

# **Share price anticipation of future earnings in the presence of financial leverage, proprietary cost and institutional ownership: Evidence from MENA emerging markets**

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## **Abstract**

**Purpose:** *This study investigates share price anticipation of future earnings in the context of Middle Eastern and North African (MENA) emerging countries. We also examine whether the relationship between stock return and future earnings vary with companies' financial leverage level, in the presence of proprietary costs and institutional ownership.*

**Methodology/Approach:** *in this paper, we use the modified future earnings response coefficient model (FERC) of Collins et al (1994) to measure the ability of stock prices to predict future earnings in the presence of institutional owners, political and proprietary cost for a sample of 69 firms in MENA emerging capital markets and during the period of 2005-2008. Our research model builds on multiple regression analysis and assumes interaction between current and future earnings and the above mentioned variables.*

**Findings:** *we show that the informativeness of current earnings is negatively associated with financial leverage level, institutional ownership and proprietary cost. Our results indicate moreover that the presence of institutional owners do not help stock prices predict future earnings. Furthermore, neither firms' leverage nor lower market entries barrier seems to have an impact on current returns anticipation of future earnings.*

**Practical implications:** *Providing evidence on the information content of earnings and its interaction with some proprietary, political and governance factors in the context of MENA emerging markets helps to a better understanding for capital market participants of the value relevance of such financial information.*

**Originality of the paper:** *This study adds to the literature on share price anticipation of earnings in two crucial respects. First, on a theoretical basis we consider the effect of Proprietary Cost, political cost and institutional ownership on the future return earnings relationship. Second, we give some insight into the future return-earnings relation in MENA emerging countries.*

## 1. Introduction

Corporate disclosure is a communication process within which a corporation shares its financial situation with investors and related parties through the most common way of disclosure: the financial reporting and in particular the annual reports. In fact, with the separation of firm's equity ownership from its control, corporate disclosure has become a critical element for the functioning of an efficient capital market. Demand for corporate disclosure can arise from information asymmetry problem and agency conflicts between management and outside stakeholders (Healy and Palepu, 2001). Corporate disclosure is believed then to mitigate these problems. Investors may better understand accounting information and make better predictions for the future which positively affects the market value of the company and the liquidity of its shares (Francis and Nanda, 2008).

Several prior studies were interested in examining the usefulness of some financial statements items and particularly accounting earnings. They addressed the issue of whether investors perceive accounting information as value relevant in that it improves equity valuation outcome. An important attribute of existing studies in this area is the focus on the contemporaneous annual return-earnings relationship and the changes to this dynamic and complex relation. In fact, from Ball and Brown (1968) forward, the literature on the returns-earnings relation has been characterized by continual refinement and considerable methodological sophistication. The "naïve" earnings expectation model exhibited notable ingenuity and improvement since a body of research (Lev and Zarowin, 1999; Amir and Lev, 1996; Collins et al., 1997; Francis and Schipper, 1999; Brown et al., 1999; Ely and Waymire, 1999) raised a decline in the value relevance of accounting earnings.

Healy and Palepu's (2001) paper discussed several significant forces in the economic environment that may influence the nature of corporate financial reporting. The rapid technological innovation, the changes in the business economics of audit and financial analyst firms, and market globalization are the main factors with a potential to shape financial disclosure. For instance, the traditional financial reporting model would not be able to capture the economic implications of many of these changes in a timely manner. Kothari and Shanken (1992) and Collins et al. (1994) relate the weakened association to the poor specification of the empirical model. They notice that current earnings do not reflect in a timely manner all the news received in the current period and that causes the market to revise its expectation about future earnings resulting in a low  $R^2$  for the empirical model.

Nevertheless, introducing future earnings into the return–earnings model specification, as in Lundholm and Myers (2002), current and future earnings yield large increases in its explanatory power of the annual return variation.

In this paper, we extend the Lundholm and Myers (2002) paper of bringing the future forward and value relevance studies by introducing proprietary cost, financial leverage and institutional ownership variables that they assume to be invariant across firms. Because large institutional ownership provides monitoring for shareholders and mitigates potential managerial abuse (Holderness, 2003), firms will disseminate value relevant information. As such, we expect that earnings informativeness will be improved. We also consider the effect of financial leverage on the ability of stock price to predict future earnings since Dhaliwal et al. (1991) argue that firms with higher debt ratio are less valued due to the lower value relevance of their contemporaneous earnings. Proprietary cost are introduced, in the other hand based on the assumption that firms with higher proprietary cost are likely to have a weaker association between current stock return and future earnings (Darrough and Stoughton, 1990). Adding these variables to the return–future earnings model specification provides an opportunity to examine the differential effects that institutional ownership, financial leverage and proprietary cost impose on this association

MENA emerging markets countries provides an interesting avenue for our research since most prior studies on share price anticipation of earnings were undertaken in the context of developed countries (US, UK) sharing a specific institutional milieu in term of ownership structure, investor protection and capital markets development. On the other side MENA countries have different institutional and economic milieu inherited from either the old British or the French colonial era which are likely to influence their accounting system and their corporate disclosure (Ben Othman and Zeghal, 2008). Furthermore, MENA regions include huge disparities among countries in term of economic development and size of capital markets (Ben Othman and Zeghal, 2010) which is likely to shape their accounting model and the value relevance of their financial information.

