

PROJECT PLANNING, MONITORING AND CONTROL

CASH-FLOW FORECAST ANALYSIS



CASH FLOW FORECAST

Useful for:

- Negotiating banking facilities
- Anticipating cash shortages
- Aid the financial control of contracts
- Avoid “overtrading”

It is not sure exactly
It needs to be updated

Cash flows between receiving payment and paying creditors
can mean the difference between insolvency and survival



CASH FLOW FORECAST

Cash out ↔ Cash in

Cash out

Cost of works

- Materials
- Salaries
- Equipment

Cash in

Payments

- Cost of works
- Profit (8%-10%)
- Retention (3%-5%)

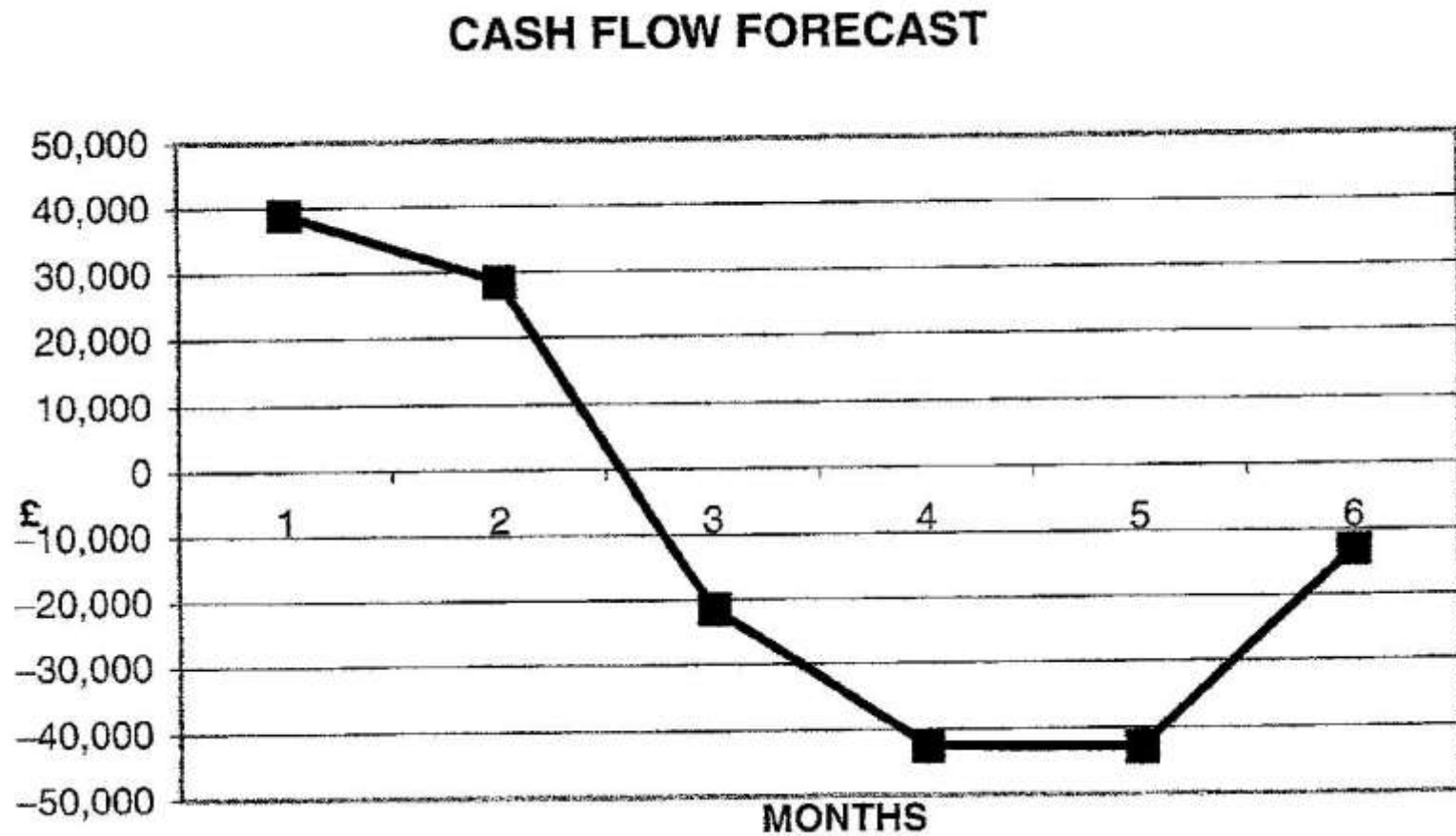
**CASH FLOW FORECAST**

EXAMPLE. Expected cash in and out in a six-month period.

