

# **Can Private Finance Be Applied in the Provision of Housing**

**Han. C. ONG and Prof. Dennis LENARD, United Kingdom**

**Key words:** privately financed public infrastructure, project finance, housing.

## **ABSTRACT**

Provision of infrastructure has traditionally been the preserve of governments. However, growing awareness of the difficulties and limitations of public funding for infrastructure development have led many governments to utilise private finance to fund public infrastructure projects. Project finance is one of the solutions in achieving this demand. This paper begins with providing a general understanding of the concept and importance of project finance in funding infrastructure projects, followed by reviewing the development of project finance around the world. It also discusses the conditions for successful privately financed public infrastructure projects with a view to assessing the suitability of such financing solutions for the procurement of housing.

## **CONTACT**

Han Ching Ong and Prof. Dennis Lenard  
School of Construction and Property Management  
University of Salford  
Salford, M5 4WT  
UNITED KINGDOM  
E-mail: H.C.Ong@pgr.salford.ac.uk

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## 1. INTRODUCTION

The provision of infrastructure has traditionally been managed and financed by the public sector, mostly through general taxation. Developed countries have a strong tax base provided by their stable economy, but public funds raised from taxation in developing countries are inadequate to finance these projects due to their low tax base, caused by their low level of commercial and industrial investments. Developing countries are faced with a situation where the demand of infrastructure development is high with little funding or no money to finance these projects. This has led to many countries, both developed and developing, to re-adopt private finance for the procurement of publicly funded infrastructure projects. The solution in achieving this is through project financing.

As stated in Merna and Dubey (1998) significant process in the provision of infrastructure facilities under public leadership in many countries has resulted in '*serious and widespread misallocation of resources*', '*poor performance*' and '*failure to respond to demand*'. The involvement of the private sector not only helps to reduce the financial burden of governments in maintaining or developing infrastructure, but it also encourages better risk sharing, accountability, monitoring and management in infrastructure provision (World Development Report, 1994).

The World Bank's Private Participation in Infrastructure (PPI) Project Database (Neil, 1999) shows that private participation grew dramatically between 1990 and 1997, rising from about US\$16 billion to more than US\$120 billion. It then declined by roughly 20% of the total in 1998 and 30% in 1999, as a result of the financial crisis in Asia that began in mid-1997. Although the Asian financial crisis has brought a significant pause in the project finance market, the author believes the investment needed in many countries still clearly remains enormous.

Meeting these needs is essential to development, not only in traditional sectors such as energy, telecommunication and transport, but also in areas such as health, education and prisons. This implies that there will be a continuing need to rely on the private sector to manage and finance development projects (IFC, 1999).

The author is of the view that traditional methods of managing and financing infrastructure projects should give way to privately financed contracts where the private sector can actively be involved in every phase of the project. Private sector investment in project finance deals rose to almost US\$100 billion in 1998 and it is expected to grow significantly in the next few years (Akash, 2000). A more comprehensive and sustainable public and private partnership should be established where the private sector is responsible for the capital investment of the infrastructure projects whilst the public sector provides the enabling environment.

## 2. PROJECT FINANCING

Increasingly over the last twenty years, project financing has been implemented in many industrialised and developing countries as a tool for economic investment. It involves funding in construction, privatisation and concession of large scale, capital-intensive infrastructure projects. Notable examples are the Eurotunnel between France and UK (worth US\$19bn), the Trans-Alaska Pipeline System Project (US\$7.7bn), the Sincor Heavy Oil Project in Venezuela (US\$4.5bn), the Hibernia Oil Field Project off the coast of Newfoundland (US\$4.1bn) and the Melbourne City Link Project (US\$1.2bn).

Project finance helps to finance new developments by structuring around the project's own operating cash flows and its general assets. Lenders of the project look not only at the creditworthiness of the sponsoring entity but also at the cash flows and earnings of the project as the source of funds for repayment of their investments (Merna and Smith, 1999). This structure is able to alleviate risks by allocating risks to parties that can best control and manage them, hence reducing the overall risk to an acceptable level. This structure also raises finance at a relatively low cost, which benefits both the sponsors and lenders.

