Asian Journal of Empirical Research
Volume 8, Issue 11 (2018): 417-433

http://www.aessweb.com/journals/5004

Earning management through marginal effect of firm based and regional economic indicators: a study on listed firms in Kuwait

Ahmed Nahar Al Hussaini

The Public Authority for Applied Education & Training. The College of Business Studies, Kuwait
✉ *drahmednahar@gmail.com* *Corresponding author*

ARTICLE HISTORY:

Received: 10-Oct-2018
Accepted: 14-Dec-2018
Online available: 01-Jan-2019

Keywords:

Earning management,
GDP,
LR,
CPI,
OLS regression estimate,
Kuwait

ABSTRACT

Under the situation of complex business firms, organizations are trying to enhance their earning capacity while competing in the marketplace. The core objective of the present study is to consider the Trading Income Ratio as a core indicator of earning capacity of the business through both firms based and regional economic indicators during the first half of the present decade. For this purpose, size, LR, credit expansion through the provision of loans, BDPS, GDP, and CPI has been considered. The effect of robust regression equations along with fixed and random effect explains that size, LR, and GDP are among the significant predictors for the earning capacity from 2011 to 2015. For the difference between the coefficient of fixed and random effect, the Hausman test is applied which indicates that the marginal effect of stated indicators is acceptable which are not correlated with the individual entities. In addition, the comparison through OLS dummies, fixed and areg (a category of linear regression) explains that again the size, LR and GDP are found to be the significant determinants of business earnings in the region of Kuwait.

Contribution/ Originality
The present study is to consider the trading income ratio as a core indicator of earning capacity of the business through both firms based and regional economic indicators during the first half of the present decade.

DOI: 10.18488/journal.1007/2018.8.11/1007.11.418.433
ISSN (P): 2306-983X, ISSN (E): 2224-4425

How to cite: Ahmed Nahar Al Hussaini (2018). Earning management through marginal effect of firm based and regional economic indicators: a study on listed firms in Kuwait. Asian Journal of Empirical Research, 8(11), 418-433.

1. INTRODUCTION

The idea of earning management is of the core interest for the business groups and companies. Because of the increasing chances of failure in the global market, highly diversified business groups are dealing with the idea of how to manage and enhance their earning capabilities while taking the core determinants related to their business and based on the nature of their regional economy. The idea of earning can be extracted through its multiple meanings, however in present literature the core definition is covered through the cash flows generated by the business over time, dividend retained and distributed to the shareholders of the business, earnings before and after tax and finally in the form of sales revenue for the various units over a time. In the region of Kuwait, various business groups are working which include both local and multinational business firms. It is situated in the northern edge of the Eastern Arabia and top of the Persian Gulf. During the time of the 1980s, the region of Kuwait has experienced the problem of geopolitical instability along with the stock market crash at the same time. The reason behind the crash of Souk Al-Manakh (Stock market of Kuwait) dealing with the high speculative and unregulated non-Kuwaiti business companies. The crash of the stock market in the late 1990s has seriously affected the various business groups and have started a discussion over the earning capacities and how to tackle the similar situation in the coming years. Since that time, business groups in the region of Kuwait are working to enhance their cash flow through strategic decisions. Among the other GCC member groups, the region of Kuwait has to shred many characteristics based on the significant involvement by the Government. Among the business groups, the majority of them are working under the title of manufacturing industries, telecoms, food and beverages, healthcare and some others. As per World Bank (2018), the economy profile of Kuwait for ease of doing a business, it ranks at 96 in the world economy. In addition, the ranking regarding the starting a business covered the number of 149 while trading across the borders is at 154. Due to all these diverse indicators of business activities, it is a primary concern of the business organizations to enhance their cash flow in the present environment.

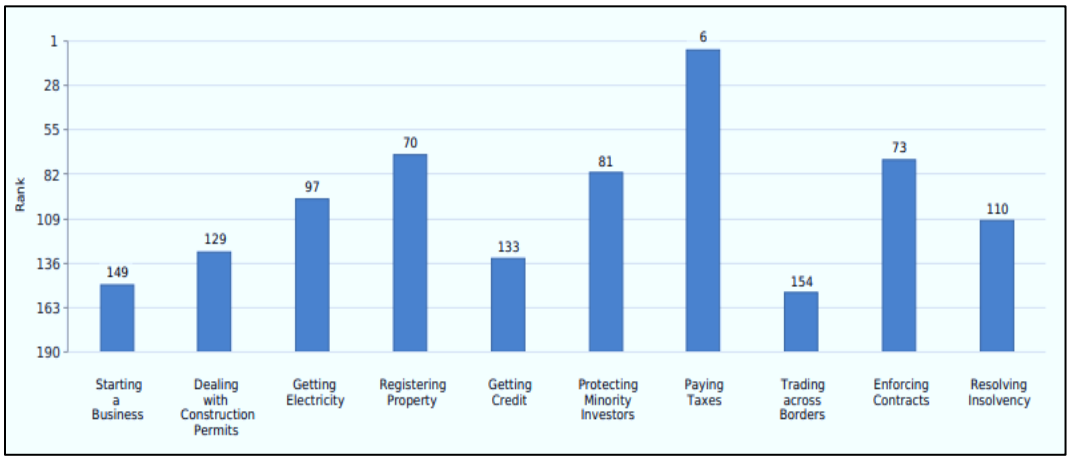

Figure 1: Rankings on doing business topics – Kuwait

Source: World Bank (2018)

2. LITERATURE REVIEW

In the present literature, the idea of earning management is discussed from the context of both developed and developing economies. Since the late 1990s, this idea is under investigation by the researchers and financial analysts along with the business managers. The studies of Burgstahler and Dichev (1997), Burgstahler and Dichev (1997) and Degeorge *et al.* (1999) have explained the fact that those business firms being held by the public are reporting a small decline in the earnings as compared

to the increase in the earnings over the same time. However, this pattern is consistent with those business managers who are using the accounting discretion for avoiding a small decline in the business earning. Numerous studies have defined the idea of earning management as in the study of who express it as smooth earning (Ahmed *et al.,* 1999; Beatty *et al.,* 2002; Ebrahim, 2007). For the business managers, the idea of earning capacity can be reflected through the provision of some incentives based on their performance. With the lower volatility in the earnings of the business can explain the stable stock price, less risk and more financial rewards for the business over time (Ahmed *et al.,* 1999; Barth, Gomez-Biscarri *et al.,* 2017). Various theories are dealing with the management obligations regarding the earing capacity which is under the title of agency theory, which suggests that business managers are purely hired to secure the interest of their shareholders/principals. In addition, they are also responsible to develop the strategies which can significantly achieve the stated objectives over a specified time (Fama, 1980). Business groups like banks and other companies are pursuing more pressure on their managers to work for the better earnings for increasing stock price at the same time. Various business groups are working to provide the incentives to their managers based on the notion of "pay for their performance" (Brockman *et al.,* 2010; Guay *et al.,* 2002). Business groups can also engage themselves for the earning management through tax minimization (Beuselinck *et al.,* 2015). Some other have expressed their opinion that there exists a significant association between the earning management and quality of the audit conducted by the firm in a specific time duration (Sarkar *et al.,* 2008).

