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CONTRACTOR COSTS OF FACTORING ACCOUNT RECEIVABLES FOR A CONSTRUCTION PROJECT

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Abstract. Literature reveals that approximately 66% of construction project funds are raised from financial institutions. The burden of capital costs on contractors is heavy and financial alternatives for the reduction of capital costs are always desired. The objective of this study is to derive a mathematical way of defining the contractor's costs for factoring account receivables, which is a form of commercial finance whereby a business sells its account receivables at a discount. Factoring can be thus considered as a contractor selling his/her accounts receivable to a factor, a financial institution that provides the services of financing, credit management, and collection. Nevertheless, factoring has far not been used for construction project financing. The relevant literature, empirical practices, and factoring theories from outside the construction industry are all evaluated and the features needed to derive the cost function are explored and integrated. This includes commission costs, expected debt costs, and credit monitoring costs. The case study is utilized and discussed to illustrate the use of factoring for a construction project and its related costs. Under the given assumptions that represent the most common financial conditions in Taiwan, the simulation results show that the contractor's factoring costs without recourse for the construction project make up only 0.8% of the total costs of the examined project which is relatively lower than that of most traditional financing. In addition, the application of factoring has the advantage of facilitating financial management, instantly improving cash flow, enhancement of investment efficiency, avoiding extra loan procedures, improving credit rating, and transfer of financial risk. Factoring is indeed a feasible financial tool for construction projects.

Keywords: factoring, accounts receivable, cost, financing, construction project.

1. Introduction

Account receivables factoring is globally accepted as a means of raising short-term capital for financial needs. It is defined as the selling of accounts receivable or invoices to secure cash flows, is derived from the US textile industry (Ruozi, Rossignoli 1985), and has spread out to over the last century to about 50 countries (Fiordelisi, Molyneux 2004). Factoring services provide multiple benefits to including the reducing and transferring of credit risks, improving cash flows, lowering financial administration costs, and increasing efficiency and productivity (Banerjee 2003). Factoring has successfully been implemented in many other industries but not for the construction industry.

In the construction business profit margins are narrow and certain levels of uncertainties must be dealt with. These uncertainties typically include project itself, exogenous impacts, involvement of parties, types of contracts, project financing methods, and so on. It is costly for contractors when such uncertainties take place, which often drive construction contractors out of business. As a result, they need either to maintain a high volume of working capital or to seek effective alternatives to reduce or even transfer risks. Numerous financing alternatives are used to reduce financing costs brought about discussions in the construction industry (Chen 2005). One common way is to preserve a certain volume of working capital to deal with inevitable fleeting huge cash outflows. This can lead to financial burdens if payments from the owners are delayed or the set payment period is too long. Another way to resolve this type of problem is financing from banks. However, both may be costly and inefficient in terms of risk transfer. Scholars suggest that factoring be effective as a means of raising short-term capital and transferring/reducing risks for construction projects (Banerjee 2003; Chen 2005). Yet, the feasibility of implementing factoring for construction projects has barely been discussed. To do this cost considerations from the contractor's viewpoint need to be explored first.

The research objective is to establish the factoring mechanism in construction and to derive a mathematical way of defining the factoring cost for contractors, aiming at the most common construction projects. Thus, the focus is on the lump-sum type of construction projects with fixed payment terms and periods. The contractor's costs are defined by selling his or her account receivables in the project. Account receivables for construction projects are defined as the payment that the contractor will collect from the owner when the corresponding work activities and items are completed by the contractor, who has received receipt(s) or invoice(s) from the owner. Possible

advance, delay payments or contract disputes subject to penalty claim are not included. Generally speaking, contractors, who are entitled to use factoring, certainly have promising perspective and crediting records. This research assumes that they are typically capable of managing risks such as uncertainties in construction process, exogenous impact, and contract management. The contractor's viewpoint only considers the general contractor's standpoint, not that of subcontractors, suppliers, or venders.

