

Are the nonprofit organizations suitable to engage in BOT or BLT scheme? A feasible analysis for the relationship of private and nonprofit sectors

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Abstract

There has been a recent increase in both developing and developed countries in an effort to meet the economic growth through build–operate–transfer (BOT) concessions. However, BOT-type schemes are not only suitable between public sector and private sector, but they can be applied to the third sector, nonprofit organizations (NPOs) as well. The major purpose of this paper is to propose a new feasible mode for build–lease–transfer (BLT) by analyzing the partnership among the constructors, the banks and the NPOs. The “triple win” solution for the main participants can be achieved by means of the successful BLT-based development.

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1. Background

During the 1980s Taiwan’s trade surplus increased substantially. Because of the abundance of foreign reserves and the increase of money supply, the New Taiwan dollar started to appreciate against the US dollar and speculative capital inflow flooded the financial market. Then, the prices of real estates and stocks were incited to a higher level, accelerating the formation and eventual collapse of Taiwan’s bubble economy in late 1990s. At the same time, due to the launching of restriction of capacity ratio (i.e. the ratio of one floor space to whole building space), the constructors were eager to rival each other for the priority in

house building resulted in oversupply in the real estate market. Besides, during the last decade, because the number of Taiwan’s banking industry has continued to show a rapid growth and Taiwan is approved to access World Trade Organization (WTO) since 2001, in order to compete with foreign large-sized banks, the domestic financial institutions substantially start to loosen the restrictions of lending credit in such easy capital market. Meanwhile, several large business groups in this region, especially for the constructors, had been using shares as mortgages for borrowing large sums of money from banks and made a large investment in the stock market and the estate market. When stock prices sharp drop, these constructors had insufficient money to pay the interest on their loan, causing a continuous increase in the nonperformed debit ratio and a harmful influence on the banks’ asset quality.

As the results, according to official registration in 2001, although the gross savings of Taiwan amounted to

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NT\$2740 billions, the banks' lending becomes more and more conservative caused easy of capital in financial systems and continuously downward interest rate. In order to deal with the large amount of idle funds, the banks start to rival each other in tendering for some secure credit cases and render them at a much lower interest rate, so that further leads the interest rate to decrease toward the level of money market in the long term.

On the other hand, the operations of NPOs become more difficult because of the lack of donation in such downward economy. In order to resolve the economic problems, it is getting more important issue in facilitating efficiency to integrate with the NPO, the financial institution and the constructor into a new collaborative mechanism, and furthermore to procure a "triple win" target.

The major purpose of this paper is to stress on constructing a newly practicable concept of BLT for the private section and the NPO. In the following sections, the roles and the advantages of the three interactive principles played in such a collaborative scheme will be discussed.

2. Models of private participation

2.1. The motives and types of private participation

In the last decade, private–public funding arrangements have burgeoned in many developing and developed countries suffering from economic recession. Taiwan's government recently faces the lack of public financial resources as well. To overcome the constraint, the fund-raising mode of infrastructure projects has gradually been transformed from totally preparing annual budget by the government into various ways supported by the private sector. As to the motives of private participation in infrastructure projects (including building, financing, and operating), three critical reasons are enumerated as follows (cf. [11]):

- (1) In general, the private sector possesses better mobility than the public sector. For example, the private sector is not only contributive to save the costs of project in planning, design, construction and operation, but also to avoid the bureaucracy and to relieve the administrative burden.
- (2) The private sector can provide better service to the public sector and establish a good public–private partnership so that the balance risk–return structure can be maintained.
- (3) The government lacks the ability of raising massive funds for the large-scale infrastructure projects, but private participation can mitigate the government's financial burden.

In practice, as the argument of Kumaraswamy and Zhang [5]: the willingness of the private sector in developing infrastructure projects depends on the mature legal environment where the projects operate. Also, Taiwan's

government has developed regulatory frameworks to serve the BOT projects in order to attract the private sector to participate in infrastructure development. For instance, the Law for Promotion of Private Participation in Infrastructure Projects, which was promulgated on February 9, 2000, establishes partnership relations between the government and the private sector. Table 1 shows a list of private participation in infrastructure projects that are either under construction or currently in operation in Taiwan. Particularly, the main scope of this law merely prescribes for the types of private participation in infrastructure projects to suit to the use of BOT-type scheme. However, the BOT-type scheme should be a more suitable tool which can be applied among private sectors as well. Unfortunately, none of the collaborative projects in the private sector has well employed the BOT-led scheme. This is the crucial reason why the new BLT scheme could be conceptualized.