The balance of this paper is organized as follows. Section 2 provides the theoretical framework for information disclosure and the associated literature review. Section 3 describes the study's model and methodology. Empirical results and their discussion are provided in section 4. Finally, concluding comments are provided in section 5.

## **2. Background and hypothesis development**

### **2.1 Share price anticipation of future earnings and financial leverage**

Akerlof (1970) stated that information or “lemon” problem arises from information asymmetry and conflicting incentives between buyers and sellers which can potentially create an adverse selection problem and leads to break down in the functioning of the market. Signalling theory addresses then information asymmetry in market and asymmetry can be reduced if the party with more information signals to others (Morris, 1987). Managers usually have better information than other stakeholders, and therefore outsiders may interpret any additional information as signals to the stock market. This information will be used by investors who are looking to gather more news about the firm, its valuation and the overall future prospects (Jones and Murrell, 2001). A large number of papers investigated how corporate disclosure is apprehended as a signal to the financial market. Prior studies like Grossman (1981), Milgrom (1981), Verrecchia (1983) and Hughes (1986) postulate that in the presence of high information asymmetry, managers’ decision to disclose or not value-relevant information depends mainly on whether they learned the value of the signal and after bearing in mind the disclosure impact on current shareholders’ wealth.

Assessing the informativeness of earnings is a major motivation for market based accounting research. The main objective of such study is to examine whether accounting earnings summarize and catch timely changes in the information set that will be reflected in firms’ security returns (Kothari, 2001). The underlying logic in these returns-earnings association studies is that any revision in stock prices provides evidence on earnings usefulness. Nevertheless, despite the clear statistical association between contemporaneous returns and earnings measures, this relation is consistently found to be to be very low and sometimes negligible (Lev, 1989). Collins et al., (1994) and Warfield and Wild (1992) suggest that earnings lack of timeliness is the main reason for the low quality of accounting earnings and hence for the declining return earnings relation. They contend in the same vein that, in an efficient market, stock returns is driven by the unexpected component of current period earnings and any new information that leads the market to revise its expectations about future periods’ earnings. Earning lack of timeliness implies therefore that some information in current earnings is already anticipated by past prices and hence uncorrelated with current returns. They suggest hence as a refinement to the traditional return-earnings model by including future earnings in the returns-earnings model specification.

Dhaliwal, Lee and Fargher (1991) and Dhaliwal and Reynolds (1994) focused on the relationship between unexpected earnings and stock returns and the effect of financial leverage on it. They demonstrated that financial leverage as long as default risk significantly and negatively impact earnings informativeness. This suggests that firms with higher debt to equity ratio are less valued due to the lower value relevance of contemporaneous earnings. Moreover, if firm's financial leverage increases, costs associated with high level of risk and the possibility of bankruptcy also increases. Accordingly, the prediction of firm future performance by the current earning became more difficult. Watts and Zimmerman (1990) argue in the other hand that when leverage is high, managers are more likely to exploit the discretionary latitude available in accounting which could mitigate the value relevance of accounting earnings.

Based on above, we postulate:

*H1. Share price anticipation of future earnings is negatively associated with firm financial leverage level.*

## **2.2 share price anticipation of future earnings and Institutional ownership**

Under the agency theory framework, prior studies (Vafeas, 2000; Karamanou et al. 2005; Petra, 2007) figured out if the information content of financial disclosure will depend on some characteristics of issuing firms and notably corporate governance attributes. In fact, corporate governance mechanisms are introduced to control the agency problem and to ensure that managers act in the interest of shareholders. Corporate disclosure is, thus, considered as a tool of controlling managers and protecting shareholders against manager's opportunism, making them more likely to release frequent and regular disclosures.

Institutional investors hold large block of shares in capitals of large companies. The magnitude of their ownership leads them to become the main actor in corporate governance structures (Lakhal, 2006). Indeed, agency theory assumes that institutional owners are able to reduce discretionary managerial power over corporate disclosure especially when managers hold high percentage in firm's equity (Healy et al. 1999). Institutional investors are likely to attenuate managers' non-value maximizing behavior, and as such, the opportunities for managers to capitalize on the latitude in accounting techniques are reduced. The study by Rajgopal et al. (1999) shows a strong negative relation between the absolute value of discretionary accruals and institutional ownership.

