THE INDUSTRY'S VIEW OF STAGE PAYMENTS AND THE LATHAM RECOMMENDATIONS

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Latham suggested that it would be a more favourable system of payment and valuation if payments were based upon stages / milestones. A questionnaire survey was constructed and sent to 180 companies including; clients, contractors, consultants and quantity surveyors. The purpose of the questionnaire was; a) To learn more about stage payments and whether they are becoming more frequently used, b) To see if the industry agrees with the advantages of stage payments as proposed by Latham, and c) To see what the industry thinks about the rest of the relevant Latham proposals. It was found that out of the nine proposed advantages, the industry as a whole, only agreed with three of them. With regard to the other Latham proposals the industry disagreed strongly with four out of the seven proposals.

Keywords: cash flow, Latham, milestones, stages, valuations.

INTRODUCTION

The report entitled "Constructing the Team" by Sir Michael Latham contained some important proposals concerning tendering, contractual issues and the current traditional monthly valuation approach. It suggested that it would be a more favourable system of payment and valuation if payments were based upon stages / milestones. Proposals such as the payment of clients into a trust fund, the abolition of retention's, advance payment to the contractor etc. were also recommended in the report. Amendments to the original New Engineering Contract (later renamed the New Engineering and Construction Contract) particularly the revision of payment schedules, which at present prevent the sub-contractors from obtaining their money until three months after finishing work, were also recommended.

Contractors have been concerned since Latham's proposals were published and have been giving their opinions in various journals and magazines e.g. *Building* 8 July 1994. The majority of their concerns related to cash flow and how interest on cash could be obtained. Stage payments will affect cash flow and if they become an acceptable form of payment, contractors will have to reassess their margins. This may jeopardize one of the main recommendations of stage payments i.e. to reduce cost. There may also be disputes between the client and the contractor when determining the stage / milestone and also as to when a specific stage is due for payment. The effect of these disputes when using stage payments would be more significant than in the traditional monthly payment approach and hence it can be said that they would increase the risk associated with contractor's cash flow.

The government already adopts stage payments in their application of the Government Public Procurement form of Contract i.e. GC/Wks/1 Edition 3, which uses two

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payment mechanisms; the milestone payment, and the stage payment chart. The MOD's policy to assemble payments as an incentive for satisfactory and timely completion is approved by the Treasury and is supposed to have accomplished significant benefits.

The objective behind milestones is not to affect profitability but to facilitate the management of the project. The aim is to define milestones that, if achieved, would secure payments that cover the contractors likely outflow of cash at any point in the programme when the milestone becomes due.

STAGE / MILESTONE PAYMENTS

The normal practice in the construction industry is for the contractor to be paid monthly during the execution of the works. The value of these payments is determined by an agreement between both quantity surveyors of the employer and the contractor. Stage payments are common to small housing developments by local developers and the payment by Building Societies to fund self-build houses.

The client's quantity surveyor will usually specify the milestones. Tenderers may propose additional, or alternative, milestones to suit their proposed sequencing of the works and expected cash flow during execution of the works. The payment provisions for works contracts allow for monthly payments: so there is little point in having a number of milestones vastly in excess of the number of months in the programme. Tenderers are invited to propose values for each defined stage. During evaluation of tenders it is normal to assess the Stage Payment Schedule to ensure that no pre-funding of work is envisaged.

THE PRESUMED ADVANTAGES OF STAGE PAYMENTS

Sir Michael Latham (1994) has stated that stage payments bring various advantages when used on a typical contract. Although there have been limited studies in this area, Cheetham *et al.* (1995), and Potts (1988), arrived at the following advantages when using stage payments;

1. Milestone payments allow the contractor the freedom to manage their programme in such a way that they ensure they receive regular payments that can be easily forecasted.
2. Payment by milestone spares the contractor the need for costly measurement of the works as they progress.
3. Senior management will be able to monitor progress simply by monitoring cash flow. They can thus easily spot programme difficulties at an early date.
4. Defined milestones provide a clear plan for the reward of performance. Both parties to the contract therefore, have a clearly stated understanding of the link between performance and payment – thus providing essential confidence in the contract agreement.
5. They reduce administration costs by eliminating valuations of incomplete work and unfixed materials, and the aggregation of trade sub-contractors claims by the main contractor. They also eliminate and avoid any arguments between the contractor and the quantity surveyor.
6. It encourages the contractor to make progress to the clients' benefit.

7. It reduces costs for consultants and contractors.

If the contract is split into too many stages the advantages are lost. If there are too few stages and consequent payments, the cost of the contract increases.