### 2.1 Concept of Project Finance

Although the concept of 'Project Finance' has been widely used in business and finance all around the world, there is no precise legal definition of project finance. Merna and Dubey (1998) describe project finance as: *'a term referring to a wide range of financing structures. However, these structures have one common feature in common – the financing is not primarily dependent on the credit support of the sponsors or the value of physical assets involved. In project financing, those providing senior debt place a substantial degree of reliance on the performance of the project itself.'*

At the same time, Merna and Owen (1998) have described the concept of project finance with specific reference to a Build-Operate-Own-Transfer (BOOT) project as: *'each project is supported by its own financial package and secured solely on that project or facility. Projects are viewed as being their own discrete entities and legally separate from their founding sponsors. As each project exists in its own right, Special Project Vehicles (SPVs) are formulated. Banks lend to SPVs on a non-recourse or limited recourse basis, which means that loans are fully dependent on revenue streams generated by the SPV, and that the assets of the SPV are used as collateral.'*

This means that lenders have no claim to any of the assets other than the project itself and so lenders must completely satisfy themselves that the project is fully capable of meeting its debt and equity liabilities and still offers a margin of profit. Nevitt (1983) agrees with this in that he views project finance as: *'a financing of a particular economic unit in which a lender is satisfied to look initially to the cash flows and earnings of that economic unit as the source of funds from which a loan will be repaid and to the assets of the economic unit as collateral for the loan.'*

According to Csizmadia (1998), project finance is: *'a technique which can permit enterprises and governmental entities to finance significant infrastructures that require a large amount of capital that would strain the ability of these entities to raise sufficient equity.'*

Similarly, Finnerty (1996) describes project finance as: *'the raising of funds to finance an economically separable capital investment project in which the providers of the funds look primarily to the cash flow from the project as the source of funds to service their loans and provide the return of and a return on their equity invested in the project.'*

Finnerty (1986) also argues that project financing is generally possible when the project consists of a set of assets that is capable of standing alone as an independent economic unit. The economic prospect of the project, combined with commitments from all parties involved in the project will generate sufficient cash flow to service project debt.

The authors define project finance as: *'a financing tool in which the private sector is in a better position than the government to manage and finance a project that is able to stand alone as a distinct legal and economic entity, where lenders only look at the revenues generated by the project itself, without having direct recourse to the general assets of the project sponsors as a repayment of their loans and to provide an attractive profit on their investment.'*

## **2.2 Characteristics of Project Finance**

The basic features of project finance are as follows (Merna and Dubey, 1998; Merna and Smith, 1999)

### *(a) Special project vehicle (SPV)*

A special project vehicle is a separate company from the sponsor's organisation, which operates under a concession, usually granted by the government. It is a company that operates on its own without interference from the sponsor's organisation. Normally, the sponsors of the project provide the seed equity capital. SPV is highly geared, i.e. a high debt-equity ratio.

### *(b) Non-recourse or limited recourse project financing*

In non-recourse project financing, lenders of the project, both debt as well as equity, do not have any direct recourse to the general funds or assets of the project sponsors. The lenders rely on the operating cash flow generated from the project itself for repayment. The project must be financially, economically, technically and environmentally feasible to provide confidence to its lenders that the project is capable of serving loans and generating attractive returns. However, in limited recourse financing, access to the sponsor's general assets and funds is provided if the sponsor provides a guarantee of repayment or other assurance of some form of support for the project, but only for certain risks. Limited recourse project financing provides confidence to the lenders that the project will only be responsible to the losses and liabilities from project-related activities. It also allow the lenders to replace the project management team in the event of poor performance or even to foreclose or sell the project to recover their interest in the project to maximum possible extent. Its disadvantages could be that the lenders or investors may be left with a partially completed facility that has

little or no residual value. In most developing countries where projects are undertaken with significant construction risks, project finance is generally of the limited recourse type.

*(c) Off-balance sheet transaction*

Akash (2000) defines a balance sheet as a snapshot of the organisation and it is a convenient means of organising and summarising what an organisation owns (its assets) and what an organisation owes (its liabilities). An off-balance sheet simply means that all financial matters relating to the project do not affect the balance sheet of the sponsor's organisation. Benoit (1996) states that the off-balance sheet transaction occurs when the non-recourse nature of project finance provides a unique tool to project sponsors to fund the project outside their balance sheet. Projects that might not otherwise have been funded can proceed under this structure, particularly when the sponsor is unwilling to expose its general assets to liabilities to be incurred in connection with the project (or seeking to limit its exposure in this regard), or do not enjoy sufficient financial standing to borrow funds on the basis of its general assets.

