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A COMPARATIVE ANALYSIS OF THE COST OF CASH RETENTION AND RETENTION BOND

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ABSTRACT

The practice of cash retention has been identified to be an opportunity cost to the contractor, equivalent to interest loss on cash retained, which could amount to a huge sum for larger contract. Literature revealed the use of retention bond as the best solution to the problems of cash retention. Hence, the need to evaluate and compare the cost of 'cash retention' and 'retention bond' costs to the contractor. This study will assist in improving payment practice in the construction industry and also improves financial stability of the contractor. Data were collected from interim valuations of completed projects and subsequently analyzed using "compounding method" to evaluate the compound interest loss on cash retained by the client and the cost of providing retention bond in-lieu of cash retention. T-test analysis was further used to determine the level of significance of the difference between both costs. The results of both analyses reveal that there is a significant difference between both cost and the utilization of retention bond in-lieu of cash retention will reduce the cost of retention by 65%. Subsequent to the findings of this research, it is therefore suggested that, clients should adopt retention bond in-place of cash retention as this will reduce the cost of retention to the contractor, while still providing adequate level of security to the clients' money.

Keywords: Comparative, Retention, Bond, Cost.

INTRODUCTION

Cash Retention, also commonly called Retainage, is a term that refers to the percentage of payments held back on a construction contract by the client. Most standard forms of building contracts provide for the deduction of retention from amount due to the main contractor or sub-contractor. Failure to release the retention at the appropriate time can have a significant effect on the profitability and solvency of a contracting firm (Hughes et al., 2000).

Retention remains the main mechanism for protecting the employers' money within standard forms of building contract (JCT) which recommends that retention is set at 5% of cost of executed work, unless the contract value is high, in which case a lower rate may be agreed. This seems reasonable because larger rates of retention could amount to a greater impact on the cost of retention to the contractor (Hayward, 2011).

Cash retention is equivalent to compound interest loss on cash retained by the client. This is compounded by the principle of the time-value of money which established that the value of a given amount of money now is not the same as its value in future due to the unsteadiness of the economy.

This therefore implies that the value of the retention withheld by the client is not the same as its value when it is been paid after the expiration of defect liability period (Hughes et al., 2000).

The retention bond is an expressed agreement which states that, in return for the client (the obligee) not holding cash retention, the surety provider will undertake to indemnify the client up to the amount that they would have had by way of cash retention should the Contractor (obligor) fail to carry out the works or remedy defects.

A retention bond is a win-win system, the client has the monetary protection it requires and the Contractor keeps hold of its cash. Offering a retention bond in place of cash retention can result in substantial cost savings for the Contractor. In addition, the retention bond will normally contain a fixed expiry date so there is no confusion about when the Contractor has been released from his obligations. This thereby prevents the holding of second moiety of the retention sum for more than the contractual period which is peculiar to cash retention (Mutti and Hughes 2002).

Statement of Hypothesis

The utilization of cash retention in construction contract has been identified to increase the cost of construction to the contractor and it negatively affects his financial stability. Literature reveals that the substitution of retention bond for cash retention will reduce construction cost and increase profitability. Hence, in-order to determine whether there exists a significant difference in the cost of retention for both alternatives, the following null hypothesis was formulated

Null Hypothesis (H₀): There is no significant difference between the cost of retention bond and the cost cash retention.

Evolution of Retention Practice and Retention System

The retention system originates in the railway construction sector in the 1840's. The vast and rapid expansion of the railway network led to a high demand for construction workers and the subsequent creation of a large number of small construction companies. Inevitably a lot of these newly formed companies became insolvent. The rate at which such companies were becoming insolvent caused delays and cost's to the clients that employed them. Therefore the client's started deducting monies from payments to ensure there was a fund available to them to help defray the cost of completion and thus retention was born (ARV Quantity Surveying Limited, 2012).

Retention is deducted first by the client who has employed the main contractor and then the deduction of retention is usually mirrored in all subsidiary contracts throughout the supply chain. Main contractors are, therefore, to a large degree the 'middle man' in this chain of deductions. Retentions of 3% are usual, although some contracts provide for higher retentions.

Failure to release the retention sums at the appropriate time can have a significant effect on the profitability and solvency of companies.