2. Disbursement and financing of construction projects

The method, time, and amount of disbursements are usually what determine not only project cash flow but how much outside funding is needed. There are 4 general types of construction project disbursements: progress payments, retainage, bond payments, and final payments (Gould, Joyce 2002). These affect the working capital, especially the cash flows for conducting a construction project. Once all payments are synchronized, financing needs to be maximized. The contractor normally receives an interim payment during the work. The interim payment varies, dependant on the agreement, but is generally 30 days in Taiwan. The retainage is defined as the percentage of disbursement retained by the owner for work which may not be completed correctly. The owner holds retainage as protection, an amount typically set to 5% to 15%. Retained disbursements are released when a substantial amount of the work has been achieved. Sometimes the contractor is required to pay for binds, which protect the owner if the contractor fails to perform the work. The final payment is a significant amount of cash flow to the contractor. Accepting the final payment means that both parties waive all claims against each other except for outstanding ones (Richter 1983; Gould, Joyce 2002).

Most medium- to large-sized construction projects require outside funding. A study shows that 66.28% of these funds are provided by financial institutions (Price, Shawa 1997). Financing can be divided into two types based on the time scale: short term, which is less than one year, or long term, which represents over one year. Short-term financing usually includes financial tools inclusive of commercial paper, short-term loans, trade credits, and so forth. Other financing tools, such as corporate loans, mortgages, bonds, project contact financing, long-term loans, and letters of credit, usually belong to long-term financing. Users need to consider the characters and advantages of each type before deciding which to apply to their projects. For example, short-term financing can be obtained more quickly and more flexibly but may more easily cause bankruptcy if the payback period becomes due without sufficient returned payments. Long-term financing usually means higher interest rates, more constraints, and a more complicated application progress, which makes it harder for small or medium companies to raise funds. Nevertheless, the impact to the user and risk of bankruptcy is lower.

Recent studies have proposed numerous approaches for financing and cash flows management in construction project. Ammar (2011) developed a nonlinear mathematical optimization model to deal with time-cost tradeoff problems for construction projects, which minimizes project direct cost and takes into account discounted cash flows. A decision support approach for cash flow management was used to forecast and manage project cash flows (Khosrowshahi, Kaka 2007). Scholars utilized a systemic analysis for project cash flows to provide prediction of cash flows and to improve overdraft financing requirements and profitability (Cui *et al*. 2010). Computational intelligence is a typical concept for coping with cash flow management (Afshar, Fathi 2009; Fathi, Afshar 2010; Cheng *et al*. 2009, 2010; Lam *et al*. 2009). Recently scholars have been searching other financial tools successful in industries other than the construction industries such as real option and credit guarantee fund (Chiara, Garvin 2007; Chen, Hsu 2008). Nevertheless, receivable factoring has barely been considered as a feasible solution in construction.

3. Factoring market and features

The factoring business is thriving worldwide and is a growing source of external financing for all types of firms (Klapper 2006). The Factors Chain International (FCI) with more than 216 members in 62 countries has adopted Electronic Data Interchange (EDI) system to facilitate the management of receivables. In 1999 there were 15 major factors world-wide, dealing with $70 billion US dollars (USD). According to the FCI, in 2006 the total factoring volume reached $11.342 trillion USD worldwide. The growth rate compared to the volume in 2005 is around 12% (FCI 2006). Scholars believe that factoring facilitates economic growth by improving cash flow, cost reduction, and information management (Thakrar 2003; Marsiello 2002; Sandak 1999). Factoring has advantages over other type of lending for firms in developing economies (Bakker *et al.* 2004). The number of small to medium business, especially medical, construction material, and construction venders, has increased recently because of the use of factoring (Tuohy 2000). Schoenberger (2001) pointed out that shortening receivables turnover is a common corporate strategy broadly practiced in the manufacturing, drapery, and paper industries. Lee (2002) made use of a case study of a computer manufacturing business to show that factoring is an optimal alternative for the provision of short-term financing in the face of cash shortages. In Taiwan, studies on factoring have been done in many industries other than the construction industry. The features of the construction industry are different, and the use of factoring in the industry is in its beginning stages (Chen 2005, 2006). However the use of factoring so far still highly concentrated in a few countries and industries is expanding in many parts of the world including the Asian region (Banerjee 2003).