*(d) Robust income stream of the project as the predominant basis for financing*

The future income stream of the project is the predominant element in project financing, as the lenders have no recourse to the assets and funds owned by the sponsors and hence the entire financing is dependent on the assured income stream from the project itself. The project sponsor has to demonstrate strong evidence of future income through various means such as a power sales contract for a power plant (an example of contract led revenue stream project), a concession agreement for a tolls road project (or a market led revenue stream project), or tenant leases for a commercial real estate project.

A contract led revenue stream project guarantees revenue for the sponsor and hence provides more security to the lenders as they look primarily at the revenue generated for repayment of their investment. However, in a market led revenue stream project, there is no guaranteed revenue.

### **3. DEVELOPMENT OF PROJECT FINANCE**

There is no comprehensive readily information on the financing of projects on non-recourse or limited recourse basis. However, since 1984 eighty-six countries have privatised 547 infrastructure companies including the UK's British Telecom and British Gas, and at least 574 private Greenfield infrastructure projects are under way in some eighty-two countries (World Bank, Private Sector Development, 1995). These figures show that many countries both in developed and developing countries are changing their economic policies in order to survive in the modern world by encouraging participation of private sector in infrastructure developments.

*Table 1. Top Ten New Private Infrastructure Investment Projects, 1984-September 1995*

<b>Location</b>	<b>Project</b>	<b>Contract</b>	<b>Cost (US\$ millions)</b>
France/ United Kingdom	Channel Tunnel	BOT, 55 Years	19,000
Taiwan (China)	Taipei Mass Rapid Transit System	BOT	17,000
Japan	Kansai International Airport	BOT	15,000
Argentina	Buenos Aires Water and Sewer Services	ROT, 30 years	4,000
Thailand	Telecom Asia Communication network	BTO, 25 years	3,700
China	Daya Bay Nuclear Power Plant Phase 1	BOO	3,700
Malaysia	North-South Toll Expressway	BOT,30 years	3,400
Mexico	Petalcalco Coal-fired Power Plant	BOT	3,000
Thailand	Bangkok Elevated Road and Train System	BOT 30 years	2,981
Note: BOO = Build-Own-Operate ; BOT = Build-Operate-Transfer; BTO = Build-Transfer-Operate, ROT = Rehabilitate-Operate-Transfer Source: World Bank Private Infrastructure Database			

Table 1 shows the top ten project finance deals around the world. Six out of ten projects are in developing countries, reflecting the importance of project finance in those countries.

*Table 2. Project Finance Transactions by Region, 1997-1998*

<b>Region</b>	<b>Number of Projects</b>		<b>Amount (millions of U.S dollars)</b>	
	<b>1997</b>	<b>1998</b>	<b>1997</b>	<b>1998</b>
Europe	207	104	81,703	26,173
Asia	191	63	58,405	27,477
Latin America	105	49	41,610	33,554
North America	75	33	28,400	15,033
Middle East and North Africa	35	14	22,876	7,169
Sub-Saharan Africa	11	8	3,429	2,114
Total	624	271	236,423	111,520
Share of developing countries	380	140	123,169	60,069

Source: Capital DATA Project Finance Ware

Greater involvement of the private sector has created new markets in many sectors previously seen as the preserve of government. From Table 2, the total number of project finance deals worldwide in 1997 (both Greenfield and expansion projects) was 624, which had a value of US\$236 billion. The value dropped back to US\$111 billion in 1998 due to the Asian financial

crisis that began in mid-1997. 380 out of 624 project transactions, at a value of approximately US\$123 billion, were in developing countries.

