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## **Plenary Session 4**

### **Financing Projects: World Trends**

**Financement de projets: tendances mondiales**

**Projektfinanzierung: Welttrends**

Organizer: Wolfgang Oberndorfer,  
Austria

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## **Financing of Infrastructure Projects in South East Asia**

Financement des projets d'infrastructure en Asie du Sud-Est

Finanzierung von Infrastrukturprojekten in Südost-Asien

### **Robert W. JEWKES**

Solicitor  
Jewkes and Partners  
Hong Kong, Hong Kong

Robert Jewkes, born in 1949 obtained his law degree at the University of Bristol, England. He is a qualified solicitor in England, Hong Kong and the Australian Capital Territory and has spent the last 16 years living and working in South East Asia. He has represented many of the world's leading international contractors in connection with projects in South East Asia and most recently in relation to BOT projects

### **SUMMARY**

The paper provides a review of the opportunities available in South East Asia for those providing "project finance" in connection with infrastructure projects and highlights some of the difficult issues which must be faced by lenders in negotiating and structuring project finance within the region.

### **RÉSUMÉ**

L'article passe en revue les possibilités de développement dans le "financement de projets" en Asie du Sud-Est. Il se réfère aux besoins existants et mentionne quelques difficultés rencontrées par les investisseurs lors de la négociation et de la mise en place de tels financements.

### **ZUSAMMENFASSUNG**

Der Aufsatz sichtet die Möglichkeiten, die sich einem Anbieter von "Projekt-Finanzierung" bei Infrastrukturprojekten in Südost-Asien auftun. Insbesondere werden einige schwierige Fragen angesprochen, denen sich Gläubiger bei der Aushandlung und Strukturierung von Projektfinanzierungen in dieser Region stellen müssen.





The brief from the Association was to provide a paper for discussion related to the topic "Project Financing – World Trends".

The world is a large canvas from which to identify images and always a greater insight can be drawn from focusing upon the segment of the picture one sees every day. I have lived and worked in South East Asia for the last 16 years and as a result the trends I am familiar with are those which have been and are currently taking place in South East Asia.

#### PROJECT FINANCE IN SOUTH EAST ASIA – AN OVERVIEW

During the past decade the growth rates of many of the economies of South East Asia have exceeded double digits. Manufacturing output has increased rapidly, service sector industries has developed and living standards have risen. The growth will continue well into the next decade. Indeed so fast has been the industrialisation and urbanisation of several of the Asian nations that governments have been unable to provide the necessary infrastructure and power resources to meet demand. In several countries it is now clear that the limiting factor upon the rate of economic expansion is the availability of power and infrastructure. Moreover investors are increasingly reluctant to further invest in countries which cannot demonstrate a means of improving or upgrading transportation communication and power generation facilities.

The ceilings placed on public sector debt together with other political considerations have led many of the governments in the region to turn to the private sector for assistance in providing these much needed facilities. The response of the private sector has been encouraging and project finance has been provided for a number of major projects. Indeed the availability of project finance for these important projects is seen as vital if high growth rates are to continue.

But what is "project finance"?

Put at its simplest, project finance will be provided for specific projects or operations where the security to the lenders of the finance lies in the revenue or cashflow and assets of the project itself. It is a notable feature of project financing that the lender bears some of the risk. Such financing is often termed "limited recourse lending" because the borrower's assets are not generally available as security (though fully non-recourse lending is rare). The practical consequence of such lending is that the lender is critically concerned to assess the cash flow assets and general viability of the project rather than with the balance sheet of the borrower.

Project finance or financing is not a term of art. It is often misleadingly applied to projects generally where the special characteristics of project financing may not be present. While it is important to avoid the jargon which is a feature of this kind of lending it remains true that project financing is sophisticated and technical because of the complex risk analysis and allocation which is required.



The legal vehicle for project financing may be a partnership, company, trust or joint venture. Typically a single purpose entity will be established by project sponsors whether incorporated or not.

Why will those raising finance for the project seek single purpose funding or as we call it project finance?

An important reason for seeking project financing is that the project itself requires huge sums for its implementation which a borrower is unable or unprepared to borrow on the strength of its balance sheet alone. It may also be important to a borrower to limit, or isolate, its liability to the project cash flow and assets and thereby protect its other assets so as to maintain maximum flexibility to deal with economic downturns. Project financing will be "tailor made" to the needs of each project and may minimise the equity outlay. It may also be important to a borrower to avoid breaching negative pledge restrictions which exist in relation to other borrowings. Particular advantages of project lending from the borrower's perspective are that the funding sources can be broadened, tax optimisation can be achieved and specific risks can be passed on to the lenders.

Banking procedures and legal mechanisms to facilitate project financing have been developed and driven by resources exploitation in the oil, gas, mining and timber industries. Providing project finance for the construction and operation of facilities such as airports, road and rail links is an infinitely more complex matter.

Those providing project finance for major projects in South East Asia look for relative political stability, a sound banking system, a liquid capital market, a high credit rating based on conservative borrowing policies and low public sector debt before they will risk financing long term infrastructure projects.

The deregulation of South East Asia's financial markets and virtual removal of exchange controls have clearly been of assistance to project financiers.

The following are some "thumb-nail" sketches of the economic and political environments for project financing in the region.

### Thailand

At present there can be no doubt that infrastructure in Thailand is inadequate. Manufacturers from elsewhere wishing to relocate to Thailand are presently dissuaded from doing so because of the massive congestion on the roads and ports. Lack of efficient telecommunications within the country also adds to the apprehension of investors. For these reasons public project financing in urban transit, national highways, ports, power generation and telecommunications is likely to remain popular for at least the next two years. Other reasons which are favourable are that economic growth still runs at nearly 10% a year and there has been relative political stability and a high credit rating based on low public sector debt. (Thailand's debt service ratio is down to 6% for the public sector alone and just above 10%, if long term borrowing is included). The annual ceiling on new government-sector debt commitments was raised to US\$1.5 billion so that, although Thailand has already awarded contracts for most of its big projects, further contracts are hoped for.



Because of the public borrowing ceiling, and because large state projects have to be screened by the National Planning Board of the Finance Ministry, ministers are tending to turn to projects with various degrees of private sector participation. Some, like the planned raising of railway tracks, would require a private contractor to build the facilities, to operate them for a period and then to transfer ownership back to the state agency concerned.