The effect of liquidity risk (LR) is playing an essential role in the overall risk management framework in recent years (Pástor and Stambaugh, 2003). A well-managed liquidity risk not only increases the value of the business but also to increase the cash flows, reserves and mitigating the uncertainty in the business over its lifetime. The balance sheet of the business firms is growing along with complexity and more tendency on the capital market while increasing the level of liquidity risk (Buch and Goldberg, 2015; Waemustafa and Sukri, 2016). This increased risk can affect he is earning capacity and insist the business firms develop a strong mechanism (Edem, 2017). In addition, with the better liquidity position, business firms like banks can increase the maturity transformation while keeping highly liquid assets and to sell them at the time of uneven financial shocks. Such shield can also secure the business groups form earning losses hence more earning management over time. As per the view of various researchers, liquidity risk (LR) can also affect the operational activities which return adversely effect on the earnings and overall capital of the business (Heider *et al.,* 2015). In addition, it can also increase the overall chance of earning losses when not managed properly. LR has numerous measures in existing literature and in the form of deposits, it is among the significant indicator. However, if the depositors start withdrawing money from the business-like banks and similar institutions, then in return lower amount will be available to meet the emergency need of the business which finally affects the earning capacity as well (Diamond *et al.,* 2017).

As per the business specific indicators, size is measured through the value of total assets available for the business over time. The similar proxy is examined through the value of the total investment by the business group in all the units. The impact of business size on the earnings of the business is also examined in existing literature. The higher level of earnings in the business can be reflected through more investment or increasing level of investment. Business firms with their expansions can get better and more manageable earning sources which in return, increase their value. Demirgüç-Kunt *et al.* (2017) have identified the significant impact of the size on earnings in the form of interest margin.

Ali *et al.* (2015) indicates the fact that firm size is significantly playing its role while defining the idea of earning management. To measure the size, log value of the assets has been considered during the time of 2004 to 2013 with the annual observation from the textile sector of Pakistan. It is found that significant positive association exists between the size and earning which provides a reasonable addition in the present literature. Shu and Chiang (2014) found that the factor of size is significantly associated with the earning management in all type of small and big business firms. However, small

business firms take the time to react in the form of market value while at the same time large are busy in earning management as well.

The relationship between the debt or loan and its impact on the earning capacity and management has also been addressed in existing literature. The study of explains the fact that debt has a negative impact on the earning diversification and earning income in the business over the time. The reason is that more debt cost in the business will increase the cost structure and finally lowers the earning capabilities for the firms over time (Rodríguez-Pérez and van Hemmen, 2010). However, the reasonable management for the debt cost in the form of interest can also significantly increase the value of the business and more return on investment. However, some of the earlier studies have provided mixed output in existing literature. For instance, Rodríguez-Pérez and van Hemmen (2010) have shown a negative association between the debt and income increase effect on the earning capacity. They also explained the fact that managers in those firms which are more leveraged may have to face the control of those who are providing the debt facility to the business. In this way, they can influence the management decisions to deal with the various debt structures, debt cost and hence the earnings of the business. In addition, the study of has also provided the idea that debt structure in the business can also be viewed from the context of regional economies and their impact on the earnings management (Nazir *et al.,* 2010). The study of contributes in a way that relationship between debt and earnings is based on the code law of Spain. While the same concept is not existing in the United States but through common-law context as well.

The factor of dividend payment by the business firms is also playing a critical role in explaining the earning management. In the literature contribution, research contribution by Kasanen *et al.,* (1996) provides enough evidence regarding the dividend-based earning management while taking the different institutions in the region of Finland. They have explained the fact that earning management and its contracting view is based on the setting of various business firms, known as the institutional setting. In addition, the factor of the implicit contract indicates the idea that earning management behaviour is associated with the smooth dividend as expected by the large equity holders in the business. Meanwhile, the factor of earning management is very much cost because of the tax effect in the region (Abidin *et al.,* 2015; Haseeb, 2018; Haseeb and Azam, 2015; Haseeb *et al.,* 2014; Kasanen *et al.,* 1996).

Amon the macroeconomic indicators, the effect of the gross domestic product on the earnings of the firms is very much significant as explained in present studies. For instance, Bashir (2003) has evaluated the financial sector firms in the Middle Eastern economies during the time of 1993 to 1998. Based on the findings of the study, it is expressed that the linear relationship prevails between the selected indicators and earnings of the financial firms. Shafie *et al.* (2004) found positive impact of 143 financial firms' earning by the economic indicators like GDP along with business-specific determinants. In addition, the effect of the European banking industry and its earnings have been investigated through GDP and related indicators, the usage of OLS estimation approach explains that GDP has a significant influence on the earnings of the selected firms. Azam *et al.* (2016), Azam *et al.* (2016) and Goddard *et al.* (2004a, 2004b) have also investigated the impact of GDP on the earnings of 583 firms working in the European states during the same time. It is found that a positive relationship exists between the earnings of selected firms and GDP over the same time. Kosmidou *et al.* (2005) have also investigated the impact of GDP for the UK banking firms and found a significant positive association between the both. However, some other studies like Bikker and Metzemakers (2005) and Shen and Chih (2005) explains that during the time of peak inflation in the economy, there is no significant impact of GDP on the earnings of firms. Athanasoglou *et al.* (2006) found the impact of GDP on the earnings of the business significant and positive. In addition, some other studies have also found the association between the GDP and earnings of the firms (e.g., Abidin *et al.,* 2018; Abidin *et al.,* 2016; Dal Maso *et al.,* 2018; Goddard *et al.,* 2011).

The factor like inflation to predict the earnings of the firm as among the core economic indicators is also under observation by the researchers. Naceur (2003) explained the fact that inflation along with the annual growth in Tunisia has its significant impact on the earnings of the banks. Mamatzakis and Remoundos (2003) investigated the impact of inflation as regional economic indicators for the earnings of Greek firms during the time of 1989 to 2000 along some other explanatory variables. Their findings indicate no considerable link of earnings of the selected firms and CPI in the region. However, the study conducted by George (2014) found a significant and positive impact of CPI on the earnings of Greek banks while applying the Generalized Method of Moment approach (GMM).

