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COST OF CAPITAL: METHODOLOGY OF COMPUTATION REWIEW

[1]Onyimba Roseline Chizoba and [2]Ewah Evelyn Bassey
[1]Department of banking and finance university of Nigeria Enugu Campus
[2]Department of accounting and finance Godfery Okoye University Enugu

Abstract
The paper reviewed various literatures on of cost of Capital to examine and identify the feasible methods for this phenomenon. The methodology of computation that has been in use for the period has not changed. Though different methods have been presented by the several writers but none has been generally accepted in literature. Most of the studies on cost of capital and information asymmetry used CAPM, while majority on other studies mostly used implied cost of capital (ICC).The obvious advantage of this reverse approach (ICC) is that estimates of the expected rate of return are based on forecasts rather than extrapolation from historical data (estimates via market model, the empirical of the Sharpe-Linter capital asset pricing model, or variants of the Fama & French (1992) three/four model). If Cost of Capital should be in predictable cost form, then, the appropriate valuation model should use forecasted cash flows.
Keywords: Cost, Capital, Methodology, Computation

Introduction

Financial decision is one of the three major components of corporate finance. As finance is the fundamental resources needed in setting up a business, because it is used in obtaining and maintaining other basic resources needed. Cost of capital is the process through which the implicit or explicit cost of finance is being ascertained. As a result, it is necessary to identify cost of capital as a vital variable that influences firm performance. Therefore, ascertaining the cost of capital used in financing a business plays a vital role in investment appraisal. An investment that did not produce a rate of return above the cost of capital is not a viable project and should not be undertaken. As Ashraf & Muhammad, posits:

One of the factors identified to affect firm performance in developing is high financing cost. Firms needs to finance and invest in their assets such as inventories over the time to improve their performance, but they need to consider the cost of raising capital before making any decision of

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financing or investing in any assets. Cost is attached if capital is raised through shareholders, bondholders and through securities. (Ashraf, & Muhammad, 2003)

So, in order to select a profitable project, one needs to identify the cost attached to the capital needed to finance the project. Financing choices with its related cost is refers to major corporate decision because minimal cost of capital, representing the corporate long-term capital (equity and debt of fixed income securities) can maximize the market share price and the value of the company (Ashraf & Muhammad, 2017). According to Eiteman, (1964), "the cost of capital may be defined as the minimum cost, expressed as a rate per annum, that must be offered to investors to induce them to place their funds at the company`s disposal and it varies with time, with circumstances and with firms". As a result, estimating firm`s expected cost of long-term financing (equity & debt) is essential for studying the relation between firm level (risk) characteristic (Ashraff & Muhammad, 2017).

Hence, Cost of capital decision is crucial for any business organization, the decision is important because of the need to maximize return to various organizational constituencies, and also because of the impact such a decision has on a firm`s ability and the firm`s value to deal with its competitive environment. In evaluating investment opportunities or measuring cost of capital, a risk adjustment is necessary to measure accurate investment returns. Kiyoung, Maretno, & Chin Yi, (2017). According to Mile & Ezzell, (1980) For financial management to make wealth maximizing capital budgeting decisions, a model that will determine correctly the market value of a project`s levered cash flows is required. An investment decision model should account not only for the effects of the investment decision, but also for the effects of the financing decision and the interaction between the two decisions.

Once the possibility of corporate finance is introduced, complications arise concerning the optimal choice of financing method and the appropriate discount rate to use in present value calculations. In absence of taxation certain principles are generally accepted, first, it is irreverent whether equity-source investment funds comes from retained earnings or the sale of new shares,. Second, firm should use a composite "cost of capital" in their discounting decisions, a weighted average of the interest rate on debt and the rate of time preference of stockholders. Finally, if the cost of capital varies with the degree of debt finance or "leverage" firms should choose the debt: equity ratio for which it is minimized

Ezra, (1955) is of the view that, cost of capital is essential to any rational system for making capital-budgeting decisions. It function is to provide a correct and objective criterion by which management can determine whether it should or not accept available proposals involving the expenditure of capital.

From the perspective of a firm, cost of capital is a cornerstone to attract a shareholder to a firm (Kitagawa & Gojoh). From the perspective of the investor, cost of capital is the minimum return an investor is expected to get for providing the capital (Ashraf & Muhammad, 2017*) and* it is a general belief that maximizing shareholder wealth is the goal of a firm. Ashraf & Muhammad,

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(2017) is also of the view that cost of capital is used as a yardstick by some firms to affirm that their objectives and goals have been met. And according to Giddy, (1981) a firm needs to attain funds at the lowest cost in order to be successful.

