FINANCING CONTRACTORS IN DEVELOPING COUNTRIES: IMPACT OF MOBILIZATION ADVANCE PAYMENT

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ABSTRACT: Obtaining funds for executing work on contracts is a huge burden for construction contractors. In essence, project finance is required to bridge the time between expenditures and revenues. The Mobilization Advance is a monetary payment made by the client to the contractor for initial expenditure in respect of site mobilization, and a fair proportion of job overheads or preliminaries. Mobilization Advance Payment (MAP) reduces contractors' need for working capital. It is practised in few third world countries like Sri Lanka. However, very scant attention has been given to systematically study this topic. Therefore, this paper aim to analyze the pros and cons of mobilization advance payment as a financial mechanism, which has been practised for more than two decades in the Sri Lankan construction industry. The main objectives are to answer 'is mobilization advance payment necessary for the Sri Lankan construction industry?'; and 'what is the effect of mobilization advance payment on contractors cash flow'. To answer these questions, research was conducted using four case studies. The actual cash–in and cash-out data were obtained from the financial records of the contractors. Semi-structured interviews were conducted among four project participants and two head office based officers for each case study after analyzing the cash flow. In this context, this paper reports the findings of this research highlighting, important role that the mobilization advance payment plays within the typical construction context, positive effects of mobilization advance payment on contractor's cash flow and negative aspects of mobilization advance payment.

Keywords – Contractor financing, Mobilization advance payment, Contractor's cash flow, Working capital

1. INTRODUCTION

Difficulties in obtaining bank loans have been recognized as one of the major constraints on the development of small businesses in developing countries (Eyiah, 2001). The problem is no different for small contractors in developing countries (Eyiah, 2001). Larcher (1999 Cited Eyiah, 2001) has identified it as the severest among 18 most common problems constraining their development. Perera (1978) found that obtaining funds for executing work on contracts is a huge burden for construction contractors in Sri Lanka. Most of the time Sri Lankan contractors function with a low equity base (Sanmuganayagam, 1978). According to Eyiah and Cook (2003) contractors' effective participation in the industry, has been

affected by several constraints in Ghana. Lack of access to finance is arguably the most critical of these constraints. Eyiah (2001) found that contractors do not have sufficient collateral to obtain finances from commercial banks. In essence one of the most pressing problems of small and medium scale contractors is obtaining the 'working capital' required for a project.

Most common sources of financing for working capital in construction are:

1. trade credit
2. accrued expenses
3. differed income and
4. bank borrowing (Pandey, 1999)

The first three sources listed above are used to reduce contractor's need for working capital in the form of bank borrowing. Mobilization advance payment could be categorized under the 'differed income' source. In essence it is an advance payment made by the client for initial expenditure in respect of site mobilization and a fair proportion of job overheads and preliminaries.

Mobilization advance payment is an important mechanism used to overcome contactors' financial problems in developing countries. However, very scant attention has been given to systematically study this topic. Therefore, this paper aim to analyze the pros and cons of mobilization advance payment as a financial mechanism, which has been practiced for more than two decades in the Sri Lankan construction industry. The main objectives are to answer 'is mobilization advance payment necessary for the Sri Lankan construction industry?'; and 'what is the effect of mobilization advance payment on contractors cash flow'.

To answer these questions, research was conducted using four case studies. This paper reports the findings of this research highlighting:

1. important role that the mobilization advance payment plays within the typical construction context,
2. positive effects of mobilization advance payment on contractor's cash flow and
3. negative aspects of mobilization advance payment

2. WORKING CAPITAL FINANCE

From the inception of the construction project, the project manager is required to make numerous decisions that will determine the success or failure of the project both in accomplishment of physical and in monetary terms. One such decision is the working capital requirement for the successful completion of the project (Kumar, 2000). In the construction industry, working capital accounts for about 60% of total investment (Kumar, 2000). Working capital is 'capital available for conducting the day-to–day operations of a project (Pilcher, 1994). Every project needs adequate liquid resources to maintain day-to-day cash flow. Working capital finance is required to bridge the time between expenditures and

revenues (Hendrickson, 1998). It needs enough to pay wages and salaries as they fall due and enough to pay creditors if it is to keep its workforce and ensure its supplies. Maintaining adequate working capital is not just important in the short term. Sufficient liquidity must be maintained in order to ensure the survival of the business in the long term as well (Heinze and Westney, 1997). Working capital cycle is the period of time, which elapses between the point at which cash begins to be expended on the project and the collection of cash from client (Speed, 1997). Most common sources of financing for working capital in a typical construction project are discussed below.