This is consistent with the view that institutional owners are better informed, thus the perceived benefits of managing accruals are reduced and the informativeness of accounting earnings will be enhanced. Cornett et al. (2007) corroborated furthermore the assumption regarding the positive influence of institutional investors on firm valuation. Karamanou et al. (2005) argue in the other hand that the presence of institutional investors will deter managers to practice strategic behavior towards earning forecast disclosure. They expect thus that firms characterized by the presence of a large institutional ownership will disseminate relevant information.

We hypothesize thus:

*H2. Share price anticipation of future earnings is stronger for firms with high institutional ownership.*

### **2.3 share price anticipation of future earnings and proprietary costs**

Verrecchia (1983) and Darrough and Stoughton, (1990) argue that firms' decisions to disclose information to investors is influenced by concern that such disclosures can damage their competitive position in product markets. Luo et al (2006) define proprietary cost as "*the costs associated with strategic decision-making by a competitor using all available information, including firms' private information*". In fact, King and Wallin (1995) appraise that private information related to future earnings are valuable for financial market and business competitors. This is likely to weaken firm competitive position and restrain corporate disclosure. Moreover, Verrecchia (1983) considers that firms tend to decrease their disclosure if it produces proprietary cost and conversely, disclosure can result in minimum proprietary cost if the disclosure deters the opponent from taking an adverse action. Bamber and Cheon (1998) reported evidence supporting this point of view: they revealed that firms tend to disclose less precise information on behalf its future earnings when proprietary costs are high (few competitors). Finally, Gelb (2000) found that firms are more likely to decrease the level of their disclosure when high proprietary cost exists and use as a substitute other mechanisms such as dividend payout or stock repurchases in order to convey favorable news. Firms will balance then their desire to convey private information under a tradeoff between costs and benefits.

For instance, whereas, higher precision of financial information increases the ability to accurately predict the future performance of the firm, Information of higher quality decreases the barriers to entry in the product market and thus has an adverse effect on the incumbent firm. This leads to the prediction that the level of predictability is negatively associated with propriety costs (Cohen, 2002).

Based on above, we state the following hypothesis:

*H3. Share price anticipation of earnings is weaker for firms with high proprietary cost.*

### **3. Research model and methodology**

This section discusses research's model, our research design and helps explain where we obtained data.

#### **3.1 Regression Model**

Our empirical model is derived from earlier studies and in particular Collins et al. (1994). In fact, they used the future earning response coefficient (FERC) to assess the value relevance of current and future earnings. This coefficient is determined by regressing current stock return on current and future earnings and stock returns plus control variables. This regression model was applied in many recent research (e.g. Banghoj and Plenborg, 2008; Gelb and Zarowin, 2002; Hanlon et al. 2007; Hussainey and Walker, 2009; Schleider et al 2007) and is considered as a standard technique for measuring the ability of stock returns to predict future performance.

Thus the applied regression model is:

$$\mathbf{R}_t = b_0 + b_1 \mathbf{X}_t + \sum_{k=1}^N b_{k+1} \mathbf{X}_{t+k} + \sum_{k=1}^N b_{k+N+1} \mathbf{R}_{t+k} + b_{2N+2} \mathbf{AG}_t + b_{2N+3} \mathbf{EP}_{t-1} + \mathbf{e}_t$$

Where:

$\mathbf{R}_t$ : stock return for year t

$\mathbf{R}_{t+1}, \mathbf{R}_{t+2}, \mathbf{R}_{t+3}$ : stock returns for year t+1, t+2, t+3 respectively.

$\mathbf{X}_t, \mathbf{X}_{t+1}, \mathbf{X}_{t+2}, \mathbf{X}_{t+3}$ : are defined as earnings change for year t, t+1, t+2, t+3 respectively.

$\mathbf{EP}_{t-1}$ : Are earnings of period t-1

$\mathbf{AG}_t$ : is the growth rate of total book value of assets for period t.

To test empirically all of our assumptions we will proceed as follow. The effect of firms' financial leverage level on share price anticipation of future earnings will be first checked by interacting all the independent variables in the regression model with "LEV<sub>t</sub>" variable approximated by debt to equity ratio. The coefficient on LEV<sub>t</sub>\*ΣX<sub>t+1</sub> is expected to be negative since it is predicted that for high indebted companies future earnings anticipation would be difficult which negatively impact the association between stock return and future earnings. We test second the interaction between all the independent variables in the regression model with institutional ownership. The coefficient on INST<sub>t</sub>\*ΣX<sub>t+1</sub> is expected to be positive since it is predicted that the presence of institutional owners is likely to increase earnings informativeness.