Economists argue that these so-called private projects should be brought back into the national screening procedures, partly to reimpose discipline on the borrowing commitments involved. To do so would slow down investment, but it would ensure that the economy is maintained on a controlled basis and that the country remains attractive for project financing.

### The Philippines

A significant problem when considering project financing is the exposure to a foreign exchange risk. Toll roads are more difficult to finance in the Philippines and Indonesia where the peso and the rupiah have been drifting downwards and loan maturities tend to dry up after 10 to 15 years. In the Philippines the oil price has been one further blow in a year of civil unrest, devaluation and mounting shortages of foreign exchange.

### Indonesia

Indonesia has been subject to some instability when its rapidly expanding banking system wobbled after the rescue of the country's fifth largest bank. With the civil service unions lobbying for pay rises, a foreign exchange risk and the prospect of an oil glut in 1991, Indonesian ministers are reluctant to pledge the country's extra cash to help finance infrastructure. Nonetheless, the dollars appear to be pouring in for infrastructure investment, perhaps as a response to tax incentives, cheap labour and available land. There is talk of allowing "commercialisation" in Indonesia which may come close to the kind of privatisation taking place in Malaysia.

### Malaysia

A feature of foreign investment lending in South-East Asia is the requirement in some jurisdictions that foreign investment may be made only where there is a local equity participation. In Malaysia, for example, the New Economic Policy, which was introduced in 1971, requires companies to structure their equity so that there is a ratio of 30% for foreigners, 40% for non-Bumiputra Malaysians and 30% for Bumiputras. However, in the late 1980s, the priority has moved towards the encouragement of more investment to combat a feared recession of the economy. For this reason, it is now possible for investors to retain a full share ownership of projects. The government has confirmed that this incentive to foreign investment will continue.

Generally speaking the Malaysian Government has embraced the concept of "build, own and operate", ("B.O.O.") wholeheartedly. The construction of the North-South Interurban Expressway by a private consortium on a B.O.O. basis has been extremely successful and work on the M\$3,500,000,000 tolled expressway stretching from Thailand to Singapore is approaching completion. Similar transportation projects to be undertaken on a B.O.O. basis are planned and include The Second Crossing from Singapore to Johore, the Kuala Lumpur Light Transit System and the Kuala Lumpur Monorail System.



## Hong Kong

Perhaps the largest fund raising in the region will be that related to development of the new airport and ports in Hong Kong. Plans for raising the necessary capital have not yet been announced however the model may well be the Mass Transit Railway Corporation where in connection with the construction of the Mass Transport Railway ("MTR") the Government provided 20% of the capital cost and guaranteed 10% of the funding. The rest of the security was against the Corporation's own resources which were boosted by the provision of land provided by the Government for property development.

While the MTR was a project of the 1970s, the Government is today likely to play a more active role in the capital raising exercise. In doing so, it can draw on a steadily growing Capital Works Reserve Fund which now holds HK\$10.5 billion, with an expectation of a further HK\$40 billion on the realisation of land sales on the site of the airport and surrounding areas. In addition, there is a large "treasure chest" contained in the Foreign Exchange Reserve Fund, the contents of which remain secret.

## SOME IMPORTANT ISSUES IN PROJECT FINANCING

### State Agreements

The huge sums involved in project financing and the necessary involvement of governments (and consequential political and legal uncertainty) has led to the use of State Agreements. These are agreements under which the relevant state government will contract directly with project sponsors to inter alia grant the concession (if any) to construct and operate the facility, secure title and ensure government consents and authorities. In some cases, the state will pass legislation to "adopt" the agreement upon which the project is based. The object is to "entrench" the agreement as part of state legislation and ensure that the obligations of the state under that agreement have the full force and protection of the law.

There are certain constitutional difficulties with such State agreements, not the least of which being that they may constitute a fetter on the discretion of a minister to grant a licence or export permission etc. These agreements have, nonetheless, during the 1970s and 1980s, been effective in facilitating projects and in ensuring that they have gone forward in relative legal and political security.

Where project financing has been impeded by political and legal systems which have little experience with foreign investment and project development, State Agreements could prove useful in avoiding problems such as ministerial discretion in granting land tenements, expropriation (or legislative or ministerial action which is tantamount to expropriation), and obtuse bureaucratic procedures. The adoption of a State Agreement, setting out rules relating to employment, environment, taxation, land use, etc., enables financiers to resolve the legal uncertainties and to complete the project.

Whilst generally there are clear benefits to be derived from enshrining the terms of the contract between the state entity and the project sponsor into legislation there can be pitfalls which need to be addressed particularly in relation to the enforcement of the provisions of the contract.





Firstly, where rights are granted under a private contract, any breach of the contract by the state entity such as the improper termination of the concession would entitle the project sponsor to damages, and in some cases specific performance of the terms of the contract. Where the rights are granted under statute, these remedies may not be available to project sponsors. Under English law jurisdictions the project sponsor would be required to enforce its rights by making an application to the courts for judicial review of the states' action or inaction under the contract and the powers of the courts to grant relief to the project sponsor are purely discretionary.

Secondly, in the case of rights granted under statute, third parties may potentially have the right to apply to the courts for an order requiring the state to comply with the provisions of the statute, and possibly, enforce provisions of the contract which either commercially or politically the state may not wish to enforce, eg., environmental protection powers. In the case of rights granted under private treaty, of course only the parties to the contract can enforce its terms.

Thirdly, whether granted under statute or private treaty, the state often reserves to itself certain discretions or powers of approval in relation to matters which are the subject of the contract. For example, the contract may provide that the state, through its Minister or Department Head, has the power to approve the design or method of construction of the facility. Under English law jurisdictions, the rules of administrative and public law require that any officer of a state entity shall exercise any power or discretion devolved to him fairly and impartially and that any complainant may, in certain circumstances, require the courts to judicially review the manner in which the discretion or power was exercised. In the case of a discretion or power given to or reserved by one of the parties under a private agreement, the manner in which the discretion or power is exercised is not fettered unless express provisions are included in the agreement to provide so.

Fourthly, a project sponsor should also take note that parties to a private treaty or contract may alter, amend or relax the terms of any concession granted at the stroke of a pen. Any rights granted under statute may usually only be altered by the enactment of further legislation which may be costly and time consuming.

