

محاضرات الاستاذ/ عماد حربى

الادارة المالية وتمويل المشروعات

ابريل ١٩٩٣



Urwick
Management
Centre

المقاولون العرب
عثمان احمد عثمان وشركاه
The Arab Contractors
OSMAN AHMED OSMAN & Co.



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CONTRACT FINANCE

I. INTRODUCTION

The purpose of this note is to clarify some financial aspects of contract management and thus help to improve understanding between contract staff and financial staff.

The note covers contract budgeting, cash flow forecasting and the use of company funds. Each aspect is discussed briefly. Fuller treatment will be found in financial text books.

I. THE MEANING OF "FINANCE"

Most businesses have to pay for the things they need for producing goods or services before their customers pay them. The money needed to bridge this gap is known as "finance".

Financial control aims to ensure, firstly, that adequate supplies of cash will be available at all times so that the company will remain solvent and, secondly, that financial resources are used economically and in the most profitable way.

The key to this lies in knowing:

1. the time lag between earning an entitlement to be paid for work done, and actually receiving the money due, and
2. the time lag between being committed to make a payment and actually paying.

Financial control is achieved with the aid of budgets and cash flow forecasts, and since in contracting a large part of a company's expenditure and virtually all its income passes through its contracts, control at contract level is very important.

III. BUDGETING FROM THE PROJECT PLAN

A Budget is a conversion of the project plan into money. If the size of the project justifies it, a budget may be prepared at the tender stage and later modified to suit changes as they occur at award and during execution.

Only planned expenditure commitments and income entitlements are shown, period by period, in the budget, and not cash payments or receipts.

A. COMMITMENTS AND ENTITLEMENTS

The work planned to be done in each period calls for resources of labour, staff, subcontractors, materials, plant and equipment to be available at specified times. These lead, in turn, to a commitment to pay for them, the amount and timing of the commitment depending on the conditions of employment or purchase. Commitment often coincides with arrival on site but under certain conditions may be some other date, such as that of placing the order.

Similarly, work that is planned to be completed each period, materials on site or goods in manufacturers' stores, give rise to entitlements to receive payment under the terms of the contract.

Appendix I shows part of a typical project budget.

B. CONTRIBUTION

An important purpose of the budget is to enable management to foresee the commitments and entitlements which will arise if the work goes according to plan.

As a result the net income, that is the difference between entitlement and commitment, can be forecast period by period. This net income is the "contribution", which the project is expected to make towards central expenditure and profit and is a measure of project profitability.

C. CHANGES AND VARIATIONS

Budgets should help management to see the financial effects of change and give an up-to-date picture of the final outcome of the project. This is particularly necessary in construction, where changes in timing, method, quantity or price are the rule rather than the exception.

It is important therefore to structure budgets so that selective modification can be readily made. This should be done, for example, by separating items of expenditure (or income) according to the pattern they follow, such as:

- | | |
|--------------------------|-------------------------------|
| - "once only" items | (eg. setting up site offices) |
| - time-related items | (eg. site supervision) |
| - quantity-related items | (eg. materials) |

To assist in cash flow forecasting, as described later, it is also helpful to keep separate such items as labour or materials where the time lag between commitment and payment differs.

The easier the process of updating and altering budgets, the more likely they are to be kept up-to-date.

D. CONTROL

The accuracy and sufficiency of budgets should be the responsibility of the line managers carrying out the work and should therefore be prepared so as to correspond with areas of management responsibility and authority. They thus become a basis for holding managers to account.

When a company has up-to-date budgets the overall financial position of the business is foreseeable and can be monitored and managed. At the same time the performance of each project and department can be measured separately against its own budget.

IV. FORECASTING CASH FLOW

A Cash Flow Forecast is an estimate of cash payments and receipts flowing out of and into the project. It is derived directly from the project budget.

A. TIMING OF PAYMENTS AND RECEIPTS

The time lag between a commitment to spend and the actual payment will vary according to the nature of the expense. For example, the time lag is one to two weeks on labour, up to a month on salaries and six weeks or more on materials.