In order words, for a firm to improve its value and attain a reasonable financial soundness, one of the vital things to put into consideration is that cost of capital must be lower than the cash flows generated through the firm`s operations. According to Gitman & Vandenberg (2000) the cost of capital has remained one of the key financial metrics used to allocate the firms scarce financial resources to long-term investments, regardless of the type of investment. However, the financial literature is full with discussions of how cost of capital can be applied to make good capital budgeting decisions, assess the economic value added or shareholder value added by a long-term investment, and value the ownership of the firm. The remaining of this paper is as follows: the review of the literatures and related literatures on cost of capital and the general summary review – Conclusion.

REVIEW OF THE LITERATURE

Modigliani, & Miller, (1963) Reviewed "Corporate income tax and the Cost of Capital: A Correction". The purpose of this communication is to correct the error made in the various formulas and valuation expressions in their earlier paper titled "The Cost of Capital, Corporate Finance and the Theory of Investment" (Review June 1958). In general, the force of these corrections has been to increase somewhat the estimate of the tax advantages of debt financing under their model and consequently to reduce somewhat the quantitative difference between the estimates of the effects of leverage under their model and under the naïve traditional view. Thus, the existence of tax advantage for debt financing, even the larger advantage of the correction version does not necessary mean that corporations should at all times seek to use the maximum possible amount of debt in their capital structure.

Easton, (2009) "Estimating the Cost of Capital Implied by Market and Accounting data." The paper analyzed the estimation of the cost of capital implied by the market prices focuses on estimating the expected rate of return implied by market prices, summary accounting numbers, and forecasts of earning and dividends. Estimates of the expected rate of return, often used as proxies for the cost of capital, are obtained by inverting accounting-based valuation models. The study chosen to introduce the key ideas via examples based on actual forecast, accounting information, and market price for listed firms, and used discounting cash flow valuation model.

Eiteman, (1964) " Capital Budgeting" there is not one capital budgeting procedure but several, sometimes two procedure lead to the same decision and sometimes two procedures lead to the same decision and sometimes they lead to opposite conclusions. Each procedure is known by a technical name such as the "payback period" approach, the "discounted payback" approach, and the "rate of return" approach and so on. The paper explained this better known procedures and to point out their underlying assumptions.

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Tbias, (2005) "The Cost of Sustainability Capital and the Creation of Sustainable Value by Companies." The study developed and applied a valuation methodology to calculate the cost of sustainability capital, and eventually, sustainable value creation of companies, capital costs were determined as opportunity cost, that is the foregone returns that would have been created by alternative investments, and the results indicated the logic of opportunity was extended to not only the valuation of economic cost of capital but also other form of capital and the findings indicated that companies earn their cost of sustainability capital whenever they use their set if different form of capital more efficiently than the benchmark.

Douglas, & Robert, (1991) "Disclosure, Liquidity and the Cost of Capital". The paper analyzed the causes and consequences of a security`s liquidity, especially the effect of future liquidity on the security`s current price, equivalently the effect on its required expected rate of return, its cost of capital. The findings showed that revealing public information to reduce information asymmetry can reduce a firm`s cost of capital by attracting increased demand from large investors due to increased liquidity of its securities, large firm will disclose more information since they benefit most. Disclosure also reduces the risk bearing capacity available through market makers. If initial information asymmetry is large, reducing it will increase the current price of the securities.

Alan, (1979) "Wealth Maximization and the Cost of Capital" the paper explored the issue of wealth maximization and the implied behavior of the firm paying attention to the following results; in absence of taxation certain principles are generally accepted. First, it is irrelevant whether equity-source investment funds come from retained earnings or the sale of new shares. Second, firms should use a composite "cost of capital" in their discounting decision, a weighted average of the interest rate on debt and the rate of time preference stockholders. Finally, if the cost of capital varies with degree of debt finance, or "leverage," firms should choose the debt –equity ratio for which it is minimized. And then how these results are affected by existence of capital income taxes. The result indicated that a tax structure similar to that in existence in the United State influences the cost of capital in a very different way that has assumed previously and relative advantages of debt over equity as a method of finance, and capital gains over dividends as a vehicle for personal realization of corporate profits may have been greatly overstated. These findings may help to explain certain aspects of corporate financial behavior that have seemed puzzling.

