

# Effect of Employee Expenses on Usefulness of Accounting Information

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## Abstract

In this study, the employee expenses model and earnings model are compared in order to determine whether or not putting the employee expenses in the earning predictability models and high relevance of accounting information to stock value, increases usefulness of accounting information. We use the term 'earnings model' to refer to the consideration of earnings alone, for determining earnings predictability as well as value relevance. The term 'employee model' refers to the consideration of earnings and employee expenses in determining earnings predictability as well as value relevance. In this study, the cost of employees' salary, which is shown under the heading of General and administrative expenses in the income statement, is the only monetary information that is available for us and relevance value is determined through the effectiveness of the models in determining stock returns. After applying these limitation, companies which were active in Tehran Stock Exchange from 2003 to 2012 were chosen as the target population. The results showed that compared to earnings model, the employee expenses model provides a better prediction of the earnings but it isn't a better model for predicting the stock relevance (related to the return of the stock)

**Keywords:** Employee expenses model; earnings model; Predictability; Value relevance; Persistence.

## 1. Introduction

Financial reporting should provide information about the financial effects of firm's transactions, operations and financial events on the financial condition and operations of the firm which then helps the investors and financial service providers in making important decisions about the future of that firm. Financial information should be provided to help the users in predicting the results of firm's current and future financial activities (Dastgire and Zafari, 2009). Thus, the overall objective of financial accounting is its usefulness in decision-making (Gassen, 2008).

Prediction is a key element in economic decisions. Thus, if accounting information is useful for decision making, it should be possible to predict some events, which are used as an input data for decision making models, based on this information.

Industrial age and pure industrial thinking period has passed, and today is the period of knowledge-based economy and knowledge-based human capital in organizations, the efficient management of human capital in modern organizations has become the key factor for success. Empirical studies that have been conducted confirm that human resource accounting data influences the decisions made by users and can lead to effective decision making by users inside and outside the organization. Unfortunately, in many cases information about human resources is missing from the firm's financial report.

So it seems that only financial information related to the employees who were audited in the financial statements (employee expenses) is available and can be used to assess the usefulness of accounting information for users.

## 2. Literature Review

Chang and Hsieh (2011), investigated the relationship between the three components of intellectual capital performance, operational, financial and stock market in Taiwan's electronics industry. For measuring the intellectual capital they used the adjusted value model of intellectual capital. Results showed that there was a positive relationship between operational performance and applied capital but there was no relationship between structural and human capital and operational performance. The components of intellectual capital are negatively correlated with financial market performance. Research and development expenses have a positive relationship with all the three performances but intellectual capital only has a positive relationship with operational performance.

Glark et al (2011), examined the relationship between intellectual capital and financial performance of Australian firms between 2004 and 2008. The results showed a direct relationship between intellectual capital and financial performance of Australian companies. Also, there was a positive relationship between human capital and structural capital for the past year and financial performance of the current year.

Nazari (2011), analyzed the relationship between the elements of intellectual capital and financial success. He used the Palyk model for calculating the intellectual capital and calculated the rate of return on equity as a measure for performance assessment. The results show that human and structural capital predict the rate of return on equity in a positive way.

Boujelbene and Affes (2013), conducted the first experimental study on the relationship

between the cost of equity and levels of disclosure of intellectual capital (human, structural and relational). They used Li et al (2008) checklist of intellectual capital disclosure and divided their sample, which consisted of French firms, into two categories: traditional and knowledge based. Results showed a significant negative relationship between disclosure of intellectual capital (human and structural) and the cost of equity.

Schiemann and Guenther (2013) examined the multiplying effect of the earnings components on information. For this purpose, they analyzed the effect of employee expenses on the future performance of UK firms from 1999 to 2010. The results showed that there was a strong negative relationship between intellectual capital disclosure and stockholders' salary expenses.