To forecast the time when money is expected to flow out as cash payments, each type of expenditure must be considered separately. Calculating and totalling these amounts shows the cash going out period by period.

Similarly, it is possible to forecast the cash income which should be received in each period. In each case the effects of special advances, discounts or retentions must be allowed for.

A forecast of cash flow is thus the result of tabulating the answers to two questions, applied to each type of expenditure or income, namely:

"When will cash flow out? "
and "When will cash flow in? "

B. USES OF CASH FLOW FORECASTS

The main uses of a contract cash flow forecast are as follows:

1. At the pre-tender stage it enables management to estimate the finance required and decide whether this is acceptable.
2. It enables project and company management to foresee the effect on the cash position of changes during the execution of the contract, thus leading to better direct control on the contract and better company cash management.
3. It is a means of building experience of cash flow patterns for future use in pre-tender estimating.

FINANCE EMPLOYED ON A PROJECT

The amount of finance "tied-up" in a project will vary from period to period.

At any point in time, a contractor is interested in two separate amounts:

1. The "Net" Financial Lock-up

The difference between the total cash inflow and outflow up to any point in the contract represents the amount of the contractor's own finance tied up and is known as the "net financial lock-up". This is indicated in Appendix II by the vertical line BC.

2. The "Gross" Financial Lock-up

At any such point, there may be commitments to pay for materials, labour and services which have not yet figured in the cash outflow.

These constitute additional finance provided by suppliers and other creditors which, together with the contractor's own finance make up the "gross financial lock-up".

This is indicated in Appendix II by the vertical line AC.

The steps in calculating net financial lock-up at any time are as follows:

1. Calculate the total cost of all labour, materials, plant and services chargeable to the project to date.
2. Deduct the total cash received to date. This gives the gross financial lock-up.
3. Deduct the total amount due but unpaid to employees, outside suppliers and subcontractors. This gives the net amount of the contractor's own finance tied up in the project.

THE ROLE OF PROJECT STAFF

Project and contract staff have an important role in the overall management of the company's financial resources:

1. Improving the use of finance on the project

The profitability of a project, just as of a company, depends on the relationship between profit and the finance used in producing it. Two key tasks in project management are maximising contribution and minimising the net finance tied up and, apart from any direct saving in interest charges, there may be as much scope for improving profitability by using less finance as by increasing the contribution.

Some ways of reducing the net finance tied up in a project are given in Appendix III.

2. The Need for Teamwork

Financial control must be flexible and not rigid, so that when individual managers see opportunities or threats, the financial implications and their possible effect on other company activities can be quickly assessed.