Finally, the supposed moderating effect of proprietary cost on share price anticipation of future earning will be also verified by interacting it with all the independent variables in the regression model. In this case we expect that the coefficient on PC<sub>t</sub>\*ΣX<sub>t+1</sub> will be negative since it is predicted than the more are the proprietary cost the less is the ability of stock return to anticipate future earnings.

For the ease of exposition we use the modified and aggregated model as adopted in Lundholm and Myers (2002) and Hussainey and Walker (2009) who combined three years of data into one aggregated variable and obtained identical results in comparison to separated data. Thus our empirical models are below:

$$\underline{\mathbf{M.1:}} \mathbf{R}_t = b_0 + b_1\mathbf{X}_t + b_2\mathbf{X}_{t3} + b_3\mathbf{R}_{t3} + b_4\mathbf{AG}_t + b_5\mathbf{EP}_{t-1} + e_t$$

$$\underline{\mathbf{M.2:}} \mathbf{R}_t = b_0 + b_1\mathbf{X}_t + b_2\mathbf{X}_{t3} + b_3\mathbf{R}_{t3} + b_4\mathbf{AG}_t + b_5\mathbf{EP}_{t-1} + b_6\mathbf{LEV}_t + b_7\mathbf{LEV}_t * \mathbf{X}_t + b_8\mathbf{LEV}_t * \mathbf{X}_{t3} + b_9\mathbf{LEV}_t * \mathbf{R}_{t3} + b_{10}\mathbf{LEV}_t * \mathbf{AG}_t + b_{11}\mathbf{LEV}_t * \mathbf{EP}_{t-1} + e_t$$

$$\underline{\mathbf{M.3:}} \mathbf{R}_t = b_0 + b_1\mathbf{X}_t + b_2\mathbf{X}_{t3} + b_3\mathbf{R}_{t3} + b_4\mathbf{AG}_t + b_5\mathbf{EP}_{t-1} + b_6\mathbf{INS} + b_7\mathbf{INS} * \mathbf{X}_t + b_8\mathbf{INS} * \mathbf{X}_{t3} + b_9\mathbf{INS} * \mathbf{R}_{t3} + b_{10}\mathbf{INS} * \mathbf{AG}_t + b_{11}\mathbf{INS} * \mathbf{EP}_{t-1}$$

$$\underline{\mathbf{M.4:}} \mathbf{R}_t = b_0 + b_1\mathbf{X}_t + b_2\mathbf{X}_{t3} + b_3\mathbf{R}_{t3} + b_4\mathbf{AG}_t + b_5\mathbf{EP}_{t-1} + b_6\mathbf{PC}_t + b_7\mathbf{PC}_t * \mathbf{X}_t + b_8\mathbf{PC}_t * \mathbf{X}_{t3} + b_9\mathbf{PC}_t * \mathbf{R}_{t3} + b_{10}\mathbf{PC}_t * \mathbf{AG}_t + b_{11}\mathbf{PC}_t * \mathbf{EP}_{t-1}$$

Where :

- **R<sub>t</sub>**: stock return for year t is calculated as buy-and-hold returns for the 12-month period.

- $X_t$ : is defined as earnings change per share deflated by share price at  $t-1$  (earning is income before extraordinary items).
- $X_{t3}$ : is the aggregated three years future earnings change (earning is income before extraordinary items).
- $R_{t3}$ : aggregated buy-and-hold future stock returns for the 12-month period of  $t+1$ ,  $t+2$  and  $t+3$ .
- $AG_t$ : is the growth rate of total book value of assets for period  $t$
- $EP_{t-1}$ : is defined as period  $t-1$  earnings per share over price at the year-end of period  $t-1$ .
- $LEV_t$ : the level of financial leverage proxied by debt to equity ratio
- $INS_t$ : defined as the percentage of total shares held by institutional investors
- $PC_t$ : proprietary cost is measured by net revenue growth ratio of period  $t$

### 3.2 Sample Selection and Data Collection

The purpose of our research is to investigate share price anticipation of future earnings in the presence of financial leverage, institutional ownership and proprietary cost among Middle East and North African countries. Particularly we focus on the emerging markets in the MENA region since it is argued that investors' pressure and demand for relevant corporate disclosure and corporate governance practice are positively related to the level of capital market development (Ben Othman and Zeghal, 2008). So far, Our sample comprises companies domiciled in nine MENA emerging capital markets including Morocco, Egypt, Bahrain, Jordan, Kuwait, Lebanon, Israel, Oman, Qatar, Turkey and UAE and are periodically listed from 2005 to 2008. Financial information such as stock returns, earnings per share, institutional ownership, financial leverage and net revenues...are gathered from *Data Stream* electronic database. After a series of sample-filtering steps due to unavailability of many required information, the process yields a 69 firms related to our period of analysis (2005-2008).