2.1 Trade Credit

Trade credit refers to the credit that a contractor gets from suppliers of goods in the normal course of business. In practice, the contractor does not have to pay cash immediately for the purchases made. Particularly, small contractors are heavily dependent on trade credit as a source of finance since they find it difficult to raise funds from banks or other sources in the capital market. Trade credit is mostly an informal arrangement, and is granted on an *open account* basis. A supplier sends goods to the contractor on credit, which the contractor accepts, and thus, in effect, agrees to pay the amount due on a future date. Trade credit is a *spontaneous source of financing.*

The major advantages of trade credit are as follows:

1. *Easy availability* - Unlike other sources of finance, trade credit is relatively easy to obtain.
2. *Flexibility*- Trade credit grows with the growth in firm's sales.
3. *Informality*- Trade credit is an informal, spontaneous source of finance.

Trade credit appears to be cost free since it does not involve *explicit* interest charges. But in practice, it involves i*mplicit cost*.

2.2 Accrued Expenses

Accrued expenses is another spontaneous source of short term financing. Accrued expenses are more automatic source since, by definition they permit the contractor to receive services before paying for them. Thus they represent spontaneous, interest-free sources of financing. The most important components of accruals are wages and salaries, sub contractor payments, taxes and interest.

2.3 Differed Income

Deferred income represents funds received by the contractor for the services he has agreed to supply in the future. These receipts increase the contractor's liquidity in the form of cash. Therefore, this constitutes an important source of financing. Advance payment made by the client constitutes the main item of deferred income. It is the theme of this paper and discussed in detail in later sections.

2.4 Bank Borrowing

Banks are the main institutional sources of working capital finance. After trade credit, bank credit is the most important source of financing working capital requirements. Credit limit is the maximum funds, which a contractor can obtain from the banking system. In practice banks do not lend 100 per cent of the credit limit; they deduct *margin money.* Margin requirement is based on the principle of conservatism and is meant to ensure security. A contractor can draw funds in the form of: *(a)* overdraft, *(b)* cash credit, *(c)* purchase or discounting of bills, (d) letter of credit, and (e) working capital loans. Banks generally do not provide working capital finance without adequate security.

Following are the modes of security, which a bank may require:

1. Hypothecation
2. Pledge
3. Mortgage
4. Lien

This study focuses on the 'differed income' method of working capital financing and deal with mobilization advance payments. The following section introduces the mobilization advance payment as practised in Sri Lanka.

3. MOBILIZATION ADVANCE PAYMENT (MAP)

The Mobilization advance is a monetary payment made by the client to the contractor for initial expenditure in respect of site mobilization, and a fair proportion of job overheads or preliminaries. The concept of MAP came in to being with the objective of overcoming financial difficulties of small and medium scale contractors in the Sri Lankan industry. MAP normally constitutes 20% of initial contract price. This amount is paid to the contractor before any physical work being executed. Sri Lanka is one of the few countries in the world that grants mobilization advance to construction contractors. MAP has taken root in the Sri Lankan construction industry in such a way that it is now regarded as a must. It has got institutionalized in the construction practise of Sri Lanka.