Miles, & Ezzell, (1980) "A Weighted Average Cost of Capital, Perfect Capital Market, and Project Life: A Clarification." Recently, the capital budgeting literature has been concerned with the effect of project life on the validity of the textbook approach to project analysis. Although it is usually accepted that the textbook weighted average cost of capital (WACC) is an appropriate discount rate for either of the polar assumptions of (1) a one- year project life or (2) level perpetual project cash flows, a number of authors have argued that the textbook approach does not generally provide correct valuations of uneven finite cash flows. The paper examined the validity of the textbook approach for uneven cash flows in the context of the MM perfect capital market and the analysis revealed that if unlevered cost of capital, the cost of debt, the tax rate, and the market

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value leverage ratio are constant for the duration of a project, then the value of a project`s levered cash flows can be obtained by discounting the unlevered cash flows at a rate: 1. that is invariant with respect to the time pattern and duration of the levered cash flows and 2. That is equal to the textbook WACC. Thus, the textbook approach is a special case of the MM valuation result and Myer`s Adjusted Present Value (APV) capital budgeting rules. The critical assumption for establishing the validity of the textbook approach is concerned with the firm `s financing policy. The project life is not the issue.

Ghoul, et al. (2011) "Does Corporate Responsibility affect the cost Capital"? the paper examined the effect of corporate responsibility on the cost of equity capital for a large U.S. firms using several approaches (of implied cost of capital) to estimate firm`s ex ante cost of equity and the result showed that firms with better corporate responsibility scores exhibit cheaper equity financing in particular, the finding suggest that investment in improving responsible employee relations, environmental policies, and product strategies contributes substantially to reducing firms` cost of equity.

Alan, (1982) "Examined Taxes, Firm Financial Policy and the Cost of Capital: An Empirical Analysis." The paper develops a theoretical model of firm behavior consistent with the maximization of shareholder utility, and derives empirical testable implication of different theories of equity finance. Using data on firm earnings and previous investment and financial behavior and access whether firms treat new shares issues as a more expensive source of finance than retentions, and weather such behavior varies across firms according to the composition of their shareholders. The results strongly supported the hypothesis that firms perceive a higher cost of capital when issuing new shares, and that the cost of capital varies significantly across firms having different estimated tax clienteles, as theory would predict.

Hribar, (2004) "The Effect of Accounting Restatement on Earnings Revisions and the Estimated Cost of Capital." By their nature, accounting restatements often lead to downward revisions in future expected earnings because the restatement affects the past time series of earnings, thereby affecting projections based on these figures. The paper used implied cost (four implied-cost-of-capital models) techniques to estimate directly the effect of a restatement on firm`s cost of capital and it showed that, on average, accounting restatements lead to both decreases in expected future earnings and increases in the firm`s cost of equity capital. Depending on the model used, relative percentage increases in the cost of equity capital average between 7 to 19% in the month immediately following a restatement. The relative increase in the cost of capital dissipates as time passes and after controlling for analyst forecast biases, but continues to average between 6 and 15% in the most conservative setting. It also revealed that the restatements initiated by auditor are associated with the largest increase in their cost of capital and that firm with greater leverage experience greater increases in their cost of capital. Generally, the evidence is consistence with accounting restatement lowering the perceived earnings quality of the firm and increasing investors` required rates of return

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Aboody, Hughes, & Liu, (2005) "Earning Quality, Insider Trading and Cost if Capital." The paper examined two closely related issues regarding the cost of capital effects of asymmetric information: (1) Whether the systematic component of asymmetric information is priced, and (2) Whether privately informed traders earn greater profits when trading stocks with higher exposure to an asymmetric information risk factor. Fama and French four-factor model asset-pricing model by adding an earnings quality factor to the Fama and French (1993) three factor model was used to measured the cost of capital. The general findings were consistent with affirmative answer to both question and the results suggest that the systematic component of earnings quality is priced, but the evidence is relatively weak.