3. EXPLANATION OF THE VARIABLES

To examine the marginal effect of various indicators on the earnings of the selected firms, numerous indicators have been added to the regression model. The first explanatory variable is entitled as the size of the firms. Various proxies have been presented in existing literature to explain the measurement of size for the business over time. It can be measured through the growth in the sales volume of the business, growth of the business regarding expansion in assets investment as expressed by various studies (e.g., Brouwer and Kleinknecht, 1996; Cliff, 1998; Gielnik *et al.*, 2017; Mitchell, 1994; Nthebe and Swart, 2017; Schwatka *et al.*, 2018; Shi *et al.*, 2017). The present study has considered the log values of the total assets to explain the measurement of the size of the business. The 2nd indicator for the earnings of the business is expressed through the loan or the credit expansion for the business. The value of loan amount as a key balance sheet item from the liability side is added in the model to explain the prediction of earnings through loan amount. The third indicator is expressed through the liquidity risk as (LR) faced by the business firm which has both positive and negative impact. In the present study, it is assumed that LR will affect the earnings of the selected firms during the defined time. To explain the earnings capacity and its management, the fourth indicator is measured through Bonus Dividend per share (BDPS) is added in the regression model which assumes to be among the significant indicators of earnings of the firms. Besides, the regional economic indicator like GDP is added in the model which indicates the economic output in the region of Kuwait. The 6th indicator for the earning is also from the overall economy and measured through the rate of inflation as expressed through consumer price index. The last indicator is expressed as the market capitalization of overall listed firms in the region. As the firms are interconnected, hence it is assumed that market capitalization will affect the earnings of the selected firms.

4. RESEARCH METHODS

To understand the in-depth effect of selected explanatory variables both from the business specific and regional macroeconomic indicators, regression equations from 1 to 5 have been developed. For the first equation, the factor of Trading Income Ratio is added in the model as main outcome factor along with the constant amount of $\Im$ which express the amount of earning capacity without the presence of the selected predictors. The effect of Trading Income Ratio will be studied for the *i* business firms over the time of *t.* The marginal effect of a first explanatory variable, size is measured through Δ_1 which expresses either the significant or insignificant effect of business size as measured through overall investments expansions. For the credit expansion loan log values are added in the equation and explaining the differential effect through Δ_2. For the LR the incremental effect either accepted or not will be explained through Δ_3. The effect of BDPS, GDP, CPI and MC will be examined through the marginal effect of $\Delta_4, \Delta_5, \Delta_6$, and Δ_7 respectively through robustness technique. Under the effect of the 2nd equation as presented below, the effect of inflation as a macroeconomic regional indicator has been removed and rest of the explanatory variables for their marginal effect remain in the model with *i* and *t* effect. For the third equation below, the effect of business indicators along with the economic growth is added to check either the earning capacity is moving in a significant way because of the size, loan, LR, and BDPS. The effect of equation 1-3 is

examined through simultaneous technique in STATA application which indicates the robust effect of predictors on outcome factor of the study.

$$y(\int_t^i Earnings\ /\ TIR) = \partial + \Delta_1 size_1 + \Delta_2\ loan_2 + \Delta_3 LR_3 + \Delta_4 BDPS_4 + \Delta_5 GDP_5 + \Delta_6\ CPI_6 + \Delta_7 MC_7 + \mu i, t \quad \ldots\ldots\ldots\ldots\ldots\ldots (1)$$

$$y(\int_t^i Earnings\ /\ TIR) = \partial + \Delta_1 size_1 + \Delta_2\ loan_2 + \Delta_3 LR_3 + \Delta_4 BDPS_4 + \Delta_5 GDP_5 + \Delta_6\ MC_6 + \mu i, t \quad \ldots\ldots\ldots\ldots\ldots\ldots (2)$$

$$y(\int_t^i Earnings\ /\ TIR) = \partial + \Delta_1 size_1 + \Delta_2\ loan_2 + \Delta_3 LR_3 + \Delta_4 GDP_4 + \mu i, t \quad \ldots\ldots\ldots\ldots\ldots (3)$$

$$y(\int_t^i Earnings\ /\ TIR) = \partial + \Delta_1 size_1 + \Delta_2 LR_2 + \Delta_3 GDP_3 + \mu i, t \quad \ldots\ldots\ldots\ldots (4)$$

$$y(\int_t^i Earnings\ /\ TIR) = \partial + \Delta_1 size_1 + \Delta_2\ loan_2 + \Delta_3 LR_3 + \Delta_4 BDPS_4 + \Delta_5 GDP_5 + \Delta_6\ CPI_6 + \Delta_7 MC_7 + \partial_2 bf2_{2it} + \partial_{30} bf2_{30it}\ vi, t \quad \ldots\ldots\ldots\ldots\ldots\ldots (5)$$

$$y(\int_t^i Earnings\ /\ TIR) = \partial + \Delta_1 size_1 + \Delta_2\ loan_2 + \Delta_3 LR_3 + \Delta_4 BDPS_4 + \Delta_5 GDP_5 + \Delta_6\ CPI_6 + \Delta_7 MC_7 + \partial_2 bf2_{2it} + \partial_{30} bf2_{30it}\ U_i + W_{ij} \quad \ldots\ldots\ldots\ldots\ldots\ldots (6)$$

$$y(\int_t^i Earnings\ /\ TIR) = \partial + \Delta_1 size_1 + \Delta_2\ loan_2 + \Delta_3 LR_3 + \Delta_4 BDPS_4 + \Delta_5 GDP_5 + \Delta_6\ CPI_6 + \Delta_7 MC_7 + \mu i, t \quad \ldots\ldots\ldots\ldots\ldots\ldots (7)$$

$$y(\int_t^i Earnings\ /\ TIR) = \partial + \Delta_1 size_1 + \Delta_2\ \ loan_2 + \Delta_3 LR_3 + \Delta_4 BDPS_4 + \Delta_5 GDP_5 + \Delta_6\ CPI_6 + \Delta_7 MC_7 + \mu\ firm\_2\ \ firm\_30 \quad \ldots\ldots\ldots\ldots\ldots\ldots (8)$$

$$y(\int_t^i Earnings\ /\ TIR) = \partial + \Delta_1 size_1 + \Delta_2 loan_2 + \Delta_3 LR_3 + \Delta_4 BDPS_4 + \Delta_5 GDP_5 + \Delta_6\ CPI_6 + \Delta_7 MC_7 + eit \quad \ldots\ldots\ldots\ldots\ldots\ldots (9)$$

Due to data nature, the effect of the fixed effect regression model is examined while adding the regression equation 4. The effect of entity-specific variables will be controlled while taking the effect estimator. The details for the fixed effect estimator can be viewed with the help of the following equation

$$y_{it} = \beta' x_{it}\,\mu + \varepsilon; with i = 1, \ldots\ldots, N\ and\ t = 1, \ldots\ldots, t \quad \ldots\ldots\ldots\ldots\ldots\ldots (10)$$

