

# An Investigation of the Association between Levels of Accounting Conservatism and Corporate Cost of Debt

Amira Elsayed Mohamed Ismael  
School of Accounting, Cairo University, Egypt  
Email: elamiraeg@hotmail.com

## Abstract

This research aimed at exploring the relationship between accounting conservatism and cost of debt. Debt in this study was corporate bonds. Past researches found continues negative relationship between levels of accounting conservatism and interest rate. The aim of this research was to study if this relationship is also applied in Egypt. Using an empirical research and a sample selected from publicly-traded Egyptian firms that issued bonds, the finding was not in consistent with the literature. The research results indicated that level of accounting conservatism adopted in a firm influence the cost of debt, and that this influence is not constant all the time; different levels of conservatism affect the cost of debt by different ways. For this, accounting conservatism should be used with caution, so that the level adopted within the firm don't exceed the accepted limit to gain the benefit. However, accounting conservatism is not always good instrument in reducing interest rate, and it should be used with care.

## 1- Introduction

### 1.1 Statement of the Problem

Using accounting figures in lending agreements is considered to be an important part of the demand for accounting. The accounting literature hypothesizes that managers make accounting choices, such as manipulating net income, to avoid tripping accounting based loan covenants (Begley and Chamberlain, 2005). Thus, when managers' manipulation of accounting figures increases, lenders risk also increase. As a result, lenders would ask for a reward for this high risk. These rewards might be increasing interest rate on their debts; and or adding more covenants that mitigate the risk. These covenants would reduce the flexibility of the firm and load an extra cost on it. Accounting conservatism may help solving this problem (Begley and Chamberlain, 2005).

However, there is no generally accepted definition of conservatism. Yet, Conservatism in the empirical literature is interpreted as representing "the accountant's tendency to require a higher degree of verification to recognize good news as gains than to recognize bad news as losses" (Basu, 1997). This interpretation allows for degrees of conservatism; the greater the difference in degree of verification required for gains versus losses, the greater the conservatism. Hence, conservatism doesn't imply that all revenues generating should be received before profits are recognized (Watts, 2002). This "Asymmetrical verifiability of the accounting conservatism speeds up the recognition of losses and provides the board of directors and shareholders with a sign to investigate the reasons for those losses" (Watts, 2003a). Hence, a higher degree of verification required for gains than for losses, because the stakeholders of the firm have asymmetric payoffs from the contracts.

Hence, "in assessing a potential loan, lenders are interested in the likelihood the firm would have enough net assets to cover their loans. Future values of the firm net assets are generally not verifiable. Lenders, however, obtain verifiable (lower bound) measures of the current value of net assets and use that as a basis for the loan. Further, they use those lower bound measures during the life of the loan to monitor the borrower's ability to pay" (Watts, 2002). In debt contracts, lenders use these lower bound measures of net assets (and other accounting measures) to trigger technical default and allow for calling the loan (Beneish and Press, 1993), and to restrict managerial actions such as cash dividends that reduce the value of net assets or otherwise reduce the value of the loan (Smith and Warner, 1979).

Therefore, "in debt, compensation and other contracts that use earnings and performance measures, conservatism emerges endogenously as an efficient contracting mechanism. It occurs because it is optimal for contracts' performance measures to be conservative "(Watts, 2002). Conservatism leads to greater delay in the recognition of gains than in the recognition of losses with the result that net assets and cumulative earnings are less likely to be overstated at any point in time. This reduces the likelihood of distributions that violate contracts and reduce the value of the firm. However, conservatism leads to bias toward reporting lower income. Hence, conservatism lowers the book values of stockholders' equity. Possible errors in measurement are in the direction of understatement rather than overstatement of net income and net assets (FASB #2, 1980).

Thus, accounting for conservative increases the likelihood of classifying firms as being in the unfavorable states of affairs and decreases the likelihood of classifying firms as being in the favorable state of affairs. Such bias, unless it can be quantified or understood by the end user, runs the risk of producing misleading

information (Fan and Zhang, 2005). For this, an adequate disclosure of the policies adapted by the firm is needed to let the stakeholders know that firms are using accounting conservatism. Financial reporting should provide information that is useful to present to potential investors, creditors and other users in making rational investment, credit, and other decisions (FASB #2, 1980). However, if conservative reporting provides lenders with a more timely signal of default risk, they are likely to reduce interest rates charged to more conservative borrowers in exchange for the mitigated risk. Moreover, the more conservative the borrower is, the greater the benefits to the lenders given greater mitigation of the default risk.

In addition, when the borrowers build a reputation as being reporting-conservative, this will reduce the cost of debt and minimize covenants because lenders will use such reputation as an implicit control on the borrowers. It is an implicit control because borrowers will keep their reputation to get the gain when they like to issue new debts (Begley and Chamberlain, 2005). "In practice, the covenants of publicly-offered bonds are enforced by the bond's trustee who is appointed and paid by the borrowing firm, and the borrowing firm's repayment capacity is monitored by third party bond-rating agencies" (Kwan and Carleton, 2004). These rating agencies update the rate of the firm periodically to reflect any risk that might appear. The firms with high debt rating are able to borrow at low interest rate. Also, as cited in Ahmed, Billings, Harris and Morton (2000), Standard & Poor's rating agency (1986) documented that there is a strong inverse relation between debt ratings and interest rates.

However, in debt contracts, conservatism benefits borrowers and lenders ex-post and ex-ante." Conservatism benefits lenders ex-post through a timely signal of default risk in the form of accelerated covenants deviation by more conservative borrowers. In exchange, lenders offer lower initial interest rates ex-ante to those borrowers who commit to or have a reputation for more conservative reporting" (Zhang, 2005). In the debt contracting process, lenders are less informed than borrowers and the former face downside risk but no upside potential. A borrower's limited liability and potential to behave opportunistically add to the downside risk of lenders. In an efficient lending market, lenders favor mechanisms that mitigate their downside risk. Watts and Zimmerman (1986) suggest that accounting conservatism is one of such mechanisms. Since lenders and borrowers contract on the financial reports through financial covenants, conservative reports enable lenders to receive a timelier signal of deteriorating financial performance through triggering covenant violations. This timely signal allows lenders to take protective action, thereby reducing their downside risk (Zhang, 2005).

Therefore, if conservative reporting provides lenders a timelier signal of default risk, they are likely to reduce the interest rates charged to more conservative borrowers in exchange for the mitigated risk. Moreover, the more conservative the borrower is, the greater the benefits to the lenders given greater mitigation of the default risk. Nevertheless, "firms with growth opportunities are more likely to seek to preserve flexibility in future financing activities by not including covenants (debt issuance or dividend restrictions) in their bond contracts. Thus, when selecting covenants to include in a debt agreement, a firm must generally choose between maintaining flexibility and reducing potential agency problems. For high-growth firms, the desire to maintain flexibility in financing dominates the need to reduce agency costs of debt" (Nash, Netter and Poulsen, 2003).