	JAN	FEB	MAR	APRIL	MAY	JUNE
CASH IN						
CONTRACT A	100 000	100 000	50 000			
CONTRACT B	50 000	50 000	60 000	100 000	120 000	100 000
CONTRACT C			50 000	100 000	150 000	150 000
CONTRACT D				50 000	100 000	200 000
TOTAL CASH IN	150 000	150 000	160 000	250 000	370 000	450 000
CASH OUT						
SALARIES	20 000	20 000	20 000	20 000	20 000	20 000
RENT	1000			1000		
TELEPHONE		500			500	
MATERIALS	40 000	60 000	90 000	150 000	200 000	200 000
SUBCONTRACTORS	50 000	80 000	100 000	100 000	150 000	200 000
TOTAL CASH OUT	111 000	160 500	210 000	271 000	370 500	420 000
NET CASH FLOW	39 000	-10 500	-50 000	-21 000	-500	30 000
CUM CASH FLOW	39 000	28 500	-21 500	-42 500	-43 000	-13 000



CASH FLOW FORECAST





CASH FLOW FORECAST FOR ONE PROJECT

APPROXIMATION TO CASH FLOW FORECAST FOR ONE PROJECT

3 Different techniques:

- The S curve
- Cumulative percentage value
- Using the bar chart programme

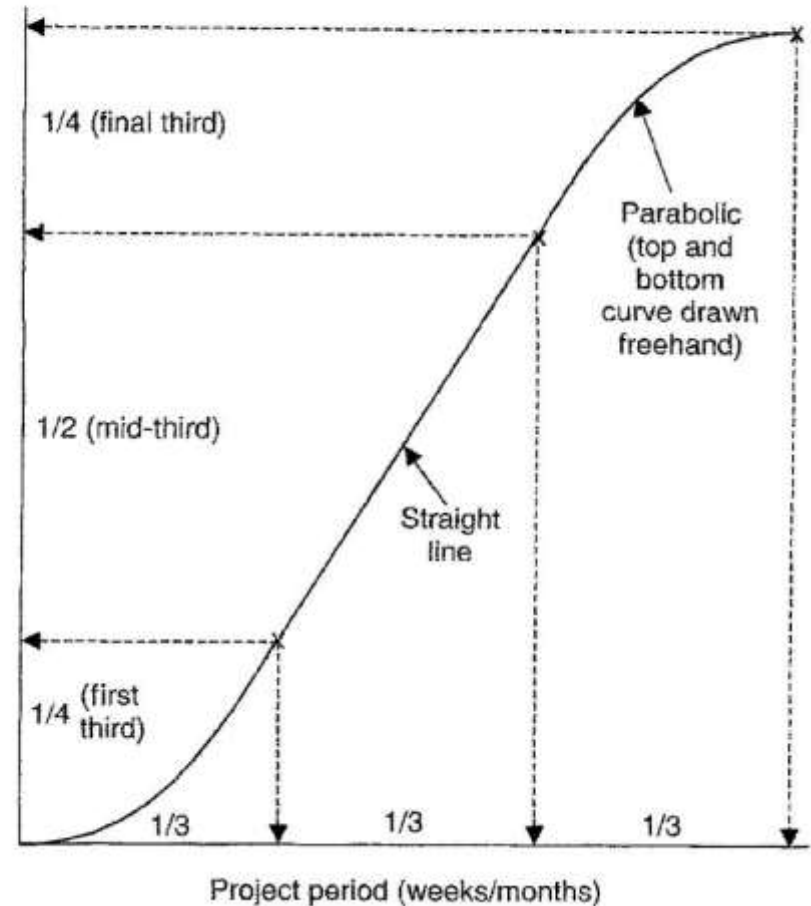


CASH FLOW FORECAST FOR ONE PROJECT

The S Curve

S-CURVE APPROXIMATION 1/4–1/3 RULE

Project
value
(£000)



1/4 value expended in first 1/3 of project period
1/2 value expended in middle 1/3
1/4 value expended in final 1/3