According to Eyiah (2001) advancement of an amount of money to contractors after they have won a contract even before a project has begun is a more positive approach, with regard to reducing the need to lobby working capital. The proponents of MAP argue that it is a win-win option for clients and contractors due to its positive impact on latter's cash flow. The opponents' main weapon is the unfortunate misuse of MAP at the hands of contractors. They argue that MAP was promoted by the World Bank as a temporary measure to develop small and medium scale contractors in the early 1980's (ICTAD, 1988). Now its mission has been accomplished. The continuing practise has given an undue advantage for the contractors and act detriment to the clients' interests. They argue that there are numerous forums to protect the contractors' interest but none for the client. Some contractors failed to fulfill their contract obligation after receiving MAP (Eyiah, 2001). Even though MAP has certain advantages, it is no secret that the way it is used by contractors has created suspicion among clients. MAP is certainly a controversial topic among the construction practitioners. However, very scant attention has been given to systematically study this important topic.

The MAP has a very long history in Sri Lanka. Time to time the amount varied from 10% to 30% of total contract sum. A survey conducted in 1982 on Construction Industry in Asia found that there is a practise in Sri Lanka to help contractors by providing them with a cash advance of 20% of the contract sum against a bank guarantee (Nagabushan, 1982). As time passed local contractors argued that 20% of MAP is not adequate due to various reasons. They argued that the minimum working capital required to own civil engineering projects would not be less than 35% of the value of contract and in building projects it is more than whatever provided at that time (Ganesan, 1991). In 1988 the government has approved the adaptation of 30% of MAP as a result of a cabinet memorandum. It was recommended to provide a MAP of 20% at inception and a subsequent advance of 10% in two stages of 5% each of the contract sum. Suitable amendments to clause 60(1) of the Conditions of Contract for Works of Building and Civil Engineering Sri Lanka (ICTAD, 1989) were made to incorporate the change. Later this condition was again revised through the 'Guidelines on Government Tender Procedure (1997)' and consequently MAP was limited to 20% of the contract sum. Amendments to conditions of contract were incorporated in the first edition of the Standard Bidding Document (ICTAD, 2002). At present this document governs the administration of MAP. According to Clause 51 of Standard Bidding Document (ICTAD, 2002), MAP is considered as an interest free loan. The employer shall make an advance payment to the contractor within 14 days after furnishing an unconditional guarantee. It shall be a bank guarantee or any other acceptable guarantee by the employer and it is valid until the MAP has been repaid. The amount of the guarantee shall be progressively reduced when it is repaid by the contractor. Contractor should use the money specifically for the project to pay for equipment, plant and material mobilization expenses and shall

submit copies of invoices or other proof to the Engineer. MAP is repaid by deducting proportionate amounts from payments due to the contractor. The MAP should be fully repaid when the total certified value of work reaches 90% of the initial contract price. It is important to note that, MAP is not only provided for contractors engaged in public works, but also for works of private clients.

Practice of advance payment until early 1980's has been reported from Saudi Arabia (Stevens and Al-Dulaijan, 1989). Saudi Arabian government provided advance payment of 20% to the contractors involved in public works until 1982 without interest or fee. The amount was reduced to 10% after 1982 and the practice has been shelved with the introduction of commercial banks into the financial system of the country (Stevens and Al-Dulaijan, 1989).

4. RESEARCH METHODOLOGY

This research was conducted using four case studies. In general, case studies are the preferred research strategy when the focus is on a contemporary phenomenon within real-life context. As with this research question, it is often used to pursue an explanatory purpose.

Case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context, when the boundaries between phenomenon and context are not clearly evident, and in which multiple sources of evidence are used (Yin, 1984). The unit of analysis of the research design is a construction project. Table 1 provides a brief profile of the four case studies. All four case studies were building projects implemented during 2002-2004 period. The actual cash–in and cash-out data were obtained from the financial records of the contractors. Interim payment bills, final accounts and production records were analyzed in detail to obtain the cash flows.

Semi-structured interviews were conducted among four project participants and two head office based officers for each case study after analyzing the cash flow. Among the six respondents, the Project Manager, Quantity Surveyor and the Accountant were purposely included where as the other three were randomly selected. The purpose of the interview is to discuss the cash flow diagrams in detail to recap how funds were used in the project. These discussions helped the researcher to re-construct the case from different perspectives, as multiple evidence is the basis of case study research.