In addition, "high investment opportunity firms are unwilling to give up flexibility with respect to cash payouts and additional financing due to the greater uncertainty about their future operations. Overall, the results indicate that bond contracts are not "boilerplate" documents, rather they are negotiated to incorporate specific covenants that are appropriate for the conditions and requirements of the issuers and investors" (Nash et al., 2003). Bondholders may reduce their covenants in the contracts if the firm agrees to adopt accounting conservatism and reporting conservative policies. However, the value of signals provided to lenders from conservatism would be reduced if the signals become too noisy in either directions, both aggressive and conservative (Begley and Chamberlain, 2005). Hence, the questions that should be addressed in this field of research would be:

- 1- Is there a difference in the level of accounting conservatism adopted within firms?
- 2- Is there an association between the level of conservatism that firms adopt and the cost of debt?

### **1.2 Objectives of the Research**

The main objective of this research is to investigate the relationship between levels of accounting conservatism and the cost of debt. This main objective can be divided into the following sub-objectives:

- a) Investigating levels of accounting conservatism adopted within firms.
- b) Examining empirically the relationship between conservatism levels and the cost of debt, to reach to the optimal level of accounting conservatism.

### **1.3 Research Methodology**

The research is based on an empirical research that will examine the different level of accounting conservatism, and the relationship between such levels and the cost of debt. The sample of the research will be selected from publicly-traded Egyptian firms that issued bonds. A scale of accounting conservatism practices is going to be calculated. A regression analysis between the cost of debt and the conservatism levels is analyzed to examine their relationship.

### **1.4 Limitations of the Research**

Previous researches have studied the relation between accounting conservatism and banks' loans (Basu,1997 & Ahmed et al., 2002). This research completes the past research by concentrating on the bonds as a way of finance. For this and according to the research objectives, the scope of the study will be limited to the following:

- 1- The debt in this study is limited to the bonds. Banks' loans are excluded.
- 2- The Egyptian corporation' bonds will be examined; other bonds that issued by banks or by the government will be excluded.

### **2- The Definition and Nature of Conservatism**

Conservatism has many definitions from them

a) Conservatism is defined as the differential verifiability required for recognition of profits versus losses (Basu,1997). Also, it is defined by Bliss, (1924) "anticipate no profit but anticipate all losses". In the empirical literature, conservatism is interpreted as representing "the accountant's tendency to require a higher degree of verification to recognize good news as gains than to recognize bad news as losses" (Basu, 1997).

b) The definition of conservatism has changed and developed during the last century. It was considered firstly as a reflection of honesty and competence in business. After this, it has been coupled with prudence principle (Fredriksson, 2006). The only official definition is that offered in the glossary of Statement of Concepts No. 2 of the FASB, namely, that conservatism is "a prudent reaction to uncertainty to try to ensure that uncertainty and risks inherent in business situations are adequately considered". However, this definition does not specify the nature of the 'prudent reaction' called for by conservatism nor does it explains how such a reaction may ensure that risks are &adequately considered (Givoly & Hayn, 2000).

c) Accounting Conservatism can also be defined from the earnings management perspective. Taken into consideration different accounting policies, (Giroux, 2004) illustrates conservatism spectrum as accounting conservatism, then, moderate accounting, next, aggressive accounting and finally fraud. It is natural to expect that managers will choose accounting policies that maximize their own utility and also maximize the market value of the firm as a whole.

d) A more descriptive definition of conservatism is that it is a selection criterion between accounting principles that leads to the minimization of cumulative reported earnings by slower revenue recognition, faster expense recognition, lower asset valuation, and higher liability valuation (Wolk., Francis and Teary, 1989; Davidson, Stickney and Weil., 1985; Stickney and Weil, 1994).

e) Moreover, Conservatism can be defined as one of the earning attributes. (Francis, Lafond, Olsson and Schipper, 2004) characterize the earning attributes as accounting based attributes or market-based attributes. They distinguish between them in that the accounting-based earning attribute is derived from an implicit assumption that the function of earnings is the effective allocation of cash flows to reporting periods via the accruals process, while market-based attributes derive from an implicit assumption that the function of earnings is to reflect economic income as represented by stock returns.

### **3- Objectives of Conservatism**

Conservatism is not always used to maximize the asymmetry in the recognition of losses and gains in annual earnings. The objective of conservatism varies with its economic determinants. Watts (2003a) argues that conservatism in financial reporting arises for a number of economic reasons. These reasons are:

- a) Conservatism's role as part of efficient technologies employed in firm contracts (with management and external parties like debt contract).
- b) Increases in litigation costs.
- c) Regulators' asymmetric loss functions.
- d) Links between reported income and income taxes.

### **3.1 Contracting Explanation**

(Watts, 2002, 2003a, 2003b) argues that the use of accounting conservatism can reduce the agency costs associated with the firm. According to (Walker, 1988), Agency Theory 1 deals with the issue of how to motivate managers to take decisions consistent with the interest of outside investors. An agency problem arises when the managers' preference rankings over alternative levels of the decision variables differ from those of shareholders. The principal-agent literature has two major problems which are "Moral hazards" and "Adverse selection".

1- Moral Hazard problem arises when the action choice of agent is unobservable and when the preference rankings of the principal and the agent over alternative actions are different. The agent is assumed to have access to superior information. In particular, it is assumed that the principal cannot observe the agent's behavior. Hence, there is a general concern that the agent will use the position of superior information to maximize the agent's self-interest at the expense of the principal. Moral hazards not only include such acts as fraud and shrinking, but also include other actions that are not in the best interest of the principal (Walker, 1988).

2- Adverse selection is the other problem of asymmetrical information. As (Walker, 1988) stated "an adverse selection problem arises when the agent has access to pre-decision information, which is not observed by the principal. The agent uses his private information in making his action choice but the principal cannot verify whether the agent has used his information in the way that best serves the principal's interest. For example a company manager might reject a project because of its high risk even though its acceptance would increase the market value of the firm outside. Shareholders would be unlikely to detect such a decision."

However, firms can use accounting numbers to solve the agency problem. These numbers should be timely to overcome the discretion actions by the agent. Hence there is a debt contracting demand for timely earning and net asset measures (Watts, 2002). Nevertheless, information provided by accounting figures should be reliable and not only timely. If the information is unreliable, it will be un-useful to the investors, even if it is timely. However, in order for the information to be reliable they should be verifiable.

Much information that could make accounting numbers timely and informative cannot be easily verified. However, there will be no legal liability for excluding expected future earnings that couldn't be verified. That is why contracts written using figures of earnings may exclude non-verifiable future earnings. (Watts, 2002) argues that losses do not need all these verification to be included in the financial statements, because lenders are mainly concerned about the lower value of net assets and use them as a basis for granting loans. Hence, accounting conservatism and its asymmetrical verification feature are used in measuring accounting figures and values of net asset.