Similar to Walker and Smith [11] and Lam [6], the examples of various BOT-type schemes listed and described in their features, several familiar BOT-based models of private participation are also gradually developing in Taiwan that may be categorized into the following types.

- (1) The private institution invests in the building and operation of the infrastructure project, and upon expiration of the operation period, transfers the ownership to such infrastructure project to the government (build–operate–transfer, or BOT model).
- (2) The private institution invests in the building of the infrastructure project and upon completion of the building, relinquishes the ownership to the government without compensation. The government then commissions the operation of the infrastructure project in question to the same private institution. Upon expiration of the operation period, the right to operate reverts back to the government (build–transfer–operate, or BTO model).
- (3) The government commissions the private institution, or the private institution leases from the government, existing facilities for operation after making renovations or expansions. Upon expiration of the operation period, the right to operate reverts back to the government (Rehabilitate–operate–transfer, or ROT model).
- (4) The government invests in the building of the infrastructure project and then commissions the operation thereof to the private institution. Upon expiration of the operation period, the right to operate reverts back to the government (Operate–transfer, or OT model).
- (5) To support the national policy, the private institution invests in the building of the infrastructure project and owns the ownership thereto upon completion of the building, and then either operates the facility by itself or commissions a third party for operation (build–own–operate, or BOO model).

Table 1
The various private participation in infrastructure projects in Taiwan

Project item	The number of projects	Total amount in NTS thousand (%)	The amount by private sector in NTS thousand (%)
Cultural and education facilities	6	14,949,568 (4.91%)	14,619,568 (10.94%)
Sewerage and water supply facilities	1	5,300,000 (1.74%)	5,300,000 (3.97%)
Transportation facilities and common conduit	13	196,065,800 (64.36%)	38,151,900 (28.55%)
Social and labor welfare facilities	4	742,074 (0.24%)	0 (0.0%)
Major industrial, commercial and hi-tech facilities	1	600,000 (0.2%)	600,000 (0.45%)
Development of new town	1	550,000 (0.18%)	550,000 (0.41%)
Agricultural facilities	3	8,180,000 (2.69%)	8,180,000 (6.12%)
Sport facilities	4	405,000 (0.13%)	405,000 (0.3%)
Sanitation and medical facilities	2	3,146,000 (1.03%)	3,000,000 (2.24%)
Environmental pollution prevention facilities	12	11,053,193 (3.63%)	11,053,193 (8.27%)
Major facilities for tour-site and forest recreation	22	63,656,350 (20.9%)	51,788,680 (38.75%)
Total	69	304,647,985 (100%)	133,648,341 (100%)

Source: Public Construction Commission, Executive Yuan, Republic of China (http://pccweb.seed.net.tw/botnew/www/index_en_01.htm).

2.2. Traditional concepts of BOT and BLT

In traditional BOT-based scheme, the project company is usually taken as a core of projects. According to the functions on the BOT projects, other participants can be divided into three parts: the source of funds (including sponsor, lender), the use of funds (including constructor, material supplier and insurance company), and the operation (including government, project operator). Fig. 1 provides a concrete feature of the relationship of key participants in the traditional BOT scheme.

Regarding BLT, short for Build, Lease and Transfer, the one of BOT-led schemes, is another model of private participation in infrastructure projects where projects are procured using arrangements which differ from the typical BOT scheme in some particular aspects. The traditional BLT scheme is the private institution investing in the building of infrastructure projects in which the acquisition of major portion of capital is to borrow from financial institutions through the governmental guarantees. Upon the completion of building, the government leases such building from the private institution and operates for a certain period known as franchise period. When the government amortizes the rent to the private institution reaching a certain amount, the project ownership and the right of operation will be transferred to the government. In other words, the government procures the right to operate and pays the rents earned by operating revenues for acquiring the ownership of the project.

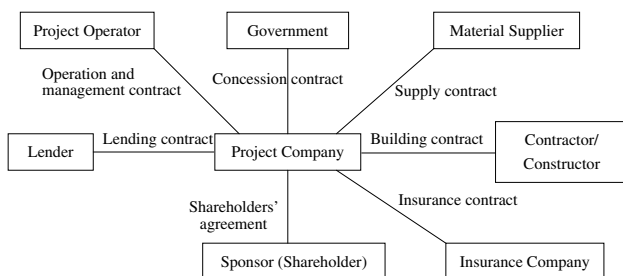


Fig. 1. The key participants of traditional BOT scheme.