THE PRESUMED DISADVANTAGES OF STAGE PAYMENTS

Cheetham *et al.* (1995) and Potts (1988) also arrived at the following disadvantages;

1. If varied work is completed early in the project it may not be paid in full until a later date. If a variation requires execution during the last six months of the project a greater payment will be made in the earlier months than represented by the actual value.
2. Contractors may bid higher percentages in the early stages of the project and there may be a possibility of overpayment in the early months. This is probably no more of a problem than in conventional projects where some tenders are front-end loaded.
3. When construction progress is in advance of the programme the contractor can be underpaid, compared to the traditional approach. However, an early completion may suit the contractor particularly if he / she can reduce their preliminary expenditure.
4. The financial requirements of the contractor need to be increased. This would reduce profit and hence may result in having to undertake fewer projects than normal.
5. Bank funds would need to be increased also.
6. The contractor may have to increase his prices to restore profit
7. Advance payments expose client's to greater risks if the contractor is unable to complete the work.
8. Sub contractors could be forced to offer the same payment terms as the main contractor.

PREVIOUS WORK

To the author's knowledge there has been limited academic work in this area and there has not been an analytical structured study to investigate the extent to which the presumed advantages and disadvantages were applicable. K. F. Potts (1988) reported that the system of stage payments has been satisfactorily used on a major international multi-contract that was completed on time and within the allotted budget. He described how the management team felt that the payment system contributed to their companies' motivation to achieve the "milestone" dates.

Cheetham *et al.* (1995) compared the contractors' cash flow by traditional monthly valuations as opposed to a stage payment approach, based on the same project. Although the stages were hypothetical, it still gave an insight into some possible consequences of their use. In order to explore some of the financial consequences of implementing stage payments on a building contract, the effect of alternative payment patterns to the contractor were calculated for a model project, and the consequences of the contractor, client and architect were considered. The basis for the model was a block of student residences costing £989,400 let on a 40-week contract for which a construction programme and elemental cost analysis were available in published data.

Table 1: Number of questionnaires sent and received

Company type	Number sent	Number received	Percentage of responses
Contractor	45	21	47%
Consultant	45	18	40%
Quantity Surveyor	45	19	42%
Client	45	16	36%
Overall	180	74	41%

It was found that stage payments could have an adverse effect on contractors' cash flow, requiring the contractor to have either a higher borrowing capacity or a larger cash reserve. The profit contained within the contract was reduced also.

THE SURVEY SAMPLE

It was necessary to encompass a wide range of firms in the construction industry and hence the views of the client, contractor, quantity surveyor, and consultant were sought. They were selected in terms of their respective turnovers and were all experienced and active firms that were more likely to have come across stage payments at some point. Only the top firms with a previous year's turnover in excess of £2 million were used. The contractors were taken from the NCE Contractors File 1998 and the consultants were taken from the respective NCE Consultants File 1998. The clients, such as Sainsbury's and Marks and Spencer's etc., were taken from a careers department. The 1998 GTI Quantity Surveyors journal provided the rest.

The sample consisted of 180 companies, (45 companies in each area of the disciplines). Each company was sent a structured multiple choice questionnaire along with an accompanying letter explaining the purposes of the survey and why they had been asked to participate. A total of 74 (41%) responses were received in all of the four areas. Table 1 shows the number of questionnaires sent and the number received in each of the four areas.

The purpose of the questionnaire was to determine the following;

- To learn more about stage payments and whether they are more frequently used
- To see if the industry agrees with the proposed advantages of stage payments
- To see what the industry thinks about the rest of the relevant Latham proposals

These three aspects provided the structure of the questionnaire. The questionnaire consisted of thirteen main questions split into 3 sections, A, B and C. Section A consisted of eleven general questions regarding stage payments to try and understand more about them. Section B consisted of questions regarding the proposed advantages. Section C consisted of questions regarding the other relevant Latham proposals. Overall there were a total of twenty-seven questions and statements to answer. For each of the questions there was space left for comments if necessary and these were taken into account in the analysis.

ANALYSIS AND DISCUSSION

For questions one, eight, nine and ten, some of the respondents gave more than one answer, as one or more responses were relevant, so the total percentage in each of these cases added up to more than 100% in the overall total. Also not all of the questions / statements were answered by the respondents overall, as they probably did not understand and hence could not answer. For example, 63 firms answered question

Table 2(i): Section A: Responses to general questions about stage payments (1 to 6)

Q1. When would a milestone / stage be determined?	Pre-tender stage 36	Tender stage 24	After contractor selection 6
Q2. Are there any disputes between the client / contractor when determining a stage?	Frequently 8	Occasional 38	Never 20
Q3. Are there any disputes as to when a particular stage is due for payment?	Frequently 18	Occasional 27	Never 13
Q4. How frequent are the payments?	0-30 days 51	30-60 days 15	60-90 days 0
Q5. What are the agreed payments' delays from the invoice and those that actually occur?	0-15 days 19	15-30 days 51	30-45 days 0
Q6. How would you describe the effect of the stage / milestone method of payment on a projects' cash flow as opposed to the traditional method?	Moderate adverse effect 20	No effect 24	Favourable effect 12

one as opposed to 70 firms answering question five. Tables 2–4 show the number of responses for each of the questions.