### **3.2 Litigation Explanation**

Overstatement of earnings and net assets can lead to litigation while understatement doesn't. Because the expected litigation cost of overstatement is higher than those of understatement, there is an incentive for accounting numbers to be understated.

### **3.3 Regulatory Explanation**

Losses from overvalued assets and overstated income are more observable and usable in the political process than foregone gains due to undervalued assets and understated income. Such losses provide incentives for regulators and standard setters to be conservative.

### **3.4 Income Tax Explanation**

Income tax depends on reported earnings and as a result, it has influenced the calculation of earnings. If a firm incurs profit, it has taxable income. This will create an incentive to reduce the income of the current year and defer it, in order to reduce the current value of taxes. This incentive leads to understatement of net assets. However, the common attribute in these economic reasons is that there is an asymmetric loss function involved. "In all economic determinants, conservatism is used to reduce the costs of overstatement of cumulative earnings and net assets" (Roychowdhury and Watts, 2005).

## **4- Levels of Conservatism**

Conservatism has two different levels are conditional and unconditional conservatism. Understanding the difference between the two concepts can help in understanding conservatism. Both levels are discussed in details.

a) Conditional conservatism (ex-post or news dependent), which means that the book values are written down under sufficiently adverse circumstances but not written up under favorable circumstances. For example, lower of cost or market in accounting for inventory. Debt contract is among the most important sources of conditional conservatism (watts, 2003a; Ball, Robin and Sadka, 2006).

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<sup>1</sup> : It is a contractual agreement or relationship between two parties (the Principal and the agent) and there is a cost-benefit for both parties.

b) Unconditional conservatism (ex-ante or news independent), which means that the assets are recorded at the inception in a value that are lower than the market value and maintaining this relation during the life of the assets. For example, immediate expensing of the costs of internally developed intangibles. (Beaver and Ryan, 2005 and Ryan, 2006).

Beaver and Ryan, (2005) also specify that the two types of conservatism are motivated by the same concern which is the benefit to investors from asymmetric loss recognition. Also, both types of conservatism have the same implications that the market value of net assets exceeds their book value, which is referred as unrecorded goodwill. According to Ball, et al., 2006 “Conditional conservatism is the stricter concept; imposing the requirement that the accounting bias is conditional on contemporaneous economic income. This requirement is not satisfied by accounting biases such as routinely over-expensing, routinely expensing early or routinely deferring revenue recognition, because their effect on accounting income is not related to economic income.”

Examples of accounting rules and practices that drive conditional conservatism are asset impairments, the (lack of) asset revaluations, inventory write-downs, and accounts receivable write-downs. Examples of accounting rules and practices that imply unconditional conservatism are the adoption of conservative depreciation policies (such as accelerated depreciation), the adoption of conservative inventory valuation policies (i.e. LIFO inventory valuation in times of inflation) and the expensing of all R&D costs. The critical difference between conditional and unconditional conservatism is that conditional conservatism uses information when it is received in future periods, while unconditional conservatism only uses information which is known at the start of the asset's life (Bauwhede, 2007).

Ball et al. (2006) conclude that unconditional conservatism can only reduce contracting efficiency. Since more efficient debt contracts result in more efficient debt financing, they predict and find that the size (importance) of the debt market is positively related to conditional but not unconditional conservatism. Basu (1997) argues that conditional conservatism is useful in contracting and other incentive-related contracts that require a higher level of verification of good news than bad news. He doesn't perceive unconditional conservatism to have any usefulness in contracting because of its news independent nature. Moreover, (Ball, et al., 2006) found that unconditional conservatism would be inefficient or at least neutral in debt contracting and cannot be justified on the grounds of efficient contracting. (Ball, et al., 2006) provide that conditional conservatism is a response to reporting demands of debt rather than equity markets by documenting a strong positive relation between the size of debt market and timely loss recognition.

Beaver and Ryan (2005) predicted a negative correlation between unconditional conservatism and conditional one. They pointed out that non-capitalization of assets (unconditional conservatism) eliminates the need for assets write-offs on arrival of bad news about the projected benefits of the assets (conditional conservatism). Nikolaev (2007) added that covenants are performing their signal role better when conditional conservatism is used in recording the accounting figures. In the absence of conditional conservatism, lenders are unlikely to rely on covenant restrictions and will look for other ways to mitigate agency problems. Also, Nikolaev (2007) expected that timely loss recognition is the main means to achieve accounting conservatism and is often referred to as conditional conservatism. However, conflicts of interests between bondholders and shareholders would be more severe when firms rely on public debt than on private one. Accounting in public firms responds accordingly by recognizing economic losses more promptly in earning, which is in turn conditional conservatism (Ball et al., 2000; Ball and Shivakumar, 2005).

##### **5- Literature Review of Accounting Conservatism and Cost of Debt**

A number of studies have been working out to configure the use of accounting conservatism. Sterling (1970) rates conservatism as the most influential principle of valuation in accounting. Watts (1977) and Leftwich (1983) predict that debt contracts adjust GAAP definitions of earnings and net assets to make the latter conservative, when standards require the anticipation of gains that are not verifiable or to which the firm has no immediate legally verifiable claim. The examination of an American Bar Association guide to writing debt covenants by Leftwich (1983) is the only empirical evidence for these propositions. His subjective assessment is consistent with conservatism. In addition, the use of accounting numbers in contracting issues is very old; many centuries for corporate use (Watts and Zimmerman, 1983).

That long usage influenced the development and nature of accounting and financial reporting, including accounting conservatism (Watts and Zimmerman, 1986; Watts, 1993). Watts and Zimmerman (1986) describe the role of accounting information in the debt contracting process. However, the voluminous empirical literature building on Watts and Zimmerman (1986) largely focuses on the use of accounting choices to avoid covenant violations. In addition, Positive Accounting Theory suggests that accounting conservatism plays an efficiency-

enhancing role in the debt contracting process (Watts and Zimmerman, 1986). Basu (1997) mentions that conservatism has influenced accounting practices for at least five hundred years.

However, the use of accounting in contracting issues for management control is very old (Chadwick, 2000). Ball, et al. (2000) demonstrated that variation in conservatism mimics variation in contracting demands. However, they do not offer direct evidence on the benefits of conservatism in contracting. Watts (2002) argues that conservatism's influence on Accounting Practices has been both long and significant. Ahmed et al. (2000, 2002) assumed that conservatism evolves as an efficient contracting mechanism to mitigate dividend policy conflicts between shareholders and bondholders. They predict that the severer such conflicts are, the more conservative the firm's accounting choice, and the lower the costs of debts. In testing both predictions, Ahmed et al. (2002) used two measures of conservatism.