Table 1 & 2 summarize the composition of the sample by country and by economic sector:

**Table.1: the composition of the sample by country**

<i>Country</i>	<i>Number of companies</i>
Morocco	3
Egypt	3
Jordan	7
Kuwait	8
Israel	19
Oman	4
Qatar	6
Turkey	11
UAE	8
<b>TOTAL</b>	<b>69</b>

**Table.2: the composition of the sample by economic sector**

<i>Sector</i>	<i>Number Of Companies</i>
Energy	4
Materials	10
Industrials	13
Consumer discretionary	8
Consumer staples	4
Healthcare	3
Financials	15
Information technology	9
Telecommunication services	2
Utilities	1
<b>TOTAL</b>	<b>69</b>

### 3.3 Descriptive statistics

Table 3 provides summary statistics for our sample. The mean (median) current return is 57.64 (0.2326). The mean (median) current earnings per share change (deflated by share price) is 0.93 (0.0350). The mean (median) accumulated 3 year earnings is 0.16 (0.0031) while the mean (median) aggregated future returns are negative -1.5763 (-0.2807) suggesting a declining performance over some of the future years and which may indicate structural changes in the returns over the sample time period. Indeed a closer look at the returns reveals that differences in measurement periods explain the differences between current and future returns. Current returns are measured in 2005 whereas future returns are measured in the time period of 2006-2008.

For example, future returns are not affected by the strong (current) returns of 1169 in 2005. Furthermore, future returns are affected by the poor or negative earnings change in respectively 2006, 2007 and 2008.

As also evidenced in table 3, the mean (median) of firms' financial leverage as proxied by debt to equity ratio is 76.67 percent (30.2 percent) and the standard deviation is 111.02 suggestive that not only our sample comprises high indebted firms but also high dispersion exist among firms with regard to their financial leverage level.

With respect to proprietary cost as measured by net revenue growth, the mean (median) is 3.90 (0.2707) and the standard deviation is 20.42 which indicates likewise considerable disparities among firms.

Finally, institutional ownership is on average quite notable. In fact, the mean (median) is about 15.92 percent (7.87 percent) and the standard deviation is 18.06 indicating that the size of institutional owners is quit diffused among our sample data firms.

Pair-wise Pearson correlations coefficients for the main variables are provided in Table 3, panel B. In contrast to what is expected, the correlations between the current returns and earnings variables are not in general significant. In fact, current return ( $R_t$ ) seems to be only significantly and strongly correlated with current earnings ( $X_t$ ). In addition, current returns are uncorrelated with future returns ( $R_{3t}$ ) consistent with Collins et al. (1994). This correlation indicates that future returns should not influence the results except through their role as a proxy for the measurement error in future earnings. However, current returns are strongly correlated with the earnings of period  $t-1$  ( $EP_{t-1}$ ). This latter is also strongly and significantly correlated with current performance which may indicate that earnings of period  $t-1$  are a good proxy for the market's expectations (at time  $t-1$ ) of the earnings for period  $t$  and beyond. Furthermore, significant strong correlation is detected between institutional ownership ( $INST_t$ ) in one hand and future earnings change ( $X_{3t}$ ) and proprietary cost ( $PC_t$ ) in the other hand. These correlations suggest that the presence of institutional owners may impact positively future earnings and may induce more proprietary cost. Finally, a negative weak correlation between asset growth ( $AG_t$ ) and firm financial leverage is noticed suggesting that high indebted companies have a lower asset growth.

Table 3 Summary descriptive statistics:

Panel A: descriptive statistics

Variables	N	Mean	Min	Median	Max	S.D
Current returns (Rt)	69	57.6456	-0.9169	0.2326	1169	232.8581
Current earnings change (Xt)	69	0.9373	-17	0.0350	58	8.1519
Accumulated Future earnings change (X3t)	69	0.1671	-1.5776	0.0031	14.8697	1.8315
Accumulated Future Returns (R3t)	69	-0.0693	-1.5763	-0.2807	2.4189	0.9106
Asset Growth (AGt)	69	0.4727	-0.2982	0.2464	3.9375	0.6995
Earnings of Period t-1 (EPt-1)	69	3.8277	-0.6521	0.0852	91	15.7478
Financial leverage % (LEVt)	69	76.6691	0.034	30.2	468.3	111.0198
Proprietary cost (PCt)	69	3.8984	-0.4294	0.2707	144.4545	20.4187
Institutional ownership% (INST)	69	15.9268	0.006	7.87	65.98	18.0611

Pearson correlation Panel B: matrix for selected variables (p-values)