A fixed effect regression equation will consist of subtracting the time mean effect from each of the variable added in the model which further explains the results while transforming the model through the OLS method of estimation. Under the econometrical analysis, such technique is known as within the estimator effect which allows dropping the component of one unobserved and consistent estimator from the model. Therefore, the above regression fixed effect model can be viewed in the following equation

$$W_i = \beta_0 + \beta_1 e_i + v_i\ \ and \text{ finally, as } Y_{it} = \beta' \tilde{x}_{it} + \tilde{\varepsilon}_{it} \quad \ldots\ldots\ldots\ldots\ldots\ldots (11)$$

In addition, the express the effect of the random effect/variance component model, the relationship between predictors and outcome factors is expressed in equation 10 as above. The model parameters are entitled under the random variable and it is also known as the hierarchical multiple regression model. It is assumed that data for the selected indicators is drawn from the hierarchy of various populations whose hierarchy is linked to their differences. The same model is entitled to control the

unobserved heterogeneity when the same is constant over time with not correlated with the explanatory variables of the model. Besides, for the more correct specification of the model, it is assumed that individual specific entity effect is correlated in the fixed effect with the predictors while random effect holds the idea that there is no correlation for the individual entities with the predictors. For this purpose, the equation 11 has added the *Yij* is the sum of the variances τ2 and σ2 of *Ui* and *Wij* are known as the variance and added in the model respectively. For this purpose, let assume as:

$$\overline{Y}_{i.} = \frac{1}{n}\sum_{j=1}^{n} Y_{ij} \quad \text{..... (12)}$$

In addition, for the sum of squared difference within and between the groups, the following effect will be examined in the random effect regression model

$$SSW = \sum_{i=1}^{m}\sum_{j=1}^{n}(Y_{ij} - \overline{Y}_{i.})^2 \quad \text{..... (13)}$$

$$SSW = n\sum_{i=1}^{m}(\overline{Y}_{i.} - \overline{Y}_{..})^2 \quad \text{..... (14)}$$

Details of the stated equations are presented in the section below.

5. DESCRIPTIVE RESULTS

The mean amount for the earning capacity regarding Trading Income Ratio is 39.345 indicating a good capability for the business over time. While the standard error in the earning capacity is found to be 2.185 with the median point of 41.603. The value of deviation from the mean is recorded at 26.769 with the sample variance of 16.632. The range of earning capacity is found to be the highest among all the key variables of the study. while minimum is recorded at the level of -31.610, indicates that during the recession time business firms have also faced negative earnings capacity with the negative margin between the interest earned and interest paid in last 5 years of the study. While the value of kurtosis is 2.609 and skewness is -2.037 respectively. The value of loan measures the credit expansion for the business has a mean amount of 1.355 with the standard error of 0.242 and median of 0.731 approximately. The value of standard deviation in the mean loan amount is 2.972 and sample variance of 8.837 which are in reasonable range in the present data set. The outcomes for the credit expansion regarding data normality through kurtosis and skewness are also in a reasonable range. While the maximum credit expansion is recorded with the value of 24.499. Standard error for the mean score of LR is 0.047 with the deviation of 0.1499. For the stock dividend per share or SDPS, the mean amount is 0.255 with the median of 0.083 and standard deviation of 0.5821. For the effect of macroeconomic indicators, three variables GDP, CPI and MCA has been added in the model. For GDP, the mean amount of 13.563 with the deviation of 1.247 and minimum growth rate of -0.9168 considered through log value. The count score of 150 indicates that all the sated indicators have been considered for all the time of the study. For the CPI as a core measure of inflation in the economy, an average of 11.073 is observed with the error of 0.393 and deviation of 4.823 respectively.

Table 1: Descriptive results of the study

	TIR	Size	Loan	LR	SDPS	GDP	CPI	MCA
Mean	39.345	6.846	1.356	0.130	0.255	13.563	11.703	30.966
Standard Error	2.185	0.219	0.242	0.012	0.048	0.102	0.394	1.019
Median	41.603	7.610	0.732	0.084	0.116	13.215	9.063	33.161
Standard Deviation	26.770	2.685	2.973	0.149	0.582	1.247	4.824	12.481
Sample Variance	16.632	7.213	8.837	0.022	0.339	1.556	23.269	15.783

Kurtosis	-0.595	2.609	32.361	11.579	26.030	-0.951	-0.747	-1.599
Skewness	-0.109	-2.037	5.316	2.944	4.506	0.686	0.905	-0.171
Range	13.610	9.096	24.499	0.970	5.504	3.307	12.687	32.296
Minimum	-31.610	1.265	3.653	0.004	-0.917	12.382	7.599	13.812
Maximum	100	9.096	24.499	0.970	4.587	15.690	20.286	46.108
Sum	5901.791	1026.908	203.397	19.516	38.280	2034.484	1755.50	4644.92

Table 2: Correlational matrix with significance levels

	Size	Loan	LR	SDPS	GDP	CPI	MC
Size	1						
Loan	0.168** 0.039	1					
LR	0.204** 0.012	0.053 0.517	1				
SDPS	0.141 0.084	-0.029 0.724	0.09 0.273	1			
GDP	-0.493*** 0.000	-0.070 0.394	-0.330*** 0.000	-0.088 0.284	1		
CPI	0.224** 0.005	0.012 0.88	0.230 0.004	-0.118 0.148	-0.627*** 0.000	1	
MC	-0.304*** 0.0002	-0.041 0.617	-0.247** 0.002	0.194 0.017	0.679*** 0.000	-0.897*** 0.000	1

After the descriptive measures of the study, the correlational analysis has been conducted and presented in table 2. The level of correlation between the size and loan is positively low but significant at 5 % with the value of .1638. The relationship between the size and LR is 0.2047, which is positive and significant at 5 %. However, the association between the size and GDP is -0.4932, explains a negative and moderate but significant association between the both. For the credit expansion the proxy of the loan has indicated no significant association with any of the explanatory variables of the study. For the LR, the association with GDP is found to be -0.3306 which is significant and weak at 1 % level of significance and with the MC it has -0.2474 but significant at 5 % level of significance. For the SDPS none of the selected indicators is found to be significantly associated during the time of the study. However, for the GDP and MC, the association is found to be above-moderated level of 0.6271 and 0.6797, significant at 99% level of confidence. This association indicates a reasonable relationship between GDP and MC with the CPI as well. In addition, the association of CPI with the MC is highly negative and 0.8976, significant at 1 % level of significance. An overview of the correlational matrix, it is found that interdependency among the variables can be a problem which can be detected through the check of VIF and tolerance test.