Factoring services can be explicitly considered as a complete financial service for account receivables. The supplier (contractor) of the accounts receivable sells them to a factor, a financial institution that provides the servi-

ces of financing, credit management, and collection (Fiordelisi, Molyneux 2004). The first service as well as the main purpose of factoring is to provide short-term financing. When selling a product without instant payment, the seller runs into a credit risk due to liquidation for other business activities. The use of factoring receivables can reduce this credit risk for the seller, because the factor can provide instant payment to clear his or her debt. The factor can be also act as a guarantor to assure the creditor of the seller's solvency. The last account management services include bookkeeping, accounting, and collection. The seller benefits by these 3 functions but receives payment in cash at a discount from the factor, which varies by region and according to firm policies (Soufani 2000; Chen 2005).

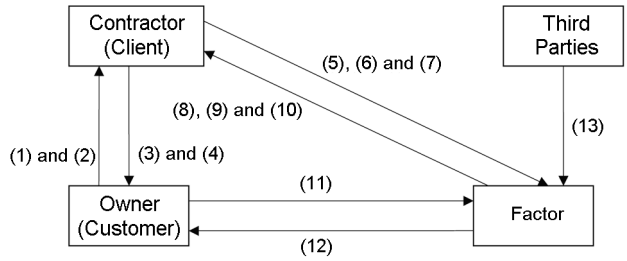
There are two types of factoring in common use: recourse and non-recourse. Factoring with recourse entitles the factoring institution to make payment claims to the supplier if the account payment defaults. In non-recourse factoring, the factoring institution has no claim which reduces and transfers the supplier's credit risk (Soufani 2002a). Determinants for choosing factoring as a source of finance for working capital and a tool for cash flow improvement have been discussed by other researchers (Soufani 2002b). Merx (2001) pointed out that one reason that factoring is popular is because cash can be collected in a day or two through selling receivables much faster than the general 30 to 60 day collection period. It is also more flexible in terms of cash conversion cycle. When profit margins, interest rates, credit protection, and timeliness need to be considered, factoring helps to reduce international trade risk (International Trade Information Center 2002).

4. Research methodology

The research methodology lies in a mathematical way to establish the factoring mechanism and to determine the factoring cost for contractors. Assuming that both contractor part and owner part are certified to use factoring for their project, the application and integration of the features of construction projects, the factoring concepts, and the contractor's costs for factoring, are presented using mathematics and a case study with two most possible scenarios.

4.1. Factoring mechanism and construction contractor's factoring costs

Similar to typical commercial lending, factoring provides working capital for firms. Basically factoring is a package of services involving three parties – supplier, buyer, and factor (Fig. 1) which also describes the mechanism used in most industries such as paper, textile, and retailing. For construction projects, the supplier means the contractor, who uses factoring to improve his/her cash-flow, while the buyer indicates the owner. During the factoring process, credit approval is first issued and, under a factoring relationship, a discounted advance payment of the invoice amount is granted to the contractor. A typical advance rate may vary from 70% to 90%, with a reserve in a range of 30% to 10%. When the invoice from the owner is paid in full, the contractor can receive the reverse amount less a commission fee which usually varies from 1% to 5% (Chen 2006). Credit information from third parties is usually required. In the relationship between the owner and contractor, the contractor takes orders from the owner, and sends invoices and ships products to the owner. This means that the contractor must perform the work based on the contracted specifications, and then deliver the completed work and the corresponding documents to the owner.



