated by IPP professionals, factor analysis revealed five factor groupings which are — (1) shareholders' credit enhancement, (2) host government's credit enhancement, (3) multi-lateral development banks (MDBs), export credit agencies (ECAs) and other parties' credit enhancement, (4) capital structure mechanism, and (5) commercial bank's credit enhancement. From these critical credit enhancement groupings, it is further noticed that contingency equity support, standby credit guarantee, subordinated debt mechanism, financing with political risk insurance from MDBs and ECAs, escrow account, and standby letter of credit are of great importance for financing decision of IPP projects in Asia.

Keywords: Independent power producer; Credit enhancement; Asia; Public private partnership

1. Introduction

Literally credit enhancement means reducing the risks of extending credit to a borrower. This includes requiring collateral, a stand-by letter of credit, a guarantor, or any other means. In the context of project financing, the issuance of a guarantee or additional collateral to reinforce the credit strength is termed as credit enhancement. Though credit enhancement means a third party's assurance for payment, performance or obligations to major participants in a project on off-take, supply and completion agreement, there are various ways to enhance the credit of a project (Chowdhury and Charoenngam, 2008). This type of agreement allows for broader risk mitigation and full range of stakeholders' commitments. For public private partnership (PPP) projects, selecting the right credit enhancement factors is considered critical. Proper selection of credit enhancement schemes can provide wider access to capital market, expand the resources of finance for infrastructure projects, and offer sufficient external support to infrastructure bonds. Credit enhancement helps broaden risk mitigation to stakeholders of a PPP project, as political risk coverage and mitigates cost-overrun risk mitigation as well.

Over the past decade, credit enhancement has emerged as a critical factor in the development of credit markets in developing and transitional countries (Saleem, 2008). In Europe, the most common credit enhancement scheme is the

* Corresponding author.
E-mail addresses: naser.chowdhury@gmail.com (A.N. Chowhury), pohanchen@ntu.edu.tw (P.-H. Chen), clktiong@ntu.edu.sg (R.L.K. Tiong).

http://dx.doi.org/10.1016/j.ijproman.2015.04.007
0263-7863/00/

guarantee from the government to pay debt principal and interest in case of default by the project company (Hellowell and Vecchi, 2012). Reviglio (2012) states that this approach is also undertaken by the European Investment Bank (EIB) and the European Commission in relation to the loan guarantee instrument for Trans-European Transport Network Projects. Buisson (2013) mentions that the UK Government has initiated a number of credit enhancement measures as PPP projects face difficulties, even cannot reach financial close due to shortage of long-term debt in the UK and European market. Some of these new measures are — guarantee schemes to underwrite a portion of debt for the projects which have already started construction, government equity stakes to reduce debt to equity ratio and so on. Similarly, the government of India has initiated steps to directly ensure availability of long term funds for PPP projects. In this line, the government has established a wholly government owned Non-Banking Finance Companies (NBFC) for providing long term direct financing and credit enhancement for bonds issued by PPP projects (Sinha, 2014). The Indian Infrastructure Finance Company Limited (IIFCL) has launched its credit enhancement initiative with a pilot transaction with the support of ADB (Asian Development Bank, 2012). Under this scheme IIFCL plans to provide partial credit guarantee to enhance the ratings of project bonds issued by infrastructure companies. Similar steps have been taken by the Pakistan government to mobilize private capital resources from financial markets.

Though some related studies and papers have been documented on this research area, few, if any, have investigated the current perceptions and experiences of credit enhancement factors in independent power producer (IPP) context in Asia. These studies have not explained which credit enhancement factors needed to be present in policy development of IPP project financing, why these factors are of great importance, and what would be the effect in failing to incorporate those factors for IPP project execution in Asia. This research is thus focused on trying to find the answers and knowledge to fill the research gaps.

The paper is structured as follows: Section 1 describes the introduction; Section 2 provides the research method and survey design including literature reviews; Section 3 presents factor analysis, results and groupings of credit enhancement factors; Section 4 explains the decision support model which helps to identify suitable credit enhancement factors for a particular country in Asia; and finally the conclusion in Section 5.

2. Research method and survey design

A triangulation research strategy combining literature review, interviews and questionnaire survey is adopted in this research. The research method followed for this study includes (1) a literature review and case investigation to identify initial lists of credit enhancement factors for IPP projects (i.e. content); (2) structured interviews with PPP experts to validate those credit enhancement factors identified in step (1) (i.e. content validation); (3) a questionnaire survey to IPP professionals in Asia to evaluate the criticality/importance of those factors; and finally (4) factor analysis for grouping of factors. Fig. 1 shows the research framework of this study.

2.1. Literature review (content)

Public private partnership (PPP) has been used internationally in more than 85 countries (Regan et al., 2009; Tang et al., 2010). PPP is increasingly practiced in energy, telecommunications, transport and water facilities (World Bank, 2011), because it is believed to be an effective way to relieve government financial burden, introduce flexible management mechanisms, improve efficiency, enhance service quality, and achieve risk transfer (Liu and Yamamoto, 2009; Meng et al., 2011; Yuan et al., 2010). However, attracting private sector to infrastructure development is not as simple as theories often suggest (Sader, 2001; Wibowo and Mohamed, 2010). Investors and other stakeholders in PPP projects generally bear serious risks including political risks, construction risks, market risks, credit risks and operational risks (Akintoye et al., 1998; Li et al., 2005; Shen et al., 2006; Zayed and Chang, 2002) due to uncertainties embedded in the large scale of investments and long recovery cycles. Thus to attract private capital or foreign investment to fund the development of these infrastructure projects, the government provides the project company corresponding preferential policies or some kinds of guarantees (which is in terms some kinds of credit enhancement as well for the project), such as tax privileges, take-or-pay agreement, provision of land, supply of raw materials, energy supply and guarantee of restrictive competition (Chen, 2009; Huang and Chou, 2006; Ke et al., 2010).

There has been an abundant amount of research being conducted in various aspects related to guarantees and credit enhancement in PPP projects. Some of these researches focused on government assurance/guarantees such as payment guarantees, fiscal incentives to the project, assurance on confiscation, expropriation, nationalization and deprivation (Choi et al., 2010; khan and Parra, 2003); legal and institutional framework support such as priority access to foreign exchange availability, letter of credit from the host government, establishing an escrow agreement between special purpose vehicle (SPV) and off-taker to capture revenues from off-taker customer to support off-taker's payment obligation, and financing with political risk insurance from multi-lateral agencies or export credit agencies or insurance companies (Kumaraswamy and Zhang, 2003); financial support such as debt service reserve fund, shareholders' retention agreement, clawback guarantees by the sponsors, subordinated debt, contingency equity, standby letter of credit, payment and performance guarantee, bank letter of credit facility (Chowdhury and Charoenngam, 2008; Davis, 2003; Lang, 1998; Tan, 2007; Tiong and Anderson, 2003); capital structure mechanism such as third-party guarantees, insurance coverage, coverage from ECAs, prevalence and timing of covenants that regulate the relationships between borrowers and lenders, escrow accounts, revolving bank guarantees and/or state guarantees for off-taker's payment obligation (Delmon, 2009; Gatti, 2008).