The test for the VIF indicates an individual value of less than 5 and the mean VIF is also less than 5, indicating no problem for the multicollinearity between the explanatory variables of the study. The value of tolerance can be compared to VIF<5 and it should be above 0.10 to support the argument that there is no problem of high correlation or interdependency between the set of explanatory variables of the study. It is found that all the variables have a tolerance value of > 0.10, hence no problem for their consideration in the robust analysis of explaining their prediction for earning capacity of the selected firms.

Table 3: VIF and Tolerance for detecting multicollinearity

Variable	VIF	SQRT-VIF	Tolerance	R-Squared
Size	1.41	1.19	0.708	0.291
loan	1.03	1.02	0.966	0.033
LR	1.13	1.07	0.881	0.118

SDPS	1.19	1.09	0.839	0.160
GDP	2.46	1.57	0.407	0.592
CPI	5.39	2.32	0.185	0.814
MC	6.5	2.55	0.153	0.846
Mean VIF	2.73			

6. REGRESSION RESULTS

Table 4 represents the outcomes for the regression equations 1-6 under robust findings. For the first equation, the effect of size, loan LR, BDPS, GDP, CPI and finally the MC has been examined. The effect of size has explained the fact that unit change in the value of size indicates a positive change of 5.778 significant at 1%. It indicates that the increasing level of investments causes a positive and significant impact on the value of earning capacity for the selected firms. The value of standard error for the size is -0.571 in the marginal effect of size for the earnings. The value of loan effect on Trading Income Ratio is .297 with the deviation of -0.32 in its differential effect. However, the recorded effect of the loan on Trading Income Ratio is insignificant. The effect of LR on Trading Income Ratio is 73.15, indicates a positive and significant effect on earnings. For the BDPS, the effect on Trading Income ratio is -2.14 and GDP is 4.17 which indicates an insignificant effect. For the CPI as among the macroeconomic indicator, the effect is found to be negative but insignificant on Trading Income Ratio. Meanwhile, the effect of MC is positive and insignificant as well. The overall explained variation in the Trading Income Ratio as defined in robust equation 1 indicates an overall change of 47 % which seems to be a moderate level. The adjusted value of R-square is 44.8 percent which indicates a change in Trading Income Ratio after the consideration of predictors and stated sample of the study.

Table 4: Regressions results for equation 1-6

	Robust Reg1	**Robust Reg2**	**Robust Reg3**	**Robust Reg4**	**Fixed Effect**	**Random Effect**
	-1	-2	-3	-4	-5	-6
	TIR	TIR	TIR	TIR	TIR	TIR
Size	5.778***	5.799***	5.741***	5.804***	5.245***	5.468***
S.E	-0.571	-0.56	-0.551	-0.527	-0.933	-0.762
Loan	0.297	0.303	0.325		0.408	0.332
S.E	-0.32	-0.314	-0.312		-0.762	-0.629
LR	73.15***	72.97***	72.48***	72.65***	79.48***	76.91***
S.E	-9.694	-9.709	-9.729	-9.631	-12.22	-10.6
BDPS	-2.142	-1.953			-1.692	-1.842
S.E	-2.222	-2.122			-2.327	-2.232
GDP	4.117	4.467*	4.471*	4.490*	3.766*	3.913**
S.E	-2.198	-1.785	-1.783	-1.768	-1.451	-1.387
CPI	-0.134				-0.164	-0.151
S.E	-0.422				-0.312	-0.306
MC	0.119	-0.058			0.08825	0.1004
S.E	-0.333	-0.0383			-0.2361	-0.2304
_cons	-63.83	-70.33*	-70.45*	-70.72*	-56.16*	-59.36*
	-36.23	-27.45	-27.43	-27.2	-25.33	-23.98
N	150	150	150	150	150	150
R-sq	0.47	0.47	0.468	0.467	0.676	.631
adj. R-sq	0.448	0.452	0.454	0.456	0.577	.608
Rmse	19.89	19.82	19.79	19.74	13.56	13.38

For the robust regression equation 2, the effect of size is positive and significant on Trading Income Ratio during the whole time of the study. In addition, the effect of LR is 72.97 indicates a positive and marginal effect on Trading Income Ratio due to LR for the selected firms over time. However, as per the stated findings in regression equation 2, the effect of GDP is found to be positive and significant at 5% level of significance. The rest of the indicators have explained an insignificant effect on the Trading Income ratio of the study. The value of explained variation regarding R-square and adjusted R-square is 0.47 and 45.2% respectively. The outcome for the third equation indicates a significant impact of size along with the LR & GDP on the value of the earning capacity of the selected firms. The rest of the indicators have shown no significant marginal effect on Trading Income Ratio during the time of the study. In addition, the adjusted effect of explained variation is 0.456 percent. For the fourth robust equation, the differential effect through the regression coefficient for size, LR and GDP are presented in table 4. It is found that the effect of all these indicators is found to be significant and positive on the value of the earnings. For the adjusted R-square explained variation is assumed to be 45.6 percent, hence indicating a reasonable marginal effect by size and LR as firm-based indicator and GDP as a regional economic indicator. To consider the effect of fixed effect while controlling the impact of heterogeneity in the firms which can influence on explanatory variables of the study, equation five based on all the explanatory variables have been presented. The effect of size and LR is found to be significant and positive on Trading Income Ratio along the GDP over time. While the effect of loan, BDPS, CPI and MC is insignificant over the same time of the study. The explained effect under the title of fixed effect is found to be 67 percent and 57 percent respectively. In addition, the 6th equation is applied for the measurement of random effect results while observing the correlation of entities with the explanatory variables as constant over time. The effect of Size, LR and GDP are positively significant on Trading Income Ratio under the random effect model of the study.