As explained previously, BOT-type schemes provide an increasing popular vehicle for private sector to participate in infrastructure development. In the last decade, the BOT-type models have been well developed in the various fields. Examples of such fields are power, transport, and telecommunication, desalination, etc. (see, e.g., [3,4,7, 12,14]). Especially in developing countries such as Hong Kong, Malaysia, Thailand, and Taiwan, these governments see BOT as a way of mitigating governmental expenditure and attracting adequate foreign capital and advance technology. To date, most of the existing literature proposed for managing BOT projects is devoted to promote the partnership relations between private sector and public sector. For example, Walker and Smith [11] and Lam [6] listed many types of BOT and reviewed the risks of major infrastructure projects. David and Fenando [2] and Tiong and Alum [9] focused their studies on the evaluation of BOT projects. In addition, some of the literature addressed the experiences of risk management in BOT projects (see, e.g., [6,8,10,16]). Recently, Clark and Root [1], Wang and Tiong [12] and Kumaraswamy and Zhang [5] discussed the governmental role in BOT-led infrastructure development. However, none of the specific literature has focused such models on nongovernmental circles and further revealed the substantial benefits obtained from BOT or BLT scheme for the key participants in each model.

In order to extend from the domains of BOT-type schemes and propose a new utility structure for private sector, this paper launches to identify the appropriate role of BOT or BLT scheme that can be thoroughly applying to the partnership relations between the private sector and “third sector” based on the consideration of tax-saving. This paper also compares BLT with BOT model in feasibility, especially for the application in practice.

3. The effects of introducing BOT or BLT to the NPOs

3.1. The applicability for NPOs to use BOT or BLT

In this article, the term *nonprofit organizations (NPOs)* is nongovernmental entities incorporated as charitable or

not-for-profit corporations. NPOs have been set up to serve some public purpose and they are tax-exempt according to the Taiwan's tax law. Based on the views of social organization, NPOs are classified as the "third sector" exclusive of public sector and private sector. In addition, NPOs are always considered synonymously with tax-exempt entities that operate for religious, charitable, public safety, or educational purpose, or for the prevention of cruelty to animals, and so on. As the definition of Wolf [13], such organizations must have the following five characteristics:

1. They must have a public service mission.
2. They must be organized as a not-for-profit or charitable corporation.
3. Their governance structures must be independent and preclude self-interest and private financial gain.
4. They must be exempt from paying tax.
5. They must possess the special legal status that stipulates gifts made to them are tax deductible.

The existence of NPOs has considerable influence on socio-economic environment. Since such organizations have the characteristics listed previously and their missions are to actively facilitate the social benefit, they should therefore interact intently with other private sectors and play significant roles to develop their capabilities in the highly changeable environment.

In Taiwan, there are some main causes with regard to the appropriateness for NPOs to use BOT or BLT model. First, they may have more fund-raising capabilities than public sector in some occasions (e.g., the donate activities of reconstruction after "921 earthquake disaster" initiated by charitable organizations). Second, sometime they can obtain a strong support from the government (e.g., public education institutions or community foundations), so their public credibility will not be inferior to public sector so that they can easily acquire adequate finance from financial institutions or become the concessionary of public works. Finally, on the basis of fulfilling organizational missions, NPOs can thoroughly and effectively serve on their operating actives because they usually have some long-term development programs to outline the scope and priorities of future infrastructure projects. However, for many NPOs exclusive of public charities (e.g., private education institutions, religious groups or other private foundations), they are still too difficult in raising adequate capital to carry out the tasks of public service, especially during the period of economic recession. Furthermore, because these organizations are subject to nondistribution constraints, they have considerably less access to capital markets issuing equity than the profit sharing organizations. Even debt is often harder for the NPOs to raise, since their assets may be quite specific to the enterprise and thus worthless as collateral. Under the context of the NPOs' particular financial strengths and weaknesses, they must determine what projects need to be developed first by mobilizing private sector

funds. On this basis, NPOs have the chances to reconsider applying BOT or BLT scheme to their missions. That is to put emphasis on the benefit sharing and the partnerships among the NPO, the bank and the constructor rather than that of public sector and private sector through the practice of traditional BOT or BLT model. Naturally, when the private sector intends to develop a project through BOT or BLT scheme, a feasible analysis should be carried out to assess the superiority of using BOT or BLT approach to a specific project or a specific organization.