(1): Award and sign contract; (2): Issue progress invoice; (3): Complete progress work activity; (4): Submit order for progress invoice; (5): Submit order for credit approval; (6): Sign contract; (7): Send progress invoice; (8): Issue credit approval; (9): Send advance payment and then pay the reserve amount when customer pays in full; (10): Send reports; (11): Pay progress payment (invoice amount); (12): Collect full progress payment; (13): Send credit information

Fig. 1. Factoring mechanism for a construction project

In Fig. 1 based on these mechanism and disbursement concepts described in the previous section, the contractor's costs for using factoring can be derived, beginning with the factor's commission fee. The range of the commission fee varies and how it is determined is usually confidential. The variables affecting commission fees include the total amount, length of contract period, contractor's credit, and owner's credit (Sopranzetti 1998). The contractor may need to pay an additional credit monitoring fee to the factor. This fee depends on the credit risks of those who are monitored, that is, the contractor and the owner. Generally the commission fee function $f(x_i)$ for the i^{th} period of time is expressed as:

$$f(x_i) = x_i \mid \left(p_i(1-r), D_i, \alpha_i, \beta_i\right), \quad (1)$$

where: $f(x_i) \in [0,1]$; i is the i^{th} period and $i \in [0, N]$; N is the total number of progress payments; p_i is the progress payment amount for the i^{th} period; r is the percentage of money reserved for work completed in the i^{th} period; D_i indicates the length of the i^{th} period in days; α_i is the contractor's credit quota; and β_i is the owner's credit quota in the i^{th} period.

For a construction project, reducing $f(x_i)$ stands if D_i is shortened and p_i is smaller, where α_i and β_i are normally constant during a short period of time. We find that the total commission fee by summing up all i:

$$\sum_{i=0}^{N}[f(x_i)\times Ar_i \times p_i(1-r)], \quad (2)$$

where Ar_i is the advance rate in the i^{th} period of time. Supposed that Ar is usually set to a constant throughout the construction project, Eq. (2) can be rewritten as:

$$Ar\sum_{i=0}^{N}[f(x_i)\times p_i(1-r)]. \quad (3)$$

Factoring with recourse occurs when the factor faces higher credit risks. To identify recourse causing debt to the contractor, we set:

$$R=\begin{cases}1, & if \quad recourse \quad occurs\\ 0, & if \quad recourse \quad does \quad not \quad \text{occur.}\end{cases} \quad (4)$$

We introduce a probability P to explain the probability of not paying back by the contractor if recourse occurs. $P\in[0,1]$, P = 1 if the contractor absolutely fails to pay anything back or any payment from the owner to the factor defaults. The costs caused by recourse to the contractor can be defined by:

$$R\times P\times\left(\sum_{j=0}^{N}p_j(1-r)+r\sum_{k=0}^{N}p_k\right), \quad (5)$$

where: j is the j^{th} time period when recourse occurs to payment p_j and can be independent of i; k is the k^{th} time period when recourse occurs to the reserve of payment p_k; i, j and k are independent.

The contractor may need to pay an additional credit monitoring fee to the factor. This fee depends on the level of credit risks of those who are monitored, that is, the contractor and owner. Assuming that $\phi\in[0,1]$ is the percentage which the factor charges the contractor, usually a constant, we obtain:

$$\phi\sum_{m=0}^{N}\left[\delta(y_m)+\varepsilon(y_m)\right], \quad (6)$$

where: m is in the m^{th} time period and is independent of i, j and k; $\delta(y_m)$ and $\varepsilon(y_m)$ are the volatile monitoring fee for the contractor's and owner's financial statuses, respectively, in the m^{th} period. Both are a function dependent on the credit conditions for those being monitored.

Adding up all costs from Eqs (3), (5), and (6) we obtain the total cost of using factoring:

$$Ar\sum_{i=0}^{N}[f(x_i)\times p_i(1-r)]+R\times P\times\left(\sum_{j=0}^{N}p_j(1-r)+r\sum_{k=0}^{N}p_k\right)+$$
$$\phi\sum_{m=0}^{N}\left[\delta(y_m)+\varepsilon(y_m)\right]. \quad (7)$$

Eq. (7) is the contractor cost function for factoring account receivables for conducting a construction project, considering commission fee, recourse costs, and monitoring fee charged by the factor.