Table 5: Difference in coefficient through HM test of fixed-random effect

	(b) Fixed	(B) Random	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
SIZE	5.245	5.468	-0.223	0.539
LOAN	0.408	0.332	0.076	0.430
LR	79.476	76.906	2.570	6.084
GOD	-1.692	-1.842	0.150	0.658
GDP	3.766	3.913	-0.147	0.427
INFLATION	-0.164	-0.151	-0.013	0.061

To make a comparison between the fixed and random effect Hausman test has been applied based on the application of the two alternative hypotheses. The null argument is that unique error terms are not correlated with the regressors and their marginal effects, the alternative hypothesis is that they are correlated with each other. The outcomes are presented in table 5 indicates a difference between the coefficient of both fixed and random effect. The difference between both coefficients is also considered for the squared S.E effect as presented in table 5. To accept the final marginal effect of regressors either under fixed or random following output is generated.

b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg
Test: Ho: difference in coefficients not systematic

chi2(7) = (b-B)'[(V_b-V_B)^(-1)](b-B)
= 0.19
Prob>chi2 = 0.9999

The probability value for the chi2 is insignificant, hence in favour for the null hypotheses which indicate that unique error terms are not correlated with the regressors of the model, hence the random effect is accepted to explain the marginal effect of a set of explanatory variables. After the in-depth analysis of the panel regression, the next step is to consider the fixed effect estimator, OLS regression

with the dummies and for areg equations. The findings are presented in Table 6. The effect of the size in all three models have its significant and positive impact on Trading Income Ratio over time. While the effect of the credit expansion is found to be insignificant in all the stated models. The effect of LR is also significant for the regression equations from 7 to 10 with the marginal effect of 78.88. However, the effect of BDPS, inflation and MC is found to be insignificant under the stated models. In addition, the effect of GDP is significantly affecting the Trading Income Ratio/earning capacity of the selected business. For the individual dummies of all the 30 firms, it is found that except the firm_2, firm_4, firm_10-12, firm_17-18, firm_24-25 has their insignificant impact in explaining the value of Trading Income Ratio over time. The rest of the selected firms have their significant impact on the value of Trading Income Ratio over time.

Table 6: Findings of equations 7-9

Variable	Fixed	OLS	Areg
size	5.322***	5.322***	5.322***
loan	0.402	0.402	0.402
LR	78.887***	78.887***	78.887***
BDPS	-2.052	-2.052	-2.052
GDP	3.624*	3.624*	3.624*
CPI	0.007	0.007	0.007
MC	0.088	0.088	0.088
Firm_2		-7.873	
Firm_3		-42.644***	
Firm_4		-9.892	
Firm_5		-26.210**	
Firm_6		-20.935*	
Firm_7		-49.347***	
Firm_8		-17.192	
Firm_9		-31.688***	
Firm_10		-17.458	
Firm_11		-13.840	
Firm_12		-8.674	
Firm_13		-38.024***	
Firm_14		-5.400	
Firm_15		-40.484***	
Firm_16		-46.761***	
Firm_17		6.056	
Firm_18		-13.565	
Firm_19		-35.359***	
Firm_20		-38.297***	
Firm_21		-52.721***	
Firm_22		-46.184***	
Firm_23		-29.993**	
Firm_24		-7.776	
Firm_25		-7.992	
Firm_26		-29.884**	
Firm_27		-24.153**	
Firm_28		-21.094	
Firm_29		-22.679*	
Firm_30		-17.054	
_cons	-59.345*	-35.440	-59.345*
N	150	150	150
R2	0.676	0.803	0.803
Adj_R2	0.573	0.741	0.741

7. CONCLUSIONS AND RECOMMENDATIONS

The diversification in the income is under significant attention in the present literature. However, the role of firm-based indicators for the earning capacity and regional economic indicators are also of the core interest of the researchers in the contemporary business environment. This study aims to consider the marginal effect of both firms based and macroeconomic indicators for the development of the business through earning management. For this purpose, a Trading Income Ratio for the selected business firms in the region of Kuwait has been calculated on annual bases along with the size, LR, credit expansion, and for the major economic indicators like GDP, CPI, and MC in the same economy during 2011 to 2015. As per the detailed review of existing literature, the association between the stated predictors and outcome factor is not under significant attention and ignored. Based on the application of robust regression models with the controlling effect of firm's heterogeneity along with the random effect, various indicators have been found which are playing their meaningful role in earning capacity of the selected firms. For this purpose, various equations are developed to empirically examine the association between the Trading Income Ratio and both firm based and macroeconomic indicators. The findings of the first robust equation indicate that size and LR are assumed to be the significant predictors of earning capacity for the selected firms. For the 2nd robust equations, LR, Size and GDP are found to be key determinants of Trading Income Ratio in the business. While under 3rd and 4th equations, the effect of size, LR and GDP are found to be significantly affecting the Trading Income Ratio for the selected firms over time. To understand the nature for the panel, model the effect of fixed effect regression equations indicates the idea that size, LR, GDP have their significant influence while taking the effect of firm's heterogeneity. The same indicators are found to be significantly associated with the earning, hence supporting the argument that both firm based, and regional economic indicators have their marginal effect on earning capacity from 2011 to 2015. In addition, the comparison of simple regression, fixed effect and OLS with the dummies indicates that size, LR and GDP are again the significant indicators of Trading Income Ratio along with the various dummies under OLS model equation.

This study provides a meaningful insight regarding the investigation of which firm based and regional economic factors are associated with the earning capacity of the business. To understand the earning management, the effect of both regional economic indicators and firm-based variables should be under consideration for any type of strategic decision in the coming time. Among the core contribution of the study, present research work is significantly covering the gap in the existing body of literature while taking the effect of key determinants through robust regression and panel equations. However, this study recommends the idea that better findings can be extracted in future time while adding the other regional indicators like the development of the financial market, expansion of credit/credit growth at a macro level along with present predictors of earning capacity. In addition, adding more time duration to the study for both the time series and cross-sectional analysis can provide enough evidence to enhance the empirical contribution in the present literature. Based on the findings, this study suggests the fact that both analysts in the financial market and other business firms should focus through significant attention to properly manage the earning capacity in coming time. Putting more attention on the revenue diversification can be another remedy for the business to tackle the loss amount if something uneven financial shock happens in future time.