Finally, it is interesting to note how differently projects are structured from jurisdiction to jurisdiction. In Malaysia the concessions granted by the state or state controlled bodies to project sponsors are invariably private contracts. On the other hand in Hong Kong concessions granted to the project sponsors of both the Eastern Harbour Crossing and the Tates Cairn Tunnel (two of the major toll road projects recently completed in the Territory) were by statute.

#### Protection of the Project Financier On A Borrower's Default

It is critically important that the project financier should have the ability ie., the legal right under the concession agreement to take over and operate the project in the event of a default. A default should not enable the concession to be revoked. The project financier as lender should have the right to "stand in the shoes" of the project sponsor or borrower as "the new owners".



Common legal consequences of default are:

Loss of voting rights

The party in default may lose its voting rights and thereby enable the non-defaulting party to vote to abandon the project or to place the project on a "care and maintenance" basis. It is necessary to ensure that provisions are drafted to require unanimity or to ensure that the project financier retains control of the project.

Exercise of pre-emptive rights

The project financier or lender would prefer that pre-emptive rights did not apply to a sale by it or by a receiver. If, however, pre-emptive rights are conceded by them, it is important that where a non-defaulting party purports to sell its shares, a minimum price mechanism is adopted to ensure that the shares are sold at a price which covers the amount owing to the lenders. If a non-defaulter does not exercise the right to purchase, the lender would then be free to sell to anyone at any price, (constrained, of course, by the usual fiduciary duties of a mortgagee). Such provisions are, however, open to objection by a non-borrowing project sponsor on the ground that it constitutes underwriting the financing of the borrowing joint venturer.

Compulsory contributions

Clauses creating an obligation to contribute to unpaid calls can create disadvantages for a lender. Under contribution clauses a lender may become bound to pay the share of a non-defaulting party of the defaulting party's unpaid calls. Failure by the non-defaulting party to pay may, itself, be an event of default and have the effect of causing each joint venturer to default in turn. Care should be taken either to avoid such clauses or to ensure such payments are debts and subject both to interest and to cross-charges.

Sale of operation of the project

Where there has been **joint** financing and cross charges, the lenders can enforce their security against the whole project and cannot be out-voted by non-defaulting parties. The lender or a receiver and manager appointed by the lender can operate the project. (They can do this by either controlling the manager or exercising their voting rights to appoint a new one). By contrast with **several** financing, the lenders do not have an opportunity to take over the project which will be operated by a manager. Importantly, where a lender can take over the entire project, it has the option to sell the project and, thereby, to ensure the best possible price on the market.



### Completion Risks

As lenders depend upon the cash flow, it is necessary that the project is completed and brought into operation. Lenders must consider the risk of cost overruns and time delays and the technical aspects. Banks will not, however, generally accept completion risks. In order to overcome these problems, a completion covenant should be drafted under which the borrower covenants to complete the project and the security extends to assets of the borrower. In this sense, recourse is not fully "limited". Where the borrower is a single purpose company (with no assets other than those of the project itself), it becomes necessary that this completion covenant is also given by the parent or sponsor or shareholder of the borrower.

The term "completion" must be drafted carefully to cover physical aspects such as infrastructure, and to cover performance and production, sales tests and ratio tests. It may also be possible to include a cost overrun facility and to provide that insurance be taken in relation to all insurable assets.

### THE CHANGING ROLE OF BANKS IN PROJECT FINANCING

A recent trend in project financing can be described by analogy with "relationship" banking in the corporate field. Banks typically retain a close working knowledge of and relationship with the project and exercise a close scrutiny and control over each stage of the project. Indeed, in one reported project development a company's treasury staff received more than 200 visits from representatives of banks involved in the financing! There are obvious and significant advantages to lenders in maintaining such a close involvement with the project itself so that they remain fully informed and able to respond quickly if necessary.

Early intervention by the lenders is necessary in major project financing because in part the lead times for the construction of railways, port facilities or accommodation for workers can take some years to complete before the first sod of earth can be turned for the project itself.

Of course the scale and complexity of many B.O.O. or B.O.T. projects cannot be underestimated and the risk analysis to be undertaken by the project sponsor and the project financier straddles many issues. There has to be a team approach between the project sponsor and its bankers.

By way of example several toll expressway projects in Malaysia, Thailand and Indonesia were only financially viable because of the provision of government cash subsidy or support. Increasingly this form of direct financial support has become politically unacceptable and although "subsidy" is still necessary in order for many projects to make commercial sense the nature of the subsidy provided has changed. For example it is increasingly the case that the government will make available to the project sponsor development rights over land adjacent to the project or over the air space above the project eg., the right to develop station sites along a rail system. Bankers evaluating the cash flow of a project now need not only to assess operating revenue derived from the project but also the revenue to be derived from the exploration of such ancillary rights. Strategies for the exploitation of ancillary rights need to be developed by the project sponsors in association with their bankers as part of a team approach.



A further trend is the introduction of more flexible financial packages which now include:

- a wider range of floating rate funding sources;
- tax efficient vehicles such as leveraged leases;
- co-financing with international financing agencies;
- integration with government export incentive financing;
- complimentary financing with local governments (eg., infrastructure - OK Tedi);
- quasi-equity financing, such as commodity bonds, redeemable preference shares; and
- interest rate and currency swaps.

I hope that these observations assist in highlighting some of the issues in financing projects in South East Asia.



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## Financing Methods for Large Construction Projects

Méthodes de financement de grands projets de construction

Die Finanzierung grosser Bauprojekte

### Akira OKA

President

Trans-Tokyo Bay Highway Corp.  
Tokyo, Japan



Akira Oka, born 1927, graduated from the Faculty of Economics at the University of Tokyo. He served as the executive director of the Bank of Japan and as the vice-governor of the Japan Development Bank. He now heads the Trans-Tokyo Bay Highway Corporation.

### SUMMARY

Several issues must be addressed when private-sector corporations are used to build major infrastructure projects. The profitability of such projects tends to decline in the degree to which they serve the public good. Furthermore, enormous sums of private financing must be found. As a result, efforts are needed to reduce the business risk that arises from changing business conditions and to ensure a fixed level of profitability so that resulting revenues can be used to pay off debt. These requirements have led to a number of governmental measures regarding the construction of the Kansai International Airport and the Trans-Tokyo Bay Highway. Their purpose is to supplement low profit margins and to promote the projects. They include tax breaks, low-interest and no-interest loans, and national and local government investments.

