

# The Problems and Prospects of Capital Budgeting among Nigerian Firms: Literature Analysis

SANI KABIRU SAIDU

Internal Audit Unit, Bayero University Kano, PMB 3011 Kano, Nigeria  
kbsnazzy@gmail.com

## Abstract

Previous studies examined the concept of capital budgeting since 1960s. Such publications came up with several alternatives in the appraisal of investment by firms ranging from simple to complex approaches with corresponding strengths and weaknesses. This paper's central focus is to identify and examine the most prevent tools of analysis in the Nigerian environment with the view to bringing to light their inherent strength and weaknesses. Unlike several studies that were examined, this paper uses local and international literature on capital budgeting application as the main source of data for analysis. The studies concluded that the Discounted Cash Flow method is widely popular but grossly misapplied even in advanced economies owing to its technicality and lack of dedicated capital budgeting personnel. The paper recommends the use of real-options along with the NPV, as well as the capital budgeting manual and post investment audit should be entrenched in improving the techniques and process of Complex investment decision.

**Keywords:** Capital Budgeting, Problem and Prospects, Nigerian Firms, Literature Analysis

## 1.0 Introduction

The quest for optimum resource allocation that guarantees good return on investment can't be over-emphasized. This is because the elementary study of Economics revolves around scarcity of means in relation to needs. This pervasive trend affects the household, firm and even Government's decision of resource allocation among competing, yet relevant needs.

Kersyte (2011) affirmed that "capital budgeting decisions are among the most important decisions made by business entities". This assertion could be seen in positive light considering the relationship which subsists between investment in capital goods and corporate performance of an entity, Akindele (2010).

Some investment of capital nature appears to be plain and simple with relatively low volume of risks. But in many investment options however, capital investment decision becomes increasingly problematic considering some level of internal and external factors that create uncertainties and risks that exist within the business environment.

Ducci (2009) while analyzing the work of several scholars on capital budgeting relayed that "the ultimate of parts of researches on Capital Budgeting (CB) has been conducted by financial scholars who have developed robust project evaluation techniques". Burns and Walker (2009) further stated that other studies developed literatures that made emphasis on process approach to CB and depicts financial evaluation in the context of complex organizational decision framework.

It is worthy of mentioning here whether CB is seen in a simple or complex evaluation techniques or as a decision making process. Its central significance to corporate profitability, growth and return on investment can't be ignored. As such, previous studies on the same subject matter emphasized on popular techniques and related comparison. It is the cited basis that a simple content study of the problems and prospects of CB among Nigerian firms is embarked upon using literature review approach. The uniqueness of the approach reveals its significance.

## 1.1 Objectives

This paper intends to identify and examine:

- i. The pattern of Capital Budgeting practice and Nigerian Firms in relation to other global best practice
- ii. The pattern and acceptability of different CB techniques in practice
- iii. The strength and pitfalls of various CB methods used by companies
- iv. Solutions based on scholarly postulations

## 2.0 Literature Review

Although the introductory component of this paper attempted to conceptualize CB in the context of basic economics decisions of individuals, firms and Government, effort is made in furthering and deepening the meaning and context of CB.

Akpan et al (2009) sees CB as "an approach or way of making a good choice of investments with satisfactory cash-flow and rate of returns". The latter and former, according to them is achieved within the context of profit maximization and cost minimization objectives of firms. Dayanda et al (2002) while concurring the position of Akpan said that for a company to realize the cited objectives, management is expected to take right decisions on

which investment to embark upon given array of alternatives on the table.

Spreen (2003) stated that CB involves the selection of most valuable investment from from a set of available but indivisible investment subject to capital constrain. In spite of the fact that Spreen's definition is functionally inclined, it does not deviate from the position of Akpan and Dayanda.

Philipaltos (1991) and Belici & Benli (2006) both agreed on the meaning of CB with little contextual variance. They agreed in separate studies which depicts CB as a process and practice concerned with the allocation of scarce economic resources in relation to the available investments options. A more rigorous view of the concept was done by Adewale and Adeniyi (2009), they see CB in the resource allocation point of view but further described it as "a set of private decisions predicated around size of returns and its quality. However, Axelsson et al (2003) cited in Olaniyi (2009) said the definition of CB has developed from the initial focus on financial theory (evaluation of investment) to what is today generally described as a complex process involving a number of activities.