Nevertheless, Watts (2003a, 2003b) summarizes the theory and evidence on the debt contracting explanation for accounting conservatism. He points out that lenders are concerned with the downside risk. Thus, they concentrate on the lower ends of the earnings and net asset distributions. With the verifiable measure of net assets that is provided by conservative reporting, lenders can make better lending decisions and effectively monitor the borrower's ability to pay. Also, Watts (2003a) suggests "The long survival of conservatism and its apparent resilience to criticism strongly suggests that conservatism's critics overlook its significant benefits." However, the empirical literature provides no evidence on the benefit of conservatism to lenders and presents only limited evidence on the benefit of conservatism to borrowers.

Zhang (2005) improved the test whether conservatism reduces the cost of debt for borrowers. Also, he provided evidence on whether and how conservatism benefits lenders, and borrowers. He measured conservatism using two asymmetric timeliness measures from Basu (1997) and two earnings measures from (Givoly and Hayn, 2000). In measuring the cost of debt, he used the actual interest rate. The results confirm the accounting theory that conservatism creates an efficiency gain that is shared between lenders and borrowers. However, (Bagnoli & Watts, 2005) found that the market believes that the company is in a good state if the managers choose accounting conservatism choice. This good state that the market perceived lead to lowering the interest rate of the loan obtained by this firm in rewarding to their use of accounting conservatism. Hence, the stock price of the firm that adopts accounting conservatism choice is greater than the firm that didn't adapt accounting conservatism as the market has inferred that the firm's prospect is relatively good.

As a result, their analysis suggests that different uses of the limited discretion allowed under GAAP can have different effects on the market's ability to infer management's private information and on the firm's ERC. For example, capitalizing advertising expenses is generally perceived as an aggressive (not-conservative) reporting policy. Since there is at least some flexibility in the amount capitalized, the market may find it relatively difficult to infer the aggressive firm's quality, if it reports high earnings. If so, one could interpret this reporting policy as relatively uninformative. Alternatively, if competing firms differ in the probability that their products are returned (or that receivables become uncollectible), the choice to recognize revenue conservatively may create a situation in which the market can more readily infer the firm's future prospects from reported earnings. Thus, associating "more informative" in the model with alternative uses of available reporting discretion may lead to additional insight into how the market impounds earnings news into price.

However, to the best of the researcher knowledge this is the first research that studies the relation between accounting conservatism and interest of corporate bonds. All other studies investigated the relation between accounting conservatism and interest of loans. The bond area was not explored yet. This research adds to the literature by investigating the relation between accounting conservatism and corporate bonds as accost of debt.

## **6- Conservatism Role in Reducing COD**

The persistent influence of conservatism in accounting practice suggests that conservatism provides benefits to economic agents who use, prepare, or regulate financial reports (Bushman and Piotroski, 2006). This influence can appear from Basu (1997) who notes conservatism has influenced accounting practice for hundred of years. Moreover, (Ball and Kothari, 2007) result implies the Basu (1997) incremental coefficient on negative returns is a conceptually valid representation of the extent of conditional conservatism in accounting income. Nevertheless, Sterling (1970) stressed the highly influential impact of conservatism in the principal of valuation in accounts.

Watts (1997) and Bushman and Piotroski (2006) have studied some factors affecting the use of accounting conservatism. The factors are legal system, tax regime, securities law and political economy institution. Information finds that with respect to countries' legal and judicial system, investors' protections embodied in corporate law, and the efficiency and impartiality of the judicial system play a significant role in

creating incentives for timely loss recognition. Firms in countries with strong investor protections and high quality judicial systems reflect bad news in reported earnings timelier than firms in countries with weak investor protections and low quality judicial systems.

Nevertheless, Securities Law has influenced accounting conservatism. Firms in countries with strong public enforcement—characterized by an independent, powerful public enforcement—slow the recognition of good news in reported earnings figures relative to firms with a weak public enforcement. In addition, the nature of state involvements (political aspects) affects the use of conservatism in accounting practice. Countries with high state involvement in the firms' affairs speed the recognition of good news and slow the recognition bad news in reported earnings relative to firms in countries with less state involvement. However, the effect of conservatism in contracting can be drawn from the institution structure of the country. For example, the existing of explicit contracts that use accounting information in an economy is dependent on the existence of a legal/judicial system that facilitates the efficient enforcement of contracts written on verifiable information signals. If the use of accounting information for contracting purpose is a channel that creates demand for conservative reports, then conservatism should be greater in countries with both a strong legal/judicial systems and a high contract use (Bushman and Piotroski, 2006).

Moreover, Conservatism use in Accounting Practices can be demonstrated in many levels. More conservatism can be achieved by increase the speed of bad news recognition, and holding the speed of good news recognition constant, decreasing the speed of good news recognition, while holding bad news recognition constant or slowing the speed of good new while speeding the recognition of bad news. An example for such issue is the use of conservatism in debt contracting. In this contract the debt holders have asymmetric information and their benefit may be lost. Unless the debt holders have contracted to maintain a minimum verifiable lower bound level of investment in the company through covenants, the bondholders may lose their lump-sum in case of liquidation. Holding a contract build on accounting conservatism, can provide a picture to bondholders about the performance of the company, and allow them to take a protective action when needed.

However, legal regime of countries have an effect on the use of conservatism in accounting practices; as documented in Watts (2003) and Bushman and Piotroski (2006). The explanation is, for any suit to be accepted in the court, it should have a legal contract. Any rights should be protected by contracts. The contracting parties use this contract to protect their right. For example, in the case of debt contracting unless there is a legal contract between bondholders and firms, bondholders cannot protect their rights and unless the contract and its covenants are built on lower bound of verification, the risk of the bondholders may be wasted.

For this, there is a high contracting demand for conservatism reporting. However, the contracting demand for accounting conservatism is higher in countries with efficient judicial system and widespread contracting activities. Nevertheless, the contracting explanation for accounting conservatism shadow the role of accounting in supporting debt contracts, where conservatism grants the providers of capital a mechanism to monitor managers actions, and to respond to the decline in the investment of the firm in a timely manner. As such, a greater use of debt contracts should increase the demand for accounting conservatism (Bushman and Piotroski, 2006). However, the use of conservatism in contracting is useless, unless there are covenants that are built on the lower bound of the conservatism. Public debt covenants are written to restrict management's actions when a particular accounting condition arises. Nowadays, there is a decline in covenant use that reflects a tendency to move away from contractual control of agency problem to indirect control (Begley and Chamberlain, 2005).