Section A: General questions regarding stage payments

A total of 57% of the sample said that a stage/milestone would be determined at the pre-tender stage, followed by 38% at the tender. It was assumed that a stage was determined at the pre-tender or tender stages. There is normally an impact on tender pricing and any changes to payment terms at the tender stage could constitute a variation to the contract.

A total of 58% of the industry said that there were occasional disputes between the client and the contractor when determining the stage, compared to 30% who said never. These were mainly over people wanting too much too soon, and to what the definition of milestones were. There would be obvious disputes as to what the definition of a milestone was and to when a particular milestone was reached. Some contractors were unsure as to if a milestone could be clearly identified as complete. It was interesting to see that some contractors suggested that a stage could be justified as complete between 95-98%. There were also occasional disputes as to when a specific stage was due for payment, with 31% saying frequently and 22% who answered never. The problems were mainly on whether the stages were complete to justify the payment.

If the stages were in the frequency of 0-30 days, there should not have been an adverse effect on cash flow (since interim valuations are monthly) as suggested. This meant that although stage payments were of this frequency, on a cumulative basis, they did not reflect the total value of work in progress (i.e. there must be some under measurement in comparison with traditional monthly valuations). The payments were mainly monthly but the stage payment frequency depended on the nature of the stages and completion of the work packages e.g. steelwork. In general the payments would not be within a set time, but on completion of the milestone.

An overall total of 43% of the industry said that stage payments had no effect on cash flow, compared with 36% who said they had a moderate adverse effect.

Table 2(ii): Section A: Responses to general questions about stage payments (7 to 11)

Q7. How would the client's Q.S. determine the extent of progress on site and hence pay the milestones?	Examination of the programme	From clauses in standard form		By agreement
	35	4		25
Q8. What procurement routes can be used for stage payments?	Traditional	Des- Build	Con. Mgt.	Man. Contg
	47	51	30	34
Q9. What procurement method is most commonly used?	Traditional	Des- Build	Con. Mgt.	Man. Contg
	20	40	6	12
Q10. When would you price variations when using stage payments?	In advance	During work		Towards the end
	38	38		8
Q11. Are stage payments becoming more frequently used?	Yes	Perhaps		No
	10	23		32

Contractors would normally like regular payment structures to minimize financing costs. In general it is ideal to get balanced cash flow, but it depends on whether payments are based on a percentage or on actual values of the work packages.

With regards to what the agreed payments' delays are from the invoice and those that actually occur, the majority (73%) said between 15-30 days, compared to 27% who said between 0-15. Although invoices are not always required in practice, it normally takes seven days to issue an interim certificate and 21 days to issue the payment i.e. within thirty days. Hence the majority of firms stated between 15-30 days. With most clients the payments were normally made within the time stated in the contract and any delays were generally avoided. This was a little bit more than the traditional method using JCT 80 were it usually takes 14 days.

Despite the design and build method mostly being used, any procurement route could be used for stage payments provided the system was well defined. This is why every firm chose one or more option as they were all relevant.

Only 15% of the respondents said that stage payments were becoming more frequent, compared to 49% rejecting this. 22% of the quantity surveyors, perhaps the most likely to be adversely affected if stage payments were applied (reduced need for the profession), claimed that they are becoming more commonly used.

Section B: Do you agree with the following statements regarding stage payments?
Out of the nine proposed advantages, the industry supported two (b, and e) the most, that stage payments will save money by the fact that less administration is needed for measurements and valuations, and that they were cost effective. Contractors and clients particularly thought that this was the case.

The claim that stage payments resulted in more realistic cost and time estimates with a greater chance of project completion within the allotted budget were rejected the most out of the proposed advantages. Contractors particularly thought that this was not often the case as stage payments, although may influence the programme of works, will not affect the overall completion of the project.

An overall majority of 56% of the industry said that stage payments would spare the contractor the need for costly measurement of incomplete work and unfixed materials. The claim that stage payments allowed progress to be monitored easily by observing cash flow and hence difficulties could be spotted at an early date were also strongly rejected, with 39% of respondents disagreeing compared to 5% who agreed. Again, a large number (56%) of firms were unsure.