Hail, & Leuz, (2006) "Cost of Capital Effect and Changes in Growth Expectations around U.S. Cross-Listings." The paper examined whether cross-listing in the U.S. reduces foreign firms` cost of capital. Estimated the cost of capital (four implied-cost-of-capital models) effects implied by market prices and analyst forecasts and which allows to explicitly account for changes in growth expectations around cross-listings and the findings showed a strong evidence that firm with cross-listings on U.S. exchanges experienced a decrease in their cost of capital, which economically significant and sustained.

Botosan, (2006) "Disclosure and the Cost of Capital: What do we know"? Whether firms receive cost of capital benefit from greater disclosure is an important and controversial question. The paper reviewed the relevant academic research that can provide insights into this question and the overriding conclusion of existing theoretical and empirical research is that greater disclosure reduces cost of capital.

Himmelberg, Hubbard, & Love, (2002) " Investor Protection, Ownership, and the Cost of Capital" the study investigated the effect of investor protection on the cost capital, where the "investor protection" refers collectively to those features of the legal, institutional, and regulatory environment and characteristics of firms or projects that facilitate financial contracting between insider owner (manager) and outside investors. Using structural equations a model derived from insider ownership and investment, the results from two predictions of the model, showed that first, the weaker is investor protection, the higher is the concentration of insider ownership, the higher is the concentration of insider equity ownership. And second, the higher is the concentration of insider ownership, the higher is the implied cost. The policies aimed at strengthening investor protection laws and their enforcement will improve capital allocation and result in higher growth.

Robert, (1989) "Consistent Valuation, and Cost of Capital Expressing with Corporate and Personal Taxes." The study examined three valuation methods, each which should lead to the same value for a given asset. These are the adjusted present value, adjusted discount rate and flow to equity methods. To achieve identical capital expressions that embody a consistent set of assumption about (1) the tax regime and (2) the time pattern and riskiness of debt tax shields. The valuation and cost of capital expressions that have been proposed in the literature are grouped and contrasted according to these assumptions. It is also showed that the familiar weighted average cost of capital

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can consistent with any such of assumptions, as long as correct expression is used to estimate the relationship between the levered and unlevered cost of equity.

Gitman & Vandenberg, (2000) "Cost of Capital Techniques Used by Major US Firms: 1997 vs. 1980" the study reports the findings of a recent (1997) survey of the cost of capital practices of major US corporations and compare them to an earlier (1980) study that used the same survey instrument. The findings revealed clearly practitioners are changing their methodology for computing many of the cost of capital metrics CAPM. Currently, almost twice as many firms report using the cost of capital to estimate the firm`s value; this is consistent with increasing focus on shareholder value. The findings reported in the study should help to further narrow the theory-practice gap in the measurement and application of the cost of capital and allow academics to report the sate-of the art to their students.

Rjiba, (2012) "Annual Report Readability and Coat of Capital" the paper examined the effect of annual report readability on the cost of equity capital in a sample of un9que 288 French firms between 2002 and 2006. After controlling for several risk factors, the results show that firms with less readable annual reports exhibit a higher cost of equity capital. Thus, study computed the cost of equity capital by estimating the ex ante expected implied in current prices and analyst`s future cash flows based on four different models

Lambert, Leuz, & Verrecchia, (2006) "Information Asymmetry, Information Precision and the Cost of Capital." The study examined the relation between the information differences across investors and the cost of capital. Model that is consistent with CAPM was used in calculating the cost of capital. The analysis makes three findings. First, in models of perfect competition, information differences across investors affect a firm`s cost of capital through investors` average information precision, and not information asymmetry per se. second, the average information precision effect is unlikely to diversify away when there exist many firms whose cash flows co-vary. Finally, in models of imperfect competition information asymmetry affects the willingness to supply liquidity; this in turn, affects a firm`s cost of capital. Thus, the precision of the information and information asymmetry have separate and distinct effects on the cost of capital.

Armstrong, Core, & Verrecchia, (2010) "When Does Information Asymmetry Affect the Cost of Capital"? The paper examined when information asymmetry among investors affect the cost of capital in excess of standard risk factors. When equity markets are perfectly competitive, information asymmetry has no separate effect on the cost of capital. When markets are imperfect, information asymmetry can have a separate effect on firm `s cost of capital. The study used future excess returns as a proxy for cost of capital, the alternative to use future return as a proxy for expected returns is to use an implied cost of capital measure. used as implied cost of capital measured The findings showed that information asymmetry has a positive relation with firm`s cost of capital in excess of standard risk factors when markets are imperfect and no relation when markets approximate perfect competition. Generally, the result showed that the degree of market

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competition is an important conditioning variable to consider when examining the relation between information asymmetry and cost of capital.

