

Implication of Catalytic Role of Current Development Finance on Private Infrastructure Project Finance in Developing Countries

K. A. K. Devapriya

Post-doctoral fellow

Knowledge Centre @ Weimar,
Bauhaus-Universität Weimar, Germany

Wilhelm Alfen

Chair in construction economics

Knowledge Centre @ Weimar,
Bauhaus-Universität Weimar, Germany

Abstract

Current approach of development finance to create an enabling environment for market based-financing rather than directly providing investment funds focuses on public and private sector working approach to optimize development impact. Multilateral and bilateral agencies' participation in private infrastructure project (PIP) finance indicates this phenomenon in developing countries (DCs). Development agencies' intervention works to ease constraints in promoting PIPs through market based financing mechanisms, namely project finance (PF) arrangements in weak institutional environments. In addition to the development agencies' role as an additional financial intermediation, created institutions are in place to promote PIPs through PF arrangements in DCs. Based upon this premise, this paper examines implication of development agencies' instruments on PIP finance when arranged through PF arrangements within specifically created institutions. Empirical evidences confirm that those development agencies' instruments, namely credit support/enhancement and guarantees function to improve the debt capacity of PIP finance and thereby improve the viability of PIPs in weak legal, political and financial environments. These results shed light into the structuring of PIP finance arrangements in underdeveloped institutional environments. Thus findings highlight effectiveness of current development finance towards a sustainable public and private working approach to achieve development goals in DCs.

Keywords

Development finance, private infrastructure projects, project finance arrangements, institutional environments.

1. Introduction

Finance for development is defined as creation of good institutions (including legal, informational and financial infrastructure) that gives incentives to mobilize private capital for the needed developments such as physical infrastructure development (Krahen and Reinhard, 1994). Development finance for such programmatic support based on agreed policies is necessary to improve institutional and informational infrastructure since increased aid levels seldom stimulate improvements in policies and institutions. In the past, high levels of development assistances are not frequently associated with improved access to foreign capital, because aid is often provided to extensively poor countries with weak institutional environment,

which are unattractive to foreign investors (Global Development Finance, 2001). Therefore, the changing nature of the donor and recipient relationships in current development finance is aimed at creating an absorptive capacity to attract private investments in the host country. The emergence of private sector development, in particular public-private partnership developments as a special area of development assistance indicates this phenomenon in DCs.

The public and private sector working approach to optimize development impact in its member countries has become the focal point of the development agencies' private sector development strategy. This changing approach of official flows is reflected by the multilateral agencies' increasing assistance for the development of institutional (including financial intermediaries) and informational infrastructure to promote private participation in economic development such as physical infrastructure development in developing countries (DCs). This is so required in the event that official flows are inadequate for the growing capital requirement for infrastructure developments in DCs. On the other hand, private sector participation in infrastructure development has been a priority area in many developing countries' policy agenda in the 1990s (World Bank, 2003). Therefore, the focus of this research is essentially on effectiveness of development agencies' instruments to attract private capital into long-term investment schemes in infrastructure development. It is in this light that this paper discusses the catalytic role of current development finance in relation to PIP finance in DCs. The structure of this paper is as follows. First, development agencies' participation in private infrastructure is discussed. Following this discussion, implication of development agencies' instruments on the debt capacity of PIPs is examined leading to conclusions of this research.

2. Donor Intervention and Private Infrastructure Development

Both multilateral and bilateral donors introduce specific programmes and instruments to promote private sector participation in infrastructure development in DCs. According to Gibbon and Schulpen (2002) the group of bilateral donors with some form of specific programmes or instruments for promoting PIPs comprises Australia, Canada, Denmark, Germany, Japan, New Zealand, Norway, the Netherlands, the United States, and the United Kingdom at the end of the 1990s and the beginning of the new century. Similarly, multilateral donors, namely World Bank Group, Asian Development Bank, African Development Bank Group, Inter-American Development Bank, Islamic Development Bank, European Investment Bank, and the European Bank for Reconstruction and Development have introduced specific programmes and instruments for PIPs in the 1990s (Gibbon and Schulpen, 2002). The programmes and financial instruments include subordinate loans, equity participation, co-financing, partial credit guarantees, political risk guarantees, and export credit facilities for PIPs in DCs (**Table 1**). Among bilateral agencies Export-Import Bank of Japan (JBIC, previously known as JEXIM), Kredietanstalt für Wiederaufbau (KfW) from Germany, and Overseas Private Investment Corporation (OPIC) from the United States actively involve in PIPs, while World Bank Group, African Development Bank and Asian Development Bank provide financial instruments for most of PIP finance transaction in DCs.