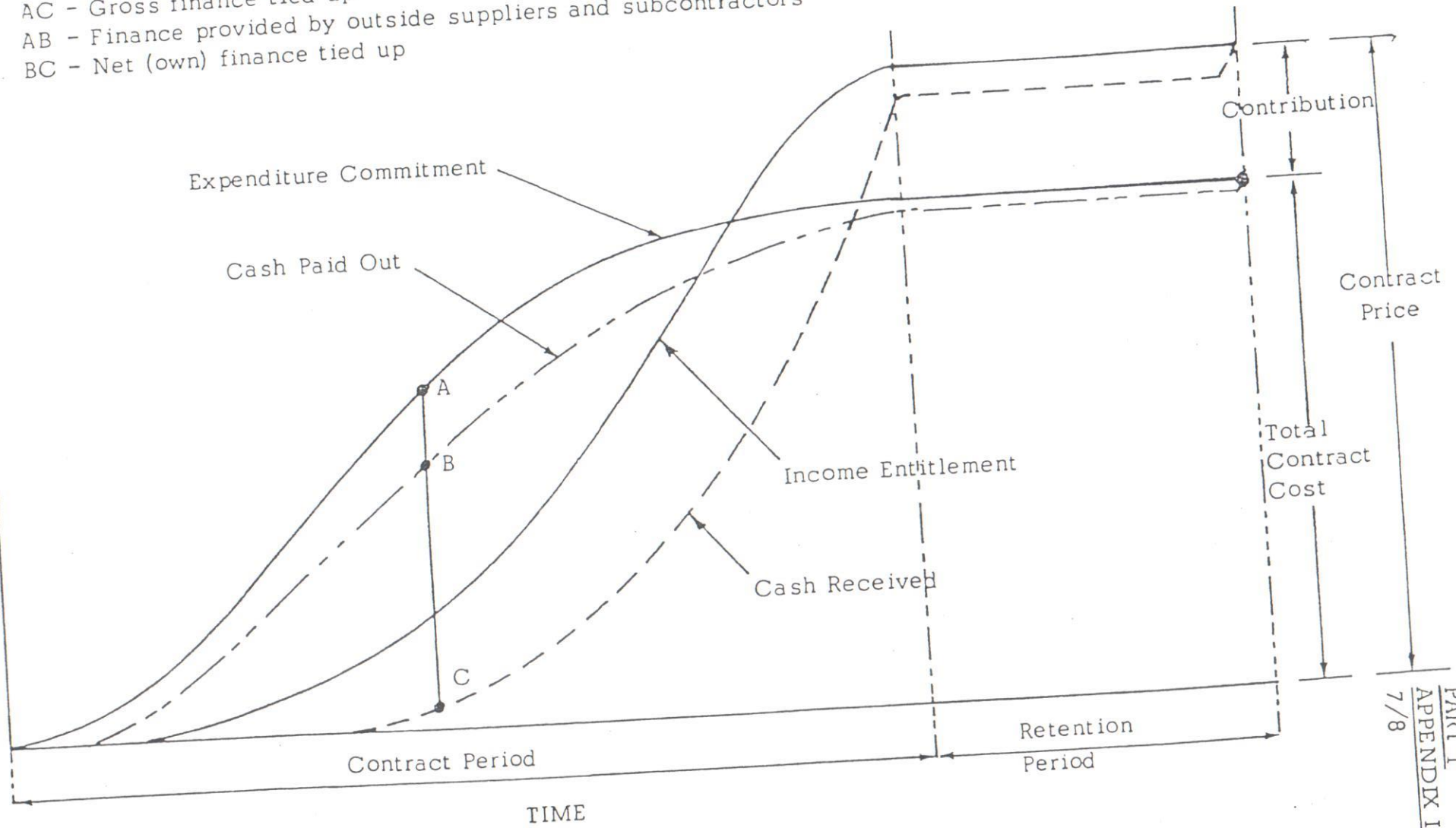
Normally, the financial calculations and procedures are the responsibility of the accountants but the decisions which affect the flow of cash and the use of funds are made by technical, commercial and operating staff. It is essential that both sides work together on problems, each learning and understanding the others' objectives and needs.

EXAMPLES FROM A PROJECT BUDGET

	Items	Totals £000	1977			
			Aug	Sept	Oct	Nov
Code	Number of weeks in period	104	4	4	5	4
	<u>EXPENDITURE</u>					
A.12	<u>Erect site offices</u>	20	10	10		
	Labour	25	12	10	3	
	Materials	5	3	2		
	Plant					
.18	<u>Site establishment</u>	85	2	3	4	4
	Engineering and Supervisory staff	70	2	2	3	3
	Admin staff	45	1	1	1	1
	General labour	8	-	-	1	-
	Heating and lighting	25	10	1	1	1
	Office expenses					
S.5	<u>Construct Tank B</u>	30	-	-	15	3
	Formwork materials	105	-	-	10	12
	Labour	85	-	-	10	15
	Ready mixed concrete	25	-	10	15	-
	Reinforcement	12	-	2	2	2
	Plant hire	80	-	-	-	40
	Steelwork subcontractor	7	-	-	-	-
	Painting subcontractor					
	Total Committed Expenditure	£ 1940	45	83	158	232
	<u>INCOME</u>					
	<u>Preliminaries</u>	80	20	30	30	-
	Clear and set up site	30	5	25	-	-
	Offices for Resident Engineer,	275	12	12	-	-
	Recurring items					
	<u>Tank B</u>	300	-	15	35	40
	Foundations and walls	100	-	-	-	50
	Steelwork	10	-	-	-	-
	Painting	(218)	(4)	(7)	(15)	(21)
	Retentions - deductions	218	-	-	-	-
	- repayments					
	Total Income Entitlement	£ 2183	33	68	140	200