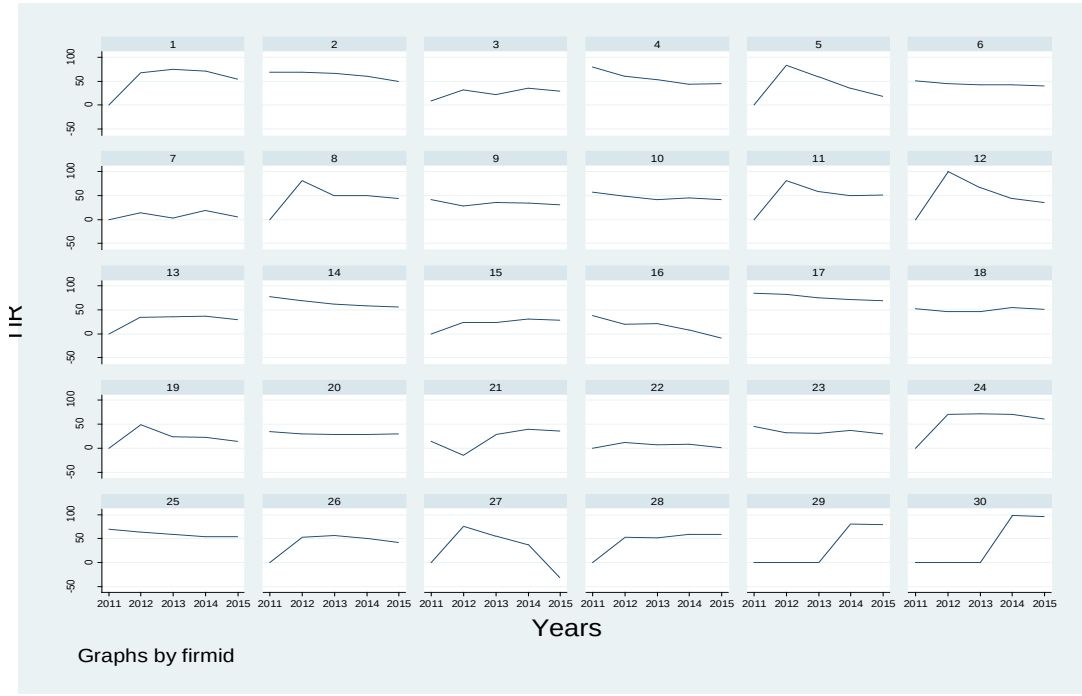

Figure 2: TIR trends over 2011-2015

Funding: This study received no specific financial support.
Competing Interests: The author declares that s/he has no conflict of interests.
Contributors/Acknowledgement: All the designing and estimation of current research done by sole author.

References

Abidin, I. S. Z., Bakar, N. A., & Haseeb, M. (2015). Exploring trade relationship between Malaysia and the OIC member countries: A panel cointegration approach (1995-2012). *Asian Journal of Scientific Research, 8*(1), 107-121. view at Google scholar / *view at publisher*

Abidin, I. S. Z., Haseeb, M., & Islam, R. (2016). Regional integration of the association of Southeast Asian nations economic community: An analysis of Malaysia-Association of Southeast Asian nations exports. *International Journal of Economics and Financial Issues, 6*(2), 646-652. view at Google scholar

Abidin, I. S. Z., Haseeb, M., Chiat, L. W., & Islam, M. R. (2018). Determinants of Malaysia–BRICS trade linkages: gravity model approach. *Innovations, 13*, 2-2. view at Google scholar / *view at publisher*

Ahmed, A. S., Takeda, C., & Thomas, S. (1999). Bank loan loss provisions: a reexamination of capital management, earnings management and signaling effects. *Journal of Accounting and Economics, 28*(1), 1-25. view at Google scholar / *view at publisher*

Ali, U., Noor, M., Khurshid, M. K., & Mahmood, A. (2015). Impact of firm size on earnings management: A study of textile sector of Pakistan. *European Journal of Business and Management, 7*(28), 1-10. view at Google scholar / *view at publisher*

Athanasoglou, P., Delis, M., & Staikouras, C. (2006). *Determinants of bank profitability in the South Eastern European region*. MPRA Paper No. 10274, 20(1), 1-32. view at Google scholar

Azam, M., Haseeb, M., & Samsudin, S. (2016). The impact of foreign remittances on poverty alleviation: Global evidence. *Economics & Sociology, 9*(1), 264.

Azam, M., Haseeb, M., binti Samsi, A., & Raji, J. O. (2016). Stock market development and economic growth: Evidences from Asia-4 Countries. *International Journal of Economics and Financial Issues, 6*(3), 1200-1208.

Barth, M. E., Gomez-Biscarri, J., Kasznik, R., & López-Espinosa, G. (2017). Bank earnings and regulatory capital management using available for sale securities. *Review of Accounting Studies, 22*(4), 1761-1792. view at Google scholar / *view at publisher*

Bashir, A. H. M. (2003). *Determinants of profitability in Islamic banks.* Some evidence from the Middle East. view at Google scholar / *view at publisher*

Beatty, A. L., Ke, B., & Petroni, K. R. (2002). Earnings management to avoid earnings declines across publicly and privately held banks. *The Accounting Review, 77*(3), 547-570. view at Google scholar / *view at publisher*

Beuselinck, C., Deloof, M., & Vanstraelen, A. (2015). Cross-jurisdictional income shifting and tax enforcement: evidence from public versus private multinationals. *Review of Accounting Studies, 20*(2), 710-746. view at Google scholar / *view at publisher*

Bikker, J. A., & Metzemakers, P. A. (2005). Bank provisioning behaviour and procyclicality. *Journal of International Financial Markets, Institutions and Money, 15*(2), 141-157. view at Google scholar / *view at publisher*

Brockman, P., Martin, X., & Unlu, E. (2010). Executive compensation and the maturity structure of corporate debt. *The Journal of Finance, 65*(3), 1123-1161. view at Google scholar / *view at publisher*

Brouwer, E., & Kleinknecht, A. (1996). Firm size, small business presence and sales of innovative products: a micro-econometric analysis. *Small Business Economics, 8*(3), 189-201. view at Google scholar / *view at publisher*

Buch, C. M., & Goldberg, L. S. (2015). International banking and liquidity risk transmission: Lessons from across countries. *IMF Economic Review, 63*(3), 377-410. view at Google scholar / *view at publisher*

Burgstahler, D. C., & Dichev, I. D. (1997). *Earnings, adaptation and equity value*. Accounting review, 187-215. view at Google scholar

Burgstahler, D., & Dichev, I. (1997). Earnings management to avoid earnings decreases and losses. *Journal of Accounting and Economics, 24*(1), 99-126. view at Google scholar / *view at publisher*

Cliff, J. E. (1998). Does one size fit all? Exploring the relationship between attitudes towards growth, gender, and business size. *Journal of Business Venturing, 13*(6), 523-542. view at Google scholar / *view at publisher*

Dal Maso, L., Kanagaretnam, K., Lobo, G. J., & Terzani, S. (2018). The influence of accounting enforcement on earnings quality of banks: Implications of bank regulation and the global financial crisis. *Journal of Accounting and Public Policy.* view at Google scholar / *view at publisher*

Degeorge, F., Patel, J., & Zeckhauser, R. (1999). Earnings management to exceed thresholds. *The Journal of Business, 72*(1), 1-33. view at Google scholar

Demirgüç-Kunt, A., Horváth, B. L., & Huizinga, H. (2017). How does long-term finance affect economic volatility? *Journal of Financial Stability, 33*, 41-59. view at Google scholar / *view at publisher*

Diamond, D. W., Kashyap, A. K., & Rajan, R. G. (2017). Banking and the Evolving Objectives of Bank Regulation. *Journal of Political economy, 125*(6), 1812-1825. view at Google scholar / *view at publisher*

Ebrahim, A. (2007). Earnings management and board activity: an additional evidence. *Review of Accounting and Finance, 6*(1), 42-58. view at Google scholar / *view at publisher*