Table 1 Multilateral donor’s programmes for private infrastructure projects

| Donor | Type of assistance | Cumulative value (US\$ bn) | Years | Main sectors |
|--|---|--|--------------------------|--|
| World Bank (WB) | Loans, equity, quasi-equity, risk management, syndication | 51.6 | 1956-2000 | Financial services 2.6% Utilities 8.5% |
| Asian Development Bank (ADB) | Loans, equity, guarantees, export credit finance | 18.0 | 1983-2000 | Financial services 63.0% Infrastructure 32.6% |
| African Development Bank (AfDB) | Loans, equity, guarantees, syndications, on-lending to SMEs | 0.58 | of which 0.24 in 2001 | Financial services 77.3% infrastructure 22.6% (2001) |
| Inter-American Development Bank (IADB) | Loans, equity, guarantees, syndications, re-insurance | 3.6 | 1995-2000 | infrastructure 100% |
| European Investment Bank (EIB) | Term finance, equity guarantees | Unstated portion of total portfolio of 159.4 | 1996-2001 | infrastructure 56% manufacturing 8% |

(Source: Gibbon and Schulpen, 2002, p12)

In addition to the participation of multilateral and bilateral agencies, we can observe that to promote PIPs through PF arrangements specifically designed institutions, particularly project specific institutions created by legislation (for example BOT laws and standard concession contracts), have been put in place in many DCs. Similarly, as part of their overall strategy to introduce private capital into infrastructure projects, governments of DCs have sought to attract private investment by offering support to investors, often in the form of grants, soft loans, or guarantees with the support from development agencies. A growing number of governments have developed an institutional approach in a form of Infrastructure Financing Facilities (IFFs) to provide such supports. IFFs effectively serve as a wholesale mechanism to channel either direct funding in the form of equity, senior and subordinated debt and grants and/or contingent support (e.g. political risk guarantees or refinancing commitments) (Klingebiel and Ruster, 2001). While project specific institutions facilitate creation of governance mechanisms for organisation of PF arrangements, donor intervention and IFFs function as additional financial intermediation to give a comfort for mobilisation of private capital into PIPs in unstable environments. Within this identification we proceed to examine implication of donor agencies’ instruments on structuring PF arrangements into PIPs in weak institutional environments.

3. Implications of Donor Intervention for Private Infrastructure Project Finance: Empirical Evidences

The popular PF arrangements, namely Built-Operate-Own (BOO)/Built-Operate-Transfer (BOT) mechanisms and merchant financing have been the most common type to finance greenfield PIPs in DCs in the 1990s. These PF arrangements have functioned to mobilise US \$ 320 billion in 1,233 PIPs, in particular private power and telecommunication projects in East Asia and Pacific in 1990-2001 (World

Bank, 2003). The application of above-mentioned PF arrangements for PIPs reflects typical characteristics when PIP finance is supported by specifically created institutional infrastructure and multilateral/bilateral development agencies' participation (**Table 2**).