## **2.2 Capital Investment Practice in Advanced Economies**

The theoretical bases of CB is global in evolution and advancement, although its managerial implementation with the extent of technical sophistication in the art and science of managerial decision making, Pike (2005), as such, a good look into the practice of CB in the economies of U.S, UK AND CANADA is considered.

Jog & Srivastava (1995), Payne et al...Canada, Arnold & Hatzopulous (2000), UK..... And Farragher et al(1999), Graham and Harvey(2001), Ryan & Ryan (2002), USA ..... all concluded that the Discounted Cash flow method (DCF) was favoured by industrial practitioners than other methods. However, Bosch et al (2007) , Carry (2008), Magni (2009) revealed some technical challenges in the DCF implementation. Lending credence to the cited authorities, Drury & Tayles (1997) were emphatic that DCF " isn't always applied correctly and their pitfalls lies in its casual use" they concluded.

Supporting the position of Drury, Bosch, Carry and Magni (cited) assert that the misuse of DCF isn't surprising given the complexity of current economic debate about what constitute correct techniques of projects assessment. The DCF technique may be widely acceptable in scholarly literature, but not possibly observed thoroughly in management practice.

The work of Drury and Tayles (1997:86) noted

".....despite the usage of the more theoretically sound discounting techniques, several writers in both the US and UK have claimed that companies are under investing in some investment jurisdiction due to the misapplication and mis-interpretation of DCF techniques....."

## **2.3 Local Application of Capital Budgeting Models**

Akinyomi's (2012) studies of capital investment appraisal in the Nigerian corporate entities revealed the use of multiple evaluation techniques with Pay Back Period (PBP) being the most popular in the model mix. Taking the historical overview of the studies on CB in Nigeria, Muhammad (2010) had it that "some companies use basic analysis techniques that require only approval from relevant departments or committees within the company" he further asserted that "the practice which favours the NPV and IRR were prevalent",

Furthering on the historical perspectives of CB practice among Nigeria firms, Oyedotun (1980) studied 60 companies 40 of which were quoted. The result of the studies reasonably favoured combination of methodologies with significant proportion favouring DCF in the service industry. In the vein, Falusi (1983) investigated 20 quoted companies found the prevalence of NPV over the PBP among large firms with the opposite in favour of smaller firms. Olanrewaju (1999) investigated about 500 companies (quoted) as published Gold Star Publications used non-discounting technique like the ARR and NPV in capital expenditure planning.

Adelega (2003) cited in Akinyomi (2012) holds that majority of the studied firms affirmed that majority of the surveyed firms appraised investments before decision is taken. He concluded (just like other researches that preceded it) that multiple techniques were used to mitigate the short-comings of a single approach.

While different studies reveal mixed results and conclusion ranging from multiple techniques, DCF and PBP methods were being used among Nigerian firms. Even where mixed techniques were utilized, DCF was largely dominant. As such, the reassessment of the pitfalls of DCF is appropriate because of the perversity of its usage CB decisions of Nigerian firms.

## **2.4 Usefulness and Pitfalls of Discounted Cash Flow Techniques**

### **i. Estimation of Cash Flow**

Breadley and Myers (2003) concluded that DCF is often misapplied by way of deducting non-cash expenses such as depreciation from accounting income and deduction of overhead cost. Michoson & Ffolliot (1996) further enlarged the deduction list to include interest expenses and tax. The latter and the former are regarded as the chief sources of error in cash flow estimation according to Bierman & Smidt (1993). It should be noted that the inclusion of finance charges in the forecasted cash flow as well as cost of capital amounts to double charge hence rejecting a valuable project that ought to be accepted.

In some instances, practitioners avoid inflation in budgeting decisions. Doing so according Drury and Tayles (1997) understates cash-flow and corresponding NPV for a very long term project. They suggested that the cash-

flow must be adjusted by either discounting real cash-flow or nominal cash-flow discounted at nominal rate.

#### **ii. Discount Rate**

Since the cost of capital ( $K_o$ ) is a key parameter in DCF computations, companies determine WACC for various sources of funds in aggregate according to Brigham & Ehrhardt (2002). They further posited that firms that finance their projects with a single source of fund such as debt make mistakes by using the cost of debt instead of the weighted average cost of capital. The WACC should be based on the capital structure targets or market value rather than the book values.