Table 1. Profile of case studies

Case study	Contract sum (Rs million)	Contract period (Months)	MAP	Recovery of MAP
A	35.5	8	20% of initial contract sum amounting to Rs. 6.9 million	Started from 30% of the work completed (from the third to the sixth interim payment)
B	114.6	11	20% of initial contract sum amounting to Rs. 21.6 million	23 % of the value of work executed from the first interim payment and continued up to the sixth payment.
C	26.2	7	20 % of the contract sum excluding provisional sums and contingencies amounting to Rs.3.9 million	25 % of the value of work executed from the first interim payment and continued up to the seventh payment.
D	19.3	8	20% of initial contract sum amounting to Rs. 2.5 million	From the first payment, to the sixth payment.

5. EFFECT OF MOBILIZATION ADVANCE PAYMENT ON CONTRACTOR'S CASH FLOW

When contractors obtained a 20% mobilization advance at the beginning of the project, they had less financial problems as given in Figures 1-4. In case study A, the contractor had excess cash until one fourth of the value of work completed. He had some financial difficulty between 50 - 90% of the work. If MAP is not available, he would have faced financial difficulties from inception. In case study B, the contractor had excess cash until 40% of work completed. He had difficulties afterwards up to 80% of the work. The scenario without MAP would have been similar to case study A. In case study C, the contractor had excess cash up to 30% of the work. In case study D, the contractor had excess cash up to 15% of the work. Similar to the other two cases, if MAP was not available these two projects also would have faced financial difficulties from the beginning.