PERIOD BY PERIOD THE EXPENDITURE AND INCOME BUDGETS, CASH FLOW AND FINANCE TIED UP ON A CONTRACT

AC - Gross finance tied up
 AB - Finance provided by outside suppliers and subcontractors
 BC - Net (own) finance tied up



SOME WAYS OF REDUCING FINANCE TIED UP IN A PROJECT

On the Income side

1. Securing advance payments from customer.
2. Shortening intervals between interim payments for work done.
3. Optimising project duration in relation to finance employed.
4. Loading more contribution on work to be done early in the contract.
5. Completing work items quickly so as to qualify for payment.
6. Measuring the work fully up to regular payment dates.
7. Prompt invoicing of valuations for payment.
8. Prompt invoicing of retention releases.
9. Expediting agreement on claims.
10. Collecting promptly all amounts outstanding from customers.

On the Expenditure side

1. Negotiating longer credit terms with suppliers (but considering possible loss of discounts).
2. Not calling forward materials, etc, too early.
3. Disposing promptly of surplus plant and materials.
4. Using subcontractors and hired plant.
5. Holding retentions on subcontractors. .

Budget الموازنة التخطيطية

القيمة بالالف جنيه

الشهر	١	٢	٣	٤	٥	٦
اجمالي مستخلصات الاعمال المستهدفة شهريا .	١٠	٥٠	٥٥	٥٠	٥٥	١٨
المصروفات :						
— العماله .	٣	١٢	٨	١٠	١٠	١٥
الخدمات :						
اسمحت	٥	١٥	١٠	١٥	١٠	٥
قطع غيار (القيمة بعد الخصم)	٥	—	٨	—	٢	—
ادوات محيه	—	١٠	—	—	٥	—
— ايجار المعدات	١	٤	٦	١٠	١٢	١٤
— مقاول باطن معين من قبل العميل	—	٢	٢	٧	١٠	٥
— مقاول باطن خاص بالشروع .	—	١	٨	٢	٦	—
— محاريف ادارة الموقع .	١	٢	٢	٢	٢	٢

الشروط المالية الخاصة بالمشروع :

١- مستخلصات العملاء تقدم للعميل في الاسبوع الاول من الشهر التالي ويحصل في الشهر الثالث .

٢- التأمين المحجوز ١٠ % لكلا من العملاء ومقاولي الباطن التأمين للمشروع ومقاولي الباطن المفروضين العميل لا يخصم من مستخلصاتهم أى تأمين .

٣- الاحرار

• تدفع شهريا

٤- الخامات

• تم الاتفاق مع مورد الاسمنت على توريد الكمية المطلوبة لفترة الموازنة التخطيطية على مبرتين متساويتين احدهما في يناير والاخرى في ابريل على أن يتم الدفع عند الاستلام .

• تم الاتفاق مع مورد قطع غيار أن يتم الدفع نقدا في نفس شهر التوريد وفي حالة عدم السداد يخسر المشروع خصم تعجيل الدفع وقدره ٥ % .
• بالنسبة لمورد الادوات الصحية يتم الدفع عند الاستلام طبقا لما هو وارد بالموازنة .

٥- المعدات

• تدفع القيمة الاجارية شهريا

٦- مصاريف ادارة الموقع

• المرتبات والاجور غير المباشرة تدفع شهريا

٧- مقاول الباطن الخاص

• يدفع له في نهاية الشهر الثالث من بعد الشهر الخاص بمستخلصه الجارى

٨- مقاول الباطن الممنوع من قبل العميل

• يدفع له في خلال ايام من تحصيل مستخلص العميل لنفس الشهر

التفويض الفعلى والعوامل الاخرى التى تؤثر فى المدفوعات

(١) الشهر الاول :

- حاصر الكميات فشل فى تقدير قيمة المستخلص للتحصيل فى الشهر الثالث .
- طلب مورد الاسمنت دفع اجمالى المبلغ لكميه الاسمنت المطلوبه
- للسته شهور .