#### **iii. Multiple Discounts Rates & Risks**

Just as risks vary with sources of funds, same happen with projects because different projects portend different risk levels. Akinyemi (2002) says projects requiring replacement of existing assets or product line have lower risk level as against expansion of an entity either by project or product. Where such scenario is depicted, Ross et al (2005) suggested pure play and subjective approaches. The former involves finding firms in the business line or product market and using their market RRR while the latter allows management to use its professional judgement in grouping projects according to risk levels. Ross's studies recognized the difficulty of varying WACC for risks levels but concluded that several US and Canada are developing separate divisional cost of capital.

#### **iv. Risk Analysis Approach**

Brigham & Ehrhardt (2002) stated that CB does not only limit itself DCF only, but also embodies risks analysis. The studies revealed that virtually all parameters of CB are prone to uncertainties. Ho and Pike (1991) recommended the use of adjusted discount rate, PBP and the sophisticated techniques(probabilistic) when dealing with risks. The techniques suggested by Ho include sensitivity analysis, monte carlo simulation and decision tree analysis.

#### **2.5 Real-Option as an emerging approach**

The development of real-option as an integral part of CB decision is one of the major invention in CB literature, Ross et al (2005).it is used to describe the option or means to expanding or abandoning a project. Amram and Howe (2002) posited that real-options be used to compliment NPV computations. This option is worth trying by practitioners because Block (2007), Brounen et al (2004) and Ryan (2005) all suggested that a considerable number of firms employ real-option in their CB analysis especially in the US.

### **3.0 Methodology**

This paper used documented literature from journals and books with the view to achieving the objectives of the studies. Similar approach was employed by Block (2003) and Ugboaja (2007), Seyram (2013).

### **4.0 Conclusion and Recommendation**

#### **4.1 Conclusion**

From the critical analysis of relevant literature made while considering the objectives set, the paper concluded:

- i. That firms employ combination of capital budgeting approaches in order to minimize the defect of a single approach
- ii. The Discount Cash-flow techniques is popular among large quoted companies with huge investment portfolio
- iii. The method identify in "ii" is often misapplied by errors inherent in cash-flow analysis, discounting rates and risks adjustment
- iv. That real-option as a supplement to the DCF calculation is at infancy stage of application

#### **4.2Recommendations**

- i. Practitioners using DCF (most popular) should use cash-flow without carrying out normal accounting adjustments that potentially alters correct decisions
- ii. Firms should consider and adopt real-option (option to expand or abandon) in the DCF calculations
- iii. Use of capital budgeting manual and post investment audit (Klammer & Walker(1984),Pike (1989)), existence of full-time capital budgeting staff, and use of Microsoft Excel application(Ho and Spike (1996))

### **5.0 References**

- Adeniyi A. (2008): An Insight into Management Accounting, 4<sup>th</sup> Ed. Lagos, El-Toda Venture Ltd
- Adewale A.A., & Olaniyi T.A (2012): An Empirical Evaluation of the Capital Budgeting Practices Among Local Governments in Kwara State
- Akinsulire O, (2003), Financial Management, 5<sup>th</sup> Ed. Lagos, Ceemol Nig. Ltd
- Amram, M. and Howe, K.M. (2002), "Capturing the value of flexibility", *Strategic Finance*, Vol. 84, No. 6, pp. 10-13.
- Adewale, A.A. (2004): An Empirical Evaluation of Capital Budgeting Practices Among Nigerian Firms,