	Rt	Xt	X3t	R3t	AGt	EPt-1	LEVt	PCt	INST
<b>Rt</b>	1.0000	<b>0.5448***</b> (0.0000)	-0.0096 (0.9377)	-0.0818 (0.9465)	-0.1231 (0.3134)	<b>0.9178***</b> (0.0000)	0.0549 (0.6543)	-0.0379 (0.7569)	-0.0258 (0.8331)
<b>Xt</b>		1.0000	-0.0140 (0.9089)	-0.0115 (0.9252)	-0.1161 (0.3423)	<b>0.7718***</b> (0.0000)	0.0258 (0.8332)	-0.0111 (0.9278)	-0.1351 (0.2682)
<b>X3t</b>			1.0000	0.1556 (0.2017)	-0.0157 (0.8979)	-0.0097 (0.9369)	0.0069 (0.9554)	-0.0137 (0.9113)	<b>0.2628**</b> (0.0291)
<b>R3t</b>				1.0000	-0.1348 (0.2696)	-0.0577 (0.6379)	-0.0529 (0.6662)	0.1042 (0.3941)	-0.0409 (0.7387)
<b>AGt</b>					1.0000	-0.1414 (0.2465)	<b>-0.2013*</b> (0.0973)	0.1263 (0.3009)	-0.1811 (0.1364)
<b>EPt-1</b>						1.0000	0.0337 (0.7831)	-0.0372 (0.7615)	-0.0948 (0.4383)
<b>LEVt</b>							1.0000	0.0127 (0.9175)	0.0960 (0.4327)
<b>PCt</b>								1.0000	<b>0.3005**</b> (0.0121)
<b>INST</b>									1.0000

This table reports the summary statistics for the sample firms. Current returns (Rt) t are buy-and-hold returns for the 12-month period for year. Current earnings (Xt) for year t are defined as earnings change per share deflated by the share price at the end of the financial year t-1. Xt3 is the aggregated three years future earnings change. Rt3 is the aggregated three years future returns. EPt-1 is defined as period t-1's earnings per share over price at the year-end of period t-1. (AGt) is the growth rate of total book value of assets for period t. Financial leverage (LEVt) is defined as debt to equity ratio. Proprietary cost (PCt) is measured by net revenue growth ratio. Institutional ownership (INST) is defined as the percentage of total shares held by institutional investors. \*, \*\* and \*\*\* indicate significance at the 0.10, 0.05 and 0.01 levels, respectively.

#### 4. Empirical results

In this section we highlight empirical analysis that attempt to examine the interplay between levels of financial leverage, institutional ownership and proprietary cost and the ability of stock prices to predict future earnings. Our main empirical results are based on feasible generalized least squares regression in order to control for the eventual presence of heteroskedasticity.

- (i) *The effect of firms' financial leverage on share price anticipation of future earnings*

Table 4 provides regression estimates for the benchmark version (model 1) of the return–future earnings model and the return–future earnings regression estimates with financial leverage level term (model 2).

As shown in table 4, the results from regression (M2) suggest that current returns appear to be strongly and negatively associated with the interaction term of current earnings and financial leverage level  $LEV_t * X_t$  ( $p < 0.001$ ) suggesting that high indebted companies have negative effect on current performance change and this negative effect is reflected in current stock returns. Hence, for indebted companies, financial leverage and the value relevance of current performance are negatively associated. This is may be due to the likelihood of managers to avoid costly debt covenant violation rather than to report earnings that are more informative about future cash flows. However, inconsistent with our first hypothesis (H1), no significant correlation exists between the interaction term of cumulated future earnings and financial leverage level  $LEV_t * X_{3t}$  and current stock returns. This indicates that current returns do not contain information about realized future earnings and that its prediction would be difficult when financial leverage is high.

In addition, despite this insignificant relationship, the sign of coefficient on  $LEV_t * X_{3t}$  is positive. Such unexpected sign may indicate that the more the firms' financial leverage is the more is the capitalization rate of future earnings news into price. In the other side, results revealed a significant and negative correlation between current stock returns and cumulated future returns  $LEV_t * R_{3t}$  in the presence of financial leverage. This finding may indicate that realized future earnings contain measurement error that future returns remove.

Overall, though these results do not support our first hypothesis (H1), it is evidenced that financial leverage can reduce the value relevance of current earnings and market expectation about firm future prospects.

Table 4: Comparison of the return–future earnings regression (model 1) and the regression of current returns on current and future earnings with financial leverage level interaction terms (model 2)

Independent variables	Model 1		Model 2	
Intercept	- 1.5940	(0.881)	-5.5738	(0.130)
Xt	<b>-11.5217***</b>	<b>(0.000)</b>	<b>24.3102***</b>	<b>(0.000)</b>
X3t	-0.1168	(0.980)	-3.0760	(0.563)
R3t	-3.9007	(0.682)	1.1301	(0.731)
AGt	0.5557	(0.964)	1.2670	(0.759)
EPt-1	<b>18.1655***</b>	<b>(0.000)</b>	<b>20.3968***</b>	<b>(0.000)</b>
LEVt			0.0618	(0.029)
LEVt*Xt			<b>-0.3841***</b>	<b>(0.000)</b>
LEVt*X3t			0.0447	(0.517)
LEVt*R3t			<b>-0.0691**</b>	<b>(0.048)</b>
LEVt*AGt			0.0241	(0.779)
LEVt*EPt-1			<b>-0.0200**</b>	<b>(0.006)</b>
<b>Wald chi-square (11) = 9626.05 (p-value): &lt;0.001</b>				