3.2. The new concept of BLT scheme

As the concepts mentioned in previous section, the emergence of traditional BLT or other BOT-type schemes is to emphasize the collaborative mechanism of private participation in the public infrastructure development involving building and operating (or leasing). On the building side, the private participation in public works can start without governmental help to initially raise the adequate capital. On the operating (or leasing) side, due to the considerations that the public sector often has less technical or administrative experiences in BOT or BLT projects, the private participation can facilitate the efficiency and apportion the project risks. However, the BLT model is not only one of collaborative modes to develop the public works, but its operationalized framework is also suitable for applying to nongovernmental circles as a joint-venture mode. The new concept of BLT is different radically from the traditional ways of financing, building and operating infrastructure facilities because such BLT scheme is organized like a joint-venture program in which the originator might be the NPO, the constructor or the lender. In other words, under the existing tax law in Taiwan, the framework of BLT can be completely applied to the allied agreement between the private sector (i.e., constructor or lending institution) and the NPOs. In such mechanism, the lending institution is able to select the qualified constructors, and then offer them project finance at low-interest level to build the large-scale project, which the NPO wants to develop. Upon the completion of building, the NPO leases such building from the constructor and operates for a certain period. When the NPO amortizes the rents to the private sector reaching a certain amount, the project ownership and the right to operate will be transferred to the NPO. Such BLT model is neither applied to public works nor dominated by public sector, but it is to integrate the private sector with the NPO into the collaborative mechanism in which the share of the tax-saving benefit is emphasized. Once the new BLT model is launched, all participants of the program can obtain a substantial benefit from this collaborative mechanism by utilizing the tax-saving operation. Moreover, they are likely to contribute to the scheme, even though the lending institution provides the majority of constructing capital in the project. So, the investment willingness of private sector will be raised under the situation that has good prospects of gain. Particularly in the era of low

interest rate, such BLT mechanism is an effective prescription of resolving flooded idle fund in banking industry, and eventually the capital efficiency and employment problem will be improved as well. Finally, the “triple win” target will be achieved.

In this new concept of BLT, the typical concept of BOT will be quoted (see Fig. 1), and the relationships among main participants are recombined and simplified as Fig. 2. In Fig. 2, the position of project company shown in Fig. 1 is replaced by the NPO and the main parties participated in the scheme are outlined by the dotted line. In such scheme, BLT project is originated by the NPO, and then the NPO seeks the qualified (e.g., large-sized, steady, or good experience and business honor in other BOT projects) contractor or constructor through the risk evaluation that also can be executed by professional banks. To raise the adequate funds, the strategy is to take the NPO to be the principle part of partnerships for acquiring the adequate capital through the analogue of *project finance*, in which, the bank and the constructor may jointly put up the capital, or the constructor can directly borrow the loan from the bank. Then, the NPO will negotiate with these two private sectors to determine the maturity and interest rates during the operating period. As the building stage is accomplished, the NPO start to lease from the constructor for operating a certain period. Due to the incentives of tax exemption, the constructor can donate a fraction of ownership year by year to the NPO during the payback period (PBP) or donate the ownership in a lot upon the maturity of lease term when the NPO pay up the rents. By way of such operating strategy, the constructor can therefore save a great deal of business tax (BT) and business income tax (BIT). Furthermore, in this mechanism, there are no direct relationships between NPO and other participants such as insurance company and material supplier.

3.3. Why BLT, not BOT?

The BOT approach initiating a private concession project is to create a project company, designed to make contracts with the public entity to provide an infrastructure development. However, BOT models are not a panacea. Because of the many inherent risks and uncertainties, BOT projects cannot be successfully implemented unless the government provides an adequate environment, and

gives some necessary guarantees to support the projects. By some other countries' experiences, several BOT-type projects have been canceled or run into serious problems due to cost overruns, unrealistic price and income projections, and legal disputes between private operators and the government such as Bangkok elevated transport system (BETS) of Thailand and Tha Ngone Bridge project of Lao PDR. Therefore, if one or more risks are not properly considered, BOT projects could lead to under-achievement, or even total failure. For example, the success of BOT-type projects seems to depend on the selection of the most suitable private participant that can be realized through a competitive tendering process. However, the concession tender procedure must face many uncertainties, especially the problem of asymmetric information. Under the framework of BOT scheme, because the tenderers cannot completely acquire construction information to quote precisely, that will enforce the tenderers on a vis-à-vis competitive situation, which is beneficial for some tendering teams with opportunistic behavior, especially for the private teams who have abundant political resources. The opportunist will be in an advantageous position to arrange for acquiring the concession, and then change the contents of concession. Meanwhile, the public sector usually trend toward harmony with the concessionary due to the administrative burden or political pressure so that the concessionaire may not be the most competent one who can realize the project. In addition, the BOT projects almost require developing tender and negotiation procedures that are a very costly and time-consuming process for all the parties, so the selection of the project company in other forms should be considered. Contrarily, in the new BLT scheme, since the land and adequate capital is completely provided by the private sector, the most suitable partner may be determined easily by the approach of choosing concessionaire. Hence, the master control power of project is still commanded by public sector and the complexity of selecting the most suitable private partner will be decreased.