The indirect control can be represented in, the desire of the firm to maintain their future reputation and to reduce the interest rate they pay on their loan. In such indirect control, rating agencies play a vital role of monitoring. Rating agencies evaluate firms and give a debt rating. "Firms that maintain a high debt rating are able to borrow at more attractive rate than firms in lower rating categories" (Begley and Chamberlain, 2005). However, conditional conservatism exists for helping efficient debt contracting which (Ball, et al., 2006) refer to as the debt hypothesis. The primary effect of timely loss recognition (conditional conservatism) on debt contracts is triggering violation of debt covenants more quickly, and so transferring the control rights to lenders more quickly. More timely loss recognition translates into more timely revision of book values of the firm and in turn into fast covenant violation. This allows lenders to exercise their rights more quickly and restrict managerial actions, thereby making debt contracts more effective.

Nevertheless, "the debt hypothesis implies that countries with comparatively large debt markets are more likely to exhibit timely loss recognition in published financial statement. If timely loss recognition increases the efficiency of debt contracting, debt becomes a more efficient form of financing and we therefore should observe comparatively more of it" (Ball, et al., 2006). For this timely loss recognition increases in the important of debt markets. Given the asymmetric feature of accounting conservatism, (Ahmed, et al., 2002) find that

whenever there is a conflict between shareholders and bondholders, the more the use of accounting conservatism. In addition, when managers agree to adopt more accounting conservatism, this reduces risk for bondholders. For example, this will tighten restrictions on dividend policy and decreasing the likelihood of excessive dividend payments. Thus, bondholders would require a lower rate of return to compensate for the reduced risk. Ahmed, et al. (2002) expected conservatism to reduce the cost of debt. They found also that firms that depart from accounting conservatism will reduce its credit worthiness, which is evaluated by the debt rating agencies, which in turn will lead to increasing the interest of future borrowing.

## 7- Empirical Examination of the Association between Accounting conservatism and Cost of Debt

### 7.1 Research Hypothesis

To achieve the overall objective of the study, the hypotheses will be formulated as follows:

H<sub>0</sub>: There is a negative relationship between the level of accounting conservatism and the cost of debt.

### 7.2 Research Model and Empirical Proxies

#### 7.2.1 Empirical Model

The hypothesis is tested by estimating the following Multiple Regression Equation (MRE):

$$r_{it} = y_0 + y_1 \text{Conserv}_{it} + y_2 \text{Lev}_{it} + y_3 \text{Size}_{it} + y_4 \text{ROA}_{it} + e \quad 1$$

Where:

$r_{it}$  = the cost of debt for firm  $i$  at year  $t$  and is calculated as the actual interest rate

$\text{Conserv}_{it}$  = conservatism level of firm  $i$  at year  $t$ , measured by deflating non-operating accruals by total assets

$\text{Lev}_{it}$  = the leverage of firm  $i$  at year  $t$  and is calculated as total debt / total assets

$\text{Size}_{it}$  = is the size of firm  $i$  at year  $t$  the size and is measured as a log of assets

$\text{ROA}_{it}$  = is the return on assets of firm  $i$  at year  $t$  and calculated by dividing net income by total assets

$y_1, y_2, y_3, y_4$  = the estimated coefficient

$y_0$  = constant

$e$  = the random error

This regression is developed from (Ahmed, et al., 2002). This research's MRE is different than (Ahmed, et al., 2002) in that (Ahmed, et al., 2002) uses the rating of the senior debt from S&P while the researcher uses the actual interest rate. (Ahmed, et al., 2002) MRE is:

$$\text{Rating} = y_0 + y_1 \text{Con} + y_2 \text{ROA} + y_3 \text{LEV} + y_4 \text{Size} + y_5 \text{BETA} + y_6 \text{MSE} + U$$

Where:

CON = one of the measures of conservatism.

ROA = firm net income before extraordinary items, divided by its total assets (a control for profitability);

LEV = firm long-term debt divided by its total assets;

SIZE = the natural log of firm total assets (a control for firm size);

RATING = a numerical transformation of S&P's senior debt rating for firm  $i$  over the interval 2 through 21, where larger values correspond to a less favorable debt rating, averaged over each six-year estimation period;

BETA = the value-weighted market-model beta, obtained from market-model estimates over the six-year period for firm  $i$ , for firms with a minimum of 24 monthly returns; and

MSE = the mean squared error of the market-model residuals, obtained from market-model estimates over the six-year period for firm  $i$ , for firms with a minimum of 24 monthly returns.

#### 7.2.2 Empirical Proxies and Control Variable

##### 7.2.2.1 Interest rates

The dependent variable ( $rit$ ) is the measure of the cost of debt. Following Zhang (2005), the interest rate is the actual interest rate given to each loan. Interest rate for all loans is either fixed or changing rate (Fixed percentage above the LIBOR). For each loan of the firm the fixed interest rate is obtained from the Egyptian Capital Market Authority (CMA). The changing rate is obtained by adding the fixed percentage rate to the rate of the LABOR. The LABOR rate is obtained from Central Bank of Egypt .

##### 7.2.2.2 Conservatism

It is measured in this study as the accumulated non-operating accruals deflated by accumulated total assets. The accumulation of non-operating accruals summarizes the actual recording of bad news. The use of "non-operating accruals" is following Givoly and Hayn (2000), who define non-operating accruals as operating accruals excluding working capital accruals, not the sum of financing and investing accruals as the name might suggest.

Givoly and Hayn (2000) also capture the asymmetric verification requirement as reflected in earnings, but they do not rely on whether stock returns are a good proxy for economic gains or losses. Examples include restructuring charges and asset write-downs.

Total accruals have two components that are operating (or working capital) accruals and non-operating accruals. Operating accruals are those arising from the basic day-to-day business of the firm. They are defined as: Operating accruals =  $\Delta$ Accounts Receivable +  $\Delta$  Inventories +  $\Delta$  Prepaid Expenses -  $\Delta$ Accounts Payable -  $\Delta$  Taxes Payable.

Non operating accruals are defined as operating accruals -  $\Delta$ accounts receivable -  $\Delta$ inventories -  $\Delta$ prepaid expenses +  $\Delta$ accounts payable +  $\Delta$ taxes payable, where operating accruals = net income + depreciation - cash flow from operations, or operating accruals = net income + depreciation - funds from operations +  $\Delta$ current assets +  $\Delta$ debt -  $\Delta$ current liabilities -  $\Delta$ cash.

Conservatism is measured in this study using the accrual approach; this is because in a steady state and over a sufficiently long period, accounting-base measures of performance of the firm are expected to converge to the true economic performance as measured by the cash flows from operations. In particular, any departures of accounting earnings from cash flows from operation are temporary and mean reverting. This expectation, which underlies the interpretation and analysis of financial statements; has been conceptually articulated in a valuation framework by Ohlson (1995) and Feltham and Ohlson (1995).