The issue of who owns the retention has long caused problems for the construction industry. As the retention is money already earned most standard forms of contract provide for the retention to have trust status, although this is often negotiated or amended and in recent years certain contract forms have removed retentions completely. The importance of trust status is a key to determining the status of retention if the party holding the retention becomes insolvent.

If the retention has been segregated from other funds then it is separately identifiable as trust property and the claiming party has first call on the fund. Difficulties arise because the retention is rarely set aside into a separate fund and the clauses relating to trust status are frequently deleted or adapted. For all parties subject to retention this means that their retention is often at risk in the event of insolvency.

Impact of Retention

There has been considerable evolution of retention policy, there remains a spirited debate on the merits of its practice. Proponents of retention bond as reported by Dennis (2004) argue that it provides financial protection for the owner and ensures performance while imposing minimal financial hardship on contractors. It was also reported that retention reduces competition, increases project cost and provides a financial disincentive for timely completion of the work, and places a severe financial hardship upon contractors and subcontractors.

Impact on Construction Cost

Retention reduces competition and increases the cost of construction as evident from previous researches. In 1999 the American Subcontractors Association (ASA, 1999) conducted a national survey of its membership on retention practices. In that study they found that 91% of their memberships are more likely to pursue a project if no retention is withheld. Also 69% of the responding subcontractors indicated they would lower their bid by an average of 3.1% if the project did not require retention. ASA's conclusion was that owners and contractors utilizing retention on their project(s) reduced competition and increased price. The study also reveals that lowering the retained percentage by 50% (i.e. from 10% to 5%) results in construction savings of 1% to 1½ %.

Impact on Cash flow

Mutti and Hughes (2002) identified four main deficiencies that are attribute of failed companies: cash flow forecasts, costing system, budgetary control, and asset valuation. Cash flow problems and shortage of working capital can, in extreme circumstances, push efficient and profitable firms into insolvency. It is also possible that a firm is pulled into insolvency by the failure of another firm. This "domino theory" may apply if a client becomes insolvent owing large sums of money to the contractor, or if a main contractor fails owing cash to one or more regular subcontractors.

Impact on Performance

Various studies have been carried to find out whether there exist a relationship between performance and retainage in construction contract. The Specialist Engineering Contractors Group (SECG) recently completed a study on retainage. Based on its investigation, SECG (2002) submits "there is no evidence to link the existence of retentions to the elimination of defects or enhanced levels of performance" (SCEG, 2002:6). ASA's 1999 survey reached a similar conclusion. It found that retainage was not a motivating factor in the completion of the work for 80% of its membership, Dennis (2004). Many argue that retainage provides an incentive to delay completion of the work to minimize the contractor's financing cost.

Bond

A bond: can be defined as a promise (in writing) by one party (the surety company) to indemnify another party (the obligee/beneficiary) in the event of default by the obligor/contractor. It is an agreement of irrevocable nature between three parties, the contractor/obligor, and the surety and the obligee and the obligor on the other hand, whereby the surety accepts liability to the obligee in the event of the obligor failing to perform his obligation.

Parties to a Bond

Before a bond is demanded, there are two primary players: the person who gives the contract (obligee/principal) and the person who should fulfill the contract (obligor/contractor).

These two parties reach an agreement which the third party, “a surety”, comes in to guarantee the fulfillment.

- I. *The obligee (employer/principal/creditor)*: this is the owner who has the benefit on the bond.
- II. *The obligor (contractor/debtor)*: is the one who carries out the obligation. He is the executor of the project for which the bond is taken.
- III. *The surety*: he guarantee the obligee that the obligor will fulfill his obligations. The surety prepares, signs, seals and delivers the bond to the guaranteed person or company. Where the contractor/obligor fails, the obligee can now recoup from either the contractor and/or the surety.

Types of Retention Bond

According to NSCC (2011), there are two types of retention bond: conditional or default and on demand or unconditional retention bond.

On Demand/Unconditional Retention Bonds:- This, as its title suggests, allows the client to demand payment under the bond without having to prove that a defect is present or that the Contractor is unable or unwilling to correct it. In the case of on demand retention bonds, the surety is usually the contractor’s own bank and the bonded amount is set against the contractor’s borrowing capacity, which will reduce his overdraft limit until such time as it is returned.