Regarding the option of BOT or BLT, particularly under the framework of tax law in Taiwan, because the constructor or other chartered managing company is one of the so-called for-profit enterprises, when the project starts to build up or to operate after completion, the BT will be raised. Even the for-profit operators must pay income tax when they have the earnings from the further normal operation. From this point of view, the tax-saving incentives will be the crucial factors whether the private sectors are willing to engage. In addition, since the ultimate mission of the for-profit private institutions is to earn money for its owners and they will only invest in a project that it can make an adequate profit under reasonably certainty, it requires to deliberate upon whether the constructor can conscientiously execute the missions of the NPO or not. As to the framework of BLT, the NPO possesses the right to operate without the agent problem so that their missions can be well developed. According to the Taiwan's BT law, the NPOs are exempt from BT that the tax rate is 5–10%

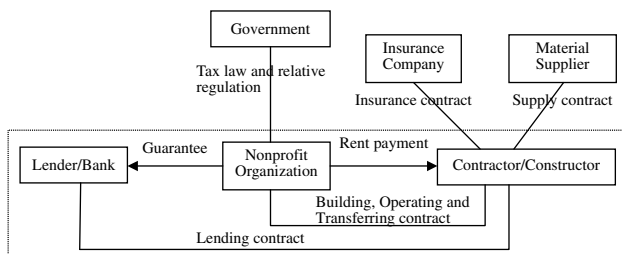


Fig. 2. The relationship of main participants in new BLT scheme.

currently; and their business income is also exempt from the BIT that the tax rate is 25% currently based on the income tax law. In general, the tax-saving profit of using the new BLT project can be shared out among the main participants by way of negotiation in the initial stage. For example, the expectable tax-saving benefit can be reflected on the building cost to decrease the total project cost or to shorten the PBP, so the NPO would acquire the ownership at an early date.

4. The advantages of main participants in new BLT scheme

4.1. Lender's position on BLT

In a more and more competitive environment, the lender (i.e., bank) has to create more diversified financial service to satisfy the customers' needs. The banks should not only operate in conventional activities, but also can develop analogous BLT project, so as to broaden the income sources and further promote their competitive advantages. In the new framework of BLT, the bank seems to earn only a fix interest, which is a relatively stable revenue stream originated from the NPO, but actually the bank should participate in the BLT project as the position of investor (e.g., to transfer the traditional role of corporate finance into project finance). Hence the bank can simultaneously share the capital income and tax-saving profit. In addition, because of the abundant experiences in risk assessment, the bank can easily select competent constructor to be a community to ensure the source of reimbursement. Especially in Taiwan, many large business conglomerates possess their own construction subsidiary and financial institution, to the bank can lend the construction company at a lower interest rate, since the financing mode of new BLT project is similar to "project finance". So, it can encourage bank to share the mutual benefit and reduce the default risk during the building period. More importantly, the new BLT scheme is an effective method that can enhance the bank to deal with their idle fund.

4.2. The substantial benefit for the constructor in the new BLT

While the constructor starts to build, they are required to raise a great deal of capital and need to undertake the construction risks. However, as mentioned previously, they can associate or negotiate with bank based on tax-saving benefit to acquire a lower interest cost. When the building is completed, the constructor can lease the building to the NPO and earn steady rents to meet the previous loan. Based on the tax-exempt characteristics of the NPO, the constructor should transfer the right of operation to the NPO so that the constructor will not shoulder the BT. Moreover, there are some tax-saving effects about the BIT that can be realized by the constructor from the new BLT scheme. On the one hand, during the leasing terms of the BLT project, the constructor will receive the annual

rents from the NPO, and then use it to offset the principal and interest of loan, so the BIT will not be raised. On the other hand, even though the BIT will be generated if the constructor has earned profit from their business actives, the constructor is still exempt from BIT by way of donation year by year. That is because the donation which the for-profit enterprises make to NPOs may be incorporated in the annual expense or loss account and be treated as tax credit, and the land donation by private sector for the purposes of initiating social and welfare services or establishing private school may exempt from value added tax of land. Thus, when the constructor transfers the ownerships of land and building to the NPO at the expiration of leasing term, the land value tax will not be brought either. To sum up, these tax incentives enable the constructor to enjoy a robust cash flow pattern during the collaborative period and reduce the constructor's operating risk, finance risks and market risks. Namely, the greatest incentive for the constructor to participate in the new BLT project is to enjoy the tax-saving benefit.