Anecdotal evidence suggests that financial reporting has become more conservative in recent years. This evidence includes the numerous FASB pronouncements that have the effect of an earlier recognition of expenses and losses, or a deferral of revenue recognition. Many FASB statements result in an earlier recognition of expenses or losses. These FASB statements include SFAS 106, Employer's Accounting for Postretirement Benefits other Than Pensions (1992), SFAS 114, Accounting by Creditors for Impairment of a Loan (1993), SFAS 68, Research and Development Arrangements (1982), SFAS 123, Accounting for Stock-Based Compensation (1995) and SFAS 121, Accounting for the Impairment of Long-Lived Assets and for Long-Lived Assets to be Disposed Of (1995).

More conservative rules by the AICPA include AICPA SOP 97-2 (1997) and SOP 98-5 (1998) on software revenue recognition and the costs of start-up (Givoly & Hayn, 2000). They found also that conservatism is essentially an issue of the timing and sequencing of revenues and expenses relative to the associated cash flows. Therefore, both time-series and distributional properties of earnings, cash flows and accruals are examined following them. All financial statement data are collected from CMA and Arab Bank.

#### 7.2.2.3 *Leverage*

It is calculated as long-term debt / total assets of the borrower. A highly leveraged firm might have more covenants and tighter ones. Hence, it is more likely to violate its covenants. However, a highly leveraged firm also bears a higher cost of covenant violations, and may be more careful either to not violate its covenant or to obtain a waiver more quickly (if a waiver is obtained within the quarter of a covenant violation, the firm has the choice not to disclose the covenant violation). Also, all financial statement data are collected from CMA and Arab Bank.

#### 7.2.2.4 *Size*

Recent literature indicates that large firms use high debt (Faulkender and Petersen, 2006; Kurshev and Strebulaev, 2006; Binsberggen, et al., 2007). These studies documented a positive relationship between size of the firm and debt usage.

The justification of this relation is that as size grows, the benefits of debt also increase and the net effect of size on the use of debt depends on whether the cost or benefit effect dominates. "The differing firm size implications documented in various capital structure papers, imply that the influence of size on the costs versus benefits of debt dominate in different settings and samples" (Binsberggen et al., 2007).

In this research, the size of the firm is measured as a natural log of total assets. Large firms are usually stronger, better able to negotiate looser terms in covenants, and better able to build more accounting slack. Therefore, large firms are less likely to violate its covenants.

#### 7.2.2.5 *Growth and Profitability*

Firms with growth opportunities face a higher cost of debt. This is consistent with the common finding that for growth firms, the opportunity cost of debt is high; this is because debt can restrict a firm's ability to exercise future growth opportunities due to debt overhang (Myers, 1977). The inflexibility arising from debt covenants could also restrict a firm's ability to optimally invest and exercise growth options. It has been documented, that large firms with tangible assets and few growth options tend to use relatively large amounts of debt (Frank and Goyal, 2004). The growth and profitability of the firm is calculated as Net income / total assets of the borrower. A firm with a higher ROA is financially sound and less likely to violate its covenants.

### 7.3 Sample Selection and Description

#### 7.3.1 Sample Description

The population consists of all firms that issued bonds from 1994 to 2007. The resulting sample, referred to as the full sample, spans the 13-years. Since this research addresses patterns in the relation between accounting conservatism and interest rate over time, firms that the researcher couldn't get information to help in this relation were excluded from the sample.

The sample consists of all firms from Capital Market Authority (CMA) files with non-missing values of the required variables for the period 1994–2007. The accrual measure used is the non-operating cash flows from the cash flow statement reported in the financial statement that are available for the majority of firms from 1994. Data are collected from The Capital Market Authority (CMA), the Arab Bank and the Central bank of Egypt.

#### 7.3.2 Selection criteria

The researcher selects companies from 1994 to 2007. For the company to be selected, it should issue bonds within this period. There are 24 companies that issued bonds during this period. The criteria for firms to be selected are as follows:

- 1- The bonds to be issued must be in Egyptian pounds and also the Interest payment is in Egyptian pounds.
- 2- Financial statements availability for one year prior to issuing the bonds.
- 3- Availability of Bulletin Subscription of the bonds.

Two firms are excluded from the sample, as the bonds issued are not in Egyptian currency leading to a sample of 22 firms. The availability of only one year financial statements is chosen because financial statements for almost all firms are not available for more than one year. For example, requesting the availability of financial statements for 3 years lead to excluding almost all the sample. Only 6 firms were satisfying such criteria. Hence, the researcher uses one-year availability of financial statement at the year of issuing the bonds. The sample selection procedures yielded a final sample of 19 Egyptian firms; the other three firms were excluded for insufficient information. The sample can be described by the following table by industry.

Industry	#
Housing	5
Manufacturing	2
Cement and construction	4
Food and Tobacco	1
Telecommunication & Media	2
Tourism	2
Investment	2
Pharmaceutical	1
<b>Total</b>	<b>19</b>

Table 3.1 Sample breakdown by industry

### 7.4 Empirical Tests and Result

Before running the regression analysis, a scatter diagram is graphed to determine the shape of the relationship. The association between Conservatism levels and Interest Rate is shown in the below figure:

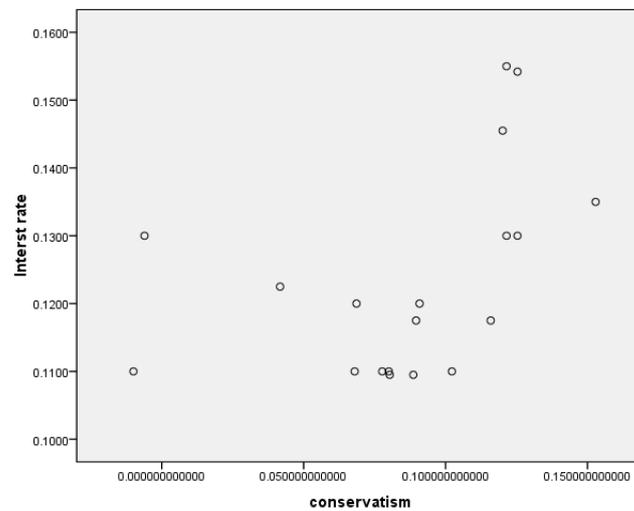


Figure 3.1 the relationship between levels of accounting conservatism and interest rates

From the diagram, it is clear that the association between levels of accounting conservatism and interest rate is not stable. The association is negative, when the accounting conservatism is low then the relationship reshaped to be positive when conservatism level increases in the firm. To clarify the relationship more, firms are divided into two sets according to the level of accounting conservatism to come up with two sets with two different relationships as appear below.