4.2. Case study

It is hard to find construction contractors in Taiwan who apply factoring to their projects. To simulate the costs of the use of factoring on a construction project we randomly collected detailed information about a medium sized construction project. It is a typical building project, making up the largest proportion of the construction types in Taiwan, and has the following characteristics: project size of $183,066,910 New Taiwan Dollars (NTD), project duration of 52 months, 49 progress payments, and 10% reserve. During the construction period, there is no project financing; therefore, the total costs come to $173,913,564 NTD, resulting in a profit margin of approximately 5%. The actual cash flows are shown in Fig. 2. The project cash outflows reach the maximum of 13.3% of the project size at the 11th month from construction startup. Based on the check clearing mechanism in Taiwan, the cash conversion cycle for each check is set to 75 days. We interviewed 7 factoring experts before deriving numerous assumptions used for factoring practices in most industries. Expertise suggests that two scenarios, factoring with non-recourse and factoring with recourse, be needed to present situations, which most construction contractors may deal with.

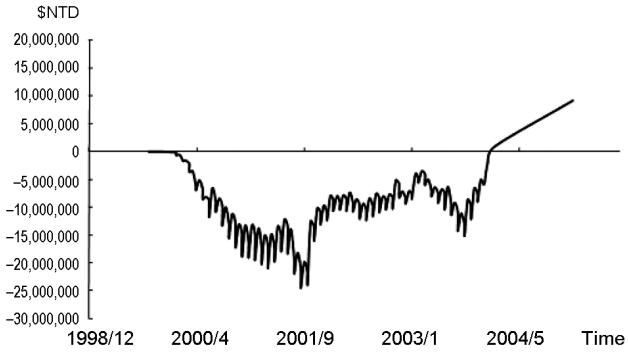


Fig. 2. Project cash flows

Based on expert opinions there are 6 assumptions that must be made to conduct factoring for construction projects: reserve percentage, percentage of commission fee, advance rate, charging percentage for monitoring fee, recourse, and probability of payback by the contractor. In general, for a construction project, these are set as follows: r = 10%; $f(x_i)$ = 3% ~ 5% annual rate; Ar = 0.8; ϕ = 0; R = 1; and P = 0 where the nature of construction projects have higher risks to factors, who adopt factoring with recourse; and assume the contractor has 100% liquidating capability. The fees for the owner's and contractor's credit monitoring are considered a part of the factor's corporate overhead. This does not appear in the contractor's costs. Given that D_i = 30 days and N = 49, Eq. (3) for the contractor's commission fee can be calculated as:

$$\begin{cases} Max\, f(x_i) = \underset{f(x_i)\to 0.05}{Max}\left[Ar \sum_{i=0}^{N=49} [f(x_i)\times p_i (1-r)] \right] = \$1,456,140 \\ Min\, f(x_i) = \underset{f(x_i)\to 0.03}{Min}\left[Ar \sum_{i=0}^{N=49} [f(x_i)\times p_i (1-r)] \right] = \$873,684 \end{cases}$$

where p_i is dependent of the actual activities completed during the i^{th} period. For example, given i = 12, with a commission fee at 5%:

$$\underset{f(x_{12})\to 0.05}{Min}\left[Ar \times f(x_{12}) \times p_{12}(1-r) \right] = 0.8 \times \left[\left(1+\frac{0.05}{365} \right)^{75} - 1 \right] \times \$4,480,404 \times (1-10\%) \cong \$33,311.$$

Notice that the calculation is based on daily compound interest rate. The account receivables are \$4,480,404 × (1–10%) when the progress payment is i = 12. In this case, the factoring agreement frames ϕ = 0, because the monitoring fee is considered a part of the factor's corporate overhead, yielding Eq. (6):

$$\phi \sum_{m=0}^{N} \left[\delta(y_m) + \varepsilon(y_m) \right] = \$0. \quad (6)$$

Scenario I: Factoring without recourse

Using Eq. (5), we can obtain the contractor's costs caused by recourse:

$$R \times P \times \left(\sum_{j=0}^{N} p_j (1-r) + r \sum_{k=0}^{N} p_k \right) = \$0. \quad (7)$$

By Eq. (7), we, thus conclude that the contractor's costs for factoring account receivables for this project will range from between \$1,456,140 and \$873,684 NTD. With respect to all project cash flows, Fig. 3 demonstrates the cash flows levered by factoring with 5% commission fee in comparison with non-financing cash flows.