4.3. The advantages for NPOs to use the new BLT

For NPOs, there are some advantages to use new BLT as follows:

1. By way of installment, the NPOs may diversify the financial risk of raising a great deal of capital within short term.
2. The NPOs is not necessary to undertake the construction risks (including complete risk and overrun risk).
3. In order to reduce the unexpected risks, the constructor will endeavor to shorten construction time so that the executive efficiency of the BLT project will be improved.
4. In order to maintain the superior creditor's rights, the lender (bank) financing constructor can spontaneously assist the NPO to monitor the building quality.

In addition, in the new BLT scheme, the NPO has the adequate bargain power of to negotiate with other private sectors (i.e., lender and constructor) for sharing the tax-saving benefit originated from the NPO's operation because of the tax-exempt characteristics. Hence, the total project cost can be reduced. On the financial side, before deciding to sign the building contract with the NPO, the constructor needs to confirm whether the annual tax-exempt benefit is greater than the interest cost. If so, the constructor will negotiate with the bank to develop a borrowing plan in which the annual capital inflow (rents) amortized by the NPO can be treated as a source of reimbursement to acquire a low-interest loan. Therefore, on the one hand, the NPO may relieve the burden of borrowing directly from the bank; and further, it will resolve the difficulty of raising a great deal of capital within a short term. On the other hand, it will conform to the investment regulation of governmental reward. For example, the Ministry of Education will subsidize 50% of interest expenses to build schoolhouses if the private school

launches a self-liquidating project. Therefore, during the leasing term or up to the maturity of lease, the NPO can easily acquire the ownership of project by constructor's donation in name only. To sum up, through the collaboration of the new BLT, the NPO not only mitigate the fund-raising pressure in the building stage, but also can acquire the right of operation without any guarantee. Furthermore, expiring at the end of lease, the NPO can successfully gain the ownership of the project. In short, mitigating the burden of raising funds, relieving the construction risk, acquiring the right of operation and the ownership of project are the real motives for the robust NPO to introduce the new BLT concepts.

Based on the above reasons, it is also very much applicable for other nongovernmental circles to completely imitate the new BLT schemes for developing their missions.

4.4. Externality effect

As above mention, all of the key participants (i.e., the bank, constructor and the NPO) can respectively earn considerable profits by way of the BLT's partnership. More importantly, some positive externalities will accompany such collaborative mechanism. For example, the use of BLT by the NPOs can generate the public goods to promote the social welfare, and during the recession environment, it can also enhance the utilization of idle funds in banking industry. Moreover, the private enterprises will be attracted to the tax-saving benefit so that their investment willingness in the whole economic system will be caused to increase, and eventually the goal of economic growth will be realized.

5. Case illustration: The BLT project for constructing students' dormitory of Nan Hua University

In Taiwan, the college students number in the millions, but the current supply of students' dormitory is unable to meet the demand. Hence, the new concept of BLT scheme conceptualized in previous section just offers the new challenges and roles for the parties involving: school, constructors and bank. Now let us illustrate a pioneered example of the BLT project under proceeding, the case of students' dormitory construction of Nan Hua University.

Nan Hua University is a private school located in the remote district in midland of Taiwan. Because their students come from every county, in order to solve the problems with the shortage of nonlocal student accommodation, the school plans to build dormitory through using the new BLT scheme. This BLT project is launched by Nan Hua University, after coordinating with other two partners (constructor and bank), the resolution is that the constructor presides over building and borrows from bank at a lending rate 3.5%. During the building period, all of the construction risks including completion delay risk and cost overruns risk are undertaken by the constructor. When the construction is completed, the school leases the construction from the constructor and operates in a certain period

estimated at about 20 years. Every year the net cash inflow from dormitory operation will be paid to constructor as rent, so as to reimburse the principal and interest to the bank. In addition, during the leasing periods, the ownership of dormitory including the building and land will be transferred to the school by means of donation year after year up to the expiry date.

The conditions of BLT project are described briefly as follows:

1. The number of beds: 560 beds (280 double rooms).
2. Rent: NT\$15,000/per bed/per year.
3. Total building value (i.e., the selling price including fully equipped room): NT\$200 million.
4. Lending from bank: 70% of total building value (i.e., NT\$140 million) at the interest rate of 3.5%.
5. Estimated net cash inflow for constructor: NT\$15 million/per year.
6. BIT rate: 25%.
7. BT rate: 5%.

In this case, three well-known methods in assessing the financial viability of project such as net present value (NPV), internal rate of return (IRR), and PBP method (see e.g., [15]) are incorporated to assess the project, and further the tax-saving effects for the key participants in the BLT will be discussed.