Darabi (2012), in a study titled "Effects of disclosure of intellectual capital components in the quality of financial reporting" showed that two components of intellectual capital, namely relational capital and human capital, had a positive effect on the dependent variable which was the quality of financial reporting and structural capital had a negative effect on the quality of financial reporting and among the three components of intellectual capital, the impact of human capital on the quality of financial reporting is far stronger than the other two factors.

Mahdavi and Sahlabadi (2012), in a study titled "An empirical investigation of the relationship between human resource value and stock returns for firms listed in Tehran Stock Exchange." showed that there is a significant relationship between the independent variables: the value of human resources, human resources of per capital and the growth rate value of human resources of the stock return.

### **3. Theoretical and research hypotheses**

#### **3.1 The usefulness of accounting information**

According to the theoretical framework of financial reporting the purpose of providing financial information is : "classifying and summarizing financial information about the financial position, financial performance and financial flexibility of the business which helps a wide range of users in making economic decisions" (Technical Committee of the National Audit Office, 2007). The financial statements of an entity contains the information that is released to public users. This information can only be useful if it has high quality.

#### **3.2 The quality of accounting information**

The main objective of financial statements is to provide information about the firm's financial and operational position in order to help the investors and creditors in making important decisions. When the financial statements fulfill this goal, they have an appropriate equality (Aboody and Hughes, 2005).

The quality of accounting information refers to a period in which, financial reports provide an honest report about the financial status of the firm over a period of time (Khajavi et al 2012). In other words, when the financial statements comply with neutrality and objectivity, it can be said that the managers have provided high quality accounting information (Brandt et al, 2010).

### 3.3 Persistence of earnings

Reported earnings are an important part of the financial information which are considered in the decision making process. Financial analysts consider reported earnings as a prominent factor in their analyses and judgments. More than that, the investors make investment decisions based on the financial information which is presented in firms' financial statements. They believe that the fixed income compared with fluctuating earnings guarantees higher dividend payment. Fluctuations in earnings are considered as an important criteria for calculating the overall risk of the firm therefore the firms with smoother earnings have lower risk (Venus et al, 2006).

Continuity of the current earnings provides stability for the firm. When the persistence of the profits is high, the company is able to provide the current earnings for a longer period of time, therefore the earnings quality is higher (Khajavi and Nazemi, 2005). Persistence and reproducibility, are two important factors that affect the quality of earnings. Firms with regular and stable earnings have higher quality earnings compared to the companies with erratic and unstable earnings because stable and regular earnings provide reliable predictions about the future of the firm. Bernard and Astovber believe that the quality of earnings depend on the efficiency of repeatable, stable and durable resources (Bülow and Talebi, 2010).

### 3.4 Predictability of earnings

Predictability of the earnings components, improves the ability of users in estimating the components of the earnings. This feature has been considered by financial analysts in designing financial models (Pope, 1987).

Earnings predictability is said to be a profit forecast. The qualitative feature so fearing are considered essential for designing the components of valuation models. In the conceptual framework of Financial Accounting Standards Board predictability of earnings is considered as a feature of relatedness and is defined as follows:

"The quality of information that helps the users to provide accurate predictions about the results of past or present financial activities". (Kurdestani and Majdi, 2007).

### 3.5 Related to stock returns (Value relevance)

In the research that has been done about the relevance of accounting information (earnings per share and book value), the correlation between the share price as an independent and various accounting variables have been analyzed. The most important effect of accounting information on the behavior of financial statements users is its impact on share prices. Users are always looking for information related to future cash flows and stock price (Habib, 2002).

In the past four decades, the usefulness of accounting information has been an interesting topic and it is still growing. The ability of accounting and financial variables in explaining stock market value (output or price), has been investigated since Wing and Beaver Brown started their research in this field.

It can be said that accounting data affect the expectations that the users of this kind information have and it can also increase or decrease the share prices in the stock market. Relevance of accounting information is "The ability of accounting numbers to summarize the

information that is essential for the stock price." Therefore the relevance of the financial information is shown by a statistical relationship between financial information, price and return (Alkday and Hnyfa, 2012).