Banks may also provide a bond which is on demand but ‘subject to satisfaction of stated conditions’. However, such conditions are likely to fall short of those contained in a conditional bond issued by an insurer.

Beyond checking that the conditions have been met, the bank will not carry out any further investigation to ascertain that the Contractor has defaulted.

The contractor should be extremely cautious about offering on demand bonds as they can be called without good reason and it is the contractor (not his bank) that will be responsible for recovering the money. In making payment to the Client, the bank will also reduce the contractor’s bargaining position.

Conditional Bonds:-In a conditional bond, the liability of employer is conditioning out the prescribed events where in construction cases, commonly the contractor default in committing their works and failure to complete the work on time that had been stipulated in the contracts. Here, comes the right of the employer on the terms of the bonds. If the employer could prove the breach and the loss suffered, the bonds is merely expressed to be activated. But, must be acknowledged that the bonds not absence immediately before the term of ‘default’ determined in detailed. Therefore, in practice, the conditional bond’s is considered as a security for damages which the employer may recover in the action against the contractor.

Generally conditional bonds can be identified by; wording which makes payment under the bond conditional upon the proof of breach of the underlying contract (as opposed to mere notice of a breach) by the contractor; the existence of notice provisions as to the existence of a default or of the intention to claim, as conditions precedent to any call on the bond; the bond being signed by the contractor. Unlike the unconditional bond, the conditional bond depends on the obligations owed by the contractor to the owner under the contract, and the contractor must be a party to it; and the absence of words typically found in unconditional bonds such as: “...on receipt of its first demand in writing...the bank/surety will fulfill its obligations under the bond without any proof or conditions...”

Period of Cover

The period of cover ranges from six(6) months to twelve(12) calendar months in most cases. It is the duration agreed by the surety provider for which he will be held liable for defects in the contractor work. The bond policies are not renewable and can only be extended on special request and

consideration with the payment of agreed extension premium. The policies therefore terminate at their expiry dates.

Premium

This is the amount charged by the surety in providing a retention bond. Generally, in bond policies, premium charged are service charge and the amount charged depends on individual obligor and the type of bond required. In many cases the charge is 1% per annum and the premium is not prorated and not refundable.

The Benefits of Using a Retention Bond

Offering a retention bond in place of cash retention can result in substantial cost savings for the Contractor. The money that would have been held in cash retention remains in the cash flow of the Contractor improving its financial position. In addition, the retention bond will normally contain a fixed expiry date so there is no confusion about when the Contractor stand released from his obligations. There is also no chasing for the release of cash retention at the end of the works, NSCC, (2011).

Problems Associated with Cash Retention

The most prevalent form of protection against non-performance on a construction project is cash retention. In a recent survey carried out by the University of Reading on behalf of the Reading Construction Forum, 77% of all projects surveyed used a retention fund.

On average they represent 3% of contract value and cost, in real terms, the loss of interest on the money held which represents approximately 0.2% of the contract value per year of the contract. This is not, however, deemed to be the most significant factor when considering retention funds, and it is clear that main contractors' retention funds are, in the main, an assemblage of sub-contractors' retentions which can present the following problems to the sub-contractor:-

- i. Retention money withheld longer than contractual retention period
- ii. Retention money not returned in its entirety, or at all, often due to spurious claims against the fund
- iii. Main contractor insolvency
- iv. Main contractor under-valuation of project swelling retention funds

RESEARCH METHODOLOGY

The study is aimed at making a comparative cost assessment of the cost of cash retention and retention bond. Relevant data required for the research were extracted from record of interim valuation of completed projects and information was also collected from financial institutions such as bank and insurance company. A total number of Twenty (20) projects were sampled for this study. The method of data analysis adopted for the research was “the compounding method” also known as “Amount of ₦1 method” which was used to evaluate cost of cash retention and cost of retention bond, which are equivalent to compound interest loss on cash retained by the client and the cost of providing retention bond respectively. Further analysis was carried out using “T-test analysis” in-order to determine the level of significance of the difference between both costs. Simple percentile was also used to compare both costs.