CASH FLOW FORECAST FOR ONE PROJECT

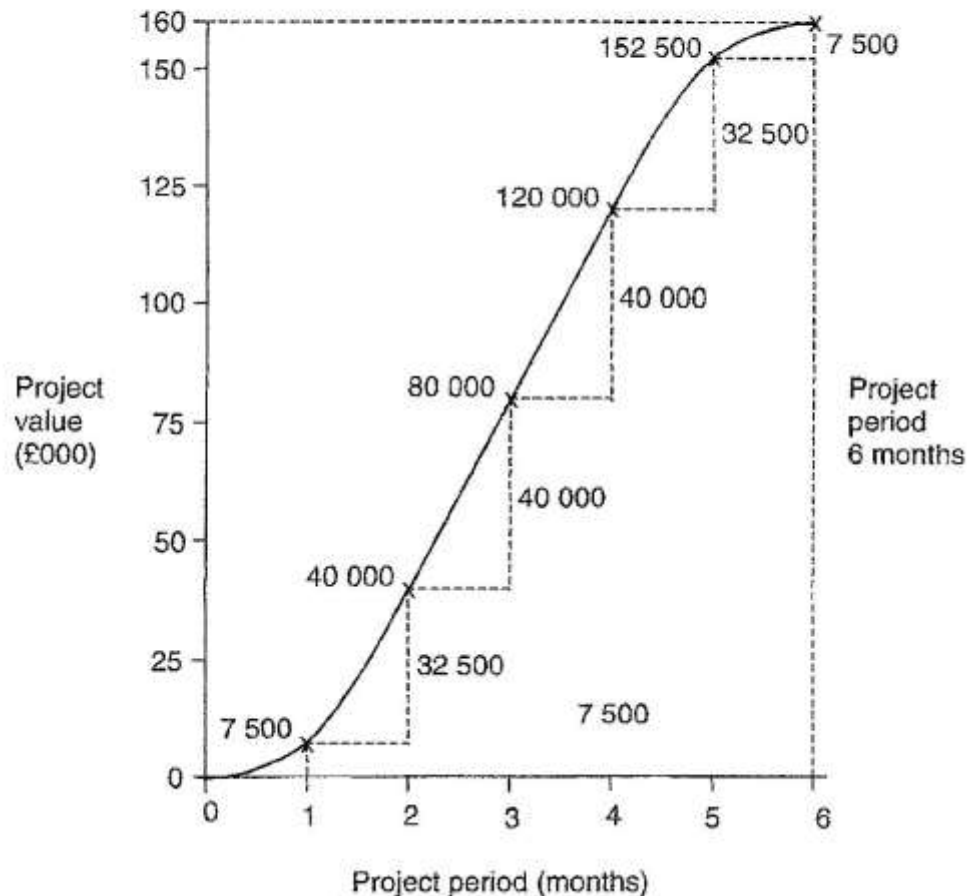
The S Curve

S-CURVE PRESENTATION

Project value £160 000

Contract period 6 months

Total value £160 000





CASH FLOW FORECAST FOR ONE PROJECT

Cumulative percentage value

Analysis of similar projects

Forecast with cumulative percentage value per month

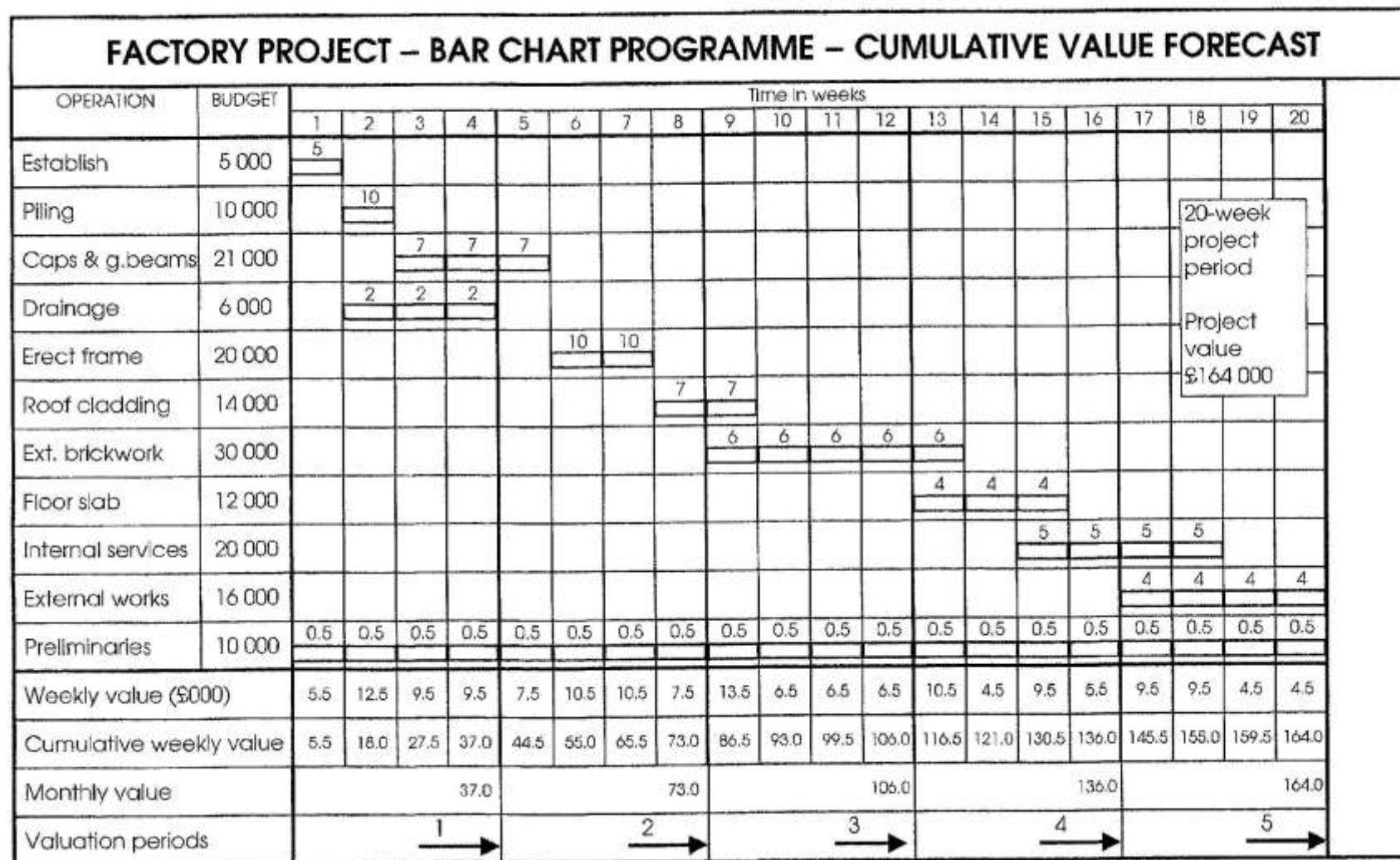
Production of a reasonable S-curve approximation

EXAMPLE

PROJECT PERIOD (months)														
HOW TO USE Read off cumulative % value relative to contract duration, i.e. 6 month contract CUMULATIVE VALUE Month Cumulative % 1 9 2 24 3 45 4 67 5 85 6 100	MONTH	1	2	3	4	5	6	7	8	9	10	11	12	Cumulative % value complete forecast
	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1	100	45	24	18	12	9	7	6	5	5	4	3	
	2		100	76	45	30	24	18	14	12	11	9	7	
	3			100	79	60	45	35	27	23	20	17	13	
	4				100	82	67	55	45	37	31	27	22	
	5					100	85	72	63	53	45	38	33	
	6						100	88	77	67	59	51	45	
	7							100	90	80	72	64	56	
	8								100	92	83	75	66	
	9									100	92	85	76	
	10										100	93	85	
	11											100	93	
	12												100	