### RÉSUMÉ

Au Japon, une nouvelle politique tend à faire construire les grands projets par le secteur privé; il en va ainsi, par exemple, pour l'aéroport de Kansai et l'autoroute de la Trans-Tokyo-Bay. Cependant, la rentabilité de tels projets a tendance à diminuer en fonction de l'utilité publique. Vu les besoins énormes en crédits privés, des mesures gouvernementales s'avèrent indispensables pour réduire les risques commerciaux et garantir un niveau de rentabilité fixé. Pour réaliser les deux grands projets ci-dessus cités, ces mesures impliquent entre autres des avantages fiscaux, des taux d'intérêt préférentiels, des prêts sans intérêt, ainsi que des investissements nationaux et régionaux.

### ZUSAMMENFASSUNG

Im Zuge der Finanzknappheit der öffentlichen Hand wurden in den achtziger Jahren viele japanische Staatsbetriebe im Infrastruktursektor privatisiert. Grossprojekte wie der Kansai-Flughafen oder die Trans-Tokyo-Bay-Autobahn wurden privat gebaut. Ihre Profitabilität sinkt jedoch tendenziell mit dem öffentlichen Nutzen. Wegen des riesigen Kreditbedarfs sind Massnahmen zur Senkung des Geschäftsrisikos und Sicherstellung der Rückzahlbarkeit erforderlich. Dazu gehören Steuer- und Zinsvergünstigungen, Anleihen und andere Finanzierungsformen im Rahmen eines umfassenden Entwicklungskonzeptes für Infrastruktur-Grossprojekte.



### RESUMÉ:

Comme les finances publiques sont devenues de plus en plus contraignantes dans les années '80, le Gouvernement japonais a cherché à privatiser des entreprises du secteur public - tels que les anciens Chemins de fer nationaux et Nippon Telegraph and Telephone Corp. - de manière à rendre plus efficaces la construction et la gestion des infrastructures publiques. En outre, le Gouvernement a adopté comme politique de faire appel à la vitalité du secteur privé dans des domaines comme le financement et le savoir-faire en management. Cette ligne de conduite est concrétisée dans l'emploi des firmes du secteur privé pour réaliser de grands projets d'infrastructure, notamment l'Aéroport International du Kansai et l'Autoroute Trans-Tokyo Bay.

Plusieurs questions doivent être envisagées quand il s'agit de faire appel à des entreprises du secteur privé pour construire d'importants projets d'infrastructure. La rentabilité de tels projets a tendance à baisser dans la mesure où ils servent le bien public. En outre, d'énormes sommes doivent être prélevées sur le financement privé. En conséquence, des efforts doivent être entrepris afin de réduire les risques qui, pour les entreprises, proviennent du changement des conditions de travail et pour garantir un niveau fixe de rentabilité de manière que les revenus puissent servir à rembourser les dettes encourues.

Ces exigences ont donné lieu à un certain nombre de mesures gouvernementales, relatives à la construction de l'Aéroport International du Kansai et de l'Autoroute Trans-Tokyo-Bay. Leur objectif est de compenser les faibles marges de profit et de promouvoir les projets en question. Parmi ces mesures figurent des réductions d'impôts, des crédits à faible intérêt ou sans intérêt, ainsi que des investissements par les gouvernements à l'échelon national et local.

D'autres mesures doivent être envisagées pour promouvoir des projets d'infrastructure de grande envergure, tout en accordant une attention suffisante à la protection des investisseurs et à la répartition des risques. De telles initiatives doivent combiner des mesures complémentaires de financement, telles que l'emploi de "revenue bonds" et le financement par augmentation des taxes, de manière à obtenir des gains appropriés par une approche intégrée du développement des projets.

### ABRISS:

Aufgrund der zunehmenden Anspannung im öffentlichen Finanzwesen der 80er Jahre suchte die japanische Regierung, solche Unternehmen der öffentlichen Hand wie die Japan National Railway und die Nippon Telegraph and Telephone zu privatisieren, um bei der Konstruktion und dem Betrieb von Infrastrukturprojekten eine effiziente Ausführung gewährleisten zu können. Darüber hinaus begann der Staat systematisch, die Vitalität der Privatwirtschaft in Sachen Finanzierung und Führungsinstrumentarium zu nutzen. Diese Verfahrensweise zeigt sich beim Einsatz privatwirtschaftlicher Unternehmen, die solche infrastrukturellen Vorhaben wie den Kansai International Airport und die Trans-Tokyo Bay Highway verwirklichen.

Bei der Inanspruchnahme privatwirtschaftlicher Unternehmen für große Infrastrukturprojekte sind mehrere Fragen zu diskutieren. Die Einträglichkeit solcher Vorhaben tendiert dazu, mit wachsendem Nutzen für das öffentliche Interesse zu sinken. Außerdem müssen bei der privatwirtschaftlichen Finanzierung enorme Gelder aufgetrieben werden. Die Bemühungen konzentrieren sich daher auf eine Verminderung der Geschäftsrisiken, die unter stetig wechselnden Umständen aufkommen, sowie auf ein stetes Rentabilitätsniveau, damit die resultierenden Erträge zur Begleichung der eingegangenen Schulden verwendet werden können.

Diese Anforderungen haben zu einer Reihe staatlicher Maßnahmen zur Konstruktion des Kansai International Airport und der Trans-Tokyo Bay Highway geführt. Ihr Zweck ist es, geringe Gewinnspannen zu vergrößern und die Bauvorhaben verschiedentlich zu fördern. Dazu gehören Steuernachlässe, niedrig verzinst oder zinsfreie Darlehen sowie Investitionen auf nationaler und präfekturaler Ebene.

Bei der Förderung großer Infrastrukturprojekte sind auch andere Maßnahmen in Erwägung zu ziehen, soweit sie dem Schutz der Investoren und der Risikoverteilung dienlich sind. Solche zusätzlichen Finanzierungsmaßnahmen können, gesteuert durch eine integrierte Führung der Projektentwicklung, kurzfristige Schatzanweisungen und Steuerinkrementfinanzierung mit dem Auffangen von nicht vorhergesehenen Entwicklungseinkünften kombinieren.