Current earnings (Xt) for year t are defined as earnings change per share deflated by the share price at the end of the financial year t–1. Xt3 is the aggregated three years future earnings change. Rt3 is the aggregated three years future returns measured as buy-and-hold returns for the 12-month period for year. EPt-1 is defined as period t–1’s earnings per share over price at the year-end of period t–1. (AGt) is the growth rate of total book value of assets for period t. Financial leverage (LEVt) is defined as debt to equity ratio. The model is estimated by feasible generalized least squares regression in order to control for the potential presence of heteroskedasticity. \*, \*\* and \*\*\* indicate significance at the 0.10, 0.05 and 0.01 levels, respectively.

(ii) *The effect of institutional ownership on share price anticipation of future earnings*

The results from table 5, model 2 affirm our second hypothesis (H2). In fact, the effect of institutional ownership level on the return future earnings association is, though positive, insignificant. In fact, unlike Jiambalvo and Rajgopal (2001) who found that for firms with higher levels of institutional ownership relatively more future earnings information is impounded in stock prices in comparison to firms with lower institutional ownership, the presence of institutional owners in our sample-firm is not likely to help capital market participants predict or anticipate firms’ future performance. This is consistent with Porter (1992) view that institutional owners are overly focused on short term earnings. If this is the case, compared to other investors, institutions are less sophisticated and therefore less likely to consider factors that affect future period earnings in pricing securities.

Moreover results revealed surprisingly a strong and negative association between current earnings depending on institutional ownership  $INST_t * X_t$  and current returns. Hence, in contrast to Jeong et al. (2002) and Jeon (2003) who provide evidence that the higher the level of institutional ownership, the larger the earnings response coefficient, our findings revealed that company with a high percentage of institutional shares has less informative earnings which may be inconsistent with the active monitoring hypothesis.

These unexpected results may be related in part to the lower presence of institutional investors in our sample of MENA emerging markets which may mitigate their monitoring role (the mean is about 15.92 percent) or to the fact that institutional monitoring induces managers' voluntary disclosures prior to earnings announcements. This is likely to reduce earnings informativeness since much of the content of the as yet unannounced earnings are likely to be impounded in the pre-disclosure market prices (El-Gazzar, 1998).

Table 5: Comparison of the return–future earnings regression (model 1) and the regression of current returns on current and future earnings with institutional ownership interaction terms (model 2)

Independent variables	Model 1		Model 2	
Intercept	- 1.5940	(0.881)	-8.3034	(0.383)
Xt	<b>-11.5217***</b>	<b>(0.000)</b>	-0.1365	(0.935)
X3t	-0.1168	(0.980)	9.6678	(0.602)
R3t	-3.9007	(0.682)	1.3023	(0.884)
AGt	0.5557	(0.964)	5.9342	(0.535)
EPT-1	<b>18.1655***</b>	<b>(0.000)</b>	<b>11.8785***</b>	<b>(0.000)</b>
INST			0.0670	(0.868)
INST*Xt			<b>-0.5400***</b>	<b>(0.000)</b>
INST*X3t			0.1720	(0.616)
INST*R3t			-0.0939	(0.832)
INST*AGt			0.0607	(0.927)
INST*EPT-1			<b>0.4117***</b>	<b>(0.000)</b>
<b>Wald chi-square (11)=1724.60 (p-value): &lt;0.001</b>				

Current earnings ( $X_t$ ) for year  $t$  are defined as earnings change per share deflated by the share price at the end of the financial year  $t-1$ .  $X_{t3}$  is the aggregated three years future earnings change.  $R_{t3}$  is the aggregated three years future returns measured as buy-and-hold returns for the 12-month period for year.  $E_{Pt-1}$  is defined as period  $t-1$ 's earnings per share over price at the year-end of period  $t-1$ . ( $AG_t$ ) is the growth rate of total book value of assets for period  $t$ . Institutional ownership ( $INST$ ) is defined as the percentage of total shares held by institutional investors. The model is estimated by feasible generalized least squares regression in order to control for the potential presence of heteroskedasticity. \*, \*\* and \*\*\* indicate significance at the 0.10, 0.05 and 0.01 levels, respectively.