Easly, & O`hara, (2003) "Information and the Cost of Capital" the paper investigated the role of information in affecting a firm`s cost of capital focusing on the specific roles played by public and private information. Using asset pricing model in which both public and private information affect asset returns and results revealed that the quality of information affects asset pricing, then how information is provided to the markets is clearly important.

Gerhard, & Nick, (2007) "The Impact of Voluntary Disclosure on Cost of Equity Capital Estimate in Temporal Setting" the investigated the association between the level of voluntary disclosure and cost of equity Capital. Residual income valuation model, starting with a basic dividend discount model was used in measuring the cost of capital. Generally, using OLS regression on 95 listed companies from Austria, Germany, Sweden, and Denmark. An expected negative relation is found between the level of forward-oriented information and cost of equity capital, and an unexpected positive relationship is found between the level of historical information and equity cost of capital.

Hou, Dijk, & Zhang, (2012) "The Implied Cost of Capital: A New Approach" The study used earnings forecasts from a cross-sectional model instead of analyst` forecasts to proxy for cash flow expectation and estimate the implied cost of capital for more than 170,000 firm-year observations over 1968-2008. The cross-sectional earnings model captures significant variation in future earnings performance across firms using ex ante publicity available information. More importantly, the model produces earnings forecasts that are superior to consensus analyst forecasts in terms of coverage, forecast bias, and earnings respond coefficient. It showed that the relative performance of the model-based earnings forecasts and implied cost of capital over analysts` forecasts and the analyst-based implied cost of capital is more pronounce for firms with a relatively poor information environment.

Lee, & Wang, (2010) "Evaluating the Implied Cost of Capital Estimate (ICC)." In attempt to address a key problem in the development of market implied cost of capital estimated how assessing ICC performance as expected returns proxies when prices are noisy. The study proposed a two-dimensional framework for assessing the quality of implied cost of capital estimates as proxies for firm-level expected returns. Using this frame work, they evaluated seven alternative implied cost of capital(s) and found that ICC approach offers significant promise in dealing with a number of long-standing empirical asset pricing conundrums, and perform well along both dimensions, and all do significantly better than Beta-based estimates and generally, implied cost of capital appear to attractive firm-level expected return proxies. An important appeal of the ICC as proxy for expected returns is that it does not rely on noisy realized returns. At the same time of ICC as a proxy for expected returns is not without its own problems and limitations.

Ashraf, & Muhannad, (2017) " Inventory Management Cost of Capital and Firm Performance: Evidence from Manufacturing Firms in Jordan." The study examined the moderating

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effect of cost of capital on the relationship between inventory types and firm performance, and used after tax weighted cost of debt + weighted cost of equity (WACC) to compute the cost of capital. The data of 48 firms for the period 2010-2016 which formed 279 firm-year observations were used i8n the study. With the use of pearson correlation and panel generalized method of moments (GMM) estimation, the findings showed that inventory management with consideration of its types influence firm performance in the long term.

Figge, & Hahn, (2005) "The Cost Sustainability Capital and the Creation of Sustainable Value by Companies." The study developed and applied a valuation methodology to calculate the cost of sustainability capital, and, eventually, sustainable value creation of companies and the methodology allowed for the calculation of the cost that are associated with the use of different forms of capital.

Chang, Harjoto & Chin Yi, (2008) "A simple way to Convey Internal Rate of Return, Cost of Capital, Investment Performance, and Capital Structure Using Compustat Data in Finance Classes." The study is to demonstrated a empirical exercise to student to estimate the project`s internal rate of return and expanded the understanding on other important corporate finance concepts, including book value vs. market value, cost of capital (as a hurdle rate), capital structure, and investment performance measurement. The return calculation of Fama & French (1999) was used to provide two return measure (WACC) Internal rate of return (IRR) based on the market value and historical cost (book value)of the firm`s investments. Using compustat data, to demonstrate to the student the estimation of cost of capital and project returns at three levels: whole economy, industry and firm level and the findings showed that there exist cross-industry differences in investment performances and that their differences are pronounced in certain periods.

