

The impact of market and supply configurations on the costs of tendering in the construction industry

Conference or Workshop Item

Accepted Version

Hughes, W. ORCID: <https://orcid.org/0000-0002-0304-8136>,
Hillebrandt, P.M., Lingard, H. and Greenwood, D.G. (2001) The impact of market and supply configurations on the costs of tendering in the construction industry. In: CIB World Building Congress 2001: Performance in Product and Practice, 2-6 April 2001, Wellington New Zealand. Available at <https://centaur.reading.ac.uk/4305/>

It is advisable to refer to the publisher's version if you intend to cite from the work. See [Guidance on citing](#).

All outputs in CentAUR are protected by Intellectual Property Rights law, including copyright law. Copyright and IPR is retained by the creators or other copyright holders. Terms and conditions for use of this material are defined in the [End User Agreement](#).

www.reading.ac.uk/centaur

CentAUR

Central Archive at the University of Reading
Reading's research outputs online

THE IMPACT OF MARKET AND SUPPLY CONFIGURATIONS ON THE COSTS OF TENDERING IN THE CONSTRUCTION INDUSTRY

Will Hughes¹, Patricia Hillebrandt¹, Helen Lingard² and David Greenwood³

¹*Department of Construction Management & Engineering, University of Reading, UK*

²*Faculty of Architecture Building and Planning, University of Melbourne, Australia*

³*Department of the Built Environment, University of Northumbria, UK*

ABSTRACT

The cost of tendering in the construction industry is widely suspected to be excessive, but there is little robust empirical evidence to demonstrate this. It also seems that innovative working practices may reduce the costs of undertaking construction projects and the consequent improvement in relationships should increase overall value for money. The aim of this proposed research project is to develop mechanisms for measuring the true costs of tendering based upon extensive in-house data collection undertaken in a range of different construction firms. The output from this research will enable all participants in the construction process to make better decisions about how to select members of the team and identify the price and scope of their obligations.

KEYWORDS:

Procurement; tendering; costs; working practices.

INTRODUCTION

The costs associated with tendering are seen by the construction industry to be significant, typically quoted as $\frac{1}{2}$ – 1% of turnover, and 2 – 3% of bid price for PFI (now PPP) bids. However, there is no robust empirical evidence to support this view. Those contractors whose bid includes a design element have to undertake more work than traditional general contractors. How much more is not widely understood.

The costs associated with tendering may be a specific example of general transaction costs, an area which has been the subject of empirical work in various industries. For example, Masden *et al.* (1991), whose empirical study relied on selecting a limited number variables and asking respondents to give an ordinal score for the importance of each factor, related to 74 observations from one firm involved with a shipbuilding contract. These qualitative evaluations were then analysed using econometric methods to test various hypotheses about the integration decision. The limitations of this work are connected with the use of proxies for data instead of real cost data, and with studying only a small sample of decisions from one firm. The idiosyncrasies of the chosen industry are important, such as the complexity of the process and scheduling issues as well as the application of government regulations to defence contracts. There are too many approximations in their data for their conclusions to be reliable, even within the limited parameters of their study. They identify the difficulty of obtaining data as the key obstacle to testing transaction-cost theory. However, they assert that the costs of organizing work in the sample that they studied formed about 14% of the overall cost of the activity. It is this cost that is at the root of the decision about whether to make or buy, in terms of transaction cost analysis.

In dealing with this potential analysis of ascertaining the costs of getting work and enforcing contracts, it seems that multiple layers of sub-contracting add enormously to the overall construction budget. Proponents of new ways of working (see below) point to the apparently unnecessary duplication of costs in multiple layers of sub-contracting. This is sometimes seen a good reason for

reducing the general level of sub-contracting in the industry. This argument is similar to the use of transaction cost theory as an explanation for the existence and extent of sub-contracting, an increasingly popular view in construction research (for example, Winch, 1989). There is no doubt that the costs of tendering, or of obtaining work by some other means, are transaction costs. But attempts to use transaction cost analysis to understand the decisions of main contractors as to whether to sub-contract work or whether to use their own labour supply have not been very fruitful in the past. The theoretical approach using the concept of the internal labour market as opposed to the external labour market suggests that there should be a movement towards the internal labour market and away from sub-contracting (Buckley and Enderwick 1989). In fact, in the UK the trend has been in the opposite direction ever since the end of the Second World War.