(iii) *The effect of proprietary cost on share price anticipation of future earnings*

Table 7 reports the results of H3 testing that predict a weaker return-future earnings relation depending on firm proprietary cost level. Inconsistent with Darrough and Stoughton (1990), gelb (2000) and Luo et al. (2006), findings revealed non-significant relationship between the interacted term PCt\*X3t and current returns. This suggests that current stock returns aren't able to predict future earnings change when proprietary cost exists. The coefficient on the interaction term PCt\*X3t is moreover negative which is in accordance with the fact that the amount of future earnings information impounded in current stock price would be less with high proprietary cost.

Results showed furthermore a significant and a negative association between current stock returns and current earnings in the presence of proprietary cost. This indicates that investors perceive firms' earnings as less informative since less information is available. Consequently when proprietary cost exists firms are likely to restrain private and precise information about future cash flows since it is likely to weaken its competitive position.

One interpretation of these results is that the growth rate of firms' net-revenue can favor the presence of competitors and the likelihood of potential entrants to the product market. Firm needs therefore to protect its future opportunities as proxied by current year's percentage change in sales by not providing relevant financial information about future prospects.

Table 6: Comparison of the return–future earnings regression (model 1) and the regression of current returns on current and future earnings with proprietary cost interaction terms (model 2)

Independent variables	Model 1		Model 2	
Intercept	- 1.5940	(0.881)	-0.7694	(0.932)
Xt	<b>-11.5217***</b>	<b>(0.000)</b>	2.7446	(0.342)
X3t	-0.1168	(0.980)	-3.6993	(0.821)
R3t	-3.9007	(0.682)	-2.0886	(0.764)
AGt	0.5557	(0.964)	0.2143	(0.984)
EPT-1	<b>18.1655***</b>	<b>(0.000)</b>	<b>13.9564***</b>	<b>(0.000)</b>
PCt			2.9835	(0.837)
PCt*Xt			<b>-15.902***</b>	<b>(0.000)</b>
PCt*X3t			-8.7778	(0.833)
PCt*R3t			0.3090	(0.944)
PCt*AGt			-2.5316	(0.848)
PCt*EPT-1			<b>8.8392***</b>	<b>(0.000)</b>
<b>Wald chi-square (11)=1484.41 (p-value): &lt;0.001</b>				

Current earnings (Xt) for year t are defined as earnings change per share deflated by the share price at the end of the financial year t–1. Xt3 is the aggregated three years future earnings change. Rt3 is the aggregated three years future return measured as the buy-and-hold returns for the 12-month period for year. EPT-1 is defined as period t–1's earnings per share over price at the year-end of period t–1. (AGt) is the growth rate of total book value of

assets for period  $t$ . Proprietary cost (PCt) is measured by net revenue growth ratio. The model is estimated by feasible generalized least squares regression in order to control for the potential presence of heteroskedasticity. \*, \*\* and \*\*\* indicate significance at the 0.10, 0.05 and 0.01 levels, respectively.

## **5. Summary and conclusion**

This paper builds on early market based accounting literature that examines the returns earnings relationship and investigates the effect of some firms' attributes on share price anticipation of future earnings. We extend this work in two important ways. First, we focus on the interaction between financial leverage, institutional ownership and proprietary cost and the ability of stock returns to anticipate future earnings. Indeed, it is well known that the quality of financial information and in particular accounting earnings is not only a tradeoff between costs and benefits but depends also on some corporate governance mechanisms. Second, given these variables, we give some insight into the future return-earnings relationship in the context of MENA emerging countries where related literature is relatively scarce.

Based on a sample of 69 firms during the period of 2005-2009 and using the modified future earnings response coefficient model of Collins et al. (1994), we showed that the informativeness of current earnings is negatively associated with financial leverage level, institutional ownership and proprietary cost suggesting that investors perceive negatively the usefulness of accounting earnings numbers. Moreover, inconsistent with prior studies, our results indicated that the presence of institutional owners do not help stock prices predict future earnings. Furthermore, neither firms' leverage nor lower market entries barrier seems to have an impact on share price anticipation of future earnings.

Our results are of interest to accounting standard setters in MENA emerging markets. Whereas the objective of financial information is to improve the predictability of future earnings, our findings showed that the informativeness of current earnings is strongly related to some firms' characteristics.

The conclusions drawn from our study are constrained by several limitations. First, the sample firm was relatively limited due to the unavailability for MENA emerging markets of many required financial information (stock prices, earnings per share...). Second, empirical tests carried out in our study may suffer from omitted variable problems.

In fact theoretical and empirical research suggests that the ability of investors to predict future earnings would be improved with firms' propensity to disclose voluntary disclosure (Hussainey and walker, 2009; Lundholms and Myers, 2002) and corporate governance mechanisms (Bushman et al., 2004).

For instance, many directions can be taken in future research. We believe that it will be interesting to focus on the simultaneous effect of voluntary disclosure and corporate governance mechanisms on the return future earnings relationship. Extending also the time period explored might provide better insights in the comparison between MENA countries.

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