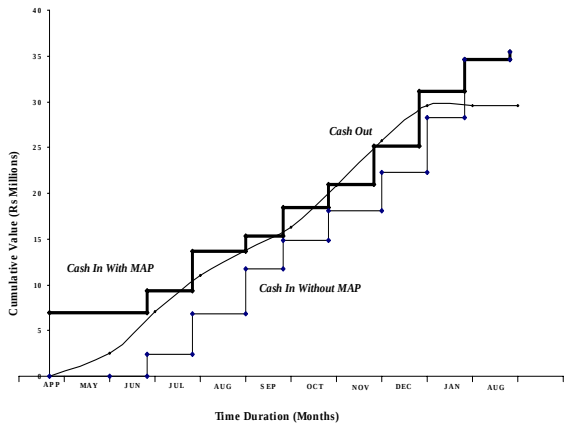

Fig. 1. Cash in and cash out curves for case study A

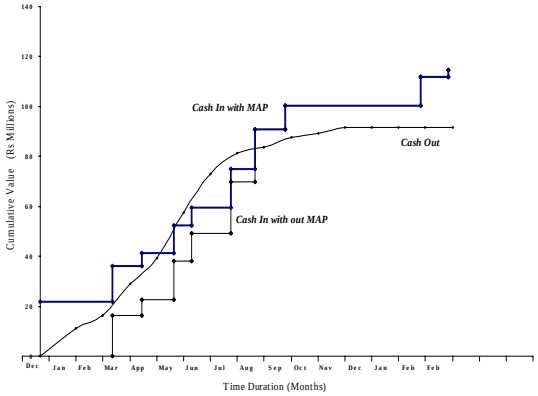

Fig. 2. Cash in and cash out curves for case study B

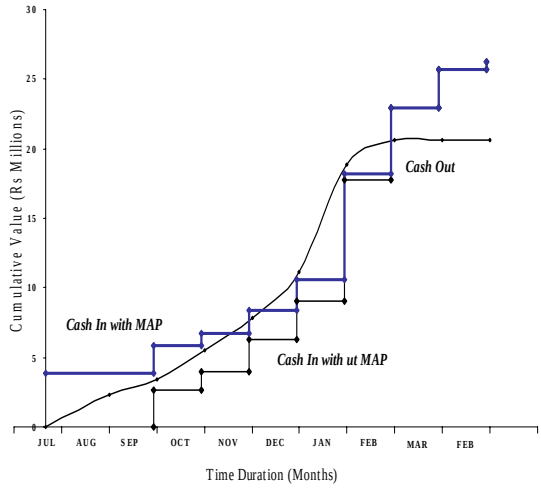

Fig. 3. Cash in and cash out curves for case study C

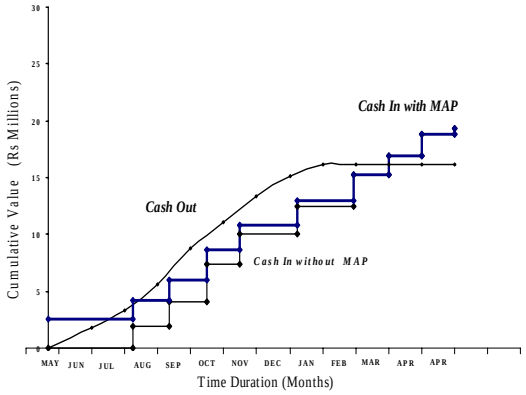

Fig. 4. Cash in and cash out curves for case study D

Based on the financial data of the four case studies, the contractor's total overdraft requirement were calculated and presented in Table 2. It is clear from Table 2 that provision of MAP reduces the contractors' overdraft requirement considerably.

Case studies revealed that MAP always had a positive impact on the working capital of the contractors. Working capital comprises the liquid or near-liquid assets to lubricate the daily transactions of the project. It is represented by the difference between current assets and current liabilities. When sufficient amount of MAP is available it will often assist in the continuous flow of work on the site. Figures 5-8 clearly depicts the working capital situation with and without MAP for the case study projects.

Table 2. Overdraft requirements of the contractors

Case study	With MAP		Without MAP	
	Amount (Rs)	% of Contract sum	Amount (Rs)	% of Contract sum
A	4,857,858.26	13.7 %	12,643,859.56	35.6 %
B	20,349,483.66	17.8 %	32,489,463.41	28.4 %
C	8,386,359.82	32.0 %	10,191,838.03	39.0 %
D	4,804,996.94	24.9 %	6,150,273.58	31.8 %