According to the outcome computed by EXCEL program (cf. Table 2), the NPV of the BLT project amounts to NT\$42.95 million and its IRR is 7.2769%. In addition, according to the evaluation of PBP method, the constructor will retrieve the debt (NT\$140 million) borrowed from bank after the tenth years. Totally, the NPV of tax-saving in this project amounts to NT\$35.204 million. Based on these evidences of the evaluation methods, a significant rate of return exceeding that of normal can be expected by the constructor. Namely, this BLT project is very much worth investing for the constructor; meanwhile, it is also profitable for the bank and the NPO.

5.1. The "triple win" effect

This BLT case of students' dormitory looks like a purely leasing behavior that the school purchases ownership by installment in name only, but it can yet be regarded as a great method for school who is not necessary to undertake the financial risks and construction risks but eventually acquires the right to operate and the ownership of students' dormitory. Moreover, from the illustrative case, one may conclude that the collaborative mechanism of BLT can be extended to other analogous projects as well. In this BLT case, the NPO (i.e., Nan Hua University) plays a role of key promoter based on the tax-exempt characteristics. Actually, the other private sectors should have more initiative position in promoting the development of BLT project in order to create more profit or to maintain their operation during the period of economic recession. For the bank,

Table 2
The trail balance of the BLT project for the constructor (unit: NT\$)

Year	Rent revenues	BT	NPV of BT	Repayment of principal	Deduction of BIT (donation)	NPV of deduction of BIT (donation)	Payment of interest	Deduction of BIT for interest	NPV of deduction of BIT for interest	Net cash inflows	PBP method	Residual principal
0	(140,000,000)									(140,000,000)	(140,000,000)	140,000,000
1	15,000,000	750,000	724,638	10,100,000	2,525,000	2,439,614	(4,900,000)	1,225,000	1,183,575	13,100,000	(126,900,000)	129,900,000
2	15,000,000	750,000	700,133	10,453,500	2,613,375	2,439,614	(4,546,500)	1,136,625	1,061,052	13,453,500	(113,446,500)	119,446,500
3	15,000,000	750,000	676,457	10,819,373	2,704,843	2,439,614	(4,180,628)	1,045,157	942,672	13,819,373	(99,627,128)	108,627,128
4	15,000,000	750,000	653,582	11,198,051	2,799,513	2,439,614	(3,801,949)	950,487	828,295	14,198,051	(85,429,077)	97,429,077
5	15,000,000	750,000	631,480	11,589,982	2,897,496	2,439,614	(3,410,018)	852,504	717,786	14,589,982	(70,839,095)	85,839,095
6	15,000,000	750,000	610,125	11,995,632	2,998,908	2,439,614	(3,004,368)	751,092	611,014	14,995,632	(55,843,463)	73,843,463
7	15,000,000	750,000	589,493	12,415,479	3,103,870	2,439,614	(2,584,521)	646,130	507,853	15,415,479	(40,427,984)	61,427,984
8	15,000,000	750,000	569,559	12,850,021	3,212,505	2,439,614	(2,149,979)	537,495	408,180	15,850,021	(24,577,964)	48,577,964
9	15,000,000	750,000	550,298	13,299,771	3,324,943	2,439,614	(1,700,229)	425,057	311,878	16,299,771	(8,278,192)	35,278,192
10	15,000,000	750,000	531,689	13,765,263	3,441,316	2,439,614	(1,234,737)	308,684	218,832	16,765,263	8,487,071	21,512,929
11	15,000,000	750,000	513,709	14,247,047	3,561,762	2,439,614	(752,953)	188,238	128,933	17,247,047	0	7,265,882
12	15,000,000	750,000	496,337	14,745,694	3,686,424	2,439,614	(254,306)	63,576	42,074	17,745,694	0	0
13	15,000,000	750,000	479,553	15,000,000	3,750,000	2,397,766	0	0	0	18,000,000	0	0
14	15,000,000	750,000	463,336	15,000,000	3,750,000	2,316,682	0	0	0	18,000,000	0	0
15	15,000,000	750,000	447,668	15,000,000	3,750,000	2,238,340	0	0	0	18,000,000	0	0
16	15,000,000	750,000	432,529	7,520,187	1,880,047	1,084,234	0	0	0	8,650,234	0	0
17	–	–	–	–	–	–	–	–	–	–	–	–
		Subtotal	9,070,588	200,000,000.00		37,312,384			6,962,141			

The NPV of the BLT project: 42,950,214.

The IRR of the BLT project: 7.2769%.