### 3.1 Project Finance in Asia

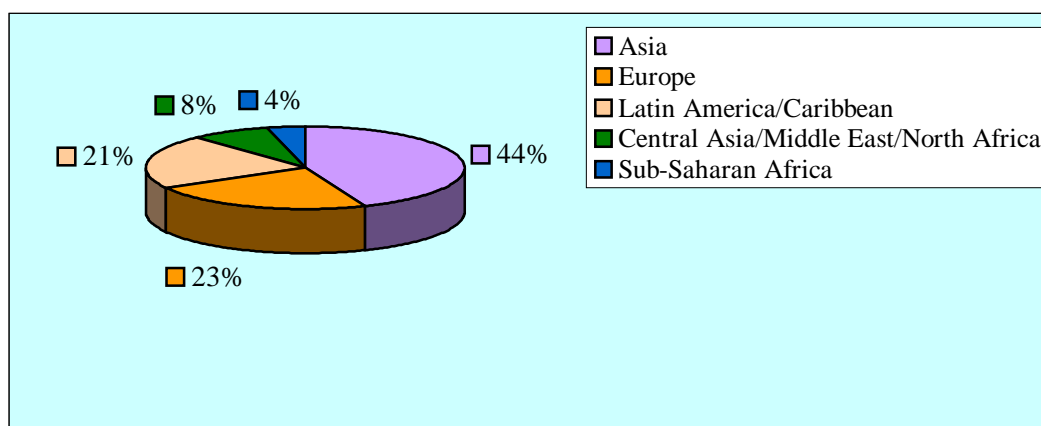


Figure 1. Regional Distributions of Project Finance Flows to Developing Markets, 1994-1998 (number of projects)

Figure 2 shows the regional distribution of project finance flows to developing markets from 1994 to 1998. It can be seen that a large proportion of project deals were undertaken in Asia, which is 44% of the total number of projects as compared to 23% in Latin America/Caribbean, 8% in Central Asia/Middle East/North Africa and 4% in Sub-Saharan Africa. According to Taylor (1998), East Asia is the world's busiest construction market in the 1990s, and the number of project finance deals funded and in the pipeline in East Asia are 51 and 205 respectively, which are larger than the proportion in other regions.

Between 1990 and 1999, US\$61 billion of private investment was committed to 279 projects in 26 developing countries, comprising 34369 kilometres of toll highways, bridges and tunnels (Gisele F. Silva, 2000). The impact of infrastructure on economic growth is significant and the availability of infrastructure is crucial for the modernisation and diversification of production in both developed and developing markets. The investments in infrastructure development have fallen sharply since the start of the Asian Financial crisis. Many high-profile projects have been cancelled or delayed and private investors and lenders are less willing to support projects facing deteriorating markets and unstable macroeconomic environments. Public criticisms of support given by governments to projects and the allegations of corruption in the awarding of contracts have exacerbated the situation in some countries.

The demand for infrastructure will no doubt pick up once the crisis is over. The World Bank estimates that the demand for infrastructure investment in Asia will amount to US\$1,262 billion between 1995 to 2004. Overall, the financial crisis has allowed governments and the private sector to re-focus on the fundamentals. Singapore's Prime Minister, Mr Goh Chok Tong, commented that people are concentrating on *'fast growth and quick infrastructure, but*

*forgetting the fundamentals*' - the fundamentals of a stable and strong economic market, clear policies and a credible and reliable governance frameworks for private investors.

### **3.2 Project Finance in Europe**

With the financial crisis hitting Asia and a number of projects being cancelled or put on hold, Europe is compensating for the loss of developing countries project finance deals. Western Europe now accounts for one third of global activity in project finance. The launch of the single currency, tighter budget deficit requirements and the liberalisation of the energy sector are the reasons behind the rapid growth of the project finance market in Europe. The tight fiscal policy due to the European monetary union also means that the governments of Italy, Spain and Portugal, all of which have high levels of public debt, can no longer afford to spend large sums of money on infrastructure development. Furthermore, the launch of this single currency with the exception of Denmark, Greece and United Kingdom, removes the risk of foreign currency exchange within the European Union (EU), which is one of the main factors that led to the financial crisis in Asia.

The United Kingdom's Private Finance Initiative (PFI) was launched by the Chancellor of the Exchequer, Norman Lamont, in 1992. It was designed to involve the private sector in the financing and management of public sector projects. Recent infrastructure projects include the £320 million rail link to Heathrow Airport, the £10 billion Channel Tunnel Rail Link; £500 million to operate trunk roads and the £96 million redevelopment of King's College teaching hospital in London.

The emphasis of PFI is not acquisition of an asset but procurement of a service. It aims to promote higher cost efficiency, improve the quality of public services and stimulate fresh flow of investment. In return for aiding the public sector in achieving the efficient and economic delivery of services and improved infrastructures, the PFI offers real benefits to the private sector in the form of increased business and profit. This should allow the public sector to expand its role as an enabler of private sector investment rather than a provider of services without the need of the initial capital investment.