Hillebrandt and Cannon (1990) list five characteristics of construction which affect the division of work between that carried out by the contractor directly and that which is sub-contracted:

- the finite construction period of each project;
- the wide geographical spread of location of projects and especially that of large ones which can be undertaken only by major firms;
- the uneven requirement for specific skills over the life of the project;
- the wide diversity of skills required such that any one contractor may not be able to supply all of them;
- fluctuations in the demand for any particular type of work.

These factors far outweigh the theoretical reasons which favour the internal labour market and result in the widespread sub-contracting of the UK industry. Buckley and Enderwick accept that these factors, as well as others related to the control of the workforce, explain the situation on the ground. There may well be similar problems in applying transaction cost economics to the tendering situation. The mere fact that sub-contracting seems more expensive than direct labour is not sufficient reason to call for a reduction of sub-contracting. The important decision in the construction industry is not whether to outsource or not, but how best to structure the relationships in the complex network of contracts that typify construction projects.

Tendering costs are normally absorbed as overheads (Dawood 1995) and each bid must incorporate the cost of failed tenders (Hillebrandt 2000). The extent of these costs is not easy to ascertain, but there have been some attempts. For example, the pre-contract costs associated with health and safety legislation in the UK were reported by The Consultancy Co. Ltd (1997) who found that in 1996, one large contractor received 5,360 pre-qualification questionnaires which cost £589,600 to complete. The same contractor received 1,802 sets of tender documentation for which it cost £495,550 to prepare an OHS response. The total of these costs during the year was £1.085m, but only 10% of the tender responses were successful.

At a workshop involving the industrial partners for this research proposal in July 2000, it was reported that building services contractors had calculated that up to 15% of their turnover could be accounted for by "unnecessary" tendering processes, intriguingly close to the 14% associated with "organizing work" reported by Masden *et al.* (1991). Many other researchers have pointed out the wasteful expense of competitive bidding (Pearson 1985, Dawood 1994, Pasquie and Collins 1997), but little has been done to test the assumption that contractor selection methods influence costs of the tendering process. There are many mechanisms for selecting contractors (Lingard *et al.* 1998). Each demands different types of documentation and the costs vary. Clients need to be able to make an informed judgement on the best value and not the cheapest price in their selection decisions (Egan 1998). Current practice makes such informed decisions very difficult to achieve.

Innovative approaches to business processes reduce the reliance on competitive tendering and focus instead on building co-operative and collaborative business relationships over the medium to long-term. It is possible that such innovative practices reduce the costs of tendering as well as the incidence of claims and disputes. The difference between the final project cost and the tender sum may also be lower when prices are not driven down at the outset. The aim of this research is to test

these ideas and provide robust empirical data upon which conclusions can be drawn about the tangible business benefits of innovative procurement practice.

CALLS FOR CHANGE

Tendering was among the main issues tackled by the Latham Report, a joint government-industry review of procurement and contractual arrangements, published in the UK in 1994. It would probably be no exaggeration to say that Latham sees traditional tendering as “the root of adversarial attitudes” (for example, Latham, 1994: 58). In his earlier, interim report, he levelled a number of serious criticisms at the industry’s traditional tendering process. These included the sheer expense of complying with tender procedures (particularly for design and build work), the excessive length of tender lists, and the existence, particular at the level of subcontract tendering, of “malpractices” such as “Dutch auctioning” and “bid peddling”¹ (Latham, 1993: 28). The prevalence of Dutch auctioning and bid peddling are perfect examples of the failure of traditional tendering: carried out with the aim of price-reduction, the effect of both is to undermine the willingness of a prospective contractor to commit to best price in the initial tender (Construction Industry Board, 1997a: 21). Latham’s recommendations on tendering show a particular concern that public sector clients, while being aware of European Union Directives, should tender selectively and adhere to established codes of procedure. Clients who “seek tenders on a design and build basis” should be particularly aware of the costs of bidding for this type of work, and modify their selection procedures accordingly (Latham, 1994: 57). Latham also noted that local authorities were being “severely hampered by being forced to accept the lowest tender” often neglecting other aspects of “value for money” (Latham, 1994: 58). Four of Latham’s 30 specific recommendations in the executive summary (Latham, 1994: vii-ix) refer to tendering:

- The Construction Industry Council should publish a code of practice dealing with “project management and tendering issues”.
- “Tender list arrangements should be rationalized … and advice issued on partnering”.
- “Tenders should be evaluated … on quality as well as price” and recommendations on tender periods should be followed.
- “A code of practice for the selection of sub-contractors should be drawn up” … with “short tender lists” and “fair tendering procedures”.