Table 2 Typical characteristics in private infrastructure project finance

| Characteristics and Functions Associate with Transaction Governance | Features of Private Debt Financing and Capital Structure |
|--|--|
| (1) Institutional environment in the host country affects the transaction governance. Concession agreements and standard off-take contracts function as <i>specific institutions</i> . | (1) Typically highly leverage in financial structure. In response to riskiness of the PF transaction, debt financing is largely included from non-commercial organizations, such as bilateral/multilateral agencies. |
| (2) External and specific institutions interact in derivation of the transaction governance. | (2) Measures like <i>credit support</i> work to address the risk of default in private debt. |
| (3) Typical secondary contractual arrangements manage the project risk. | (3) Hedging arrangement addresses the <i>currency risk</i> in foreign debt serving. |
| (4) Demand, supply and construction risks are hedged through off-take contract, supply contract and forward contract. | (4) Loan spread in relation to risk level reflected in the strength and weakness of the transaction governance. |
| (5) <i>Incentive and guarantees</i> as bonding mechanisms address risk of agency problems arising from failure of counterparty's contractual obligations. | (5) Third party <i>guarantees</i> work to cover political risk in commercial lending. |

(Source: Devapriya, 2003)

From the perspective of structuring credit transactions, Devapriya (2003) assessed the implication of donor intervention on structuring credit transactions in PIPs in DCs, based upon the premise that PIP finance faces characteristic problems due to weak institutions and poor information accessibility. Structuring credit transactions is related to traditional factors that affect credit transactions, such as informational and agency issues and other issues that affect the performance of the loan, such as legal and economic conditions in the host country (Geenbaum and Thakor, 1995). In the PF setup, lenders' main attention in screening, searching, contracting and post-contractual monitoring is thus largely associated with the "project" itself (the special vehicle company of the PIP) as the nexus of contracts through which credit risk is managed with respect to the institutional environment because traditional agency and information issues are minimized in PF. Therefore, in the assessment of implication of donor intervention, the main focus was on the debt capacity of PIPs as explained by institutional environment and transaction specific characteristics. The institutional characteristics reflect the creation of project-specific institutions to facilitate credit transactions in PIPs in DCs, while transaction-specific characteristics represent traditional agency and information issues, as well as credit enhancement from multilateral and bilateral agencies.

Econometric results confirm that in order to reap the full potential of debt capacity in PIPs in an underdeveloped institutional environment, credit support from multilateral and bilateral agencies is often necessary even within specifically created institutional and informational infrastructure (Devapriya, 2003). Project capital structure in PIPs is largely financed through bank-lead syndications in DCs, and the ability to arrange credit support from multilateral banks enabled an increase in the commercial debt financing in the capital structure; or enabled a raise in the level of commercial debt. This indicates the importance of presence of bilateral and multilateral agencies' in PIP finance in weak institutional environments. Following the above econometric results this research presents some case study findings to

examine the nature of implications of development agencies' instruments on PIP finance (**Table 3**). Accordingly, utilisation of development agencies' instruments in the structuring of PF transactions into three BOO type private power projects is analysed. Three power projects include Paiton Power Project (Indonesia), AES LAL PIR Power Project (Pakistan), and Tri-Energy Co.Ltd (Thailand). The PF transactions in these projects are largely bank-based financing which complies with the characteristics of popular application of PF for PIPs in DCs (as per the **Table 1**). The analysis is based on case study notes compiled for multiple case studies on PIP finance in Asia by Devapriya (2003). Multiple sources of references such as trade journals, company profiles and specific databases have been referred to compile case study notes.

Table 3 Analysis of development agencies' instruments in private infrastructure project finance

(1) AES LAL PIR Power Project Finance in Pakistan: Total investment amounted to USD 344 million (1993) and financial closure has been achieved within one year after the concession award.

The project's debt to equity ratio was 72 percent to 28 percent. The equity contribution came from sponsors and International Finance Corporation (IFC), while commercial banks and the IFC provided loans for debt financing. The total IFC contribution amounted to US \$ 49 million. The participation of the IFC in both equity and debt financing provided an important credit support for limited recourse financing in the capital structure. This became apparent as it acted as bonding mechanism to address risk of debt agency. The equity contribution of the IFC gave further comfort to the commercial lenders since it signaled confidence in the commercial viability of the governance arrangements of the AESLP project.