The NPV of tax-saving: 35,203,937.

Note: the values in parentheses are negative.

although the bank can only secure a relatively stable revenue stream through the BLT project which is originated from the rents paid by school, it is still contributive for bank to develop robust credit cases in the flooded money market. Added to all these, such BLT project can also provide a survival chance for the constructor. For example, the constructor is not only exempt from taxes, but there are a lot of added value will be created through the collaborative mechanism of BLT such as the increase of employment and investment. Consequently, the “triple win” effects will emerge from the BLT project.

In this section, there still exists some limitations that could be improved in the further research such as: (i) the new BLT scheme proposed in the paper is not a universal concept in practice, so the evaluation procedure of project cannot be generalized; (ii) there are no standard criteria to measure the share of tax-saving profits and the burden of project risks for all parties. In other words, the collaborative mode of BLT and its result will be different in accordance with the time, the place and the originator; (iii) the crucial factors of successful BLT depend on a great deal of negotiation to achieve a state of equilibrium.

6. Conclusions

This study has derived the new framework of BLT scheme from the existing BOT models, and revealed the advantages shared by the key participants through the realistic BLT example. It also argues that the new BLT scheme enables the private sector to meaningfully converge toward a mutually acceptable solution and eventually result in a “triple win” scenario if the new BLT scheme can be properly managed and extended to all tax-exempt organizations as well as NPOs. Since all of the participants will benefit by way of tax deduction and the positive externalities (i.e., the enhancement of social welfare, increase of employment and economic resuscitation, etc.), the lessons for applying to similar BLT projects will be drawn in the expectable future. Accordingly, it is meaningful to study such practices of nongovernmental circles in managing BLT projects in order to draw lessons in the future. That is just the major contribution of this paper.

Furthermore, facing the era of low interest, in order to resuscitate the private sector, especially for banking indus-

try, some recommendable notices will be proposed in terms of the following: the banks should play roles of promoters to develop their business through actively participating BLT project and to ensure the efficient use of the idle funds, so as to stabilize and diversify their profit sources. Thus the faults of price war with the traditional pattern within the banking industry will be overcome. Finally, if further studies, it is necessary to propose more concrete models or empirical evidences to facilitate the optimal project solution, and further to quantified the substantial benefit in BLT projects.

References

- [1] Clark GL, Root A. Infrastructure shortfall in the United Kingdom: the private finance initiative and government policy. *Political Geogr* 1999;18:341–65.
- [2] David AK, Fenando PN. The BOT option: conflicts and compromises. *Energy Policy* 1995;23(8):669–75.
- [3] Deane J. Private sector participation in desalination in the Mediterranean Middle East (MME) – past, present and future. *Desalination* 2002;152:57–66.
- [4] Hall M, Holt R, Graves A. Private finance, public roads: configuring the supply chain in PFI highway construction. *Eur J Purchasing Supply Manage* 2000;6:227–35.
- [5] Kumaraswamy MM, Zhang XQ. Governmental role in BOT-led infrastructure development. *Int J Project Manage* 2001;19:195–205.
- [6] Lam PTI. A sectoral review of risks associated with major infrastructure projects. *Int J Project Manage* 1999;17(2):77–87.
- [7] Tam CM. Build–operate–transfer model for infrastructure developments in Asia: reasons for successes and failures. *Int J Project Manage* 1995;17(6):377–82.
- [8] Tiong RLK. BOT projects: risks and securities. *Constr Manage Econom* 1990;8:315–28.
- [9] Tiong RLK, Alum J. Evaluation of proposals for BOT projects. *Int J Project Manage* 1997;15(2):67–72.
- [10] Travares LV, Ferreira JAA, Coelho JS. On the optimal management of project risk. *Eur J Oper Res* 1998;107:451–69.
- [11] Walker C, Smith A. *Privatised infrastructure: the BOT approach*. London: Thomas Telford; 1995.
- [12] Wang SQ, Tiong RLK. Case study of government initiatives for PRC’s BOT power plant project. *Int J Project Manage* 2000;18:69–78.
- [13] Wolf T. *Managing a NPO in the twenty-first century*. New York: Simon & Schuster Inc.; 1999.
- [14] Wolfs M, Woodroffe S. Structuring and financing international BOO/BOT desalination projects. *Desalination* 2002;142:101–6.
- [15] Woodward DG. Use of sensitivity analysis in build–own–operate–transfer project evaluation. *Int J Project Manage* 1995;13(4):239–46.
- [16] Yeo KT, Tiong RLK. Positive management of differences for risk reduction in BOT projects. *Int J Project Manage* 2000;18:257–65.