## 1. A HISTORY OF PUBLIC INFRASTRUCTURE DEVELOPMENT

As Japan's modernization progressed in the latter half of the nineteenth century, the government was generally responsible for building and operating such major infrastructure projects as highways, major railway lines, telecommunications, and airports. This pattern continued after the conclusion of World War II (1945 to present). Public entities undertook the development of public infrastructure to promote reconstruction and to surmount the bottlenecks that accompanied economic growth. A number of public corporations were established at this time in addition to Japan National Railways, including Japan Highway Public Corporation and Nippon Telegraph and Telephone Public Corporation. These public corporations undertook infrastructure development in their respective areas of operations.

In the years following 1970, Japan's private sector gradually acquired ample capital and human resources. In order to make use of private-sector vitality, a number of public-private companies were established at this time. These firms were largely involved in the development of local public infrastructure projects.

More recently (1983 to present), the growing constraints on public finance has resulted in a number of measures to actively incorporate private-sector initiative in public infrastructure development. First, companies such as Japan National Railways and Nippon Telegraph and Telephone were privatized in order to ensure that the development and operation of public infrastructure takes place more efficiently. Second, private-sector financing and management know-how was put to use more actively in the development of infrastructure serving the public good.

Nevertheless, several issues required addressing before private-sector vitality could be used in the development of public infrastructure projects. They included (1) securing the financing needed for large-scale projects, (2) addressing the decline in profitability that accompanies projects benefiting the public, and (3) reducing increased business risk.

As a result, a number of measures have been implemented. They include such governmental measures as relaxed regulations, tax breaks, low-interest or no-interest loans, interest subsidies, and grants. These measures have been employed in various combinations, taking into account the entities carrying out the projects.

While these supportive measures have seen some success, some of them are not without their problems. The expansion of the nature of aid is also sought for some measures.

Two recent public infrastructure projects will be used to explore the above in greater detail.

## 2. THE USE OF PRIVATE-SECTOR INITIATIVE IN PUBLIC INFRASTRUCTURE DEVELOPMENT

The Kansai International Airport and the Trans-Tokyo Bay Highway are the two largest public infrastructure projects under way that take advantage of private-sector initiative.

### 2.1 Kansai International Airport

#### 2.1.1 Project summary

The Kansai International Airport project concerns the creation of a 1,700-ha landfill in the southwest of Osaka Bay and the construction of four runways with lengths between 3,000 and 4,000 m. The first-stage project now in progress concerns the completion of a 511-ha landfill by the summer of 1994.

#### Plan summary

##### • Airport

Location: Southeast area of Osaka Bay, 5 km from shore.

Size and capacity:

	First stage	Second stage (planned)
Area	511ha	1,200 ha
Runways	3,500 m x 60 m	4,000 m x 60 m 4,000 m x 60 m 3,200 m x 60 m
Landing and takeoff capacity (per year)	160,000	260,000

##### • Connecting bridge

A 3.75-km bridge supporting both rail and motor vehicle traffic.

##### • Start of operations

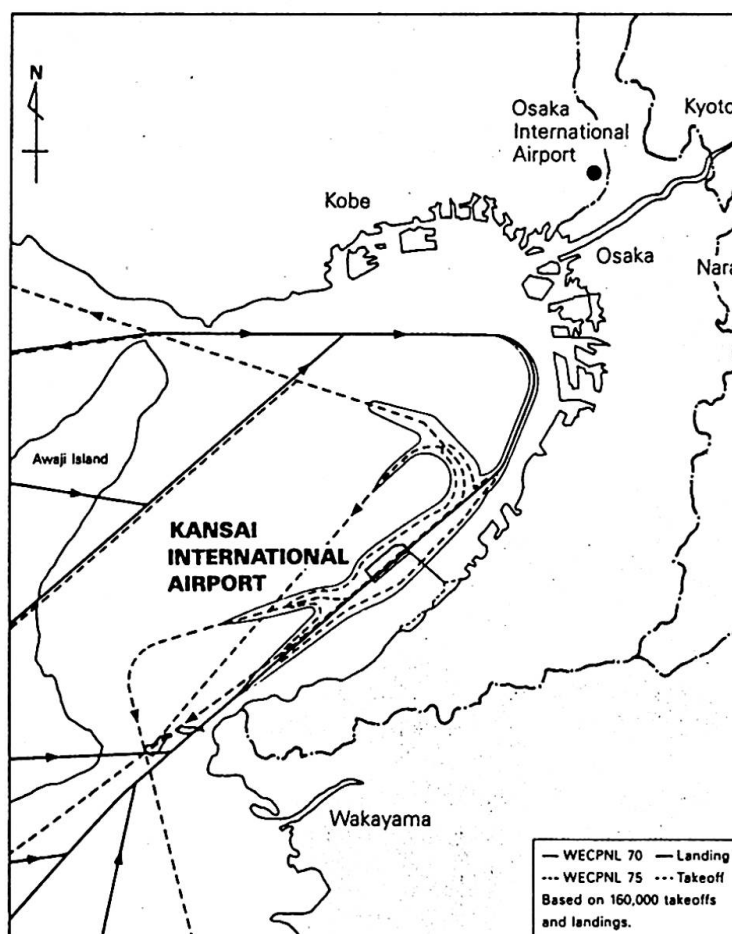
Summer of 1994, (the second-stage target date has not yet been made specific).

#### 2.1.2 Past airport development

Airport development in the past was carried out by the government in the case of major international airports (Haneda Airport and Osaka Airport) and by a public entity, the New Tokyo International Airport Authority, in the case of Narita Airport. Other airports were generally developed by prefectural and local governments.



### Predicted Pattern of Aircraft Noise Distribution



Note: WECPNL (Weighted Equivalent Continuous Perceived Noise Level), the environmental standard index for aircraft noise, is 70 or less for residential areas.

#### 2.1.3 The developer of Kansai International Airport

Because of restrictions on the national budget, the Kansai International Airport is not being developed as a public works project. Rather, a stock company, the Kansai International Airport Company Limited, was established under a special law, and private-sector financing was used in the development of the airport. The role the government took was to supply appropriate levels of public assistance.