(2) Tri-Energy Power Project in Thailand: Total investment amounted to US \$ 467 million (in 1998)

The project's debt to equity ratio was 78 to 22, which indicated relatively higher leverage. The guarantees from OPIC and Ministry of International Trade and Industry (MITI) in Japan facilitated achieving the higher leverage capital structure. The OPIC provided a credit facility of US \$ 200 million. This credit facility acted as a bonding mechanism to address risk of debt agency problems associated with payment default by the project company as a consequence of payment default (in Power Purchasing Agreement-PPA) by the off-taker. As a result, the credit enhancement facility contributed to the establishment of a comparatively higher level of debt in the capital structure.

Table 4 Analysis of development agencies' instruments in private infrastructure project finance (Contin..)

(3) Paiton Power Project in Indonesia: Total investment amounted to US \$ 2.5 billion (in 1995) and financial closure of commercial syndication has been achieved within three years after concession award.

Debt to equity ratio in the capital structure of the Paiton Project was 73 percent to 27 percent respectively. The equity component consisted of both shareholders' equity and subordinated debt provided by equity holders, which amounted to 55 percent of the total equity. However, Export Credit Accounts (ECAs), namely Japan Export and Import Bank (JEXIM) and the US Export and Import Bank (USEXIM) contributed 79.1 percent of the total debt financing. The total loan amounts accounted to US \$ 1440 billion. These loans utilized foreign currency to fund the construction contracts, which were largely denominated in foreign currencies, so as to match borrowing with project expenses. A bilateral agency, Overseas Private Investment Corporation (OPIC), also contributed to debt financing (US \$ 200 billion). The tenure for JEXIM and OPIC loans is approximately 16.5 years, and the commercial bank facilities had tenure of 8.5 years to be repaid in 16 equal quarterly parts. These terms were attractive compared to conventional commercial debt financing. Such guarantees resulted in limited recourse debt finance instead of non-recourse finance. In effect, they gave sufficient assurance to the lenders to mobilize

commercial debt since they included the asset specific investment as security, in the form of loan collateral. The above mentioned non-commercial loans interacted with the loans from commercial lenders so that default on the commercial loans would also constitute default on the non-commercial loan. This condition averts default of the loan by the project company due to the multilateral agency's involvement. This arrangement therefore, functioned as an effective bonding mechanism to manage the risk of debt agency, particularly in the weak institutional environment in Indonesia.

4. Conclusions

This research reveals that donor intervention and specifically created institutions work to effectively manage the lender's risk and improve chances of arriving at early financial closure of PIPs. Therefore, the role of additional financial intermediation and created institutions is vital important to promote long-term investment schemes in infrastructure delivery in DCs. Most importantly, findings highlight that the development agencies' instruments create an absorptive capacity of the project company (i.e. corporate governance enhancement) to attract private capital, while those instruments themselves function as additional financial intermediation to mobilise development funds into PIPs. These findings are in line with the current development finance objectives. Thus findings indicate the effectiveness of private sector development instruments at project and sector levels in the host country.

5. References

- Devapriya K.A.K.; (2003); A Study of Project Finance in Asia with Emphasis on Private Infrastructure Project Finance; **PhD thesis**; University of Hong Kong.
- Dias A.; (1994); A Managerial and Financial Study on the Involvement of Private Sector Companies in the Development, Construction, Operation, and Ownership of Infrastructure Projects, **Ph.D. thesis**, University of Michigan, USA.
- Gibbon P. and Schulpen L.; (2002); Comparative Appraisal of Multilateral and Bilateral Approaches to financing Private Sector Development in Developing Countries; **Discussion Paper No. 2002/112**; World Institute for Development Economics Research; November, 2002.
- Greenbaum I.S. and Thakor V.A.;(1995); **Contemporary financial intermediation**; The Drden Press; Florida, USA.
- Klingebiel D. and Ruster J.:(2001); **Why infrastructure facilities often fall short of their objectives**; Working paper, The World Bank.
- Krahen J.P. and Reinhard H. S.:(1994); **Development finance as institution building: a new approach to poverty-oriented banking**; Boulder: Westview press.
- The World Bank; (2001); **Global development finance 2001**, The World Bank, Washington D.C., USA.
- The World Bank; (2003); **Private participation in infrastructure: Trends in developing countries in 1990-2001**; Private provision of public services group, The World Bank.