### **3.6 Employee expenses**

Employee expenses are the only monetary information about employees that are presented in the financial statements and they are shown as paid or payable salaries under the right heading in the general and administrative expenses of the income statement. According to the results of Pope and Wang(2005) study, if an earnings component has different characteristics compared with the other earnings components, then this aggregation leads to the loss of information. In this case, it is more appropriate to consider these earnings component separately. Therefore we will use the Schiemann and Guenther (2013) total model for this study:

Earnings model refers to the consideration of earnings alone, for determining earnings predictability as well as value relevance.

Employee model: refers to the consideration of earnings and employee expenses in determining earnings predictability as well as value relevance.

The research hypotheses are:

Hypotheses 1: Employee expenses increase earnings predictability of the employee model in relation to the earnings model.

Hypotheses 2: Employee expenses increase the value relevance of the employee model in relation to the earnings model.

## **4. Research methods and sampling**

This study is a quasi-experimental research in the field of positive research PAT. This research in terms of nature and purposes is an applied one. Also this study is based on real information of stock market, financial statements, notes to the financial statements and the company reports. In this study the necessary information for forming the test hypothesize, was collected from financial statements, the Tehran Stock Exchange databases site and Rahavard Novin data bases. After choosing a sample from the available companies, Excel spreadsheet software was used for calculation of the data. For analyzing the data, regression models and R software were used.

The population for this study was selected from the listed companies in Tehran Stock Exchange Market between the years 2003 to 2012. Firms that did not have the following conditions were removed:

- 1.Their financial year ended on March 19.
2. Companies did not stop their operations.
- 3-Firms shouldn't have changed the financial year in their financial statements.
4. Their financial information was available.
- 5-Theywere listed in Tehran Stock Exchange since March 19, 2002.

The information and data that were required for this research was collected from various sources depending on the type of needed information. Information related to literature review

and theoretical framework was collected from library sources and scientific databases and journals. The information that was required for this study is was generally obtained from Rahavard Novin software, Tehran Stock Exchange website, financial statements and the reports that were published by the Tehran Stock Exchange.

## 5. Research methodology

Hypotheses 1 and 2, examine the effect of employee expenses on earnings predictability and value relevance. To this purpose, we analyzed earnings predictability and value relevance with earnings model and then analyzed them with employee model. If earnings predictability and value relevance increase in the employee model, these hypotheses are accepted.

We use a regression model (autoregressive) to investigate the earnings predictability (Francis, 2004; Lip, 1990).

$$EBET_{j,t} = \beta_{0,j} + \beta_{1,j}EBET_{j,t-1} + \varepsilon_{j,t} \quad (1-5)$$

$$EBET_{j,t} = \gamma_{0,j} + \gamma_{1,j}EBET_{j,t-1} + \gamma_{2,j}EMPEXP_{j,t-1} + \xi_{j,t} \quad (2-5)$$

Where  $EBET_{j,t}$  is earnings before tax for firm  $j$  in the year  $t$  and where  $EMPEXP_{j,t}$  is employee expenses. Both,  $EBET$  and  $EMPEXP$  are measured on a per share basis.

For value relevance, we measured the regression of returns on earnings and their changes (Collins et al, 1997; Francis and Schipper, 1999; Bushman et al, 2004; Francis et al., 2004; Schiemann and Guenther, 2013).

Like Francis et al. (2004) model, relatedness in earnings model is calculated through this formula:

$$RET_{j,t} = \delta_{0,j} + \delta_{1,j}EARN_{j,t-1} + \delta_{2,j}\Delta EARN_{j,t} + \rho_j \quad (3-5)$$

Then the model was extended with employee expenses and their changes, similar to the model of Chen and Wang (2004).

Therefore evaluation value relevance in the employee model will be as follows :

$$RET_{j,t} = \varphi_{0,j} + \varphi_{1,j}EARN_{j,t-1} + \varphi_{2,j}\Delta EARN_{j,t} + \varphi_{3,j}EMPEXP_{j,t-1} + \varphi_{4,j}\Delta EMPEXP_{j,t} + \xi_{j,t} \quad (4-5)$$

Where  $EARN$  is measured as earnings before tax.