(٢) الشهر الثانى :

- لم تتعدى الاعمال المنفذه ٤٢٠٠٠ ألف جنيه .
- قام مورد الادوات الصحيه بتوريد الكميه المتعاقد عليها خلال الستة شهور وقد تم سداد اجمالى المبلغ عند الاستلام .

(٣) الشهر الثالث :

- نظرا لسوء التربه والاحوال الجويه ثم تنفيذ ٦٠ % من المخطط وظلت
- الالتزامات كما هى مخططة .

(٤) الشهر الرابع :

- المنفذ مثل المخطط .

(٥) الشهر الخامس :

- زادت العماله بمبلغ ٢٠٠٠ ألف جنيه .
- أمكن تنفيذ ٦٠٠٠ ألف جنيه .
- مقالو الباطن الخاص ببناء على حاجته للاموال لدفع الضرائب طلب ان يدفع له مستخلص الشهر الثالث والرابع فى هذا الشهر ومستخلص هذا الشهر
- يدفع فى الشهر السادس .
- لم يدفع لمورد قطع الغيار وتم الاتفاق ان يسدد له فى الشهر التالى .

(٦) الشهر السادس :

- — زادت العمال ٢٠٠٠ ألف جنيه .
- — وسبب الاحوال الجيده والحوافز أمكن تنفيذ ٥٨٠٠٠ ألف جنيه .

المحاور

- ١- حساب التدفق الداخلى والخارج شهر بشهر مخطط وفعلى .
- ٢- حساب صافى التدفق شهريا والمجموع مخطط وفعلى .
- ٣- انقائده المدفوعه شهريا . (الفائده سوريا ٠/٠١٢) .

[illegible]

التدفق النقدي مخطط وقلم

الشهر	١		٢		٣		٤		٥		٦		متأخر	
	م	ف	م	ف	م	ف	م	ف	م	ف	م	ف	م	ف
إيداعات														
عمد	٢	٢	١٢	١٢	٨	٨	١٠	١٠	١٠	١٢	١٥	١٧		
أسمنت	٢٠	٦٠	—	—	—	—	٢٠	—	—	—	—	—		
قطع غيار	٥	٥	—	—	٨	٨	—	—	٢	—	—	٢١		
أدوات صحيه	—	—	١٠	١٥	—	—	—	—	٥	—	—	—		
معدات	١	١	٤	٤	٦	٦	١٠	١٠	١٢	١٢	١٤	١٤		
مقاول باطن معين من قبل العميل							٢	٢	٢	٢	٧	٧	١٥	١٥
مقاول باطن خامي بالمشروع									٩	٩٩	٧٢	٤٥	٨٩	١٧٧
مصاريف اداريه	١	١	٢	٢	٢	٢	٢	٢	٢	٢	٢	٢		
اجمالي التدفق الخارج (المدفوعات)	٤٠	٧٠	٢٨	٢٢	٢٤	٢٤	٥٤	٢٤	٢٢٩	٢٧٩	٤٥٢	٤٧٥	٢٢٩	١٦٧
اجمالي التدفق الداخل (انفيوضات)	—	—	—	—	٩	—	٤٥	٥١٢	٤٩٠٥	٢٩٧	٤٥	٤٥	١١٩	١٢٢
صافي التدفق شهريا	-٤٠	-٧٠	-٢٨	-٢٢	-١٥	-٢٤	-٩	+٢٧٢	+١٥٦	-٨٢	-٢٢	-٢٥	+٩٥٦	١١٥,٢
مجمع صافي التدفق	-٤٠	-٧٠	-٦٨	-١٠٣	-٨٢	-١٢٧	-٩٢	-٩٩٧	-٧٦٤	-١٠٧٩	-٧٦٦	-١١٠٤	+١٩	+٤٩
إفائده ١٪ شهريا	٤٠	٧٠	٦٨	١٠٣	٨٢	١٢٧	٩٢	١	٧٧	١٠٨	٧٧	١١١		