CASH FLOW FORECAST FOR ONE PROJECT

The bar chart programme





CASH FLOW FORECAST FOR ONE PROJECT

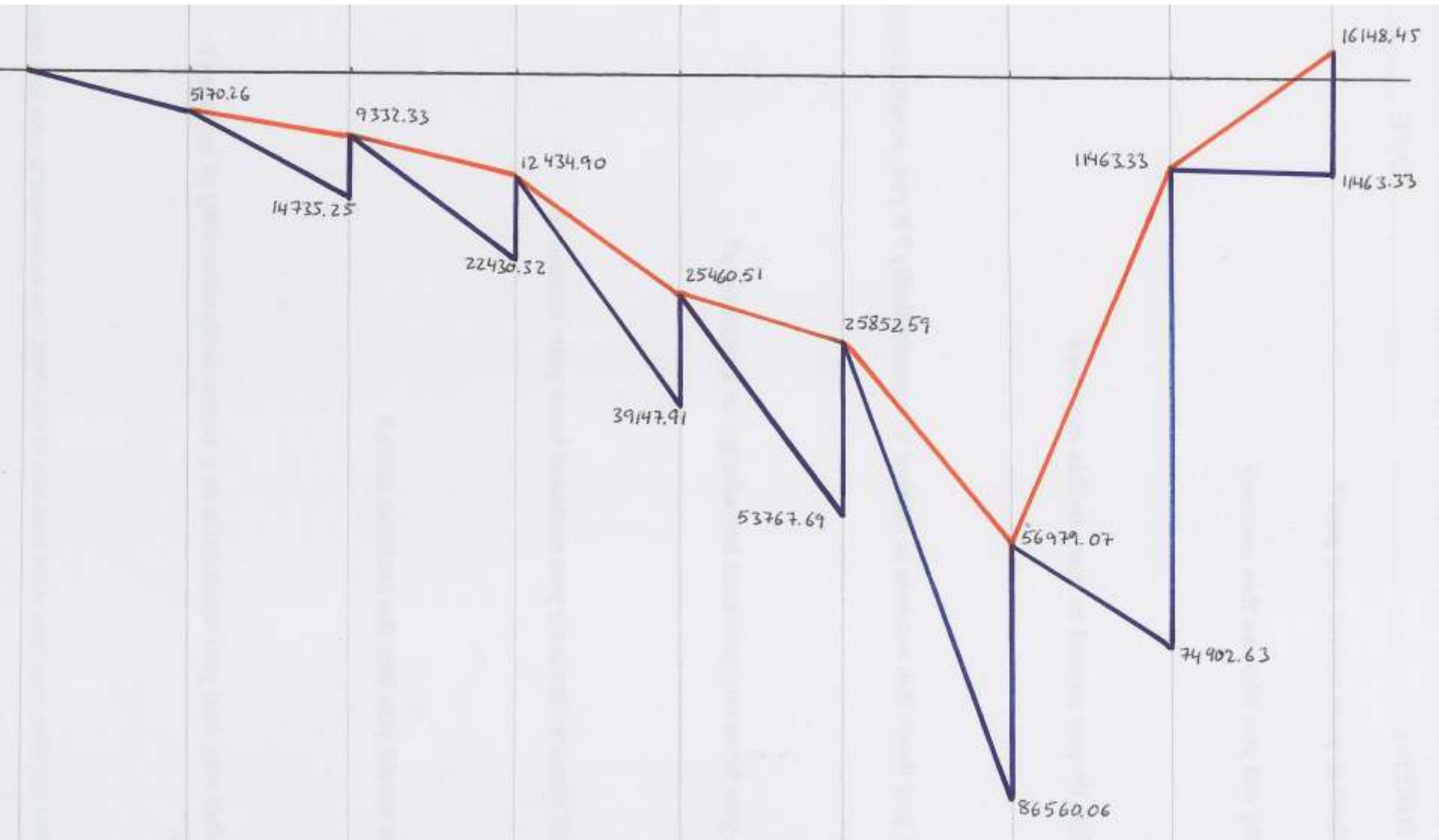
Study of locked-up capital

**EXAMPLE
(Excel)**



CASH FLOW FORECAST FOR ONE PROJECT

Cash-flow diagram





CASH FLOW FORECAST FOR ONE PROJECT

SIMPLE INTEREST

$$TOTAL\ INTEREST = \sum_{I=0}^{I=n} x_i \times \frac{INT}{12}$$

x_i = locked-up capital every month

i = number of months with locked-up capital

INT = annual interest



CASH FLOW FORECAST FOR ONE PROJECT

CUMULATIVE INTEREST

$$TOTAL\ INTEREST = \frac{\sum_{i=0}^{i=n} x_i}{n} \left(\left(1 + \frac{INT}{12} \right)^n - 1 \right)$$

x_i = locked-up capital every month

i = number of months with locked-up capital

INT = annual interest



CASH FLOW FORECAST FOR ONE PROJECT

EXERCISE

The construction of a commercial centre has the following economic conditions:

Estimated cost of works: £10 million

Duration: 12 months

Profit: 10%

Retention: 5%

Payments: 1 month after valuation

Make an approach to the cash-flow forecast using the S-curve technique, draw a cash-flow diagram and study the locked-up capital.

What happens if the contractor can't afford this capital and has to borrow it at 7% rate?