Total independent variables in this model is calculated for per share.

If AIC criteria in the employee expenses model is greater than AIC criteria in the earning model, employee expenses improves relevance value and hypothesis (2) will be accepted.

## 6. Results

Table (1) shows the descriptive statistics of the data, there is a large gap between maximum and minimum of employee expenses. This is due to the fact that the sample consists of firms from various industries.

If a country views human resources as an investment and their thoughts and creativity are the first and most important factors that are considered by the company, such a great difference

between should not be present in the employee expenses of various industrial groups. Because in a knowledge-based economy, the main emphasis is on company's human resources and creativity which leads to greater competitive advantage. One of the important aspects of the company's human resources is employee salaries and advantages. If all the companies in various industries pay attention to this important aspect of human resources this could lead to a move toward a knowledge-based economy.

	Minimum	Maximum	Mean	Std. Deviation
EMPEXP	305	3912921	70966	228×10 <sup>3</sup>
RET	81.46-	535.33	30.75	74.2472
EBET	1.98702-	8040108	237699	758000

Table(1). Descriptive Statistics

### 6.1 Examine hypotheses (1)

In order to check hypothesis(1), the abnormal data was removed and analysis process was performed with the remaining data. The dependent variable average versus time (*EBET*) graph shows that the overall profit was decreased in 1383 and since then it follows an uptrend.

To compare the fixed time effects model and least squares model, F test was used. As it is shown in table(2), the p -value of F- test is less than 5% and according to the hypothesis  $H_0$ , the fixed effects model is better than the least squares model therefore the hypothesis  $H_0$  is rejected and the fixed effects model should be checked in both models .

models	p- value
Earning model	<2.2e-16
Employee expenses model	<2.2e-16

Table( 2). Comparison of the time fixed effects model with the least squares model by F- test

The F test was also used to compare the fixed effects model with fixed time effects model, p-value was less than 5% in both models thus the fixed time effects mode is chosen.

models	p- value
Earning model	2.612e-10
Employee expenses model	1.662e-07

Table( 3). Comparison of the time fixed effects model with the fixed effects model by F- test

For comparing the fixed effects model and random effects model, the Hausman test was used and the results show that random effects model is better than the fixed time effects model. Hausman test results are shown in Table(4), the p-value is less than 5% so the random effects panel model is not as efficient as the fixed effects panel model.

models	p- value
Earning model	<2.2e-16
Employee expenses model	<2.2e-16

Table(4). The Hausman test for comparing the fixed effects model and random effects model

According to Breusch-Pagan and Breusch-Godfrey test outputs, the significance level is less than 5% in both models and problem-sectional dependence and serial correlation exists therefore generalized maximum likelihood method should be used to fit models with the data.

models	p- value
Earning model	<2.2e-16
Employee expenses model	<2.2e-16

Table (5). Examining the cross-sectional dependence with Breusch-Pagan test

models	p- value
Earning model	<2.2e-16
Employee expenses model	<2.2e-16

Table (6). Examining the serial correlation with Breusch-Godfrey test

variable	t-value	Std. Deviation	Coefficient	p- value
Constant	2.6613	1.6494e+04	4.3895e+04	2.2e-16
EBET <sub>t-1</sub>	39.4971	2.0051e-02	7.9196e-01	2.2e-16
AIC =37287.89				

Table (7). Earning model for earnings predictability by the generalized

maximum likelihood method

variable	t-value	Std. Deviation	Coefficient	p- value
Constant	12.064	1.3351e-01	1.6107e+00	2.2e-16
EBET <sub>t-1</sub>	27.589	2.3082e-02	6.3681e-01	2.2e-16
AIC = 37022.75				

Table (8). Employee expenses model for earnings predictability by the generalized maximum likelihood method

As observed in the table (7) and table (8), profit variables are meaningful before and after tax and employee expenses write-off and are effective in the model which means that if employee expenses are considered in the earning forecasting models, which usually consider external factors, alongside the past earnings costs the earning predictions will be more accurate. This was confirmed by

AIC (Akaike information criterion) in the employee expenses model. AIC (37022.75) in the employee expenses model is less than the AIC (37287.89) in earning model which means that earning predictability in the employee expenses model is better. Therefore the first hypothesis which is based on the positive impact of employee expenses on earnings predictability, is approved.