Table 3: Section B: Responses to the proposed advantages

Q.13 Do you agree with the following statements regarding stage payments?	**Yes**	**Perhaps**	**No**
a) they allow the contractor the freedom to manage their programme in such a way that they can ensure they receive regular payments that can be easily forecasted	7	37	22
b) they spare the contractor costly measurement of incomplete work and unfixed materials	37	24	5
c) they allow senior management to monitor progress simply by observing cash flow and hence difficulties can be spotted at an early date	3	37	26
d) they provide a clear plan for the reward of performance and hence all parties have a clear understanding of the link between performance and payment	22	40	4
e) they are cost effective	40	18	11
f) they encourage the contractor to make progress to the client's benefit	24	18	24
g) they reduce costs for contractors and consultants	27	31	9
h) they eliminate the aggregation of trade sub-contractor's claims by the main contractor	16	24	18
i) they result in more realistic cost and time estimates with a greater chance of project completion within the allotted budget	8	22	30

Three of the advantages were claimed to be perhaps true. These claims were that stage payments ensure contractors received regular payments that were easily forecasted; they provide a clear plan for the reward of performance; and they allow progress to be monitored easily by observing cash flow. The quantity surveyors were the most unsure about these claims.

It could be seen that there were a few similar patterns in the responses. With regards to the number of responses to the three set of answers in each question (i.e. "Yes", "Perhaps", "No"). It could be seen that for advantages (a), (c) and (d), the pattern was low for "yes", high for "perhaps", and medium for "no", while the responses for advantages (b) and (e) were different, giving the pattern high, mid, low respectively. For each of the statements, the industry gave very similar pattern responses especially for advantages (a), (b) and (c). It could also be seen that contractors and clients gave virtually the same patterns, compared to the consultants on the other hand who responded the same as the quantity surveyors.

Section C: Do you agree with the following Latham proposals?

Out of the seven Latham proposals, the respondents supported two the most ((i.e. (a) and (e)). These related to reforming the JCT to keep up with changes in the industry, and the introduction of incentives for exceptional performance.

Surprisingly, only 59% of the overall sample supported those incentives / bonuses for exceptional performance, compared to 8% answered "no". Contractors and clients were most in favour, with consultants disagreeing the most with 20% saying it was a bad idea.

Table 4: Section C: Responses to the Latham proposals

Q.14 Do you agree with the following Latham proposals?	**Yes**	**Perhaps**	**No**	**Don't know**
a) reforming the JCT to keep up with the change in the industry	52	5	3	6
b) the NECC to be used for the whole industry	3	25	34	6
c) the payment of clients into a trust fund	13	15	22	13
d) advance payment to the contractors and sub-contractors	12	23	31	0
e) incentives / bonuses for exceptional performance	39	22	5	0
f) the abolition of retention	25	15	29	0
g) the abolition of pay-when-paid clauses	33	0	33	0

The respondents strongly rejected three of the Latham proposals, and thought that using the NECC for the whole industry, advance payment to contractor and sub-contractor. The abolition of "pay when paid" clauses have already been abolished under the HGCR Act 1996. These can be circumvented though if inclined to do so.

The consultants tended to be the most uncertain, as the industry were not sure over using the NECC for the whole industry, advance payments, and incentives / bonuses. Again there were pattern similarities in the responses. Proposals (a) and (e) had similar patterns with high, mid, and low range responses, compared to (b), (c) and (d) producing the reverse pattern, low, mid, and high. The respondents as a whole gave similar response patterns for each of the proposals, with the exception of (f) and (g). The contractors, quantity surveyors and clients tended to give the same pattern in their responses.

CONCLUSIONS

Comments from the industry were mixed in their praise for stage payments. The main concern is how stage payments would affect cash flow. Unlike contractors, clients and consultants were more than happy to pay by stages in general as it did not seem to affect their cash flow / profits. If they pledge to pay sub-contractors as soon as they get paid from the client, then they would have to increase their tender margins. There would be no arguments between contractors' and clients' quantity surveyors over the valuation of works if stage payments became common place. One disturbing fact though is that there would be a need for fewer quantity surveyors, and hence they may have to get more involved in the management side rather than the accountancy side.

The author doubts that a single form of contract could be used for the whole industry, what with the differing complexities and specifications in each area, but remains open minded. As for the payment of clients into a trust fund i.e. retention monies, this can already be requested in the JCT contract. Contractors would obviously like advance payments being made to them, but clients are very unlikely to agree. Incentives for exceptional performance sound good but problems of definition will no doubt arise. Despite retention bonds being cost effective, the industry were in favour of abolishing them in favour of something else. Aside from the fact that the Latham proposals were not strongly supported, it was surprising to see that most of them are in some way incorporated into present day use.

Generally, one of the main problems of the industry was how a stage was actually determined, when it was accepted as complete, and when it was due for payment. It was also interesting to see that payments were normally made monthly but had a moderate adverse effect on cash flow.

Overall, the implementation of stage payments will be such a radical change to existing procedures that they may have certain consequences, both unintended and unexpected. The behaviour of the client, consultant, contractor, quantity surveyor and the rest of the construction industry will ultimately change.

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