#### 2.1.4 Project costs

The cost of the first stage of the Kansai International Airport was initially estimated at about ¥1 trillion (\$7.14 billion) when using fiscal 1983 construction costs. The current estimate is ¥1.43 trillion (\$10.20 billion). (Dollar figures assume U.S. \$1 = ¥140.)

#### Breakdown of Initial Project Costs (FY 1983 prices)

(Billion)

Construction	¥800
Airport Island	440
Connecting bridge	120
Runways, terminal building, and other facilities	240
General administrative costs	200
Total	¥1,000 (\$7.14)

Notes: 1. Figures above are estimates.

2. The dollar figure assumes U.S. \$1 = ¥140.

#### 2.1.5 Financing and public assistance

The financing and public assistance of the Kansai International Airport consists of (1) national, prefectural, and local government investments, (2) low-interest-rate loans by the Japan Development Bank, (3)



the flotation of government-guaranteed bonds, and (4) the reduction of municipal property taxes.

In order to supplement the low profitability of the project, capital investment of ¥300 billion, or 30 percent of the initial cost of ¥1 trillion, was planned (¥200 billion from the national government, ¥50 billion from prefectural and local governments, and ¥50 billion from the private sector). The remaining ¥700 billion was to be procured through the flotation of government-guaranteed bonds, as low-interest-rate loans from the Japan Development Bank, and as private-sector bank loans.

However, the estimate of the first-stage project climbing to ¥1.4 trillion has meant a financing shortfall and reduced profitability. Financing plans are therefore being reviewed.

### Initial Financing Plans

(Billion)

Investments	¥300	(30%)	\$2.14
National government	200		
Prefectural and local governments	50		
Private sector	50		
Borrowings, other	700	(70%)	5.00
Total	¥1,000	(100%)	\$7.14

Note: The dollar figures assume U.S. \$1 = ¥140.

## 2.2 Trans-Tokyo Bay Highway

### 2.2.1 Project summary

The Trans-Tokyo Bay Highway will traverse a 15-km stretch across central Tokyo Bay; the project is scheduled for completion in March 1996. An underwater motor-vehicle tunnel of 10 km, the longest in the world when completed, will cross the west side of the bay, which is heavily traveled by ships. The remaining 5 km will be a bridge.

### 2.2.2 Past highway development

Highway development in the past has been carried out by the national government in the case of national highways and the Japan Highway Public Corporation (JHPC), a government entity, in the case of major toll roads. Highway construction has therefore been considered public-sector projects in the past. Nevertheless, the application of private-sector initiative is beginning to take place. In the construction of the Honshu-Shikoku Bridge, which connects the major islands of Honshu and Shikoku, a Honshu-Shikoku Bridge Authority was established, and a substantial amount of the financing came from the private sector.

### 2.2.3 The developer of the Trans-Tokyo Bay Highway

A public corporation was not chosen as the developer of the Trans-Tokyo Bay Highway. Rather, a stock company, the Trans-Tokyo Bay Highway Corporation, was set up under a special law (as was in the case of the Kansai International Airport) to carry out the project. However, although the Kansai International Airport Authority will continue to manage and operate the completed airport, the Trans-Tokyo Bay Highway Corporation will turn over all facilities on completion to the JHPC since the transbay highway will become a part of Japan's national highway network. Centralized JHPC administration of the new highway was considered most appropriate to secure the public good and to uphold the efficiency of the national highway network.

### 2.2.4 Project risk

Any risk regarding the profitability of the project will be borne by the JHPC since the completed facilities will be turned over to the JHPC and since construction costs will be paid for by the JHPC in installments over a thirty-year period.

### 2.2.5 Project costs

The total cost of the Trans-Tokyo Bay Highway is estimated at ¥11.51 trillion (U.S. \$8.20 billion). Project costs for the Trans-Tokyo Bay Highway Corporation is estimated at ¥9.40 trillion (\$6.70 billion). The remaining ¥2.12 trillion (\$1.50 billion) will come from the JHPC and will go for such expenses as fishing industry compensation.

### Project Costs

(Billion)

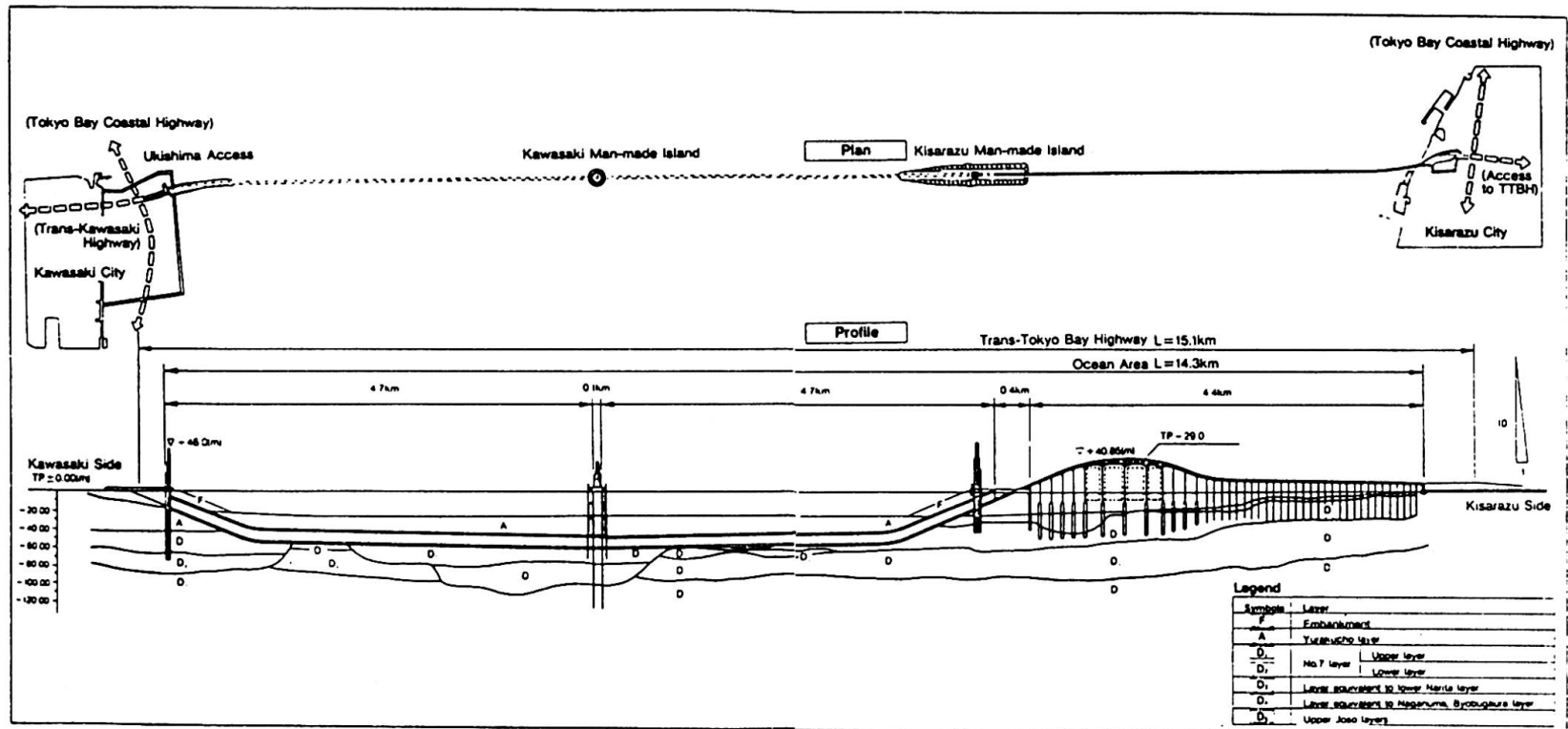
	Trans-Tokyo Bay Highway Corporation	Japan Highway Public Corporation	Total
Project costs	¥789.1	¥140.9	¥930.0
Interest and other expenses during construction	150.4	70.7	221.3
Total	¥939.7 (\$6.7)	¥211.6 (\$1.5)	¥1,151.3 (\$8.2)