### 6.2 Examine hypotheses (2)

For both models, the F test was used to examine the appropriateness of the fixed effects model and the least squares model. P-value was greater than 5% in both models. The least squares model is better than the fixed effects model therefore the least squares model is used.

models	p- value
Earning model	0.3609
Employee expenses model	0.4031

Table(9).compares the time fixed effects mode land the least squares model by F test

The model was estimated using the least squares method. The remainders were considered normality, not normal. Hence conversion of the dependent variable *RET* is used. To convert the values of the dependent variable they need to be positive. Therefore the mean values of *RET* Subtracted from *RET* values to provide a positive value. In order to know which conversion is better we used Box-Cox transformations.

Box-Cox graph for both models is the near-zero so the logarithmic transformation of the dependent variable was used. Least squares model is used again for analyzing the transformed data.

variable	Coefficient	t-value	Std. Deviation	p- value
Constant	4.5357	231.427	0.0196	<2e-16
EBET <sub>t-1</sub>	43.6842	2.980	14.3230	0.00294
ΔEBET	70.6199	4.406	16.0281	1.14e-05
R <sup>2</sup> =				0.01565
Adj - R <sup>2</sup> = 0.01414				

Table (10). for the earning model of the value relevance of the least square method with the log of the dependent variable

variable	Coefficient	t-value	Std. Deviation	p- value
Constant	230.912	0.0196	4.5355	<2e-16
EARN <sub>t-1</sub>	2.989	14.3399	42.8556	0.00286
ΔEARN	4.380	16.0473	70.2896	1.28e-05
R <sup>2</sup> =				=0.01556
Adj - R <sup>2</sup> = 0.01404				

Table (11) . for the employee expenses model of the value relevance of the least square method with the log of the dependent variable

Tables (10) and (11) show that in the earning model earnings and changes in the earnings have a positive and significant relationship with the dependent variable (stock returns). In the employee expenses model, employee expenses and changes in the employee expenses were excluded from the model but earnings and changes in the earnings had a significant positive correlation with the dependent variable at 5% error level.

As seen in these tables, after transforming the logarithm of the dependent variable in the earning model and employee expenses model, the least squares model presents identical results. There are only slight differences in the values of two tables that may have been caused by the deletion of the data. The employee expenses model and the earning model will become quite similar after eliminating the employee expenses in the expenses model, therefore hypothesis (2) is rejected.

Again residuals are normally checked. Charts are a straight line almost, so we can conclude the normality of residuals.

We used Durbin - Watson test to investigate residuals in terms of independent. If the test statistic is close to 2, it shows that the residuals are independent. The test statistic value which is close to 2 will lead to the conclusion that residuals in the models do not have autocorrelation.

models	value
Earning model	1.86842
Employee expenses model	1.866762

Table(12). Durbin - Watson test

## 7. Discussion and conclusions

The hypothesis one examined whether or not the inclusion of employee expenses in the predictability earning models improves the ability to forecast earnings. Based on the results this hypothesis is confirmed. Meaningful employee expenses in the models suggest a positive relationship between earning predictability of firms and employee expenses of firms. Thus, putting the employee expenses in the earning prediction model can increase the usefulness of accounting information and helps the decision makers in making better and more effective decisions. Schiemann and Guenther (2013) research shows similar results.

Hypothesis two assessed whether or not interring employee expenses in the model increases the relevance of accounting information. The findings suggest that employee expenses were not associated with relevance and were excluded from the model, this means that relevance of information to stock prices can be studied through the earning and earning changes. Therefore hypothesis two was rejected. But in the Schiemann and Guenther (2013) research, this hypothesis was accepted.

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