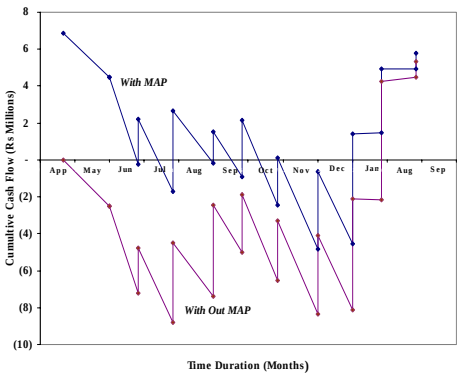

Fig. 5. Working capital requirement for case study A

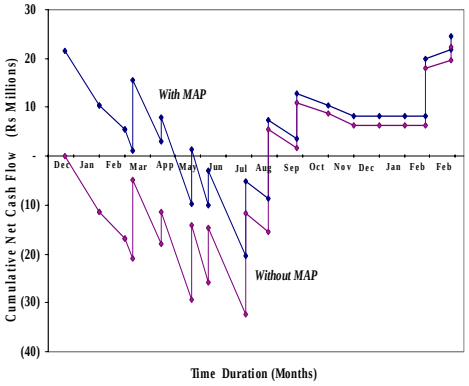

Fig.6.Working capital requirement for case study B

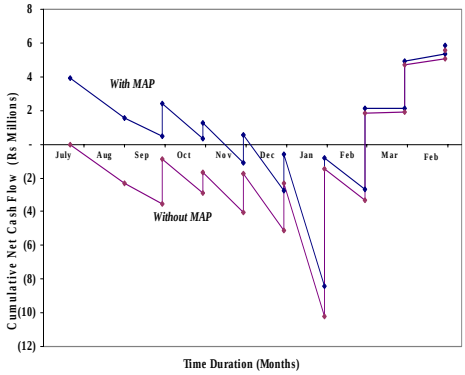

Fig. 7 Working capital requirement for case study C

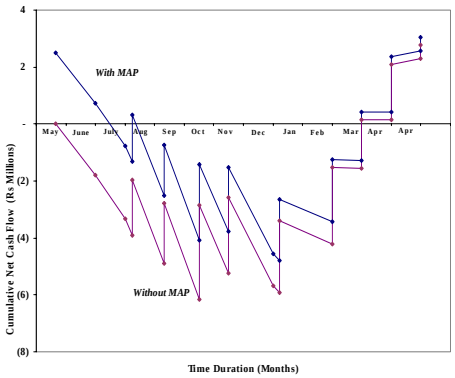

Fig. 8 Working capital requirement for case study D

6. POSITIVE & NEGATIVE ASPECTS OF MOBILIZATION ADVANCE PAYMENT

The positive and negative aspects of providing MAP to the contractor inferred through the four case studies and two questionnaire surveys are given below.

6.1 Positive Aspects

1) Financial assistance

Most of the medium and small-scale contractors and even large-scale contractors do not have sufficient working capital to finance construction projects. The paid up capital of such companies are invariably very low. Financing a construction project is a major undertaking for a construction firm. If it has to work parallely on several projects, it would be an impossible task. On the other hand the options for borrowing capital by contractors' are relatively limited. Access to financial facilities from banks is costly due to very high interest rates and unreasonable collateral. For small or medium scale projects, over draft facilities are the most common form of financing. Therefore, MAP is a financial assistance provided by the client to ease the burden on the contractor. Moreover, the client usually has a better credit rating and can secure loans at a lower borrowing rate. This is particularly true for large-scale construction projects with long durations for which financing costs and capital requirements are high. Therefore, through MAP the overall cost of financing get reduced.

2) Interest free loan

MAP is an interest free loan given by the client to enhance contractors' working capital. Case studies have shown that it has a high impact on the contractors' working capital.

3) Repayment relates to the value of work executed
If a contractor borrows money from a bank he has to pay it irrespective of the value of work completed. However, the repayment of MAP is proportionate to the amount of work completed.

4) Informal security given by the client
The practice of client providing a 'Payment Guarantee' is not popular in Sri Lanka. Therefore, MAP indirectly acts as a guarantee for prompt payment by client.

5) Motivator
MAP motivates the contractor at different stages of the project life cycle. Initially it motivates the contractor to bid for projects. Then at inception, the contractor is motivated to commence work at the earliest possible date. It also motivates the contractor to complete a project on time and with good quality.

6.2 Negative Aspects

1) Misuse of MAP
Case studies have revealed that misuse of MAP is a serious issue. Contractors use the excess money on other projects and even on non-construction activities.

2) Difficulties in obtaining guarantee
In order to procure MAP, the contractor has to provide an unconditional on-demand guarantee from a bank. This is purely a financial guarantee as it is in lieu of the funds provided by the client. Small and medium scale contractors do not have enough funds to bestow a guarantee like that. The Construction Guarantee Fund operated by the government has taken some steps to ease the burden of obtaining guarantees.

3) Cost to the client
Even though the MAP is an interest free loan, there is an opportunity cost for the client. This aspect is very often overlooked by the practitioners.

4) Additional work for the client
In order to prevent the misuse of advance payment, the client has to set up a monitoring system. Once the contractor submits the records it is to be verified by the clients' representative. It is an additional burden for the clients' representative.

7. CONCLUSIONS

From the foregoing sections it is clear that MAP plays an important role in the Sri Lankan construction industry. All four case studies clearly depict the effect of MAP on contractor's cash flow. If contractors are not provided MAP, their overdraft requirements tend to be much higher. In addition, the net cash flow tend to be negative during most part of the project. This results in working capital deficiencies until the completion of substantial amount of work. One of the major negative aspects of MAP is its misuse by the contractors. If it is not misused, it creates a win-win situation for the contractor and the client. From the foregoing argument it can be concluded that MAP by itself is good for the industry. Its use and misuse has to be regulated by the client through proper contract administration.

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