Scenario II: Factoring with recourse

Given that a recourse takes place at the 12th progress payment (p_i = 12) and recourse fee per time is up to 40%

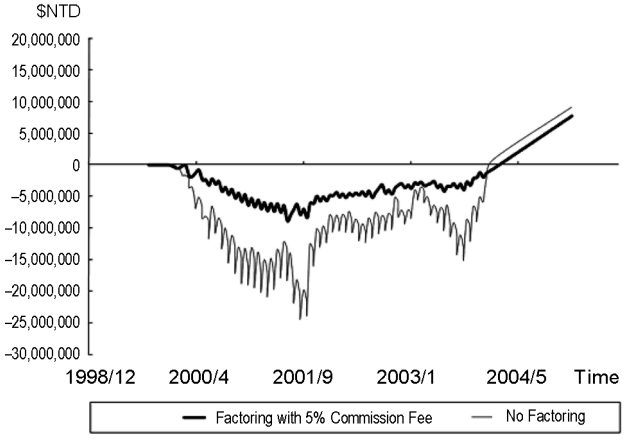


Fig. 3. Project cash flows with factoring and non-financing

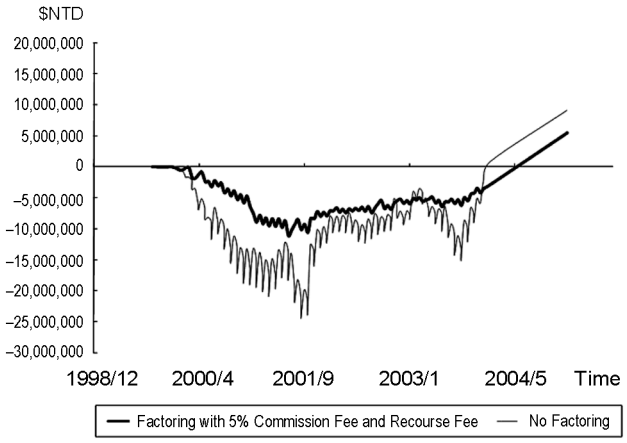


Fig. 4. Project cash flows affected by factoring with 5% commission fee and recourse fee

of the corresponding progress payment, the contractor's costs caused by recourse can be computed as follows:

$$R \times P \times \left(\sum_{j=0}^{N} p_j (1-r) + r \sum_{k=0}^{N} p_k \right) = \$2,238,670,$$

where: R = 1, P = 1 (when j = 12; otherwise, P = 0), r = 10%, p_k = 40% of p_j at k and j = 12. Fig. 4 presents the cash flows affected by factoring with 5% commission fee and recourse fee comparing to non-financing cash flows.

4.3. Result and discussion

The costs of financing account receivables for the contractor of a regular medium-sized construction project ranges between 0.48% and 0.80% of the lump sum price. This range is bearable, compared to 3% ~ 5% profit margins that general construction firms expect to earn. The results of a comparison between projects with 5%-commission-fee factoring and non-financing are summarized in Table 1.