The PFI has started to deliver its promises but is still some way from achieving its full potential. The problems with the PFI are (a) lack of clarity in guidelines; (b) over-complicated and expensive tendering procedures; and (c) a lack of confidence in the financing community (Merna and Owen, 1998). However, PFI has the potential to change the fragmented nature of the construction industry if greater efforts are to be exercised.

Recent news published by the Financial Times stated that several countries have already turned to project finance to fund their infrastructure projects. Most notably is the Euro 1.3 billion project finance deal for the construction of 170km of toll motorways in Portugal. Other pipeline projects include a light railway system in Barcelona and the new high-speed Amsterdam to Antwerp rail system in the Netherlands. Italy, which has been very slow in attracting private funding to finance infrastructure projects, has already planned a number of projects using project finance. Projects proposed include two motorways, one being a 400km motorway connecting Salerno and Reggio Calabria in the south.



However, not all countries are keen on the prospect of using project finance (Benoit, 1997). France does not believe in using project finance to fund infrastructure projects because of a number of failures. The Orlyval monorail link between Paris and Orly airport was bought by the RATP Paris public transport system after reporting huge losses, and concessions for the Lyons toll road and Clermont-Ferrand tramway have been cancelled in the wake of massive public opposition. Germany considers that project finance is complicated and costly to arrange, while countries such as Luxembourg, Sweden, Belgium and the Netherlands are only just starting to turn to project finance.

### **3.3 Project Finance in Latin America**

The World Bank's Private Participation in Infrastructure (PPI) Database states that Latin America and East Asia dominate the private participation investments. The debt problems of the 1980s and the 1994 Mexican Peso crisis have hindered the growth of the private finance market in which lenders and investors lack confidence to invest in those regions that are perceived to be of high risk. Furthermore, the impact of the Asian financial crisis hit them before the project finance market could regain its full momentum after the 1994 Peso crisis, and thus resulted in cancellation and postponement of many high profile projects.

Project finance in Latin America has expanded rapidly in recent years. The World Bank estimates that the demand of infrastructure in Latin America amounts to US\$60 billion a year. Some significant projects have gone ahead, including the US\$ 1.45 billion Petrozuata oilfield development in Venezuela's Orinoco Belt, the country's first big project finance deal since the 1970s.

## **4. CONDITIONS FOR SUCCESSFUL PRIVATELY FINANCED PUBLIC INFRASTRUCTURE PROJECTS**

The route to successful privatised infrastructure development is complex and time consuming, and involves significant expenditure. The author has identified the following requirements for successful privately financed infrastructure projects.

### *(a) Economic stability of the host country*

The economic stability of a country is the main concern of many investors in which decisions will be made as to whether to proceed or abandon the proposed project. Parameters that affect the economy include interest rates, inflation, strength of the local currency and the cost of labour and materials (Keong, Tiong and Alum, 1997). If a country's economy is unstable, for example, with sharp interest rate fluctuations and high inflation rates, sponsors and lenders will be unwilling to invest in such a country, as the forecasted revenues will no longer be viable.

### *(b) Strong political will and commitment*

There must be strong political will and commitment from all levels of government and agencies concerned with the project. Host government support – legislative, regulatory, administrative and sometimes financial - is essential. Sir Gordon Wu, the Chairman of Hopewell Holdings Ltd, admitted that political stability and government support and

incentives are the key factors for privately funded projects, especially in developing countries. The host government must accept and fully understand the concept of a project finance structure project (e.g. BOOT) if it has an active participation in the project. The authors believe that an uncorrupted and honest political regime is required and, most importantly, there should be no intervention of politics throughout the implementation and operation of the project.

(c) *Well-established local stock and capital markets*

Local stock and capital markets should be well developed so that equity and loans can be raised if required or when additional funding is needed for further investment. On the other hand, an equitable and clear legal system for private investment should be developed to assure private investors that disputes could be easily resolved through litigation.

(d) *Suitability of privately financed projects*

Not all projects are suitable for private financing and careful planning should be adopted. Although there is no rule on the size suitable for a project finance structure project, it must be large enough to secure development capital and time required by the sponsor/promoter to generate revenues, and eventually the returns expected by investors and lenders. The lenders and investors will only invest in a project if there is evidence that they will get a better return from this type of investment than in other investment opportunities. The source of revenue must be clear and certain and capable of providing a return on equity commensurate with the risks borne by the investors and lenders.