#### 7.4.1 The first set

The sets are divided according to the conservatism level. The conservatism level in the first set started from 0.08 till -0.01. The firms in this set are 8 firms. However, the association between conservatism level and cost of debt is negative as shown below

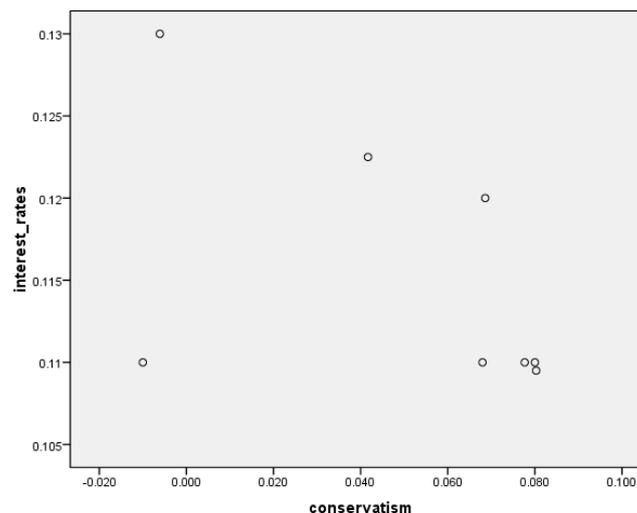


Figure 3.2 Set#1 the relationship between levels of accounting conservatism and interest rates

Independent variable	Estimated Coefficients	T- Test		F- Test		R <sup>2</sup>	VIF
		B	Value	Sig.	Value		
(Constant)	0.145	10.31	0	14.514	.011 <sup>a</sup>	0.948	
conservatism	-0.203	-4.321	0.012				4.486
lev	0.017	2.615	0.059				2.385
ROA	-0.042	-0.948	0.397				2.364
Size	-0.002	-1.25	0.28				2.609
Loan size	-0.015	-5.392	0.006				2.355

Table 3.2 Set#1 regression of interest rate on conservatism levels, Leverage, ROA, Size and loan size

Table 3.2 presents the results obtained from estimating the multiple linear regression equation 1. The interpretations of the results are as follows:

1-All the coefficients behave as follow:

a) The coefficient of conservatism is significantly negative. That is, Egyptian firms with conservatism level within the level of -.01 till 0.08 is negatively related to their cost of debt, i.e. firms are offered a low interest rate as a reward for adapting accounting conservatism. Increasing one level in conservatism within that level leads to a decrease in interest rate by 0.203. This relation conforms to all previous researches.

b) The coefficient of leverage is significantly positive, that is when the leverage level increases in the firm, the interest rate increases. One level increases in leverage will be faced by 0.017 increase in interest rate. This means that, as Firms borrow more, the interest rate on their loan will increase accordingly. In addition, this relation is as in previous researches done by (Zhang 2005 and Ahmed et al., 2000).

c) The coefficient of ROA is negatively related to the cost of debt, so that any level increase in the ROA will be reflected as 0.042 decrease in the interest rate. This implies that Egyptian firm with growth and profitable opportunity is likely to be rewarded by a low interest rate compared to other firms with less profitability.

d) The coefficient of size is negatively related to the interest rate. That is, when the size of the firm increases, it will be able to borrow at low rate than others firms.

e) The coefficient on loan size is significantly negative that is increasing the loan size will be face with a decrease in the interest level offered to the firm. One level increasing in the loan size will lead to a decrease by 0.015 in the interest rate.

2- The F- test shows that there is a significant linear relationship between interest rate and all independent variables taken together, suggesting that multiple linear regression equation 1 can be used to obtain reliable estimates of the interest rate.

3- The R<sup>2</sup> shows that all independent variables (conservatism, leverage, firm size and ROA) explain 94% of the variation in the interest rate. The other 6%, which is the unexplained portion, is due to either random error in the regression model or other explanatory variables that need to be included in the model.

4- The variance inflation factor (VIF) shows that there is a weak multicollinearity. i.e., the independent variables are not correlated to each other as the variance inflation factor is below the maximum.

#### 7.4.2 The Second Set

The conservatism level in this sets started from 0.088 till 0.15. The firms in this set are 11 firms. However, the relationship between conservatism level and cost of debt is positive as appearing below

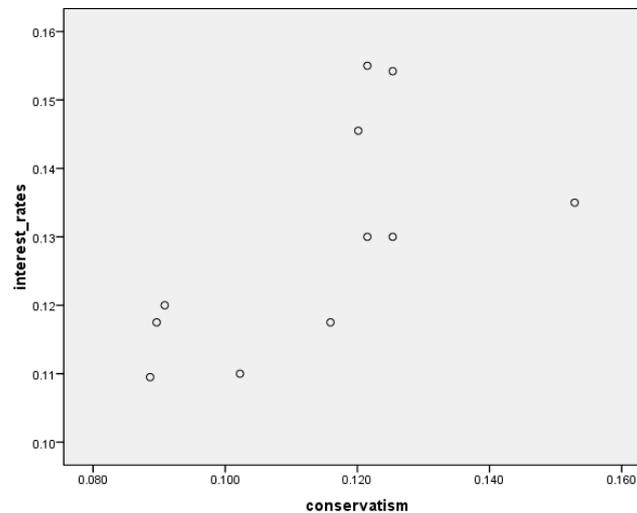


Figure 3.3 Set#2 of the relationship between levels of accounting conservatism and interest rates

Independent variable	Estimated Coefficients	T- Test		F- Test		R <sup>2</sup>	VIF
	B	Value	Sig.	Value	Sig		
(Constant)	0.013	0.077	0.941	1.173	0.433	0.540	
Conservatism	0.670	2.341	0.066				1.263
Lev	0.052	1.099	0.322				1.717
ROA	-0.019	-0.065	0.950				1.242
Size	0.004	0.251	0.811				2.675
Loan size	-0.052	-0.644	0.548				2.884

Table 3.3 Set#2 regression of interest rate on conservatism levels, Leverage, ROA, Size and loan size

Table 4.3 presents the results obtained also from estimating the multiple linear regression equation 1 for the second set. The interpretations of the results are as follows:

1-All the coefficients behave as follows:

a) The coefficient of conservatism is significantly positive. This means that the Egyptian firms with conservatism level within the level of 0.088 till 0.15 is positively related to their cost of debt. i.e. a high interest rate will be charged for adapting more accounting conservatism. Increasing one level in conservatism within this level lead to an increase in interest rate by 0.67.

b) The coefficient of leverage is positive, that is when the leverage level increases in the firm, the interest rate increases. One level increase in leverage will be faced by 0.052 increases in interest rate. This means that as firms borrow more, the interest rate on their loan will increase accordingly. This relation is the same as in the first set of data.

c) The coefficient of ROA remained the same as previous set of data so it is negatively related to the cost of debt, so that any level increase in the ROA will be reflected as 0.042 decreases in the interest rate. This implies that Egyptian firm with growth and profitable opportunity is likely to be rewarded by a low interest rate compared to other firms with less profitability.

d) The coefficient of size is positively related to the interest rate. That is when the size of the firm increases, the interest rate on their loans also increases. This relation is opposite to the relation in the first set of data. This is may be because the multicollinarity between conservatism and the size of the firm.

e) The coefficient on loan size is negative that is increasing the loan size will be faced with a decrease in the interest level offered to the firm. Increasing one level in the loan size will lead to a decrease by 0.052 in the interest rate.