Edem, D. B. (2017). Liquidity management and performance of deposit money banks in Nigeria (1986–2011): an investigation. *International Journal of Economics, Finance and Management Sciences, 5*(3), 146-158. view at Google scholar / *view at publisher*

Fama, E. F. (1980). Agency problems and the theory of the firm. *Journal of Political Economy, 88*(2), 288-307. view at Google scholar / *view at publisher*

George, k. (2014). *Does the cross border mergers and acquisitions of the greek banks in the balkan area affect on the course of profitability efficiency and liquidity indexes of them*? The economies of balkan and eastern Europe countries in the changed world, 6. view at Google scholar

Gielnik, M. M., Zacher, H., & Schmitt, A. (2017). How small business managers' age and focus on opportunities affect business growth: a mediated moderation growth model. *Journal of Small Business Management, 55*(3), 460-483. view at Google scholar / *view at publisher*

Goddard, J., Liu, H., Molyneux, P., & Wilson, J. O. (2011). The persistence of bank profit. *Journal of Banking & Finance, 35*(11), 2881-2890. view at Google scholar / *view at publisher*

Goddard, J., Molyneux, P., & Wilson, J. O. (2004a). Dynamics of growth and profitability in banking. *Journal of Money, Credit and Banking, 36*(6), 1069-1090. view at Google scholar / *view at publisher*

Goddard, J., Molyneux, P., & Wilson, J. O. (2004b). The profitability of European banks: a cross-sectional and dynamic panel analysis. *The Manchester School, 72*(3), 363-381. view at Google scholar / *view at publisher*

Guay, W., Core, J., & Larcker, D. (2002). Executive equity compensation and incentives: A survey. *Economic Policy Review, 9*(1),3-27. view at Google scholar / *view at publisher*

Haseeb, M. (2018). Emerging issues in islamic banking & finance: challenges and solutions. *Academy of Accounting and Financial Studies Journal, 22*, 1-5. view at Google scholar

Haseeb, M., & Azam, M. (2015). Energy consumption, economic growth and CO2 emission nexus in Pakistan. *Asian Journal of Applied Sciences, 8*(1), 27-36. view at Google scholar / *view at publisher*

Haseeb, M., Bakar, A., Azam, M., Hassan, S., & Hartani, N. H. (2014). The macroeconomic impact of defense expenditure on economic growth of Pakistan: An econometric approach. *Asian Social Science, 10*(4), 203-213. view at Google scholar / *view at publisher*

Heider, F., Hoerova, M., & Holthausen, C. (2015). Liquidity hoarding and interbank market rates: The role of counterparty risk. *Journal of Financial Economics, 118*(2), 336-354. view at Google scholar / *view at publisher*

Kasanen, E., Kinnunen, J., & Niskanen, J. (1996). Dividend-based earnings management: Empirical evidence from Finland. *Journal of Accounting and Economics, 22*(1-3), 283-312. view at Google scholar / *view at publisher*

Kosmidou, K., Tanna, S., & Pasiouras, F. (2005). *Determinants of profitability of domestic UK commercial banks: panel evidence from the period 1995-2002*. Paper presented at the Money Macro and Finance (MMF) Research Group Conference. view at Google scholar

Mamatzakis, E., & Remoundos, P. (2003). Determinants of Greek commercial banks, 1989-2000. *Spoudai, 53*(1), 84-94. view at Google scholar

Mitchell, W. (1994). The dynamics of evolving markets: The effects of business sales and age on dissolutions and divestitures. *Administrative Science Quarterly, 39*(4), 575-602. view at Google scholar / *view at publisher*

Naceur, S. B. (2003). *The determinants of the Tunisian banking industry profitability: Panel evidence*. Universite Libre de Tunis working papers, 1-17. view at Google scholar

Nazir, M. S., Nawaz, M. M., Anwar, W., & Ahmed, F. (2010). Determinants of stock price volatility in karachi stock exchange: The mediating role of corporate dividend policy. *International Research Journal of Finance and Economics, 55*(55), 100-107. view at Google scholar

Nthebe, S., & Swart, M. (2017). The mediating role of tourist attractions in the relationship between hotel employees and business tourists' intentions to visit tourist attractions in Pretoria, South Africa. *African Journal for Physical Activity and Health Sciences (AJPHES), 23*(1), 133-145. view at Google scholar

Pástor, Ľ., & Stambaugh, R. F. (2003). Liquidity risk and expected stock returns. *Journal of Political Economy, 111*(3), 642-685. view at Google scholar / *view at publisher*

Rodríguez-Pérez, G., & van Hemmen, S. (2010). Debt, diversification and earnings management. *Journal of Accounting and Public Policy, 29*(2), 138-159. view at Google scholar / *view at publisher*

Sarkar, J., Sarkar, S., & Sen, K. (2008). Board of directors and opportunistic earnings management: Evidence from India. *Journal of Accounting, Auditing & Finance, 23*(4), 517-551. view at Google scholar / *view at publisher*

Schwatka, N. V., Smith, D., Weitzenkamp, D., Atherly, A., Dally, M. J., Brockbank, C. V., & McMillen, J. (2018). The impact of worksite wellness programs by size of business: a 3-year longitudinal study of participation, health benefits, absenteeism, and presenteeism. *Annals of Work Exposures and Health, 62*(1), S42-S54. view at Google scholar / *view at publisher*

Shafie, S., Azmi, W. N. W., & Haron, S. (2004). Adopting and measuring customer service quality in Islamic banks. *Journal of Muamalat and Islamic Finance Research, 1*(1), 1-12. view at Google scholar

Shen, C. H., & Chih, H. L. (2005). Investor protection, prospect theory, and earnings management: An international comparison of the banking industry. *Journal of Banking & Finance, 29*(10), 2675-2697. view at Google scholar / *view at publisher*

Shi, H., Sridhar, S., Grewal, R., & Lilien, G. (2017). Sales representative departures and customer reassignment strategies in business-to-business markets. *Journal of Marketing, 81*(2), 25-44. view at Google scholar / *view at publisher*

Shu, P. G., & Chiang, S. J. (2014). Firm size, timing, and earnings management of seasoned equity offerings. *International Review of Economics & Finance, 29*, 177-194. view at Google scholar / *view at publisher*

Waemustafa, W., & Sukri, S. (2016). Systematic and unsystematic risk determinants of liquidity risk between Islamic and conventional banks. *International Journal of Economics and Financial Issues, 2016, 6*(4), 1321-1327. view at Google scholar / *view at publisher*

World Bank Group. (2018). *Doing business 2018*. Retrieved 06-08-2018, 2018, from http://www.doingbusiness.org/content/dam/doingBusiness/country/k/kuwait/KWT.pdf.