Note: Dollar figures assume U.S. \$1 = ¥140

### 2.2.6 Financing and public assistance

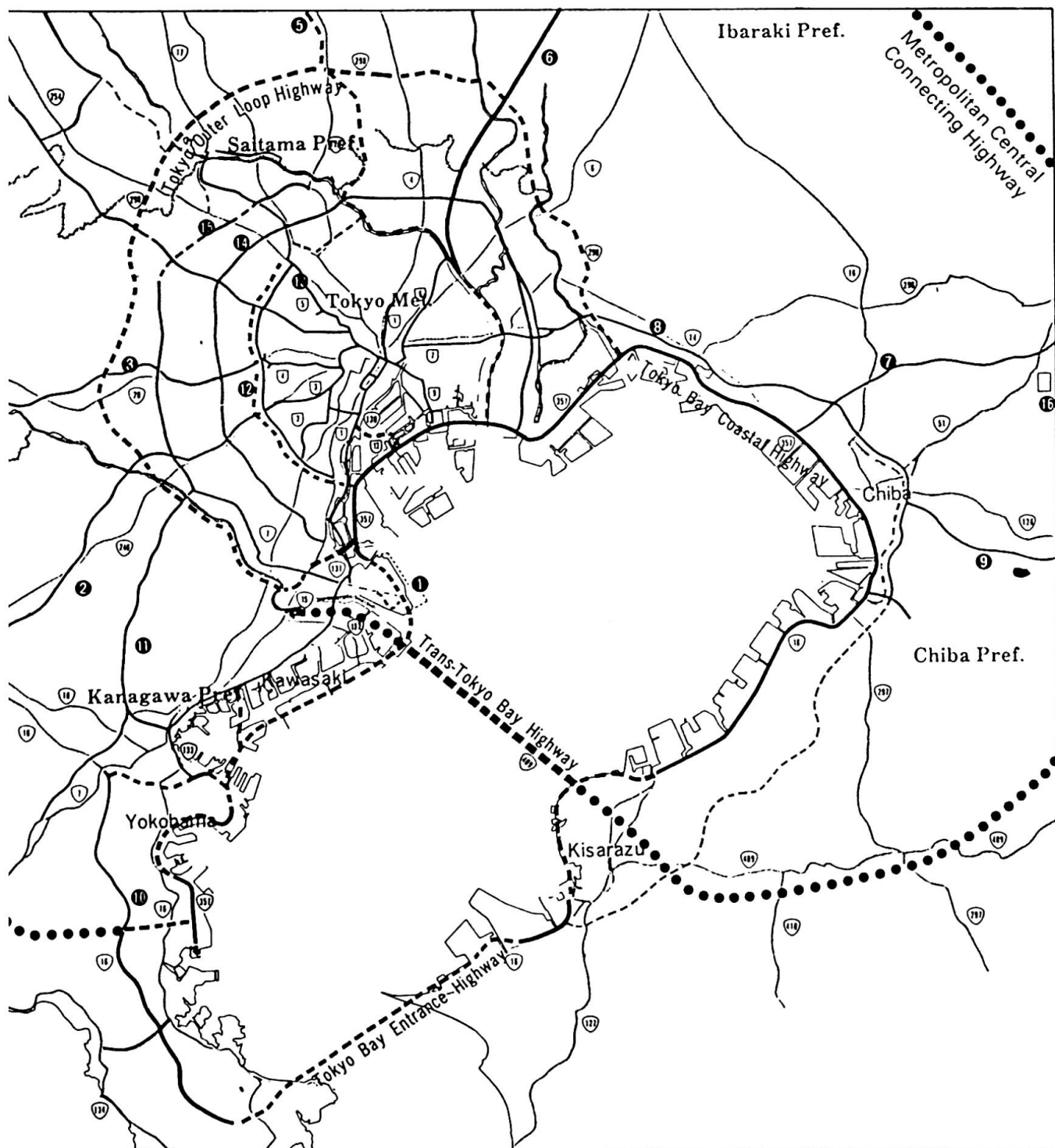
The financing and public assistance of the Trans-Tokyo Bay Highway consists of (1) national (JHPC), prefectural, and local government investments, (2) low-interest-rate loans from the national government (from the Highway Development Fund) and the Japan Development Bank, and (3) the flotation of government-guaranteed bonds.