According to the Taiwan Construction Law (Ministry of Interior 2005), Class A and B construction companies are capable of performing this typical project; however the 13.34% of maximum funds needed can possibly cripple working capital management for both corporate and project finance, especially for the relatively smaller Class A and most Class B firms. Although using self-owned capital is more profitable, such firms may quickly run into fund shortages since they are required to carry out numerous projects annually so as to remain the current class. Or, they may need to carry a relatively large amount of working capital, which leads to idle capital or changes in the corporate capital structures. For a typical construction firm, the manager usually chooses alternatives that can level cash flows and effectively reduce capital gaps. Mitigating the capital gap usually requires loans, the most popular financial tool used in the construction industry. The typical annual interest rate for most corporate and project financing in Taiwan varies from 3% to over 10%, depending on the borrower's credit. The annual interest rates of loans on favorable terms mostly lie in

Table 1. Comparison between projects with factoring and projects without financing

Financing method	Non-financing	Factoring with 5% commission	
		Non-recourse	Recourse
Project size ($NTD)	183,066,910	183,066,910	183,066,910
Length of a financing period (days)	N/A	75	75
Total financing amount ($NTD)	N/A	139,789,419	139,789,419
Interest rate (%/year)	N/A	5	5
Total costs ($NTD)	173,913,564	175,369,704	177,608,374
Financing costs ($NTD)	0	1,456,140	3,694,810
Average funds needed ($NTD)	10,455,976	4,838,926	6,472,241
Maximum funds needed ($NTD)	24,420,345	8,883,903	11,122,573
Ratio of maximum funds needed to project size (%)	13.34	4.85	6.08
Profit margin (%)	5.00	4.20	2.98
Financial management tasks	self	Financial institution	Financial institution

between 6.5% and 8.5% recently. Self-owned equity such as shares and stocks is even more expensive. A typical feature of these loans is that one-time basis crediting may not cover all funds needed for a project. Other loans or crediting processes may be required, and these cost the borrower extra time and money. On the other hand, loans are still the most commonly used sources of fund to fill project capital gaps.

In Table 1, it is implied that factoring without recourse is more cost effective than loans on favorable terms. Factoring also has advantages of facilitating financial management, instantly improving cash flow, enhancing investment efficiency, avoiding extra loan procedures, improving the credit rating, and financial risk transfer. The transfer of financial management tasks to a professional institution is an effective way to reduce workloads and internal costs of corporate and project administration. Cash flow volatility can be reduced two or more times, meaning better investment efficiency to the project and others. Repeating loan procedures to raise sufficient funds can be avoided. Financial risk is transferred partially from the contractor to the factor, because the factor rather than the contractor performs the collection task. These benefits can cost a medium-sized project 9.6% to 16% of the total profit margin. On the other hand, costs significantly increase due to recourse if the owner is not able to assure the factor of full amount of each payment. Table 1 presents the contractor's costs caused by recourse. Even though the factor charges only 40% of the payment for the specific recourse, the project profit margin drops down to 2.98%. Generally speaking, owners including both private and public sectors usually have procedures to prepare funding and payment certifications for their construction projects. Adversity to those owners who fail to provide sufficient funding or payment certifications unlikely occurs unless serious financial distress strikes them. Finally it is not suggested that factoring be applied to those projects where expected profit margins are low. There exists a credit limitation that excludes construction firms with relatively lower credit ratings.

5. Conclusions

Lowering financing costs and seeking other effective financing alternatives are incentives to construction contractors. This study introduces the application of the factoring concept and mechanism to the construction financing field. Studies of the application of factoring in other industries and the features of construction projects are constructed and the contractor cost function is derived. Two simulations with an empirical case illustrate that factoring is an efficient and effective tool to deal with project financing. Although it has the major disadvantage of slightly lowering corporate profit margin, it has numerous advantages of lowering financing costs, facilitating financial management, instantly improving cash flows, enhancing investment efficiency, avoiding extra loan procedures, improving credit ratings, and reduced financial risk. Ineffective use of working capital for a construction project that arises from applying other financing tools can be mitigated by using factoring. The contribution of this research are as follows: the establishment of a cost function for factoring related to the contractor, the provision of a cost-effective financing tool under the guaranteed payback assumption when recourse occurs, the introduction of a tool that improves project cash flows and reduces crediting procedures, and an alternative of financial risk transfer. The findings support that those construction contractors, who have lump-sum projects with fixed disbursements and fixed terms, adopting factoring to mitigating their financial burden is feasible.