(e) *Learning from project lessons*

No project is unique. However, the nature of the cycle of activities and decisions that each requires is similar (Wearne, 1994). The ability to learn the lessons from completed projects by making comparisons is one of the hallmarks of a mature applied science.

(f) *Training*

Due to the complexities of this type of project arrangement, trained and experienced personnel should be assigned to manage the project and to be able to negotiate its terms and conditions. The efficiency of the project management team is another important factor in getting a project a success. Losses are significant due to bad management resulting in delays in completion. Necessary training should be provided to all levels of project management, including project managers and administrators. Training can greatly help people to learn from their own and other people's experience. Techniques for risk analysis, cost estimating, project planning and resource allocation should be learnt by those who are appointed to that specific task.

## **5. SUSTAINABLE FINANCING STRATEGIES FOR THE IMPLEMENTATION OF COMMUNITY-DRIVEN HOUSING SCHEMES**

### **5.1 Introduction**

This is an exploratory investigation examining the application of private financing to public housing. The research time scale is three years, at the end of which it is expected that the main project goals set out below will have been reached.

### **5.2 Background**

A massive influx of people to urban centres has been observed throughout the world over the last fifteen years. This phenomenon has also become evident in major Asian cities as unprecedented numbers of rural migrants move into urban centres in search of employment. Low levels of income and limited opportunities for employment have reduced the extent of affordability for the most basic of housing resulting in large informal 'shanty-style' settlements with little or no infrastructure such as services or amenities. Africa has become a major problem also; for example, in a large informal settlement of more than 200,000 people in Cape Town there are sewer and water outlets provided at one point per square kilometre. The South African Government has planned to increase housing delivery on a sustainable basis to a peak level of 350,000 new units per annum for a number of years and yet the problem of large informal settlements still exists and is growing. Government strategies seem to be failing due to the major injection of funds required for the provision of housing to low income groups. This study will focus on Asia and in particular on Malaysia.

The proposed study will be based on detailed evaluations of existing urban housing schemes that have the objective of converting informal housing into sustainable urban developments. The provision of infrastructural facilities will also be studied.

The aim is to develop a model for the implementation of sustainable and affordable housing schemes capable of being applied in Malaysia. The model will necessarily include the provision of finance and management of urban infrastructural services given for investment of resources and subject to social and environmental constraints. The model is thus expected to provide a sound basis for policy to:

- Explore through literature and detailed case studies, both developing and developed countries, the application of private finance in the provision of affordable and sustainable housing;
- Understand the current state of low-cost housing sector and examine the national housing policies in Malaysia in order to identify the impact of low-cost housing developments on the sustainability of the urban environment;
- Identify factors influencing provision of sustainable and affordable housing in urban areas including the provision of services;
- Investigate the modalities of community participation in the provision, maintenance and sustainability of low-cost housing development;

- Conduct questionnaire surveys of private developers, financial institutions and government agencies involved in the housing industry to understand their views and perspectives with regard to the promotion of the development of community-based financial institutions and the utilisation of private finance in the provision of affordable housing;
- Formulate organisational strategies and development of skills including training, supervision, management and administration of the works during projects implementation;
- Develop innovative financing solutions with the provision of community-based financial institutions in sustainable low-cost housing development; and
- Provide, as a pilot project, experimental evidence to gauge the possible success of the implementation of the model throughout Asia.

## 6. CONCLUSIONS

The realisation of the importance of the private sector's involvement has led many countries to utilise project finance as a financing tool in the provision of publicly funded development projects. The benefits of private participation include the reduction of government expenditure, access of management expertise, higher efficiency, improved financial performance and the transfer of risks to the private sector. Project finance has stimulated private sector investment in infrastructure development and has brought investors, lenders, governments and other parties to share the costs, risks and the benefits of a new investment strategy. A project should be carefully structured with a proper regulatory framework to assure the lenders and investors that the project is technically, financially, and economically viable. A stable macroeconomic environment and a transparent and robust investment climate are required, which involves private participation. It seems that this type of public-private partnership will continue to grow in infrastructure developments and it could be the solution for the housing sector in the near future.

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