Koedijk &Dijk, (2004) "Analyzed Global Risk Factors and the Cost of Capital." The paper investigated whether incorporation global risk factors would significantly affect international cost-of-capital computations. The study analyzed a sample of almost 3,300 stocks from nine industrialized countries for the 1980-99 period and found that for approximately 95 percent of the companies, a clear-cut approach to investigating the effect of global risk factors on cost-of capital calculations is to consider alternative asset-pricing models that do and not include global factors and evaluate whether they different estimates of the cost equity capital. Price-error test was applied and showed that the straight forward domestic CAPM does not lead to a significantly different estimate of the cost of equity capital from that provided by the international CAPM. Also the findings showed that an international capital asset pricing model should be used for computing a company.

McDaniel, (1997) "Examined the Cost of Capital Project" the study is the detailed description of a class project for advanced managerial financial classes. The student estimated the weighted average cost of capital (WACC) for an actual company, using primary data source and findings revealed that the cost of capital is a pedagogical tool used for over 10 years in advanced

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managerial finance classes. By estimating the WACC for actual company, students have a closer-to-real life experience in applying financial management models.

Ranjit, (1968) "Optimal Investment and the Cost of Capital." The paper presentenced an alternative model for estimating the cost of capital (optimal investment decision of the firm over time as the market valuation of a firm and its optimal investment decision are integrally interrelated) to a firm in the private sector, the model was applied to the current industry of India, 1956-1966, the findings revealed that, first, there is a wide range of dispersion in the cross-section of cost of capital. Second, the direction of change in such cost over time need not be the same for all the firms in the industry. The differences when compared with MM method are significant. The method served as a cross-check on the MM approach.

Ezra, (1955) "Measuring a Company`s Cost of Capital" the aim of this paper to formulate a explicit and appropriate way of defining and measuring cost of capital, it sought a correct way of defining and measuring the cost of capital and for a more than one source of financing is used. One approach to take the supply of equity funds as given and to assume that all increments of financing over and above derived from borrowing, the second approach to take the cost of equity funds as the relevant cost for all increments of financing, whether debt or equity source are used and finally the third approach is a variant of the first approach. It takes the cost of debt funds as being equal to the net (after-tax) rate of interest. Though, the three approaches and its shortcoming suggested that the problem of determining the optimum ratio of debt to equity and the problem of measuring the cost of capital cannot be treated independently. Both must be solved within the same framework, and no simple framework is likely to provide such a solution.

Jhaveri, (1977) "Impact of High Capital Cost on Cash Flows of Industrial Units." The paper assessed the impact of escalation in capital cost and the possible approach to assessing the impact of escalation in capital increase in interest rate charged on term-finance would be to identify the amount of incremental funds required by an industrial unit on account of these factors. The purpose is to quantify, in certain hypothesis cases, incremental requirement of funds in the form of depreciation and debt servicing-interest pus amortization (repayment of principal) – on the bases certain simplified assumption and it suggested that escalation in capital cost is normal phenomenon which does not require any special solution. Ultimately, interest cost like any other increase in cost has got to be adjuste3ed either through offsetting reductions in some other components of cost or a revision in prices.

Zahir & Ahmed, (2017) "Measurement of Cost of Capital for Foreign Direct Investment in Pakistan: A Neoclassical Approach," The paper analyzed the FDI regime in Pakistan with special reference to the effects of fiscal provisions in the form of reducing production cost via cost of capital in Pakistan. To achieve the goal, they incorporated the well-known Jorgenson`s investment model for its application to compute the cost of capital for foreign firms in Pakistan. In order to reach this computation, present values of depreciation deductions are computed and then the components of cost of capital are explained (after tax cost of debt + equity cost, WACC), the

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results showed that cost of capital has strong implications for investment firms and public institutions as it can be influenced by the fiscal incentives and public actions.

SUMMARY REVIEW

The financial structure of any firm is characterized by short term and long term (capital structure) finance. A firm capital structure can either be all equity or equity-debt financed. The Computation of the relative cost attached to either of the option cannot be over looked. The determination of a company's capital budget is an intricate process that requires several simultaneous decisions by management; the total extents of capital expenditures will takes; and the forms of financing to be used in meeting these expenditures (Ezra, 2017). Thus, it is essential for an appropriate project selection. Many researchers have studied cost of capital in various ways. Including effect of cost of capital on firm performance, the relationship between cost of capital and information asymmetry, many have used it as a base of assigning or measuring value of firm`s performance and so on. Ascertaining the rate on the cost of capital requires model for the computation. Theoretically, a lot of method have been identified and used by various Authors in different environment.