RESULT AND DISCUSSION

Table 1 reveals the cost of retention for both alternatives, against the limits of retention for the projects sampled in this study. The costs were computed using the compounding method and the difference between both costs are as shown in table 1. The results reveals that the average annual cost

of cash retention and retention bond for the sampled projects are $N3.8824 \times 10^5$ and $N1.3897 \times 10^5$ respectively and the average difference in cost is $N2.4927 \times 10^5$

Table 1: Evaluation of Annual Cost of Retention

S/NO	PROJECT TITLE	LIMIT OF RETENTION (₦)	ANNUAL COST OF CASH RETENTION (₦)	ANNUAL COST OF RETENTION BOND (₦)	DIFFERENCE IN COST (₦)
1	A	86,565,347.85	2,075,115.70	841,000.42	+1,234,115.28
2	B	2,266,089.50	52,781.44	23,490.43	+29,291.01
3	C	10,206,810.86	377,610.36	106,150.83	+271,459.52
4	D	17,182,229.54	660,741.38	178,695.19	+482,046.19
5	E	17,269,994.54	460,030.80	167,505.24	+292,525.56
6	F	26,281,672.80	1,444,671.76	365,338.34	+1,079,333.42
7	G	8,278,894.50	257,152.47	128,059.64	+129,092.83
8	H	3,779,983.78	202,707.18	29,119.15	+173,588.04
9	I	15,282,773.53	474,666.52	239,033.00	+235,633.53
10	J	5,266,685.00	159,797.58	81,466.16	+78,331.42
11	K	23,115,756.27	876,880.64	362,351.42	+514,529.22
12	L	1,789,003.53	50,875.43	18,605.64	+32,269.79
13	M	7,783,460.04	262,006.85	122,828.50	+139,178.35
14	N	1,415,289.05	72,067.62	22,961.65	+49,105.97
15	O	775,488.28	36,993.60	7,903.78	+29,089.82
16	P	1,283,760.51	61,555.12	13,351.11	+48,204.01
17	Q	937,722.80	44,962.93	9,752.32	+35,210.62
18	R	1,249,489.52	63,830.68	20,271.72	+43,558.96
19	S	1,332,539.00	68,512.05	21,619.11	+46,892.94
20	T	1,227,549.00	61,901.47	19,915.75	+41,985.72
AVERAGE COST (₦)		11,664,527.00	388,243.08	138,970.97	+249,272.11

Table 2 shows the result of the T-test carried out in-order to determine the level of significance of the difference between the annual cost of cash retention and the annual cost of retention bond. The result reveals that the value of calculated T ($T_{cal} = 1.959$) for the data is greater than the value of tabulated T ($T_{tab} = 1.684$) and also the probability value ($P_{value} = 0.014$) is less than the cutoff point ($C_oP = 0.05$). This implies that a significant difference exist between the cost of cash retention and the cost of retention bond, hence the null hypothesis was rejected.

Table 2: Test of level of significance

S/N	Variables		Type of model	Observation				Inferences Action on hypothesis
	X ₁	X ₂		T _{tab}	C _{oP}	P _{value}	Rmk	
1	Annual cost of cash retention	Annual cost of retention bond	Independent samples	1.684	0.05	0.014	SS	Reject H ₀

Table 3 shows the relationship between the annual cost of cash retention and the annual cost of retention bond. The results reveals that the annual cost of retention bond is 35.79% of the annual cost

of cash retention. This implies that the substitution of retention bond for cash retention in building contract will lead to the reduction of the cost of retention to the contractor by 64.21%. This finding substantiates the finding of Ahmad and Barnes (1994) which state that cash retention reduces profitability and increases contractors' bankruptcy. It also corresponds with the statement by proponents that cash retention increases project cost and places financial hardship upon contractor and subcontractor.

Table 3: Relationship between Cash Retention and Retention Bond

S/N	RELATIONSHIP	
	Ratio of Retention	Retention of Retention Limit
Annual Cost of retention bond	35.79%	1.19%
Annual Savings on Retention Bond	64.21%	2.14%
Annual Cost of Cash Retention	100.00%	3.33%

CONCLUSION

Subsequent to the findings of this research, the study therefore concludes that the utilization of retention bond in lieu of cash retention will reduce the cost of retention to the contractor by 64.21%, equivalent to 2.14% of limit of retention, while still maintaining adequate level of security of the clients' money.

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