In 1995 the Construction Industry Board (CIB) was set up with the primary objective of implementing the Latham recommendations. Among the CIB’s publications, several relate to tendering, and these include codes of practice for the selection of consultants, main contractors and sub-contractors, as well as related publications on partnering, briefing and pre-qualification. The common features of the codes for tendering are the requirements that:

- Clear and transparent procedures should be followed.
- Tender lists should be compiled systematically and be as short as possible.
- Conditions should be the same for all tenderers.
- Confidentiality should be respected.
- Sufficient time is to be allowed for tendering.
- Sufficient information should be provided.
- Tenders should be assessed on quality as well as price.
- Tender prices should not change on an unaltered scope of works (Construction Industry Board, 1997b and 1997c).

In July 1998 a rather more radical approach to tendering was exhibited in another UK construction industry report. Entitled ‘Rethinking Construction’ it was commissioned by the Department of the

¹ Dutch auctioning describes the practice whereby bidders are invited to engage in further cost-cutting rounds after the initial tenders have been received; the practice of bid peddling is generally restricted to sub-contract procurement and involves the successful main contractor receiving unsolicited sub-contract bids directly after securing a project.

Environment, Transport and the Regions and produced by a 'task force' under the chairmanship of Sir John Egan. The report reflected a 'deep concern that the industry as a whole is under-achieving' and that 'too many of the industry's clients are dissatisfied with its overall performance' (Construction Task Force, 1998: paragraphs 4-6). In order to achieve the ambitious performance targets set in the report, Egan observed that the industry will need to make 'radical changes to the processes through which it delivers its projects' with a view to 'eliminating waste and increasing value' (Construction Task Force, 1998: chapter 3). The report makes specific reference to the need to 'replace competitive tendering with long term relationships based on clear measurement of performance and sustained improvements in quality and efficiency' (Construction Task Force, 1998: paragraphs 67-71). This involves 'new criteria for the selection of partners' based, not on 'lowest price, but ultimately ... best overall value for money' (Construction Task Force, 1998: chapter 4). According to Egan, 'the most immediately accessible savings from alliances and partnering come from a reduced requirement for tendering'. While this admittedly 'goes against the grain, especially for the public sector', and causes concern with all clients that they are getting value for money, it is considered vital, since 'cut-throat price competition and inadequate profitability benefit no-one' (Construction Task Force, 1998). The influence of the Egan report has prompted a number of further initiatives in the UK industry, including the *Movement for Innovation* (M4i) and the *Best Practice Programme* of the Construction Innovation and Research Management Division of the Department of the Environment Transport and the Regions, both of which retain an interest in the reform of tendering practice.

However perhaps the single most significant shift in procurement policy has come from the implementation, on 1 April 2000, of the Local Government Act 1999. Under the Act, the requirement for Compulsory Competitive Tendering had been abolished, and replaced with 'Best Value Procurement'. Broadly speaking 'Best Value' requires a council to seek improved performance by whatever means is best. It is likely to transform the way services are procured and delivered. The legislation requires authorities to *challenge* whether existing practices are still relevant, *consult* on better cost-effectiveness, *compare* its performance with others through benchmarking, and *compete* with the best solutions (Joseph Rowntree Foundation, 1999: 47). The result is that local authority clients are enabled to experiment with alternatives to tendering.

PROPOSED RESEARCH

The research proposed in this paper is intended to examine the practicalities of new ways of working in terms of their actual costs. The objectives are to discover from practitioners the structure and magnitude of the costs of tendering; to develop a mechanism for measuring the true costs of tendering; to develop a deep understanding of the costs of tendering; and to use this new data and understanding to identify and quantify the relationship between forms of procurement, types of project and the costs of tendering.

Method

The research will involve a two-stage approach. First, the costs of transactions will be identified and classified. Second, these costs will be quantified. The method for collecting data on tendering costs will involve extensive collaboration with industrial partners. Eleven major construction and consultancy firms have agreed to provide access to comprehensive data collection.

The widely varying circumstances of contractors and projects make this topic very complex. It will first be necessary to update and develop the existing literature review to identify the nature and variety of project supply characteristics, approaches to collaboration between participants and methods used in the selection of consultants, contractors and sub-contractors. A three-dimensional framework of variables representing the varieties of market relationships encountered in the construction industry will be developed. Purposeful sampling will be used to ensure participants represent cover all configurations (Patton 1990, Neuman 1994).