2- The F- test shows that there is a linear relationship between interest rate and all independent variables taken together, suggesting that multiple liner regression equation 1 can be used to obtain reliable estimates of the interest rate.

3- The  $R^2$  shows that all independent variable explains 54% of the variation in the interest rate. The unexplained portion is due to either random error in the regression model or other explanatory variables that need to be included in the model.

4- The Variance Inflation Factor (VIF) shows that there is a weak multicollinearity, i.e., the independent variables are not correlated to each other as the variance inflation factor is below the maximum.

## 8- Summary

Accounting conservatism is an accounting policy that doesn't have a specific definition or description. This research aimed at exploring the relationship between accounting conservatism and cost of debt. Debt in this study is bonds and more specifically corporate bonds. Past researches found a negative relationship between levels of accounting conservatism and interest rate. The aim of this research is to study if this relationship is also applied in Egypt .This study reveals that these economic reasons may be the source of raising accounting conservatism; not only the contracting role. However, Covenants are the contractual agreement designed to limit managerial control over a firm when it encounters financial difficulties (Nikolaev, 2007). The target of covenants is to protect bondholders from opportunistic behavior by managers; and when any violation triggered, control right is transferred from managers to bondholders in order to take protective actions.

Nevertheless, high-growth firms may be less likely to include restrictive covenants. Flexibility is also important for firms facing financial distress. That's why when selecting a covenant to be included in a debt indenture, a firm must choose between maintaining flexibility and reducing potential agency problems (Nash, et al., 2003).Also, the role of the rating agencies and the reputation of the firm in designing the accounting conservatism policy are discussed. The study finds that firms with high debt-rating are able to borrow at low interest rate. Also, Standard & Poor's rating agency (1986) documented that there is a strong inverse relationship between debt ratings and interest rates. Conservatism can be measured by many methods which are: earning/stock-return relation measures as done by Basu (1997), valuation models which include two types: the ratio of book value of equity to market value model (Beaver and Ryan, 2000) and Feltham- Ohlson valuation model. The last measure of accounting conservatism is earning/accrual measure (Givoly and Hayn, 2000). All of these measured are discussed in detail within the chapter.

The researcher does not ignore the role of the Egyptian Accounting Standards in formulating accounting conservatism. Accounting conservatism in this standard doesn't mean reducing the income and increasing expenses, yet it means that the financial statements provide information that is not biased (Item # 37 of EAS framework). However, some of these standards are discussed in the chapter. Basu (1997) mentions that conservatism has influenced accounting practices for at least five hundred years. In addition, Positive Accounting Theory suggests that accounting conservatism plays an efficiency-enhancing role in the debt contracting process (Watts and Zimmerman, 1986; Watts, 2003a, 2003b). However, in deciding the capital structure of a firm, the managers can finance the firm operation and activity through equity, debt or both of them. These financing decisions will affect the firm and the stakeholders. There are numbers of factors that managers should take into consideration when deciding the capital structure. These factors are taxes on income and corporate taxes, the probability of bankruptcy and the signaling effect of the capital structure (Michael, Smith & Watts, 1995 and Myers 1977).

Also, the hypothesis assumes that there is a negative relationship between the level of accounting conservatism and the cost of debt. Following Givoly and Hayn (2000), the method used in measuring accounting conservatism is the accrual approach. The accrual conservatism is measured as the accumulated non-operating

accruals deflated by accumulated total assets. For the cost of debt, the researcher is following Zhang (2005), and uses the actual interest rate as a measure of the cost of debt. Other studies used debt rating as a proxy for the cost of debt given that there is a strong relation between debt rating and cost of debt. The empirical study has been done to verify the hypothesis of the study. The empirical study helped the researcher to recognize the relation between accounting conservatism and cost of debt and how different conservatism levels can affect the cost of debt.

## 9- Results

The results indicate that level of accounting conservatism adopted in a firm influence the cost of debt, and that this influence is not a constant all the time. To explain such relation, the researcher has divided the data into two sets depending on the conservatism level adopted in the firm. The conservatism level in the first set started from 0.08 till -0.01; in this set the Level of accounting conservatism has a negative relationship with interest rate which means that an increase in the conservatism level by one level within that interval leads to a decrease in interest rate by 0.203. This relation conforms to previous researches.

In this set, the independent variables selected by the model to be the most effective variables on the dependent variable explain the increase in the dependent variable by 94%. Therefore those independent variables are the most effective variables on the dependent variable. In the second set, conservatism level started from 0.088 till 0.15. The relationship between conservatism level at this set and the cost of debt is positive. This relation means that a high interest rate will be charged for adapting more accounting conservatism. Increasing one level of conservatism within this interval leads to an increase in interest rate by 0.67.

R2 for the second set shows that all independent variable explains 54% of the variation in the interest rate. The unexplained portion is due to either random error in the regression model or other explanatory variables that need to be included in the model. However, the result of this second set is not in consistent with past researches. Past researches found continues negative relation between accounting conservatism level adapted in the firms and cost of debt for these firms. For this, Accounting conservatism should be used with caution, so that the level adopted within the firm doesn't exceed the accepted limit to gain the benefit of it. However, as indicated from the results; accounting conservatism is not always good instrument in reducing interest rate, and it should be used with care.

## 10- Recommendations

The researcher recommends that; accounting conservatism plays a vital role in reducing the cost of debt. The introduction of accounting conservatism in the accounting policies of the firm may help in getting better rates for their debts. However, accounting conservatism when applied in a firm; it should be used with some caution. Firms could adopt a suitable level of accounting conservatism to reduce the interest they pay in different loans. The suitable level of accounting conservatism differs from firm to other. This suitable level depends on the amount of debt, its maturity, ROA, LEV and the size of the firm. Also, factors that are related to the firm itself and the industry within should be considered. The research result induces that if accounting conservatism level increases or decreases from certain level, the goal of adopting such policy is missed. However, managers should determine the level applicable to each firm according to the firm and industry characteristics.

## 11- Future Research

A potential extension of this research is to study the optimal level of accounting conservatism. The optimal level of accounting conservatism will depend on characteristics of each firm and on the industry in which the firm works. If this goal is attained each firm can adopt the level of conservative applicable to its condition to gain the benefit of conservative without any worry.

Moreover, another potential extension is to study the relationship between the size of the firm and the interest rate offered to it, given accounting conservatism is applied. It will be very helpful to determine if the relationship between the size of the firm and interest rate is independent of accounting conservatism or that accounting conservatism affects this relation.

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