The research findings may be limited regarding natures of construction projects and exogenous impacts. Uncertainties take place dependent on project characteristics so typical financial institutions are unlikely to issue credit approval for risky projects such as tunnel construction, marine construction, super-elevation construction, and underground works. Projects with design complexities, innovations, and extremely site conditions may also cripple the practicability of factoring. Exogenous impacts for construction projects (e.g., financial strength of parties, economic conditions, and political affairs) causing changes or impediments to the factoring practi-

cability may be considerable. The research findings may be not applicable to those projects encountering such impacts if significant.

Future work is suggested that the viewpoints of the other parties be considered and a more thorough theoretical structure be built. The relationship between the seller and his/her subcontractors and vendors can be discussed to construct a more comprehensive mechanism. The function may be altered for other cost drivers or other payment types such as advance payments, delay payments, and delay penalty. A deeper comparison between factoring and other financial methods could also be made. Such a comparison could facilitate discussion for a better financing environment. Achieving optimal factoring by combining above-mentioned options may be feasible and thus is recommended. How factoring affects project cash flow is also of interest. This impact may exist in the interrelationship between the corporation and other projects. Succeeding studies may consider other financial issues such as numerous projects in hand, value of future projects, credit arrangements with sub-contractors and material suppliers. A decision-making model using hybrid concepts of financing can be also established.

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RANGOVO SĄNAUDOS, STATYBŲ PROJEKTO GAUTINAS SUMAS PERDAVUS FAKTORINGO ĮMONEI

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Santrauka

Literatūros šaltiniai rodo, kad statybų projektuose apie 66 % lėšų gaunama iš finansų institucijų. Rangovams tenka didžiulė kapitalo sąnaudų našta, taigi visuomet pageidautina turėti finansinių alternatyvų kapitalo sąnaudoms mažinti. Šiuo tyrimu siekiama surasti, kaip matematiškai nustatyti rangovo sąnaudas, gautinas sumas perduodant pagal faktoringą, kuris yra komercinio finansavimo forma, kai įmonė savo gautinas sumas parduoda su tam tikra nuolaida. Taigi galima sakyti, kad faktoringo atveju rangovas savo gautinas sumas parduoda faktoriui – finansų institucijai, kuri teikia finansavimo, kreditų tvarkymo ir pinigų rinkimo paslaugas. Tačiau faktoringas ne itin naudojamas statybų projektams finansuoti. Įvertinama atitinkama literatūra, empiriniai pavyzdžiai ir su statybų sektoriumi nesusijusios faktoringo teorijos, nagrinėjamos bei integruojamos savybės, leidžiančios išvesti sąnaudų funkciją. Jos apima komisinius mokesčius, numatomą skolos kainą ir kredito stebėjimo sąnaudas. Atliekamas ir aptariamas atvejo tyrimas, siekiant parodyti faktoringo naudojimą statybų projekte ir susijusias sąnaudas. Pasitelkus tam tikras prielaidas, atspindinčias dažniausiai Taivane pasitaikančias finansines sąlygas, modeliavimo rezultatai rodo, kad statybų projekto atveju rangovo sąnaudos faktoringui be regreso teisės sudaro tik 0,8 proc. visų nagrinėto projekto sąnaudų, o tai gerokai mažiau už daugumą tradicinių finansavimo būdų. Be to, faktoringas duoda ir kitokios naudos: palengvina finansų tvarkymą, iškart pagerina pinigų srautus, padidina investicijų efektyvumą, leidžia išvengti papildomų paskolų procedūrų, pagerina kreditingumą ir perkelia finansinę riziką. Taigi faktoringas – išties tinkamas finansinis įrankis statybų projektams.

Reikšminiai žodžiai: faktoringas, gautinos sumos, sąnaudos, finansavimas, statybų projektas.

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