Focus groups, guided by a theme list, will then be held with participants. The focus group approach has been chosen because the aim is to expose rich and detailed information about where costs are incurred and how they are dealt with. Focus groups are ideally suited to this purpose because the

members of the group develop the conversation with minimal prompting from researchers. Focus groups will be organized by type of project participant, such as client/developers, design consultants, contractors, sub-contractors and other specialist consultants, ensuring a variety of project supply arrangement and type. Mixed sessions will not be held because of the sensitivity of information under discussion.

The focus group transcripts will be analysed, using ethnographic content analysis, to elicit meaning and structure in the concepts and concerns of the participants. This is ideally suited to development of a satisfactory and useful classification of transaction costs because these costs have not hitherto been classified and, using this approach, concepts do not exist *a priori* but emerge out of the research context (Bryman and Burgess 1994). This also ensures that the information generated is not merely a confirmation of the researchers' preliminary suspicions.

Thus, a detailed classification of tendering costs will be derived, based on information elicited during the focus groups. Although this work is still at the proposal stage and there will be no attempt to pre-empt concepts emerging from the focus group data, some structure is already evident in the potential details of costs associated with tendering. It is likely that these costs will fall into the following three categories:

- Pre-tendering work (such as marketing and arranging framework agreements);
- Tendering work (such as calculating prices, risk assessments, environmental assessments, health and safety plans and quality plans); and
- Post-tendering work (such as performance monitoring, enforcement and disputes).

Using the classification system, a measurement method will be developed to collect detailed cost data for a particular tender. This method will be largely reliant on time sheets, developed by the research team, and used by industry participants to record their own cost data. The research team will be interviewing and working closely with industrial partners during the data collection, as well as monitoring the processes of in-house data collection.

The structured approach to the collection of data will enable costs for different project supply configurations to be identified and quantified. Where sufficiently complete information is available, comparisons will be made between these configurations and non-parametric tests will be used to ascertain the influence of different market relationship and supply scenarios on transaction costs.

REFERENCES

- Bryman A. and Burgess R. G., (1994) *Analysing Qualitative Data*. London: Routledge.
- Buckley and Enderwick (1989) In: Hillebrandt, P and Cannon, J. (eds) *The British construction firm*. London: Macmillan.
- Construction Industry Board (1997a) *Partnering in the Team*. London: Thomas Telford.
- Construction Industry Board (1997b) *Code of practice for the selection of subcontractors*. London: Thomas Telford.
- Construction Industry Board (1997c) *Code of practice for the selection of main contractors*. London: Thomas Telford.
- Dawood N N (1994) Developing an integrated bidding management expert system for the pre-cast concrete industry. *Building Research and Information*. **22**, 95-102.
- Dawood N N (1995) An integrated bidding management expert system for the make-to-order pre-cast industry. *Construction Management and Economics*. **13**, 115-125.
- Egan J (1998) *Rethinking construction: The report of the construction task force*. London: Department of the Environment, Transport and the Regions.
- Egan, J. (1998) *Rethinking Construction* (The Egan Report), Department of the Environment, Transport and the Regions, London: HMSO.
- Hillebrandt P (2000) *Economic theory and the construction industry*. 3ed. London: Macmillan.

- Joseph Rowntree Foundation, (1999) *Modernizing local government*.
- Latham, M. 1994) *Constructing the team: the final report of the joint government/industry review of procurement and contractual arrangements in the UK construction industry*. London: HMSO.
- Latham, Sir Michael (1993) *Trust and money: the interim report of the joint government/industry review of procurement and contractual arrangements in the UK construction industry*. London: HMSO.
- Lingard H, Chinyio E and Hughes W. (1998) The impact of contractor selection method on transaction costs: a review. *Journal of Construction Procurement*. **4**, 89-102.
- Masden, S. E., Meehan, J., W. and Snyder, E., A. (1991) The costs of organization. *Journal of Law, Economics & Organization*, **7**(1), 1-25.
- Neuman W. L., (1994) *Social Research Methods*. Needham Heights, Mass.: Allyn and Bacon.
- Pasquire C and Collins S (1997) The effect of competitive tendering on value in construction. *RICS Research Papers* **2**(2), London: Royal Institution of Chartered Surveyors.
- Patton, M. Q., (1990), *Qualitative evaluation and research methods*. London: Sage.
- Pearson G (1985) Tender assessment. Chartered Quantity Surveyor. 8, 194-195.
- The Consultancy Company Ltd. (1997) *Evaluation of the Construction (Design and Management) Regulations 1994*. HSE Contract Research Report 158/1997. Sudbury: HSE Books.