## Trans-Tokyo Bay Highway (15.1 km)





## Metropolitan Highway Network



Legend:

- Tokyo Bay Coastal Highway
- Tokyo Outer Loop Highway
- Metropolitan Central Connecting Highway
- Metropolitan Expressway
- Expressway & Toll Roads
- National Highways
- Principal Local Roads

- ① Tokyo International Airport (Haneda)
- ② Tomei Expressway
- ③ Chuo Expressway
- ④ Kan-etsu Expressway
- ⑤ Tohoku Expressway
- ⑥ Joban Expressway
- ⑦ Higashi Kanto Expressway
- ⑧ Keiyo Highway
- ⑨ Chiba-Togane Highway
- ⑩ Yokohama-Yokosuka Highway
- ⑪ Third-Keihin Highway
- ⑫ Central Loop Route
- ⑬ Loop No. 6
- ⑭ Loop No. 7
- ⑮ Loop No. 8
- ⑯ New Tokyo International Airport (Narita)





The capital of the Trans-Tokyo Bay Highway Corporation is somewhat modest at ¥60.0 billion. The interest paid for overall financing has been lowered to about 6 percent through such assistance measures as low-interest government loans (at one-half the interest of market rates). This assistance combines a no-interest government loan of ¥125.0 billion and a private-sector loan of ¥125.0 billion.

#### Breakdown of Financing

(Billion)

Investments	¥60.0	No interest
Government(JHPC)	20.0	
Prefectural and local government	20.0	
Private sector	20.0	
Low-interest government loans	250.0	1/2 of market rates
Loans from government lending institutions	20.0	About 1% below Market rates
Government-guaranteed bonds	389.1	Market rates
Private-sector loans	220.6	Market rates
Total	¥939.7 (\$6.71)	

Note: The dollar figure assumes U.S. \$1 = ¥140.

### 3. CHARACTERISTICS AND ISSUES ASSOCIATED WITH INFRASTRUCTURE DEVELOPMENT USING PRIVATE-SECTOR INITIATIVE

A number of benefits can be noted regarding the use of private-sector initiative in public infrastructure development.

1. Development can proceed independently of the financial circumstances of the national government. Furthermore, the government's single-year accounting system ties public-works projects to an annual budgetary process. More flexibility is introduced when a private company carries out development projects.
2. A private company can solicit the cooperation of private-sector human resources and take advantage of private-sector technological and management know-how.
3. The use of private-sector funds becomes easier.

Nevertheless, a number of issues still remain.

1. The higher a given project serves the public good, the lower its profitability. This makes public assistance indispensable.

2. Since the financial environment can be volatile, uncertainty accompanies large private-sector financings.
3. Measures are needed to address business risks associated with changes in business conditions.

In particular, feasibility studies should be carried out beforehand by both the public and private entities involved to develop contingency measures for instances when cost overruns trim profitability.

### 4. FUTURE DIRECTIONS

As can be seen from the above, Japan has developed various measures to make use of private-sector vitality in public infrastructure development. Other financing measures, such as community bonds, have either been tried or are under consideration.

Other nations are also exploring diverse financing mechanisms, including the issue of such debt instruments as revenue bonds (where future profits are used as security), tax increment financing (where future tax increases are used as security), and floating-rate bonds.

The build, operate, and transfer method, which takes advantage of the superior business know-how of private corporations, is also being increasingly tried for public infrastructure development.

In order to use private-sector financing in large public-works projects, a certain level of profitability must be guaranteed to make it possible to pay off accumulated debt. This requires the careful consideration of the characteristics and categories of projects for which private-sector financing can be employed. In addition, these projects should be promoted by effectively combining assistance measures. This could be done by pairing financing methods with the capture of windfall development gains through an integrated approach to project development. Furthermore, the perspectives of investor protection and risk dispersal must not be overlooked.

As development needs become more diverse and sophisticated, the continued use of private-sector initiative in the development of public infrastructure will be vital, based on the examination of the issues just mentioned. For that reason, the Trans-Tokyo Bay Highway Corporation will work to ensure that the Trans-Tokyo Bay Highway project will become an appropriate precedent for the use of private-sector vitality in the development of public infrastructure.

# New Financing Methods

	Mountain, river, and seacoast improvements	Public highways, urban parks, natural parks	Cultural, social, educational and sports facilities; public rental housing	Health care facilities, water supply and sewage systems, waste disposal	Toll roads, airports, seaports	Electricity, gas, railroads, telecommunications	Remarks
Profitability	None		LittleLarge				
Build, operate, and transfer	<div><div></div><div>Large electric power plant (Turkey) Undersea tunnel (U.K., France), expressway (Thailand) Undersea tunnel (Hong Kong)</div><div></div></div>						Private firms undertake the planning, fund procurement, management, and operations of the project. The profits during the period of private management go for investment recovery. The project is then turned over to the project initiator after a specified period. The method is appropriate for large projects likely to be profitable.
Revenue bonds	<div><div></div><div>Water supply systems (U.S.), toll roads (U.S) Port authorities (U.S.), electricity and gas supply (U.S.)</div><div></div></div>						The revenues generated by the project are used for debt service. The method is widely applicable when debt service (the repayment of principal and the payment of interest) is tailored to the earnings prospects of the project.
Community bonds	<div><div></div><div>Gymnasiums (Japan), citizen centers (Japan) Swimming pools (Japan)</div><div></div></div>						A kind of privately placed bond issued by local government entities and purchased by local citizens and businesses. Since the development area is limited, the method is appropriate for community-based projects.
Special assessment district	<div><div></div><div>Highway development (U.S.), urban rapid transit (U.S.) Shopping malls (U.S.)</div><div></div></div>						The project is financed by placing a surcharge on the property taxes or other taxes paid by the citizens of a particular district. The prior approval of district property owners is required.
Tax increment financing	<div><div></div><div>Roads (U.S.), water supply and sewage systems (U.S.) Housing and parking lots (U.S.)</div><div></div></div>						A district that will benefit from the project is defined, and bonds are issued that are secured by an incremental tax on local property taxes or other taxes. Although relatively widespread application is possible, it is difficult to accurately anticipate the revenues generated by the incremental tax increase.
Convertible mortgages	<div><div></div><div></div><div></div></div>						Bonds in which a debt interest can be converted into an equity interest in land or buildings. The method is difficult to use alone for public infrastructure development. However, it can sometimes be combined with other financing methods.

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