- Published M.Sc. Thesis, University of Lagos, Akoka
- Akpan N.P, Etuk E.H and Essi I.D (2007), A Deterministic Approach to a Capital Budgeting Problem
- Arnold, G.C. and Hatzopoulos, P.D. (2000), "The theory-practice gap in capital budgeting: evidence from the United Kingdom", *Journal of Business Finance and Accounting*, Vol. 10, No. 5, pp. 603-626.
- Axelsson H.J., & Kheddache, M.,(2003): Capital Budgeting Sophistication and Performance- A Puzzling Relationship. Industrial and Financial Economics
- Bierman, H. and Smidt, S. (1993), *The Capital Budgeting Decision: Economic Analysis of Investment Projects*, 8th ed., Prentice Hall, Toronto
- Block, S. (2007), "Are real options actually used in the real world?", *The Engineering Economist*, Vol. 52, No. 3, pp. 255-267.
- Block, S. (2003), "Divisional cost of capital: a study of its use by major U.S. firms", *The Engineering Economist*, Vol. 48, No. 4, pp. 345-362.
- Block, S. (1997), "Capital budgeting techniques used by small business firms in the 1990s", *The Engineering Economist*, Vol. 42, No. 4, pp. 289-302.
- Bean J, Noon C.E, & Salton G.J (1987): Asset Divestiture at Homert Development Interfaces
- Bilici H, & Benli O (2006): Capital Budgeting with Risk Adjustment for large scale Interdependent Projects. Review of Social, Economic and Business Studies
- Bradley, Michael, and Desai, and E. Han Kim. 1988. "Synergistic Gains from Corporate Acquisitions and Their Division between the Stockholders of Target and Acquiring Firms." *Journal of Financial Economics* 21:1, 3-40.
- Brehmer, Berndt. 1980. "In One Word: Not from Experience." *Acta Psychologica* .
- Brigham, E.F. (1975), "Hurdle rates for screening capital expenditure proposals", *Financial Management*, Vol. 4, No. 3, pp. .
- Brigham, E.F. and Ehrhardt, M.C. (2002), *Financial Management: Theory and Practice*, 10th ed., South-Western, Mason, Ohio.
- Brounen, D., De Jong, A. and Koedijk, K. (2004), "Corporate finance in Europe: confronting theory with practice", *Financial Management*, Vol. 33, No. 4,
- Drury, C. and Tayles, M. (1997), "The misapplication of capital investment techniques", *Management Decision*, Vol. 35, No. 2,
- Farragher, E.J., Kleiman R.T. and Sahu, A.P. (1999), "Current capital investment practices", *The Engineering Economist*, Vol. 44, No. 2,
- Graham, J. and Harvey, C. (2001), "The theory and practice of corporate finance: evidence from the field", *Journal of Financial Economics*, Vol. 60, No. 2-3, pp. 187-243.
- Ho, S.S.M. and Pike, R.H. (1991), "Risk analysis in capital budgeting contexts: simple or sophisticated?", *Accounting and Business Research*, Vol. 21, No. 83, pp. 227-238.
- Ho, S.S.M. and Pike, R.H. (1996), "Computer decision support for capital budgeting: some empirical findings of practice?", *Journal of Information Technology*, Vol. 11, No. 2,
- Jog, M.J. and Srivastava, A.K. (1995), "Capital budgeting practices in corporate Canada", *Financial Practice and Education*, Vol. 5, No. 2,
- Klammer, T. and Walker, M.C. (1984), "The continuing increase in the use of sophisticated capital budgeting techniques", *California Management Review*, Vol. 27, No. 1,
- Magni, C.A. (2009), "Correct or incorrect application of CAPM? Correct or incorrect decisions with CAPM?", *European Journal of Operational Research*, Vol. 192, No. 2,
- Nicholson, J.T. and Ffolliott, J.D. (1966), "Investment evaluation criteria of Canadian companies", *The Business Quarterly*, Summer,.
- Payne, J.D., Heath, W.C. and Gale, L.R. (1999), "Comparative financial practice in the US and Canada: capital budgeting and risk assessment", *Financial Practice and Education*
- Pike, R.H. (2005), "Capital investment decision-making: some results from studying entrepreneurial businesses", *Accounting and Business Research*, Vol. 35, No. 4,
- Seyram P.K., (2013): Corporate Capital Structure Determinants of Listed Companies in the West African Monetary Zone, *Journal of Accounting and Finance*, Vol. 4, No 19.
- Ross, S.A. (2007). *Fundamentals of Corporate Finance*, 4th Aust ed., McGraw Hill, Sydney.
- Ross, S.A., Westerfield, R.W. and Jaffe, J.F. (2002). *Corporate Finance*, 6th ed., McGraw Hill, New York.
- Ross, S.A., Westerfield, R.W., Jordan, B.D. and Roberts, G.S. (2005), *Fundamentals of Corporate Finance*, 5th Canadian ed., McGraw Hill, Ryerson
- Ryan, P.A. and Ryan, G.P. (2002), "Capital budgeting practices of Fortune 1000: how have things changed?", *Journal of Business and Management*, Vol. 8, No. 4