However, cost of capital is a very important component of corporate finance because it directly affects the cash flow of the project. Every rational investor tries to choose an investment that will produce positive net present value when the expected cash flow is been discounted using the rate determined by the firm`s cost of capital or the required rate of return. Therefore, the rate of return from the project must be higher than the cost of the capital rate in order to maximize the returns. Its function is to provide a correct and objective criterion by which management can determine whether to accept or not accept an available proposals involving the expenditure of capital; because of this function, this concept – cost of capital has been called the "minimum required rate of earning" or the "cut off" rate for capital expenditures (Ezra, 2017). There are combination of techniques and approach for the assessment of cost of capital (long term capital), these methods are;

- **Internal rate of return (IRR) approach**

Fama & French argue that the IRR on the value is, in essence, a cost of capital. The overall cost of capital is the IRR that equate the initial market value of the firms with their post-entry cash flows and their terminal market value Kiyoung, Maretno, & Chin Yi, (2017). Because cash flows are measured prior to interest and dividends, I RR is a compound return on assets for holding the whole sector over the sample period. It is also a weighted average of cost of capital based on securities issued by firms initially and through the sample period Kiyoung, Maretno, & Chin Yi, (2017).

- **Present Value Approach;**

The capital budgeting involves discounting cash inflows at the cost of capital comparing the resulting present value with the initial outlay required to obtain the income stream.(Eiteman, 1964).

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- **Optimal Capital Structure.**

The overall cost of capital depends upon the combination of sources that the company uses to finance and upon the total financing of the company, not just the financing of the additional expansion. To comply with economic definition of cost of capital as the minimum cost needed, the optimal capital structure must d be determined. Where this is not feasible, a workable estimate of cost of capital for a particular firm can be made by assuming that the firm`s present capital structure reflects management`s option as to the optimal capital structure. Under this assumption, cost of capital becomes a weighted average of the cost of individual source of capital (WACC) **(**Eiteman, 1964).

- **Economic Cost of Capital**

Economic capital is invested in a company whenever the expected return of the investment lies above the opportunity cost of the capital. Opportunity costs indicate the value that would have been created by alternative use of capital. In a financial market opportunity cost of capital corresponds to the yield of an investment with a similar risk. In practical the opportunity cost and thus, the cost of capital is determined by the equation- $CC = VC^M / CE^M$, CC= cost of capital, VC^M = the value created by the market and CE^M = the amount of capital employed by the market. A company creates value when it uses capital more efficiency than the market. In order words, a company creates possible economic value if the value created by the company is higher than the opportunity cost of the capital employed, that is, higher than the value that would have been obtained by investing the same amount of capital in the market.

- **The Implied Cost of Capital (ICC)**

The implied cost of capital for given asset can be defined as the discount rate (or internal rate of return) that equates the asset`s market value to the present value of its expected future cash flows. Further analysis showed that the relative performance of the ICCs is closely related to the compatibility's of earnings forecasting method to the valuation models. According to Haribar, (2004) the model used forecasts of future earnings expectations and current stock prices as inputs to a valuation model, assumptions about the evaluation of both future earnings stream in order to drive a firm specific of a capital measure (Lee, So, & Wang, 2010). ICC models are an explicit attempt to separate cash flow (or growth) effects from cost of capital effect.

- **Capital Assets Pricing Model (CAPM)**

According to the CAPM, the cost equity capital for a firm (R_j) is the linear function of its systematic risk (beta) that is $R_j = Y_o + Y_iB_{i..}$ It comprised the risk free rate of interest (rf) and a premium for the firms non-diversifiable risk (risk premium). CAPM is of the view that the total return an investor should be expecting from the money invested is the reward for the time value of money and the premium for taking systematic risk. That is: Rf = reward for time value of money, while β(Rm – Rf) = reward for taking systematic risk. Therefore, cost of equity capital is Re = Rf + β(Rm – Rf).

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- **Residual Income Valuation Model**

Starting with a basic dividend discount model i.e. $P_t = \sum_{i=0}^{\infty}(dpst + r)/ 1+ re$

$\sum_t$ (dpst + r) is expected dividend per share at time t, re is the return on equity, Pt is assumed to be the best available empirical proxy for a stock `s intrinsic value and the discounted expected dividends are equal to the P v of P_t (Gerhard, & Nick, 2007).

- **Traditional Dividend Discount Valuation model**

Cost of equity capital can be also be described as the risk-adjusted discount rate that investors apply to expected future cash flows (E_t (Div) to arrived at current stock price (Pt) the notion is capture by the traditional dividend discount formula giving by $\sum_{r=1}^{\infty} E(\ Div)/(1 + r)$.

- **Three Factor Model Approach/ Four model Approach**

Frama & French (1999), three factor models expands the set of risk factors to include the risks captured by firm size and market- to-book. The three factor model presents the same estimation problem described above include non-diversified risks captured by firm and market-to- book. The four models Approach were all based on discounted earnings approach.

Though, there a combination of various methods for the assessment of equity cost of capital or equity-debt cost of capital. These methods are discounted cash flow/earnings/dividend and "WACC" weighted average cost of capital/weighted average interest respectively. As described above, the methods are all based on discounted approach except CAPM which is based historical data and the market returns. The formal methods used in literature were all based on discounted valuation model, despite the fact that, the difference might come in form of what the model is using for discounting, either, cash flows, dividend, earnings, forecasted earning or cash flows that equate its present value to the current value. While the WACC is the combination of the two set of capital (equity and debt) after the specific cost of each component must have been ascertained using the either discounting approach. However, the decades- long academic debates and controversial on the validity of these approaches, yet none has been generally accepted in literature.

On the other hand, the cost of equity capital is the minimum rate of return equity investors require for providing capital to the firm. For CAPM this approach is popular in practice, its widespread use is not without controversy. According to Gitman & Vandenberg, (2000) a large majority of firms in US in 1997 than in 1980 used some type of weighted average and are less likely to use the Cost of specific source to calculate the cost of capital while many firms in 1997 than in 1980 were more familiar with CAPM and its related tools and concepts; employed them in some fashion; and used them in determining the cost of capital and capital budgeting.

The cost of capital for a firm in the private sector also has been a matter of wide debate. The traditional view holds that it is a function of the leverage i.e. the proportion of debt to total assets; more specifically, it a U shape curve (Ranjit, 1968). In Sharp contrast to the above school, MM has developed an econometric model to estimate the cost of capital. As Ezra posit:

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Quite apart from the practical difficulties of measuring capital costs for a specific company, there is today no explicit and general acceptable account of what is the correct conceptual approach to its measurement. The only valid criterion for the cost of new equity capital is a refinement of the simple E/P ratio. If the shareholders were all in the zero income tax bracket and underwriting cost and brokerage fees were also zero, the valid cost of capital funds derived internally from retained earnings would be clearly equal to the cost of external derived equity funds. The problem of determining the optimum ratio of debt to equity and the problem of measuring the cost of capital cannot be treated independently. Both must be solved within the same framework, and no simple framework is likely to provide such a solution (Ezra, 1955).

Conclusion

Determining the cost of capital would help firms to make better and more accurate decision on investment expected returns before undertake the project. It is characterized by the integration of the decision concerning investment and financing decision. A project with minimum cost of capital higher than its rate of return is not a viable project. Discounted method approach stands as an economic theory that describe the ex ante cost of capital. However, the required return on capital from the investor is the cost of capital to firm, therefore the relative return on investment should be the ex ante cost of capital to the firm, since what the investor received as expect return from investing their fund in a particular firm is what the firm paid the investors for using their money.

Thus, the four ICC models suggested in the literature (Clous &Thomas, 2001) were consistent with the discounted dividend valuation model but exploit the accounting structure to obtain or equivalent earnings-based representation (Luzi,& Hail,2006).

Therefore, whatever the company is paying or value created from using any form of capital should be the relative return on capital to the provider of capital irrespective of the inflation. Reason because inflation will directly or indirectly affect the value of the capital invested and likewise the value of the returns (cash flows, dividend or earnings). Internal rate of return is used to ascertain the minimum cost of capital using implied cost of capital (ICC) (forecasted returns). ICC for a given firm is the internal rate of return that equates the current stock price to the present value of expected future cash flow, while composite ICC measures the equal-weighted average of the individual estimates (Hou, Dijk, & Zhang, 2012). Proposed project is said to be viable when its internal rate of return is higher than the required cost of capital.

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